



Assessment of conflicts activities on livelihood of fishing and fish farming households in Nigeria

B. Fregene | University of Ibadan | Ibadan | Nigeria

J. Idogun | University of Ibadan | Ibadan | Nigeria

M. Bello | University of Maiduguri | Maiduguri | Nigeria

DOI: 10.1481/icasVII.2016.a06c

ABSTRACT

There has been an appreciable decrease in fish catch from inland waters due to conflicts from environmental pollution, religious and tribal clashes; as well as at the household level based on differences in gender roles. Lack of enforcement of fisheries laws and data collection have also resulted in failure to coordinate and restrain the many users, thereby affecting livelihood of fisher folks and food security. However, evidence of conflict on their livelihood and on fish catch and production has not been documented. The study was therefore aimed to identify various forms of conflict, perception of fisher folks and impact on the fishing and fish farming households in Nigeria; and factors influencing conflict. Multistage stratified sampling method was used to select households involved in fishing and fish farming from two States each in the North East (NE) and South South (SS) political zones of Nigeria. Fishing and fish farmers were proportionally and randomly sampled from lists obtained from Agriculture Development Program and Ministry of Agriculture and Natural Resources in each state based on known conflict Local Government Areas. Both primary and secondary data were used for the study. Qualitative primary data were collected through In-Depth Interviews with heads of Fisheries Department and leaders of livelihood groups along the capture fisheries and aquaculture value chains. Structured questionnaires were administered to a sample size of 96 and 44 for fisher folks and fish farmers respectively in NE, while 93 and 117 were sampled among fisher folks and fish farmers respectively in SS; being a total of 350 households. Descriptive statistics and logit model were used for the analysis. Various forms of conflicts, effects on fisher folks livelihood and food security in fishing communities were documented. Types of perception, vulnerabilities, and methods of adaptation to the various forms of conflict were documented. Implication of conflict and migration on the household and fisheries activities as major sources of livelihood were discussed. Types of conflict and productivity of fish differed with political zones. In conclusion, conflict activities had adverse effects on livelihoods and food security of fishing and fish farming households.

Keywords: Perception, Vulnerabilities, Adaptation, Food security

PAPER

1. Introduction

Fisheries resources are a major source of food especially as animal protein for humans and provide employment and economic benefits. According to Food and Agriculture Organisation (2016), in 2013, fish accounted for about 20 percent of animal protein intake in developing countries; Nigeria inclusive. Fisheries can therefore play a role in eradicating extreme poverty and hunger especially in the South-South where most households within the region depends on fishing and fish marketing (Kingdom and Alfred-Ockiya, 2009). Based on the immense role fisheries play to the food security and development of a country such as Nigeria, it is imperative to know that it is being affected by the complex, multi-lingual, multi-cultural diversities of the people. In recent years, these have triggered different forms of conflicts ranging from ethno-religious conflicts to cultural conflicts to political conflicts and to conflict in resource use (Danfulani, 2009). Conflicts take place in fisheries when groups or individuals seek the same resource using different methods or try to utilize the same space for their activities with either party seeking dominance (FAO, 2003). Therefore, conflicts over access and control of fisheries and aquatic resources are a global phenomenon. However, they have particular importance in Nigeria where a significant portion of the population depends on capture fisheries for food and livelihoods. Conflict has led to violence, but avoiding and shunning conflict is also problematic. This is because unresolved problems may flare up again, often with renewed vigour (Salayo et al., 2006). This has been the case in the North East (NE) and South-South (SS) Agro-ecological Zone (AEZ) of Nigeria where unresolved conflict activities have been noted to be a major factor affecting production of fish.

1.1 Problem Statement

Fish catch from inland waters have decreased over the years due to conflicts from environmental pollution, religious and tribal clashes. There has also been inadequate enforcement of fisheries laws and data

collection which failed to coordinate and restrain the many users, thereby affecting livelihood of fisher folks and food security. Livelihoods are now threatened as a result of the depletion of aquatic lives, deforestation of farm lands and loss of biodiversity resulting from overexploitation of existing resources and the resultant pollution (Egbe, 2012). Though there is no specific statistics as to how much conflict has dwindled fish production in the agro-ecological zones but according to Davies (2008) the livelihood of fisher folks which was once solely dependent on fisheries resources, accounting for more than 85% annual income, is now combined with other occupation such as arable farming and trading among several others. These livelihoods play complimentary and supplementary role in stabilizing the economy of fishing communities (Fregene, 2005).

1.2 Justification for Study

The presence of many inland water bodies in the NE and SS provide sources of livelihood from fishing and fish farming. Moreover, FAO (2008) reports that the fisheries sector is valuable and important for employment, livelihood support, poverty reduction, food security as well as foreign exchange earnings. The sector employs men in the main fishing activity/pond construction, while women are involved with the on-shore postharvest activities such as processing, storage and trading. Due to various conflict activities in the region, the fisheries sector has become vulnerable and the livelihoods of most fishers are threatened. However, evidence of conflict on their livelihood and on fish catch and production has not been documented.

1.3 Objectives and Hypothesis of Study

The study was therefore aimed to identify various forms of conflict, perception of fisher folks and impact on the fishing and fish farming households in Nigeria; vulnerabilities, adaptation and factors influencing conflict.

H_{01} = None of the demographic and socio-economic factors have any significant relationship on enhancing conflict activities.

2.0 Methodology

2.1 Sampling Procedure

Multistage sampling method was used to select two geopolitical zones in which conflict activities were more prominent among fish folks and fish farmers. In the NE, Borno and Taraba States were selected, while Delta and Edo States in SS zones. Households involved in fishing and fish farming were proportionally and randomly sampled from lists obtained from Agriculture Development Program and Ministry of Agriculture and Natural Resources in each state based on known conflict affected Local Government Areas (LGAs). Structured questionnaires were administered to a sample size of 96 and 44 for fisher folks and fish farmers respectively in NE, while 93 and 117 were sampled among fisher folks and fish farmers respectively in SS; being a total of 350 households. Both primary and secondary data were used for the study. Qualitative primary data were collected through In-Depth Interviews with heads of Fisheries Department and leaders of livelihood groups along the capture fisheries and aquaculture value chains.

2.2 Data Analysis

Descriptive statistics was used to describe household characteristics. Logit model will be used to analyze factors enhancing conflicts.

3.0 Results and Discussion

3.1 Socio-economic Characteristics

Presented in Table 1 are forms and perceptions of conflicts in NE and SS AEZs of Nigeria. In the NE AEZ, the predominant form of conflict is religious (57.1%), while 25.7% indicated no activity of conflict. The dominant forms of conflict in the SS AEZ range from politics (19.0%) to oil pollution (13.3%) and land ownership (5.7%) which are collectively 'resource control' form of conflict; but 41.4% observed none. The perception of conflict indicated as very severe was 83.6% in NE, but in the SS AEZ main perception of conflict were severe 40.0% and very severe (18.6%). This is in line with the findings of El-Bushra et al (2013) who reported that land disputes such as competition over access to oil-bearing land and to compensation for environmental impact of oil and gas including political manipulation of elections are the major cause of conflict in the south-south AEZ. Arong and Egberé (2013) also reported that oil spills have destroyed the aquatic ecosystem leading to decline of fisheries resource.

The major form of livelihood in the NE was fishing (68.6%) while 31.4% were engaged in fish farming as an alternative (Table 2). In the SS AEZ the major form of livelihood was fish farming (55.7%) and fishing (44.3%). It was observed that people were leaving fishing due to polluted waters resulting in little or no yield. Historically, fishing and agriculture have been the two main occupations in the region. However,

Table 1: Forms and Perceptions of Conflicts in North Eastern and South Southern AEZs of Nigeria

	North Eastern AEZ						South Southern AEZ					
	Borno State		Taraba State		Total		Edo State		Delta State		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Forms of Conflict												
None	21	15.0	15	10.7	36	25.7	37	17.6	50	23.8	87	41.4
Religious	41	29.3	39	27.9	80	57.1						
Land ownership	4	2.8	0	0	4	2.8	17	8.1	7	3.3	24	11.4
Tribal	0	0	0	0	0	0	3	1.4	9	4.3	12	5.7
Oil pollution	0	0	0	0	0	0	0	0	28	13.3	28	13.3
Politics	20	14.3	0	0	20	14.3	14	6.7	28	12.4	40	19.0
River portion	0	0	0	0	0	0	16	7.6	3	1.4	19	9.0
Perception of Conflict												
None	0	0	0	0	0	0	3	1.4	0	0	3	1.4
Not severe	0	0	3	2.9	3	2.9	34	16.2	50	23.8	84	40.0
Severe	0	0	9	6.4	9	6.4	37	17.6	47	22.4	84	40.0
Very severe	86	61.4	31	22.1	117	83.6	13	6.2	26	12.4	39	18.6

after Nigeria's independence in 1960, conflicts between local communities, oil companies, and the federal government started to emerge. As a result of this, communities have come into conflict with oil companies and with the security forces over a range of issues including payments, land acquisition, and environmental damage (Niger Delta Development Commission, 2005). Fishermen were also engaged in fish related activities such as fish processing, fish transportation etc. (Akinrotimi et al., 2007).

The major vulnerability in the NE AEZ was division and crisis caused by the Islamic sect (60%) and the inaccessibility to credit facilities (34.3%). In the SS, the major vulnerabilities were due to inaccessibility to natural resources (42.4%) as a result of either pollution or over-exploitation and the corrupt practices of leaders who seek to amass the wealth and resources for themselves without giving thought to the sustainability of livelihood (41.0%). The major coping strategy in NE AEZ was migration (75%) whereas in the SS AEZ was livelihood diversification. The implication of conflicts on livelihoods of households in the study area was that people were displaced from their homes and forced to undertake other livelihood activities not peculiar to them. As a result this has invariably caused fish production to dwindle in the study area. In view of this, the United Nations Development Project (2007) argues that men and women in the Niger Delta (South-South) feel politically disenfranchised and disadvantaged when compared to the other geopolitical zones of Nigeria. They are frustrated that they cannot legitimately benefit from the oil resources. Therefore, there is a clash of interest among individual, companies and the host communities. For instance, being designated as a "host community" to an oil facility comes with benefits, but historically this practice has exacerbated grievance and fighting among communities and has also led to disputes over "oil" boundaries. Insecurity and volatility in the region have disrupted livelihoods, damaged the ecosystem and created a challenging environment for social and economic development (Environmental Impact Assessment, 2003).

3.2 Test of Hypothesis

Results of the binary logistic regression (Table 3) showed that number of tribes ($p < 0.05$), the type of livelihood and the major cause of conflict ($p < 0.01$) were significant factors enhancing conflict in the NE. In the SS, education ($p < 0.05$) and the major cause of conflict ($p < 0.01$) contributed significantly to conflict activities. This is similar to the findings of Kamilu et al., (2012) who found that the conflict situation in Taraba state cut across level of religion, exposure education, occupation and personal characteristics. In terms of natural resource conflict, El-Bushra et al 2013 reported that in Nigeria, conflict between indigenous and incoming fishermen over sustainable fishing methods in the NE, while in the SS, land disputes such as competition over access to oil-bearing land and to compensation for environmental impact of oil and gas. The Hosmer and Lemeshow test revealed that the logit model regression had an overall goodness of fit. The Cox and Snell R^2 and Nagelkerke R^2 for the northeast showed that the model explained 42% and 62% respectively of the variation in the dependent variable whereas in the south-south 33% and 41% respectively are explained in the variation of the dependent variable.

4.0 Conclusion

Conflict activities vulnerabilities and coping strategies differed among the North East and South-South Agro-

Table 2: Livelihoods, Vulnerabilities and Coping Strategies

	North Eastern AEZ						South Southern AEZ					
	Bornu State		Taraba State		Total		Edo State		Delta State		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Livelihood												
Fishing	58	41.4	38	27.1	96	68.6	66	31.4	27	12.9	93	44.3
Fish farming	28	20.0	16	11.4	44	31.4	21	10.0	96	45.7	117	55.7
Vulnerabilities												
Division by Islamic sect	69	80.2	15	27.8	84	60.0	0	0.0	0	0.0	0	0.0
Inaccessibility to water/land	0	0.0	8	14.8	8	5.7	43	49.4	46	37.4	89	42.4
Bad leadership	0	0.0	0	0.0	0	0.0	8	9.2	27	22.0	86	41.0
Inaccessibility to credit	17	19.8	31	57.4	48	34.3	36	41.4	50	40.7	35	16.7
Coping strategies												
None	19	13.6	16	11.4	35	25.0	37	17.6	50	23.8	87	41.4
Migration	67	47.9	38	27.1	105	75.0	13	6.2	11	5.2	24	11.4
Diversify							20	9.5	28	13.3	48	22.9
Loans/claims							0	0	15	7.1	15	7.1
Solidarity							17	8.1	19	9.0	36	17.1

Table 3: Results of Binary Logistic Regression for North Eastern and South Southern AEZs of Nigeria

	North Eastern AEZ			South Southern AEZ		
	Parameter estimate	S. E.	Significance	Parameter estimate	S. E.	Significance
Education	-0.035	0.046	0.448	0.087	0.043	*0.045
Household size	-0.056	0.047	0.233	0.010	0.021	0.641
Number of tribes	-0.356	0.171	*0.038	0.103	0.117	0.378
Type of fisheries	2.199	0.641	**0.001	-0.051	0.422	0.903
Major cause of conflict	4.730	1.162	**0.000	3.528	0.570	**0.000
Constant	0.484	0.791	0.541	-1.819	0.789	0.021
Hosmer and Lemeshow test			**0.002			*0.020
Likelihood ratio (model X^2)	24.298			18.236		
d.f.	8			8		
Cox and Snell R^2	0.416			0.325		
Ngelkerke R^2	0.616			0.438		
N	140			210		

*= $p < 0.05$ **= $p < 0.01$

ecological Zones of Nigeria. Major causes of conflict include religious, politics and oil pollution. Impact of conflict effects on livelihoods and food security of fishing and fish farming households include inaccessibility to credit and water/land.

REFERENCES

- Akinrotimi, O.A, Onunkwo D.N, Cliffe P.T, Anayanwu P.E and Orokotan O.O (2007) The role of fish in the nutrition and livelihoods of families in Niger Delta, Nigeria, *Intl. J. Trop. Agric. Food. Sys.* 1(4):344 - 351.
- Arong F.E and Egberé M.I (2013) The Effect of the Cost of Militancy and Unrest or Peace Accounting on the Productivity of Private Organizations in Nigeria, *International Journal of Public Administration and Management Research (IJPAMR)* Volume 2, Number 1
- Danfulani, U.D. (2006) The Jos Peace Conference and the indigene/settler Question in Nigerian politics, <http://www.ascle=den.n//pdf/papdanfulan.pdf>.
- Davies, R.M., Davies, O.A., Inko-Tariah, M.B. and Bekibele, D.O. (2008) Mechanization of fish farms in Rivers State, Nigeria. *World Appl. Sci. J.* 3(6):926-929.
- Egbe O.D (2012) Nigeria: State Violence against Agriculture in the Niger Delta. *American International Journal of Contemporary Research* Vol.2 No.3 11pp
- El-Bushra, Judy; Sarah Ladbury and Ukoha Ukiwo 2013 From Design to Implementation: Addressing the Causes of Violent Conflict in Nigeria. *Stability: International Journal of Security & Development*, 3(1): 1, pp. 1-18, <http://www.stabilityjournal.org/articles/10.5334/sta.cy/>
- Environmental Impact Assessment (2003) Country Analysis Briefs: Nigeria Environmental Issues, July. Energy Information Administration, Department of Energy, Washington, D.C
- FAO (2016) The State of World Fisheries and Aquaculture 2016. Contributing to food security and nutrition for all, Rome. 200 pp, <http://www.fao.org/3/a-i5555e.pdf>
- Food and Agriculture Organisation, (2003) The Ecosystem Approach to Fisheries. In: *FAO Technical Guidelines for Responsible Fisheries. No. 4, Suppl. 2*, Fisheries Department, Food and Agriculture Organization, Rome, Italy
- Fregene, B. T. (2005): Economic Status of Fisher Folks on Lagos Lagoon Nigeria. *Nigerian Journal of Forestry*, Vol. 35, No.1: 44-50.
- Kamilu B.K, Fapojuwo E.O and Ayanda I.F (2012) Conflict resolution strategies among farmers in Taraba State Nigeria OIDA *International Journal of Sustainable Development* 05: 01 (2012)
- Kingdom, T. and Alfred-Ockiya, J. K. (2009) Achieving the Millennium Development Goals Through Fisheries in Bayelsa State, Niger Delta, Nigeria. *Asian Journal of Agricultural Sciences* 1(2): 43-47. Niger Delta Development Commission (2005) Niger Delta Regional Development Master Plan: Our challenge-Their Future, January. Niger Delta Development Commission
- Nwankwo, Beloveth Odochi (2015) The Politics of Conflict over Oil in the Niger Delta Region of Nigeria: A Review of the Corporate Social Responsibility Strategies of the Oil Companies, *American Journal of Educational Research* 3.4: 383-392
- Salayo, N., Garcés, L., Kuperan, K.V., Ahmed, M., (2006) Fish fights over fish rights: non-traditional security issues in Southeast Asia, In: *Studying Non-traditional Security in Asia: Trends and Issues*. Marshall Cavendish, Singapore
- United Nations Development Project (2007) Niger Delta Situation Assessment and Opportunities for Engagement, Mission Report, April (Restricted Circulation), United Nations Development Program, Abuja