

The Role of Communities in Environmental Management: A Case study of Khana L.G.A., Rivers state, Nigeria

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Abstract— The Role of Communities in Environmental Management in Khana Local Government Area of Rivers state is a study aimed to measure the extend of Communities awareness, involvement in environmental improvement on Industrial actions and Oil spill management promised by Government and Industrial administrators. The interest to reveal and measure current situation on the clean-up project in the Land of Ogoni as pertained to host Communities, particularly in Khana Local Government Area though other Communities outside the LGA within the land of Ogoni participation motivated this research work. The Role of Communities in Environmental Management recorded significant facts in relation to the Area of study. 200 copies of questionnaires were distributed with clarity within the host communities, 191 respondents ascertained there communal fact on their communities while the rest population never met absolute validity on the primary data. 80.20% of respondents indicated that they are not aware of the Implementation of recommendations of the United Nation Environmental Programme (UNEP) to 19.80% of the research population that indicted partial awareness. 183 (96.04%) respondents noted that the damages are caused by industrial action and Oil spillage over 7 (3.96%) respondents' population which are indifference supported by recent documentations and evaluation that does not indicate any action plan or activities in the area [1]. From all indications and data analysis, there is no active implementation plan recorded in the Communities within the local government area of the Rivers with strong related facts from other local councils in the land of Ogoni. Direct community participations and evaluations is recommended between the government, SPDC and local citizen while representatives from those communities should be second-placed in effective interaction on performance and achievement.

Index Terms— Environment, Oil Spillage, Industrial Action, Deforestation, Agricultural activities, Overpopulation and Management

1. INTRODUCTION

Nigeria is confronted with major environmental problems, the most important of which are: deforestation, drought and desertification, soil and coastal erosion, water pollution, oil pollution, water hyacinth invasion, loss of biodiversity, flooding, urban decay, and industrial pollution [2]. The communities in Khana Local Government Area are predominantly low on the environmental information on management and environmental sustainability. United Nation Environmental Programme (UNEP) assessed that the environmental restoration of Ogoniland would require coordinated efforts on the part of government agencies at all levels, industry operators and communities. UNEP also presented its recommendations as a major opportunity to bring new investment, employment opportunities and a culture of cooperation to Ogoniland in addition to driving improvements in the environmental and health situation on the ground [3].

levels, industry operators and communities. UNEP also presented its recommendations as a major opportunity to bring new investment, employment opportunities and a culture of cooperation to Ogoniland in addition to driving improvements in the environmental and health situation on the ground [1]. The movement and efforts of government and the multi nationals for enhancing the environment motivated the interest to ascertain the measure and extend of sustainable management done within the coast and environment of Ogoniland using the local government area as case study for the Role of Community in Environmental Management and the community participations and awareness.

1.1 Research Hypotheses

- (HO): There is no significant relationship between Community Environmental Management and Oil spillage
(HA): There is significant relationship between Community Environmental Management and Oil spillage
- (HO): There is no significant relationship between Community Environmental Management and Industrial actions
(HA): There is significant relationship between Community Environmental Management and Industrial actions
- (HO): There is no significant relationship between Community Environmental Management and Deforestation

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UNEP (United Nation Environmental Programme) assessed that the environmental restoration of Ogoniland would require coordinated efforts on the part of governmental agencies at all

(HA): There is significant relationship between Community Environmental Management and Deforestation

5. (HO): There is no significant relationship between Community Environmental Management and Agricultural activities

(HA): There is significant relationship between Community Environmental Management and Agricultural activities

6. (HO): There is no significant relationship between Community Environmental Management and Overpopulation

(HA): There is significant relationship between Community Environmental Management and Overpopulation.

2 RELATED WORKS

The challenges of Environmental Problems in Nigeria studied and published by Omofonmwan S. I. and Osa-Edoh G. I., department of Geography and planning and Educational Foundation, Ambrose Ali University in the Journal of Humidity and Ecology 2008, addressed this challenge of environmental problems largely. The study addressed the environmental problems in Nigeria in Desertification, Urbanization, Deforestation, Overpopulation and Pollutions and the way forward.

Environmental protection techniques need to be cultured, home-grown and the framework should be "Bottom – Up". It should be community based. The framework should be organized at the village or community level. A number of community should be grouped together at the (political) ward level. From ward level to Local Government Level, Environmental protection agents at the local government level should be empowered to punish every offender. Environmental awareness education should be included in the primary and post primary school curricula [4, 5].

Communities Role in Sustainable Forest Management in Cameroon; Managers or Participants was studied by Njandome Irene Monsi at High Degree Committee of Ritsumeikan Asia Pacific University. The local communities are not performing their role in forest managing as they ought to. They have limited role in the decision making process, planning, implementation and evaluation of community forests. This is vital for their empowerment to manage the resources themselves. In fact the decision making process is top-to-bottom, where the government officials make decisions and impose them on the local people who act as observers. The local people role in management is more or less passive and so they are less influential; they are therefore participants, not managers of the forest. Their main role in planning is in the preparation of the simple management plan of activities for their community forest, since it is a

requirement in acquiring the community forest in the first place [6].

3. MATERIAL AND METHOD

3.1 Research Area

Khana is a Local Government Area in Rivers State, Nigeria. Its administrative seat is in the town of Bori. It has an area of 560 km² and a population of 294,217 at the 2006 census. The postal code of the area is 504 [7].

Bori is a city in Khana Local Government Area, Rivers State, southern Nigeria It is the birthplace of author and activist Ken Saro-Wiwa Bori is the traditional headquarters of the Ogoni people. Bori serves as a commercial centre for the Ogoni, Andoni, Opobo Annang and other ethnic nationalities of the Niger Delta Benue Congo. Bori is the host of the Ken Saro Wiwa Polytechnic Bori [8].

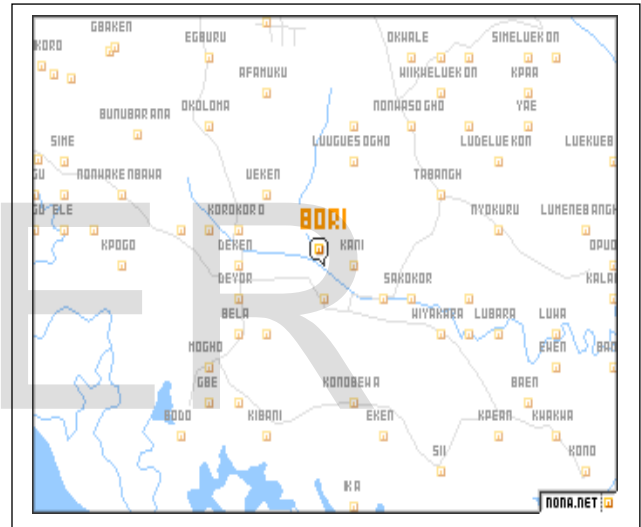


Figure 3.1: Map of Khana LGA.

Source: [9]

The Geographic coordinates of Bori, Nigeria; Latitude: 4°40'34" N Longitude: 7°21'54"E, Elevation above sea level: 18 m = 59 ft. Coordinates of Bori in decimal degrees Latitude: 4.6762900° Longitude: 7.3651900° Coordinates of Bori in degrees and decimal minutes Latitude:4°40.5774'N Longitude: 7°21.9114' E [9].

The Bori Urban Area has many adjoined communities including Bori Town, Bua Kaani, Yeghe, Zaakpon, Wiiyaakara, Betem 3, Kor, Kpong, and Bo-Ue. The Kaani people built and donated the first community secondary school in Nigeria to the Government of the Old Rivers State of Nigeria. Bori is the second largest city in Rivers state after Port Harcourt and the commercial center of the Rivers southeast senatorial district in Rivers state. Bori is an Agricultural hop in Rivers state involve in the production of Yams, Garri, corn, cocoyam, palm oil and vegetables. Also available are fishes and meat. The Bori main market is a daily

market where these products can be bought in large quantities for local or export market [8].

The hypotheses were tested at 0.05% level of significance with the decision rule that state that at F0.95 greater than 0.5 we accept the null hypothesis and reject the alternative hypothesis. Primary data were collected with the distribution of 200 copies of Questionnaires, validity of 191 respondents were used for results computations with 9copies were invalid. SPSS version 20 software were used for multi-variant test and analysis of independent variables (Xn=1-5) against the dependent variable Y. The Role of Community in Environmental management is the dependent variable in this study while independent variables are Oil Spillage (X1), Industrial actions (X2), Deforestation (X3), Agricultural activities (X4) and overpopulation (X5). Hence, an independent variable makes a significant unique contribution to the prediction of the dependent variable when the significant value is less than 0.05 ($p < 0.05$)

Data were collected using three Likert scaling system expressed as follows: Agree (A) 3 points, Neutral (N) 2 points, Disagree (D) 1 points. Data collected were subjected to multiple regression analysis of a linear model expressed as follows:

$Y = E_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5$ where
Y = the Role of Communities in Environmental Management

TABLE 1.0
Socio-Demographic Characteristics of Respondents

Categories	Frequency (N 191)	Percentage (%)
Gender		
Male	112	58.60
Female	74	38.70
Age of participants		
18 & Above	14	0.74
19-24	24	12.57

And the independent variables are examined and tested for the dependent variable.

- X1 = Oil Spillage
- X2 = Industrial actions
- X3 = Deforestation
- X4 = Agricultural activities
- X5 = Overpopulation

4. RESULT PRESENTATION AND DISCUSSION
4.1 Respondents' Characteristics and Classifications

Table 1.1 is respondents' characteristics and classifications. The survey is computed based on the hundred and Ninety one (191) responses from participants visiting and residing citizen of Bori City and communities in the Local Government Area, Rivers state. From the study population, thirty six (74) were females (38.7%), 112(58.6%) are males without gender were 5-respondents that account for the rest 2% of the valid respondents. The participants that were 18 years and below of age were 14(0.73%), 24(12.56%) were 19-24 years, 25-29 years were 41(21.46%), 104(54.45%) were of age 30 and above. The above analyses, 41.36% of the study population were young adults between the ages of 20-29years. The rest 58.64% responses were drawn from the adult populations

25-29	41	21.47
30 & Above	104	54.54
EDUCATIONAL STATUS		
No formal education	0	0
Pri. & post pri. Education	18	9.90
Undergraduate	11	5.94
Grad. & Post graduate	160	84

Source: Field Survey, 2017

Table 2.0 The Role Community in Environmental Management a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
VAR Y ₀	15.164	1.669		9.088	.0

4.2 Hypothesis Testing and Results

Table 3.0 Correlations for The Role of Community in Environmental Management and the Independent Variables

	VAR Y	VAR X1	VAR X2	VAR X3	VAR X4	VAR X6	
Pearson Correlation	VAR Y0	1.000	-.091	-.067	.037	-.094	-.219
	VAR X1	-.091	1.000	.095	.062	-.261	.203
	VAR X2	-.067	.095	1.000	.034	.122	.169
	VAR X3	.037	.062	.034	1.000	.008	.184
	VAR X4	-.094	-.261	.122	.008	1.000	.091
	VAR X5	-.219	.203	.169	.184	.091	1.000
Sig. (1-tailed)	VAR Y0		.106	.178	.308	.098	.001
	VAR X1	.106		.095	.199	.000	.002
	VAR X2	.178	.095		.321	.046	.010
	VAR X3	.308	.199	.321		.454	.005
	VAR X4	.098	.000	.046	.454		.106
	VAR X5	.001	.002	.010	.005	.106	
N	VAR Y0	191	191	191	191	191	191
	VAR X1	191	191	191	191	191	191
	VAR X2	191	191	191	191	191	191
	VAR X3	191	191	191	191	191	191
	VAR X4	191	191	191	191	191	191
	VAR X5	191	191	191	191	191	191

Table 3.0 and 2.0 shows the correlations and the coefficients of the independent variables in relationship with the dependent variable of the effect of cost on the usage of mobile telephone services in Nigeria. The independent variables are Call rate (X1), Time spent (X2), Service reliability (X3) and Cost of Voucher (X4) on the Cost of using mobile telephone services in Nigeria (Y).

1. Ho: There is no significant effect on Oil Spillage and The Role of Community in Environmental Management
 HA: There is significant effect on Oil Spillage and The Role of Community in Environmental Management

From Table 2.0; The Unstandardized coefficient of Oil Spillage variable X1 is 0.102 with t-value of 1.003 and at statistical significance p-level of 0.317 which is greater than 0.05. Hence, the study rejects

the alternative hypothesis and accepts the null hypothesis. Oil Spillage alone variable has no significant effect on The Role of Community in Environmental Management where $\beta = -1.102$ $P > 0.05$; we therefore conclude that Oil Spillage has no effect on The Role of Community in Environmental Management. This also means that Oil Spillage variable alone has no effect on the Role of Community in Environmental Management.

1. Ho: There is no significant effect on Industrial action and the Role of Community in Environmental Management.

HA: There is significant effect on Industrial action and the Role of Community in Environmental Management.

From Table 2.0, The Unstandardized coefficient of Industrial action variable X2 is -0.025 with T-value -0.221 and at statistical significance p-level of 0.826 which is greater than 0.05. Hence, the study accepts the null hypothesis and rejects the alternative hypothesis. Industrial action variable has no significant effect on the Role of Community in Environmental Management. Where $\beta = -0.025$ $P > 0.05$; we therefore conclude that Industrial action has no effect on the Role of Community in Environmental Management.

2. Ho: There is no significant effect on Deforestation and the Role of Community in Environmental Management.

HA: There is significant effect on Deforestation and the Role of Community in Environmental Management.

From Table 2.0, The Unstandardized coefficient of Deforestation variable X3 is 0.167 with T-value 1.116 and at statistical significance p-level of 0.266. Hence, the study accepts the null hypothesis and rejects the alternative hypothesis. Deforestation variable has positive influence on the Role of Community in Environmental Management. Where $\beta = 1.116$ $P > 0.05$; we therefore conclude that Deforestation has no significant effect on the Role of Community in Environmental Management.

3. Ho: There is no significant effect on Agricultural activities and the Role of Community in Environmental Management.

HA: There is significant effect on Agricultural activities and the Role of

Community in Environmental Management.

From Table 2.0, The Unstandardized coefficient of Agricultural activities variable is -0.209 with T-value of -0.209 and at statistical significance p-level of 0.214 which is greater than 0.05. Hence, the study accepts the null hypothesis and rejects the alternative hypothesis. Agricultural activities variable has no significant effect on mobile call service usage where $\beta = -.209$ $P > 0.05$; we therefore conclude that Agricultural activities has no significant effect on the Role of Community in Environmental Management.

4. Ho: There is no significant effect on Overpopulation and the Role of Community in Environmental Management.

HA: There is significant effect on Overpopulation and the Role of Community in Environmental Management.

From Table 2.0, The Unstandardized coefficient of Overpopulation variable is -0.228 with T-value of -2.757 and at statistical significance p-level of 0.006 which is less than 0.05. Hence, the study accepts the alternative hypothesis and rejects the null hypothesis. Overpopulation variable has significant effect on the Role of Community in Environmental Management where $\beta = -0.228$ $P < 0.05$; we therefore conclude that Overpopulation has significant effect on the Role of Community in Environmental Management.

Table 4.0 Model Summary for The Role of Community in Environmental Management

Model	R	R Square	Adjusted R Square	Std. Error of Estimate	Change Statistics				
					R Square Change	F Change	df 1	df 2	Sig. F Change
1	.255a	.065	.040	2.13669	.065	2.584	5	185	.028

a. Predictors: (Constant Y), VAR X5, VAR X4, VAR X3, VAR X2, VAR X1

From Table 4.0, the study found that the independent variables combined were in relationship with the dependent variable of 0.255

which is a strong positive relationship, in addition to the contribution of all independent variables to the dependent variable with R-square of 0.065. This indicates that the independent variables combined account for 6.5% percentage of the change in the behavior of the dependent variable (The Role of Community in Environmental Management ; A case study of Khana Local Government Area, Rivers, Nigeria), and others variables associated but not tested in this research work account for the remaining percentages, while the statistical independent constructs amounted to the impact of these variables combined on the dependent variable through the adjusted R-square 0.065

Table 5.0 The Role of Community in Environmental Management ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
1	58.977	5	11.795	2.584	.028 ^b
	844.604	185	4.565		
Total	903.581	190			

a. Dependent Variable: VARY

b. Predictors: (Constant), VAR X5, VAR X4, VAR X3, VAR X2, VAR X1

The ANOVA table 5.0 report on the general model. As Probability value (P) is less than 0.05, the model is significant. Thus, the combination of the variables significantly predicts the dependent variable ($F=2.584$; $P=0.028 < 0.05$). The table shows that the collective influence of all aspects of The Role of Community in Environmental Management variables (Oil Spillage, Industrial action, Deforestation, Agricultural activities and Overpopulation) have significant influence on the Role of Community in Environmental Management. It indicates that the specified model and data are well fit in explaining the influence and reliable for decision making on The Role of Community in Environmental Management in Khana Local Government Area, Rivers State, Nigeria.

Table 6.0 Ranking Correlation of Independent Variables

Independent variables	Correlation significant	Ranking
Overpopulation (X5)	0.001	First
Agricultural activities (X4)	0.098	Second
Oil Spillage (X1)	0.106	Third
Industrial actions (X2)	0.178	Fourth
Deforestation (X3)	0.308	Fifth

It's obvious from table 6.0 that Overpopulation (X5) variable has the highest influence on the Role of Communities in Environmental Management with a value of 0.001, followed by Agricultural activities (X4) with a value of 0.098, Oil spillage (X1) with 0.106, Industrial (X2) with the value of 0.178 and Deforestation of value of 0.308.

4.3 Discussion of Results

The research work on the Role of Communities in Environmental Management revealed many comparative results of independent variables on the Role of Communities in Environmental Management in Khana Local Government Area of Rivers state. Oil spillage and Industrial actions effects were placed within the third and fourth place based on the no management plans and actions are in place in Khana Local Government Area and the region of damages in that regards.

4.3.1 The Role of Communities in Environmental Management (Y)

From Table 2.0 and 3.0 correlations of independent variables and the Role of Communities in Environmental Management (dependent variable, Y), Overpopulation variable (X5) shows the third significant correlation figure compared to other variables and the dependent variable of 0.006, followed by Agricultural activities (X4) 0.098, Oil Spillage (X1) 0.106 then Industrial action (X2) 0.175 and Deforestation (X3) 0.308. Table 4.0 is the Role of Communities in Environmental Management model summary shows the relationship of the independent variables at R-value of 0.225 (22.5%) and the R² – value 0.065 (6.5%) which indicates that the variables as a whole accounted for 6.5% changes and significance on the Role of

Communities in Environmental Management while the rest percentage is measured by other factors not study in this work. Table 4.5 is ANOVA for the Role of Communities in Environmental Management shows the significant of the model as a whole at a p-value $0.028 < 0.05$ the error allowed, indicating the combined effect of the independent variables on the Role of Communities in Environmental Management in Khana Local Government Area, Rivers state.

5. CONCLUSION

Having examined the Role of Communities in Environmental Management in Khana Local Government Area of Rivers state it was noteworthy and most significant and necessary to note that in spite of the fact that all these variables significant clearly indicated no improvement and unawareness of the area population of any action activities in their communities. From Table 2.0 and 6.0 coefficient of independent variables and the Role of Communities in Environmental Management (dependent variable Y), Agricultural activities variable (X3) correlate positively 0.167, followed by Overpopulation (X5) -0.228, Agricultural activities (X4) -0.209 then Oil spillage (X1) -0.102 and Deforestation (X3) -0.025. Table 3.0 is the Role of Communities in Environmental Management model summary shows the relationship of the independent variables at R-value of 0.225 (22.5%) and the R² – value 0.065 (6.5%) which indicates that the variables as a whole accounted for 6.5% changes and significance on the Role of Communities in Environmental Management while the rest percentage is measured by other factors not study in this work. Table 4.0 is ANOVA for the Role of Communities in Environmental Management shows the significant of the model as a whole at a p-value $0.028 < 0.05$ the error allowed, indicating the combined effect of the independent variables on the Role of Communities in Environmental Management in Khana Local Government Area, Rivers state.

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