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Socio-economic characteristics of artisanal fisher folks in Igbokoda Ondo State

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Abstract
The fishery sector in Nigeria plays a major role in terms of national food security and employment. This study examined the socio-economic characteristics of the artisanal fisher's folks in the study area, the dominant fish in the landing site, the type of fishing gear used at the location, their contribution to fish landing, the effect of by-catch on artisanal fish production and food security in Igbokoda, Ilaje Local Government Area of Ondo State. Data was collect by the random distribution of a questionnaire using statistical analysis such as; pie chart, bar graph and regression analysis to collate and show the data obtained from the study area. The output of an artisanal fisher was affected by gender and the season of fishing and not the educational status of the fisher men, 64% of the fishers were male and the highest age bracket was between 31-40 years. Only 10% of the respondents have tertiary education and 64% of the fishers have between primary and secondary education. The level of profitability was average (64%), 98% of by-catch were demanded for. This study hereby proves that fishing is profitable and therefore, suggests that policy variables such as extension, education, and credit identified in the study as important determinants of efficiency of artisanal fishers should be strengthen for sustainable fish production in the State and Nigeria at large.

Keywords: *Igbokoda; By-catch; Artisanal; Socioeconomic.*

Introduction

Nigeria coast is richly endowed with a variety of natural resources, especially forest and mangroves, fisheries, touristic resources and mineral (Adedokun *et al.*, 2006). Nigeria water accommodates over one million small scale artisanal fishers contributing to 85% domestic fish consumption in Nigeria (FDF, 2008). The hunting, catching and marketing of edible fresh water and ocean fishes largely dominate fishing industry in Nigeria. Fish contains high quality protein, vitamins, minerals and other nutrients important for human health and growth (FAO, 2007). According to Ovie and Raji (2006), fish is crucial to the Nigerian economy, contributing 5.4% of the gross domestic product (GDP). Fish are significant to the nation's economy in terms of food security, income, employment, poverty alleviation, foreign exchange earnings and provision of raw materials for animal feed industries (Amao *et al*., 2006).

With independence, the pace of changes has been so fast that the uneducated, subsistence-sector, rural parents can reasonably expect that their children will

obtain a formal education and spend most of their working lives in the city, or even in another country. The bulk of poor Nigerians are in the coastal areas (Bolarinwa, 2014). Members of the traditional rural fishing community see no point in training their children in a subsistence lifestyle. As important as artisanal fisheries sector to Nigeria fishery industry where it serves a major contributor to the domestic supply of fish, the standard of living of artisanal fisher folks is far from being enviable. (Williams, 2006). Indeed, most outer-island children now spend their teens at residential schools far from their homes. In fishing gear, there have been few significant changes since the advent of the monofilament gill-net, except for recent advances in small scale pelagic long lining technology, and this has little significance for purely coastal fisheries (Anon 2003). Fish folks are dispersed along coastlines; because they depend mainly on marine ecosystem situated close to their homes. (Olagunju *et al*., 2007). Of the major problems facing small-scale fishing communities' vulnerability to climatic change and other natural event, such as yearly and seasonal fluctuations in stock; poor catch; bad weather and natural disaster; high cost of fishing inputs, price fluctuations and variable access to market, pollution as a result of oil exploration. (Olawusi-Peters and Ayo-Olalusi, 2009) Hence, there is a need to study the socio-economic effect of characteristics of artisanal fisher folks, assess the potentials and uses of by-catch in the study area, Identify the dominant fish and the type of fishing gear used at each location and their contribution to fish landing

Research Methodology

Study Area

The study area is bounded in the east by Benin River in Edo State, in the West by Ogun State coastline and in the North by the land mass of Okitipupa and Irele local government areas in Ondo State. The river in igbokoda is a stream with the region font code of Africa/middle east. It is located at an elevation of 39 meters above sea level and its population amount to 71,027. Its coordinate are latitude 6.3167 and longitude .816 (6 .19' N and . 9' N) . This river is one of the longest water bodies in the country. The vast expanse of the water makes for an exciting fishing expedition. It is the longest territorial water in Nigeria and has fishing terminal. Babatunde (2010) reported that 80% of the population of the study area engages in fishing and that the area always records the bulk of fish produced in Ondo State. The Ilajes who are the major fish producers in Ondo State, with over 80 fishing communities along the coastline (Akegbejo-Samsons, 1995, as cited in Adeparusi, *et al*., 2003). The people in the region have some peculiar characteristics which affect entrepreneurship development in the Region. Majority of them are poor and do not have the basic literacy. The entrepreneurs are all sole proprietors engaging mainly in fishing. Their level of education is lower than the national average, especially for women.

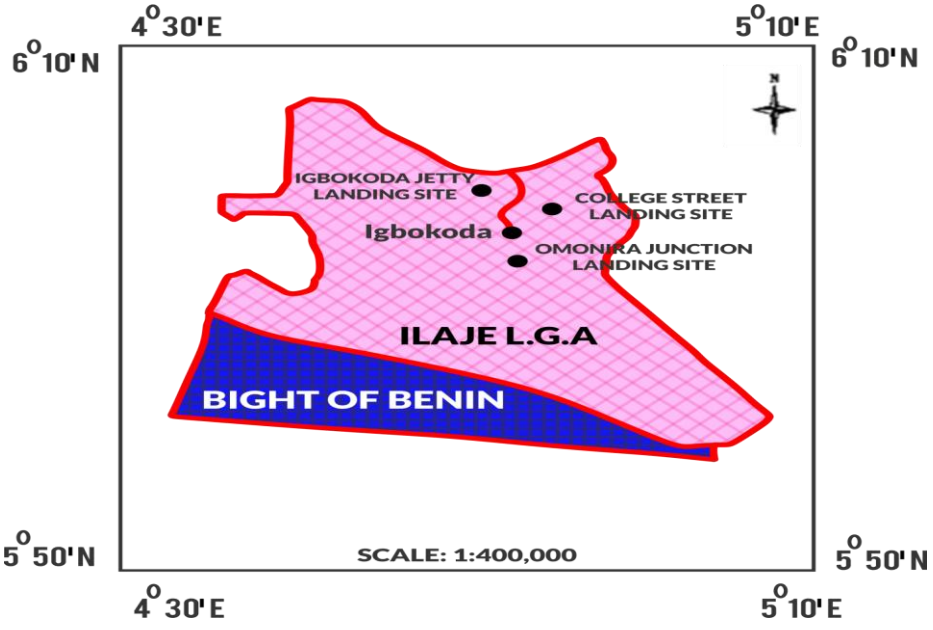

Fig 3.1. Map of the surveyed landing sites in Igbokoda area of Ondo State, Nigeria.

Methods of data collection:

Primary data source was only employed for the study. The data were collected with the aid of structured questionnaire administered to the randomly selected respondents. Structured questionnaire was prepared and used for collections of the primary data were tested for its reliability. The questionnaire with pre-test questions were distributed randomly to respondents in the study area. Additional hands were engaged in the interpretation of the context of the questionnaires to some respondents who are aged, the illiterates and or little learned. The questionnaire was distributed to the farmers at random, this was done monthly for four months. Data collection activities during these days include very early morning visits to landing sites to interview fishermen. Twenty-five (25) questionnaires were distributed monthly for four months and at the end a total of one hundred (100) questionnaires were obtained and furthered for analysis.

Sample Location

Data and information were collected directly from fisher folks/fishermen, fish consumers and fish trader along the water using a questionnaire and also through survey and also at the market where fish is being transacted.

Analytical tools:

The tools of analysis used for this study are:

- Descriptive Statistics,
- Profitability (Gross Margin), and
- Net Income (NI)

Descriptive Statistical Tools:

Frequencies tables and percentages, pie chart and bar graph were used to describe the socio-economic characteristics of the respondents. The characteristics include the Age, Marital Status, Education Attainment, and Occupation, Fishing experience and Sex among others.

Gross Margin Analysis: The budgetary technique was used to determine the gross

margin income at each stage of the chain. The model that was used in estimating the gross margin is:

Profitability:

Gross Margin = Revenue- Cost of Goods Sold / Revenue

Results and Discussion

Table 1: Summary of Demographic Characteristics of the respondents

	Gender	
	Frequency	**Percentage**
Male	66	66.0
Female	34	34.0
Total	100	100.0
	Marital Status	
	Frequency	**Percentage**
Single	21	21.0
Married	65	65.0
Divorced	7	7.0
Widowed	7	7.0
Total	100	100.0
	Age	
	Frequency	**Percentage**
<20	4	4.0
20-30	18	18.0
31-40	39	39.0
41-50	24	24.0
>50	15	15.0
Total	100	100.0
	Education Status	
	Frequency	**Percentage**
No formal Education	1	1.0
Primary Education	38	38.0
Secondary Education	50	50.0
Tertiary Education	11	11.0
Total	100	100.0
	Indigene	
	Frequency	**Percentage**
Yes	82	82.0
No	18	18.0
Total	100	100.0

It can be seen from table 1 above that 66% of the respondents in the study area were male while 34% are female. This finding is in accordance with the finding of Sule and Raji **(**2006) who pointed out that fishing business is an exclusive business for male. 39% of the respondents were between the age class of 31-40years, 24% of the respondents falls between

the age class of 41-50years, only 4% of the population falls below age 20 as shown in table 1 above. This is in agreement with the finding of Malgwi (2000) in his study of economics of fish production in Maiduguri metropolitan area, where he revealed that most of the fishermen are in their middle age. The implication of this finding is that middle age people take part more in fishing activities than old aged and younger ones in the study area. This has to do with the fact that young adult or middle aged people are more energetic and may have better entrepreneurial drive in the society. It's is because at these aged range people are more energetic and healthier. This is in line with finding of Bello (2000) and George *et.al*., (2010) that age had a positive correlation with Agricultural Productivity. Marriage is highly cherished in the society (Ekong, 2003). Table 1 above also shows the marital status of the respondents in which 65% of the respondents are married, 21% are single, 7% are divorced while those that are widowed were 7%.

This result corroborates the findings of Fakoya (2000) and with that of Oladoja et al., (2008) who reported that marriage allows individuals to be responsible and committed.

The education status of the respondents is also presented in table 1.50% of the total respondents had secondary education while 38% of them had primary education. Only 11%of the total respondents had tertiary education while just 1% had no formal education. This finding negates that of Mele (2007), following his study of economic analysis of fresh fish marketing in Dadinkowa, Gombe State where he found that majority of the respondents had formal education. It can also be clearly seen from table 1 above that 82% are indigene of Igbokoda while 18% are not from Igbokoda but they settle their due to business and other reasons.

Table 2: Awareness characteristics of discards among the artisanal fishers in the study area.

Variable	Dominant Indicator
Awareness of discards	78.2 % not aware, 21.8% aware
Demand for discards in the market	34% demand, 66% no demand
Common discarded species	Shrimps, crayfish, prawns, fingerling size fishes, snake fish, sea turtle, crocodile etc.
What they do with discards	50% sell, 25% exchange, 25% personal use
How are the discards preserved	Washing, sun drying, cooking, roasting, refrigerating, frying, salting.
Fishing gear used	Cast net 60%, hook and line 25% , 10% traps, trammel net 5%.

Profitability of fish farming in the study area

The level of Profitability of fish farming is presented in figure 6: 64% of the respondents responded that fish farming is averagely profitable.24% said it is very profitable.12% of the respondents considered it to be fairly profitable none of the respondents said it is not profitable. This result agrees with the finding of Ashaolu et al.(2006) who observed that fish farming is profitable.

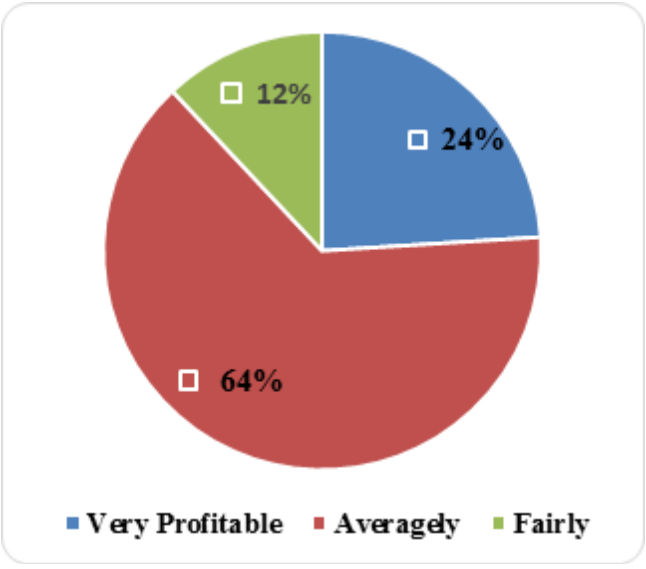

Figure 1: The level of Profitability of fish farming

Average income per fishing day

The average income per fishing day is presented in table 3. Majority (58%) of the respondent's average income per fishing day is between 10,000-20,000. 33% of the respondent's average income is less than 10,000. Only 10% of the respondent's average income is between 20,000-30,000. None of the respondents make above 30,000 as their average income per day.

Table 3: Average income per fishing day

	Frequency	Percentage
<10,000	33	33
10,000 - 20,000	58	58.0
20,000 - 30,000	9	9.0
Total	**100**	**100.0**

Profitable Season

Seasons with highest profit is presented in figure 8, 67% of the respondent make their highest profit during the raining season while only 29% of the respondents make their highest profit during the dry season. Just 4% of the respondents make theirs in both seasons.

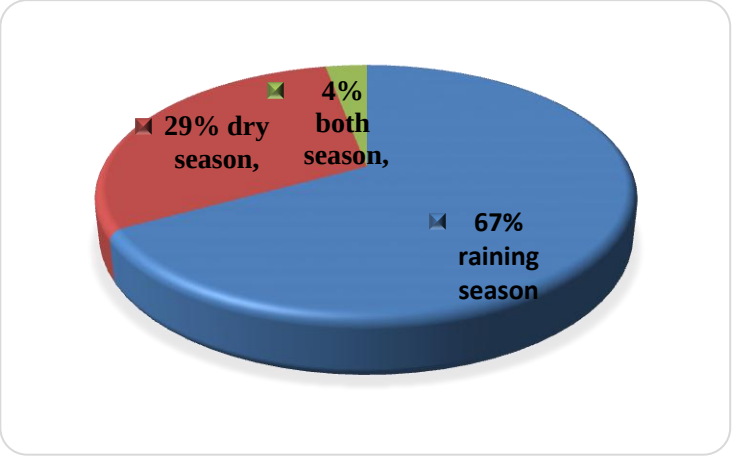

Figure 2: Seasons with highest profit

Types of Fishing Gear used in the study area and its effectiveness

The type of fishing gear used by the respondents is presented in table 6 below. Majority of the respondents (63%) uses cast net as their fishing gear. 26% adopted the use of hook and line. While the rest make use of other instruments like gill net, drill gill net, traps etc. The high percentage of respondents using nets, hooks and traps is not unexpected as fisheries studies by Sesabo and Tol (2005) indicate that they are common gears used by artisanal fishermen in tropical Africa. Level of effectiveness of the fishing gear is presented in figure 3. Majority (82%) of the respondents in the study area said the fishing gear used in fishing is averagely effective. About 15% said it is very effective while only 2% of the population said it is most effective instrument for fishing while 4% of them said it is just fair and none of the respondents said the fishing gear used in fishing is poor.

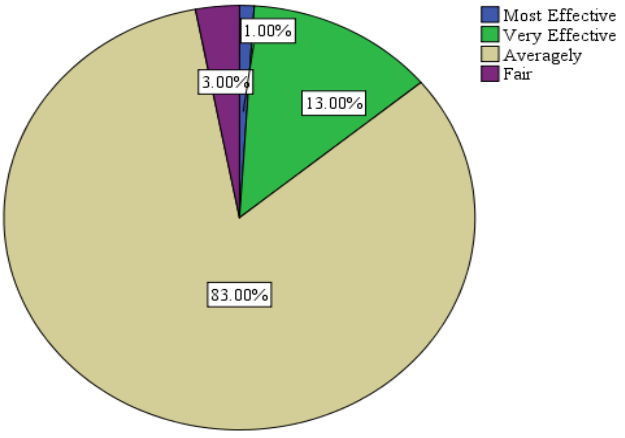

Figure 3: Level of effectiveness of the fishing gear

Table 4: Forms of Utilization of discard

	Are the discard return to the wild?	
	Frequency	Percentage
Yes	3	3.0
No	97	97.0
Total	100	100.0
	Are they Sold?	
	Frequency	Percentage
Yes	95	95.0
No	5	5.0
Total	100	100.0
	Are they given out as gifts to the villagers?	
	Frequency	Percentage
Yes	40	40.0
No	60	60.0
Total	100	100.0
	Is there high demand for the discards in the market?	
	Frequency	Percentage
Yes	98	98.0
No	2	2.0
Total	100	100.0

Table 8 shows the response of respondents on whether discard is returned to the wild. Majority (97%) of the respondents said discards are not returned to the wild while just 3% of the respondents said they do not. It also shows the response of respondents on if discards are sold if not discard in the wild in which 95% of the respondents said they are sold while only 5% said they are not. The table also represent the response on if discards are given to the villagers as gift in which 17.60% of the respondents said they do not give out to the villagers. On contrary, only 40% said they do give out to the villagers as gift. Table 8 further shows the response of respondents on if there is high demand for discards in the market. 98% of the respondents in the study area said there is high demand for discards in the market while only 2% disagreed.

Abundant fish species in the study area

The abundance of fish species in the study area is presented in figure 8 below. Tilapia fish is the most abundant fish species in the study area and it is the most consumed fish species in the study area. The second most abundant is Agbadajiri followed by Eja-Osan and Ikodo.

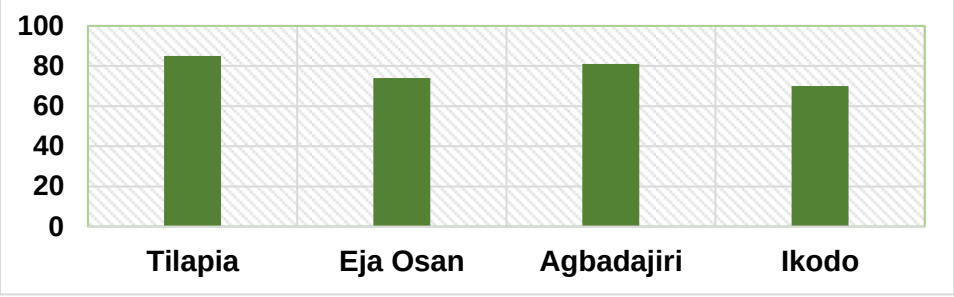

Figure 4: Abundance of fish species in the study area

Conclusion and Recommendations

This research work has briefly carried out the assessment of socio-economic value of fishery product in Igbokoda, Ilaje local government, Ondo state, Nigeria and found the area to be profitable in term of fishery value exchange. The findings also revealed that the output of individual fishing households is positively associated with all the independent variable factors of capital, labor, operating costs, fishing experience, number of years spent in school by household heads and household size. The outcome of this study also shows that discards were preserved by washing, sun-drying, cooking, roasting, refrigerating, frying and salting. The fishing gear used are cast net, hook and line, traps, trammel net etc. with usage being 60%, 25%, 10% and 5% respectively. The study also revealed that most respondents have no access to credit facilities to enable them procure fishing crafts and gears whose prices have gone beyond the reach of an average fisherman. This may have forced most people to abandon fishing for occupations that require very low input requirements.

This study, therefore, suggests that policy variables such as extension, education, and credit identified in the study as important determinants of technical efficiency of the farms should strengthen as variable of policy concern for sustainable fish production in the State and Nigeria at large.

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