
Status and Constraints of Artisanal Fisher's In Escravos Estuary Around Okerenkoko and Kurutie Axis, Niger Delta, Nigeria

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ABSTRACT

The status and constraints of artisanal fishers in Escravos Estuary around Okerenkoko and Kurutie Axis, Niger Delta, Nigeria was examined for a period of twelve months between May, 2021 and April, 2022. The study is aimed at determining the demographic characteristics of artisanal fishers, find out the constraints they faced and proffer solutions to abate the constraints in order to improve the standard of living of artisanal fishers in the study area. Data were collected from well-structured questionnaire. A total of 350 questionnaires were randomly distributed to artisanal fishers and only 300 questionnaires were retrieved and used for the analysis. Data were analyzed using descriptive statistics in form of frequencies and percentages. The results revealed that females constituted the highest percentage (73.33%) of the total population of the respondents while the males (26.67%) the lowest percentage. The results revealed that, majority (73.33%) of the artisanal fishers were females, within the age of 31-40 years (33.33%), married (60.00%) with household size of 1-5 (66.67%), 53.33% had primary education and 66.67% of them had over 15 years fishing experience. Majority (66.67%) carry out fishing operation in full-time bases and just few (33.33%) carry out fishing operations in part-time bases. The major pressing constraints faced by fishers were lack of good processing and storage facilities, destruction of spawning grounds and fish kill due to crude pollutions, lack of access to some suitable fishing grounds due to restriction imposed by oil installation companies and lack of fund to purchase fishing materials. Therefore, fishers should be provided with basic amenities and funds to purchase fishing materials. Government should enact laws compelling oil companies to cease discharging crude oil in the environment.

Keywords: Artisanal fishers, Constraints, Status, Escravos Estuary, Niger Delta.

Aims Research Journal Reference Format:

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1. 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 (Ngodigha *et al.*, 2018). 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 (Ngodigha

et al., 2018). 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 (Mathew, 2003, Davies and Kwen, 2013). However, the artisanal fisheries are prominent fisheries in tropical developing countries (Gnanadoss and Aderounm, 1983). Artisanal fisheries can be subsistence or commercial fisheries providing for local consumption or export. In the developing world today, artisanal fishery sector constitutes the most important sector which accounts for the major fish source. Nevertheless, attempts to harness the full potentials in this sector have often failed as a result of the enormity of poverty which constantly put the fishers on the brinks of economic stagnation and incapacitation (Davis and Kwen, 2013).

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 counties (Gnanadoss and Aderounm, 1983) and 5 nautical miles away from the seashore (Anene and Ezech, 2010). Artisanal fishers carry out their fishing operations often with more dug-out wooden canoes than three motorized fishing crafts (Anene *et al.*, 2010). Traditional dug-out canoes used by artisanal fishers range between 3-8 meters (Inoni and Oyaide, 2007). 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 (Inoni and Oyaide, 2007) with an average of 3 fishers per boat (Sikoki and Hart, 1999, Abowei and Har, 2008).

Fishing is an occupation engaged by both male and female irrespective of age (Inoni and Oyaide, 2007). Although, this fisheries sector is dominated by men; but the 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 (Williams, 2002, Kwen and Nwabeze, 2014). 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. Fishing gear used by artisanal fishers are mostly traditional fishing gear and are easily found in their localities. In Nigeria, artisanal fishers use fishing gear such as cast nets, hand lines, traps, long lines, gillnets, beach nets, purse seines, clap nets etc. According to Kingdom and Kwen (2009) more than 70% of artisanal fishers use more than 3 fishing gear during fishing operations.

1.1 Justification of the Study

Escravos Estuary in Delta State, is a coastal water body in Nigeria which possesses huge potentials for artisanal fisheries activities which adversely impact positively on the inhabitants of the Escravos Estuarine communities and as well enhances the economy of the state and country in general. Studies in the Niger Delta water bodies showed that the artisanal fisheries remain the major fishing practice carried out by the inhabitants in the area (Mustapha, 2013, Egasi, 2016, Bolorunduro, 2016 and Binyotubo *et al.*, 2019). Consequently, artisanal fisheries sector is one major source for domestic fish production in the study area. The twenty communities are some of the major communities situated on the bank of the Escravos Estuary in Delta State where artisanal fishing activities take place almost every day.

Notwithstanding the important roles of artisanal fishers in the study area, there is little or no comprehensive study that is carried out on the status and constraints of artisanal fishers around Okerenkoko and Kurutie axis in Niger Delta, Nigeria. So, there is a dearth information on this laudable activity carried out by artisanal fishers in the area. This study will therefore bridge the gap. The findings obtained from this study would be useful to professional fishers, fishery extension workers, fisheries institutions, government, policy makers to enable them formulate policies that will favour fishing business and management, conservation of fish stocks and improves the standard of living of artisanal fishers.

1.2 Aim and Objectives of the Study

The main aim of this study is to examine the status and constraints of artisanal fishers around Okerenkoko and Kurutie axis, Niger Delta, Nigeria. Specifically, the objectives of the study are to:

- i. Determine the demographic characteristics of artisanal fishers in Escravos Estuary.
- ii. Find out the constraints faced by artisanal fishers in the study area.
- iii. Proffer solutions to abate the constraints in order to improve the standard of living of artisanal fishers in the study area.

2. MATERIALS AND METHODS

2.1 Description of the Study Area

The study area is located in Escravos Estuary around Okerenkoko and Kurutie fishing Communities in Warri South-West Local Government Area of Delta State, Nigeria. Escravos Estuary is situated between latitude $5^{\circ} 30' 0''$ N & $5^{\circ} 50' 0''$ N and Longitude $5^{\circ} 10' 0''$ E & $5^{\circ} 40' 0''$ E (Figure 1). The area is characterized by active beaches on the seaward sides. The surrounding Escravos Estuary is characterized by a tropical climate. With well demarcated rainy and dry season. The dry season stretches from November to April while the rainy season is usually from May to October (Opule, 200). The vegetation is made of *Eichhornia crassepes*, *Fern*, *Pistia*, *Pennisetum Purpureum*, *Cenchrus*, *Ciliaris*, *Nympkarpasp*, *Trapasp*, *Lemnasp*, *Ceratrpphyllum sp.* The human activities that are carried out in the study area include: jetty operations, offloading and selling of goods and petroleum products, board movement, dumping of organic and inorganic wastes, log movement, laundering, washing of boats, bathing and swimming.

2.2 Selection of Locations

The sampling locations were selected based on preliminary investigation from artisanal fishers along the Escravos Estuary. The locations selected were greatly influenced by the fishing activities in those Communities. All communities share very close ties, often participating in common fishing trips and other economic activities and are major fishing landing sites along the Escravos Estuary.

2.3 Data Collection

Data for the study were collected through primary sources. A well-structured questionnaire was designed with both opened and closed ended questions relevant to the objectives of the study and administered randomly to artisanal fishers operating 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 options in writing. The study was carried out for a period of twelve months between May, 2021 and April, 2022.

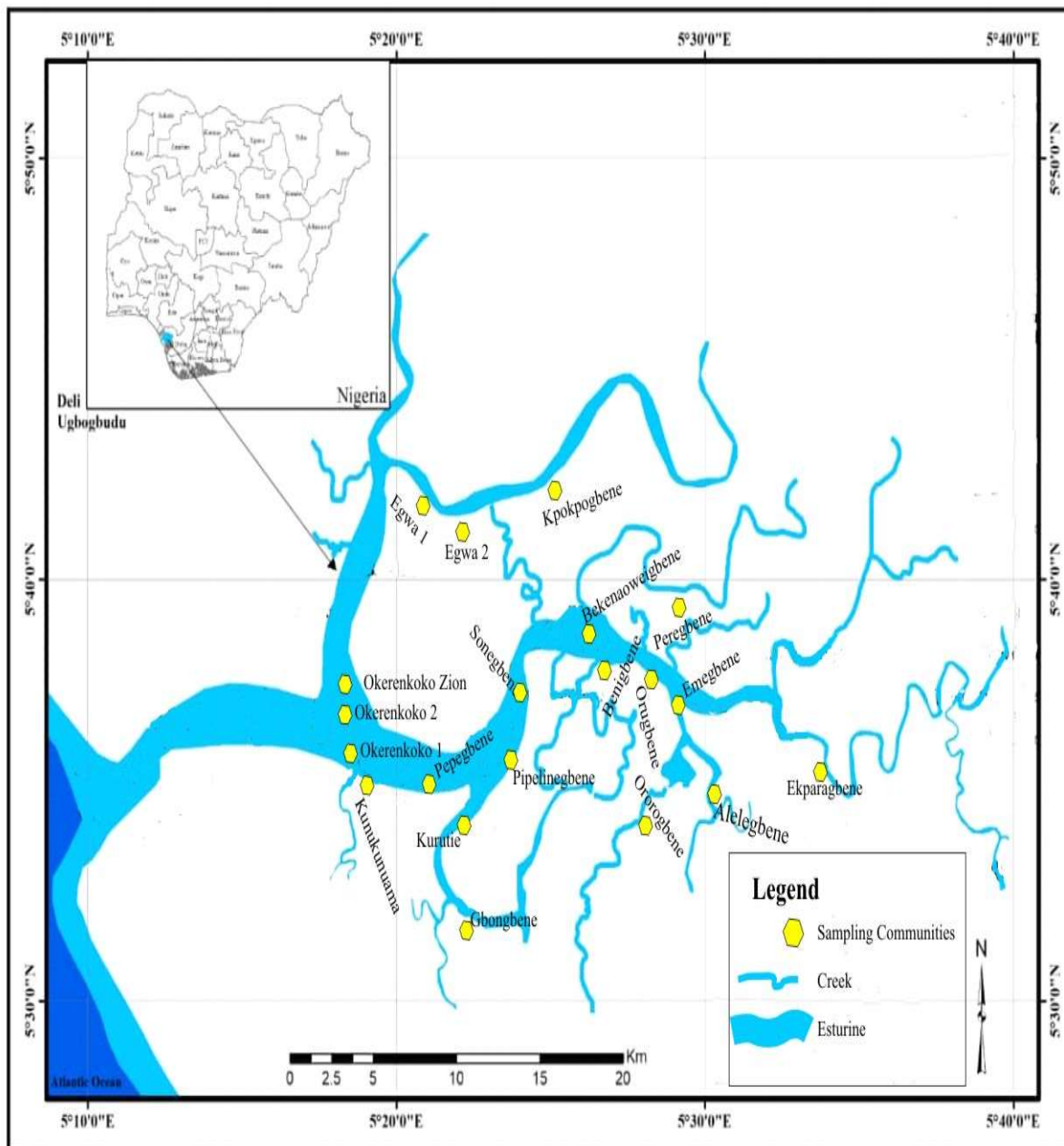


Figure 1. Map of the Study Area, Showing Sampling Communities

2.4 Data Analysis

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

3. RESULTS AND DISCUSSION

The demographic characteristics of the respondents are presented in Table 1. The results revealed that the females constituted 73.33% of the total population of the respondents in Escravos Estuary around Okerenkoko and Kurutie in Delta State while the remaining 26.67% were males. The high percentage of female members dominating the artisanal fishing operations (activities) may be due to the fact that fishing activities in the study area are devoid of gender limitations and women were more disposed towards fishing and fish products than their male counterparts (Yamhere, 2011; Ibitoye, 2012). An additional reason is that, men in the area are no longer interested in fishing due to the introduction of mini-refineries around the area that generates more funds to them than fishing.

Kwen *et al.* (2013) in their study on the survey of fishing gear and status of fishers in Igbedi Creek, Nigeria Delta, Nigeria also reported that females dominated in the fishing activities in the study area. A contrary view was reported by Agbontale (2009) that marketing is seen as a preferred work for women and not fishing operations. The age of the respondents indicated that majority (33.33%) of them were within the age bracket of 31-40 years and the others were either 21-30 years (30.00%), 41-50 years (23.33%) and above 50 years (12.67%). From this results, it is evident that most of the respondents were within the economically active age. This is an indication that, the artisanal fishers in this study area were relatively young and is predominantly being carried out by young people. Therefore, training, extension and spread of knowledge would be quite effective for people of such age bracket.

This is in agreement with the reports of Mebine and Adeyemo (2012), Davies and Kwen (2013) and Kwen and Nwabeze (2014) who had reported that fishing activities including processing and marketing are majorly carried out by people within the ages of 30-40 years. This could be due to the fact that; youths normally go about doing their personal business without any challenges of old age. Most of the respondents (60.00%) were married with household size of 1-5 (66.67%). The high percentage of married people involvement in fish marketing is in line with the reports of Onyia and Adebayo (2006), Misau *et al.* (2012), Kwen *et al.* (2013) and Kwen and Nwabeze (2014) who reported that the social aspect of fisheries is been dominated by married people, and some of their activities include: processing, preservation, transportation, marketing etc.

This suggest that they are the people who have more pressing responsibilities to cater for than those who are single. The educational level of the respondents revealed that, majority of them (53.33%) had primary education while 23.33% and 6.67% had secondary and tertiary education. Only 16.67% of the respondents were without formal education. This low level of education may discourage active participation and acceptance of new innovations that will enhance artisanal fishing operations and other agricultural activities. In terms of the years of experience by the artisanal fishers, majority (66.67%) of them had over 15 years fishing experience, 30.00% had 11-15 years' experience while 3.33% only had 5-10 years' experience.

Table 1: Demographic characteristic of artisanal fisher's in Escravos Estuary

Variables	Frequency	Percentage (%)
Sex		
Male	80	26.67
Female	220	73.33
Total	300	100.00
Age		
21-30	93	31.00
31-40	100	33.33
41-50	70	23.33
Above 50	38	12.67
Total	300	100.00
Marital Status		
Single	40	13.33
Married	180	60.00
Widow	80	26.67
Total	300	100.00
Household Size		
1-5	200	66.67
5-10	90	30.00
Above 10	10	3.33
Total	300	100.00
Educational Level		
No Formal Education	50	16.67
Primary	160	53.33
Secondary	70	23.33
Tertiary	20	6.67
Total	300	100.00
Years (Yrs.) of Experience		
5-10 Yrs.	10	3.33
11-15 Yrs.	90	30.00
Above 15 Yrs.	200	66.67
Total	300	100.00

Source: Field Survey, 2021-2022.

Figure 1 depicts the mode of fishing operation carried out by artisanal fishers in Escravos Estuary. Out of the artisanal fishers interviewed, majority (66.67%) carry out their fishing operation in full-time bases and just few (33.33%) of them carry out their fishing operations in part-time bases in Escravos Estuary. This is portraying the fact that artisanal fisher' in Escravos Estuary is carrying out fishing operations in full-time bases majorly and not part-time. This finding in alliance with the findings of Kwen *et al.* (2013) in their study in the Igbedi Creek Area, Niger Delta, Nigeria.

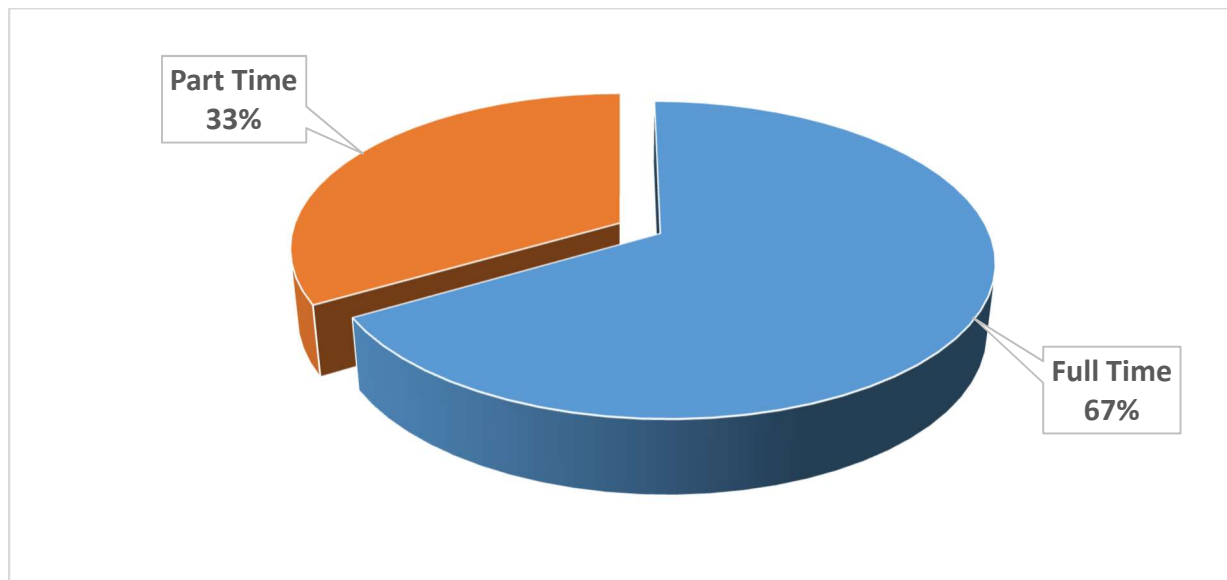


Figure 1: Mode of fishing operation by artisanal fishers in Escravos Estuary

3.1 Constrains of Artisanal Fishers

The constrains faced by artisanal fishers in Escravos Estuary are emphasized in Table 2. Majority of the respondents (20.00%) indicated that lack of good processing and storage facilities is a major challenge facing artisanal fishers in the study area, followed by destruction of spawning grounds and fish kill due to crude pollutions (15.00%), lack of access to some suitable fishing grounds due to restriction imposed by oil installation companies (13.33%), lack of fund to purchase fishing materials (10.00%), difficulties in accessing loans (6.67%), unorganized markets (6.67%). Others were; lack of good transport facilities to transfer catches (5.00%), lack of social amenities (5.00%), the changing nature of North-East wind, lead to poor catches (3.33%), problem of water depth (3.33%) and inability to repair fishing crafts and gear (1.67%).

This is an indication that these were the constrains faced by artisanal fishers in the area which affects their fishing business. Kwen and Nwabeze (2014) noted similar challenges on their study on the marketing of smoked freshwater Clam (*Galatea paradoxa*) in three selected communities in Yenagoa Local Government Area of Bayelsa State. They affirmed that these are some of the major challenges faced in the fishing industries in most parts of Nigeria. The observed challenges faced are also in agreement with reports of Esobhawan *et al.* (2012), Davies and Kwen (2013), Kwen *et al.* (2013), Kwen and Nwabeze (2014), Agbebi and Adetuwo (2018), and George *et al.* (2021) and Aghoghovwia *et al.* (2022).

Table 2: Constraints faced by artisanal fishers in Escravos Estuary

S/N	Constraints Faced	Frequency	Percentages (%)
1	Lack of fund to purchase fishing materials	30	10.00
2	Difficulties in accessing loans	20	6.67
3	Lack of good transport facilities to transfer catches from landing sites to consumer centers	15	5.00
4	Lack of good processing and storage facilities	60	20.00
5	Lack of social amenities	15	5.00
6	Unorganized markets	20	6.67
7	The changing nature of North-East wind, lead to poor catches	10	3.33
8	Lack of access to some suitable fishing grounds due to restriction imposed by oil installation companies	40	13.33
9	Destruction of spawning grounds and fish kill due to crude pollutions	45	15.00
10	Problem of water depth	10	3.33
11	Inability to repair fishing crafts and gear	5	1.67
	Total	300	100.00

Source: Field Survey, 2021-2022.

Proffered Solutions of Artisanal Fishers

The proffered solutions to the constraints are represented in Table 3. The proffered solutions include: provision of fishing materials at subsidized rate (8.00%), Provision of loans to fishers (6.67%), provision of good transport facilities to transfer catches from landing sites to consumer centers (5.67%), provision of good processing and storage facilities (20.00%), provision of social amenities (5.00%), provision of good markets and structures (7.00%), the changing nature of North-East wind, lead to poor catches (3.67%), banned should be lifted to enable fishers access some suitable fishing grounds that were restricted by oil installation companies in the area (13.33%) enacting laws and regulations compelling oil companies to implement the clean-up of waterways during and after crude pollutions (21.67%), increasing the depth of river by dredging to increase movement area for fish (5.33%) and fishers should be trained on how to repair fishing crafts and gear (3.33%).

The proffered solutions to abate the challenges faced artisanal fishers are also similar with the proffered solutions by Davies and Kwen (2013), Kwen *et al.* (2013), Kwen and Nwabeze (2014) and George *et al.* (2021) in their studies in other water bodies in the Niger Delta region.

Table 3: Proffered solutions to abate challenges faced by artisanal fishers in Escravos Estuary

S/N	Proffered solutions to challenges	Frequency	Percentages (%)
1	Provision of fishing materials at subsidized rate	25	8.33
2	Provision of loans to fishers	20	6.67
3	Provision of good transport facilities to transfer catches from landing sites to consumer centers	17	5.67
4	Provision of good processing and storage facilities	60	20.00
5	Provision of social amenities	15	5.00
6	Provision of good markets and structures	21	7.00
7	The changing nature of North-East wind, lead to poor catches	11	3.67
8	Banned should be lifted to enable fishers access some suitable fishing grounds that were restricted by oil installation companies in the area	40	13.33
9	Enacting laws and regulations compelling oil companies to implement the clean-up of waterways during and after crude pollutions	65	21.67
10	Increasing the depth of river by dredging to increase movement area for fish	16	5.33
11	Fishers should be trained on how to repair fishing crafts and gear	10	3.33
	Total	300	100.00

Source: Field Survey, 2021-2022

4. CONCLUSION

The females were more involved in the artisanal fisheries in the study area than their male counterparts. The most economically active age involved in artisanal fisheries was within the age bracket of 26-50 years. Over one third of the fish marketers had secondary education. Majority of the respondents carry out fishing operations on full-time bases personal savings and this will obviously not affect the business output negatively in the study area. The constraints faced by artisanal fishers include: lack of good processing and storage facilities, destruction of spawning grounds and fish kill due to crude pollutions, lack of access to some suitable fishing grounds due to restriction imposed by oil installation companies, lack of fund to purchase fishing materials, difficulties in accessing loans, unorganized markets. Others were; lack of good transport facilities to transfer catches, lack of social amenities, the changing nature of North-East wind, lead to poor catches, problem of water depth and inability to repair fishing crafts and gear.

5. RECOMMENDATIONS

Based on the conclusion of this study, the following recommendations were made:

- i. Provision of fishing materials at subsidized rate.
- ii. Provision of loans to fishers
- iii. Provision of good transport facilities to transfer catches from landing sites to consumer centers. Provision of good processing and storage facilities.
- iv. Provision of social amenities, provision of good markets and structures.
- v. Banned should be lifted to enable fishers access some suitable fishing grounds that were restricted by oil installation companies in the area.
- vi. Enacting laws and regulations compelling oil companies to implement the clean-up of waterways during and after crude pollutions.
- vii. Increasing the depth of river by dredging to increase movement area for fish and fishers should be trained on how to repair fishing crafts and gear.

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