VOL. 03 NO. 4,
FEBRUARY, 2024
E-ISSN 3026-9210
P-ISSN 3026-815X



African Scholar Publications & Research International
www.africanscholarpub.com

Journal of Built Env. & Geological Research (JBEGR)

Challenges Confronting the Implementation of Environmental Management Plan of Obiafu Oil and Gas Project in Rivers State, Nigeria

Thompson, Hope Hoze[1], Adamu Tanko Ogah[2], Joshua Innocent Magagi[3] and Abugu, Nkechinyere Anthonia[4]
[1,2,3&4] Geography Department, Nasarawa State University, Keffi.
researcherescreed@gmail.com

Abstract

The Niger Delta Region of Nigeria has continued to experience dangerous environmental degradation due poor to implementation of Environmental Management Plan (EMP). The challenges confronting the implementation of Obiafu oil and gas project were identified and broadly classified using PCA. Purposive sampling technique was used to select twenty (20) respondents for questionnaire administration and interview. The respondents are the project EIA stakeholders. They constitute of five representatives each from company that own the Obiafu oil and gas project, EIA Departments Federal Ministry of Environment, Rivers State Ministry of Environment and host communities that participated in the EIA process. Data collected was analysed using percentage and Principal Component Analysis (PCA). Results shows that challenges confronting implementation of EMP of Obiafu Oil and Gas project includes lack of adequate workforce, cost, inadequate experts, poor follow-up, negligence, poor coordination among EIA regulatory Agencies and corruption. The principle components of challenges are limitations of experts and other stakeholders

challenges (45.53%), abusive process including poor follow-up and environmental negligence challenges (28.68%), and cost (19.50%). Therefore, limitations of experts and other stakeholders is major challenge confronting implementation of EMP of Obiafu Oil and Gas project. It was recommended that the challenges of implementation EMP can be reduced through training and recruitment of more expertise.

Keywords: Implementation, Environmental Management, Plan, Oil and Gas

Introduction

Environmental Management Plan (EMP) is a documented plan containing details of impacts, recommended mitigation, monitoring measures and legal document based on which the performance is monitored (Centre for Natural Resources Governance (CNRG, 2017). The objective of EMP is to set out clearly the key components of environmental management for project such that the concepts are realized throughout the construction, operation, closure and post-closure phases of project. EMP is vital component of Environmental Impact Assessment (EIA). When the EIA process is approved by the authorizing body, the EMP is extracted from the report as an independent document for onward implementation (Nwafor, 2006; Anyadiegwu, 2012). The success of EIA in achieving sustainability depends on the implementation of the EMP. The significance of the environmental management plan (EMP) in environmental impact assessment (EIA) practice makes it a major requirement for many EIA regimes including Nigeria (Hemba and Phil-Eze, 2021).

However, despite the credibility of EIA in predicting and mitigating environmental impact of oil and gas production, the Niger Delta Region of Nigeria has continued to experience dangerous environmental degradation (Odukoya, 2006; Yakubu, 2017). This is mainly because adequate attention has not be given to the Implementation of Environmental Management Plan (EMP) in EIA rather it is usually suggested that lack of implementation of mitigation measures, makes EIA ineffective (Ahmed *et al*., 2020; Msheliza *et al*., 2020). Olawuyi and Tubodenyefa, (2018) also has shown that EIA is merely a certification for oil and gas production; for example, there are discrepancies

between the certification of prevailing limits and site visit/verification by independent stakeholders.

Lack of project affected person participation has been pointed as reason why EIA is not effective in mitigating negative project impact (Idemudia, 2014). According to Adomokai and Sheate (2004), the operating companies only decide what projects to do for the community as community or public service instead of their active participation in contributing to the real environmental decisions because there is no legal requirement and obligation for the project proponents to engage the affected public in its own assessment before submitting its reports to the Federal Ministry of Environment (Eweje, 2006). In the same vain, Amnesty International (2009) criticized the EIA system in the Niger Delta for oil and gas activities on the grounds that it is usually carried out by consultants hired by the oil companies and not seen as a tool to protect the environment or the people but primarily is seen as a regulatory requirement. Similarly, Eweje (2006) had recommended that government needs to adopt a wider range of strategic environmental protection approaches that embrace the fundamental components of sustainable development, economic prosperity, environmental health and social equity and well-being and makes sure more environmentally sensitive decisions are taken to reduce environmental damage. Voluntary compliance has also been seen as weakness in EIA in Nigeria (Anaejionu *et al*., 2015). Therefore, in order to achieve a better environmental protection, the regulator should have the strong will power to enforce environmental laws with stiff sanctions for non-compliance. According to Anaejionu *et al*. (2015), the EIA process is not carried out with the required level of seriousness by companies and as a result not thoroughly executed because the agency saddled with the responsibility to review the EIA lacks the manpower to identify lapses. The entire Act did not consider the ethno-diversity nor support the identity and culture of the host communities, its rich biodiversity and conservation of wildlife.

Elenwo and Akankali (2014) reviewed the environmental policies and strategies in the Nigerian oil and gas industry sector, assessing its efficiency, challenges and prospects. Essentially, the study established that the Environmental Policies and Strategies of Nigeria Oil and Gas Industry have impacted positively on the Nigerian environment over the years, especially in the area of awareness creation for all stake-holders. In terms of challenges, inefficiency of the regulators due to inadequacy of logistics, poor environmental data base, duplication and overlaps of regulators functions are some of

the challenges identified. The prospect of environmental policies and strategies in Nigeria is generally considered to be bright, considering the fact that the industry is still evolving.

The implementation of environmental policies and strategies in Nigeria is currently fraught with certain challenges, cutting across socio-economic, scientific, cultural frontiers and overlap of Authorities. United Nations Environment Programme (UNEP) (2011) report on assessment of Ogoni land remarked that "overlapping authorities and responsibilities between ministries and a lack of resources within key agencies has serious implications for environmental management on the ground, including enforcement". Adegoroye (2016) opined that the effects of responsibility overlap among environmental agencies goes beyond rampant duplication of environmental policy to increase cost of implementation.

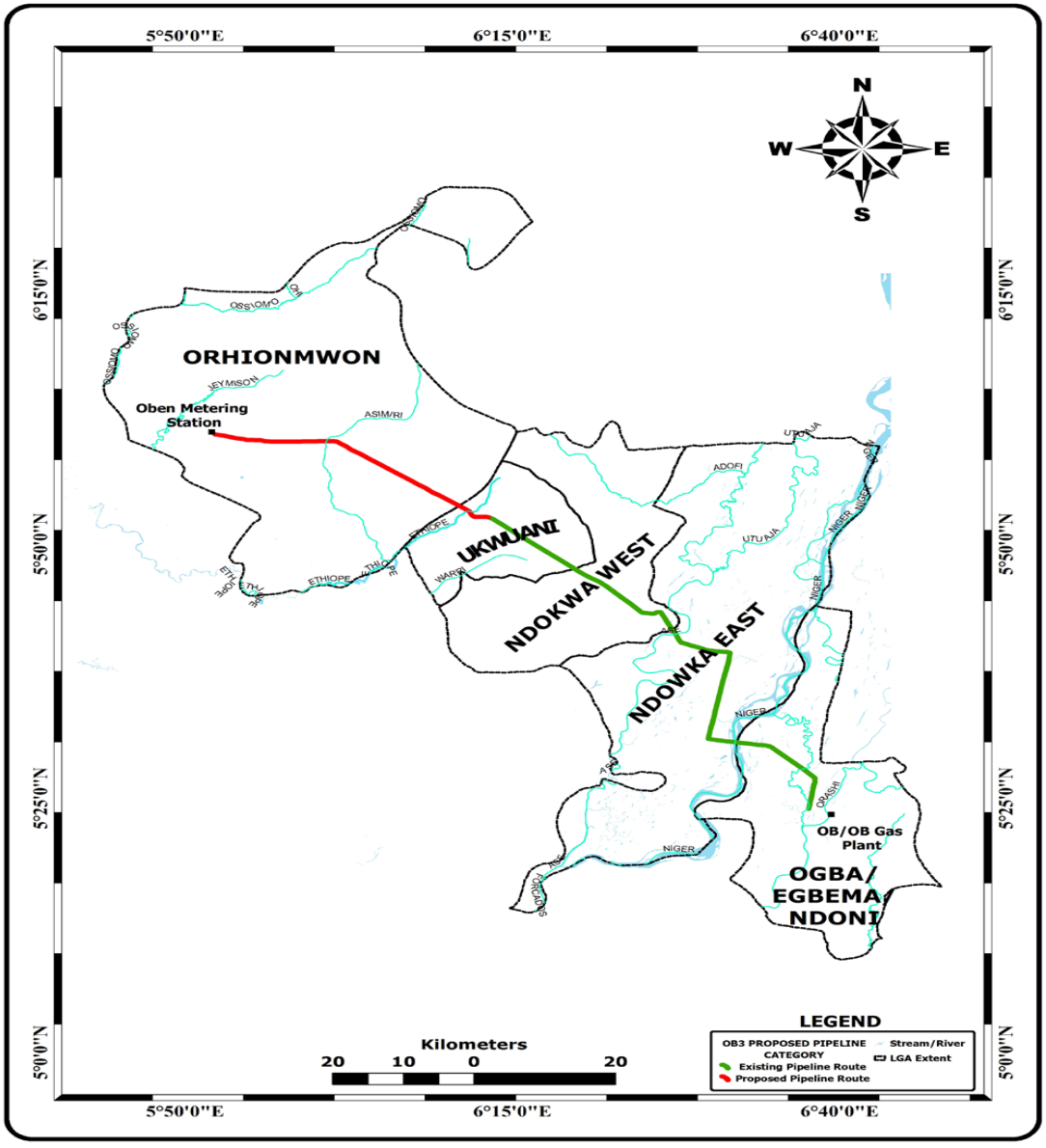
Inadequate access to environmental information is another challenge confronting the efficiency of EIA (Makarenko, 2020). The host communities who are the most critical stakeholders are oftentimes ignorant of the environmental legislations and policies governing the oil and gas industry (Akankali and Oronsaye, 2017). When critical stakeholders are largely uninformed, it makes implementation of Environmental Management Plan voluntary and difficult. According Makarenko (2020) understanding and cooperation of all stakeholders is essential for successfully implementation of environmental policy. Other challenges include poor environmental education, dearth of equipment and logistics for policies and strategies actualization, inadequate and poorly trained manpower, poor research and documentation of research results etc (Nwafor, 2006).

Literature has shown different challenges to EIA process and implementation of management plan however, none was specific on oil and gas project. The challenges identified by previous studies were diverse and cannot be easily comprehend. Thus, this study bridged this gap as it used Principle Component Analysis (PCA) and summarized the challenges that confront the implantation of environmental management plan of oil and gas project. The challenges confronting the implementation of Obiafu oil and gas project were identified and broadly classified using PCA.

Materials and Methods

Study Area

Obiafu oil and gas project and its major communities Omoku, Obrikom and Ebocha are located in the Ogba/EgbemaiNdoni Local Government area (ONELGA) of Rivers State. The project is part of NAOC's OML 61(EIA report). The field is located within latitudes 40251 to 40551North of the equator and Longitudes 50401 to 60301 East of the Greenwich Meridian occupying an approximate area of 164,596 hectares (Figures 1 & 2).



The Location of the Study Area
Source: EIA Report of Obiafu 19 Oil and Gas Project

The climatic condition in the study area is typical of the coastal zones of Nigeria. Two prevalent climatic regimes (dry and wet seasons) exist in the study area. The two climatic regimes are dependent on the two prevailing air masses blowing over the country at different times of the year-the north-easterly air mass of Saharan origin, and the humid maritime air mass blowing from over Atlantic. Rainy season commences around March and extends to early November. A little dry spell is experienced about the third or fourth week in August commonly called August break in the area. This trend is however fast changing. The mean annual number of rainy days in the area varies from 100 to 250, mean monthly amount of rainfall recorded is 152 - 350mm, while the mean annual rainfall amount in the area ranges from 2,540 to about 4,000mm. The highest mean daily temperature values of between 28 - 30 °C are recorded around February and March, while lowest values of between 23 - 24 °C are recorded in August. Mean annual maximum temperature in the area varies from 29 - 32 °C, while mean annual minimum temperature values vary from 22 - 23 °C (Osuagwu and Olaifa 2018).

The traditional inhabitants of Obiafu are farmers and fishermen. Farming involves harvesting of palm fruits, tapping of palm wine and cultivation of plantain, cassava, yam, vegetable, etc. Fishing is a seasonal occupation. During the dry season, the crop farming booms as the floods recedes. The rainy season comes with flood thus compelling the inhabitants to change to fishing. This involves about 88% of the populace while an insignificant percentage of the people are employed by the oil companies as security guards for the flow stations and well heads. The womenfolk collect forest resources and assist the male counterparts in processing palm fruits and sale of produce from the farm. Farmlands, bush fallows and forests occupy a central place in the existence of the people. The inhabitants of the area are subsistence farmers, who depend mainly on the farms and forests for livelihoods. Loss of resources would therefore be a major threat to the people livelihood. The population of the affected communities in 2011 as cited in the EIA Report was 53,339 people. This was estimated to 83,777 people in 2022 using 2.8% growth rate.

Purposive sampling technique was used to select twenty (20) respondents for questionnaire administration and interview. The respondents are the project EIA

stakeholders. They constitute of five representatives each from company that own the Obiafu oil and gas project, EIA Departments Federal Ministry of Environment, Rivers State Ministry of Environment and host communities that participated in the EIA process. Data collected was analysed using percentage and Principal Component Analysis (PCA).

Results

Challenges confronting implementation of mitigation measures of Obiafu Oil and Gas project includes lack of adequate workforce, cost, inadequate experts, poor follow-up, negligence, poor coordination among EIA regulatory Agencies and corruption. The affirmations of challenges confronting implementation of mitigation measure of Obiafu Oil and Gas project are presented in Table 1.

Table 1: Challenges Confronting Implementation of ESMP

Challenges	**Frequency(N= 20)**	**Percentage (%)**
Lack of adequate workforce	6	30
Cost	19	95
Inadequate experts	9	45
Poor follow-up	20	100
Negligence	20	100
Poor coordination among EIA regulatory Agencies	12	60
Too much paper work	9	45
Logistics	16	80
Enforcement machinery	12	60
Corruption	18	90
Bribery	18	90
Poor interest	20	100
Poor environmental consciousness	20	100
Too many regulatory bodies	13	65
Cost of certification	19	95
Quality of consultants	14	70
Time involved	18	90
Exposure of the organizations	7	35

Behavior of environmental regulatory agencies	12	60
Tedious process of EIS	16	80

Source: Field Survey, 20

Table 1 shows a wide range of 30-100% affirmation of the challenges that confront implementation of the Environmental and Social Management Plan. Principal Component Analysis (PCA) was employed to group and analyze the identified challenges into more manageable size. Thus, the challenges were resolved into three main factors (Table 3). The correlation pattern of challenges confronting the implementation of the Obiafu Oil and Gas Project was first analysed. Result shows both positive and negative correlations among the selected variables. By implication, inverse and associative relationships exist from the interaction of the variables that confront the implementation of the Obiafu Oil and Gas Project ESMP. Correlation coefficients of ± 0.50 were considered significant at 0.5 confidence level (one-tailed).

The relationship between some variables were weak, however, no particular pattern can be deduced from the relationship. There are instances of auto-correlation and multiple relationship among some variables, the problem of lack of a clear explanatory pattern and mixed relationship among variables in the correlations were resolved through the use of Principal Component Analysis. On the basis of Kaiser Principle, three components were extracted using the variable maximization (varimax) method with Eigen-values of 7.24, 4.56 and 3.10 and percentage contributory variances of 51.72%,
29.79% and 15.78% respectively (Table 2).

Table 2:Principal Component Analysis of Challenges Confronting Implementation of Management Pl

Variables	Components		
	I	II	III
Lack of adequate workforce	.877	-.233	-.106
Cost of implementation	.432	.436	.834
Inadequate experts	.857	.419	-.096
Poor follow-up	.450	.595	-.105
Negligence	.438	.569	-.480
Poor coordination among EIA regulatory Agencies	.988	-.143	-.115
Too much paper work	.418	.636	-.570
Logistics	-.136	-.110	-.636
Enforcement machinery	.859	-.103	-.207
Corruption	-.352	.675	.493
Bribery	.486	.505	-.095
Poor interest	-.107	.568	-.312
Poor environmental conscious	-.315	.525	-.227
Too many regulatory bodies	.590	.427	-.097
Cost of certification	-.440	-.118	.519
Quality of consultants	.857	-.103	-.104
Time involved	-.311	-.110	.669
Inadequate stakeholders involvement	.820	.471	-.113
Behavior of environmental regulatory agencies	.534	-.107	-.565
Tedious process of EIS	.234	.534	-278
Eigen-value	7.24	4.56	3.10
% Variance	45.53	28.68	19.50
% Cumulative explained	45.53	74.21	93.71

The rotated component matrix in Table 2 shows the component matrix for the three (3) factors. Component I has an Eigen-value of 7.24 and accounts for 45.53% of the total variance. It has significant positive loading on eight (8) variables (lack of adequate workforce, inadequate experts, poor coordination among EIA regulatory

agencies, enforcement machinery, too many regulatory bodies, quality of consultants, inadequate stakeholders' involvement and behavior of environmental regulatory agencies). All the variables with significant positive loadings touched on limitations of experts in regulatory bodies and other stakeholders, thus, it was named 'limitations of experts and other stakeholders challenges'.

Component II has an Eigen-value of 4.56 explains 28.68%, of the total variance. It has also significant positive loading on eight (8) variables (poor follow-up, negligence, too much paper work, corruption, bribery, poor interest, poor environmental conscious, tedious process of EIS). All variables with significant loadings touched on abusive process and environmental negligence. Thus, is named 'abusive process and environmental negligence challenges'. Component III has an Eigen-value of 3.10 accounts for 19.50% of the total variance. It has significant positive loadings on four (4) variables (Cost of implementation, logistics, cost of certification and time involved). All the variables with significant positive loadings touched on cost and thus, is was named cost challenges.

It was deduced from the result of the Principle Component Analysis of challenges confronting the implementation of the Obiafu Oil and Gas Project ESMP that challenges were broadly grouped into three namely: limitations of experts and other stakeholders challenges (45.53%), abusive process including poor follow-up and environmental negligence challenges (28.68%), and cost (19.50%). Thus, all the variables used could explain 93.71% of challenges confronting the implementation of the Obiafu Oil and Gas Project ESMP. Therefore, variables are relevant and significant challenges to be considered for the implementation the Obiafu Oil and Gas Project ESMP.

These findings shows that 'limitations of experts and other stakeholders, abusive process including poor follow-up and environmental negligence' and cost factors can explain to a large extent (93.71%) of challenges confronting the implementation of the Obiafu Oil and Gas Project ESMP is in tandem with previous studies. For examples, studies have indicate that poor stakeholders' knowledge and team work affects the implementation of ESMP (Makarenko, 2020). According Makarenko (2020) understanding and cooperation of all stakeholders is essential for successfully implementation of environmental policy. It also agrees with Nwafor (2006) who posited that EIA challenges include poor environmental education, dearth of equipment, manpower, research and documentation of research results.

Conclusion and Recommendations

The principle components of challenges confronting the implementation of the Obiafu Oil and Gas Project EMP are limitations of experts and other stakeholder's challenges, abusive process including poor follow-up and environmental negligence and cost. The challenges of implementation EMP can be reduced through training and recruitment of more expertise; adoption of due diligence in all efforts toward environmental protection and proper fund allocation for each activities.

References

Adegoroye, A. (2016). The Challenges of Environmental Enforcement in Africa: The Nigerian Experience. *Sustainable Development,* 15 (1).

Adomokai, R and W. R. Sheate. (2004).Community participation and environmental decision-making in the Niger Delta. *Environmental Impact Assessment Review, 24* (5):495-518.

Ahmed Y.B, Ogah A.T, Magaji JI and Abugu N.A (2020).Assessment of the Implementation of the Environmental Management Plan of the Gurara Multi-Purpose Dam in Kaduna State Nigeria. Published in *WJIR, 9*(5).

Amnesty International. (2016).Nigeria: Petroleum, Pollution and Poverty in the Niger Delta. Available online: https://www.amnesty.de/files/Amnesty_Bericht_Niger_Delta_09.pdf (accessed on 26 December 2020).

Anyadiegwu *C. I. C.*(2012). Overview of Environmental Impact Assessment of Oil and Gas Projects in Nigeria. *An International Journal of Science and Technology Bahir Dar, Ethiopia,1* (3).

Elenwo, E.I. and Akankali, J.A. (2014). Environmental Policies and Strategies in Nigeria Oil and Gas Industry: Gains, Challenges and Prospects. *Natural Resources*, *5*: 884-896.

Eweje, G. (2006). Environmental Costs and Responsibilities Resulting from Oil Exploitation in Developing Countries: The Case of the Niger Delta of Nigeria," *Journal of Business Ethics, 69* (1):27-56.

Hemba S & Phil-Eze P.O.(2021). Implementation of EMP in EIA Follow-Up of Oil and Gas

Projects in the Niger Delta Region of Nigeria: A Case of Bayelsa and Rivers States. *Journal of Environmental Research, Engineering and Management, 77* (1): 96–108. DOI 10.5755/j01.erem.77.1.23960.

Idemudia U. (2014). Corporate-community engagement strategies in the Niger Delta: some critical reflections. *Extr Ind Soc 1:*154–162.

Makarenko I. (2020). Challenges of Environmental Impact Assessment (EIA) Procedure for Transboundary Projects in the Black Sea Basin. *Turkish Journal of Fisheries and Aquatic Sciences 12:* 445-452.

Msheliza F.N, Samaila, I K, Magaji J.I. and Abugu N.A. (2020). Appraisal of the Implementation of the Environmental Management Plan (EMP) for Okobo Coal Mining Project in Ankpa, Kogi State, Nigeria. *The Environmental Studies, 2*(1).

Nwafor, J.C. (2006): *An Assessment of river fish populations in response to Rainfall Distribution and Agricultural patterns of river state and fish communities Planning*. Ann Arabor, MI publishing, Michigan.

Odukoya A.O.(2006). Oil and Sustainable Development in Nigeria: A Case of Study the Niger Delta. *J. Hum. Ecol., 20*(4): 249-258.

Olawuyi D.S and Tubodenyefa Z. (2018). Review of the environmental Guidelines and standards for the petroleum industry in Nigeria (EGASPIN). Department of Public Health Sciences, College of Health and Social Services Building, New Mexico State University, Las Cruces NM 88003-8001, USA.

Osuagwu ES and Olaifa E. (2018). Effects of oil spills on fish production in the Niger Delta. PLoS ONE 13(10)
United Nations Environment Programme (UNEP, 2011) Environmental Assessment of Ogoniland. First Published by UNEP at www.servenigeria.com/com.