ECONOMIC IMPLICATIONS OF FISH LANDINGS IN NIGERIA: A CASE STUDY OF AYADEHE AND OKU IBOKU FISHING COMMUNITIES IN ITU LOCAL GOVERNMENT AREA OF AKWA IBOM STATE

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ABSTRACT

The aim of this study was to ascertain the economic implications of fish landings for the national economy. The study area was stratified with a frame survey into two principal sampling units (PSU) corresponding to the two fishing communities (Ayadehe and Oku Iboku in Itu Local Government Area). Each PSU was assessed for 28 -31 days per month for seven months. The landings of 36 fishermen operating in the two fishing communities were randomly sampled. Personal interview and complete enumeration were instruments for data collection. The data collected were analyzed statistically with chi-squared at 5% significance level. The findings revealed that the fishermen were faced with numerous problems. However, it was recommended among others that the provisions of cold storage facilities, ice-making plants, landing jetties, fish processing sheds, more fishing crafts, etc would boost fishing activities and catch landings in the study area.
Keywords: Fish landings, economy, Ayadehe, Oku Iboku

INTRODUCTION

In every production system, evaluation of economic viability is of great importance in determining whether the production system is profitable or not. The profitability of fish production in any water body depends on the quantity of fish landed and the income generated from it, less the production cost. Fish landings in the Nigeria beaches are mainly from industrial and artisanal fisheries sectors. Nigeria's total domestic fish production stands at 640,000MT from both marine and fresh waterbodies with a current national fish demand of about 1.6 millionMT/year (Fish Network, 2009). This quantity is grossly inadequate for domestic consumption, thus Nigeria imports 700,000MT of fish per year to cushion the supply- demand gap (Ibru, 2005; Fish Network, 2009) and provides at least a 50% animal protein intake for the millions of Nigeria's population. Aquaculture provides only 80,000MT (Atanda, 2009) to the national domestic production.

The total contribution of fisheries to the Nigerian economy is put at N126,417 billion gross output with a capitalization of N78,530billion (Faturoti, 2010). Fishing and marketing of fish and fish products are very lucrative ventures that contribute to food security, poverty alleviation and the Nigerian economy. Over 70% of the total pelagic catch from inland and coastal waters consumed within the nation (Tall, 1997)

attest to the fact that fish landings of good catch has economic implications on agriculture, protein deficiency alleviation in human diets and the food security of the teeming population. Fishing is a major source of livelihood for the artisanal, coastal and inland fisheries sectors. Artisanal fisheries produce the bulk of fish eaten in Nigeria. Moses (2002) reports that artisanal fisheries employ roughly 18 times more fishermen than industrial fisheries and support the welfare of over 100 million persons worldwide. According to him, artisanal fisheries alone accounts for $^{2}/_{3}$ of the total fish landings in Asia and more than half of the total fish landings in Africa. Artisanal fish production system presently is estimated to create 23,000 jobs in fish handling and processing (Faturoti, 2010). River fisheries are highly seasonal in nature and play a significant role in the economic condition of the fishing communities. The yearly total domestic fish productions of inland waters in Nigeria with the money value are scarce in the literature. This research becomes necessary to bridge this information gap for the river as well as provide economic implications of such catch landings. This study therefore, seeks to highlight the economic implications of fish landing in the study area in order to ascertain the financial worth in wealth creation and influence on the socio-economic status of the people.

METHODOLOGY

The study was conducted at Ayadehe and Oku Iboku fishing communities located along Itu River (otherwise known as the Cross River system) in Itu Local Government Area. Fishing, aggregate mining, petty trading and farming have remained the traditional occupation of the people. The study area was stratified with a frame survey into two principal sampling units (PSU) and each PSU was divided into fishing units (FUS)/fishing boats; from where sampling was carried out. Random sampling method was used to select the FUs and sampling occurred for 28-31 days per month for seven months. The sampling population was the fishermen and fish mammies in the two fishing communities. Data were collected from fishermen and fish mammies with the use of personal interview, complete enumeration and direct observations. The data was analyzed statistically with chi-square at 5% precision of fish production in the two fishing communities. The total fish production and the money value were equally computed. The results are presented on Tables.

RESULTS AND DISCUSSION

Table1 shows the catch landings for 7 months at Ayadehe fishing community. Landed shellfishes were Oysters, Crayfish, periwinkles, shrimps while finfishes consisted of Chrysichthys nigrodigitatus, Clarias spp, Heterobranchus spp, Heterotis niloticus and Tilapia at Ayadehe fishing community. Table 2 shows the total shellfish and finfish landings at Oku Iboku with the money value. Periwinkle and chrysichthys were observed to be in most abundant. Table 3 shows the total catch landings of shellfishes and finfishes from Ayadehe and Oku Iboku fishing communities respectively, the percentage catch of Oyster was 41.15% of the total shellfish landings while those of crayfish, clams, shrimps, periwinkles were 4.30%; 0.65%; 21.09%

and 32.81% respectively, indicating that Oysters are the most abundant followed by periwinkles. Similarly, Heterotis niloticus, Clarias spp, Tilapia spp, Chrysichthys spp and Heterobranchus had a percentage catch of 10.35% 3.87%; 1.12%; 83.31%; 1.35% respectively over the study period; indicating that Chrysichthys spp is the most abundant landed finfish followed by Heterotis niloticus.

Fishing business in the study area was observed to be very lucrative within the 7 months of fishing operations. The landings of fish and shellfishes over the decades in the study area have been a source of livelihood for the fishermen, fish mammies and their families thus protein deficiency in diets of the riverine people must have been remedied by the consumption of fish. In many parts of Nigeria, fish constitute about 40% protein intake and up to 80% in the riverine areas (Anibeze, 1995). Fish contains excellent nutritious components that add to the welfare and health of the people. Besides strengthening the nation's food security base, it creates gainful employment and generates income and wealth. Records of fishery contributions to Gross Domestic Product (GDP) have been found to progress from 1994, 1995, 1996, 1997, 1998 with N1.2billion, N1.23billion, N1.48billion, N1.65billion, N1.88 billion respectively (Moses, 2002) up to the present figure of 5.4% GDP (Atanda, 2009). This places the fisheries sub-sector the third amongst the four agricultural sub-sectors (crops, livestock, fisheries and forestry).

Ibru (2005) has reported a foreign exchange earning from fish and fish products exportation of US$54,054,123.00 while ornamental fish yielded US$300,000.00 in 2003. According to him live fish export generates income and employment to the country with the sitting of allied industries that produce fishing inputs and other accessories. At present, Niger Delta is the second largest producer of shrimps in the world and Nigerian shrimp has been rated one of the best worldwide; currently generating a foreign exchange worth of over US$50million annually (Raji, 2008). Fishing, wherever it is practised and catch landed, is an income generating venture. Fish diets constitute a healthy food source rich in essential nutrients needed for a healthy living. According to Eyo (2005), over 200 million Africans rely on fish nutrient, while 10 million are engaged in fish production, processing and trade. Whole fish is incorporated into fishmeal and animal feeds and its diets provide high calorific value from fish fats, high quality protein and some fat soluble vitamins and minerals.

Lagler, Bardach, Miller and Passion (1977) have identified three essential amino acids found in fish (lysine, methionine and tryptophan), which make fish protein first class when compared to protein from livestock and poultry. Fish diets because of its low cholesterol content forms a drug to patient with digestive disorders while the tissue protein contained in fish is readily digested without leaving any deposit of fats compared to the connective tissue protein found in livestock and poultry (Anibeze, 1995). Fish also contains leusine, valine, sulphur and keeps older people brainy (Fish Network, 2005). For landing such a huge catch in the study area, the fishermen and fish mammies that process them, have enriched the diets of the Nigerian fish-consuming public with thiamine, riboflavin, vitamins A and D, phosphorus, calcium, iron, polyunsaturated fatty acids, protein, etc.

Trace elements such as copper, zinc, magnesium, cobalt, molybdenum and selenium are equally found in fish (Essen, 2005). The fishing crafts in both communities were dugout canoes and boats of which most of them were motorized with outboard engines to land the catch at the beaches at a shorter period of time; thereby reducing percentage loss through spoilage. The fishing gears ranged from drift, lift and cast nets, baskets, traps and hooks. Maximum yields were observed in the months of September to October and January to February where Chrysichthys spp became abundant; while Clarias spp occurred mostly in December. Heterotis niloticus was landed from October through February. Oyster occurred mostly in December; crayfish mostly in August with shrimps from January to February at Oku Iboku while periwinkle became most abundant in August and December; just to reflect the seasonal nature of River fisheries. Where the finfish or shellfish could not occur indicates that they must have retreated to the breeding and nursery grounds or averted adverse environmental conditions in the aquatic medium such as drought, oil spillage and pollution. Fishing and fish landings generate sustainable economic development by reducing the level of unemployment, rise in the output of goods and services, improvement in the levels of social and political consciousness, self reliance in food production, provision of health services and housing to make life more meaningful and worth living.

According to Ebong (2007), economic development embodies the process of improving the general welfare or quality of life of the people through the provision of per capita income and social amenities. Fishery development involves a wider range of economic activities such as, seafood production, processing, preservation, transportation and marketing. Joshua (1991) has identified two types of markets in fisheries business namely: industrial markets; where fishing inputs such as crafts, gear, OBES, life bouy, etc are sold; and consumer markets where fish and fish products are offered for sale to consumers. Prices of fish in the study area fluctuated per landings; following market forces and nature of catch. The contribution of fish landings to economic development in Nigeria are enormous.

The production of seafood increases the food needs of the people, contributes 5.4% to the GDP, provides gainful employment and generates income through fish marketing. Fish products serve as raw materials in feed mills, allied industries/ confectionaries while fish exportation brings foreign exchange earnings. Others include the provision of social amenities, such as good access roads, portable water supply, electricity for operation of cold rooms, clinics, schools in the fishing communities by governments to make life comfortable. Fish serves as health food in eradicating poverty, hunger and malnutrition. Eating of fish reduces child mortality and improves maternal health. Child mortality due to malnutrition is remedied with consumption of diets rich in fish. According to the Millennium Development Goals (MDG) cited in Raji (2008), Omega-3 type of polyunsaturated fatty acid found in fish oil ensures normal development of human fetus in pregnant women. Thus, pregnant women and nursing mothers fed with rich quantity of fish have good health

and less incidence of child mortality. Fish landing promotes gender equality and women empowerment. Some women in the study area formed fishing crews to their husbands while many others engaged in fish handling, processing and trade. In the fishing community, about 90% of the women engaged in fish processing and marketing (Wokoma, 1991). These roles of women reduce poverty, promote food security and gender equality as well as empower them financially in income generation as well as dignify the economic status of women. Fish landing attracts environmental sustainability and economic growth by improving the living standards and environment conservation to sustain the living resources there. Due to fishing activities, government have taken measures to regulate/control environmental pollution through oil spillage, sewage and industrial effluents. Equally, fishery business forms a veritable tool to combat HIV/AIDS. Fishery extensionists give public enlightenment on HIV/AIDS, to migrant fishermen that had left their families on fishing expeditions but could not restrict themselves from women and the menace of this deadly disease. Moreover, retroviral treatments of AIDS with high quality protein diet from fish have been found to revive the health of patients to live a fulfilled life (Raji, 2008).

CONCLUSION AND RECOMMENDATIONS

Fishing in the study area was very lucrative and highly seasonal, though besotted with some constraints such as insufficient fishing gears and crafts, lack of cold storage, ice-making plants amongst others. Fishing as evidenced with huge catch landings involved investment in both material and human resources to yield dividends quantified primarily in terms of catch. These landings contribute to the national domestic production. Catch landings of the inland rivers of Nigeria are collated by the Federal and States Department of Fisheries and forwarded to the Federal Department of Fisheries, Abuja, for compilation of yearly total domestic fish production for the nation. The provision of ice-making plants, cold storage, adequate fishing inputs, establishment of processing sheds, service stations for outboard engine (OBE) repairs etc, would increase fish production.

Artisanal fisheries production of the inland waters form part of the total national domestic fish production. In other to boost fish production the following recommendations should be implemented.

(a) Government and corporate bodies should build landing jetties, ice-making plants, cold room and workshop/service stations for repair of crafts and OBE
(b) Fish marketing sheds where the landed fish commodity are kept and processed for sales should be built by the Federal and State Department of Fisheries to enhance high hygienic and sanitary conditions.
(c) Every landing site especially the ones that are accessible to fish mongers/ mammies should be built with processing and preservation facilities.
(d) Fingerlings should be produced in the hatcheries to stock the inland waters for sustainable fish production.

(e) Workshops/seminars to train the fishermen and fish mammies on improved fishing, processing and preservation methods should be mounted regularly by the Federal and States Department of Fisheries.

(f) The cost of procuring fishing inputs such as fishing gears/crafts and safety kits should be subsidized by government and fishermen should form themselves into cooperative societies in order to benefit from such assistance.

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Table 1: Monthly Fish Landings at Ayadehe Fishing Community

Months	August	September	October	November	December	January	February	Total
Shell fish spp	Tons/Amount	Tons/Amount	Tons/Amount	Tons/Amount	Tons/Amount	Tons/Amount	Tons/Amount	Tons/Amount
Oyster	0.37/7400				3.45/ 69,000			3.82/76400
Crayfish	0.66/ 15,120							0.66/ 15,120
Periwinkle Clam	0.12/2400							0.12/ 2400
Total								4.60/93,920
Finfish spp								
Chrysicthys		108.50/3772800	22.76/386600	3.18/56200	2.10/73500	8.80/ 293800	17.50/922500	162.84/5,505400
Tilapia spp						0.98/19,600		0.98/19600
Clarias spp					6.80/238000			6.80/ 238000
Heterotis sp				10.83/296,600	1.20/ 42000			12.03/338600
Heterobranchus								
Total								182.65/ 6,101, 600

Source: August 2009 February 2010.

Table 2: Monthly Fish Landings at Oku Iboku Fishing Community

Months	August	September	October	November	December	January	February	Total
Shell fish spp	Tons/Amount	Tons/Amount	Tons/Amount	Tons/Amount	Tons/Amount	Tons/Amount	Tons/Amount	Tons/Amount
Oysters				2.50/ 62500				2.50/ 62500
Crayfish								
Periwinkle	0.42/7760				4.50/67500			4.92/75260
Shrimps	0.35/7900					1.00/40,000	1.89/34020	3.24/81920
Clam	0.10/1500							0.10/1500
Total								10.76/ 221, 180
Fin fish spp								
Chrysicthys		17.22/476700	15.70/441500	4.32/104, 000	5. 40/128000	8.87/317300	6.92/187,344	58.42/1654844
Tilapia spp						2.00/40,000		2.00/40,000
Clarias spp					2.10/52500		1.38/52440	3.48/104940
Heterotis sp			2.50/62500	4.15/88750	3.60/72000		5.20/64900	15.45/288150
Heterobranchus			1.75/ 43750				1.84/64400	3.59/108150
Total								82.95/2,196,084

Source: August 2009 February 2010.

Table 3: Summary of Total Fish Production per Months and percentage Fish Catch Landings for both Fishing Communities (Ayadehe and Oku Iboku)

Shell fish spp	**Tons**	**(N)Amount**	**%Occurrence**
Oysters	6.32	138,900.00	41.15
Crayfish	0.66	15,120.00	4.30
Periwinkle	5.04	77,660.00	32.81
Shrimps	3.24	81,920.00	21.09
Clam	0.10	15,00.00	0.65
Total	15.36	315,100.00	
Finfish spp			
Chrysichthys spp	221.27	7,160,244.00	83.31
Tilapia spp	2.98	59,600.00	1.12
Clarias spp	10.28	342,940.00	3.87
Heterotis spp	27.48	626.750.00	10.35
Heterobranchus spp	3.59	108,150.00	1.35
Total	265.60	8,297,684.00	
Grand total	280.96	8,612,784.00	

Source: Fish landings (fin and shell fish production) August 2009-February 2010.