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Assessment of fishing gear and crafts utilized by fishermen in Eleyele Lake, Ibadan, Oyo State

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Abstract

This study was conducted to assess the evolution of fishing gears and crafts utilized by fishermen in Eleyele lake reservoir in Ibadan Oyo State, Nigeria. Data were collected from thirty fishermen using a structured questionnaire. The data obtained were analyzed using frequency counts and chi-square. Majority (56.7%) of the respondents were married, more of respondents were male (56.7%). Fish harvesting and fishing gear construction activities in the study area is dominated by youth. More of the respondents were Christians (56.7%) and few were Muslims (36.7%). There was significant relationship between the type of fishing gear use (modern and traditional) and the time spent to catch fish as well as the quantity of fish caught. The result also revealed that iraditional fishing gears such as basket, bamboo trap, hook and line and cast net were been used by the fisher folks but were later changed to modern fishing gear which is gill net. The traditional fishing gears were replaced with the modern fishing gear like gill net because of the effectiveness and efficiency of the modern fishing gears. However, the effectiveness and efficiency of modern fishing gear is being hampered by aquatic weeds covering the surface of the water body.

Keywords: Evolution, fishing gear, fishing craft, fishermen.

Introduction

Fishing like other hunting activities has been a major source of food for human race and has put an end to the unsavory outbreak of anemia, Kwashiorkor. It accounts for about one fifth of world total supply of animal protein and this has risen five folds over the last forty years from 20 million metric tons to 98 million metric tons in 1993 and projected to exceed 150 million metric tons by the year 2010 (FAO, 1991). Fish are normally caught in the wild, techniques for catching fish include hand gathering, spearing, netting, angling and trapping. The term fishing may be applied to catching other aquatic animals such as shellfish, cephalopods, crustaceans, and echinoderms. The term is not usually applied to catching aquatic mammals, such as whales, where the term whaling is more appropriate, or to farmed fish (NDFHC, 2010). Water bodies are among the important natural resources bequeathed to Nigeria by nature. Fishing activities constitute the traditional occupation of communities possessing these water sources such as lakes, streams, oceans and rivers especially along River Niger and Benue, which tri-set the country. The hunting, catching and marketing of edible freshwater and ocean fishes largely dominate fishing industry in Nigeria. The artisanal fishermen population in Nigeria totaled about half a million and approximately 42 percent of these numbers are part-time fishermen who also engage in other economic activities such as farming and tailoring. Besides, the predominant craft used in artisanal fisheries are dugout and wooden plank type of canoes or a combination of both (FAO, 1985; Mabawonku, 1998). Large populations of the artisanal fishermen who rely on the predominant use of small fishing gears are found around the coastal line. This group of fishermen commonly operates in inland rivers, lagoons and creeks; extending to about five nautical miles of the sea shore (Adesulu and Sydenham, 2002). A high percentage of landed fish in Nigeria are from artisanal catch. Tobor (1995) reported an access to over 180,000 metric tons of artisanal fishery resources in the area and an estimated annual yield potential of 1,830,990 metric tons of fish from which a harvest close to 350,000 metric tons are made annually. Faturoti (2010) reported that artisanal fisheries in Nigeria provided more than 82% of the domestic fish supply, giving livelihoods to one million fishermen and up to 5.8 million fisher folks in the secondary sector. Though artisanal fish production is the main stay of Nigerian domestic fishing industry, researchers have paid little attention to the experiences of the artisanal fishermen. This study is conducted to evaluate the effectiveness and efficiency of the current

fishing gears and crafts being used by the fishermen in Eleyele lake.

Materials and Methods

This work was carried out at Eleyele lake (man-made). The Lake was constructed on River Ona within Ibadan metropolis, Oyo state of Nigeria in 1942 for the purpose of providing good drinking water for the city of Ibadan. Eleyele Lake Reservoir is on latitude 7°25' N and longitude 3°53' E. Thirty respondents were chosen through snowball technique while structured questionnaire was used to collect data. The data obtained were analyzed using both descriptive and inferential statistical tools (SPSS, 2008; Version 17).

Results and Discussion

The demographic characteristic of the respondents is presented in Table 1. The result shows that majority (56.7%) of the respondents were married, Yisa et al. (2011) also reported similar result for rural fish marketers where it was reported that 82.5% of the respondents were married. Also, more of respondents were male (56.7%). This shows that male are involved more in fish harvesting than the female, Finegold et al. (2010) reported similar result for marine fishing in Western Region of Ghana where it was reported that marine fishing in the region is dominated by small-scale fishermen where they operate roughly 5000 canoes. Fish harvesting and fishing gear construction activities in the study area is dominated by youth as indicated in the result. More of the respondents were Christian (56.7%) and few were Muslim (36.7%). The result indicates that most of the respondents had secondary education while the least attained tertiary educational level, this is in accordance with the study of Soumyendra and Ruma (2007) where it was reported that reported that fishermen in West Bengal, India are semi literate/ illiterate. Most of the respondents are Yoruba (33.3%), followed by Ijaw (26.7%), Ilaje (16.7%), Igbo (13.3%) and Hausa (10%) the least. The result also indicates that all of the respondents have other income generating activity besides fishing; majority of the respondents involve in repairing household electrical appliances (23.3%), others involve in photographing (23.3%), trading (20.3%), teaching (16.7%), fish processing (13.3%) the least, similar result was reported for fishermen in Ilaje-Ugbo, Ondo State where most of the fishermen were reported to be involved in other activities that fetch them income such as harvesting and marketing of timber and non-timber products (Abosedo, 2010).

Table 2 gives information on fishing gear and craft activities of the respondents. The result indicates that half of the respondents (50%) have been fishing between 3-5 years. The result also revealed that majority of the respondents (46.7%) make use of fishing gears of 2½, 3 and 3 inches mesh sizes followed by those that use fishing gears of 2, 2½ and 3 inches (33.3%) and 2, 3/2 and 4 inches (20%) mesh sizes. The result also revealed that most of the respondents (46.7%) use synthetic netting material in accordance with the observation of Udolisa et al. (1994) that synthetic twines are locally used for small-scale fishing gears construction in Nigeria, the synthetic netting material of mesh size 3 inches, while 30 and 23.3 percent make use of 2½ inches and 3½ inches, respectively.

The chi-square analysis shows that the type of fishing gear use (modern and traditional) had significant relationship on both the time spent to catch fish and the quantity of fish caught (Table 3).

Table 1: Demographic characteristics of respondents.

Variable	Frequency	%
Marital status		
Single	8	26.7
Married	17	56.7
Divorced	5	16.7
Total	30	100
Sex		
Male	17	56.7
Female	13	43.3
Total	30	100
Age		
20-30	6	20
31-40	12	40
41-50	9	30
Above 50	3	10
Total	30	100
Religion		
Christianity	18	60
Islam	12	40
Total	30	100
Education status		
No formal education	8	26.7
Primary	5	16.7
Secondary	14	46.7
Tertiary	3	10.0
Total	30	100
Ethnicity		
Yoruba	10	33.3
Igbo	4	13.3
Hausa	3	10.0
Ilaje	5	16.7
Ijaw	8	26.7
Total	30	100
Other income-generating activities		
Electrician	8	26.7
Teaching	5	16.7
Photography	7	23.3
Trade	6	20.3
Fish processing	4	13.3
Total	30	100

Table 2: Information on fishing gear and craft activities.

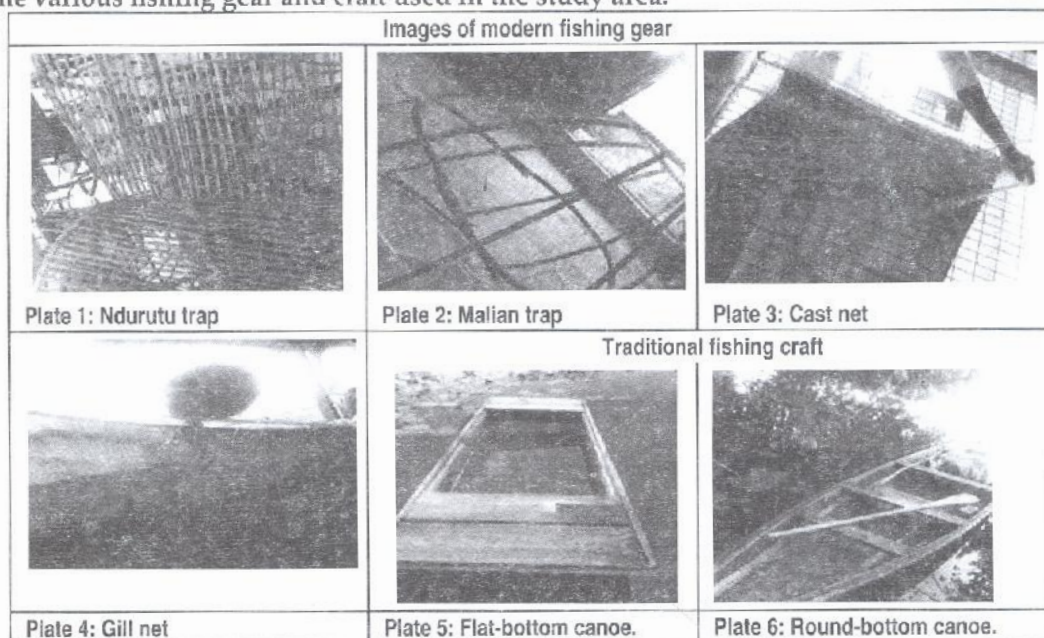
Variable	Freq.	%
Years of experience		
< 3	4	13.3
3 - 5	15	50.0
> 5	11	36.7
Total	30	100
Mesh sizes (inches)		
2, 2½ & 3	10	33.3
2½, 3 & 3½	14	46.7
2, 3½ & 4	6	20.0
Total	30	100
Synthetic netting material		
2½ inch	9	30.0
3 inch	14	46.7
3½ inch	7	23.3
Total	25	100

Table 3: Chi-square analysis of relationship between the type of fishing gear use (modern and traditional) and time and quantity of catch.

Variables	X ²	Degree of freedom	% level of significance (P)
Quantity of catch	9.1	1	0.004
Time spent to catch fish	1.6	1	0.001

Significant at P = 0.05

Images of the various fishing gear and craft used in the study area.



Conclusion and Recommendation

The study revealed that traditional fishing gears such as basket, bamboo trap, hook and line and cast net (throw net) were used by the fisher folks which were later changed to the use of modern fishing gear i.e. gillnet. It is majorly believe by the fisher folks in the study area that the modern fishing gear i.e. the gillnet is more effective and efficient than the traditional fishing gear but its use is not used optimally due to the effect of aquatic weeds covering the surface of the water body. Traditional fishing craft like flat bottom canoe was in use by the fisher folks and it was later changed with modern fishing craft that is more efficient and effective which is the round bottom canoe that was introduced by the migrant Ilaje fishermen, this eventually lead to increase in fish caught per unit of effort expended in catching the fish. It is therefore recommended that management of aquatic weeds which have overgrown on the surface water body is of major concern as these weeds are hampering the fishing activities.

REFERENCES

Abosedo, B. (2010). The impact of oil exploitation on the socioeconomic life of the Ilaje-Ugbo people of Ondo State, Nigeria. *Journal of Sustainable Development in Africa*, 12 (5): 61-84.

Adesulu, E.A., Sydenham, D.H.J. (2002). *The Freshwater Fishes and Fisheries of Nigeria*. Lagos: Macmillan Publishers. 397.

Bada, A.S. (2005). Strategies for Bridging the Supply-Demand Gap in Fish Production in Nigeria. *Proceedings*, 19th Annual Conference of the Farm Management Ass'n of Nigeria, 329-337.

CBN (2005). *Annual Report and Statement of Accounts*. Abuja: Central Bank of Nigeria Press. 36-38.

FAO (1985). *Report of the 13th Session of the European Inland Fishery Advisory Commission*, Denmark. No. 3011, 42.

_____. (1991). *Fish for Food and Employment*. Rome.

Faturoti, O. (2010). Nigeria: Fisheries contribute \$1 billion to economy. *25th Annual Conf. Fish. Soc. Nigeria*, Badagry, Lagos.

Finogold, C., Gordon, A., Mills, D., Curtis, L. and Pulis, A. (2010). *Western Region Fisheries Sector Review*, WorldFish Center. USAID Integrated Coastal and Fisheries Governance Initiative for the Western Region, Ghana.

Kudi, T. M., Bako F. P. and Atala, T. K. (2008). Economics of fish production in Kaduna State. Asian Research Publishing Network (ARPN). *Journal of Agricultural and Biological Science*, 3(5-6): 17-21.

Mabawonku, A.F. (1998). Fisheries in Nigeria Economy: The Challenges Ahead. *The Journal of West African Fisheries*, 11/1: 18-23.

NDFHC, (2010). *Nature Discovery*. New York: Free Word Press.

Soumyendra, K. D. and Ruma, K. (2007). Socioeconomic appraisal of culture-based fishermen: Case study in West Bengal. *J. Soc. Sci.*, 15(3): 255-262.

Tobor, J.G. (1995). An appraisal of fisheries development efforts in Nigeria. *Fish. Soc. Nigeria Conf. Proc.* 78.

Udolisa, R. E. K., Solarin, B. B., Lebo, P. and Ambrose, E. E. (1994). *A Catalog of Small-Scale Fishing Gear in Nigeria*. R.A.F.A publication. RAFR/0.14/F1/94/02, 140-142.

Yisa, T. A., Tsadu, S. M. and Mohammed, I. (2011). Socioeconomic evaluation of rural women and the estimation of profitability of fish marketing in four markets in Nigeria. *International Journal of Fisheries and Aquaculture*. 3/9: 180-183.