International Journal of Small Business and Entrepreneurship Research
Vol.5, No.1, pp.51-59, January 2017
Published by European Centre for Research Training and Development UK (www.eajournals.org)

INFLUENCE OF COASTAL CHALLENGES ON THE OPERATIONS OF SMALL SCALE FISH BUSINESS IN AKWA IBOM COASTLINE COMMUNITIES, NIGERIA

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ABSTRACT: *Coastal challenges is one of the obvious problems facing fish business in Akwa Ibom State as none over the years has grown from small to large scale. In this study, effort was made to determine the extent to which coastal challenges could influence the operations of small scale fish business. Three research questions were answered in the study and three null hypotheses were tested at .05 level of significance. Related literature and empirical studies were reviewed. The population of the study comprised 1420 small scale fish business operators from fifty one fishing communities that spread across eight Local Government Areas that situate along the coastal bank. Stratified random sampling technique was used in selecting a sample of 312 small scale fish business operators. The researcher developed 30-items structured questionnaire (which were equally interpreted in local dialects) for data collection. The questionnaire items were face validated by three experts, two from Department of Vocational Education and One from Department of Educational Foundation; all from University of Uyo, Uyo. Cronbach Alpha method was used in calculating the reliability of the instrument and a correlation coefficient index of 0.82 was obtained which showed that the instrument was reliable. Data were analyzed using mean and standard deviation for research questions while the null hypotheses were tested to determine the extent of influence using t-test. The findings of the study indicate that flood, sea piracy, and coastal storms have high influence on the operation of small scale fish business. It was recommended that Akwa Ibom State Government should design an Incentive-Based Risk Sharing System (IBRSS) for fish business operators to enable them contain risk associated with coastal storms and should set up agencies like Local Coast Guard (LCG) and Distress Response Team (DRT) among others. These agencies will help stem the activities of pirates.*

KEYWORDS: Coastal Challenges, Flood, Fish Business and Coastline Communities

INTRODUCTION

Fish business constitutes an important sector of the nation's economy. The importance of this business can better be appreciated in the light of the report given by the Federal Department of Fisheries (FDF) (2009), that fish business makes up about 3.3% of the nation's Gross Domestic Product (GDP) and about 3.0% GDP of the south-eastern Nigeria where Akwa Ibom is located. The implication of this report is that fish is not just predominantly serving as a commodity for business in this area but as a catalyst product to ancillary industries such as sales of locally made boats, marine engines, nylon (fishing nets) net mending and ecotourism among others. Hence, fish business could be seen as a business of businesses.

ISSN 2053-5821(Print), ISSN 2053-583X(Online)

Roheim and Sutinem (2006) buttressed the above statement by declaring that seafoods (which include all kinds of fish) is one of the most extensively traded commodities in the world, as it is a business that drives other allied businesses. Export of fish produce in developing countries comprise 20 percent of food processing exports and is likely to increase as demand for fish produce continue to increase given the fact that it is the cheapest and richest source of human protein. Having seen the marketing margin of fish products, one would have expected fish business to be the leading sector to diversify the state economy (in the face of dwindling revenue allocation from Federal Account) and as well generate employment opportunities, but this is not so.

It has been observed by Ekpo and Essien-Ibok (2013) that fish business in recent times have been confronted with many problems and operating constraints placed upon it by coastal challenges. Therefore, influence as used in this work refers to the capacity of something (coastal challenges) to cause an inducement on the operations of small scale fish business. Coast means an area of land that is close to sea or an ocean. Hence, coastal challenges (which include flood, sea piracy, oil platforms, costal storms and sea shore erosion) simply refer to problems that are peculiar to an area of land that is close to the ocean as they affect the sales, marketing and distribution of fish. Fish in the words of Moses (2002) is any living aquatic resource exploitable by man for food, income, recreation and other economically useful purposes. This definition makes it easy for fish to be seen as a commodity or product of enterprises especially those category of enterprise that qualify to be small scale businesses. Akpan (2004) stated that small scale businesses are enterprises with fixed assets (excluding cost of land) plus cost of investment project not exceeding ten million naira (₦10m). Osuala (2005), added that small scale business is any business that is owned, managed and controlled by a sole proprietor or partner of about two persons, having total assets of less than four million naira and a relatively small share of the market, and does not have more than fifty employees. From these definitions, it could be inferred that small scale fish business is a special field of small scale enterprise that provides the public with fish as its product and whose capital investment may exceed two million naira but not above ten million naira.

Fish business is operationally conceived in this work as that part of business that focuses on the downstream sector of the fish business that covers an array of activities such as sales, marketing, warehousing and distribution of fish. It can also, be seen as the logistic networking or downstream linkages that engages in services of integrating the various level of supply chain; ranging from procurement of fresh fish in bulk from trawler ship through the distribution process to the retailing of fish to the common users of fish product which may either be in fresh or dry form. This means that the flow of fish supply has that characteristic feature of value-chain addition in delivery of fish product to the final consumers (Ekanem, 2010). The sales, marketing and distribution of fish involve both male and female; this necessitates the consideration of the two groups as the major participants in this study.

The records of the Statistics Unit of the State Department of Fisheries (SDF) (2002), shows that there are 220 fishing settlements in Akwa Ibom State. Out of this number, 71 fishing settlements with 1420 small scale fish businesses are located within coastal area. These businesses, according to Pro-Natural International (Nigeria) (2004) are the major source of income and livelihood to people living within the coastal areas. These businesses are affected by a number of coastal challenges.

ISSN 2053-5821(Print), ISSN 2053-583X(Online)

Statement of the Problem

One of the cheapest and richest means through which the fast human growing population could meet their need for protein is through the consumption of fish. Unfortunately fish harvested from ocean which should be sufficient to meet the human need could not. This is because of overbearing and a growing numbers of coastal challenges that have placed heavy distortion on the supply chain of fish. There have been cases were both material (fishing gears) and human resources are loss as a result of coastal storm, flood covering beach markets, pirates molesting fish distributors and hijacking their fishing gears, sea shore erosion denying fish distributor navigational routs to trawler ships were they can buy fish and location of oil platforms having both effects of crude oil spillages or droplets that account for fish stock depletion and denial of fish distributors accessibility to trawler ships. The consequence of this is that fish mongers and marketers are exposed to frustration as a result of stock-out, loss in material and human resources hence, inferring with the smooth flow of fish in the logistics and distribution networks such that the end consumers now sought for rared or cultured fish out of frustration.

Purpose of the Study

The purpose of this study was to determine the influence of coastal challenges on the operations of small scale fish business in Akwa Ibom coastline communities. Specifically, the study sought to:

1. determine the influence of flood on the operations of small scale fish business in Akwa Ibom Coastline Communities.
2. determinethe influence of sea piracy on the operations of small scale fish business in Akwa Ibom Coastline Communities.
3. determine the influence of coastal storms on the operations of small scale fish business in Akwa Ibom Coastline Communities.

Research Hypotheses

The following null hypotheses were formulated and tested at .05 level of significance.

Ho_1. There is no significant difference in the mean responses of male and female fish operators on the influence of flood on the operations of small scale fish business in Akwa Ibom coastline communities.

Ho_2. There is no significant difference in the mean responses of male and female fish operators on the influence of sea piracy on the operations of small scale fish business in Akwa Ibom coastline communities.

Ho_3. There is no significant difference in the mean responses of male and female fish operators on the influence of coastal storms on the operations of small scale fish business in Akwa Ibom Coastline communities.

RESEARCH METHODOLOGY

Descriptive survey research design is adopted for this study. This is because it involves the use of various analytical techniques employed in the description or explanation of a phenomenon and it enables the researcher to collect, organize, analyse and describe data as they exist without any interference, hence, it is the choice of the researcher to adopt the design (Uzoagulu, 2011). The

ISSN 2053-5821(Print), ISSN 2053-583X(Online)

study was conducted in Akwa Ibom Coastline Communities. The area is sandwiched on the East by the Cross river estuary and on the West by the Imo River. Other major rivers found within the area include: Qua Iboe River and the Shooter Creek (OkwanObolo). On Southern axis, the area is bounded by the Atlantic Ocean (the Bight of Bonny) while in the North are other politically stratified Local Governments Areas such as Onna, MkpatEnin and Eket. It lies between latitude 7^0 35'E and longitude 8^0 20'E. The coastline communities stretch across the following Local Government Areas: IkotAbasi, Eastern Obolo, Ibeno, Mbo, Oron, UdungUko and Okobo. It has two main geomorphologic limits- the coastal sedimentary low land and the lagoon water bodies, occupying the Islands and peninsulas that interrupt the densely lengthy mangrove forest which is an environmental resource for industrial development.The population of the study consists of 1420 registered small scale fish business operators in the Coastline Communities.A total of 312 small scale fish business operators constituted the sample for the study. The sampling technique used for the study is stratified random sampling. Structured questionnaire was used to collect the data for the study.

A researcher-developed instrument titled "Coastal Challenges and the Operations of Small Scale Fish Business Questionnaire" (CCOSSFBQ) was used in collecting data (from the literate fish business operators) for the study. The instrument was interpreted in local dialect of the respondents, to enable the illiterate fish business operators give valid responses. The questionnaire was sub-divided into six sections (A-F). Section A requested for respondents personal data, name, gender, name of business, location and Local Government Area. Section B solicited information from the respondents on challenges associated with flood. Section C sought for information on problems related to sea piracy, Section D elicited information from respondents on the challenges relating to location of oil platforms, Section E requested information from the respondents on the challenges relating to coastal storms and Section F solicited information from the respondents on the problems regarding sea sore erosion. Then, for illiterate fish business operators, structured interview was conducted. The questionnaire was used as a guide for the interview.

The instrument was given to three research experts, two from the Department of Vocational Education and one from the Department of Educational Foundations, all in the University of Uyo for face validation. The internal consistency of the instrument was determined by using Cronbach Alpha method. A trial test was carried out using 30 fish business operators from Lagos and Ogbogbo-uti fishing ports who were not take part in the actual study. The coefficient index of 0.88 was obtained.

The distribution of the questionnaire was carried out by the researcher in order to achieve high rate of returns and as well prevent loss of instrument. Two research assistants were engaged and briefed on procedures for distribution and collection of the instrument from the respondents. Three hundred and twelve (312) copies of the questionnaire were distributed. The respondents were given two days to complete the questionnaire and same was retrieved from them after completion, giving 100% return rate. The data collected from the respondents were analyzed using mean, standard deviation. The mean of the responses of 4-points scale was 2.50. Any item with a mean of 2.50 and above was regarded accepted while any mean less than 2.50 is rejected.

ISSN 2053-5821(Print), ISSN 2053-583X(Online)

DATA ANALYSIS AND DISCUSSION OF FINDINGS

Null Hypothesis 1
There is no significant difference in the mean responses of male and female fish operators on the influence of flood on the operations of small scale fish business in Akwa Ibom coastline communities.

Table 1: Independent t-test analysis on influence of flood on the operations of small scale fish business **N=312**

Gender	Mean	SD	N	Df	t-cal	t-cri
Female	20.3636	1.53967	132	310	5.71	1.97
Male	19.3222	1.62610	180			

Note: Significant at 0.05 alpha levels; df =310; critical t = 1.968

The result in Table 1 reveals that the calculated t-test of 5.713 is greater than the critical t-value of 1.968; at .05 level of significance, with 310 degree of freedom. With this result, the null hypothesis which states that there is no significant influence of flood on the operations of small scale fish business in Akwa Ibom coastline communities is rejected. Therefore, there is significant influence of flood on the operations of small scale fish business in Akwa Ibom Coastline Communities.

Null Hypotheses 2
There is no significant difference in the mean responses of male and female fish operators on the influence of sea piracy on the operations of small scale fish business in Akwa Ibom coastline communities.

Table 2: Independent t-test analysis on influence of sea piracy on the operations of small scale fish business **N=312**

Gender	Mean	SD	N	df	t-cal	t-cri
Female	20.2727	1.89854	132	310	2.77	1.97
Male	19.8778	1.97938	180			

Note: Significant at 0.05 alpha levels; df =310; critical t = 1.968

The result in Table 2 reveals that the calculated t-test of 2.771 is greater than the critical t-value of 1.96;at .05 level of significance, with 310 degree of freedom. With this result, the null hypothesis which state that there is no significant influence of sea piracy on the operations of small scale fish business in Akwa Ibom coastline communities is rejected. Therefore, there is significant influence of sea piracy on the operations of small scale fish business in Akwa Ibom Coastline Communities.

ISSN 2053-5821(Print), ISSN 2053-583X(Online)

Null Hypotheses 3
There is no significant difference in the mean responses of male and female fish operators on the influence of coastal storms on the operations of small scale fish business in Akwa Ibom Coastline communities.

Table 3: Independent t-test analysis on influence of coastal storms on the operations of small scale fish business N=312

Gender	Mean	SD	N	df	t-cal	t-cri
Female	20.7121	2.34612	132	310	4.52	1.97
Male	19.4889	2.37418	180			

Note: Significant at 0.05 alpha levels; df =310; critical t = 1.968

The result in Table 3 reveals that the calculated t-test of 4.519 is greater than the critical t-value of 1.968; at .05 level of significance, with 310 degree of freedom. With this result, the null hypothesis which state that there is no significant influence of coastal storms on the operations of small scale fish business in Akwa Ibom coastline communities is rejected. Therefore, there is significant influence of coastal storms on the operations of small scale fish business in Akwa Ibom Coastline Communities.

DISCUSSION OF FINDINGS

The Challenges of Flood on the Operations of Small Scale fish Business

The analysis shown in Table 1 indicates that fish business operators are affected by the influence of flood in the operation of small scale fish business. The implication of this finding is that flood serves as a major setback to the growth and profitability of fish business. This is in consonance with the findings of Darwin, Richard and Tol (2001), who maintained that the effects of flood are usually felt in the following ways, namely: loss of dry land without protection, loss of wetland without protection loss of economic infrastructure and existing human settlements. Hence, when an existing fishing settlement is destroyed or submerged by flood, fish business operators are displaced and their gears are lost. The findings of Ubong, Tilburg and Nichof (2010), support this finding which states that flood affect the operations of fish business when the beach market which serves as a trading ground for fish is submerged.

The researcher observes from the findings of the study that virtually all the fishing communities are without protection. Therefore, the state government should embark on land-taracing and sand bagging of these fishing communities that are flood prone, considering the strategic role it plays in the state economy.

The result of the data presented in Table 1 shows that there is a significant influence of flood on the operation of small scale fish business. It is significant due to the fact that the t-cal is greater than the t-cri. The null hypothesis is therefore rejected and the alternative is accepted. The findings of Eyo (2011), is in agreement with the finding of this study which states that fish business assumes

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overbearing loss when market is flooded resulting in spoilage of fish stock and price depletion. The significance of the result also conform with Overpeck and Strauss (2011), who maintained that flood exposes fish business to post-harvest loss which is one of the reasons that discourages investors coming into the business to invest.

The analysis of the data presented in Table 2 shows that fish business operators are highly affected by the influence of sea piracy in the operation of small scale fish business. The finding here indicates that sea piracy is among the factors that hampers the smooth operations of small scale fish business. The result reveals that there is a significant influence of sea piracy on the operations of small scale fish business. The null hypothesis is rejected given the fact that the t-cal is greater than t-cri. Hence, the alternative hypothesis is accepted.

The result of this analysis is in consonance with the finding of Dick (2010) who maintained that some trawlers (in recent times) are unwilling to do business in Nigeria on the account of pirate attacks. This is supported by the finding of Pro Natural International (Nigeria) (2002) who posit that activities of pirates have been found not only to be inimical to the development of the local economy but also an act that exert negative influence on the growth of the nation's Gross Domestic Product (GDP) at large.

The researcher observed that Government did not pay sufficient attention to this sub-sector of the economy as it is done in the oil sector. This is because the navigational routes and fishing grounds of fish business operators are without security cover. Therefore, Government should make provision for security coverage especially with modern techniques and gadgets.
The analysis of the data presented in Table 3 reveals that fish business operators are highly affected by the influence of coastal storms in the operation of small scale fish business. The result implies that coastal storms constitute setbacks to the smooth operations of fish business. This agreed with Enemugwem (2001) who lamented that it is common among fish business operators to loose two to three persons (including gears) while trying to buy fish from supplying ship. This is supported by Abiodun and Ayanda (2007) who posit that fish business operators of invaluable estimation are often claimed by coastal storms, resulting in these businesses, either being liquidated or continue in perpetual small scale.

The result of indicates that there is a significant influence of coastal storms on the operations of small scale fish business. It is significant based on the fact that the t-cal is greater than the t-cri. The null hypothesis is therefore rejected and the alternative hypothesis is accepted. The researcher observed from the study that none of the fish business operators uses modern fishing gears like sea truck perhaps due to cost implication; and that government grants and other facilities have never been designed to cover these group of business operators. Therefore, state government should include fish business operators their economic plan.

CONCLUSIONS

The following conclusions are drawn based on the findings of this study:
Coastal challenges like flood, sea piracy and coastal storms affect and have significant influence on the operations of small scale fish business. If Government at both the Federal and State levels

ISSN 2053-5821(Print), ISSN 2053-583X(Online)

show sufficient commitment towards providing incentives and basic facilities, this would encourage the fish business to grow and break the vicious cycle of smallness to join the league of large scale business just as the foreign ships that are fishing in the territorial waters of Nigeria.

The significant influence of flood, sea piracyand coastal storms on the operations of small scale fish business implies that these are challenges that perhaps account for insignificant contribution to the nation's GDP and economy as whole.

RECOMMENDATIONS

Based on the findings and conclusion of this study, it was recommended that:

1. Akwa Ibom state government should design an Incentive-Based Risk Sharing System (IBRSS) for fish business operators to help them contain the problem of coastal challenges that usually claim lives and fishing gears.
2. The State Government through office of the Ministry of Commerce or Food Sufficiency should set up agencies like Local Coast Guard (LCG) and Distress Response Team (DRT). Such agencies will help to bring to the bearest minimum the challenges of sea piracy and incessant boat wrecks that often claim material and human lives.
3. The Federal Government through Ministries of Works, Transport and Water Resources should undertake to dredge the estuaries and basins around the coastal region as well as embankment of the coastal line. This will help to address the challenges of flood, ocean surges and coastal erosion respectively that often characterizes the operation of fish business.
4. The State Government through Ministries of Transport and Agriculture should design an intervention programme for the fish business operators such as provision of good water transport facilities through grants to enable fish business operators to acquire sea trucks, over-craft and other modern boat that has gadgets.
5. The Federal Governments through National Agency for Environment should install gadgets for ocean surge and flood warning system around the coastal borders of the country.
6. The Federal Governments through Ministry of Power should make provision for the building of mini-dams in the coastal areas. This will help both in the control of flood; ocean surge and supply of electricity for storage of fish as well attract investors in the sub-sector.
7. Special management board should be set up by the State Government. Such board among other responsibilities will coordinate the activities of fish business operators, regulate entry and exit from ocean through registration of fish business operators(such as mandatory registration of all fish business operator, assigning a uniform colour for all) and carrying out of Maritime Domain Awareness (MDA) Campaign among communities in the coastline area.
8. The Federal Governments through Ministry of Defense should provide for a sub-naval office in each Local Government Area of the coastal region, such decision will help reduce the incidence of sea piracy.
9. Akwa Ibom State Government through State House of Assembly should enact laws and policies that will compel trawlers, fishing in the territorial waters of the state to have a hub or fish depot in the state. Such development, will serve as a platform for people to venture into franchise business which is a modified fish business operations that is less prone to coastal challenges.

ISSN 2053-5821(Print), ISSN 2053-583X(Online)

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ISSN 2053-5821(Print), ISSN 2053-583X(Online)