



CHALLENGES AND POTENTIAL INTERVENTIONS IN ARTISANAL FISH PRODUCTION ALONG OGUN RIVER BASIN

¹Adeosun, O. M., ²Adeosun, F. I., ¹Soyoye, V. O., ²Ajiboye, E. O. and ²Fadeyi, P. B.

¹Agricultural Media Resources and Extension Centre,
Federal University of Agriculture, P. M. 2240, Abeokuta

²Department of Aquaculture and Fisheries Management,
Federal University of Agriculture, P. M. 2240, Abeokuta

Corresponding Author's Email: adeosunom@funaab.edu.ng

ABSTRACT

The study profiled the challenges and potential interventions in artisanal fish production along Ogun River basin. Two stage sampling technique was employed to select 120 artisanal fishers. Data were collected with the aid of structured and validated interview guide. Data were analyzed using descriptive and inferential statistics. The result showed that majority of the artisanal fishers were male and married (59.1%) with a mean household size of 8.5. Results also showed that the age range of 41-50 and 21-30 had the highest percentage of 40% and 20.8% respectively. The results further revealed that 34.45% and 34.1% of the respondents had primary education and no formal education respectively. *Oreochromis niloticus* has a higher percentage of abundance and distribution in the study area 58.3%. The major constraints among fishers is decline in fish population, it revealed that 90.8% of the respondents had no access to interventions or supports while 9.2% of the respondents had access to interventions or supports. Results on the distance covered on fishing trips revealed that <5km had a high percentage of 87.5%, while 5km- 10km had a percentage of 12.5%. Also, the distance covered of each fisher man/woman to operation site and also how near and far the operation site is to their landing site or homes. Additionally, it revealed that the full-time and part-time fishers had a percentage of 70.8% and 29.1% respectively of the total population. This explains that most of the fishers are fully involved in fishing as their main occupation. Based on the findings of this study, it was revealed that artisanal fishers along the Ogun River Basin continue to experience significant challenges that affect their operations, even in the presence of measurable yield and productivity. These challenges highlight critical areas where strategic and context-specific interventions are required to enhance artisanal fish production, strengthen livelihoods, and promote the sustainable management of fisheries resources in the study area.

Keywords: Challenges, Potential, Interventions, Artisanal, Fishing, Production.

INTRODUCTION

Artisanal fishing is the backbone of coastal communities, generating income and supporting local businesses (Olaoye *et al.*, 2018), and their methods are often less destructive than industrial fishing (Lloret *et al.*, 2018, Sala *et al.*, 2023), promoting the health of Ogun River basin. Artisanal fishing is an age-old human tradition that refers to a variety of small-scale, low tech, low-capital fishing techniques carried out by individual fishing households (Ohara *et al.*, 2023). Many of these households are of coastal or island ethnic groups and they make short (rarely overnight) fishing trips close to the shore. Their produce is mostly intended for local consumption and is typically not processed. Cast nets, small (if any) traditional fishing boats, fishing arrows, harpoons, and other traditional fishing gear are all used in artisanal fishing. The government has recently shown interest in the socioeconomic standing of the artisanal fishing community due to this (Lloret *et al.*, 2018). Artisanal fishing is critically important, not only for food, but also for jobs, income, nutrition, food security, sustainable livelihoods, and poverty alleviation as well (Lauria *et al.*, 2018). Fish and aquatic foods are commonly supplied to domestic and international markets through the seasonal, full-time, or part-time operations of this artisanal fish farming (Hamerlynck *et al.*, 2019). For many coastal communities, artisanal fishing is a vital part of their culture and economy.



However, in the modern period, these communities face numerous obstacles. The large-scale industrial fishing that destroys ecosystems and depletes fish stocks frequently casts a shadow over them. An additional degree of complexity is introduced by climate change, as fish migration patterns and infrastructure are impacted by rising sea temperatures and extreme weather events (Mendenhall *et al.*, 2020). Artisanal fisheries have enormous potential for sustainability and financial success despite these obstacles (DeFries *et al.*, 2019). Their traditional methods are frequently less harmful than industrial ones and the catch's superior quality and freshness allow them to sell it as a premium good, bringing in more money and carving out a specialized market (Sullivan *et al.*, 2022), but their attention is fixed to particular species.

The artisanal fishers are still facing a myriad of challenges that threaten their livelihoods. Among these challenges include overfishing, competition from larger commercial operations, climate change impacts, limited access to markets and fair prices, and outdated equipment. These are preventing their operation from reaching the full potential. This research work directly addresses the critical issue of maintaining the viability of artisanal fisheries, which play a vital role in providing a significant portion of the fish consumed in Nigeria, contributing to national food security. Therefore, the study aimed to assess the challenges and opportunities for interventions in artisanal production along Ogun river basin in Abeokuta, Ogun state. The specific objectives were to:

- i. identify and describe the socio-economic characteristics of artisanal fishers in the study area;
- ii. identify the fishing practices of artisanal fishers in the study area;
- iii. assess the abundance, distribution and diversity of fish species in the study area and
- iv. identify the constraints and prospective interventions to address the challenges faced by artisanal fishing in the study area.

METHODOLOGY

The Study Area

This study was conducted among fisher folks in Ogun River, Ogun State, Nigeria. Ogun River is one of the major rivers in the south western part of Nigeria with a total area of 22.4 km² and a fairly large flow of about 393/m³ secG1 during the wet season. It has coordinates of latitude 3°28'E and longitude 8°41'N from its source in Oyo state to 3°25'E and 6°35'N in Lagos State where it enters the Lagos lagoon (Adeosun *et al.*, 2023). The water is used for agriculture, aquaculture, transportation, human consumption, various industrial activities and domestic purposes. Along its course, it constantly receives effluents from breweries, cattle markets, slaughterhouses, textile and dyeing industries, tanneries and domestic wastewater before finally discharging to Lagos. A 100 square km area around River Ogun has an approximate population of 3,637,013 and an average elevation of 336 meters above the sea (Adeosun *et al.*, 2023).

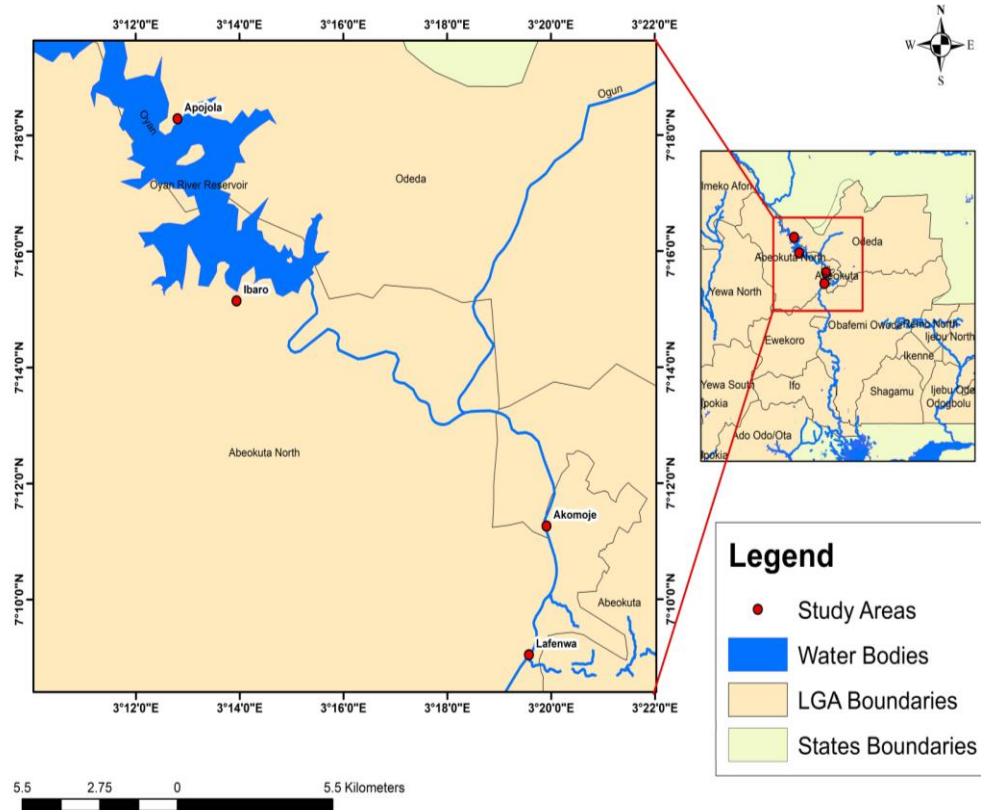


Figure 1: Map of Ogun River Showing the Study Locations
Source: ArcGIS

Sampling Techniques and Sample Size

A two stage sampling technique was employed to select 120 artisanal fishers along the water body. The first stage involved the purposive selection of fishing communities along Ogun River basin based on the extent of their fishing activities. These communities are specifically selected based on their fishing intensity and they include: Apojola, Ibaro, Akomoje and Lafenwa. The second stage involves the random selection of fisher within the selected fishing communities. The data collected for this study include primary data, which was collected with the aid of a well-structured questionnaire from artisanal fishers in the study area after validated by experts.

Method Data Collection?

Method of Data Analysis

Data collected were cleaned, coded and entered into the Statistical Package for Social Science (SPSS) version 20.0. Data collected was subjected to descriptive and inferential statistics, tools such as mean, median, frequency distribution, percentage were used to analyze and categorize the socio-economic characteristics of the respondents and problems militating against fishermen in the study area. The constraints were analyzed using four-point Likert scale where respondents' responses to the effect of the constraints on their activities were capture by four different responses; 1 = Not severe, 2 = Slightly severe, 3 = Moderately severe and 4 = Very severe. The constraints were ranked using the mean.

RESULTS

The socio- economic Characteristics of the Respondents

The socio-economic characteristics of respondents are presented in Table 1. The result showed that 59.1% of the respondents were male while 40.8% were female. Also, it showed that the age range of 41-50 had the highest percentage of 40%, while 21-30, 31- 40, 51-60 and above 60 had a percentage of 20.8%, 18.3%, 14.2%, 6.7%, respectively. The age category of middle aged men which had the



highest percentage of 40.8%, age category of middle aged woman had a percentage of 23.3%, young men had a percentage of 15.8% and young women 16.8%, elderly man had a percentage of 2.5% while age category of elderly women (Above 60) had the lowest percentage of 0.8%. The educational status of the respondents showed that 38.4% of the respondents had primary education while 34.1%, 20.8%, 4.2% and 2.5% had no formal, secondary tertiary education and vocational education certificate, respectively. The results revealed that majority (80.8%) of the respondents were married, 15.9% were single while 3.3% belonged to the others category. In addition, 50.8% of the respondents' had household size 6-10 while 24.1%, 12.5%, 8.4% and 4.2% had 1-5, 15-20 and above 20 persons, respectively.

Table 1: Socio- economic Characteristics of the Respondents (n=120)

Variable	Frequency	Percent	Cummulative Percent	Mean
Gender				
Male		59.1	59.1	
Female	49	40.8	100	
Total	120	100		
Age				
21-30	25	20.8	20.8	
31-40	22	18.3	39.1	
41-50	48	40	79.1	43.5
51-60	17	14.2	93.3	
>60	8	6.7	100	
Total	120	100		
Age Category				
Elderly man (Above 60)	3	2.5	2.5	
Elderly women (Above 60)	1	0.8	3.3	
Middle aged man (36-60)	49	40.8	44.1	
Middle aged woman (36-60)	28	23.3	67.4	
Young man (18-35)	19	15.8	83.2	
Young woman (18-35)	20	16.8	100	
Total	120	100		
Level of Education				
No formal education	41	34.1	34.1	
Primary education	46	38.4	72.5	
Secondary education	25	20.8	92.3	
Tertiary education	5	4.2	97.5	
Vocational education	3	2.5	100	
Total	120	100		
Marital Status				
Married	97	80.8	80.8	
Single	19	15.9	96.7	
Others	4	3.3	100	
Total	120	100		
Household Size				
1-5	15	12.5	12.5	
6-10	61	50.8	63.3	8.5
11-15	29	24.1	87.4	
16-20	10	8.4	95.8	
Above 20	5	4.2	100	
Total	120	100		

Socioeconomic Status of Fishers

The results indicated that fishing activities were dominated by males who accounted for 59.1 percent of the respondents while females constituted 40.8 percent. This finding suggests a clear gender imbalance in artisanal fishing activities. Similar observations have been reported by Opele *et al.* 2022



who noted that male fishers were more involved in fish capture due to their physical strength and ability to endure the strenuous nature of canoe paddling. Ashley Dejo *et al.* 2017 and Pineda *et al.* 2023 also reported male dominance in fishing activities. The predominance of males may further be attributed to their greater access to productive resources such as land fishing gear and other fixed assets which are critical for fishing operations. Burabe *et al.* 2020 similarly confirmed that fishing activities were largely male dominated due to higher levels of physical activity and economic engagement among men.

The age distribution of respondents showed that the majority of fishers were within the middle age category with the highest proportion falling between 41 and 50 years. This indicates that artisanal fishing is largely practiced by economically active individuals who possess the physical strength and experience required for fishing operations. The relatively lower participation of younger individuals may suggest a gradual shift toward alternative livelihoods possibly due to the demanding nature of fishing and increasing economic uncertainty within the sector. This trend aligns with the findings of Akinyemi *et al.* 2022 who observed that fishing is often regarded as a long-term occupation dominated by middle aged individuals.

Educational attainment among the respondents was generally low as most fishers had only primary education or no formal education. This finding corroborates the report of Ayanda *et al.* 2017 who noted that many fisherfolk rely on indigenous knowledge acquired through experience rather than formal training. Limited educational exposure may restrict the ability of fishers to adopt improved fishing technologies access relevant information and diversify their livelihood options. In contrast Burabe *et al.* 2020 and Ashley Dejo *et al.* 2017 reported higher levels of education among fishers which enhanced their access to information and encouraged engagement in fish farming and other income generating activities. Education plays a crucial role in improving the fishers' capacity to adopt innovations, increase productivity and participate effectively in policy related processes. Ayanda *et al.* 2017 emphasized that inadequate education and training hinder skill acquisition knowledge transfer and the adoption of improved technologies thereby limiting productivity.

Marital status distribution revealed that the majority of respondents were married indicating that fishing is largely practiced by individuals with family responsibilities. This suggests that fishing serves as a primary livelihood strategy aimed at meeting household needs and ensuring food security. Baiyewu 2020 similarly reported that marriage often motivates engagement in fishing as a means of fulfilling family obligations. Mafimisebi *et al.* 2016 also observed that married fishers are more likely to engage in fishing to secure a stable source of income to meet household responsibilities. Akinyemi *et al.* 2022 further noted that marital status can influence economic stability and access to social support networks. Married fishers are therefore likely to demonstrate greater commitment and seriousness in their fishing activities as noted by Burabe *et al.* 2020.

Household size was relatively large with most respondents having between six and ten household members. Larger household sizes may provide additional labor for fishing related activities but may also increase economic pressure on household heads. The proximity of fishers residences to fishing sites and markets reduces travel distance and facilitates immediate sale of catches at landing sites. Pineda *et al.* 2023 reported that variations in distance traveled by fishers are often influenced by geographical location and settlement patterns.

The Fishing Practices of Artisanal Fishers along Ogun River Basin

Table 2 showed the travel distance covered in km of respondent to operation site. The results revealed that <5km had a high percentage of 87.5%, while 5km- 10km had a percentage of 12.5%. Also, the table showed the distance covered of each fisher man/woman to operation site and also how near and far the operation site is to their landing site or homes. Additionally, it revealed that the full-time fishers had a higher percentage of 70.8% and the part-time fisher had a percentage of 29.1%. This explains that most of the fishers are fully involved in fishing as their main occupation. 43.3% of the respondents had experience range of 21-30 years, 21.7% of the respondents had experience of range >30 years, 20.0% of the respondents had year experience of 11-20 years while 15% of the respondents had the least year experience of 1-10 years. The most commonly used gear among fishers was gura with a percentage of 79.7%, followed by cast net with a percentage of 70.3%, drag net had a percentage of 50.0%, hook and line has a percentage of 9.4% and the least used gear among the artisanal fishers across



Ogun river-basin falls under others category with a percentage 7.8%. Furthermore, the table shows the food security status of respondent along Ogun river basin. 5.6% of the respondents were highest secured in terms of food while 54.6% of the respondent very low secure status.

Table 2: The Fishing Practices of Artisanal Fishers

Variable	Frequency	Percent	Percent	Mean
Travel Distance				
< 5km	105	87.5	87.5	
5km-10km	15	12.5	100	
Total	15	100		
Mode of Operation				
Full-time	85	70.8	70.8	
Part-time	85	29.1	100	
Total	108	100		
Years of experience				
10-15	18	15	24.1	
16-20	24	20	35	
21-30	52	43.3	78.3	22.5
>30	26	21.7	100	
Total	120	100		
Fishing gear				
Gura	65	79.7		
Cast net	38	70.3		
Drag net	30	50		
Hook and line	8	9.4		
Others	5	7.8		
Food Security Status				
High Food Secure	9	5.6	5.6	
Marginal Food Secure	19	12	17.6	
Low Food Secure	42	27.8	45.4	
Very Low Food Secure	50	54.6	100	
Total	120	100		

Source: Field Survey, 2024

The fishing practices of the respondents indicated that most fishers operated within close proximity to their fishing grounds. A large proportion of the respondents traveled less than five kilometers to their operation sites while only a small proportion covered distances between five and ten kilometers. This suggests that fishing activities are largely conducted near the fishers places of residence or landing sites which allows for immediate sale of catches directly at the water body. The short travel distance reduces operational costs and post-harvest losses and reflects the localized nature of artisanal fishing along the Ogun River Basin. Differences in travel distance among fishers have also been attributed to variations in geographical location as reported by Pinela *et al.* 2023.

The results further revealed that fishing serves as the primary occupation for most respondents with a greater proportion engaged on a full-time basis compared to those involved part time. This indicates a high level of dependence on fishing as a livelihood source within the study area. The dominance of full-time engagement suggests limited alternative employment opportunities and highlights the importance of fisheries to household income and sustenance. In addition, most respondents possessed substantial fishing experience with a large proportion having more than twenty years of experience. Long years of involvement in fishing reflect deep knowledge of the fishing environment and operational practices. Experienced fishers are more likely to adopt improved technologies and management practices as past exposure enables them to address challenges encountered in previous operations and mobilize resources to enhance productivity as noted by Ashley Dejo *et al.* 2017 and Pinela *et al.* 2023.



Fishing operations in the study area were characterized by the use of predominantly traditional fishing gear. The most commonly used gear included gura cast nets and drag nets while the use of hook and line and other gear types was minimal. The dominance of traditional gear indicates a low level of technological advancement and small-scale mode of operation among artisanal fishers. This finding aligns with the report of Opela *et al.* 2022 who observed that artisanal fishers mainly rely on simple gear such as cast nets gill nets and seine nets. The reliance on traditional gear limits catch volume and contributes to low productivity which may be insufficient to meet market demand. Reduced catches may also be influenced by declining fish stocks and high levels of household fish consumption.

The food security status of respondents revealed that the majority of fishers were either very low or low in food security with only a small proportion considered food secure. This highlights food insecurity as a major challenge facing artisanal fishing households. The high level of food insecurity suggests heavy reliance on fishing as the primary source of income which exposes households to vulnerability when catches are low. Although fishing remains the main occupation many fishers engage in supplementary income generating activities to cope with economic pressure. Secondary livelihood activities commonly reported include trading crop production and arable farming as noted by Kapembwa *et al.* 2021 and Pinela *et al.* 2023. Income diversification therefore serves as a critical strategy for enhancing household resilience and reducing livelihood risks among artisanal fishers.

The Abundance, Distribution and Diversity of Fish Species along Ogun River Basin

Table 3 depicted that the most abundant fish species in the study area with the highest percentage of 58.3% was *Oreochromis niloticus*, *Clarias gariepinus* has a percentage of 17.5%, *Chrysichtis nigrodigitatus* has a percentage of 12.5%, *Lates niloticus* has a percentage of 6.7% while other species has a percentage of 5.0%. More so, the finding revealed that the most abundant fish along Ogun water basin was *Oreochromis niloticus* while other species *s Elops lacerta*, *Mugil cephalus*, *Gymnarchus niloticus* are also present but they are not widely distributed. The table also showed the diverse fish species present in the river basin.

Table 3: Perception on Level of Abundance, Distribution and Diversity of Fish Species among Fishers

Fish Abundance	Frequency	Percent	Cumulative
<i>Oreochromis niloticus</i>	70	58.3	58.3
<i>Clarias gariepinus</i>	21	17.5	75.8
<i>Chrysichtis nigrodigitatus</i>	15	12.5	88.3
<i>Lates niloticus</i>	8	6.7	95.0
Others	6	5.0	100.0
Total	120	100	

Source: Field Survey, 2024

Abundance, Distribution and Diversity of Fish Species in the Study Area

The distribution as presented in Table 3, indicated a clear dominance pattern among the ichthyofaunal assemblage in the study area. *Oreochromis niloticus* emerged as the most abundant species, accounting for 58.3% of the total fish catch. This overwhelming dominance suggested that the species is highly adapted to the prevailing environmental conditions of the basin, including water quality, food availability, and habitat structure. The ecological plasticity, high reproductive capacity, and tolerance to a wide range of physicochemical conditions commonly associated with *Oreochromis niloticus* may explain its numerical superiority in the study area. *Clarias gariepinus* was the second most abundant species, contributing 17.5% of the total catch, followed by *Chrysichthys nigrodigitatus* (12.5%) and *Lates niloticus* (6.7%). Other fish species collectively accounted for 5.0% of the total abundance. The relatively high abundance of *Clarias gariepinus* further reflect its adaptive advantage, particularly its ability to survive under low dissolved oxygen conditions and exploit diverse food resources. The moderate presence of *Clarias nigrodigitatus* and *Lates niloticus* indicates their ecological importance within the basin, although their distribution appears more restricted compared to the dominant species.



In terms of spatial distribution, *Oreochromis niloticus* was widely distributed along the Ogun water basin, occurring consistently across sampling stations. In contrast, other species such as *Elops lacerta*, *Mugil cephalus*, and *Gymnarchus niloticus* were present in the basin but exhibited limited distribution and low numerical abundance. This uneven distribution pattern may be attributed to habitat specialization, selective feeding behavior, or sensitivity to environmental fluctuations such as changes in flow regime, substrate composition, and anthropogenic disturbances.

The dominance of *Oreochromis niloticus* and *Clarias. gariepinus* in the study area suggests a fish community structure skewed towards species with high ecological tolerance and opportunistic life-history strategies. While the presence of several other species reflects a reasonable level of species richness, their low abundance indicates that they contribute minimally to the overall biomass of the system. Such a pattern is typical of river systems experiencing varying degrees of environmental stress, where resilient species outcompete more sensitive taxa. Despite the dominance of a few species, the Ogun water basin supports a diverse assemblage of fish species belonging to multiple families. This diversity underscores the ecological significance of the basin as an important freshwater habitat. The findings of this study are consistent with the observations of Adeosun *et al.* (2019), who reported the dominance of fish families such as *Clariidae*, *Cichlidae*, *Bagridae*, *Malapteruridae*, *Schilbeidae*, *Mormyridae*, *Osteoglossidae*, *Channidae*, and *Mochokidae* in Akomoje, with each family represented by various species. The prevalence of these families in both studies highlights the stability of the ichthyofauna composition within the region and suggests that the Ogun water basin provides suitable ecological conditions for sustaining diverse fish communities.

The Constraints and Prospective Interventions to Address the Challenges Faced by Artisanal Fishing along Ogun River-Basin.

Table 4 revealed the constraints /challenges of artisanal fishers across Ogun river-basin. The major constraints among fishers is decline in fish population (1st), shortage of skilled labour (2nd), high cost of energy supply (3rd), lack of storage facilities (4th), high level of illiteracy (5th), lack of training opportunities (6th), lack of good management practices (7th), lack of access to modern fishing facilities (8th), lack of access to fishing inputs (9th), damming (10th), poaching (11th), unacceptability of fish species (12th), health risks/challenges (13th) and pollution (14th). All of these constraints have implications on the livelihood outcome of the fish farmers. It is however worthy of note that the major constraint is decline in fish population which could be as a result of climate change and human activities among others.

Table 4: Constraints among Fishers along the Fish Value Chain

Constraints	Mean	S.D.	Decision
Shortage of skilled labour	2.98	1.07	2 nd
High level of illiteracy	2.60	0.96	5 th
Health risks/Challenges	2.33	0.99	13 th
High cost of energy supply	2.77	1.00	3 rd
Pollution	2.24	0.93	14 th
Damming	2.37	0.86	10 th
Lack of storage facilities	2.61	1.08	4 th
Decline in fish population	3.18	0.95	1 st
Poaching	2.36	0.96	11 th
Lack of access to fishing inputs	2.45	0.89	9 th
Lack of training opportunities	2.59	0.99	6 th
Unacceptability of fishing species	2.35	0.90	12 th
Lack of good management practices	2.55	0.89	7 th
Lack of access to modern fishing facilities	2.54	0.83	8 th

Source: Field survey, 2023

Intervention and Form of Intervention Received

Table 5 showed the percentage of respondents to access to interventions or supports. It revealed that 90.8% of the respondents had no access to interventions or supports while 9.2% of the respondents



had access to interventions or supports. 98.30% of the fishers had no access to grant support while 1.7% of the respondents had access to grant, 95.80% of the fishers had no access to community sensitization while 4.20% of the respondents had access to community sensitization, all (100%) of the respondents had no access to forms of support/Gender mainstreaming, 100% of the respondents had no access to form of support/women empowerment, 98.30% of the fishers had no access to form of support/capacity building/training while 1.70% of the respondents had access to form of support/capacity building/training and 95.0% of the fishers had no access to form of support/loan/support while 5.0% of the respondents had access to form of support/loan support.

Table 5: Distribution of Respondent According to Receipt of Intervention and Form of Intervention Received

Variable		Frequency	Percentage	Cumulative Frequency
Received intervention	No	109	90.8	90.8
	Yes	11	9.2	100.0
	Total	120	100.0	
Grant	No	118	98.3	98.3
	Yes	2	1.7	100.0
	Total	120	100.0	
Community sensitization	No	115	95.8	95.8
	Yes	5	4.2	100.0
	Total	120	100.0	
Gender Mainstreaming	No	120	100.0	100.0
	Yes	0	0.0	100.0
	Total	120	100.0	
Women empowerment	No	120	100.0	100.0
	Yes	0	0.00	100.0
	Total	120	100.0	
Capacity building/training	No	118	98.3	98.3
	Yes	2	1.7	100.0
	Total	120	100.0	
Loan	No	114	95.0	95.0
	Yes	6	5.0	100.0
	Total	120	100.0	

Source: Field Survey, 2024

The distribution of respondents based on access to interventions and support services was presented in Table 5 above. The findings indicated that the majority of respondents did not have access to any form of intervention or support. Specifically, 90.8 percent reported no access to interventions, while only 9.2 percent indicated that they had some form of access. With regard to grant support, 98.3 percent of the fishers reported no access, and only 1.7 percent had benefited from grants. Similarly, 95.8 percent had no access to community sensitization programmes, while 4.2 percent reported some level of access. All respondents reported no access to gender mainstreaming initiatives and women empowerment programs. In addition, 98.3 percent had no access to capacity building or training opportunities, with only 1.7 percent indicating participation in such programs. Access to loan support was also limited, as 95.0 percent reported no access, while only 5.0 percent had received loan support. These findings demonstrated a widespread lack of institutional and financial support across the fisheries value chain, including fishers, processors, and marketers. The limited access to grants, training, credit facilities, and empowerment initiatives suggests systemic gaps in policy implementation and stakeholder engagement. The absence of structured support mechanisms has constrained productivity,



reduced income opportunities, and limited the capacity of value chain actors to adopt improved technologies and practices.

The present findings are consistent with the study by Nwafor and Ezeh 2024, which reported that artisanal fishers face substantial economic challenges due to limited financial support and inadequate investment. Their study observed that the lack of targeted interventions from government and nongovernmental organizations contributed to poorly developed processing facilities and low processing standards, thereby affecting income generation and the sustainability of fishing operations. Similarly, Kimani *et al* 2020 emphasized the importance of infrastructure and technological improvements in strengthening the fisheries sector. They identified the development of cold chain systems, modernization of fishing equipment, and improvement of road networks as critical measures. The provision of ice for fishing vessels and adequate storage during periods of fish surplus were considered essential for reducing spoilage, while improved road infrastructure was viewed as necessary for efficient transportation to markets and reduction of post-harvest losses.

CONCLUSION AND RECOMMENDATION

Based on the outcome of this research, it is evident that artisanal fishers along in the study area are faced with quite a number of challenges despite their yield and productivity. All of the constraints have implications on the livelihood outcome of these fishers. It was also noted that majority of the fishers are married men in their 40's which has great impact on their livelihood and productivity. Therefore, there is need for intervention and support systems that can address the above listed constraints faced by artisanal fish farmers. In accordance with the findings in this study, the following recommendations were suggested:

1. Closed season/area should be encouraged by the authority in order to prevent overexploitation, increase the growth rate and size of fish species, and prevent the very important fish species from going into extinction.
2. Artisanal fishers should form themselves into corporative society to seek financial interventions with limited minimum interest rate to diversify into aquaculture as well non- fisheries related enterprises. This will reduce the risk linked with over-dependence and pressure on water habitat.
3. Government programs should be developed and aimed at educating fishermen so as to improve their view and acceptance of new innovations and also to expand their knowledge on the importance of education.
4. Extension agents and Ministry of Environment must collaborate to educate fishing households on the importance of conservation of fish and water habitat to enhance and sustainability for future use.
5. There should be enforcement of gear restriction to reduce fishing intensity/overfishing to enhance adequate sustainability and production thus preventing extinction.

REFERENCES

- Adeosun, O.M., Soyoye, V. O., Onireti, O.B., and Adeosun, F. I. (2023). Artisanal Fisheries Value Chain Actor's Participation in Policy Formulation among Fisherfolks along Ogun River Basin, Ogun State, Nigeria. *Nigerian Journal of Fisheries*, **20**(2): 2718-2731.
- Afolabi, J., Adeyemi, O., and Olatunji, A. (2022). Assessment of Fish Population Decline and Its Implications for Artisanal Fisheries in the Oshun River Basin, Nigeria. *Journal of Environmental Studies*, **19**(3): 45-58.
- Akinyemi, J. O., Ojo, J. A., & Olaoye, S. A. (2022). Socioeconomic Characteristics of Artisanal Fishers in the Oshun River Basin Nigeria. *Journal of Aquatic Sciences*, **39**(2): 145-158.
- Ashley-Dejo, S. S., Olaoye, O. J., and Adelaja, O. A. (2017). Comparative evaluation of economic benefits of adopters and non-adopters of improved fish production technologies in Oyo State, Nigeria. *Nigerian Journal of Animal Production*, **44**(2): 230-247.



- Burabe, B. I., Thliza, M. G., Owolabi, J. O., and Saleh, R. A. (2020). Assessment of the Effectiveness of Utilization of Electronic Media among Fish Farmers in Maiduguri Metropolis, Borno State, Nigeria. *Journal of Agricultural Economics, Environment and Social Sciences*, **6**(2): 7-15.
- DeFries, R., Edenhofer, O., Halliday, A., Heal, G., Lenton, T., Puma, M., and Ward, B. (2019). *The missing economic risks in assessments of climate change impacts* (No. GSFC-E-DAA-TN73629).
- Hamerlynck, O., Nyngi, W. D., Paul, J. L., and Duvail, S. (2019). The fish-based farming system: maintaining ecosystem health and flexible livelihood portfolios. In *Farming Systems and Food Security in Africa* (354-392).
- Kapembwa, S., Gardiner, A., and Pétursson, J. G. (2021). Small-scale fishing: Income, vulnerability and livelihood strategies at Lake Itzhi-Tezhi, Zambia. *Development Southern Africa*, **38**(3): 331-352.
- Kimani, P., Wamukota, A., Manyala, J. O., & Mlewa, C. M. (2020). Analysis of constraints and opportunities in marine small-scale fisheries value chain: A multi-criteria decision approach. *Ocean & Coastal Management*, **189**: 105-121.
- Lauria, V., Das, I., Hazra, S., Cazcarro, I., Arto, I., Kay, S., ... and Fernandes, J. A. (2018). Importance of fisheries for food security across three climate change vulnerable deltas. *Science of the Total Environment*, **640**: 1566-1577.
- Lloret, J., Cowx, I. G., Cabral, H., Castro, M., Font, T., Gonçalves, J. M., and Erzini, K. (2018). Small-scale coastal fisheries in European Seas are not what they were: ecological, social and economic changes. *Marine Policy*, **98**: 176-186.
- Mendenhall, E., Hendrix, C., Nyman, E., Roberts, P. M., Hoopes, J. R., Watson, J. R., ... and Sumaila, U. R. (2020). Climate change increases the risk of fisheries conflict. *Marine Policy*, **117**, 103954.
- Nwafor, O. N., Ezech, C. I. (2024). Economic Challenges and Policy Deficits in Artisanal Fish Processing in the OgunOshun River Basin. *African Journal of Fisheries and Aquaculture*, **29**(1), 83-99.
- Ohara, E. E., Ogar, I. F., Felix, A. C., and Okon, I. O. (2023). Effect of Women Participation in Artisanal Fishing on Their Socio-Economic Well-Being in Coastal Communities in Cross River State, Nigeria. *Global Journal of Agricultural Sciences*, **22**(1): 93-100.
- Oladipo, A., and Afolabi, J. (2023). Health Challenges and Risk Factors Among Artisanal Fishers in the Oshun River Basin, Nigeria. *International Journal of Public Health*, **29**(1): 112-123.
- Oladipo, O., Olowoyo, T., and Olajide, A. (2023). Challenges in Artisanal Fish Marketing in Nigeria: Evidence from the Oshun River Basin. *Journal of Fisheries Economics*, **12**(3): 45-59.
- Olaoye, O. J. and Ojebiyi, W. G. 2018. *Marine fisheries in Nigeria: A review*. In M. Türkoğlu, M. Öztürk, & B. Öztürk (Eds.), *Marine ecology - Biotic and abiotic interactions* (pp. 155–173). IntechOpen. DOI: 10.5772/intechopen.75032
- Opele, A. I., Ilori, A. R., Onasanya, A. S., & Aderinto, A. (2022). Effect of Climate Change on Livelihood Activities of Artisanal Fisherfolks in Coastal Areas of Southwest, Nigeria. *Journal of Agripreneurship and Sustainable Development*, **5**(1): 250-258.
- Pineda, F., Molina, E., Torregroza-Espinosa, A. C., Cardona-Almeida, C., and Suarez, A. (2023). Sustaining local ecological knowledge of artisanal fishers: a perspective from northern Colombia. *Latin american journal of aquatic research*, **51**(4): 491-502.
- Sullivan, N. (2022). *The blue revolution: Hunting, harvesting, and farming seafood in the information age*. Island Press.