

## **Environmental laws and their enforcement in the oil and gas industry in the Niger Delta, Nigeria**

Urho, C.S. Oyegun, C. U and Elenwo, E.I.

*Department of Geography and Environmental Management, Faculty of Social Science University of Port Harcourt, P.M.B.5323, Choba, Rivers State, Nigeria*

---

**Abstract:** Oil and gas companies' degradation of environment through pollution, gas flaring, water, air, ecosystem devastation, worrisome to ascertain whether they comply to laws/ regulations guiding their operations. Study examined environmental laws and enforcement in oil and gas industry in the Niger Delta. Cross sectional research design was adopted. Primary and secondary data sources used. Analysis of Variance/Duncan Post Hoc; Spearman rank Correlation and the Student t-test analyse used. Results showed, significant variation in the enforcement of laws by oil and gas companies; F-ratio 1.350 at 0.258 and p-value 0.05,  $H_0$  accepted. Compliance by oil and gas companies to joint venture agreement  $H_0$  rejected,  $H_1$  accepted; Duncan analysis showed mean ranges; 3.8350 and 4.1880, P-value 0.05 at 0.009 significance. Non-compliance to oil and gas laws by IOCs across study area,  $H_0$  rejected,  $H_1$  accepted showing significance relationship between level of enforcement. Nigeria oil and gas laws differ from USA and Europe; t-value 2.324 higher than P-value 0.05,  $H_0$  rejected,  $H_1$  accepted. Awareness of oil and gas laws across the study area; F-value 0.571 at 0.05 and Duncan analysis showed 0.197 differences amongst states. Perceived effects of enforcement by agencies of government showed significant variation in enforcement, F-ratio 7.03 at 0.05 probability,  $H_0$  rejected,  $H_1$  accepted, Duncan analysis showed distribution levels 0.0325; 0.052; and 0.126 at  $p < 0.05$ . Other findings; laws and regulations were faced with challenges which made compliance difficult; 72.5% agreed. Laws and regulations did not achieve set mandate; 62.3.0% agreed. About 79.05% agreed oil and gas laws are merely on paper and agencies lack competence to enforce laws. These heightened agitations /restiveness in the region. Study recommends; Government to review functions of ministries/ agencies either merging/abolishing those with same roles. National/State law makers to review environmental laws, repealing colonial/obsolete laws and replace with local content-laws. Funding, institutional strengthening/capacity building of enforcement agencies/ministries given priority attention.

**Keywords:** Environmental -Laws, Enforcement, Oil & Gas, Industry, Niger Delta

---

### **1. Introduction**

Scholars, individuals, corporate institutions and Non-Governmental Organisations have expressed concern over the complexities which surround the violation of oil and gas regulation and problems of compliance by the oil and gas industry in the Niger Delta. This paper addresses these constraints. It agrees with scholars like Okonnah, (1997), Usman (2001), Oгри (2001), Okonta, Ike and Douglas (2001), Omorogbe (2011), Ogbonnaya, (2011), Elenwo and Akankali, (2014), Raji and Abejide, (2014), Agbonifo, (2016), Elenwo and Urho, (2017), Elenwo and Ochege, (2018) who have shown concerns about constant violations of oil and gas laws and regulations by major oil companies notably Shell-BP, Total-Fina ELF, Agip (Eni-group) and Chevron in the Niger Delta region. Within the legal framework required by Nigerian laws over pollution and environmental degradation, this paper discusses some of the major oil and gas regulations with the aim of finding a lasting solution to the problems of violations and non-compliance. The Nigerian government since independence seemed to have taken certain practical steps aimed at maximizing the oil wealth. In order to achieve this, the government has laid a strong foundation for the development of petro-business in the country through certain petroleum laws that encouraged granting of licenses to both indigenous oil companies like Henry Stephen Delta Oil, Niger Oil Resource, and Niger Petroleum Company; later more oil multinational companies were permitted to join the existing ones (Hassan, 2006). It should be noted that in order to enhance a clean environment and political peace within the oil-producing communities of the Niger Delta, the Nigerian government had also made some environmental legislations to manage and control the operations of Shell-BP, Chevron Nigeria and other oil multinational corporations. This step was taken by the government in the early 1960s, bearing in mind the fact that oil drilling involves the degradation of the environment that affects their natural vegetation, as well as causing pollution to waters and rivers (Usman, 2001). This shows that the government was pre-emptive of high risk of pollution that is associated with the production of oil which may occur through mechanical failures or sabotage of oil pipelines. The task of effective enforcements of environmental protection laws in Nigeria begins with the understanding of the linkage between human activities and dynamics within the ecosystem. If human activities clearly threaten to

overwhelm the sustaining capabilities of the natural system as available data at the disposal of scientists has shown, either nature must be technologically redesigned or human beings must alter the destructive pattern of human behavior through the development of an effective legal framework (Adegoke, 2001).

The aim of this paper is to examine the enforcement of environmental laws or regulations in the oil and gas industry in the braced States of the Niger Delta, Nigeria.

The objectives of the study are to:

- (i) examine the nature and type of environmental laws or regulations applicable to the oil and gas industry in the Niger Delta region.
- (ii) compare environmental laws in Nigeria with those of Europe and America?
- (iii) Analyse the compliance of oil and gas companies in the Niger Delta to enforcing the environmental laws/regulations in the joint venture arrangement with government.
- (iv) determine the agencies of government charged with the enforcement of environmental laws in the oil and gas industry and how well they have performed this function.
- (v) determine the awareness of host communities about environmental laws in the oil and gas industry and the extent of their enforcement in the Niger Delta.

The following hypotheses were tested in this research for each of the State capital in the six states of the braced Niger Delta.

- (1). There is no significant variation in the enforcement of environmental laws or regulation by oil and gas industry in the braced states of the Niger Delta.
- (2). There is no significant variation in compliance of oil and gas companies to the joint venture regulations.
- (3). There is no statistically significant correlation between level of enforcement of environmental laws and noncompliance of same in the study area
- (4). Environmental laws in Nigeria do not significantly differ from those in Europe and America.
- (5). Awareness of host communities about environmental laws in the oil companies do not vary across the study area.
- (6). Perceived effects of enforcement agencies do not vary across the study area.

## 2. Method of study

The research utilized cross sectional survey research because it is a snap shot of the sampled population in the Niger Delta Region. This structure is relevant for this research since it is descriptive and records information existing in the population without manipulating the variables. The sources of data for this study were primary and secondary sources. Data obtained from the field using questionnaire instrument constituted the primary source of data. In addition, secondary data were obtained from government organizations such as the National Population Commission (NPC, 2006), National Bureau of Statistics (NBS, 2012) and International Organizations such as the United Nations (UN) and previous studies carried out by eminent scholars in the field of environmental law. The research adopted inclusive/exclusive criteria to select host communities from the local government areas in the states as well as the capitals of the braced states of the Niger Delta Region. Inclusion criteria were characteristics that the prospective subjects must have if they are to be included in the study, while exclusion criteria were those characteristics that disqualify prospective subjects from inclusion in the study. In this sense, inclusion and exclusion criteria are usually written in a positive way: if a participant has inclusion criteria, they are in; if they have exclusion criteria, they are out. The state capitals to be selected are inclusive because of their peculiarity in oil and gas activities and were Yenagoa, Port Harcourt, Uyo, Calabar Municipality, Benin-city and Asaba, while local government to be selected were Port Harcourt, Obio/Akpor, Eleme, Calabar South, Benin city, Egor and Ikpoba-Okha in Edo State and Asaba in Delta state. These were projected using the growth rate of 2.8% (NPC, 2006).

**Table 1.1: Population of LGAs in State Capitals of the Niger Delta (BRACED) States 2006-2020**

State	Local Government Areas in State capitals (inclusive/Exclusive Criteria)	Population (Census 2006)	Total Population Projected estimate 2020	Sample Size
Bayelsa	Yenagoa	352,285	504,434	400
Rivers	Port Harcourt	538,558	771,157	400
	Obio/Akpor	462,350	662,035	400
	Eleme	190,194	27,337	399
Akwa Ibom	Uyo	305,961	438,103	400

Cross Rivers	Calabar Municipal	183,681	263,011	399
	Calabar South	191,515	274,228	399
Edo	Benin city	374,515	536,265	400
	Egor	340,287	487,254	400
	Ikpo-Okha	372,080	532,778	400
Delta	Asaba	150,032	214,829	399
<b>Total</b>		<b>3,461,458</b>	<b>4,956,431</b>	<b>4396</b>

Source: Adapted from National Population Commission, 2006.

### 3. Sampling Technique and Sample Size Determination

A random selection of community in each state capital in the braced states was adopted. The Taro Yamane formula was used to get a sample size of 400 head of households, for each State capital. The study instrument was administered to heads of households who are knowledgeable about oil and gas industry and activities in the states in the sampled state capitals/local government areas in the study area. Taro Yamane (1967) provides a simplified formula to calculate sample size where N is population size and e is the level of precision. The formula for Taro Yamane;

$$n = \frac{N}{\{1 + N(e)^2\}}$$

Where n = sample size

1 = constant

N = Population size = 456,503

e = Error margin, 5% = 0.05

Simple random sampling technique was used to randomly select the Local Government Areas where participants were drawn for the study because it gives an equal and non-zero opportunity for sample to be selected (Oyegun, 2003). Six local government areas and six state capitals were randomly selected by inclusive/exclusive criteria because of the oil/gas activities engaged in the area, which formed the sampling frame. Systematic sampling technique was used to select the communities in the local government areas where questionnaires were administered. This was done by listing and numbering the communities' local government area. The lottery method (Oyegun, 2003) was used to randomly select the first element, subsequently, the sampling interval was added to the serial number of the chosen element as well as other elements until the desired elements were selected. This technique was utilized because it is quite representative of the total population. Afterward, simple random sampling technique was used to randomly select households for questionnaire administration. The total projected population estimate of the selected local government area was 2,739,016. This was derived from the projection of the 2006 population census figures which was 1,912,866 using a growth rate of 2.8% (NPC, 2006). The total estimated household population was 456,503 using an average household size of six (NBS, 2012). From the total household population of each LGA, the Kumar (1976) stratum allocation formula as stated:

$$n_h = \frac{n(N_h)}{N}$$

Where  $n_h$  = Stratum allocation

n = Sample size (400)

$N_h$  = Stratum population

N = Overall population (456, 503)

Using this formula, the stratum allocation for the selected Local Government Areas in the state capitals are seen in Table 1.2. Furthermore, Table 1.3 was drawn through inclusive /Exclusive criteria from the list of oil/gas companies operating in the sampled areas as well as government agencies. The number of Managers /HSE staff of the oil/gas companies and Heads/Senior officers in the government agencies was determined and used for the key person's interviews.

**Table 1.2: Summary Statistics of the Target population (Heads of Households)**

States	Local Government Area(s) in state capital	LGA Selected (inclusive/exclusive criteria)	Population Projected estimate 2020	Approximate number of estimated household	Approximate household sample size
Bayelsa	One (1)	Yenogoa	504,434	84,072	74
Rivers	One (1)	Port Harcourt	771,157	128,526	113
Akwa Ibom	One (1)	Uyo	438,103	73,017	64
Cross River	One (1)	Calabar Municipal	263,011	43,835	39
Edo	One (1)	Benin City	536,265	89,378	79
Delta	One (1)	Osaba	214,829	35,805	31
<b>TOTAL</b>	<b>Eleven (6)</b>	<b>Six (6)</b>	<b>2,618,677</b>	<b>454,633</b>	<b>400</b>

Source: Adapted from National Population Commission, 2006.

**Table 1.3: Summary of Statistics of oil/gas companies/Government Agencies/NGOs interviewed in the study Area**

States	Selected oil/gas companies	Selectd Government Agency/NGO	Number of Staff Randomly Selected for interview	Percentage Number of Staff interviewed
Bayelsa	7	3	70	15
Rivers state	19	7	130	27
Akwa-Ibom	12	4	110	23
Cross Rivers	5	5	45	10
Edo State	5	3	30	8
Delta State	12	8	80	17
<b>Total</b>	<b>60</b>	<b>30</b>	<b>475</b>	<b>100</b>

Source: Researcher's Computation, 2020.

#### 4. Data Collection and Instrumentation

The study utilized both primary and secondary data. The primary data were acquired by using a well-structured pre tested questionnaire, focus group discussions and key person's interviews. While the secondary data were acquired from the national population census reports, relevant journals and books found in the libraries and internet. The research instrument was used in collecting data from the field. About 400 copies each of the questionnaires were administered to the respondents in the local government and state capitals of the braced Niger Delta region. The questionnaire consisted of two sections; section A dealt with demographic and socio-economic issues, while section B dealt with specific issues as they pertain to environmental laws and regulatory compliance and awareness in the State capitals of the braced in Niger Delta Region.

#### 5. Data Analysis:

In line with the objectives of this study, descriptive statistics such as simple percentages, cross tabulations and charts were used to explain the results of the analyses while inferential statistics such as analysis of variance (ANOVA), Duncan Post Hoc Test, and Student T statistics and t-test were used to test the hypotheses and level of significance of samples of observations for the study. The Duncan Post Hoc test was employed when there is need to show pattern of variation in the Analysis of Variance (ANOVA), while the Student T-test statistics was used to test the level of significant difference between the levels of enforcement of environmental laws in Nigeria with that of Europe/USA for the study. Thus, this statistical tool was employed because it aids in the comparisons between means of samples whether they differ from each other (i.e. comparing the means of observations of environmental laws in Nigeria with those of Europe/U.S.A). Furthermore, the information filled in the questionnaires were collated and analyzed by the use of mean and rank order statistics for research objectives 1, 2, 3, 4 and 5. The Likert scale for data collected was as follows:

Strongly Agree (SA) -5 points, Agree(A) -4 points, Disagree(DA) -3 points, Strongly Disagree(SD) -2points, and Undecided (UD) -1 point.

**Weighted Mean:** This was calculated by multiplying the frequency of each point in the scale with its quantifier for all points and dividing by the total number of respondents. The criterion mean is the average of all the quantifiers, i.e.  $\frac{5+4+3+2+1}{5} = 3.0$

## 6. Results

### Objective One: Nature and Types of Environmental Laws Applicable to Oil & Gas in Niger Delta (ND) (Residents)

The question interrogating the nature and types of environmental laws and regulations in Niger Delta are displayed on Table 1.4 and Table 1.5. The distribution on Table 1.4 revealed that statements 2, 3, 4, 5, 6, 7, 8 and 9 were all not agreed to by sampled residents because of low weighted mean values of 2.42, 2.38, 2.46, 2.43, 2.40, 2.46, 2.40, and 2.40 respectively. These statements based on weighted mean values showed that the responses received were not above 2.50 which indicated that the statements were strongly disagreed amongst majority of sampled residents in the study area. However, the weighted mean for statement 1 (3.80) was tending towards 4.00 and this was accepted and it thus mean that (62.3%) of sampled residents agreed to this statement. Also, the weighted average (mean) of 3.64 indicating acceptance revealed that (59.0%) agreed to this statement. Thus, laws and regulations put forward to checkmate the activities of oil and gas have not achieved its mandate for establishment as indicated by majority of sampled respondents in the study area. The residents' opinions concerning the 1999 Constitution on the protection of lives and individual rights was illustrated on same Table 1.4.

The distribution on Table 1.5 for responses amongst the NGOs/companies showed that statements 1 to 10, except statements 6, 7, and 9 were accepted. It does mean that all respondents (100% ) (4.57) believed the 1999 constitution guarantees protection of lives and individual rights; about (78.9%) (4.27) of sampled respondents believed that Oil pipeline Act enacted for regulation has fulfilled its mandate; also about (78.0%) (4.22) agreed to the statement on Petroleum Act; More so, about (100%) (4.66) of sampled respondents agreed that EIA enacted to delineate projects has achieved this core mandate in Niger Delta (ND); also about (73.0%) (4.10) agreed that the EGASPIN Act has been effective. Also about (71.0%) (4.03) of sampled respondents agreed that Oil in Navigable Water Safeguarding pollution has been effective since it became operational. However, statements 6, 7 and 9 that were not accepted and this indicated that (62.0%) (3.35), (67.0%) (3.15) and (69.0%) (2.95) disagreed with these statements in the study area. The distribution of the opinion of sampled NGOs/Companies concerning the stand of the 1999 constitution in protecting lives and individual rights was illustrated on same Table 1.5.

Table 1.4: Nature and Types of Environmental Laws & Regulations in ND (Residents)

S/N	LAWS & REGULATIONS	SA	A	D	SD	UND	WA	R
1	The 1999 Constitution guarantees the protection of lives and individual right, but it is not the case in Niger Delta (ND)	205 51.3%	44 11.0%	65 16.3%	39 9.8%	47 11.8%	3.80	Agreed
2	Oil pipeline Act was enacted to regulate oil/gas company pipeline routes, and has fulfilled this mandate in the ND region	19 4.8%	38 9.5%	98 24.5%	183 45.8%	62 15.5%	2.42	Not Agreed
3	Petroleum Act was promulgated to protect the rights of oil/gas companies' activities and in case of pollution restore the impacted areas	12 3.0%	37 9.3%	101 25.3%	189 47.3%	61 15.3%	2.38	Not Agreed
4	EIA was enacted to delineate projects that requires mandatory assessment, and has achieved this core mandate in ND region	20 5.0%	33 8.3%	113 28.3%	178 44.5%	56 14.0%	2.46	Not Agreed
5	AGASPIN Act was promulgated to regulate operations of oil/gas companies offshore/onshore and has been effective in this purpose in the ND	20 5.0%	37 9.3%	99 24.8%	183 45.8%	61 15.3%	2.43	Not Agreed
6	NESREA Act was enacted to enforce compliance to environmental laws in	16 4.0%	38 9.5%	95 23.8%	191 47.8%	60 15.0%	2.40	Not Agreed



	oil/gas industry; the agency has been effective since creation								
7	Oil/gas re-injection Act was enacted to prevent gas flaring in the ND and has achieved this core mandate	19 4.8%	38 9.5%	105 26.3	182 45.5%	56 14.0%	2.46	Not Agreed	
8	Oil in Navigable waters was promulgated to safeguard pollution in territorial waters of ND and has been effective since operational	18 4.5%	35 8.8%	98 24.5	187 46.8%	62 15.5%	2.40	Not Agreed	
9	Harmful waste SP was enacted to apprehend illegal trading on hazardous/harmful wastes along the water bodies and has been effective since enactment	16 4.0%	35 8.8%	102 25.5	187 46.8%	60 15.0%	2.40	Not Agreed	
10	Land use Act was enacted to bequeath ownership of land from community to the government and has been an instrument of land administration & ownership of oil wealth in ND	164 41.0%	72 18.0%	63 15.8	59 14.8%	42 10.5%	3.64	Agreed	

Source: Researcher's Computation, 2020

SA – Strongly Agree; A – Agree; D – Disagree; SD – Strongly Agree; Und – Undecided; WA – Weighted Average; R - Remark

Table 1.5: Nature and Types of Environmental Laws & Regulations in Niger Delta (ND) (NGOs/Companies)

S/N	LAW & REGULATIONS	SA	A	D	SD	UND	WA	R
1	The 1999 Constitution guarantees the protection of lives and individual right, but it is not the case in Niger Delta (ND)	57 57.0%	43 43.0%	0 0.0%	0 0.0%	0 0.0%	4.57	Agreed
2	Oil pipeline Act was enacted to regulate oil/gas company pipeline routes, and has fulfilled this mandate in the ND region	58 58.0%	21 21.0%	11 11.0	10 10.0%	0 0.0%	4.27	Agreed
3	Petroleum Act was promulgated to protect the rights of oil/gas companies activities and in case of pollution restore the impacted areas	50 50.0%	28 28.0%	16 16.0	6 6.0%	0 0.0%	4.22	Agreed
4	EIA was enacted to delineate projects that requires mandatory assessment, and has achieved this core mandate in ND region	66 66.0%	34 34.0%	0 0.0%	0 0.0%	0 0.0%	4.66	Agreed
5	AGASPIN Act was promulgated to regulate operations of oil/gas companies offshore/onshore and has been effective in this purpose in the ND	48 48.0%	25 25.0%	16 16.0	11 11.0%	0 0.0%	4.10	Agreed
6	NESREA Act was enacted to enforce compliance to environmental laws in oil/gas industry; the agency have been effective since creation	14 14.0%	22 22.0%	51 51.0	11 11.0%	2 2.0%	3.35	Not Agreed
7	Oil/gas re-injection Act was enacted to prevent gas flaring in the ND and has achieved this core mandate	11 11.0%	17 17.0%	53 53.0	14 14.0%	5 5.0%	3.15	Not Agreed
8	Oil in Navigable waters was promulgated to safeguard pollution in territorial waters of ND and has been effective since operational	47 47.0%	24 24.0%	14 14.0	15 15.0%	0 0.0%	4.03	Agreed
9	Harmful waste SP was enacted to apprehend illegal trading on hazardous/harmful wastes along the	10 10.0%	20 20.0%	26 26.0	43 43.0%	1 1.0%	2.95	Not Agreed

water bodies and has been effective since enactment

10	Land use Act was enacted to bequeath ownership of land from community to the government and has been an instrument of land administration & ownership of oil wealth in ND	54 54.0%	46 46.0%	0 0.0%	0 0.0%	0 0.0%	4.54	Agreed
----	---	-------------	-------------	-----------	-----------	-----------	------	--------

Source: Researcher’s Computation, 2020

SA – Strongly Agree; A – Agree; D – Disagree; SD – Strongly Agree; Und – Undecided; WA – Weighted Average; R – Remark

**Objective Two; Environmental Laws in Nigeria with Europe & America Compared**

The question interrogating the comparison between Nigeria environmental laws and that of Europe and USA are displayed on Table 1.6. The distribution revealed that all weighted mean average values were high enough to accept all statements. Thus, environmental laws in Europe and USA are better off in terms of what each agency stand for and in the discharge of their duties and responsibilities about 208(52.0%) attested to that, while about 183(45.8%) respondents strongly agreed that proliferation of Nigeria laws and regulation. Table 1.6 revealed that majority of sampled residents agreed to these statements concerning the environmental laws situation in Nigeria and that of Europe and America compared.

On the other hand, the information received from Oil and Gas companies/NGOs as being displayed on Table 1.7 and revealed that not all statements were accepted. For instance, as regards oil and gas laws in Nigeria, they were enacted in such a way and manner that it gives leeway to IOCs to pollute the environment was disagreed by majority of these respondents (79.0%). It was also indicated amongst majority of sampled NGOs that oil and gas laws in Nigeria are not merely on paper (72.0%); and that Nigeria laws or regulations also guarantees individual/corporate ownership of oil fields and the safeguarding of oil/gas operations in host communities (69.0%).

Table 1.6: Environmental Laws Compared (Residents)

S/N	LAWS & REGULATIONS	SA	A	D	SD	UND	WA	R
1	Oil and gas laws in Nigeria are enacted in such a manner that gives leeway...	164 41.0%	119 29.8%	65 16.3%	52 13.0%	0 0.0%	3.99	Agreed
2	Oil and gas laws in Nigeria needs sound institutional...	204 51.0%	119 29.8%	34 8.5%	43 10.8%	0 0.0%	4.21	Agreed
3	Proliferation of enforcement agencies on oil and gas laws in Nigeria has created divisions...	183 45.8%	115 28.8%	57 14.3%	41 10.3%	4 1.0%	4.08	Agreed
4	Oil and gas laws in Nigeria are merely on paper as agencies...	134 33.5%	141 35.3%	80 20.0%	45 11.3%	0 0.0%	3.91	Agreed
5	The provision on US environmental protection agency (EPA) is strictly adhered to compared to provisions in Nigeria...	208 52.0%	143 35.8%	31 7.8%	18 4.5%	0 0.0%	4.35	Agreed
6	OSHA of EU/US has performed effectively well than NESREA...	138 34.5%	122 30.5%	66 16.5%	59 14.8%	15 3.8%	3.77	Agreed
7	The FERC of USA has stiffer penalties for defaulters than the Nigeria Gas-reinjection...	135 33.8%	105 26.3%	85 21.3%	42 10.5%	33 8.3%	3.67	Agreed
8	PHMSA of EU/USA has stemmed illegal transportation/sale of hazardous materials than Nigeria...	169 42.3%	89 22.3%	56 14.0%	62 15.5%	24 6.0%	3.79	Agreed
9	The BLM of USA guarantees individual/corporate ownership of oil fields than the Nigeria land use Act	193 48.3%	119 29.8%	80 20.0%	8 2.0%	0 0.0%	4.24	Agreed
10	BSEE of the EU/USA guarantees the safeguard of oil/gas operators/host	177 44.3%	71 17.8%	101 25.3%	51 12.8%	0 0.0%	3.94	Agreed

	community than the Nigeria oil...								
11	BOEM of EU/USA provides stiffer penalties on illegal trade on hazardous waste in her territorial boundaries than the Nigeria...	94 23.5%	154 38.5%	65 16.3%	67 16.8%	20 5.0%	3.59	Agreed	
12	The CERCLA of EU/USA was promulgated to protect lives of citizens of environmental pollution when compared to the provisions of the Nigerian...	128 32.0%	101 25.3%	92 23.0%	79 19.8%	0 0.0%	3.69	Agreed	

Source: Researcher's Computation, 2020

SA – Strongly Agree; A – Agree; D – Disagree; SD – Strongly Agree; Und – Undecided; WA – Weighted Average; R – Remark

Table 1.7: Environmental Laws Compared (NGOs/Companies)

S/N	LAWS & REGULATIONS	SA	A	D	SD	UND	WA	R
1	Oil and gas laws in Nigeria are enacted in such a manner that gives leeway...	1 1.0%	20 20.0%	35 35.0%	44 44.0%	0 0.0%	2.78	Not Agreed
2	Oil and gas laws in Nigeria needs sound institutional...	52 52.0%	48 48.0%	0 0.0%	0 0.0%	0 0.0%	4.52	Agreed
3	Proliferation of enforcement agencies on oil and gas laws in Nigeria has created divisions...	39 39.0%	34 34.0%	23 23.0%	4 4.0%	0 0.0%	4.08	Agreed
4	Oil and gas laws in Nigeria are merely on paper as agencies...	8 8.0%	20 20.0%	48 48.0%	24 24.0%	0 0.0%	3.12	Not Agreed
5	The provision on US environmental protection agency (EPA) is strictly adhered to compared to provisions in Nigeria...	50 50.0%	25 25.0%	11 11.0%	10 10.0%	4 4.0%	4.07	Agreed
6	OSHA of EU/US has performed effectively well than NESREA...	41 41.0%	28 28.0%	25 25.0%	5 5.0%	1 1.0%	4.03	Agreed
7	The FERC of USA has stiffer penalties for defaulters than the Nigeria Gas-reinjection...	33 33.0%	37 37.0%	16 16.0%	14 14.0%	0 0.0%	3.89	Agreed
8	PHMSA of EU/USA has stemmed illegal transportation/sale of hazardous materials than Nigeria...	33 33.0%	53 53.0%	6 6.0%	8 8.0%	0 0.0%	4.11	Agreed
9	The BLM of USA guarantees individual/corporate ownership of oil fields than the Nigeria land use Act	28 28.0%	27 27.0%	13 13.0%	12 12.0%	20 20.0%	3.31	Not Agreed
10	BSEE of the EU/USA guarantees the safeguard of oil/gas operators/host community than the Nigeria oil...	16 16.0%	11 11.0%	43 43.0%	26 26.0%	4 4.0%	3.09	Not Agreed
11	BOEM of EU/USA provides stiffer penalties on illegal trade on hazardous waste in her territorial boundaries than the Nigeria...	7 7.0%	73 73.0%	12 12.0%	0 0.0%	8 8.0%	3.71	Agreed
12	The CERCLA of EU/USA was promulgated to protect lives of citizens of environmental pollution when compared to the provisions of the Nigerian...	34 34.0%	37 37.0%	19 19.0%	0 0.0%	10 10.0%	3.85	Agreed

Source: Researcher's Computation, 2020

SA – Strongly Agree; A – Agree; D – Disagree; SD – Strongly Agree; Und – Undecided; WA – Weighted Average; R - Remark



**Objective Three; Analysis of the Compliance of Oil & Gas Companies in Niger Delta**

The question interrogating the compliance of Oil and Gas Companies on environmental laws in the Niger Delta Region shows thus; for residents; oil and gas companies /NGOs are displayed on Tables 1.8 and 1.9. The result revealed that all weighted mean average values were high enough to accept all statements. Thus, environmental laws in Niger Delta and Nigeria and the nation at large are faced with enormous challenges ranging from the lack of trust in the administration of the Joint Venture Agreement by the IOCs and government of Nigeria and the complete evasiveness to the laws and regulations by the oil and gas companies as shown in the tables interrogating such questions. For instance; in question (1) Joint venture partnership between Nigerian government and IOCs was a business agreement; about (290) (72.5%) respondents of residents strongly agreed; for question (2) joint venture was created to entrench mutual relationship between IOCs and the government; about 321 (57.8%) of resident respondents strongly agreed. Also question (3) IOCs took advantage of the lack of expertise /manpower in the country oil and gas industry to exploit the region; about 196(49.0%) resident respondents strongly agreed. More so, question (4) Oil and gas companies' laws or regulations created for the IOCs to operate in the region; about 172 (43.0%) of respondents strongly agreed. The question (5) on Joint Venture Agreement being executed without following rules of engagement; about 170(42.5%) respondents strongly agreed. Also question (6) Poor technological /Infrastructural facilities were impediments for the development of oil and gas sector in the region; about 193((48.3%) strongly agreed. Question (7) on the poor development of the indigenous companies in the region to engage in oil and gas sector; about 168(42.0%) of residents attested to it strongly. The question (8) on Joint Venture Agreement could not be realized dues to lack of trust on both parties to the agreement; about 178(43.5%) of residents strongly agreed to the assertion. Furthermore; the question (9) on Poor government policy and strategy as impediments to the growth of oil and gas sector in the region; about 157(38.0%) respondents from the host communities agreed strongly agreed. The question (10) on Poor staffing, corruption, poverty as impediments to the enforcement of the oil and gas laws and regulation; about 166 (41.5%) strongly agreed to the assertion.

On the other hand, these questions were posed to the oil companies /NGOs; the weighted averages were also all high and were accepted as shown in tables 1.8 and 1.9.

Table 1.8: Analysis of Compliance of Oil & gas companies in Niger Delta (ND)(Residents)

S/N	LAW & REGULATIONS	SA	A	D	SD	UND	WA	R
1	The joint venture partnership between NNPC (on behalf of Nigeria) and IOCs are public partnership ventures	110 27.5%	290 72.5%	0 0.0%	0 0.0%	0 0.0%	4.27	Agreed
2	The oil and gas JVA was created to entrench mutual relationship and co-tenancy between the IOCs and Nigeria.	231 57.8%	79 19.8%	41 10.3%	38 9.5%	11 2.8%	4.20	Agreed
3	The IOCs took advantage of the lack of expertise/manpower in Nigeria in ...	196 49.0%	117 29.3%	41 10.3%	18 4.5%	28 7.0%	4.09	Agreed
4	The oil and gas laws in Nigeria created leeway for the IOCs to operate with trade-off...	172 43.0%	145 36.3%	37 9.3%	18 4.5%	28 7.0%	4.04	Agreed
5	The JVA partnership agreement was executed by the IOCs without keeping to..	170 42.5%	137 34.3%	47 11.8%	18 4.5%	28 7.0%	4.01	Agreed
6	The poor technological/infrastructural development in Nigeria oil/gas ...	193 48.3%	137 34.3%	24 6.0%	18 4.5%	28 7.0%	4.12	Agreed
7	The indigenous oil/gas companies in Nigeria (NNPC) did not demonstrate...	168 42.0%	112 28.0%	74 18.5%	18 4.5%	28 7.0%	3.93	Agreed
8	The goal of JVA could not be realized because of lack of trust by the parties...	174 43.5%	136 34.0%	44 11.0%	18 4.5%	28 7.0%	4.03	Agreed
9	Poor governmental policy/strategy in the development and growth of oil/gas...	152 38.0%	90 22.5%	62 15.5%	40 10.0%	56 14.0%	3.60	Agreed
10	Poor staffing, corruption and poverty in the system has impeded the enforcement.	166 41.5%	150 37.5%	46 11.5%	10 2.5%	28 7.0%	4.04	Agreed

Table 1.9: Analysis of Compliance of Oil & gas companies in ND (NGOs/Companies)

S/N	LAWS & REGULATIONS	SA	A	D	SD	UND	WA	R
1	The joint venture partnership between NNPC (on behalf of Nigeria) and IOCs are public partnership ventures	59 59.0%	40 40.0%	1 1.0%	0 0.0%	0 0.0%	4.58	Agreed
2	The oil and gas JVA was created to entrench mutual relationship and co-tenancy between the IOCs and Nigeria.	44 44.0%	56 56.0%	0 0.0%	0 0.0%	0 0.0%	4.44	Agreed
3	The IOCs took advantage of the lack of expertise/manpower in Nigeria in ...	15 15.0%	36 36.0%	39 39.0%	10 10.0%	0 0.0%	3.56	Agreed
4	The oil and gas laws in Nigeria created leeway for the IOCs to operate with trade-off...	36 36.0%	35 35.0%	21 21.0%	8 8.0%	0 0.0%	3.99	Agreed
5	The JVA partnership agreement was executed by the IOCs without keeping to..	32 32.0%	32 32.0%	23 23.0%	11 11.0%	2 2.0%	3.81	Agreed
6	The poor technological/infrastructural development in Nigeria oil/gas ...	28 28.0%	38 38.0%	20 20.0%	13 13.0%	1 1.0%	3.79	Agreed
7	The indigenous oil/gas companies in Nigeria (NNPC) did not demonstrate...	17 17.0%	48 48.0%	13 13.0%	20 20.0%	2 2.0%	3.58	Agreed
8	The goal of JVA could not be realized because of lack of trust by the parties...	45 45.0%	32 32.0%	8 8.0%	14 14.0%	1 1.0%	4.06	Agreed
9	Poor governmental policy/strategy in the development and growth of oil/gas...	35 35.0%	30 30.0%	1 1.0%	20 20.0%	14 14.0%	3.52	Agreed
10	Poor staffing, corruption and poverty in the system has impeded the enforcement.	38 38.0%	33 33.0%	1 1.0%	18 18.0%	10 10.0%	3.71	Agreed

Source: Researcher's Computation, 2020

SA – Strongly Agree; A – Agree; D – Disagree; SD – Strongly Agree; Und – Undecided; WA – Weighted Average; R - Remark

#### Objective Four; Determine the Performance of Agencies Charged with the Responsibility of Enforcement

The question interrogating the performance rating of Agencies charged with the responsibility of enforcement of oil and gas laws in the Niger Delta region on tables 1.10 and 1.11. The distribution revealed that all weighted mean average values were high enough to accept all statements. For example, question (1) Enforcement agencies lack the expertise /equipment to enforce laws; about 145(36.3%) or host community residents strongly agreed. The question (2) on overlapping on the functions of enforcement agencies; about 159(39.8%) of respondents strongly agree. Also question (3) lack of funding by government to enforcement agencies; about 141(35.3%) strongly agrees. Furthermore; question (4) on Weak Enforcement Mechanism; about 111(27.2%) agreed that it was a pointer to the poor performance of the agencies. Also question (5) Proliferation of agencies in the country and overbearing influences of one over the other; about 95(23.8%) of respondents strongly agreed. Also question (6) on Attitudinal problems of the staff/poor policy implementation; about 159(39.8%) agreed to the assertion. The question (7) on corruption and poverty amongst agency staff was supported by 180(45.0%) of respondents. Also question (8) on Obsolete laws/regulations as well as weak penalties on defaulters; about 180(45.0%) strongly agreed. The question (9) on lack of stakeholders' mentality /poor team spirit by agency staff, was supported by 143(35.8%) respondents; while the question (10) on Prolonged litigation/difficulty in the prosecution of oil pollution cases by victims was supported by 185(46.3%) respondents.

On the other hand, the information received from Oil and Gas companies/NGOs as displayed on Table 1.11 also revealed that all statements were accepted. These statements affirm the true state of affairs of the oil and gas enforcement agencies in the Niger Delta and Nigeria at large. The perception rating of the enforcement agencies was very poor.

Table 1.10: Residents' Performance Rating of the Agencies charged with Enforcement

S/N	LAWS & REGULATIONS	SA	A	D	SD	UND	WA	R
1	Enforcement agencies lack the expertise/equipment to enforce laws...	145 36.3%	140 35.0%	47 11.8%	52 13.0%	16 4.0%	3.87	Accepted
2	Overlapping in the functions of the agencies charged with enforcement...	131 32.8%	159 39.8%	68 17.0%	26 6.5%	16 4.0%	3.91	Accepted
3	Lack of funding by the government to the enforcement agencies (NESREA...	141 35.3%	137 34.3%	51 12.8%	53 13.3%	18 4.5%	3.82	Accepted
4	Weak enforcement mechanism/lack of continuity by government...	75 18.8%	111 27.2%	80 20.0%	101 25.6%	33 8.3%	3.24	Average
5	Proliferation of agencies and over bearing influence of one agency over the other...	95 23.8%	67 16.8%	93 23.3%	87 21.8%	58 14.5%	3.13	Average
6	Attitudinal-problem/poor policy implementation by government...	101 25.3%	159 39.8%	41 10.3%	51 12.8%	48 12.0%	3.54	Accepted
7	Corruption and poverty among staff of agencies of government	105 26.3%	123 30.8%	32 8.0%	83 20.8%	57 14.3%	3.34	Average
8	Obsolete-laws/regulations/weak sanctions/penalty on defaulters (IOCs)	180 45.0%	123 30.8%	34 8.5%	36 9.0%	27 6.8%	3.98	Accepted
9	Lack of stakeholder/team spirit by staff of enforcement agencies in Nigeria	143 35.8%	130 32.5%	45 11.3%	60 15.0%	22 5.5%	3.78	Accepted
10	Prolonged legal cases/difficulty in prosecution of oil pollution cases ...	92 23.0%	185 46.3%	12 3.0%	60 15.0%	51 12.8%	3.52	Accepted

Source: Researcher's Computation, 2020

SA – Strongly Agree; A – Agree; D – Disagree; SD – Strongly Agree; Und – Undecided; WA – Weighted Average; R - Remark

Table 1.11: NGOs/Companies Performance ratings of the Agencies charged with Enforcement

S/N	LAWS & REGULATIONS	SA	A	D	SD	UND	WA	R
1	Enforcement agencies lack the expertise/equipment to enforce laws...	34 34.0%	34 34.0%	20 20.0%	8 8.0%	4 4.0%	3.86	Accepted
2	Overlapping in the functions of the agencies charged with enforcement...	44 44.0%	27 27.0%	15 15.0%	6 6.0%	8 8.0%	3.96	Accepted
3	Lack of funding by the government to the enforcement agencies (NESREA...	55 55.0%	16 16.0%	7 7.0%	17 17.0%	5 5.0%	3.99	Accepted
4	Weak enforcement mechanism/lack of continuity by government...	46 46.0%	31 31.0%	14 14.0%	8 8.0%	1 1.0%	4.13	Accepted
5	Proliferation of agencies and over bearing influence of one agency over the other...	49 49.0%	18 18.0%	15 15.0%	16 16.0%	2 2.0%	3.96	Accepted
6	Attitudinal problem/poor policy implementation by government...	11 11.0%	10 10.0%	68 68.0%	10 10.0%	1 1.0%	3.20	Average

7	Corruption and poverty among staff of agencies of government	47 47.0%	21 21.0%	7 7.0%	13 13.0%	12 12.0%	3.78	Accepted
8	Obsolete-laws/regulations/weak sanctions/penalty on defaulters (IOCs)	48 48.0%	24 24.0%	19 19.0%	9 9.0%	0 0.0%	4.11	Accepted
9	Lack of stakeholder/team spirit by staff of enforcement agencies in Nigeria	31 31.0%	33 33.0%	21 21.0%	8 8.0%	7 7.0%	3.73	Accepted
10	Prolonged legal cases/difficulty in prosecution of oil pollution cases ...	36 36.0%	44 44.0%	1 1.0%	10 10.0%	9 9.0%	3.88	Accepted

Source: Researcher's Computation, 2020

SA – Strongly Agree; A – Agree; D – Disagree; SD – Strongly Agree; Und – Undecided; WA – Weighted Average; R - Remark

### Objective 5; Assessment of the Awareness of Host Communities about the Existence of Oil/Gas Laws & Enforcement Ratings

The question interrogating the awareness of Host communities about the existence of Oil and gas laws and Enforcement rating in the study area are displayed on tables 1.12 and 1.13. The distribution revealed that all weighted mean average values were high enough to accept all statements. For example, question (1) Host communities are not aware of the JVA with IOCs and Nigeria government; about 137(34.3%) of host community residents strongly agreed. The question (2) Host communities have been impoverished (farm land and water destroyed by IOCs); about 186(46.5%) of respondents strongly agree. Also question (3) on Non-payment of compensation to victims of pollution in the host communities; about 158(39.5%) strongly agrees. Furthermore; question (4) on Restiveness resulting from wrong interpretation of laws and regulations; about 221(55.3%) agreed that it was a pointer to the incessant agitations by youths all over the Niger Delta region. Also question (5) on Pollution of environment occasioned by IOCs lack of developmental agenda in the Niger Delta; about 172(43.0%) of respondents strongly agreed. Also question (6) Poor implementation of Corporate Social Responsibility (CSR) by IOCs; about 177(44.0%) agreed to the assertion and evidences of poor infrastructural development are seen all over the states in the Niger Delta. The question (7) on Lack of technological transfer and divide and rule policy by IOCs was supported by 171(42.8%) of respondents. Also question (8) on poor information dissemination poor public participations; about 152(38.0%) strongly agreed. The question (9) on long term neglect of the host communities by the IOCs was supported by 197(49.3%) respondents; while the question (10) on gap between value expectation and capabilities was supported by 140(35.0%) respondents. More so, question (11) host communities did not know about the environmental laws; about 220(55.0%) strongly agreed, while question (12) on Host communities did not know the agencies that enforces the oil and gas laws in the region; about 140(35.0%) strongly agreed. On the other hand, the information received from Oil and Gas companies/NGOs as displayed on Table 1.13 also revealed that all statements were accepted. These statements affirm the true state of affairs of the unhealthy relationship between oil and gas companies and host communities in the Niger Delta and Nigeria at large.

Table 1.12: Residents' Assessment of the Awareness of Host Communities about existence of Laws

S/N	LAWS & REGULATIONS	SA	A	D	SD	UND	WA	R
1	Host communities are not aware of the JVA with IOCs and Nigerian government on the operations of oil/gas...	137 34.3%	78 19.5%	61 15.3%	63 15.8%	61 15.3%	3.42	Not fully accepted
2	Host communities have been impoverished (farmland/water) ...	186 46.5%	113 28.3%	35 8.8%	25 6.3%	41 10.3%	3.94	Accepted
3	Non-payment of compensation to host communities by IOCs as a result of ...	158 39.5%	135 33.8%	50 12.5%	37 9.3%	20 5.0%	3.93	Accepted
4	Restiveness resulting from wrong interpretation of law/regulation...	221 55.3%	73 18.3%	16 4.0%	43 10.8%	47 11.8%	3.95	Accepted
5	Pollution of environment by IOCs and lack of development in the host...	172 43.0%	90 22.5%	39 9.8%	59 14.8%	40 10.0%	3.74	Accepted
6	The poor implementation of CSR by IOCs in host communities	177 44.3%	129 32.3%	39 9.8%	33 8.3%	22 5.5%	4.01	Accepted

7	Lack of technology/divide and rule by IOCs which created divisiveness...	171 42.8%	137 34.3%	37 9.3%	33 8.3%	22 5.5%	4.00	Accepted
8	Poor information dissemination/poor public participation by host ...	152 38.0%	156 39.0%	40 10.0%	33 8.3%	19 4.8%	3.97	Accepted
9	Long term neglect of the host communities on provisions of basic...	197 49.3%	188 47.0%	15 3.8%	0 0.0%	0 0.0%	4.45	Accepted
10	The gap between the value expectation and value capabilities leading to ...	140 35.0%	122 30.5%	71 17.8%	55 13.8%	12 3.0%	3.81	Accepted
11	Host communities are not aware of the environmental laws regulating oil/gas...	220 55.0%	52 13.0%	89 22.3%	23 5.8%	16 4.0%	4.09	Accepted
12	Host communities do not know the agencies charged with enforcement responsibilities in oil/gas industry	140 35.0%	81 20.3%	58 14.5%	62 15.5%	59 14.8%	3.45	Not fully accepted

Source: Researcher's Computation, 2020

SA – Strongly Agree; A – Agree; D – Disagree; SD – Strongly Agree; Und – Undecided; WA – Weighted Average; R - Remark

Table 1.13:Oil and gas Companies/NGOs Assessment of the Awareness of Host Communities about the enforcement of Environmental laws

S/N	LAWS & REGULATIONS	SA	A	D	SD	UND	WA	R
1	Host communities are not aware of the JVA with IOCs and Nigerian government on the operations of oil/gas...	23 23.0%	28 28.0%	45 45.0%	2 2.0%	2 2.0%	3.68	Accepted
2	Host communities have been impoverished (farmland/water) ...	38 38.0%	34 34.0%	21 21.0%	7 7.0%	0 0.0%	4.03	Accepted
3	Non-payment of compensation to host communities by IOCs as a result of ...	41 41.0%	33 33.0%	20 20.0%	4 4.0%	2 2.0%	4.07	Accepted
4	Restiveness resulting from wrong interpretation of law/regulation...	53 53.0%	16 16.0%	18 18.0%	13 13.0%	0 0.0%	3.96	Accepted
5	Pollution of environment by IOCs and lack of development in the host...	33 33.0%	25 25.0%	29 29.0%	13 13.0%	0 0.0%	3.65	Accepted
6	The poor implementation of CSR by IOCs in host communities	30 30.0%	42 42.0%	14 14.0%	3 3.0%	11 11.0%	3.77	Accepted
7	Lack of technology/divide and rule by IOCs which created divisiveness...	30 30.0%	42 42.0%	10 10.0%	5 5.0%	13 13.0%	3.71	Accepted
8	Poor information dissemination/poor public participation by host ...	22 22.0%	36 36.0%	20 20.0%	17 17.0%	5 5.0%	3.53	Accepted
9	Long term neglect of the host communities on provisions of basic...	33 33.0%	42 42.0%	13 13.0%	7 7.0%	5 5.0%	3.91	Accepted
10	The gap between the value expectation and value capabilities leading to ...	23 23.0%	41 41.0%	16 16.0%	10 10.0%	10 10.0%	3.57	Accepted
11	Host communities are not aware of the environmental laws regulating oil/gas...	33 33.0%	38 38.0%	12 12.0%	9 9.0%	8 8.0%	3.79	Accepted
12	Host communities do not know the agencies charged with enforcement	25 25.0%	42 42.0%	15 15.0%	10 10.0%	8 8.0%	3.66	Accepted



Source: Researcher’s Computation, 2020

SA – Strongly Agree; A – Agree; D – Disagree; SD – Strongly Agree; Und – Undecided; WA – Weighted Average; R - Remark.

### 7. Hypotheses

On the hypotheses test carried out in this research, 1,2,3, 4, 5 and 6, all except 4, rejected the null hypothesis and accepted the alternate ( $H_1$ ). The result for hypothesis one (1) showed F ratio of 1.350 at probability value of 95% (0.05) of degrees of freedom (Df) 59 was 0.258. Since, the level of significance of 0.258 was higher than the p-value of 0.05, the Null hypothesis ( $H_0$ ) was retained for the test. Therefore, there is no significant variation in the enforcement of environmental laws or regulation by oil and gas industry in the braced states of the Niger Delta. The Duncan Post Hoc analysis show the pattern of variation using their means for groups in homogenous sets (range between 3.43 and 3.79). Thus, the pattern of variation, that is difference between means were not significant (0.094) for the study. This was the case for Hypotheses 2,3 5 and 6 **except hypothesis 4** in the study.

#### 7.1 Hypothesis four:

$H_0$ : Environmental laws in Nigeria do not significantly differ from those in Europe and America.

$H_1$ : Environmental laws in Nigeria significantly differ from those in Europe and America.

The results of the computed students t-test for hypothesis 4 is displayed on Table 1.14. The distribution revealed that the calculated t-value was 2.324 at degrees of freedom of 10 was 0.043. Since the level of significance of 0.043 was lower than the p-value of 0.05 (95% probability value) we therefore reject the null hypothesis ( $H_0$ ) and accept the alternative hypothesis ( $H_1$ ). Therefore, environmental laws in Nigeria significantly differ from those in Europe and America.

Table 1.14: Student’s T-test Computed for Hypothesis 4

Independent samples	N	Mean	SD	Variance	DF	t	Sig.
1 – Environmental laws in Nigeria	6	4.104	0.1614	0.0260	12	2.324*	0.043
2 – Environmental laws in Europe/USA	6	3.616	0.4397	0.1933	2		
					10		

Source: Researcher’s Field analysis, 2020; N – no. of samples; SD – standard deviation; Df – degree of freedom; t – student’s t-test; Sig. at  $p < 0.05^*$

### 8. Conclusion

This research was undertaken to examine the enforcement of compliance to environmental laws and regulations by the oil and gas companies in the Niger Delta Nigeria. From the study, some basic factors that influenced non-compliance to environmental laws in oil and gas sector in the Niger Delta were identified as follows; The Joint Venture Agreement (JVA) entered into by Nigerian government and the International Oil and Gas companies (IOCs) was purely a business venture which the (IOC) exploited to their own advantage. The (IOC)s operated the (JVA) to make profits, therefore they did not keep to the rules of engagement in their operations, because they failed to transfer technology to staff from their host government. The government of Nigeria lack the expertise to manage the oil and gas sector, with poor development of the indigenous oil and gas companies, this lead to the continued management of the internal oil and gas companies by expatriates. Furthermore, the poor infrastructural development of the oil and gas sector in Nigeria was an impediment to the growth of the oil and gas industry in Nigeria. Also the poor staffing and ill equipped agencies culminated in the poor monitoring and enforcement mechanism in the oil and gas sector leading to noncompliance by the (IOCs). There must be strong commitment on the part of government and a stable leadership in the Enforcement Agencies in its formative years and beyond. The mandate of enforcement must be clear and roles of line of agencies/ministries distinct to avoid inter-agency/ministry conflicts that could be capitalized upon by powerful target groups to frustrate enforcement and compliance Programmes. There should be concerted efforts to seek assistance from developed countries to build capacity. Above all, the mobilization of funds to enable these Programmes succeed must be pursued by the government of the day without compromise. It is only when all these are done that the laws would be obeyed and an environmentally friendly society achieved.

## 9. Recommendations

In view of the finding above, the following recommendations are made:

- 1.The National and State's Assemblies (legislative arm) shall as a matter of urgency review all relevant environmental laws, thereby repealing all colonial laws that are obsolete and replacing such with laws with local content that will address environmental problems of the various ecological and industrial zones in the country.
- 2.The Federal and state governments must review the functions of all its Ministries and Agencies by either merging those with same roles or outright abolishment of such ministries/agencies to reduce wastages and avoid roles conflicts, this will deal with the apparent overlap in functions of Federal Ministries/Agencies and the States in dealing with issues of environmental resources.
- 3.The issue of funding of the relevant Ministries/Agencies cannot be overemphasised. A situation where regulatory agencies are sponsored by the companies they regulate is unacceptable. Also they should be provided with the state of the art equipment with which to work, this would help improve performance.
- 4.Institutional strengthening and capacity building, the challenges of rapidly evolving complex environmental protection issues in the world requires well trained professionals in the different fields. The government must embark on recruitment of young environmental scientists as well as senior academics into the ministries/agencies and also retrain older staff that are still relevant, strong and vibrant to build capacity.
- 5.Recognizing the need to gain the confidence of the general public, there is the urgent need for public to know the roles/functions of the ministries/agencies as well as the laws pertaining to their offices. These they can achieve through sponsored workshops/seminars, conferences, media advertisement (radio jingles/TV commercials) etc. Information dissemination through Newsletters; monographs, Bulletins and newspapers. These will help the public know all about the agencies/ministries and their roles and forge a cordial relationship between the people and the ministries/agencies in terms of enforcement of the laws.

## References

- [1]. Adegoke "Third international conference on environment and enforcement". *Federal Ministry of Environment, Nigeria.*(11-21)(2001).
- [2]. P.E Agbonifo Risk Management and Regulatory Failure in the Oil and Gas Industry in Nigeria: Reflections on the Impact of Environmental Degradation in the Niger Delta Region *Journal of Sustainable Development*; (2016)Vol. 9, No. 4.(2016)
- [3]. E.I Elenwo, and J.A. Akankali .Environmental Policies and Strategies in Nigeria Oil and Gas Industry: Gains, Challenges and Prospects. *Natural Resources*, 5, 884-896. <http://dx.doi.org/10.4236/nr.2014.514076>.(2014).
- [4]. E.I Elenwo and C.S.Urho, C.S. Challenges and Prospects of Enforcement of Environmental Laws in Port Harcourt Metropolis Rivers State,Nigeria. *British Journal of Applied Science and Technology*)Vol.19(1)1-29.(2017).
- [5]. E.I Elenwo and U.C. Ochege, *Environment, Resources and Sustainability in the Niger Delta Region*, Nigeria. ISBN:978-978-5530-4-3.Publishers University of Port Harcourt Choba Rivers State, Nigeria. pp.203.(2018).
- [6]. National Bureau of Statistics (NBS) 2012.Federal Republic of Nigeria.
- [7]. National Population Commission, NPC. (2006) *Population Census of Nigeria*. Abuja: NPC.
- [8]. S. Kumar(1967). *Annual of Sampling Techniques*. Heinemann Publishers, London.(1967).
- [9]. O. R. Ogri, 'A Review of the Nigerian Petroleum Industry and the Associated Environmental Problems', *Environmentalists*, 21(1), (2001).
- [10]. G.N Ogbonna and A. Ebimobowei, "Impact of Petroleum Revenue and the Economy of Nigeria" *Current Research Journal of Economic Theory*, 4 (2): 11-17.(2012).
- [11]. A. O.Omorogbe, and C.A Yinka.'The Legal Framework for the Production of Petroleum in Nigeria', *Journal of Energy and Natural Resource Law*, 5(4).(2011).
- [12]. I .Okonta, and A. Douglas "Where Vulture Feast: Shell, Human Rights and Oil in the Niger Delta," San Francisco, Seirra Club Book. (2001).
- [13]. E.O. Okonnah Public Regulation of oil and Gas Industry in Nigeria: An Evaluation, *Annual survey of International & Comparative Law*.Vol.21 Iss. 1 Article 6.(1997).
- [14]. A. Raji and T.S. Abejide Compliance with oil and gas Regulations in the Niger Delta Region (1960-2000): An Assessment. *Arabian Journal of Business and Management Review (OMAN Chapter) Vol. 3, No.8*.(2014).
- [15]. S. Usman, 'Why Nigeria Remains Poor Despite Being Rich' *Newswatch Magazine*, Feb. 18 2008 pp.32-36. (2001).
- [16]. T. Yamane, *Statistics: An introductory Analysis*( 2<sup>nd</sup> ed.) New York U.S.A. Harper and Row Inc.(1967)