HUMANUS DISCOURSE Vol. 4. NO 1. 2024
ISSN 2787-0308 (ONLINE)

A review of the legal framework for marine environmental protection and sustainable development in Nigeria: Case study of the Niger Delta region and upstream petroleum development

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Abstract

The significance of marine environmental protection and preservation is not far-fetched. The marine ecosystems provide essential services that enhance human existence and life on earth, as well as the realization of the global sustainable development agenda. Hence, the United Nations sustainable development goals emphasize the need to conserve and sustainably exploit the marine environment. The responsibility for marine environmental protection and preservation is generally vested on States through the instrumentality of various international, regional, and domestic environmental laws. This responsibility requires States to take all measures necessary to prevent, reduce, and control marine environmental pollution and degradation from any source within their jurisdictions. Against this background, this article aims at the analysis of the legal and regulatory provisions employed by the Nigerian State for marine environmental protection in the country, especially in the upstream petroleum sector. Adopting a desk-based research methodology, the article begins with a review of the relationship between the marine environment and sustainable development. In so doing, the article highlights the adverse effects of upstream petroleum development on the marine environment, and the multiplier effect on the achievement of sustainable development using the Niger Delta Region of Nigeria as a case study. The article proceeds to evaluate the legal framework for marine environmental protection in the Nigerian upstream petroleum sector vis a vis international regulatory framework on marine environmental protection. Consequently, areas requiring policy, regulatory or other legal reforms were highlighted, and relevant recommendations proposed.

Keywords: Marine environment, environmental protection, sustainable development, upstream petroleum development, Niger Delta Region

ISSN 2787-0308 (ONLINE)

Introduction

Since the United Nations Conference on the Human Environment 1972 (Stockholm Conference), the need to integrate economic development with environmental protection and social development has expanded tremendously. This system of integrating economic development with social development and environmental protection is generally referred to as sustainable development. The concept of sustainable development challenges the conventional view of development which prioritizes economic growth and development at the detriment of the environment.[1] Although the sustainable development debate can be traced to the early 1960s, the Stockholm Conference brought it to the fore by the recognition of the importance of environmental management and protection.[2] The Stockholm Conference emphasizes that environment and development can no longer afford to be in a state of conflict because development significantly depends on the environment.[3]Thus, sustainable development is viewed as a concept that connotes the integration of environmental protection with economic development because environmental sustainability is required for the sustainability of economic development.[4]

The notion of sustainable development became more popular and widely accepted globally as a result of the publication of the Report of the World Commission on Environment and Development in 1987.[5] The global

[1] Susan Baker,*Sustainable Development* (London: Routledge, 2006), 1-3; Dennis A Rondinell& Michael A Berry, "Environmental Citizenship in Multinational Corporations: Social Responsibility and Sustainable Development" *European Management Journal*18 (2000): 70; Giuseppe Munda, "Environmental Economics, Ecological Economics, and the Concept of Sustainable Development" *Environmental Values*6, no. 2 (1997): 213; Ian Moffatt,*Sustainable Development: Principles, Analysis and Policies* (New York: Parthenon Publishing Group, 1996); Mario Giampietro, "Using Hierarchy Theory to Explore the Concept of Sustainable Development" *Futures*26, no. 6 (1994): 616; Stephan Schmidheiney,*Changing Course: A Global Business Perspective on Development and the Environment* (Massachusetts: MIT Press, 1992).

[2] Desta Mebratu, "Sustainability and Sustainable Development: Historical and Conceptual Review" *Environmental Impact Assessment Review*18 (1998): 493. See also Gill Seyfang, "Environmental Mega-Conferences- From Stockholm to Johannesburg and Beyond" *Global Environmental Change*13, no. 3 (2003): 223; DjamchidMemtaz, "The United Nations and the Protection of the Environment: From Stockholm to Rio de Janeiro" *Political Geography*15, no. 3-4 (1996): 261; Carl Mitcham, "The Concept of Sustainable Development: Its Origins and Ambivalence" *Technology in Society*17, no. 3 (1995): 311.

[3] See the "United Nations Stockholm Declaration on the Human Environment" (1972) UN Doc A/CONF.14/48/Rev.1, accessed July 21, 2023, http://www.unep.org/documents.multilingual/default.asp?documentid=97&articleid=1503.

[4] Susan Baker, *Sustainable Development,* 5; David W Pearce, Edward Barbier & Anil Markandya,*Sustainable Development: Economics and Environment in the Third World* (London: Earthscan Publications, 1990), 4.

[5]Paul R Portney, "Corporate Social Responsibility: An Economic and Public Policy Perspective" in *Environmental Protection and the Social Responsibility of Firms: Perspectives from Law, Economics, and Business,* eds. Bruce L Hay, Robert N Stavins & Richard H Vietor (London: Routledge, 2010), 107; John Drexhage& Deborah Murphy, "Sustainable Development: From Brundtland to Rio 2012" Background Paper Prepared for Consideration by the United Nations High Level Panel on Global Sustainability (2010): 2, accessed May 28,

acceptability of sustainable development was further enhanced as a result of the United Nations Conference on Environment and Development held in 1992 (Rio Conference),[6] as well as the World Summit on Sustainable Development held in 2002.[7] These summits gave rise to a significant increase in the influence of sustainable development on national and international policy development, as well as policy documents of business organizations globally.[8]Furthermore, consequent upon the Brundtland Report,[9] the Rio Declaration,[10] and the Johannesburg Declaration,[11] sustainable development is no longer regarded as a mere concept but a recognized principle of contemporary international law.[12] Since contemporary international law emphasizes the need for environmental protection, as well as establishes economic, social and cultural rights, the need for the integration of social justice and equity with economic development and environmental protection is recognized as a core component of sustainable development.[13] Thus, the sustainable development agenda contemporarily connotes a development paradigm that integrates environmental and social concerns with economic considerations.[14]

2023,http://www.un.org/wcm/webdav/site/climatechange/shared/gsp/docs/GSP1-6_Background%20on%20Sustainable%20Devt.pdf; David Reid,*Sustainable Development: An Introductory Guide* (London: Earthscan Publications, 1995), xiii.

[6] United Nations Conference on Environment and Development, Rio de Janeiro (1992) which gave rise to the Rio Declaration on Environment and Development, as well as the Agenda 21.

[7] World Summit on Sustainable Development, Johannesburg (2002) which gave rise to the Johannesburg Declaration on Sustainable Development and the Implementation Plan of the Declaration.

[8] Peter Hardi & Terrence Zdan,*Assessing Sustainable Development: Principles in Practice* (International Institute for Sustainable Development, 1997), 8. See also Desta Mebratu, "Sustainability and Sustainable Development".

[9] The Report of the World Commission on Environment and Development (Brundtland Commission) *Our Common Future* (1987), accessed May 28, 2023,http://www.un-documents.net/our-common-future.pdf.

[10] United Nations Declaration on Environment and Development (Rio Declaration) (1992) 31 *International Legal Materials* 874, accessed May 28, 2023,http://www.jus.uio.no/lm/environmental.development.rio.declaration.1992/portrait.a4.pdf.

[11] The Johannesburg Declaration on Sustainable Development (2002) UN Doc A/CONF.199/20, accessed May 28, 2023,http://www.unmillenniumproject.org/documents/131302_wssd_report_reissued.pdf.

[12]Virginie Barral, "Sustainable Development in International Law: Nature and Operation of an Evolutive Legal Norm" *The European Journal of International Law*23, no. 2 (2012): 377.

[13]Robert W Kates, Thomas M Parris & Anthony A Leiserowitz, "What Is Sustainable Development? Goals, Indicators, Values, and Practice" *Environment: Science and Policy for Sustainable Development*47, no. 3 (2005): 8.

[14] Christian Rammel, "The Paradox of Sustainable Development: Socio-Ecological System, Stability and Change" in *Sustainable Development: New Research*,ed. Alexander D Maples(New York: Nova Science Publishers Inc., 2005), 1; Bill Hopwood, Mary Mellor & Geoff O'Brien, "Sustainable Development: Mapping Different Approaches" *Sustainable Development*13 (2005): 38; Bob Giddings, Bill Hopwood & Geoff O'Brien, "Environment, Economy and Society: Fitting them together into Sustainable Development" *Sustainable Development*10, no. 4 (2002): 187.

ISSN 2787-0308 (ONLINE)

The marine environment and sustainable development

The term 'marine environment' is used in this study to describe an integrated system comprising of the oceans, seas, coastal areas, and aquatic resources. These marine components form an integrated whole and constitute an essential component of the global life-support system and sustainable development agenda. This is because several millions of people inhabiting indigenous coastal communities depend on the marine sector for their nutrition and livelihoods.[15] In addition to the provision of food and water, the marine environment possesses some of the most diverse and productive ecosystems essential in the provision of environmental goods and services such as energy, recreation, shipping, etc. Thus, the marine environment is a very important element for human development and local subsistence. Likewise, the marine environment is significant for the sustainable development of various local communities and indigenous people particularly, those in coastal areas. For instance, the UN calls for the realization of zero hunger through the achievement of food security and improved nutrition as an inclusive component of the sustainable development agenda.[16]Marine animals contribute to the enhancement of food security either directly as a source of food and essential nutrients, or indirectly as a source of income for the purchase of food especially for coastal communities who are largely dependent on marine resources for subsistence.[17]

The UN also calls for the eradication of poverty by building the resilience of the poor and vulnerable, and reducing their exposure and vulnerability to climate-related extreme events and other economic, social and environmental disasters.[18] It is noteworthy that the marine sector often constitutes the major source of subsistence for the majority of the inhabitants of coastal communities thus, playing a significant role in their economic security. Marine environmental pollution and degradation however undermines the marine environment thereby threatening the economic security of the local coastal communities, and inhibiting poverty alleviation in such communities. Such marine pollution and degradation leads to a depletion of marine economic resources including fisheries, and tourism, among others.[19]

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[15] United Nations, "Factsheet: People and Oceans" The United Nations Ocean Conference, New York, 5-9 June 2017, accessed August 16, 2023,https://sustainabledevelopment.un.org/content/documents/Ocean_Factsheet_People.pdf.

[16] The United Nations Sustainable Development Goals, goal 2, accessed September 28, 2023,https://sdgs.un.org/goals/goal2.

[17]Ifesinachi Okafor-Yarwood, "The Effects of Oil Pollution on the Marine Environment in the Gulf of Guinea- The Bonga Oil Field Example" (2018) accessed September 28, 2023, https://research-repository.st-andrews.ac.uk/bitstream/handle/10023/20305/Okafor_Yarwood_2020_Effectws_of_oil_pollution_TLT_AAM.pdf?sequence=1&isAllowed=y; RE Katikaro& ED Macusi, "Impacts of Climate Change on West African Fisheries and its Implications on Food Production" *Journal of Environmental Science and Management* 15, no. 2 (2012): 83.

[18] The United Nations Sustainable Development Goals, goal 1, accessed September 28, 2023,https://sdgs.un.org/goals/goal1.

[19] Edward H Allison et al., "Vulnerability of National Economies to the Impacts of Climate Change on Fisheries" *Fish and Fisheries* 10, no. 2 (2009): 173; VWY Lam et al., "Climate Change 2007: Impacts, Adaptation, Vulnerability" *African Journal of Marine Science*34 (2012): 103.

Furthermore, sustainable marine energy including wave and tidal energy, and ocean thermal energy, among others, has been identified as capable of playing a vital role in the sustainable development agenda.[20] This is particularly with regard to the production and consumption of sustainable energy, and the achievement of an increase in the ratio of renewable energy in the global energy mix.[21]In addition, the development of sustainable marine energy constitutes a pertinent climate action that may be taken to combat climate change and its impacts. The production and consumption of sustainable marine energy helps to reduce reliance on energy from unsustainable sources such as fossil fuels thereby, contributing to the reduction of greenhouse gases emissions. Also, marine habitats contribute to protection from extreme weather conditions thereby helping to keep the climate stable.[22]Moreover, the ocean absorbs about one-quarter of global carbon emissions thus, helping to regulate the climate and contributing to the mitigation of climate change and alleviation of its impacts.[23] Hence, the marine environment may be regarded as an asset that contributes to the realization of the global sustainable development agenda. In other words, marine environmental protection and sustainability can help countries make progress towards the achievement of some of the sustainable development goals. The marine environment is however being rapidly degraded and eroded in different jurisdictions around the world. Such degradation results from a wide range of activities including, land use, agriculture, offshore petroleum operations, shipping, illegal discharges, among others.[24]This brings to the fore the need for marine environmental management including marine environmental protection, and conservation of marine resources.

The marine environment and sustainable development: Case study of the Nigerian Niger Delta region and upstream petroleum development

The upstream petroleum sector is primarily concerned with the exploration and production of crude oil, with various activities ranging from construction and operation of oil rigs and pipelines to operation of drilling and extraction equipment, etc.[25] It is noteworthy that a substantial part of upstream petroleum operations take place offshore thereby generating several forms of marine environmental degradation. This is in addition to the adverse effects of onshore upstream petroleum operations on the marine environment. Generally, upstream petroleum development, whether offshore or onshore, adversely

[20] World Bank & United Nations Department of Economic and Social Affairs,*The Potential of the Blue Economy: Increasing Long-term Benefits of the Sustainable Use of Marine Resources for Small Island Developing States and Coastal Least Developed Countries* (Washington DC: World Bank, 2017), 21.
[21] See the United Nations Sustainable Development Goals, goal 7
[22] European Commission, "Energy, Climate Change, Environment: Marine Environment" accessed September 28, 2023,https://environment.ec.europa.eu/topics/marine-environment_en.
[23] United Nations, "Sustainable Development: Oceans" accessed August 16, 2023, https://www.un.org/sustainabledevelopment/oceans/.
[24] See the Report of the United Nations Conference on Environment and Development 'Agenda 21', (1992), accessed September 28, 2023, https://sustainabledevelopment.un.org/content/documents/Agenda21.pdf.
[25] Library of Congress, "Oil and Gas Industry: A Research Guide", accessed August 16, 2023, https://guides.loc.gov/oil-and-gas-industry/upstream.

affects the quality, quantity and accessibility of marine and coastal resources as a result of various environmental stressors such as noise pollution from drilling equipment, chemical pollution, effluent emissions, oil spillage, etc.[26] Marine environmental pollution and degradation from upstream petroleum development have wide spread and long-term effects on fisheries, marine habitats, human health and livelihoods, as well as the cultural heritage and recreational resources of coastal communities.[27]

The Niger Delta Region of Nigeria typifies the various adverse impacts of upstream petroleum development on the marine environment. This region is home to several millions of people who by virtue of their geographical location are traditionally dependent on fishing and marine exploitation for their livelihood and sustenance.[28] This region is also home to Nigeria's foremost oil producing communities as a result of the presence of deep oil and gas reserves. Several years of upstream petroleum development have made the region one of the most polluted and degraded environment with consequences including degradation of farmlands, and the marine environment.[29] The exploration and exploitation of petroleum have posed significant marine environmental challenges in the region such as pollution from oil spills, industrial effluents, and solid wastes, etc.[30] The re-occurring incidents of oil spillages from leaking underground pipelines and storage tanks have adversely affected the productivity of the region's marine environment. This is in addition to pollution from gas flaring and the resultant heat stress and acid rain which has continued to degrade the region's marine ecosystem.[31] The multiplier effect of these is the decline in local food production and deepened poverty in the region's local communities.[32] This is because pollution from petroleum development has degraded the waters which constitute a major source of food production, as well as a depletion of marine economic resources which form the basis of the local economies of the region.[33] The inhabitants of the local communities in the region mostly depend on fishes and other marine animals as the only source of animal protein. For these communities, fisheries also play a significant role in

[26] Nathan Andrews et al., "Oil, Fisheries and Coastal Communities: A Review of Impacts on the Environment, Livelihoods, Space and Governance" *Energy Research & Social Science* 75 (2021): 4.
[27] Etuk Etiese Akpan, "Environmental Consequences of Oil Spills on Marine Habitats and the Mitigating Measures- The Niger Delta Perspective" *Journal of Geoscience and Environment Protection*10, no. 6 (2022): 191.
[28]Oshwofasa, Bright O., Anuta, David E., &Aiyedogbon John O, "Environmental Degradation and Oil Industry Activities in the Niger-Delta Region" *African Journal of Scientific Research*9, no. 1 (2012): 444-460.
[29] Ibid.
[30]Ifesinachi Okafor-Yarwood, "The Effects of Oil Pollution on the Marine Environment in the Gulf of Guinea- The Bonga Oil Field Example"; Eze Simpson Osuagwu & Eseoghene Olaifa, "Effects of Oil Spills on Fish Production in the Niger Delta" *PLoS ONE* 13, no. 10 (2018): 1.
[31] Nigeria, "National Policy on the Environment" (revised edition) 2016, accessed October 5, 2023,https://faolex.fao.org/docs/pdf/nig176320.pdf.
[32] Arinze Chijioke, "Niger Delta Oil Spills bring Poverty, Low Crop Yields to Farmers" Aljazeera, September 9, 2022.
[33]Ifesinachi Okafor-Yarwood, "The Effects of Oil Pollution on the Marine Environment in the Gulf of Guinea- The Bonga Oil Field Example"; RE Katikaro& ED Macusi "Impacts of Climate Change on West African Fisheries and its Implications on Food Production".

enhancing food security by augmenting food supply and consumption and/or constituting a source of income for the purchase of food supplies.[34] Likewise, the unsustainable exploitation of the marine environment in the upstream petroleum sector has led to individuals and local communities dependent on marine resources losing their means of livelihood and economic security. For majority of the population in the region, the fisheries sector plays a significant role in their economic security through employment opportunities inherent in the sector. The fisheries sector also serves as a source of women empowerment as it provides an opportunity for a lot of women living in the region to earn a living as fisherwomen or fishmongers.[35] The various oil spills and other petroleum pollution have however occasioned an undesirable change in the physical, chemical and biological characteristics of the waters thereby, resulting in a reduction in fish harvest and income. The result of an empirical study revealed that artisanal fishermen in the Niger Delta region incurred higher costs of production and poor fish harvests as a result of pollution from petroleum development, leading to lower profit for fishing activities.[36]

Further, is the quality of the region's marine environment in terms of industrial effluents and other platform discharges which has significantly reduced access to potable water and sanitation, thus, adversely affecting the standard of living of the inhabitants of the region.[37] According to an Amnesty report, the repeated oil spills and waste discharges from petroleum development has resulted in significant damage to the marine ecosystems of the Niger Delta region, destroying not only the aquatic animals, but also affecting the natural survival of man.[38]

Summarily therefore, petroleum development generally and upstream petroleum development particularly, inhibits marine environmental sustainability, and poses a significant impediment to the realization of sustainable development in the Niger Delta Region of Nigeria.

International framework for marine environmental protection in the upstream petroleum sector

Pursuant to the United Nations Convention on the Law of the Sea (UNCLOS), States have the general responsibility to protect and preserve the marine

[34] Serge M. Garcia, "World Inventory of Fisheries. Contribution of Fisheries to Food Security" *Issues Fact Sheets* (Rome, 2005).
[35] Tendai Marima, "There's an Invisible Cost to Nigeria's Oil Spill Disasters"(2016), Quartz Media, accessed October 23, 2023, https://qz.com/859201/theres-an-invisible-cost-to-nigerias-oil-spill-disasters/; Ibim Adaba Tonye and Amiye Francis, "Women and Post Harvest Fish Production in the Niger Delta Area" *Journal of Agriculture and Veterinary Science*7, no. 3 (2014): 78–82.
[36]Gbigbi T.M., "Fishing in oil spillages zone: A case study of Burutu Local Government Area of Delta State, Nigeria" *African Journal of Agricultural Research*8, no. 16 (2013): 1563-1569.
[37]Nigeria, "National Policy on the Environment".
[38] Amnesty International, "Nigeria: Petroleum, Pollution and Poverty in the Niger Delta" June 30, 2009, accessed October 6, 2023, https://www.amnesty.org/en/documents/afr44/018/2009/en/.

environment.[39] Hence, even though States have the sovereign right to exploit their natural resources, such exploitation should be pursuant to their environmental policies, and in accordance with their duty to protect and preserve the marine environment.[40] As such, States have the responsibility to take all measures necessary to prevent, reduce, and control marine environmental pollution from any source within their jurisdictions.[41] Such measures include those designed to minimize to the fullest extent possible, the release of toxic, harmful or noxious substances into the marine environment, as well as pollution from installations and devices used in exploration or exploitation of the natural resources of the marine environment, among others.[42] Furthermore, States,in pursuance of the UNCLOS, commit to the prevention, reduction and control of marine environmental pollution in accordance with international rules, regulations, and procedures.[43]

Arguably, some action plans that are expected to be implemented by national governments within their jurisdictions pursuant to the UN Conference on Environment and Development (UNCED) constitute one of such international rules and regulations. These action plans include the enactment of effective environmental legislations reflecting the environmental and developmental contexts to which they apply,[44]as well as development of national law regarding liability and compensation for the victims of pollution and other environmental damage.[45]For such environmental framework to be sustainable, it is required to take due account of those who depend on natural resources for their livelihoods.[46] Thus, States are expected to formulate integrated national policies for environment and development taking into account demographic trends and factors.[47]In addition, in order to ensure the integration of environment and development, States are encouraged to adopt the effective use of economic instruments and market incentives, as well as establish systems for integrated environmental and economic accounting.[48] Also, States are required to recognize and support the identity, culture and interests of indigenous people and local communities, and enable their effective participation in environmental management and development.[49]

Furthermore, national environmental management frameworks are required to include the integrated management and development of marine areas.[50]With regard to marine environmental protection, the UNCED encourages a

[39] The United Nations Convention on the Law of the Sea 1982, article 192, accessed August 30, 2023,https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf.
[40] Ibid, article 193.
[41] Ibid, article 194(1).
[42] Ibid, article 194(3).
[43] Ibid, article 209.
[44] The United Nations Declaration on Environment and Development, principle 11.
[45] Ibid, principle 13.
[46] The Report of the United Nations Conference on Environment and Development 'Agenda 21', para 3.2.
[47] Ibid, para 5.16.
[48] Ibid, chapter 8.
[49] The United Nations Declaration on Environment and Development, principle 22.
[50] 'Agenda 21', para 17.21.

precautionary and anticipatory rather than a reactive approach to the management of marine environmental degradation. This approach requires the adoption of measures such as environmental impact assessment, clean production techniques, recycling, waste audits and minimization, etc. Hence, national environmental laws and policies must ensure that prior assessment of activities that may have significant adverse impacts on the marine environment are undertaken, provide for economic incentives to apply clean technologies, and prescribe other provisions consistent with the internalization of environmental costs pursuant to the polluter pays principle.[51] Likewise, States have the responsibility for the establishment or improvement of regulatory and monitoring programs to control effluent discharges and emissions.[52]

Beyond the UNCED, the United Nations Environmental Program (UNEP) in furtherance of its mandate on environmental conservation adopts a Regional Seas Program as a regional mechanism for the conservation of the marine environment. The program consists of Regional Seas Conventions and Action Plans (RSCAP) which provide inter-governmental frameworks for addressing marine environmental degradation at a regional level.[53] One of such RSCAP is the 'Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region' (Abidjan Convention),[54] to which Nigeria is a signatory. The Abidjan Convention requires State-parties to take appropriate measures to prevent, reduce, combat and control marine environmental pollution, and ensure sound environmental management of natural resources.[55] State-parties are required to discharge this obligation through the establishment of national laws and regulations, and the harmonization of national policies in this regard.[56]

In order to implement and give effect to the objectives of the Abidjan Convention, the 'Additional Protocol to the Abidjan Convention on Environmental Norms and Standards for Offshore Oil and Gas Exploration and Exploitation Activities' (Malabo Protocol) was adopted in 2017.[57]Pursuant to the Abidjan Convention, the Malabo Protocol is aimed at the prevention, reduction or elimination of marine environmental pollution or degradation from offshore oil and gas exploration and exploitation.[58]Thus, State-parties to the Malabo Protocol are obliged to take appropriate measures for the

[51] Ibid, para 17.22.
[52] Ibid, para 17.28.
[53] See United Nations Environmental Program, "Regional Seas Programme" accessed October 11, 2023,https://www.unep.org/explore-topics/oceans-seas/what-we-do/regional-seas-programme.
[54] The Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region (Abidjan Convention) March 23, 1981, accessed October 11, 2023, http://www2.ecolex.org/server2neu.php/libcat/docs/TRE/Full/En/TRE-000547.txt.
[55] Ibid, article 4(1).
[56] Ibid, article 4(3).
[57] Additional Protocol to the Abidjan Convention on Environmental Norms and Standards for Offshore Oil and Gas Exploration and Exploitation Activities (Malabo Protocol) 2017, accessed October 11, 2023,https://www.wabicc.org/mdocs-posts/malabo-protocol-additional-protocol-environmental-standards-and-guidelines-for-offshore-oil-and-gas-activities/.
[58] Ibid, article 2.

prevention, mitigation, and control of marine environmental pollution from offshore petroleum development within their jurisdictions.[59]In furtherance of this obligation, State-parties are required to apply the precautionary principle, polluter pays principle, as well as the principle of public participation.[60] Also, the Malabo Protocol requires State-parties to subject authorizations for offshore oil and gas developmental activities to some general conditions and provisions including; the proposed facilities for such activities comply with international standards, the operator possess the technical and financial capacity to undertake the proposed activities including decommissioning, and public participation had been undertaken in respect of the proposed activities.[61]Furthermore, State-parties are required to subject any application for a permit or permit extension in respect of offshore petroleum development to the filing of the proposed project with the competent authority. State-parties should prescribe information required to accompany such permit application including; a study of the environmental impacts of the proposed activities, emergency response plans against pollution, insurance or other adequate financial guarantees to cover applicant's liability for any damage caused by the activities, and decommissioning costs, among others.[62] State-parties are required to implement programs to constantly monitor operators so as to ensure that the conditions for authorization are met especially with regards to the environmental impact of their operations.[63]In addition, State-parties are required to mandate the use of best available techniques, and ecologically effective and economically appropriate practices, while also observing national and internationally accepted standards to mitigate the impacts of pollution from offshore petroleum development.[64]

Moreover, State-parties are required to either prohibit the discharge into the marine environment of harmful or noxious substances and materials from upstream petroleum development,[65] or make such discharge subject to the grant of an authorization by the competent authority.[66] Likewise, State-parties are obliged to prohibit the discharge of waste water from upstream petroleum facilities into the marine environment unless the facility is discharging the waste water after treatment in an appropriate treatment plant as approved by the competent authority.[67]

Legal framework for marine environmental protection in the Nigerian upstream petroleum sector

The legal framework for environmental protection in the Nigerian upstream petroleum sector derives from the Nigerian Constitution. The Constitution prohibits the exploitation of natural resources in any form or for any reasons

[59] Ibid, article 4(1).
[60] Ibid, article 4(2).
[61] Ibid, article 6(1).
[62] Ibid, article 7(1).
[63] Ibid, article 21(1).
[64] Ibid, article 9.
[65] Ibid, article 10(5).
[66] Ibid, article 10(6) & (7).
[67] Ibid, article 12(1).

other than the good of the society.[68] In other words, natural resources should not be exploited in a manner that is detrimental or poses adverse impacts on the society, including adverse environmental impacts. In addition, the Constitution provides that "*the State shall protect and improve the environment, and safeguard the water, air and land, forest and wildlife of Nigeria*".[69] These provisions highlight the roles and responsibilities of the Nigerian government in ensuring environmental protection generally in the country. The Nigerian government has adopted several regulatory approaches to ensuring environmental protection in Nigeria generally and in the upstream petroleum sector particularly. This section of the paper highlightsthe provisions of existinglaws and regulations relevant for marine environmental protection in the Nigerian upstream petroleum sector.

i. National Policy on the Environment (Revised Edition) 2016

The National Policy on the Environment (NPE) defines a holistic framework to guide environmental protection generally in Nigeria. The policy-based instrument prescribes sectoral and cross-sectoral strategies and action plans for environmental protection towards sustainable development in Nigeria. In order to ensure adequate environmental protection in the petroleum sector, theNigerian government through the NPE commits to some action plans that are relevant towards environmental sustainability generally, including marine environmental sustainability. The action plans include; ensuring that baseline studies are conducted before the start of any petroleum operation, and strict environmental impact assessments are required before permits are issued for such operations;[70] ensuring regular environmental evaluations and risk management plans for petroleum fields, ensuring regular environmental audits throughout the lifespan of such fields; and ensuring a regular review of the environmental program of petroleum operators.[71]

ii. Oil in Navigable Waters Act 1968

The Act was enacted to implement the terms of the International Convention for the Prevention of Pollution of the Sea by Oil in Nigeria. Adopting a command-and-control regulatory approach, the Act prohibits and criminalizes the discharge of oil into the waters of Nigeria.[72] With regard to upstream petroleum operations, the subsidiary regulation made pursuant to the Act prescribes relevant precautions to be taken when loading, discharging, or bunkering oil in Nigeria so as to prevent the discharge of oil into the waters.[73]

[68] Constitution of the Federal Republic of Nigeria 1999 (as amended), section 17(2)(d) accessed October 16, 2023, https://www.constituteproject.org/constitution/Nigeria_2011.pdf.
[69] Ibid, section 20.
[70]Nigeria, "National Policy on the Environment".
[71] Ibid.
[72] Oil in Navigable Waters Act 1968, section 1 & 3, accessed October 16, 2023, https://www.placng.org/lawsofnigeria/laws/O6.pdf.
[73] Oil in Navigable Waters Regulations 1968, regulation 5, accessed October 16, 2023, https://www.placng.org/lawsofnigeria/laws/O6.pdf.

iii. Petroleum (Drilling and Production) Regulations 1969

The regulations were made pursuant to the power vested on the Minister of Petroleum Resources to make regulations providing for general matters relating to petroleum operations, including the prevention of environmental pollution. With regard to marine environmental pollution, the Regulations mandate an upstream operator to adopt all practicable precautions to prevent water pollution or the destruction of fresh water or marine life. In the case of an eventual occurrence, an upstream operator is mandated to take prompt steps to control, and where possible, end such pollution.[74] Other provisions that enhance marine environmental protection include the requirement for an operator to carry out his operations in accordance with good oil field practice, take all practicable steps to control the flow of petroleum waste to the environment, and prevent the escape of petroleum into any waters.[75]

iv. Environmental Impact Assessment Act 1992

This Act implements the provision of the NPE which seeks the requirement of an environmental impact assessment before the commencement of petroleum operations in Nigeria.[76] Adopting a command-and-control regulatory approach, the Act prohibits any public or private entity from undertaking or authorizing projects or activities without prior consideration, at an early stage, of their environmental effects.[77] Thus, upstream petroleum operators are mandated to carry out an assessment of the potential adverse impacts of their upstream operations on the environment generally, including the marine environment, before embarking on such operations. Beyond an assessment, upstream petroleum operators are required to implement a follow-up program detailing the measures intended to be put in place for the prevention, mitigation, or remediation of the identified likely adverse impacts of its upstream operations on the marine environment.[78] Incorporating the principles of environmental procedural rights, the Act requires that relevant stakeholders including members of the public, government agencies, experts and other interested groups are allowed to comment on an environmental impact assessment report.[79] Such comments are required to be taken into consideration by the relevant regulatory agency before making a decision on an application for environmental authorization.[80]

v. National Oil Spill Detection and Response Agency (Establishment) Act 2006

The Act established the National Oil Spill Detection and Response Agency (NOSDRA) and vests it with the responsibility for preparedness, detection and

[74] Petroleum (Drilling and Production) Regulations 1969, regulation 25, accessed October 16, 2023, https://faolex.fao.org/docs/pdf/nig120683.pdf.
[75] Ibid, regulation 37.
[76] Nigeria, "National Policy on the Environment".
[77] Environmental Impact Assessment Act 1992, section 2(1), accessed October 16, 2023, https://www.fao.org/faolex/results/details/en/c/LEX-FAOC018378/.
[78] Ibid, section 16(c).
[79] Ibid, section 7 & 8.
[80] Ibid, section 7.

response to all oil spillages in Nigeria.[81] Particularly, the Act vests on NOSDRA the responsibility for the surveillance, and ensuring compliance with environmental legislations and detection of oil spills in the petroleum industry; receiving reports of oil spillages and coordinating oil spill response activities; and coordinating the implementation of the National Oil Spill Contingency Plan.[82] Pursuant to the Act, NOSDRA is obliged to assess any damage caused by an oil spillage, assess the extent of the damage to the environment by matching conditions following the spill against pre-existing conditions, and undertake a post-spill assessment to determine the extent, intensity, and long-term effects of the damage.[83] The owner or operator of a petroleum facility is required to provide monitoring system or equipment for oil spill detection, and to carry out rapid assessment to evaluate the severity of an oil spill incident.[84] Such owners or operators are further mandated to clean-up any impacted site, as a result of any oil spill incident from their activities, to all practicable extent including remediation.[85] NOSDRA is required to ensure that appropriate remedial action is taken for the restoration of the environment, and monitor the clean-up operations to ensure full environmental rehabilitation.[86]

vi. Environmental Guidelines and Standards for Petroleum Industry in Nigeria (EGASPIN)[87]

In order to meet up with its responsibility for ensuring safe and environmentally efficient petroleum operations in Nigeria, the Department of Petroleum Resources (DPR) develops the EGASPIN periodically to provide regulation for the environmental aspects of petroleum operations in Nigeria. The EGASPIN establishes environmental standards and makes provisions on pollution prevention and control, with the objective of enhancing environmental sustainability in Nigeria. It also outlines the requirements for environmental protection at all stages of petroleum operation, including upstream. Pursuant to the EGASPIN, an intending upstream petroleum operator is required to submit an approved environmental impact assessment report before obtaining an operating license.[88] Likewise, such operator is required to put in place an environmental management system (EMS) consisting of planned and integrated environmental management practices aimed at ensuring that unforeseen, identified and unidentified environmental issues are contained and brought to an acceptable minimum during the course of upstream operations.[89] In addition, the EGASPIN mandates the planning of decommissioning programs

[81] National Oil Spill Detection and Response Agency (Establishment) Act 2006, section 1(1), accessed October 16, 2023, https://faolex.fao.org/docs/pdf/nig124170.pdf.
[82] Ibid, section 6(1).
[83] Ibid, section 19(1).
[84] Oil Spill Recovery, Clean-up, Remediation and Damage Assessment Regulations 2011, regulation 2(1), accessed October 16, 2023, https://gazettes.africa/archive/ng/2011/ng-government-gazette-dated-2011-07-17-no-68.pdf.
[85] NOSDRA Act, section 6(3); Oil Spill Recovery, Clean-up, Remediation and Damage Assessment Regulations ibid, regulation 6 & 18.
[86] National Oil Spill Detection and Response Agency (Establishment) Act, section 19(1).
[87] Environmental Guidelines and Standards for Petroleum Industry in Nigeria (Revised Edition, 2018), accessed October 16, 2023, https://www.scribd.com/document/533874232/DPR-EGASPIN-2018.
[88] Ibid, part I-III, section 5.
[89] Ibid.

for upstream petroleum facilities, including environmental remediation and restoration programs.[90]

vii. Harmful Wastes (Special Criminal Provisions, etc) Act 1988

This Act was enacted to guard against the illegal movement, storage and disposal of hazardous wastes anywhere in Nigeria. With regard to marine environmental protection, the Act criminalizes the deposit or dumping of any harmful waste in any territorial waters of Nigeria without lawful authority.[91] Where any damage, including marine pollution or other degradation, is caused as a result of the deposit or dumping of any harmful waste in any territorial waters of Nigeria, the offender is liable for such damage.[92]

viii. National Environmental Standards and Regulations Enforcement Agency (Establishment) Act 2007

This is the principal environmental legislation in Nigeria. It establishes the National Environmental Standards and Regulations Enforcement Agency (NESREA) as the apex regulator of the Nigerian environment. With regard to marine environmental protection, the Act prohibits the discharge of any hazardous substance in harmful quantities into the waters of Nigeria except with lawful authority.[93]The Act also empowers NESREA to review existing effluent limitations and to make new regulations on effluent limitations for the protection of the marine environment, among others.[94]

ix. National Environmental (Coastal and Marine Area Protection) Regulations 2011

These regulations were made pursuant to the NESREA Act which obliges NESREA to make regulations for the purpose of protecting public health or welfare, and enhancing water quality standards in Nigeria.[95]The regulations aim to ensure the protection of the marine environment for sustainable development; control sources of marine pollution; encourage the application of preventive, precautionary and anticipatory approaches to avoid marine environmental degradation; reduce long-term irreversible effects on the marine environment; and prohibit hazardous waste in marine areas; among others.[96]Hence, the regulations mandate the utilization of marine resources in a sustainable manner, such that ensures the continued protection of marine areas and the functions and services they provide.[97] Second, the regulations mandate environmental impact assessments for all new developmental activities in

[90] Ibid, part VIII-H.
[91] Harmful Wastes (Special Criminal Provisions, etc.) Act 1988, see sections 1 & 7, accessed October 13, 2023,https://faolex.fao.org/docs/pdf/nig18377.pdf.
[92] Ibid, section 12.
[93] National Environmental Standards and Regulations Enforcement Agency 2007, section 27(1), accessed October 13, 2023,http://lawsofnigeria.placng.org/laws/nesrea.pdf.
[94] Ibid, section 24.
[95] Ibid, sections 23(1) & 34.
[96] National Environmental (Coastal and Marine Area Protection) Regulations 2011, regulation 2, accessed October 13, 2023,https://faolex.fao.org/docs/pdf/nig195012.pdf.
[97] Ibid, regulation 3.

marine areas, and the conduct of environmental audits on all facilities in marine areas every three years.[98] Third, best practices options is required to be applied for the protection of marine areas, and marine environmental protection is required as an integral part of development approval process.[99] Further, adequate access to information and opportunity is required for meaningful participation in planning and decision-making processes, and the polluter-pays principle is required to be applied to discourage pollution in the marine environment.[100] In addition, the regulations prohibit the discharge into watercourse and water bodies of untreated wastes and effluents from industries.[101]

Before undertaking any development project in the marine area, an operator is required to obtain an operating permit from NESREA,[102] and an environmental impact assessment shall be required for the issuance of such permit.[103] NESREA is empowered to grant such operating permit subject to a condition requiring the operator to take whatever measures or carry out whatever terms of operation that are reasonably necessary to protect the public interest with respect to the marine environment.[104]Any operator who contravenes the condition for granting an operating permit, shall in addition to a criminal penalty, be required to carry out environmental remediation.[105]

x. National Environmental Protection (Effluent Limitation) Regulations 1991

These regulations were made by NESREA pursuant to its responsibility for the determination of effluent limitations in Nigeria. By these regulations, every industrial facility in Nigeria is mandated to install anti-pollution equipment for the detoxification of effluent and chemical discharges from the facility on the basis of the best available technology, best practicable technology, or the uniform effluent standards.[106] Likewise, every industrial facility which discharges effluent is mandated to treat the effluent to a specified uniform level to ensure assimilation of same by the water into which the effluent is discharged.[107]

xi. National Environmental Protection (Pollution Abatement in Industries and Facilities Generating Wastes) Regulations 1991

These regulations were also enacted by NESREA pursuant to its responsibility for ensuring environmental protection in Nigeria. According to the regulations, every industrial facility in Nigeria is prohibited from releasing hazardous or

[98] Ibid.
[99] Ibid.
[100] Ibid.
[101] Ibid, regulation 6.
[102] Ibid, regulation 12(1).
[103] Ibid, regulation 14(6).
[104] Ibid, regulation 17(1).
[105] Ibid, regulation 20(3).
[106] National Environmental Protection (Effluent Limitation) Regulations 1991, regulation 1, accessed October 13, 2023, https://faolex.fao.org/docs/pdf/nig120290.pdf.
[107] Ibid, regulation 3.

toxic substances into the water of Nigeria beyond the limits approved by NESREA.[108]Second, every industrial facility is required to have a pollution monitoring unit and an on-site pollution control, or assign the responsibility for pollution to a person or corporation accredited by NESREA.[109] Third, the owner or manager of an industrial facility is obliged to analyze every discharged waste from such facility, and report same to NESREA through a monthly Discharge Monitoring Report.[110] In the event of an accidental discharge from an industrial facility, it must be reported to NESREA within 24hours of such accidental discharge.[111] Meanwhile, every industrial facility must mandatorily have in place a contingency plan approved by NESREA against accidental release of pollutants into the waters of Nigeria.[112]This is in addition to the responsibility imposed on every industrial facility to set up machinery for combating environmental pollution hazard.[113] Furthermore, the regulations empower NESREA to demand for an environmental audit from existing industries, and an environmental impact assessment from new industries in respect of major developmental projects.[114]

xii. Petroleum Industry Act 2021

The Act is the principal legislation for the regulation of all stages of petroleum operations in Nigeria. It was enacted to enhance effective and sustainable development in the Nigerian petroleum industry. To this end, every operation in the petroleum industry is subject to the grant of an authorization to carry out such operation. Every such petroleum authorization must contain clauses including details of guarantees to be provided by the applicant regarding the performance of obligations imposed by the authorization; details of obligations regarding relinquishment, decommissioning and abandonment of the operating area.[115] Likewise, in the event of any commercial discovery of crude oil, a petroleum operator is required to prepare a field development plan in respect of the discovery, and submit same for approval by the competent authority. The competent authority shall only approve the field development plan where it meets the technical standards required for petroleum operations based on good international petroleum industry practices; it meets prescribed environmental standards; it includes an environmental management plan, a decommissioning and abandonment plan, and provisions on decommissioning and abandonment fund.[116]

[108] National Environmental Protection (Pollution Abatement in Industries and Facilities Generating Wastes) Regulations 1991, regulation 1, accessed October 13, 2023,https://faolex.fao.org/docs/pdf/nig120294.pdf.
[109] Ibid, regulation 2.
[110] Ibid, regulation 3.
[111] Ibid, regulation 4.
[112] Ibid, regulation 7.
[113] Ibid, regulation 8.
[114] Ibid, regulation 21.
[115] Petroleum Industry Act 2021, section 76, accessed October 13, 2023, http://www.petroleumindustrybill.com/wp-content/uploads/2021/09/Official-Gazette-of-the-Petroleum-Industry-Act-2021.pdf.
[116] Ibid, section 79.

To ensure that environmental protection is maintained in the upstream petroleum sector, the Act requires an upstream operator to submit an environmental management plan to be approved by the Nigerian Upstream Petroleum Regulatory Commission (NUPRC). The NUPRC is empowered to approve such plan where it complies with relevant environmental laws, and the operator has the capacity or provides for the capacity to rehabilitate and manage the adverse environmental impacts of its operations.[117] Adopting an economic regulatory approach pursuant to the polluter-pays principle, the Act further establishes an environmental remediation fund into which an operator is required to pay a prescribed financial contribution for the rehabilitation or management of the adverse environmental impacts of its operations.[118] The amount payable by an operator is dependent on the size of its operations, and the level of risk such pose to the environment.[119]

xiii. Upstream Petroleum Environmental Regulations 2022

These are comprehensive regulations issued by the NUPRC pursuant to its responsibility for environmental protection under the Petroleum Industry Act. To ensure that the objective of environmental protection is achieved in the upstream petroleum sector, the regulations mandate every upstream operator to prepare an environmental risk register (ERR) containing all risks posed by any proposed upstream project to the environment.[120] The regulations further mandate every operator to prepare an environmental management plan (EMP) in respect of all their upstream projects for approval by the NUPRC.[121] Such plan is required to contain the details of each upstream project, inherent risks associated with each project, means of reducing such risks to as low as reasonably practicable, and the resources and procedures in place to manage such risks.[122] In addition, the EMP is required to discuss the procedures for implementing any identified risk mitigating measures in respect of a project, identify personnel responsible for implementing the plan and the time frame for implementation. The EMP is also required to provide a budget for implementation of the identified mitigating measures, and for post-ERR monitoring.[123] Furthermore, the EMP is to stipulate the processes, policies and practices to be followed, equipment to be used, and actions to be taken for the purposes of minimizing the environmental impacts and risks of upstream operations.[124]

The regulations also mandate every upstream operator to conduct periodic environmental audits so as to facilitate the control of its environmental practices, and assess its compliance level with its approved EMP and other

[117] Ibid, section 102.
[118] Ibid, section 103(1) & (4).
[119] Ibid, section 103(2).
[120] Upstream Petroleum Environmental Regulations 2022, regulation 1, accessed October 13, 2023, https://www.nuprc.gov.ng/wp-content/uploads/2022/08/Upstream-Petroleum-Environmental-Regulations.pdf.
[121] Ibid, regulation 16.
[122] Ibid, regulation 19.
[123] Ibid, regulation 20.
[124] Ibid, regulation 24.

regulatory requirements.[125] Likewise, such operators are required to carry out regular environmental management reviews and verifications in order to evaluate the status and adequacy of their EMP in relation to environmental protection.[126] In addition, such operators are mandated to have an environmental performance evaluation management system in place and periodically report to the NUPRC on their environmental performance.[127]

Legal framework for marine environmental protection in the Nigerian upstream petroleum sector: gaps and recommendations

A review of the legal framework for marine environmental protection in the Nigerian upstream petroleum sector *vis a vis* the existing international framework indicates the presence of some gaps and loopholes which if not adequately addressed, may impede marine environmental protection and sustainable development in the Niger Delta Region. A critical analysis of the international framework indicates several recommended action plans and strategic approaches to enhancing marine environmental protection and sustainability in the upstream petroleum sector. First is the enactment of national environmental legislations, which UNCED recommends should be enacted within specific environmental and developmental contexts. This may include the enactment of environmental legislation within the context of marine protection, offshore development, upstream petroleum operation, for instance. Arguably, this approach to environmental law-making ensures that environmental legislations give rise to comprehensive rules and regulations that target every aspect of specific environmental or developmental activities. On the long term, this enhances environmental protection and sustainability within various specific environmental or developmental contexts. Although Nigeria has implemented a system of environmental laws, policies and regulations which are relevant for marine environmental protection in the upstream petroleum sector as highlighted in section five, none has been enacted within the specific context of marine environmental pollution and degradation from upstream petroleum development. It is however noteworthy that the Malabo Protocol is a viable focal point in this regard because it prescribes action plans and strategies for marine environmental protection specifically within the context of offshore petroleum development. Since Nigeria is already a signatory to the Malabo protocol, it is recommended that its provisions be adopted to formulate an environmental legislation that specifically addresses marine environmental regulation and protection in the Nigerian upstream petroleum sector.

Second, the international framework emphasizes the need for States to adopt basic international environmental law principles particularly, the prevention, precautionary, and polluter-pays principles, as well as the principle of environmental remediation. These principles are reflected in varying degrees in some of the domestic legal framework relevant for marine environmental protection in the Nigerian upstream petroleum sector. For instance, the Oil in Navigable Waters Act adopts the prevention and precautionary principles by

[125] Ibid, regulation 113.
[126] Ibid, regulation 114.
[127] Ibid, regulation 115.

ISSN 2787-0308 (ONLINE)

prohibiting the discharge of oil into the Nigerian waters, and prescribing precautions to be taken to prevent such discharge. Second, the Petroleum Drilling and Production Regulations mandate the adoption of all practicable precautions for the prevention of marine environmental pollution and degradation. Incorporating the principle of environmental remediation, the NOSDRA Act mandates the clean-up of any impacted site as a result of any oil spillage, as well as the implementation of appropriate remedial actions for the restoration of any impacted environment. Likewise, the EGASPIN mandates that environmental remediation and restoration programs should be integrated in the decommissioning programs for petroleum facilities. The Petroleum Industry Act incorporates the polluter-pays principles. This is reflected in the establishment of an environmental remediation fund by virtue of which a petroleum operator is expected to pay a sum for the management and rehabilitation of the adverse environmental impacts of its operations. The requisite sum to be paid by an operator is based on the size of its operations, and the magnitude of its potential adverse environmental impacts. Since oil spillage is one of the major adverse impacts of upstream petroleum development on the marine environment, these provisions substantially addresses marine environmental protection in this regard. Put together, these provisions encompass relevant precautions to be taken to prevent any oil spillage, the obligation to clean-up and remedy any impacted environment in the case of any oil spillage, and a financial guarantee in the form of an environmental remediation fund to ensure that environmental remediation is adequately carried out. These provisions are laudable and are capable of enhancing marine environmental protection in the Nigerian upstream petroleum sector.

Third, the international framework expects States to apply strategies that ensure sound environmental management of natural resources within their jurisdictions. Arguably, this connotes the application of internationally acceptable environmental management standards such as environmental impact assessment, environmental management systems, environmental performance evaluation, environmental monitoring and auditing, environmental reporting, and environmental procedural rights. This is because the significance of these management standards to environmental protection and sustainability is enormous. Environmental impact assessment ensures that the possible adverse environmental impacts of an activity are identified and analyzed before the start of such activity. This ensures that appropriate strategies for the prevention, mitigation or remediation of such adverse impacts are identified and taken into consideration during the execution of such activity. An environmental management system ensures that all programs for the management of identified adverse environmental impacts are properly and adequately implemented and documented. Environmental monitoring and auditing, and environmental performance evaluation ensures that the state of the operating environment is periodically reviewed against pre-existing conditions or prescribed benchmarks so as to assess the level of progress made in terms of environmental management. Environmental reporting is a meta-regulatory approach by which regulated entities report on their environmental performance to a relevant competent authority. This enables the relevant authority to assess the compliance level of regulated entities with regard to environmental provisions, or the conditions for the grant of an operation

ISSN 2787-0308 (ONLINE)

permit, among others. Environmental procedural rights seek to ensure the participation of relevant stakeholders and interested persons in the process of environmental management.

These international environmental management standards are reflected in various extents within the framework for marine environmental protection in the Nigerian upstream petroleum sector. With regard to environmental management in the petroleum industry generally, the NPE prescribes recommended action plans with regard to environmental impact assessment, environmental management system, environmental performance evaluation, and environmental monitoring and auditing. These action plans are substantively implemented in various environmental laws and regulations relevant to the petroleum industry in Nigeria. For instance, the Environmental Impact Assessment Act mandates the assessments of the potential adverse environmental impacts of developmental activities before the execution of such activities. It further mandates the implementation of a follow-up environmental program for the prevention, mitigation or remediation of identified adverse impacts. The EGASPIN also requires the conduct of an environmental impact assessment before the grant of an operating licence to any petroleum operator. Such operator is also required to implement an environmental management system detailing planned and integrated environmental programs for the prevention or mitigation of any adverse environmental impacts of petroleum operations. With regards to the marine environment specifically, the Coastal and Marine Area Protection Regulations mandate the conduct of environmental impact assessments for all new developmental activities in marine areas. In fact, such assessment is a prerequisite for the grant of an operating permit in the marine area.

The Upstream Petroleum Environmental Regulations also reflect international environmental management standards. The regulations mandate all upstream petroleum operators to prepare a register of all environmental risks posed by their activities, and put in place a system for the management of such risks. This reflects the requirement for upstream petroleum operators to carry out environmental impact assessments of their activities, and implement an environmental management system in respect of same. The regulations also mandate the conduct of periodic environmental audits, and a post-environmental risk monitoring so as to evaluate the environmental performance of the operator *vis-à-vis* regulatory requirements and its environmental management program. Further, upstream petroleum operators are required by the regulations to report periodically on their environmental performance.

The NOSDRA Act obliges NOSDRA to assess the extent of any damage caused by an oil spillage to the environment by matching conditions following the spill against pre-existing conditions. This implies that a baseline environmental study is expected to be conducted before the commencement of upstream petroleum operations. Such baseline study is essential for determining the existing state or quality of the environment before the commencement of an activity. This enhances an effective environmental monitoring and auditing process.

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The Coastal and Marine Areas Protection Regulations mandate the conduct of periodic environmental audits on all facilities in marine areas. Apparently, this is aimed at assessing the impacts of such facilities on the marine ecosystems. However, the regulations does not provide for the conduct of a baseline environmental study which could enhance an effective environmental audit process. The regulations also align with the principle of environmental procedural rights. Thus, it requires that adequate access to information and opportunity be provided to relevant stakeholders to ensure meaningful participation in marine environmental planning and decision-making processes. This is in consonance with the provision of the Environmental Impact Assessment Act which requires that relevant stakeholders and interest groups be allowed to participate in the process of environmental authorization.

In order to enhance marine environmental protection and sustainability, another action plan recommended is the regulation of the discharge of wastes and hazardous substances into the marine environment. In alignment with this international recommendation, Nigeria has in place laws and regulations controlling illegal effluent and the discharge of hazardous substances into the environment. The NESREA Act prohibits the discharge of hazardous substances into the environment without lawful authority. The Effluent Limitation Regulations mandate every industrial facility to treat their effluent to a specified uniform level, and to have in place anti-pollution equipment for the detoxification of effluent and chemical discharges from such facility. The Pollution Abatement in Industries and Facilities Generating Wastes Regulations also prohibits the discharge of toxic substances into the marine environment beyond approved limits. Thus, all industrial facilities are required to put in place approved contingency plan against accidental discharge into the marine environment. These provisions enhance marine environmental protection and sustainability by guarding against marine pollution and degradation of the marine ecosystems from harmful wastes and other toxic substances.

In addition to the enactment of national environment legislations, States are also expected to develop national law on liability and compensation for environmental damage. Likewise, States are expected to adopt the principle of intra-generational equity whereby national environmental laws, as well as those on environmental liability and compensation, take account of demographic factors such as those who depend on natural resources for their livelihood. The existing environmental framework relevant for marine environmental protection in the Nigerian upstream petroleum sector does not provide any form of liability for environmental compensation as a result of environmental degradation. In other words, there are no regulatory provisions regarding the liability of operators to the victims of environmental pollution and degradation from developmental activities, neither are there any provisions on the award of compensation to such victims. This connotes that the indigenous communities in the Niger Delta Region who depends on marine resources for their livelihood and sustenance for instance, may not have access to adequate compensation where their means of livelihood is degraded as a result of upstream petroleum development. This is contrary to the principle of intra-generational equity whereby national environmental laws are expected to take cognizance of demographic considerations such as those who depend on natural resources for sustenance. It is therefore recommended that the

ISSN 2787-0308 (ONLINE)

framework for environmental protection in Nigeria incorporates the principle of intra-generational equity whereby demographic environmental interests are taken into consideration. This may call for the implementation of a comprehensive national framework on environmental liability and compensation whereby upstream petroleum operators for instance, are held accountable for their adverse environmental impacts, and are liable to compensate the victims of such impacts timely and adequately.

Some of the existing relevant framework for marine environmental protection in the upstream petroleum sector requires operators to adopt best available and practicable technology, and abide by good international petroleum industry practices. With regard to upstream petroleum operations for instance, this highlights the need for the development of industry-specific framework on technological standards and guidelines, as well as sustainable developmental practices acceptable in the petroleum sector internationally. This may be subject to periodic reviews to reflect technological advancements and evolution in sustainable petroleum industry practices. This may serve as a guide or benchmark to operators in the industry in the conduct of their operations in a sustainable and internationally acceptable manner.

In addition, the Nigerian State is encouraged to deploy economic instruments and market incentives towards marine environmental protection in the upstream petroleum sector. For instance, upstream petroleum operators may be more encouraged to adopt clean technologies in their operations, or invest in the best available technologies if there are incentives to do so. Such incentives may include regulatory provisions on tax breaks or subsidy for the deployment of sustainable technologies or investment in clean technologies. It may also include regulatory provisions on environmental tax levied on the deployment of certain environmentally unfriendly technologies or practices.

Conclusion

This article reviews the legal framework for marine environmental protection in the Nigerian upstream petroleum sector *vis a vis* international regulatory framework on marine environmental protection. The review indicates that existing regulatory provisions are substantially in alignment with internationally acceptable recommended action plans for marine environmental protection. The review notwithstanding also indicates some gaps and loopholes which if not adequately addressed, may impede marine environmental protection and sustainable development in the Niger Delta Region. Hence, areas requiring policy, regulatory or other legal reforms were highlighted, and relevant recommendations proposed.