International Journal of Research in Agriculture and Forestry
Volume 3, Issue 11, November 2016, PP 1-5
ISSN 2394-5907 (Print) & ISSN 2394-5915 (Online)

Socioeconomic Survey and Cost-Benefit Analysis of Artisanal Fisheries in Egbin Waterside, Lagos Lagoon, Lagos State, Nigeria

Josef Bamidele Bolarinwa

Department of Fisheries Technology, Lagos State Polytechnic, P.M.B 21606, Ikeja, Lagos, Nigeria

Ogunbona, A.A

Department of Fisheries Technology, Lagos State Polytechnic, Ikeja, Lagos, Nigeria

Ishola,O.Jelili

Department of Animal Production Technology, Lagos State Polytechnic, Ikeja, Lagos, Nigeria

Frank O Ogundana

Department of Leisure and Tourism, Lagos State Polytechnic, Lagos, Nigeria

ABSTRACT

Socioeconomic survey of artisanal fisherfolks of Egbin waterside, Lagos lagoon, Lagos State, Nigeria conducted for 6 months (April 2015-October, 2015) revealed the presence of 15 most commonly caught species viz *Caranx senegalensis, Tilapia zilli, Cynoglossus cynoglossus, Pomadasy jubelini (grunter), Trachinotus goreensis (owere), Sphagebranchus cephaloptis (snake eel), Eucinostomus melanopterus (flagfin mojarra), Chrysichthys nigrodigitatus, Polynemus decadactylus (African threadfin), Erpetoichthys calabaricus (reed fish), Pseudotolithus elongatus , Mugil cephalus and Ethmalosa fimbriata, Sphyraena piscatorum and Elops lacerta* . Socioeconomic survey of the fisher folks revealed a high rate of illiteracy among the fisherfolks of Egbin. About 60% had no formal education, hence the generally poor record-keeping habit observed. About 60% of whom practiced cast- net fishing supplemented with gill netting(21%), hooks and lines(17%) revealed dearth of infrastructural facilities, poor record keeping habit, lack of awareness of modern fishing laws and regulations, poor access to credit and improved fishing inputs and extension services. Cost-benefit analysis showed the use of paddled canoes by 20% of the fisher folks was less profitable than use of motorised canoes by 80% of the fisherfolks. Earnings before Tax for fishing with paddle canoes and motorised canoes were ₦379,500 and ₦1,564,500.00 respectively. Return On Sales (ROS) for paddled and motorised canoe users were 46% and 58% respectively while the Benefit-Cost ratio were 1.86: 1 and 2.40:1 respectively. The diverse challenges facing the fisher folks calls for provision of a conducive enabling environment by the government. There is a need for training and sensitization of the fisherfolks of Ondo State. Policy makers should also adopt a ' Bottom-up approach' to incorporate the specific needs of the artisanal fisher folks who were the major stakeholders.

Keywords: *Species composition, fisher folks, socioeconomics, infrastructure, Benefit-Cost analysis, artisanal, lagoon.*

INTRODUCTION

Nigeria is blessed with abundant natural aquatic resources in marine, estuarine and freshwater environments. The marine components are within the Nigerian 200 nautical miles Exclusive Economic Zone (EEZ) and the coastal waters. The estuarine resources are found in the extensive mangrove ecosystem estimated to cover an area of about 858,000ha. The freshwater components are within extensive river systems, lakes, flood plains and reservoirs scattered over the entire land surface area of over 4,212,500ha (Ita,1993,Obasohan and Oransaye , 2006).

The artisanal fisheries sector is important in Nigerian fisheries industry being the major contributor to the domestic supply of fish. Despite the importance of the coastal areas of Nigeria and the artisanal fisher folks, the standard of living is far from being enviable, hence the need to study the socioeconomic status of the fisher folks with a view to coming up with appropriate management strategies. There is a dearth of information on socioeconomic status on the artisanal fisher folks of Lagos State. There have been past works by authors like Williams (1998), Omitoyin and Fregene

(2008) and others on the neglect of artisanal fisher folks of Nigerian coastal waters. The bulk of poverty-stricken Nigerians are in the coastal areas characterized by intense anthropogenic activities and dearth of infrastructural facilities, hence the need for this present study (Bolarinwa, 2015 a, b).

The purpose of this study is to conduct a socioeconomic survey of the fisherfolks of Egbin waterside in the coastal waters of Lagos State, Nigeria and do a comparative cost-benefit analysis of artisanal fisheries using paddled and motorised canoes. They are useful in decision making on utilisation, management and conservation of the resources in coastal waters of Lagos State (Agboola and Anetekhai, 2008). There is therefore a need to study the socioeconomic characteristics of the fisher folks of Egbin terminal in Lagos State coast. Baseline data to be generated could help in rational evaluation of necessary management practices.

MATERIALS AND METHODS

The Study Area

The study area is located in Ijede local government area of Lagos State of Nigeria. Egbin waterside of Lagos Lagoon, Lagos State. Egbin is located in Ijede Local Council Development Area of Ikorodu Local Government.It shares boundary with Agura and Gberigbe at the North, Lagos lagoon at the South and Ewu-Elepe at the west. It lies along latitude 6.5669 ^{o} and longitude 3.6000^{o}. Ikorodu is a coastal upland attaining 45 m The study area is predominantly inhabited by the Yorubas.There are also fisherfolks that are Eguns, Ijaws and Ilajes. The primary occupation in this locality is fishing with dredging.

The study area is contiguous to Nigeria South West coastline which is characterized by extensive lagoons of Niger Delta systems. It is part of the approximately 670 kilometers coastline of Nigeria. There is a large concentration of mangrove and fresh water swamps. The area is subject to tidal flunctuations with salt water incursion, between two to ten months of the year. There are wet and dry seasons. The rainy season spans May-October while the dry season starts from November and end by April.

The study involved collection of fin fishes from Egbin terminal jetty where fishes are landed.

Fresh fish catches from four (4) boats were sampled on a monthly basis in each fish landing site for 6 months (April 2015-October, 2015). The catches were sorted into taxonomic groups (species and families) using standard fish identification keys provided by Adesulu and Syndenham (2007); Boulenger (1916), Fish Base web site and Raji and Babatunde (2013). Personal communications with experience fisher folks on the local names of the fishes were also solicited. The fishes were subsequently counted and weighed.

The primary source was through the use of both quantitative and qualitative sources. The primary source was through the use of both quantitative and qualitative sources. The quantitative source includes the use of 125 well - structured and validated questionnaire. The questionnaire was validated by given it to experts in the area for content validation. The qualitative data were obtained using participatory approaches such as: Focus Group Discussions, participation observation and in-depth interview with key informants. Secondary data were obtained from relevant journals, textbooks and publications. Data collected were subjected to descriptive statistical packages.

RESULTS AND DISCUSSION

Fifteen most commonly caught fishes caught in Egbin waterside of Lagos State were *Caranx senegalensis, Tilapia zilli, Cynoglossus cynoglossus, Pomadasy jubelini(grunter), Trachinotus goreensis (owere), Sphagebranchus cephaloptis (snake eel), Eucinostomus melanopterus (flagfin mojarra), Chrysichthys nigrodigitatus, Polynemus decadactylus (African threadfin), Erpetoichthys calabaricus (reed fish), Pseudotolithus elongatus ,Mugil cephalus and Ethmalosa fimbriata, Sphyraena piscatorum* and *Elops lacerta*. These fishes belong to the families Carangidae, Cichlidae, Cynoglosidae, Pomadasytidae, Ophithidae, Scianidae, Claroiteidae, Carangidae, Polypteridae, Mugilidae ,Clupeidae, Sphyraenidae and Elopidae.

The survey revealed high rate of illiteracy among the fisher folks, dearth of social amenities in the coastal community. Table 1 showed the greatest challenges of the fisher folks to be credit,storms, thermal pollution and post harvest storage facilities. Similar findings have been reported by past authors (Williams, 2006; Babale, 2008; Omitoyin and Fregene, 2008; Bolarinwa, 2013).

Majority of respondents used cast nets(61%), followed by gill nets(21%), hooks and line (17%) and traps(1%). The most commonly used mesh size of nets were 2''(54.8mm ply) used by about 70% of the fisher folks. Only 10% agreed to usage of 25.4 mm mesh size.

Over 90% of the respondents were involved in group fishing (usually 2) in Egbin waterside. Major fishing partners are friends. Most of the spouses are involved in fish processing and marketing. Poor record keeping was generally observed probably due to high illiteracy level. Access to credit, extension services and agricultural inputs were generally poor according to over 60 % of the respondents.

Table1. *Socioeconomic characteristics and fishing practices of Egbin Fisherfolks, Lagos lagoon, Nigeria.*

Features:	**Frequency(%)**
Gender:	
Male.....	80
Female.....	20
Age(Years):	
21-40.....	80
41-60.....	18
>60.....	2
Religion:	
Christianity.....	33
Islam.....	62
Traditional religion.....	5
Marital Status:	
Married.....	78
Single.....	17
Divorced/widow/widowers.....	2
Widow/Widower.....	3
Educational Status:	
Primary Education.....	33
Secondary education.....	5
Tertiary Education.....	2
No formal education.....	60
Major Challenges:	
Credit**:**	50
Dredging	11
Storms & Heat Pollution	20
Postharvest storage gadgets	19
Access to Fishing Input:	
No access	69
Have access	31
Type of Fishing Gears Used:	
Cast net.....	61
Gillnet.....	21
Traps.....	1
Hooks & Line.....	17
Commonly caught Fishes:	
Cichlids (T. zilli)	14
Pseudotolithus spp	16
Chrysichthys nigrodigitatus	13
Mugil spp	8
Ethmalosa spp	5
Caranx spp	10
Pomadasy jubelini	11
Cynoglossus sp	10
Erpetoichthys calabaricus	7
Sphyraena piscatorium	6
Knowledge of Fishing Laws;	
Yes.....	36
No.....	64

Access to extension services	
No access.....	55
Have access	45
Group Fishing:	
In pairs.....	95
Triple.....	3
Single.....	2
Membership of Cooperative Society:	
Yes.....	56
No.....	44
Ownership of Boats:.	
Paddle canoes	22
Motorised Boats	78
Record-Keeping:	
Keep records	89
Don't Keep records	11
Net Mesh Size Used:	
25.4mm ply	10
50.8mm	70
76.2mm	15
101.6mm	5

Source: *Field Survey (2011)*

CONCLUSION AND RECOMMENDATIONS

From the study, it is obvious that the artisanal fisher folks have been neglected in terms of infrastructural facilities despite their immense contribution to the domestic fish output. There is therefore a need for governmental; intervention in the area of provision of fishing inputs and credit at concessionary rates. The high level of illiteracy among the fisher folks might have been responsible for the low awareness of fishing laws and regulations which could result in overfishing of the waters, there is therefore a need for training and sensitisation of the rural populace.

By and large, there is a need for more in depth study of the species composition and quality of Egbin waterside of Lagos lagoon over a longer period in view of the on-going industrialisation and nearness to Hydroelectric Power Plant in Egbin township to ascertain the water quality of the aquatic ecosystem as this could affect aquatic flora and fauna.

REFERENCES

[1] Adebowale, F.O, Agunbiade, B and Olu-Owolabi, I(2008). Impacts of natural and anthropogenic multiple sources of pollution on the environmental conditions of Ondo State coastal waters, Nigeria, *Electronic Journal of Environment, Agriculture & Food Chemistry*

[2] Agbebi, F.O (1998). Socioeconomic factors influencing sustainable management and entrepreneurship among women involved in fisheries in the coastal areas of Ondo State. Ph.D Thesis, Federal University of Technology, Akure

[3] Agboola, J. I. and Anetekhai, M. A. (2008**).** Length-weight Relationships of Some Fresh and Brackish Water Fishes in Badagry Creek, Nigeria. *J. Appl. Ichthyol*.24: 623-625p

[4] Babale, U.G (2008). Role and Contributions of the Nigerian Agricultural Cooperative and rural Development Bank ltd to the development of the Fisheries Industry in Nigeria. Proceedings of Annual Conference of Fisheries Society of Nigeria, pp 80-82.

[5] Bolarinwa, J.B (2O11). The feeding of *Elops lacerta* in brackish water of Buguma, River State, Nigeria. Journal of Vocational Education,(3): 1.

[6] Bolarinwa, J.B (2O12): Growth pattern and condition factor of Elop lacerta in the Brackish water ponds of Buguma, Rivers state, Nigeria, IRCAB. Internal Journal of Natural Sciences, 2(2): 46-49.

[7] Bolarinwa, J.B (2013). Length-weight relationship and condition factors of six economic fishes of Ibeshe water side, Lagos Lagoon, Nigeria. Proceedings of the International Conference on Oceanography, Orlando-Florida, U.S.A, pp 54-59.

[8] Bolarinwa,J.B (2015). Ichthyofauna Resources of the coastal waters of Ondo State. Ph.D Thesis, Federal University of Technology,Akure, Ondo State, Nigeria.

[9] Egborge, A. B. M (1992**).** Problems of Aquatic Resources Conservation. A Case study of Nigerian Fishes. In Proceedings of the National Conference on Aquatic Resources, Calabar. 11-14th May, 1992. 27p.

[10] Ita, E. O. (1993): Inland Fishery Resources of Nigeria. F.A.O. CIFA Occasional Paper No. 20, 120p.

[11] King,R.P(1998). Physiochemical indices of the fisheries potential of a Nigerian rain forest pond. *Journal of Aquatic Science*, 13:49-54..

[12] Obasohan, E. E. and Oransaye, J. A. O. (2006). Biodiversity and Sustainability of Freshwater Fishes of Nigeria, FISON Proceedings 230-237.

[13] Omitoyin, S.A and Fregene, B.T (2008). Sources and Impact of microcredit on the productivity of artisanal fisherfolks in Lagos lagoon, Proceedings of Fisheries Society of Nigeria, pp103.

[14] Reed, W., Burschard, J., Hopson, A. J., Jenness, J. and Yaro, I. (1967): Fish and Fisheries of Northern Nigeria. Min. of Agriculture, Northern Nigeria. 226p.

[15] Sikoki, F. D. and Otobotekere, A. J. T. (1999): Fisheries. In: The Land People of Bayelsa State Central Niger Delta. E.C. Alagoa, (Ed.). Port Harcourt, pp: 301-319.

[16] Soyinka, O.O and Kusemiju, K(2007). The growth pattern, food and feeding habits of young bonga(*Ethmalosa fimbriata (B*OWDICH) from Lagos and Lekki lagoons, Nigeria, *Nigerian Journal of Fisheries*, 4(1),pp 1-4.

[17] Williams, S.B (2006): The socioeconomic potential of women ion riverine small-scale fisheries in Nigeria <Available from http//www.skk.uit.no>[Assessed 18th July,2011].