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Nexus between environmental accounting and financial performance of listed downstream oil and gas firms in Nigeria

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Abstract
This paper examines the effect of environmental cost factors on stated profits of oil and gas companies in Nigeria. Ex-post facto research design was adopted and a panel data from 2014 to 2023 was used to examine the financial performance of 13 firms out of the 14 oil and gas company listed on the Nigeria Stock Exchange. Findings revealed that Community Development Cost (CDC), significantly influenced the financial performance of the selected firms while employee's health and safety cost does not have significant effect on the financial performance of the Nigeria oil and gas firms. The paper therefore recommends among others that, the management of the listed oil and gas firms should increase contributions to host communities' in order to guarantee environmental safety so as to have a conflict-free operational atmosphere required for maximum productivity, profitability and silence the militants' agitation in the host communities.

Keywords: Environmental cost factors, oil and gas companies, financial performance

Introduction
The important players in Sub-Saharan Africa, particularly Nigeria, are becoming more environmentally conscious. This development in intelligence and sentience has largely been the outcome of crusades and awareness campaigns organized by key environmental groups. Around the middle of the nineteenth century, the public began to take interest in environmental concerns and the possible impact of humans on the green world. Clamoring for environmental sustainability has become a necessity, and environmental challenges have emerged as a major concern for people's wellbeing. Public education, campaigns, and education programs organized by major public interest groups concerned with the environment have mostly contributed to increased awareness. Environmental non-governmental organizations are championing this cause.

Samuel and Ekundayo (2016) [30], asserted that there's growing demand on businesses to show muchcare about the environment in response to increased scrutiny, several companies have released reports documenting the harm they have caused to the natural world, as a result of these, Managers at all levels of any company are under pressure to control expenses and try to reduce their operations' environmental impact to the bearrest minimum, this has impacted significantly on both economic, social, and environmental legacy. However, pressure comes from wide variety of sources including; government, regulators, workers, consumers, investors, NGOs and suppliers of financial services. This has putting many businesses under increasing pressure to report and improve on their environmental performance from a wide variety of stakeholders such as; commercial clients, investors, communities, and even the government (Beredugo & Me, 2012) [7]. The decision-making process is becoming more difficult as a result of consequence of environmental costs that are disproportionate to the advantages the firm obtains due to stakeholder demand. Conventional management accounting practices a re coming under more scrutiny as it becomes clear that they often failed to provide enough and correct information on environmental management and costs related to environmental management (Daniel & Ambrose, 2013) [8].

Globalization of the financial sector makes international financial reporting and auditing standards crucial integration tools.

The 2009 G20 meetings in London and Pittsburgh made this very obvious. International Financial Reporting Standards (IFRS) have been deemed crucial by G20 leaders, who have repeatedly urged its wider adoption since 2011. Nigeria is progressively adjusting to the many international environmental rules and regulations that have been adopted as a result of IFRS (Bassey *et al.*, 2013) [6]. This growing awareness made Nigeria to pass the environmental impact assessment Act (EIA) in 1992 and the environmental guidelines and standards for the petroleum industry in Nigeria in 2002, (EGASPIN), (Osemene, 2007) [21]. The significance of regulations mandating publicly listed corporations to include environmental expenses and pertinent environmental data in their yearly financial reports has increased dramatically.

According to Mark (2016) [31], Oil and gas industry are to serves as major source of income for Nigeria economy, help to sustain Nigeria daily operations by creating energy business lines that will generate money for the country; rather than an avenue for series of environmental and health challenges which gulp fortune out of the country (Yahaya & Bakare, 2019) [5].

So considered due to the democratic dispensation, which revolutionized the Nigerian corporate environment. Oil and gas industries is being focused on due to the fact that this sector was characterized by conflicts in the Niger-Delta region resulting from environmental neglect and infrastructure damage by irate militants. In view of the perceived environmental hazard caused by the hydrocarbon industries in Nigeria, this study examines the nexus between environmental accounting and financial performance of listed downstream oil and gas firms in Nigeria for the period between 2014 – 2023 (10 years). This choice of this period was informed because this is the period in which a lot of reforms have been introduced which include 13% derivation to the region to cater for their needs, which include environmental derivation. More also, of recent is the introduction of 3% to the host communities as well as changing the petroleum profit tax to hydrocarbon tax among others. Revolutionized corporate environment which was championed by democracy dispensation. The sector was also choosing as a result of adverse effects of environmental neglect in the industry, which has led to series of crisis that almost crippled the sector in the Niger-Delta region of Nigeria.

This study examines the nexus between environmental accounting and financial performance of listed downstream oil and gas companies in Nigeria.

Research Questions

In the course of carrying out this study, the following research questions were answered. These include:

- To what extent does employee health safety cost affect return on equity of downstream oil and gas companies in Nigeria?
- In what way does community development cost affect return on equity of downstream oil and gas companies in Nigeria?

Literature Review

Environmental accounting is a branch of management accounting which reports on the firm's environmental effects and cost on the corporate organization. It is also known as green accounting; it is an aspect of accounting that specializes in corporate organization environmental issues. The scope of this field has expanded from eco-accounting to sustainability, (Iliemena 2020). This is often referring to the process through which a firm informs its stakeholders of its internal and external environmental performance (Alawode *et al.*, 2020) [3]. This kind of effort is necessary to restore environmental damage brought on by the operations of a number of enterprises in the region.

Eze *et al*. (2016) [32], its responsibilities include creating reports for both internal and external audiences, as well as giving management access to environmental data that can be used to better manage costs, allocate resources, and set appropriate prices. For managerial goals including cost accounting, resource allocation, and price fixing, environmental data may be used. It may be classified as either environmental financial accounting or environmental management accounting, both of these classifications have a common ground. The goal of environmental financial accounting is to inform interested parties about an organization's past, present, and future environmental efforts and investments via accurate and transparent financial statements (Bassey *et al*., 2013) [6].

Environmental reporting, without a doubt, should instill environmental responsibility in reporting organizations, since no sensible management team would desire to give a report about itself that portrays negativity or poor performance. According to Oguniyi *et al*., (2023) [33], environmental accounting improves environmental transparency and modifies the relationship between a company and environmental pressure groups and the general public. Chiamogu and Okoye (2020) [34], describe environmental accounting as the process of reporting the cost implications of environmentally inclined outflows to enhance corporate performance. Environmental accounting helps in accomplishment environmental sustainability entrenched within an organization's ethos and procedures (Bakare *et al.*, 2023) [22].

This provides decision makers with data that assists the organization in reducing costs, risks and by so doing adding value to the business. Owolabi, Okulenu, and Samuel (2020) [35] both define environmental accounting as the technique of calculating, analyzing, and allocating monetary expenses related to environmental impacts and then factoring those figures into corporate operations. It also includes the channels via which such information reaches the firm's stakeholders. We may be more environmentally responsible and lessen the negative impacts of exports by taking into consideration the environment and calculating the additional cost involved (Osemene, 2007) [21].

Environmental Cost and Reporting: Expenses paid by a company due to environmental contamination and trash released during the production of products and services are known as environmental internal failure costs. In this sense, "environmental cost" encompasses all expenses made by a corporation in order to minimize its negative impact on the environment, not only those necessary to meet legal requirements or lessen the amount of harmful chemicals released into the atmosphere (Enahoro, 2009) [9]. The costs of conforming to regulations and limiting the emission of harmful chemicals are included here. The purpose of environmental accounting as Oguniyi *et al*., (2023) [36] described is to identify, analyze and classify the cost information in reference to environment i.e. environmental

cost for management decision making.

Environmental costs are those costs associated with or incurred in controlling, detecting, and preventing environmental degradation." U.S. Environmental Protection Authority EPA often refers environmental cost accounting as "environmental management accounting" "full cost accounting," or "total cost assessment." Public disclosure of an organization's environmental performance is called "environmental reporting". Companies that regularly report on their environmental impact seem to care more about their social, ecological, and financial footprints. When a company makes its environmental performance information public, it is reported on (Bassey *et al.*, 2013) [6].

This is analogous to how corporations reveal their financial performance in order to improve decision making, pushes businesses to establish a standard, set reduction targets and informs the public about the need to shift away from wasteful consumption production habits and move towards more efficient resource management. Berdugo & Mefor (2012) [7], environmental reports are crucial for accountability, comparability, and probity, without which it is impossible to have faith in an organization's honesty and integrity.

Employee Health and Safety Cost: This involves ensuring a high standard of safety for employees in line with best global Health Safety and Environment (HSE) standards, in-house clinic remained functional and accessible to employees throughout the year during business hours (Enahoro, 2009) [9]. The HSE department organized a "wellness/health talk program on the causes, prevention and control measures on the prevalent disease and an "hepatitis screening awareness campaign" at all the company's operational facilities/offices, with full participation of the executive and management team, employees, business partners and regulatory agencies (Bassey *et al.*, 2013) [6].

The HSE also organizes the following related trainings; fire prevention/first aid emergency response course for facilities' fire marshals and wardens at the head office, lube plant, fuel terminal and aviation depots, safe loading/unloading procedure and incident prevention practical training, for retail outlet representatives, managers and drivers, road transportation safety practices for employees of the operations/ logistics department, representatives of different hauler companies and drivers, engineering contractors' annual HSE/safe works practice review forum.

Government agencies carried out periodic inspections and assessments of the of the undertakings of the oil and gas firms` at their various facilities in order to ensure compliance to regulatory requirements; directorate of petroleum resources (DPR), federal/state fire services departments, federal aviation authority of Nigeria (FAAN), national oil spills, detection and response agency (NOSDRA), standards organization of Nigeria (SON) and Nigerian ports authority – LPC, HSE Committee. Staff costs comprise of costs for training various employees, heads of departments, and top management. This could be in-house or local external training such as basic Fire Safety and First Aid, IFRS master class training, aviation fuel handling and safety training, to mention a few.

Community Development Cost: Community is thought of as a geographical term, although there are other means of describing the term community however, it refers to only the geographical concepts, where boundaries are readily understood and accepted by others by the hydrocarbon factories and the indigene. A human community can be a city, town, or village that people live or work in (Bassey *et al.*, 2013) [6]. Having a diverse population in a will necessitates community development as a result human activity. Community processes take charge of the conditions and factors that are capable of influencing the residents and improving the quality of life (Nurudeen, 2023) [5].

The oil and gas industry in Nigeria has realized the sensitivity the host community to this function. There has been a series of reports in reference to poor contributions to the community. All the oil gas companies Nigeria participating in one or the other community development project (Oguniyi *et al*, 2023) [33]. They give back to the neighborhoods where they operate as part of their CSR initiatives. Community development is about community building as such, where the process is as consequential as the results. One of the primary challenges of community development is to balance the desideratum for long-term solutions with the day-to-day realities that require immediate decision-making and short-term action. Funding for things like scholarships, new schools, youth entrepreneurship, disaster relief, boreholes, modern medical facilities and power, and the building of local markets and rural roads might add up (Oguniyi *et al*, 2023) [33].

Theoretical Review: In providing a sound theoretical background, this study was anchored on legitimacy theory as propounded by (Pepper, 1986) [37]. "Legitimacy" refers to the widespread consensus that an organization or person's acts are commendable, respectable, and acceptable in the light of a widely acceptable standards by society at large. Edward Freeman first proposed the validity hypothesis for legitimacy theory in 1984 with the primary premise that the organizational social compact was fulfilled by permitting its goals to be acknowledged. Campbell *et al*. (2003) [38], sees legitimacy theory as the most often used theory in the social acts of a corporation and the transparency of the firm's surroundings in an effort to fulfil their social contract.

Cho and Patten's (2007) [39], presumed that, the interpretation of legitimacy theory suggests that when social and political constraints on a company's environmental performance are strong enough, the company will disclose such information to the public. Tilling (2008) [26], in a supporting view postulated that legitimacy theory may help in making voluntary social and environmental disclosures made by businesses subjected to public critical discussion. To support this claim, he further argues that legitimacy theory provides a great tool for appreciating corporations' voluntary social and environmental disclosure. Demand for more comprehensive offsetting or positive environmental disclosures in the financial statements of businesses that have a poor track record of environmental performance.

It is assumed in legitimacy theory that a company's reputation improves as it expands into new markets or refocuses its efforts on satisfying the needs of its current clientele. Suggest that a proactive and powerful legitimization campaign may come from management's efforts to win over constituents who have the potential to be supportive but are uncertain. This theory choice was informed by the need to examine how environmental accounting influences the financial performance of listed

hydrocarbon companies in Nigeria and meeting the aspiration and expectation of the community and the operators (employees) where such firms operate. Another justification is that if every party in the financial reporting ecosystem are considered in order to ensure quality financial report and premise their orientation on the tenet and principle of legitimacy theory in order to have an acceptable financial report of environmental related cost inclusion.

Empirical Review

Maria *et al.*, (2021) [40], in Malaysia examined the relationship between green accounting, corporate social responsibility and firm profitability and its value. Conducting the study through 30 peer-reviewed articles, findings revealed that green accounting and corporate social responsibility (CSR) significantly affect financial performance.

Rimaben (2021) [41], in Gujarat, appraised the effect of environmental accounting on the performance of a company. The study adopts multiple regression technique; findings revealed that environmental accounting has a significant and negative relationship with the return on capital employed and earnings per share while it has a positively significant relationship with dividend per share and net profit margin.

Keyotekunrin *et al.*, (2021) [42], in Zimbabwe investigated the workability environmental accounting in mining firms, both descriptive and mixed mode exploration design was employed and data were collected through questionnaires and interview guides. Stratified purposeful sampling of 52 respondents were made up of 16 mining firms' officials that are dominantly firms in mining; chromite, coal, gold, asbestos, copper and nickel, 20 government establishments reps and 16 mining communities' leaders were coopted for interviewed and questionnaires distributed to mining firms' officials and government organizations reps. The study revealed that environmental accounting was not properly implemented and there was no sign of commitment of resources by the government in the direction of adoption of environmental accounting.

Onyekachi *et al.*, (2020) [43], investigated the influence of environmental investments on the earnings of listed oil and gas firms in Nigerian over the period under review (2008-2017). Expo facto research was employed and used financial data of five selected companies. An ordinary, least square regression method was used, and findings indicate the firm's environmental investments related significantly with firm's earnings.

Alawode *et al.*, (2020) [3], examined environmental accounting and reporting practices as an emerging issue in Nigeria. It introduces transparency and accountability as resources management tools embodying; cost control, identification, measuring of liabilities and assets that may be affected during ordinary courses of business. The finding revealed that environmental accounting is still at infancy and need necessary back up by statutes in order to ensure that all benefits of environmental accounting and are enjoyed.

Omesi and Berembo (2020) [44], examined the association between social accounting and performance of selected listed oil and gas firms in Nigeria for the period of five years (2012-2017). The study used the data of Nigeria Stock Exchange and analyzed through regression. The finding revealed no significant association between the social accounting and performance of selected oil and gas firms in Nigeria.

Research Design

This paper employed an ex-post factor research design, being the most appropriate to examine likely causes and effect relationship by ascertaining some prevailing consequences and examining causal factors. This study adopts and re-modified model of Ngwakwe 2009 [17], in this study. CDC was introduced which was absent in Ngwakwe, 2009 [17] study. The model was remodified to suit this paper and employed two independent variables: community development cost (CDC) and employee health safety cost (EHSC), in explaining the environmental accounting disclosure and financial performance as the dependent variable peroxide by return on equity (ROE). The target population consists of fourteen (14) hydrocarbon firms quoted in the Nigeria Exchange Group (NXG) as of 31st December 2023; the chosen firms are presented in the table below:

Table 1: Population of the Study

S/N	Companies	Year of Listing
1.	Mobil Oil PLC.	1979
2.	ANINO International PLC.	1990
3.	Capital Oil PLC.	1985
4.	Conoil PLC.	1989
5.	ETERNA PLC.	1997
6.	FORTE OIL PLC.	1978
7.	Japaul Oil & Maritime Services PLC.	2005
8.	MRS OIL Nigeria PLC.	1978
9.	OANDO PLC.	1992
10.	RAK UNITY PET. COMP. PLC.	1989
11.	Seplat Petroleum Development Company PLC.	2014
12.	Total Nigeria PLC.	1978
13.	BECO Petroleum Product PLC	2009
14.	Navitus Energy PLC	1993

Source: Nigerian Stock Exchange, (2024).

The firms incorporated as a sample size of this study have been quoted on or before 31st December 2014 and stay listed throughout the ten (10) years under study and the firms have details disclosure of environmental values in the entire period covered. The use of the criteria above produced a sample size of thirteen (13) out of the fourteen (14) firms listed above. That is, only one firm (Seplat petroleum development company Plc) was unable to meet these study criteria. This study used secondary data as it required the use of financial and market data thus, data were sourced from the CBN Statistical bulletin and annual reports of the firms for the years involved (2014 - 2023). Financial performance being the (dependent variable) is peroxide by returned on equity (ROE). ROE is measured as:

$$ROE = \frac{\text{Net Income}}{\text{Shareholder's Equity}} X\ 100$$

Environmental accounting (independent variable) peroxide by employee's health and safety cost (EHSC) and community development cost (CDC). EHSC are the costs incurred on employee's health and safety such as handling and safety training, medical test & screening, safety equipment among others, while on the other hand, CDC

includes all donations and gifts/ contributions to the host community where oil firms operates, this includes; disaster relief, building of modern class rooms, scholarships award, organizing of orientation and entrepreneurships awareness programmes, provision of water and other amenities.
The model specified for this study:
Ngwakwe (2009) [17] model $FINP_{it} = \alpha + \beta_1 SOEV_{it} + \beta_2 EHSC_{it} \mu_{it}$ was adapted and re-modified for this paper as shown below:

$$ROE_{it} = \alpha + \beta_1 CDC_{it} + \beta_2 EHSC_{it} \mu_{it}$$

Where:
ENVAC= Environmental Accounting
ROE = Return on Equity i at time t
CDC= Community Development Cost
EHSC= Employee Health and Safety Cost
μ_{it} = Total error term
β_1- β_2, represent intercept.
A priori expectation is that $\beta_1 - \beta_2 > 0$

Data Analysis and Discussion of Results

Table 2: Descriptive Statistics

Variable	Observations	Mean	Std. Dev.	Minimum	Maximum
Return on Equity (ROE)	130	6.7503	9.1509	-17.6	30.04
Employee Health and Safety Cost (EHSC)	130	29160.49	20446.81	4244	86570
Community Development Cost (CDC)	130	6088.24	4411.69	1100	26782

Source: Author's Computations, (2024).

As shown in the table, ROE has a mean value of 6.7503 with maximum and minimum values of 30.04 and -17.6 respectively. This implies that the average return on equity of quoted oil and gas companies in the country was 6.8%.
Furthermore, the mean value of EHSC was 29160.49 with maximum and minimum values of 86570 and 4244 respectively which suggested that these quoted oil and gas firms committed a substantial sum towards their employees' health and safety in the covered period of this study. The mean value of CDC was 6088.24 with maximum and minimum values of 26782 and 1100 respectively. This implies that a considerable fund was committed to community development by these firms for the period.

Table 3: Correlation Matrix

	ROE		EHSC	CDC
ROE	1.0000			
	0.7478	1.0000		
EHSC	0.3145	0.3081	1.0000	
CDC	0.0630	0.0031	0.0317	1.0000

Source: Author's Computations, (2024).

Table 2 presents the correlation matrix of the entire variables under the study (Independents and dependents). This is to measure the linear association between these variables (ROE, EHSC and CDC). This table shows the comparative strength of the linear relationship among the variables. According to Gujarati (2004) [13] multicollinearity problem could only arise if the pair-wise correlation coefficient of the regressors are above 0.80. As shown in table 2, no variable that post problem since their values are not above 0.80, thus they are orthogonal (statistically independent).

Multicollinearity Test: The imbedded postulation of panel least square estimation method is that the independent variables are not perfectly correlated or near perfect correlation with one another". Since, there is absence of such relationship among the explanatory variables of the study, they are said to be orthogonal to one another. Table 4.2 shows the association among the explanatory variables through the use of Pairwise Correlation.

Table 4: Variance Inflation Factor

Variable	VIF	1/VIF
CDC	1.07	0.9371
EHSC	1.00	0.9972
Mean VIF	1.06	

Source: Author's Computation, (2024).

Table 3 shows the variance inflation factor (VIF) which reflect the relationship amongst the independent variables of the study. The result showed absence of multicollinearity effect between the studied variables with each VIF scores is coming before 10, while the average is less than 10 as well.

Table 4: Regression Result

Variable	Random Effect Model	Fixed Effect Model
Constant	8.6546 (0.005)*	6.6123 (0.053)**
CDC	-0.0001 (0.582)	-0.0002 (0.085)**
EHSC	0.0000 (0.443)	0.0001 (0.043)*
Wald X^2	4.33 (0.3629)	7.60 (0.1075)
Hausman Test	4.13 (0.3885)	0.26 (0.9924)
Breusch and Pagan Lagrangian Multiplier Test	52.55 (0.0000)*	138.41 (0.0000)*

* and ** denotes 5% and 10% level of significance respectively.
( ) denotes Prob., while the value signifies coefficients of the variables.
Source: Author's Computation, (2024).

Therefore, table 4 shows the result of the random-effects model for effect of; community development, employee health and safety cost on financial performance measure by ROA of quoted downstream firms in Nigeria. Overall R^2 value of 0.0846 (9%), and 0.0543 (5%) for ROE slow them independently. More so, these percentages (9%, 5%, and 9%) revealed the extent of how financial performance of quoted oil and gas firms in Nigeria is predicted by the independent variables (EHSC and CDC).
The breakdown of each variable in connection to ROE is as follows: regarding how community development cost (CDC) impacts the financial performance of publicly listed oil and gas companies in Nigeria, it's evident that CDC had a negative impact on both ROE. However, these impacts were not statistically significant at the 5% and 10%

significance levels for ROE, respectively where statistical data (0.582 for ROE) supported this finding. This implies that there is negative relationship between community development cost (CDC) and financial performance of quoted oil and gas firms in Nigeria. Therefore, the stated null hypothesis cannot be refuted.

The sign and magnitude of the coefficients of employee health and safety cost (EHSC) revealed a positive but minute effect on ROE. The relationship was significant with at 5% and 10% level of significance while it's insignificant on ROE with values of 0.443 and 0.05. This showed that there is positive association between employee health and safety cost (EHSC) and financial performance of quoted oil and gas firms in Nigeria with respect to their return on assets and, but not on return on equity. Therefore, the stated null hypothesis cannot be accepted. Furthermore, the Wald X^2 (4.33), and (7.60) with P-value 0.3629, and 0.1075 respectively for ROE indicates that; EHSC and CDC disclosure has no statistical significance on financial performance of quoted downstream oil and gas firms in Nigeria even at 10% level of significance.

From table 4 the random-effects model shows that, CDC had negative effect on ROE (0.582, and 0.082) and was not statistically significant at 5% and 10% level respectively. This implies that as community development cost (CDC) increases, financial performance of selected listed firms in Nigeria reduces and vice-versa. Therefore, hypothesis one is accepted indicating that community development cost does not have significant effect on financial performance of oil and gas firms in Nigeria. The finding is not in line with the study *a priori* expectation and consistent with the work of Acti *et al*., (2013) [1], which affirmed that community development cost has a negative relationship and significant.

Furthermore, the study finds a positive association between employee health and safety cost (EHSC) and financial performance of the selected firms in Nigeria with respect to return on assets, but not on return on equity, thus, there is positive but insignificant effect on ROE, and was established statistically to be significant at 5% and 10% level of significance respectively on insignificant on ROE. Therefore, hypothesis two rejected, indicating that employee health and safety cost does not have significant effect on financial performance of oil and gas firms in Nigeria. The study result is consistent with the work of Acti, Lyndon, and Bingilar (2013) [1] which stated that employees' health and safety cost is positive and significantly related with organisation performance. This suggests that as EHSC increase, financial performance of listed hydrocarbon firms in Nigeria increases and vice-versa. Finally, it is obvious from the regression results that environmental accounting disclosure has no statistical significance effect on financial performance of listed oil and gas companies in Nigeria at 5% and 10% level of significance.

Conclusion and Recommendations

The study examines the nexus between environmental accounting and financial performance of listed down-stream oil and gas firms in Nigerian. The paper conclusively that, environmental accounting cost have no significant effects on financial performance of the selected hydrocarbon firms for the period under review as little funds were committed to CDC and substantial fund was committed to EHSC which in turn increases Nigerian oil sector profitability under the period review. A reasonable degree of changes occurs in term of return on asset and return on equity when compared with environmental accounting cost due to significant fund committed to employee's health and safety cost.

In respect of the findings, the study recommends that:

- Management of downstream oil and gas firms should increase their participation in CDC to their host communities in order to guarantee a conflict free operation atmosphere needed by managers, customers, employees and interested parties for maximum productivity/profitability. This will silence the militant agitation in the host community.
- Management must be transparent in reporting and allow stakeholders to assess the company's commitment to environmental stewardship.
- Management of oil and gas firms should formulate and implement consistent environmental friendly policies like immediate removal of pollution or contaminants from the environment, community safety among others, to enhance their competiveness.
- Government should make laws that mandates downstream oil and gas companies in Nigeria to deploy certain percentage of their income back to the host community and also management of oil and gas firms should find a way of giving back to the host communities by investing on capital projects for developmental purpose.

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