

FACTORS AFFECTING CHANGING LIVELIHOOD STRATEGIES OF ARTISANAL FISHERFOLKS IN INLAND FISHING COMMUNITIES IN DELTA STATE

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Abstract

This study examined the factors affecting changing livelihood strategies of artisanal fisherfolks in inland fishing communities in Delta State, Nigeria. The sample size of 169 respondents was selected through a simple random sampling from a total of 935 fisherfolks in two selected Local Government Areas. Instrument for data collection was structured questionnaires. Data were analysed using descriptive and non parametric statistic. The result showed that majority (44%) of the respondents is between the ages of 41 and 60 years. There were no significant relationships between marital status, educational level, family size, income of fisherfolks and changing livelihood strategies ($r = -0.118, p = 0.05$; $r = -0.102, p = 0.05$; $r = -0.107, p = 0.05$; $r = -0.107, p = 0.05$) respectively. Correlation co-efficient analysis revealed that there was insignificant relationship between reasons for diversification of livelihood and changing livelihood strategies of the artisanal fisherfolks. ($r = 0.103, p = 0.184$). In conclusion, the factors affecting livelihood strategies of artisanal fisherfolks include coping with insufficiency, income, obnoxious fishing method, government policy, resource depletion through sand bank, respondents ethnicity, age and sex. It is therefore recommended that greater emphasis should be directed towards provision of credit facilities. Fishing nets should also be subsidised by the government.

Key words: Changing Livelihood, Artisanal Fisherfolk, Inland Fishing

Introduction

Nigeria has a number of important inland fisheries including those of Lake Chad, the River Niger, Lake Kainji, the Upper River Benue, Tiga Lake among others (FAO, 1990). With an estimated total annual fish production of between 60,000 tonnes and 100,000 tonnes, the inland fisheries provide up to 50% of Nigeria's domestic fish supply and support artisanal fishery communities (Neiland, 2000). In spite of the abundant fish production from the inland fisheries which contribute substantially to total domestic fish supply in Nigeria between 1981 and 1985 (Ita, 1987), the artisanal fisherfolks are still operating at the small scale level. They predominantly use canoes, employing fishing gears such as hook and line, gillnet, cast nets, seine nets and various types of traps.

In recent years, decline in fish catches have made fisherfolks to device alternative sources of livelihood for sustained food security and increased income. DFID/FAO (2004) revealed that increased human population has resulted in increased intensity of fishing and fishing effort using undersized mesh net.

Livelihood means the capabilities, assets and activities that are required for a means of living (Graham *et al.*, 2000; Chambers and Conway, 1992). The activities become evident when analysis is made of the livelihood strategies adopted by individuals within the communities. According to Loubster (1995), livelihood is defined as "the totality of means by which people secure a living, have or acquire the requirements for survival and satisfaction of needs as defined by the people themselves in all aspects of their lives". Livelihood has also been defined by Ellis (1999) as the activities, assets and the access that jointly determine the living gained by the rural household as livelihood.

Livelihood activities of artisanal fisherfolks therefore, include not only the income-generating activities they engage in but also other transactions and strategies through which they earn their living. In Delta State, this varies from one rural area to another depending on the available resources, climatic conditions and infrastructure. However, the livelihood options according to Neiland (2000) belong to three broad clusters. Those of agricultural intensification or extensification (output per unit area is obtained either through capital investment or using more labour or through putting more land under cultivation); the second option involves diversification of income sources and the third involves migration (this can be local, national or international).

This study focuses on the factors affecting changing livelihood strategies of artisanal fisherfolks in inland fishing communities of Delta State since people in the fishing communities maintain social, economic and cultural links with their relations in other fishing communities and vice-versa. All these linkages will influence the livelihood activities of the rural households of the artisanal fisherfolks and the extent to which these activities meet their livelihood needs.

Broadly this study examines the factors affecting changing livelihood strategies of artisanal fisherfolks in inland fishing communities in Delta State and specifically: (1) Describe the selected personal characteristics of artisanal fisherfolks in the study area; (2) Ascertain artisanal fisherfolks change from fishing as a livelihood activities to other livelihood options; and (3) Identify factors affecting changing from fishing as a livelihood activity by the respondents

Methodology

The population of the study comprises of all artisanal fisherfolks (active and non-active fisherfolks) in inland fishing communities of Delta State. Six Local Government Areas (Patani, Ndokwa-West, Ethiope-East, Ukwuani, Ndokwa-East and Oshimili-North) are involved in active inland fishing in the state. The six Local Government Areas were stratified as high producing (Ndokwa-East, Patani and Ndokwa-West) and low producing (Ethiope-East, Ukwuani and Oshimili-North). One Local Government Area was randomly chosen from each group (that is, Ndokwa-East from high producing group and Oshimili-North from low producing group).

From the two selected Local Government Areas, three fishing villages out of six were randomly selected in Ndokwa-East LGA and three out of five fishing villages were also randomly selected in Oshimili-North respectively (Ndokwa-East LGA: Iselegwu, Okpai and Umuolu and Oshimili-North: Ngegwu, Ugbelu, Ebu). From the list of registered fisherfolks, random sampling technique were used to select the respondents.

In Ndokwa-East LGA, 98 respondents out of 540 fisherfolks were randomly chosen representing 18 percent of the population. In Oshimili North LGA, 71 fisherfolks out of 395 fisherfolks were randomly chosen representing 18 percent of the population. Therefore, a total of 169 respondents out of 935 fisherfolks represented the sample size of the study. Data were analysed using descriptive and non-parametric statistics.

Results and Discussion

Personal Characteristics of Respondents

Most (68.0 percent) of the artisanal fisherfolks are Delta Ibos, which is the ethnic group of the selected fishing communities in the study area. The implication of the result is that majority of the respondents are native of Delta Ibos. Delta State contains wide spread inland and coastal waters that provide good fishing grounds for other ethnic groups within their domain.

Majority (44.0%) of the respondents fell within the age bracket of 41 to 60 years. About 39.0 percent of the respondents fall within the age bracket of 21 to 40 years, 8.0 percent were less than 21 years while 9.0 percent consisted those above 60 years of age. The result of the findings suggest that artisanal fisherfolks in the combined age bracket of are more economically active and independent than those in the age group of less than 21 years and above 60 years respectively.

Majority (74.0%) of the artisanal fisherfolks in the study were males while the rest (26.0%) were females. Most (65.0%) of the respondents are married. The dominance of married households implies that appreciable numbers of the households are likely to diversify their livelihood strategies because of its immense benefit of ensuring food security, income generation and reduced vulnerability within the household. More than 60 percent (66.0%) of the respondents are literate. This will affect fisherfolks positive responses to improved techniques of fishing, processing, preservation and other livelihood activities. Majority (49.0%) of the respondents family size was 4 to 6 persons, 33.0 percent have 1 to 3 persons, 12.0 percent have 7 to 9 persons, while 5.0 percent have 9 persons and above. Rural-urban migration of youths to cities in search of job opportunities has contributed to low family size of the respondents (Jibowo, 1992).

About 56.0 percent of the respondents earn monthly income between N5,001 N10,000, while 4.0 percent earn above N20,000. The poor income level of the rural populace could be attributed to the low level of infrastructural development in the area, which affects the extent to which rural dwellers can take advantage of economic and other opportunities (Olawoye, 1986) and also, the subsistent level of food production prevalent in the rural areas (Gbarabe, 1998).

Reasons for Diversification from Fishing to other Livelihood Activities

Table 1 Distribution of Respondents based on Reasons for Diversification from Fishing to other Livelihood Activities.

Reasons for diversification	Yes	No	Total
Effect of oil exploration	23(14)	146(86)	169(100)
Obnoxious fishing methods	123(73)	46(27)	169(100)
Movement of fish away from the area in which The community is situated	87(51)	82(49)	169(100)
Effect of aquatic weed	10(6)	159(49)	169(100)
Erosion of river bank	10(6)	159(94)	169(100)
Effect of braiding	28(17)	141(83)	169(100)
Fluctuation in climatic region	105(62)	64(38)	169(100)
Resources depletion through sand bank	120(71)	49(29)	169(100)
Income	134(79)	35(21)	169(100)
Market	25(15)	144(85)	169(100)
Government policy	121(72)	48(28)	169(100)
Conflict	28(17)	141(83)	169(100)
Spreading risk	96(57)	73(43)	169(100)
Coping with insufficiency	149(88)	20(12)	169(100)
Seasonality	101(60)	68(40)	169(100)
Compensation for fisheries in credit markets	10(6)	159(94)	169(100)
Gradual transition to new activities	47(28)	122(72)	169(100)
Building on complementation	23(14)	146(86)	169(100)
Others (inadequate supply of labour)	5(3)	164(97)	169(100)

Source: Field Survey, 2005.

Table 1 shows the respondents most important reasons for diversification from fishing to other livelihood activities. These include coping with insufficiency 88 percent, income 79 percent, obnoxious fishing method 73 percent, government policy 72 percent, resources depletion through sand bank 71 percent, fluctuations in climatic 62 percent, seasonality 60 percent, spreading risk 57 percent and movement of fish away from the area in which the community is situated 51 percent. The percentages of the respondents giving other reasons for diversification are less than 30 percent. This result corroborates the work of Ashley *et al.* (2002), that households adopt diversified portfolios of activities for one or several reasons.

Table 2. Respondents Change from Fishing as Livelihood Activity

Livelihood Activities	Change in Activities		New Entrants in Activities
	Yes	No	
Fishing:			
(a) Catching fish with net	80(47)	60(36)	
(b) Setting of traps	5(3)	105(62)	21(12)
(c) Setting of hooks	4(2)	20(12)	3(2)
Fish processing:			
(a) Scaling of fish	22(13)	7(4)	
(b) Removing of fish gut	8(5)	23(14)	
(c) Charring	-	-	
(d) Smoking	35(21)	21(12)	6(4)
(e) Impaling	-	-	
(f) Packaging	-	-	
Fish marketing:			
(a) Selling of fish	7(4)	33(20)	13(8)
(b) Fish mongering	21(12)	58(34)	10(6)
(c) Fish transportation	3(2)	15(9)	3(2)
Fishing gear construction:			
(a) Mending of nets	10(6)	24(14)	
(b) Making of traps	12(7)	25(15)	
Fishing craft:			
(a) Building of canoes/paddles	5(3)	21(12)	2(1)
(b) Mending of canoes	4(2)	22(13)	1(1)

Source: Field Survey, 2005.

Table 2 reveals catching fish with net (47%) and fish smoking (21%) as the most important fishing activities the respondents have changed from. Most (62%) agree with not changing from setting of fish trap in fish capture. The prominent entrants in fishing activities are setting of fish trap (12%), selling of fish (8%) and fish mongering (6%). The result could imply that most of the respondents were attracted to setting of fish trap in fish capture because of high cost of procurement of fishing nets.

Test of Relationship

Selected Personal Characteristics and Changing Livelihood Strategies of Respondents

Table 3. Multiple Regression Analysis of Selected Personal Characteristics and Changing Livelihood Strategies of Respondents

Variable code	Variable name	Regression coefficient	T-values
X ₁	Ethnicity	0.169	2.070 *
X ₂	Age	0.162	1.274 *
X ₃	Sex	0.123	1.374 *
X ₄	Marital status	-0.118	-0.130 NS
X ₅	Educational level	-0.102	-0.893 NS
X ₆	Family size	-0.107	-0.989 NS
X ₇	Income	-0.107	1.203 NS

Source: Field Survey, 2005

Key: NS = Not significant

* Significant at 5% level

R² = 0.042

F-value = 1.931.

The regression coefficients showed the influence of the variables on the changing livelihood strategies of the artisanal fisherfolks. Table 3 shows the empirical evidence obtained by means of multiple regression analysis to determine the relationship that existed between the selected personal characteristics and changing livelihood strategies of artisanal fisherfolks in the study area. The result of the multiple regression analysis shows that there was a positive and significant relationship between ethnicity, age, sex, and changing livelihood strategies. This implies that changing livelihood strategies of the artisanal fisherfolks in the study area depend on the fisherfolks ethnicity (X_1), age (X_2) and sex (X_3). Ethnicity could provide social net work that enable fisherfolks to change their livelihood strategies. Roles and responsibilities increases with age (X_2) and the more the role and responsibilities fisherfolks assume, the more they tend to change the livelihood strategies for high economic return to meet their obligations. The positive relationship between changing livelihood strategies and sex suggest that sex of the fisherfolks influence their livelihood portfolios.

The signs of regression coefficient for marital status (X_4), educational level (X_5), family size (X_6) and income (X_7) were negative and not significantly related to changing livelihood strategies of the artisanal fisherfolks in the study area. This result implies that changing livelihood of artisanal fisherfolks in the study area does not depend on the fisherfolks' marital status, educational level, family size and income.

Reasons for Diversification of Livelihood and Changing Livelihood Strategies

Table 4 Correlation Co-efficient Test of Relationship between Reasons for Diversification of Livelihood and Changing Livelihood Strategies

Variable	Value	P	Decision	Remark
Reasons for diversification of livelihoods	0.103	0.184	NS	Accept Ho

Source: Field Survey, 2005

The result of Correlation co-efficient (PPMC) analysis in Table 4 shows that there was insignificant relationship between reasons for diversification of livelihood and changing livelihood strategies of the artisanal fisherfolks in the study area at 5 percent level of significance. Null hypothesis is accepted which states that there is no significant relationship between reasons for diversification of livelihood and changing livelihood strategies.

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