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THE LEGAL REGIME ON OIL AND GAS WASTES: CAN DECOMMISSIONING OF PETROLEUM ASSETS UNDER THE PETROLEUM INDUSTRY ACT 2021 COMBAT ENVIRONMENTAL DEGRADATION RISK IN NIGERIA'S UPSTREAM PETROLEUM SECTOR?

Olujobi, Olusola Joshua*

ABSTRACT

Decommissioning of petroleum assets has been a global concern due to its adverse environmental risks occasioned by oil firms' operations. This problem often occurs on land and deep seas which have become uncontrollable as international and municipal legal regimes are less effective as member states' multinational oil firms or corporations often disregard the conventions on the treatment of disused oil and gas assets by abandoning their infrastructure upon the cessation of oil exploration and production activities. This has occasioned the pollution of the ecosystem. The paper embraces a conceptual legal approach utilising existing literature to aid a doctrinal library-based legal technique. The paper also utilises primary and secondary sources of laws. Also, a comparison of

*PhD, Associate Professor, College of Law, Department of Public and International Law, Afe Babalola University, Ado Ekiti, Nigeria. Email: olujobi.olusola@abuad.edu.ng . Tel: 08038006033.

decommissioning of oil and gas installations in the United Kingdom, Norway, United States and Nigeria were done with the lessons Nigeria can learn to improve the laws on decommissioning. The paper finds that weak enforcement**,** absence of comprehensive law governing decommissioning of offshore oil and gas installations with no credible records yet of decommissioning requirements and structure that are due for decommissioning, their locations, seize and cost of decommissioning. However, section 231(1) of the new Petroleum Industry Act 2021 regulates petroleum decommissioning. Absence of specialised agency to oversee decommissioning with vital technical expertise to promote efficient environmental governance in Nigeria. The paper advocates overhauling of Nigeria's laws on decommissioning and strict compliance with best practices and other extant legal regimes. The study advocates stringent enforcement of Decommissioning and Abandonment Fund in section 233(1) of the Petroleum Industry Act 2021 to deter non-compliance with decommissioning obligation. Conclusively, the paper recommends scientific environmental decommissioning to restore petroleum sites to their natural state.

Keywords: Decommissioning, Petroleum Assets, Oil firms, Explorations, Environment.

1. INTRODUCTION

The decommissioning or abandonment of petroleum infrastructure is a global challenge that demands significant attention due to its deleterious impacts on the environment, aquatic lives and human health. After the completion of oil exploration activities, assets such as the oil wells, fields and other assets are often abandoned.; hence, the need to combat this menace and to strengthen the regulatory framework on decommissioning of petroleum assets in Nigeria[1].

Oil exploration and production activities are enduring schemes with inherent, economic, environmental, political and technical hurdles such as unsuccessful exploration wells or non-viable production of oil wells and loss on oil investments especially where oil wells are not valuable to generate

[1]Nwosu, S.E.C., "Decommissioning of Petroleum Assets: Setting Agenda for an Emerging Subsector in the Nigerian Petroleum Industry", *Journal of Jurisprudence, International Law and Contemporary Issues,* (2020), 13(1),31-52.

net revenues on asset worsened with the legislative responsibility to avert ecological degradations and to bear the expenditure of decommissioning. These often dissuade decommissioning obligation. This may occasion pandemic and loss of life, thus, requiring decommissioning of such assets at the end of their valuable lifecycle or cessation of oil exploration and production activities to guarantee the well-being of mankind and sustainability of the environment.[2]

Often, oil and gas installations and assets utilized in the prospection of oil were deserted at the end of oil exploration activities. owing to innovations in technologies, easy costs of decommissioning under Petroleum Industry Act 2021. Besides, decommissioning is the proper disposal of a substance after its useful lifespan has expired. Infrastructure and facilities utilised by oil exploration licence, oil prospecting license and oil mining lease and activities are covered by the Oil Pipelines Act such as survey permit Oil Pipeline License infrastructure and platforms used by refineries. Onshore and offshore exploration platforms and oil and gas pipelines. Oil exploration licence activities such as radioactive materials and cables utilised during the seismic operations, hydrological and hydrographical equipment are to be decommissioned[3].

It is also the process of removing, disposing of or reuse of an installation or structure after the productive life span is evaluated, a plan of action is prepared by the operators and approval is received from the Federal Government and then executed. This obligation is not owed to the oil-producing areas, but has become a global obligation and environmental concern. The historical voyage of oil and gas exploration in Nigeria revealed tales of neglect and abandonment of the oil-producing communities after the lifespan of the firms' oil fields due to the absence of a law on the reintegration of the host community back into the society at the end of oil and gas exploration activities[4].

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[2]Olujobi, Olusola, Olusola-Olujobi,Temilola, 'Comparative Appraisals of Legal and Institutional Framework Governing Gas Flaring in Nigeria's Upstream Petroleum Sector: How Satisfactory?', Environmental Quality Management, (2020), 1-14.

[3]Adoga, O.T., "Decommissioning of Offshore Oil and Gas Installations, the Nigeria Case in the Context of International Regulations and Best Practices", *Port Harcourt Journal of Business Law,*(2019), 6(1), 242-255.

[4] Ojo, A.A., and Ayo, T.E., "An Appraisal of the Legal Regime of Offshore Decommissioning and Abandonment of Oil Installations in Nigeria",*Afe Babalola University Ado Ekiti, Law Journal*(2017), 1(5), 167-186.

The need for a comprehensive and efficient legal and institutional framework for the decommissioning of oil and gas assets after the end of their useful lifespan or cessation of prospection especially where oil in commercial quantity has been discovered by such oil company. [5]. The aim of this study is to examine the legal regime on oil and gas wastes and whether decommissioning of petroleum assets under the Petroleum Industry Act 2021 combats environmental degradation risk in Nigeria's upstream petroleum sector.

Nigeria has about 800 oil and gas producing communities with over 900 oil wells, above 100 flow stations and gas plants with more than 1500km of trunk lines and over 45,000km of oil and gas flow lines. Decommissioning of oil and gas installations or assets include the engineering, safety groundwork, stoppage of production plugs the wells deep below the surface and make them safe. The procedure for removal installations from the site is often intricate, costly and time-consuming as health and safety issues are involved[6].

The study is divided into 5 sections with the introduction as the first. The next section considers the methodology, statement of problem, literature review, international legal framework on onshore decommissioning, theoretical framework on decommissioning and abandonment of petroleum assets. Section 3 considers the available national legal framework to determine its effectiveness in regulating decommissioning and abandonment of offshore assets or installations after the cessation of oil exploration and the solutions for decommissioning challenges were also examined. Section 4 discusses the comparison of decommissioning of offshore oil and gas installations and assets in the United Kingdom, Norway, United States and Nigeria.

The findings and discussion of results reveal the hurdles against offshore oil and gas decommissioning and the solutions proffered. The agencies that regulate environmental protection in the oil and gas industry were also considered. As a contribution to knowledge, the study designed a hybrid model for the transformation of Nigeria's upstream petroleum sector decommissioning law and strategies. Section 5 concludes with

[5]Olujobi, O.J., 'The Legal Sustainability of Energy Substitution in Nigeria's Electric Power Sector: Renewable Energy as Alternative', *Protection and Control of Modern Power Systems*, (2020), 5(32), 1-12.

[6]Odum, E.H., "An Appraisal of the Legal Framework of Decommissioning of Offshore Oil and Gas Installations in Nigeria", *University of Port Harcourt, Journal of Private Law*(2017), 1(1), 114-122.

recommendations and advocates stringent enforcement of the new Petroleum Industry Act 2021 to combat infringement of decommissioning obligation by oil companies.

1.1 Methodology

The study adopts a conceptual legal research method, using current literature to apply library-based doctrinal legal research techniques with a conceptual legal approach. Primary and secondary sources of laws such as case laws and the provisions of the Petroleum Act 1969 Cap P10, Laws of the Federation of Nigeria 2004 were painstakingly utilised. The provisions of the National Oil Spill Detection and Response Agency (Establishment) Act 2006 were also assessed. Furthermore, mixed methods were utilized based on archival and secondary data sources. Comparison of decommissioning of offshore oil and gas installations in the United Kingdom, Norway, United States and Nigeria were carried out with the lessons Nigeria can learn to improve her laws on decommissioning and abandonment of oil and gas assets. The author also evaluated the problems and extracted inferences that concluded the study.

1.2 Statement of Problem

Global environmental degradation occasioned by oil and gas exploration and production activities has been a concern owing to environmental degradation and poor ecological management, regulations and governance in Nigeria. Some domestic laws have been enacted but more still need to be done to remodel Nigeria's environmental and petroleum laws.

Unsuccessful exploration or non-commerciality of oil production wells can result in a significant financial loss on investments and the obligation to dispose off production facilities and installations to promote a healthy environment may impose a further financial burden on such companies. The cost and technological requirements for offshore deep-water exploration and dismantling of oil and gas infrastructure or facilities could be capital intensive. Political uncertainty or risks such as a change in government, legal system and regulatory change that could ensue at any

point in time may hinder decommissioning of oil and gas facilities or disused infrastructure in the upstream sector[7].

Also, inadequate funding harms the decommissioning of oil and gas infrastructure. Funding is the lifeblood of any petroleum activities from exploration, production to decommissioning, failure to pay the share of cash calls in Joint Venture between the national oil firm (NNPC) and multinational oil firms[8]. The inadequacy of funds to perform the decommissioning obligation of oil and gas facilities or infrastructure is extremely high in the sector due to the paucity of capital to finance oil and gas projects.

The Petroleum Industry Act 2021 makes provision for decommissioning. Being an international and national obligation, oil and gas companies must comply satisfactorily irrespective of the liabilities or insolvency of the defaulting party or any other defaulting factors[9]. Most oil companies do not know when to start decommissioning preparation due to inconstant variables such as oil price, conservational influence and technological development which encourage oil and gas recovery as the period of the commencement of decommissioning is often stated in the host country's extant laws and the end is often difficult to predict due to uncertainty and technicality of the process in various oil-producing countries.

Often, default occurs immediately after oil production ceases, unsuccessful exploration or where there is a low level of oil production, not commercial enough to meet subsequent decommissioning obligations. Natural depletion of oil production wells often results in the inability to pay decommissioning funds. Petroleum host countries, oil and gas companies

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[7]Dan-jumbo, E.A., "Strengthening Institutional Framework and Protecting the Environment in the Assessment of Oil Impacted Sites Arising from Pollution in Nigeria",*The Journal of Property Law and Contemporary Issues, Faculty of Law, Rivers State University*, (2019), 11(2),102-159.

[8]Nnawulezi U.A., and Nwedu, C.N., "Avoidance of Default Risk of Unsuccessful Exploration and Decommissioning Obligation in Joint Operation Agreements", (2018), *African Journal of International Energy* and In E Etteh, N.,ed., (2014), Joint Operating Agreement: Which Issues are Likely to be the Most Sensitive to the Parties and How Can a Good Contract Design Limit the Damage from such Disputes?' Centre for Energy, Petroleum and Mineral Law and Policy, http://www.dundee.ac.uk/cepmlp/gateway/index.php?news=31272(accessed April 2, 2021), 2(2), 70-89.

[9]Cameron, P.D., "Legislation and Compliance in the Decommissioning Process", (2015), available at >https://my.dundee.ac.uk/bbcswebdav/pid-4567896-dt-content-rid-2967958_2/courses/CP51005_sem0000_1516/Ch39%20with%20PD%20editorial%20comments.16april.clean.pdf> (accessed March 23, 2021).

often set up a protective measure against these risks by demanding collateral or security. Where the assets become less productive in value, oil companies often move away from such assets, considering the cost of decommissioning, since there are no incentives to stay in operations in Nigeria yet[10].

However, in the views of Emejuru and Dike, environmental law and policy in Nigeria have not properly evolved in anticipation of decommissioning exercise and other environmental degradation risks. Monitoring and enforcement capabilities of the regulatory agencies are fundamental to the success of decommissioning exercise. Decades of failed response to environmental degradation risks, such as decommissioning of oil and gas infrastructure, have bred resentment and distrust among oil-producing communities therefore, there is a need for comprehensive, specific and stringent laws governing decommissioning of offshore oil and gas installations in Nigeria.

1.3 Literature Review

According to Dawood[11], the existence of mankind is under a serious threat due to environmental degradation risks occasioned by pollution from oil and gas companies' exploration and production activities including decommissioning and abandonment of oil and gas infrastructure after cessation of operations. This renders the people and environment vulnerable to deleterious effects of pollution. This article fails to adumbrate the need for a comprehensive law on decommissioning and abandonment in the oil and gas industry. The current author opines that it is extremely imperative to carry out a holistic review of the policies and legislation on decommissioning and abandonment of petroleum assets for efficiency and sustainability of the sector.

Moreover, it is also the views of Ojo in his article titled "An Appraisal of the Legal Regime of Offshore Decommissioning and Abandonment of Oil Installations in Nigeria" that every offshore oil platform installation should, at the expiration of exploration activities, be evacuated by the oil licensee or oil company since a number of these oil platforms are ageing and

[10]Ayoade, M., "Environmental Risk and Decommissioning of Offshore Oil Platforms in Nigeria", *NIALS Journal of Environmental Law*,(2011), 1,1-30.

[11] Dawood, H.A.,"Climate Change: A Need for Paradigm Shift in Environmental Legislation",(2011), In Egbewole, W.O, Etudaiye, M.A., Olatunji O.A., ed, "Law Climate Change in Nigeria", (Olu Printing and Binding Ilorin), 262.

outlived their usefulness. Their physical removal in an environmentally friendly manner is *sine qua non,* with the parties bearing the cost implications that would arise from the exercise.

The author further argues that decommissioning of offshore oil and gas assets or infrastructure has no clear cut or comprehensive legal framework unlike onshore decommissioning which is largely uncontroversial and sufficiently covered by Nigeria's regulatory regime.

However, the study fails to emphasize the need for stringent sanctions for non-compliance or infringement of the law. Therefore, the current author submits that there is a need for a specific law on decommissioning and abandonment of oil and gas assets or infrastructure in Nigeria with stringent penalties for non-compliance with the obligation.

Also, Ayoade,[12] in his work "Environmental Risk and Decommissioning of Offshore Oil Platforms in Nigeria", argues that decommissioning arises in an oil and gas field at the end of the life of an oil production when there is depletion of the oil reservoir but fails to itemize in details the gaps or *lacunas* in the various laws on decommissioning with the practicable legal remedies to the menace. The current study is considering the effective panacea to environmental degradation risks in Nigeria's upstream petroleum sector.

Equally, Atsegbua[13] in his book titled *Decommissioning and Abandonment of Oil Platforms and Installations in Oil and Gas Law in Nigeria: Theory and Practice,* advocates the urgent need to put in place a functional, comprehensive and effective legal regime for regulating and administering offshore decommissioning. The position which the current study further underscored with more emphasis on stringent sanctions for infringement of decommissioning obligations by oil companies, other players and stakeholders in the sector.

According to Gibson,[14] decommissioning proposal should be made along with the development plan for oil and gas field operations with the cost, time to execute the decommissioning plan and the security instrument

[12]*Ibid*, note 10.

[13]Atsegbua, L., "Decommissioning and Abandonment of Oil Platforms and Installations in Oil and Gas Law in Nigeria: Theory and Practice" (Benin, Fifers Lane Publisher 3rd Ed,2012), 280.

[14]Gibson, G., "The Decommissioning of Offshore Oil and Gas Installations: A Review of Current Legislation, Financial Regimes and the Opportunities for Shetland, STEP Placement',(2002), available at http://www.kimointernational.org/WebData/Files /Decommissioning /oildecommissioningreport1.pdf (accessed March 23, 2021).

for funding the costs in the event of default or insolvency[15]. The current author submits that this mechanism should be supported by legislation to prevent default which he fails to adumbrate in his article. The current study hereby aligns with the submission of Emejuru and Dike[16] that environmental governance is the effective management and conversation of ecological, biodiversity and natural resources for economic growth and human development, but emphasis should be on the need for specific and detailed laws on decommissioning and abandonment of oil and gas assets with stringent sanctions for non-compliance to serve as a deterrent to would-be offenders in the sector.

2 THEORETICAL FRAMEWORK ON DECOMMISSIONING AND ABANDONMENT OF PETROLEUM INFRASTRUCTURE OR ASSETS

The *Sociological Theory of Law* by Eugene Ehrlich (1913) is based on facts or law. He believes laws are based on the relationship between law and the conduct of the citizens. This can also relate to failure to carry out decommissioning obligation under section 232 of the Petroleum Industry Act 2021 after conclusion or expiration of oil exploration activities which affected the environment, human health and other aquatic life. It is the social value and conduct of the citizens which determine the rule to be enacted to combat mischief in society[17]. This means that the attitude of oil companies regarding decommissioning and abandonment is very significant if the Petroleum Industry Act 2021 is stringently enforced as the living law that reflects the values and dominates societal life. It will promote sound enforcement of decommissioning obligations in the upstream petroleum sector against any defaulting oil company and it will serve as a deterrent.[18]

Another fundamental theory to this study is the pure theory of law founded by Hans Kelson between 1881 and 1973. The theory is utilised due to the weaknesses in the sociological theory. The pure theory emphasizes

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[15] Olujobi, O.J., "Combating Insolvency and Business Recovery Problems in the Oil Industry: Proposal for Improvement in Nigeria's Insolvency and Bankruptcy Legal Framework", Heliyon, (2021),7, e06123, 1.

[16]Emejuru, C.T., and Dike, S.C. "Environmental Sustainability, Conservation and Natural Resources Management" *Rivers State University, Journal of Public Law,*(2018), 5(1), 233-246.

[17]Sanni, A.O, "Introduction to Nigerian Legal Methods" (2006 Obafemi Awolowo University Press), 12.

[18] Olujobi Olusola. and Olujobi Oluwatosin., "Theories of Corruption: Public Choice-Extractive Theory as Alternative for Combating Corruption in Nigeria's Upstream Petroleum Sector", *International Journal of Environmental Sustainability and Green Technologies* (IJEST),(2020), 11(2), 12.

that law is a norm or rule that states what to do and what should not be done in society particularly in the upstream petroleum industry. The theory takes cognizance of the hierarchy of norms and pointed out that higher norms are the *grundnorm* that other extant laws must be subject to for validity. This means that the validity of environmental and petroleum law on decommissioning does not depend on its moral, sociological or historical contents but it is the law, once it is made by the National Assembly[19]. However, for any environmental and petroleum law to be valid, it must derive its validity from a higher norm which is the provision of section 44(3) of the 1999 Constitution of the Federal Republic of Nigeria (as amended).

However, some legal scholars have argued that the theory did not consider the primary purpose of the law which is to promote the cause of justice, peace and society by caring less of the consequences of a critical law. The critics say further that for the law to be valid, it must regulate the conduct of petroleum operators or firms in the industry. That is, the existing norms and values of Nigeria's upstream petroleum industry challenges have to be taken into consideration. The current author argues that the theory may promote authoritarian and oppressive governments that are careless in utilizing the nation's petroleum resources in developing the country socially and economically[20].

Furthermore, the flaws in the pure theory of law prompted the need for another pertinent theory for combating dereliction of decommissioning obligation in the upstream petroleum sector called the historical school of thought. The theory was developed by Friedrich Carl Von Savigny in 1779–1861 to counter the influence of natural law theory by overthrowing the monarch to create an egalitarian society and to maintain the status quo.

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[19]Olujobi Olusola, COVID-19 Pandemic and Illegal Oil Refineries in Africa: Evidence from the National Oil Wealth in Nigeria, in Socioeconomic Shocks and Africa's Development Agenda Lessons and Policy Directions in a Post-COVID-19 Era Edited By Evans Osabuohien, Gbadebo Odularu, Daniel Ufua, Romanus Osabohien, 1st Edition, (2022), London, Routledge, Taylor Francis, 332, eBook ISBN9781003208358, DOI: https://doi.org/10.4324/9781003208358 Chapter in a Book, Available at https://www.taylorfrancis.com/chapters/edit/10.4324/9781003208358-20/covid-19-pandemic-illegal-oil-refineries-africa-olusola-joshua-olujobi?context=ubx&refId=aaa33c5d-eed5-4750-a8cf-524d9919d46c (accessed September 26, 2022) Chapter 15-19.

[20]Olujobi, Olusola, Nigerian Petroleum, Energy and Gas Resources Law (Legal Theories, Cases & Practice) Petroleum Industry Act 2021 & Climate Change Act 2021 (Princeton & Associate Publishing Limited, Ikeja, Lagos, 2022). Available at https://www.researchgate.net/publication/365776783_Nigerian_Petroleum_Energy_and_Gas_Resources_Law_Legal_Theories_Cases_Practice_Petroleum_Industry_Act_2021_Climate_Change_Act_2021 (accessed December 6, 2022).

The theory emphasizes the spirit of the people, *volkgeist*, which binds the people of a particular society together which distinguishes them from any other people. It maintains that for the law to be valid, it must incorporate the history, the way of life of the people and their custom. For any law to combat the menace of infringement of decommissioning obligation, it must be designed in conformity with the uniqueness of the Nigerian upstream petroleum sector by considering our geographical and cultural differences or backgrounds and not by replicating verbatim the laws on decommissioning of other advanced countries without this in contemplation. The law should be based on the prevalent customs and long practices of the sector with potent sanctions for non-compliance coherent with the current economic reality in Nigeria.

The theory has been criticized for being dogmatic and may hinder the establishment of some desirable reforms that will transform the sector**.** The theory is based on assumption that the rule of custom is rational and fair, but this is not necessarily the case in practice. Therefore, there is a need for urgent reform of Nigerian petroleum laws by enacting the pending Petroleum Industry Governance Bill with the amendment of the various gaps identified and inclusion of decommissioning of offshore installations or assets with the various reforms proposed in the bill for a comprehensive and robust petroleum law[21].

3. LEGAL FRAMEWORK

3.1 International Legal Framework on Onshore Decommissioning and Abandonment

There are plethora of international conventions for the administration and operation of decommissioning activities in Nigeria. The primary international legal framework for offshore decommissioning is the United Nations Convention on the Continental Shelf of 1958 (The Geneva Convention) which commenced in 1964 and was ratified by Nigeria on April 28, 1971. The Convention offers member states exclusive right to explore and exploit their continental shelf and natural resources without intervention with navigation, fishing and preservation of the resources of the sea as specified under Article 2(1) of the Convention. Article 5(1) requires the member states to maintain and construct offshore

[21]Olujobi, Olusola, Deregulation of the Downstream Oil Sector: An Option or A Necessity for Evolution of Nigeria's Petroleum Industry? *Pacesetter LAW Journal*, (2022),1(1), 47-62.

installations. Article 5(3), 5(6) and 5(7) obliges host nations to establish 500 metres of safety zones around oil platforms with the obligation to ensure safety zone and protection of living resources of the sea. Article 5(5) requires the removal of all oil and gas installations which are abandoned or disused and notice of all construction, oil and gas installations and device installed. But Article 15 of the same Convention fails to address the issue of offshore pipeline or desertion which is another major flaw of the Convention.

The Convention for Prevention of Maritime Pollution by Dumping of Wastes and Other Matters at Sea of 1972 (The London Dumping Convention) is a global environmental protection treaty that regulates dumping of wastes, incineration at sea of harmful wastes and other matters within the marine atmosphere. It spells out specifically the processes and conditions to be satisfied before the removal of platforms and rigs on the sea to their last termini. Nigeria is a party to this Convention. In the 1996 Protocol to the London Dumping Convention, dumping is defined as deliberate disposal at the sea of wastes from vessels, aircraft and other man-made structures at the sea. The protocol takes priority over the 1972 Convention.

The Protocol, under Article 8, initiated a provision to cater for natural eventualities or occurrences by creating exceptions such as *force majeure* circumstances that may pose danger to human life where dumping is permissible. The polluter pays and precautionary principles where the person planning to dump an installation or wastes must prove that it is the last resort in contemplation of the environment as detailed under Article 3(1)(2) of the same international legal instrument.

Nigeria, on December 10, 1982, ratified the provisions of the United Nations Convention on the Law of the Sea 1982 (UNCLOS)[22], and it came into force on November 16, 1994. Article 60(3) of the Convention provides that any installations or structures which are abandoned or disused shall be removed to ensure the safety of navigation, taking into account the generally accepted international standards established in this regard by a competent international organization. Such removal shall also have due

[22]The United Nations Convention on the Law of the Sea, https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf (accessed December 29, 2022).

regard for fishing, protection of the marine environment, the rights and duties of other states.

Furthermore, appropriate publicity shall be given to the depth, position and dimensions of any installations or oil and gas structures not entirely removed. However, the Convention fails to stipulate that the structures not removed entirely shall be removed taking into consideration the marine environment and accepted international standards for decommissioning and abandonment of oil and gas facilities or assets.

International Maritime Organisation Guideline 1989 confirms the provisions of Article 60(3) of the United Nations Convention on the Law of the Sea[23] that oblige states to comply with the International Standards Organisation and its Maritime Safety Committee. It sets the standard and guidelines for the removal of disused or abandoned offshore oil installations. However, it is a mere recommendation to guide policy-makers on stringent removal requirements on abandoned oil and gas installations. Its provisions are not binding and it fails to provide for what should happen afterwards especially where there is non-compliance with the provisions of the Convention.

The Convention for the Cooperation in the Protection and Development of the Maritime and Coastal Environment of the West and Central African Regions (Abidjan Convention)[24] promotes regional cooperation for the protection of the marine, coastal environment and conservation of their resources. But the Convention fails to mention the issue of decommissioning of offshore oil and gas installations. However, being a signatory to this Convention, Nigeria is expected to control, stop pollution arising from its seabed, subsoil exploration and exploitation activities arising from the upstream petroleum industry.

3.1 National Legal Framework Regulating Decommissioning in Nigeria

Nigeria has made some statutory provisions for decommissioning of oil and gas infrastructure but these have not satisfied international best practices,

[23]International Maritime Organisation Guideline 1989, Available online at https://wwwcdn.imo.org/localresources/en/KnowledgeCentre/IndexofIMOResolutions/AssemblyDocuments/A.672(16).pdf (accessed December 29, 2022).

[24]Abidjan Convention, International Water Governance, http://www.internationalwatersgovernance.com/abidjan-convention.html#:~:text=%E2%80%8BThe%20Convention%20for%20the,effect%20on%205%20August%201984.(accessed December 29, 2022).

safety standards and methods in their operations in the sector as the laws are scattered in several incoherent provisions in several legislations.

The 1999 Constitution of the Federal Republic of Nigeria, provides that the government shall protect and improve the environment and safeguard the water, air and land of Nigeria as stated in Chapter II of the Constitution which set out the fundamental objectives and directive principles of state policy which are non-justiciable as also stated in section 6(6)(c) of the Constitution.

The repealed Petroleum Act[25]was the main petroleum legislation in Nigeria but the Act fails to provide for decommissioning of offshore installations specifically but section 9 of the Act empowers the minister to enact regulations on construction, maintenance and operation of installations like other advanced oil-producing countries. The newly enacted Petroleum Industry Act 2021 provides a legal, governance, regulatory and fiscal framework for the Nigerian petroleum industry, development of host communities and other related matters. Section 232 (1) of the Act provides for decommissioning and abandonment of petroleum wells, installations structures, utilities, plants and pipelines for petroleum operations on land and offshore. This should be conducted under good international petroleum industry practice and guidelines issued by the Commission or Authority as the case may be provided. It further provides that the guidelines issued shall meet the standards prescribed by the International Maritime Organisation on offshore petroleum installations and structures and environmental development. A decommissioning and abandonment shall not take place without the written approval of the Commission or authority as the case may be.

Contractual arrangements under section 85 of this Act provides for responsibilities and liabilities relating to decommissioning and abandonment. It states in section 233 **that the licens**ee or lessee as a contractor and shall submit to the Commission or Authority a programme setting out an estimate of the cost of the proposed measures to be taken regarding the shutdown of operations and decommissioning and abandonment of disused installations, structures or other assets used in petroleum operations. The programme shall not be approved if relevant environmental, technical and commercial regulations or standards are not

[25] 1969 Cap P10, Laws of the Federation of Nigeria 2004.

complied with. Before approval of application or programme for decommissioning and abandonment, the Commission or authority shall ensure that considerations and recommendations are taken in the light of individual circumstances. The potential for the reuse of a transportation pipeline together with another existing facility in connection with further hydrocarbon developments is considered before decommissioning, all feasible decommissioning options have been considered and a comparative assessment made.

All feasible decommissioning options have been considered and a comparative assessment made and any removal or partial removal of an installation, structure or transportation pipeline is to be performed in a manner that guarantees sustainable environmental development. Recommendation to leave an installation, structure or gathering line in place is made concerning its likely deterioration and to the present possible and future effects on the environment and in the case of offshore installations and structure must be consistent with the applicable good international petroleum industry practices. The Commission or Authority as the case may be is to enforce compliance by any holder of a current licence, lease or a holder of an expired licence or lease who is responsible for the applicable decommissioning and abandonment plan in respect of a licence or lease that has expired or out of its remaining or unfulfilled decommissioning and abandonment obligations under the Act. The Commission or Authority as the case may be may recall a licensee or lessee responsible for a decommissioning and abandonment programme concerning a licence or lease that has expired or surrendered or a licensee or lessee that has transferred or divested its interest or equity to carry out an obligation under the Act. However, where a new company has assumed all respective obligations with the approval of the Commission or Authority, upon transfer or divestiture, the licensee or lessee shall have no further obligations. The Commission or Authority is to provide the list of the installations, structures and pipelines on land and offshore in Nigeria used few petroleum operations and their current status are made accessible to the public annually.

To ensure the maintenance and safeguard, were any installation, structure or pipeline remained disused and in position or are to be party removed concerning the deep and ultra-deep-water environment and where the installation, structure or pipeline is partly removed, the licensee

shall remain liable for any residual liability arising from the installation, structure or pipeline not removed. Installations and structures on land shall be completely removed and the environment restored to its original condition except for buried transportation pipelines and gathering lines.

Also, the Petroleum (Drilling and Production) Regulations[26] enacted under section 9(1) of the Petroleum Act Laws of the Federation of Nigeria 2004. This imposes obligations on international oil firms to remove all buildings, installations, chattels brought by the licensee in connection with petroleum activities but is subject to the minister right to take over such installations as stated under Regulation 45(3). Also, sections 11,12 and 36. Require the owners and occupiers of the relevant areas of an Oil Exploration License to bring and erect upon the relevant area temporary structures, machinery and other essential for his operations and to dismantle or decommission the same after the expiration of the license. Section 36 states that no boreholes or existing well shall be re-drilled, plugged or abandoned and no cemented casting or other permanent forms of casting shall be withdrawn from any borehole or existing well which is proposed to be abandoned without the written permission of the Director of Petroleum Resources this among other incoherent provisions under the regulation. The gap is that what should constitute the content of the proposed abandonment programme are not expressly stated in the regulation[27].

The process, structure, content and method of the decommissioning programme should be approved and agreed to by the Director of Petroleum Resources was also not provided for by the regulations. The undue laxity and statutory discretion are given to the Minister of Petroleum for the extension of the period to deliver productive boreholes which are capable of being abused by corrupt oil licensees by demanding more time to circumvent their statutory obligations to decommission appropriately. The provision of section 12 of the regulation provides as follows:

"Subject to the right of the owners and occupiers of the relevant area the license of an oil exploration license may, with the approval of the Director of Petroleum Resources, bring and erect upon the relevant area

[26] Cap P10.

[27]Olujobi, Olusola., Olarinde, Smaranda, Yebisi, Tunde., Okorie, Uchechukwu , COVID-19 Pandemic: The Impacts of Crude Oil Price Shock on Nigeria's Economy, Legal and Policy Options, Sustainability 2022, 14(18), 11166, available on line at 6. https://doi.org/10.3390/su141811166.

temporary structure, machinery and other things necessary for his operations, and may dismantle and remove the same". The fact that the stipulations are contained in a mere regulation rather than the substantive Petroleum Act whittle down the efficacy of this legal provision and its effects.

Oil and Gas Pipeline Regulations 1995 was enacted also under section 9(1) of the repealed Petroleum Act sections 23(1) and 24 which require the holders of a licence who desire to discontinue operations to apply to the Department of Petroleum Resources for approval. The Oil Pipelines Act[28] provide for the rights and duties of third parties in the use of pipelines and payment of compensation for damages caused by licenses of pipeline under the Act. Also, regulation 23(1) emphasises the right of way of an abandoned pipeline that ought to have been removed deemed to be maintained by the holder of the license. This appears unrealistic and incredible. Leaving the responsibility of maintaining the right of way of a pipeline that is no longer in use to the holder of a license that has ceased oil exploration operation without any alternative provision in the event of failure of compliance by the license holder appears not to be logical.

The Environmental Guidelines and Standards for the Petroleum Industry 1991and 2002 were enacted under the Directorate of Petroleum Resources' Powers to regulate and enforce standards in the petroleum industry by section 9(1) of the Petroleum Act 1969 Cap P10, Laws of the Federation of Nigeria 2004. The regulation fails to consider in detail the uniqueness of the Nigerian environment. It was adapted from the 1998 International Maritime Organisation Guidelines. It requires complete removal of any offshore installations sited in a water depth of fewer than 100 metres and weighing less than 4,000 tons. It further requires that all installations in the continental shelf or exclusive economic zone should be designed in a manner that can be completely removed. However, the guidelines fail to state who is liable for the removal in the event of default[29]

The guidelines provide that decommissioning programme shall be planned with the objective and implementation drawn up during the project initiation and design with restoration and remediation programmes

[28] Cap 07 Laws of the Federation of Nigeria 2004.

[29] Fagbemi, S.A., "The Impact of Resources Management on the Achievement of the National Policy on the Environment and Environmental Sustainability in Nigeria",*Afe Babalola University, Ado Ekiti, Law Journal*, (2017), 1(5), 28-52.

but fail to set out the criteria, objective and specific method for the implementation of the project initiation and design stages for forming the basis of the decommissioning plan but rather leaves it to the whims and caprices of the oil companies who often refuse to properly decommission their oil platforms due to the cost implications[30].

The Harmful Wastes (Special Criminal Provisions) Act 1988, section 1(3) of the Act makes it a criminal offence to deposit or dump harmful wastes into the marine environment. Harmful is defined under section 5 as poisonous, toxic, noxious, injurious substances that may expose one to the risk of death, fatal injury or incurable impairment of physical and mental health but weak enforcement has been the challenge of this law by regulatory authorities due to the alleged poor funding and lack of personnel or human capacity in the organisation[31].

The decommissioning provisions in the existing oil and gas contractual agreements such as the Joint Venture Agreement where partners are obliged to contribute financially to the extent of the percentage held in the contract towards the exploration and development of the oil gas blocks including decommissioning. The Production Sharing Contracts also require the oil-producing firms to decommission their disused assets after the cessation of oil exploration and production activities.

Similarly, the National Environmental Standards and Regulations Enforcement Agency (Establishment) Act 2007 establishes the national Environment Standards Regulatory and Enforcement Agency (NESREA) to protect and develop the environment, biodiversity conservation and sustainable development of Nigeria's natural resources and enforcement of environmental standards and regulations. However, the scope of the act does not include the oil and gas industry even though most environmental problems in the country are caused by oil and gas exploration and

[30]Ojo, A.A., and Ayo, T.E., "An Appraisal of the Legal Regime of Offshore Decommissioning and Abandonment of Oil Installations in Nigeria", *Afe Babalola University Ado Ekiti, Law Journal*(2017), 1(5), 167-186.

[31] Olujobi, Olusola., et al "Carbon Emission, Solid Waste Management, and Electricity Generation: A Legal and Empirical Perspective for Renewable Energy in Nigeria, International *Environmental Agreements: Politics, Law and Economics,* (2022), DOI 10.1007/s10784-021-09558. Available online at https://link.springer.com/article/10.1007%2Fs10784-021-09558-z#citeas (accessed December 29, 2022).

production activities[32]. The National Oil Spill Detection and Response Agency (Establishment) Act provides the regulatory framework for the management of wastes from the oil and gas industry to combat its adverse effects on the aquatic, environment and human health. The agency is responsible for the surveillance and compliance with the extant environmental laws and detection of oil spills in the petroleum industry.

Equally, the Environmental Impact Assessment (EIA) Act[33], makes it mandatory for the environmental impact assessment of any proposed oil and gas project which may likely have significant adverse effects on the environment before the execution of such projects. The environmental impact assessment help to predict the environmental adverse effects of the proposed oil and gas project and formulation of appropriate palliative or measure to mitigate the adverse environmental effects of such proposed project in the sector. Decommissioning of oil and gas infrastructure or assets require environmental impact assessment before commencement of operations as stated under paragraph 12 of the Petroleum Act, Schedule to the Environmental Impact Assessment Act.

The National Environmental (Base Metals, Iron and Steel Manufacturing/Recycling Industries Sector) Regulation[34] imposes an obligation to prevent and minimize pollution in the Nigerian environment from the operations of the sector. Cleaner production technology is to be applied to reduce pollution in the sector[35]. Weak implementation of the law has been a concern due to the absence of the political will of the Federal Government to implement its environmental and petroleum laws stringently due to mundane pecuniary benefits from the oil and gas investors.

Other legislations that have provisions on decommissioning are the Nuclear Safety and Radiation Protection Act[36] Oil Navigable Waters Act[37] and the Nigerian Meteorology Agency Act but their provisions are weakly

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[32]Ikpeze Nnamdi., "Safe Disposal of Municipal Wastes in Nigeria: Perspectives on a Rights-Based Approach", *Afe Babalola University, the Journal of Sustainable Development Law and Policy*,(2014), 3(1), 72-85.

[33] 1992 Cap E12 LFN 2004.

[34]2011 Laws of the Federation of Nigeria 2004 Cap N164.

[35]Olujobi, Olusola., Ufua, Daniel., Olokundun, M., Olujobi, O.M., "Conversion of Organic Wastes to Electricity in Nigeria: Legal Perspective on the Challenges and Prospects", *International Journal of Environmental Science and Technology,(2021),19(2),* 939–950

[36]Cap N142 LFN 2004.

[37]Cap 06 LFN 2004.

enforced by the various regulatory authorities in the sector to deter infringement of decommissioning obligations.

Section 234 (1) of the Petroleum Industry Act 2021 makes provision for the host communities development to foster sustainable prosperity within the host communities, to provide direct social and economic benefits from operations to host communities. To enhance peaceful and harmonious coexistence between licensees or lessees and host communities. To create a framework to support the development of host communities. Development in the host communities will foster sustainable development among host communities[38]. To offer social and economic benefits from petroleum operations to host communities to enhance peaceful and harmonious coexistence between the host communities and the oil companies to guarantee peace and to support the host community's development. Section 234(3) provides for a grievance mechanism to resolve disputes between settlers and host communities and section 235(1)(2)(6) of the Act require the incorporation of "Host Communities Development Trust" to finance and executive projects for the benefits and sustainable development of the host communities. To undertake infrastructural development of the host communities within the scope of funds available to the Board of Trustees and to facilitate economic empowerment opportunities in the host communities, educational, health care and to support initiatives which enhance protection of the environment within twelve (12) from the effective date for existing oil mining leases for the benefits of the host communities. Failure to comply with this obligation having been informed of such failure in writing by the Commission or Authority may be grounds for revocation of the licence or lease. Each settlor, where applicable through the operator shall make an annual contribution to the applicable Host Communities Development Trust Fund of an amount equal to 3% of its annual operating cost of the preceding financial year in the upstream petroleum operations affecting the host communities for which the applicable host communities' development trust fund was established. Payment made by the settlor under section 240(2) of the PIA shall be deductible for hydrocarbon tax and companies incomes as applicable.

[38]Olujobi, Olusola, Olujobi, Oluwatosin., "Re-Thinking and Optimising Nigeria's Anti-Corruption Legal Framework: Upstream Petroleum Sector Corruption Evaluation", *Journal of International and Comparative Law*, (2020), 8, 79-105.

For settlers operating in shallow water and deep offshore, littoral communities and any other community determined by the settlers shall be the host communities. However, this has not been complied with by the operators operating in the upstream petroleum industry under Joint Operating Agreements. The Nigerian Upstream Regulatory Commission (NURP) and the Nigerian Mid and Downstream Petroleum Regulatory Authority (NMDPRA) as the case may be is empowered to formulate regulation on the administration and the use of the trust fund.

The decommissioning provisions in the existing oil and gas contractual arrangements are in three (3) categories in Nigeria's oil and gas industry namely: The Joint Venture Agreement which has no provisions on decommissioning of oil and gas facilities but references on decommissioning were made under Article 3 of the standard Joint Venture Agreement. Risk Service Contract, where the contractor bears all the risk regarding the capital for exploration and production and where no oil discovery is made contract ceased with no obligations on the part of either party. However, in the event of a commercial discovery of crude oil the contractor is entitled to payment. The Production Sharing Contract (PSC) is primarily offshore concessions with three (3) contracts such as the 1993 Production Sharing Contract which has no provision for decommissioning. The 2000 and 2005 Production Sharing Contract models have provisions for the offshore decommissioning with the decommissioning fund for restoration and rehabilitation upon the expiration of their oil operations. Clause 12.7 2005 model production sharing contract states that the international oil company is responsible for decommissioning but fails to include stringent sanctions for non-compliance with the contract to serves as a deterrent to other oil companies in the industry. Section 85 (1)(2)(a)(b)(c)(d) of the Act provides for a model contract such as Production Sharing Contract for the exploration, development and production of petroleum on terms under the financial risk-bearing party shall recover costs from a share of production as stated in the contract from the applicable area. It involves the sharing of crude oil and natural gas from petroleum operations in agreed proportions between the host government and the oil company[39]. The contractor bears the initial exploration risk and if oil is discovered and extracted a portion of the oil is produced to

[39] Section 85(1)(a) Petroleum Industry Act 2021.

reimburse its costs of production. The challenges associated with cash call is eliminated by lifting the financial burden from the Federal Government and affording the government significant control over its oil and share of the profit without any investment since it is the contractor that will lose the cost sunk into the project. Section 85(1)(c) provides that the Risk Service Contract on the other hand is the provision of essential services such as drilling, engineering or construction in return for payment by the host government. The merit is that the government retains the entire production and the contractor is guaranteed a fixed service fee[40].Section 65(1) of the Petroleum Industry Act also provides that NNPC Limited and other parties to joint operating agreements in respect of the upstream petroleum operations may voluntarily restructure their joint operating agreement as a joint venture carried out by way of a limited liability company each referred to as incorporated joint venture company. A profit-sharing contract is a production contract where the profit oil is provided in cash to the Federal Government as stated under section 85(1)(b) of the Petroleum Industry Act[41]. A concession agreement for exploration, development and production of petroleum such as incorporated or unincorporated joint venture with NNPC Limited.

The various contractual arrangements cover extensive issues such as the limits of their respective interest in the management of costs and profits sharing after the exploration, production and definition of their respective rights and duties under the arrangement. However, none was able to address the issue of decommissioning, abandonment or cessation of oil gas operations[42]. This issue was left to the applicable regulatory laws of the host nations.

In Nigeria, legislations and regulatory institutions saddled with the responsibilities of monitoring decommissioning are incoherent, too weak or lack the necessary expertise and technical know-how to undertake the responsibilities of decommissioning. Therefore, there is a need for strengthening the regulatory frameworks for mainstreaming

[40]Kachikwu, Ebe.I., Legal Issues in the Nigerian Petroleum Industry (Law Publishing & Conference Services Ltd, Lekki, Nigeria, 2016), 76-87.

[41] 2021.

[42]Jolaosho Temilade Olujobi, Olusola, Developing a Market-Based Approach to Gas-Flaring Regulation in Nigeria and Experiences from Norway and Canada, (*OGEL, Oil and Gas Energy Law Intelligence*,(2022),available at https://www.ogel.org/journal-advance-publication-article.asp?key=699 (accessed February 1, 2022).

decommissioning of petroleum industry assets. The establishment of agencies for the regulation and coordination of the various decommissioning of petroleum assets or infrastructure is imperative in the sector. The existing agencies lack the requisite training, technical competence and expertise for standard or best practice on decommissioning exercise like in the other advanced climes.

6.2 Principal Agencies in Nigeria that Regulate Environmental Protection in the Oil and Gas Industry

Primary institutions in Nigeria that regulate environmental protection in the oil and gas industry to overhaul their modus operandi for protecting the environment are:

National Oil Spill Detection and Response Agency, Section 1 of the NOSDRA Act[43] establish the National Oil Spill Detection and Response Agency with the responsibility for preparedness, detection, response and combating oil spillage in the country[44], section 18 of the Act set up the advisory, monitoring and coordinating arm of NOSDRA called the National Control and Response Centre. The functions of NOSDRA are set out under section 638 of the Act.

The Nigerian Maritime Administration and Safety Agency (NIMASA) under section 1(ii) of the Nigerian Maritime Administration and Safety Agency Act[45] is to regulate and promote maritime safety, security, marine pollution and maritime labour. The objectives of the agency are set out under section 22(2)(f) of the Act. The oil spill is deleterious to human health and the environmental pollution is a threat to marine safety, the agency ought to be involved in environmental protection in the oil and gas sector. The functions of the NIMASA Act as stated under its Act conflict with the functions of the NOSDRA due to the multiplicity of agencies functions. Amendment of these Acts by the legislature is necessary. NODRA Act is a specialised agency established for environmental protection in the petroleum sector.

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[43] Cap N157 LFN 2006.

[44]Olujobi, Olusola, Oyewunmi, Olabode Oyewunmi, Adebukola., "Oil Spillage in Nigeria's Upstream Petroleum Sector: Beyond the Legal Frameworks", *International Journal of Energy Economics and Policy*, (2018), 8(1), 220-226.

[45] Cap N161 LFN 2007.

The Nigerian National Petroleum Corporation (NNPC) Act[46] functions of the agency are set out under section 5(1)(d)(e) of the Act. It is a state-owned oil corporation established in 1977. A major reason for petroleum reform was for NNPC to remain as a commercial entity. The regulators under the new framework are clearly defined. However, its involvement in environmental protection might be incidental but being a major player and a regulatory body, it ought to be involved to prevent oil spillage and other environmental protection issues as NNPC is listed by the National Oil Spill Contingency Plan as one of the agencies to be coopted in the event of tier 3 oil spillage but corruption has affected the efficiency of the corporation.

The Department of Petroleum Resources has the statutory responsibility of ensuring compliance with oil and gas laws, regulations and guidelines in the sector. Supervision of oil and gas industry operations, leases and leases among other functions.

The Nigerian Security and Civil Defence Corps (NSCDC) [47]states the functions of the corps to include oil spillage, oil pipeline monitoring and protection from vandalization with the power to arrest with or without a warrant, detain, investigate and institute legal action against any suspect due to chemical poison or oil spillage and nuclear waste poisoning. Under the Criminal Code Act sections, 245 and 247(a) the police, armed forces and the State Security Services have the power to prosecute any polluter of water and players in the oil and gas sector. However, it appears that the only culprits contemplated are the natural persons as the punishment cannot yet be meted out on the corporate offenders.

The Nigerian Port Authority Act[48] section 7(i) states functions include among others control of pollution arising from oil or any other substances from ships suing the ports limits or their approaches. The penalty for contravention of any of the regulations is very paltry exhibiting the need to review the laws by the legislatures to further boost their engagement in environmental protection in the sector. Enforceability of the laws appears too weak to guarantee environmental protection therefore, there is a need to harmonize the provisions of all these laws on environmental protection and pollution control in the oil and gas sector.

[46] Cap N123, LFN 2004.
[47]Cap N146 LFN 2007.
[48]Cap N126 LFN 2004.

The Ministry of Petroleum Resources is charged with the supervision of the operations of the oil and gas industry in Nigeria for efficiency to ensure compliance with international standards. Agencies under the ministry are the Nigerian National Petroleum Corporation and the Department of Petroleum Resources.

The National Environmental Standards and Regulations Enforcement Agency Act[49] is a statutory regulatory agency that ensures compliance with environmental laws and regulations including decommissioning activities. However, sections 7(k), 8(s) and 29 of the Act disqualify the agency from the activities of the oil and gas industry[50].

6.3 Comparison of Decommissioning of Offshore Oil and Gas Installations in the United Kingdom, Norway, United States and Nigeria

Comparison of decommissioning of offshore oil and gas installations in the United Kingdom, Norway, United States and Nigeria with some lessons or strategies Nigeria can absorb from the chosen case study nations for best practice and environmentally friendly decommissioning exercise is also considered as stated below:

United Kingdom: Energy Act 2016, United Kingdom's Energy Act 2008. The Oil and Gas Authority with the power to sanction non-compliance with the law. Under section 38(4) of the United Kingdom Petroleum Act, 1998 the Secretary of State may impose the provision of financial security on the operator or any of the parties who are unable to satisfy their obligations under the appropriate decommissioning plan or via Model Decommissioning Security Agreement to pay for decommissioning costs any time. The fund is statutorily protected from the United Kingdom's Insolvency Act and all forms of creditors. The United Kingdom's decommissioning framework are unambiguous on the residual liability of the operators. The United Kingdom Petroleum Act 1998 require that the costs of decommissioning of oil and gas facilities should be borne by the company. It protects its citizens from bearing the liabilities of decommissioning. Decommissioning cost is borne by the operators. Residual liabilities remain with the owners/operators in perpetuity.

[49] No 25, 2007.

[50]Olujobi, Olusola, Oyewunmi, Olabode, 'Annulment of Oil Licences in Nigeria's Upstream Petroleum Sector: A Legal Critique of the Costs and Benefits' *International Journal of Energy Economics and Policy,* (2017), 7(3), 364-369.

Imposition of financial security on oil companies to prevent the default of decommissioning obligations.

Norway: The Petroleum Safety Authority of Norway regulates decommissioning of oil and gas assets. Absence of express statutory financial security regime for decommissioning of oil and gas structures. No decommissioning funds but the country adopt a cost-sharing method where the government bears the cost of decommissioning and deducts tax based on the government interest in the oil and gas fields. Liability is imposed on anybody who wilfully or negligently caused damage by decommissioning. Residual liability is unambiguously treated under the country's legal regime. The cost-sharing method is adopted where the government bears the cost of decommissioning and deducts tax based on the government interest in the oil and gas fields. A stringent legal regime on decommissioning obligation is imposed on oil companies.

United States: The legal regime on decommissioning is similar to the United Kingdom, however, absence of express law against insolvency to protect decommissioning funds as applicable in the United Kingdom. The Bureau of Ocean Energy Management was set up to ensure financial security for decommissioning from operators in form of security bonds made available before business operations. Upon certification by the Bureau of Safety and Environmental Enforcement which is the statutory body empowered to regulate decommissioning with sanction for non-compliance. Forfeiture of security or bonds in case of non-compliance with decommission or environmental laws. Security or bonds are imposed before the commencement of business operations or oil exploration or production with sanction for non-compliance.

Nigeria: Nigeria's legal regime on decommissioning fails to address the issue of residual liability in conformity with the recommendations of the International Maritime Organisation states' obligations in respect of disused offshore infrastructure. EGASPIN should be amended. Absence of an independent statutory body saddled with the responsibility of decommissioning oil and gas assets to ensure a regulated and manageable decommissioning exercise. There is a need for the introduction and protection of decommissioning funds against insolvency and other risks. But

this is currently lacking in Nigeria unlike in the selected countries. Absence of provision for forfeiture of security or bonds in case of non-compliance with applicable environmental laws on decommissioning or abandonment. Absence of legal and financial provisions for decommissioning including future obligations or liabilities for disused offshore oil and gas infrastructure. The laws on decommissioning are analogous to the United Kingdom, but, the absence of express law against insolvency to protect decommissioning funds need to be reconsidered. Nigeria can absorb the strategies adopted in the selected case study nations for best practice and environmentally friendly decommissioning obligations of oil companies. Good international petroleum industry practices or guidelines should be adopted

7. Findings and Discussion of Results

There is weak enforcement of the Petroleum Industry Act 2021 in addressing decommissioning and abandonment of offshore oil installations or infrastructure in Nigeria. The study advocates a comprehensive, stringent, functional and workable national legal regime for offshore oil decommissioning in Nigeria to be enacted by the legislatures to prevent deleterious effects of environmental pollution in Nigeria. Weak enforcement of payment or contribution to "Decommissioning Trust Fund" which is a form of financial security oil and gas companies utilise to secure funding for decommissioning obligations or costs. Upon default in payment, the host country will be at liberty to draw the full amount of the fund from such a designated account. This encourages compliance with decommissioning obligations by oil and gas companies.

7.1 The Hurdles against Offshore Oil and Gas Decommissioning

A major challenge is a fact that the Constitution has rendered the Constitutional provisions for the protection and promotion of a healthy environment favourable to life non-justiciable. The failure of the Federal Government to demonstrate the political will needed to amend the 1999 Constitution in conformity with the international obligations flowing from the ratification of the provisions of the African Charter. Lack of national

coverage by the National Environmental Standards and Regulatory Agency has affected the efficiency of the agency in executing its mandates[51].
Most environment regulatory agency is poorly staffed and ill-equipped with modern environmental technologies or scientific techniques for combating environmental degradation or risks such as decommissioning of oil and gas infrastructure under the international best practices and environmentally friendly manner.

The huge cost of decommissioning is one of the principal problems confronting licensee in making provision for decommissioning of offshore oil and installation to promote a viable environmentally friendly exercise, restoration gulped exorbitant cost of decommissioning, thereby, discouraging most oil companies.

Consistent compromise of environmental quality and standards for oil licensee and lessees for pecuniary advantages by some regulatory authorities and the greed of some host states who are often concerned with the commercial advantage of oil exploration than environmental and safety consequences on the host communities.

Absence of a sustainable plan and viable legal regime for regulating decommissioning during the productive life of the oil exploration activities. Absence of statutory "Decommissioning Fund" designated for decommissioning obligations of oil companies. The requirement of complete removal as stated under the United Nations Convention of the Law of the Sea 1982 is a major challenge to decommissioning obligations of oil companies. It is alleged by some oil companies that it is easier and less costly to engage in partial removal of disused infrastructure than complete removal of such assets or infrastructure.

The delay in the passage of the Nigerian Petroleum Industry Bill has caused Nigeria a financial loss of 15 billion Naira annually and diminished the ability of Nigeria to properly regulate its petroleum industry due to regulatory uncertainty in the petroleum industry before the passage of the Petroleum Industry Act.

7.2 Solutions to the Problem of Abandonment and Decommissioning of Oil and Gas Infrastructure or Assets in Nigeria

[51]Olujobi, Olusola., Olujobi, Oluwatosin, and Ufua, Daniel, "A Critical Appraisal of Legal Framework on Deregulation of the Downstream Sector of the Nigerian Petroleum Industry", *International Journal of Management*, (2020), 11 (6), 252-268.

There is a plethora of statute that plays an important role to brings to the fore the prospects or solutions to the problems of abandonment or decommissioning obligations in Nigeria's upstream petroleum sector.

The introduction of security instruments will serve as a solution in instances where the assets of the oil company have become a liability due to defaults of such companies in satisfying their decommissioning obligations. Security or bond option insulates potential default of decommissioning obligation by the companies, it will ensure that funds for dismantling and disposing of facilities and installations used for the oil and gas production would have been guaranteed. The primary form of financial security oil and gas infrastructure or assets includes the following:

Trust Fund which is titled "Decommissioning and Abandonment Fund" is a form of financial security oil and gas companies or consortium of companies utilise to secure funding for decommissioning obligations or costs. Upon default in payment, the host country will be at liberty to draw the full amount of the fund without resorting to the defaulting company. Periodic review of the decommissioning plan concerning the available fund. The trust fund is the solution to the financial challenge hindering decommissioning obligation in Nigeria.

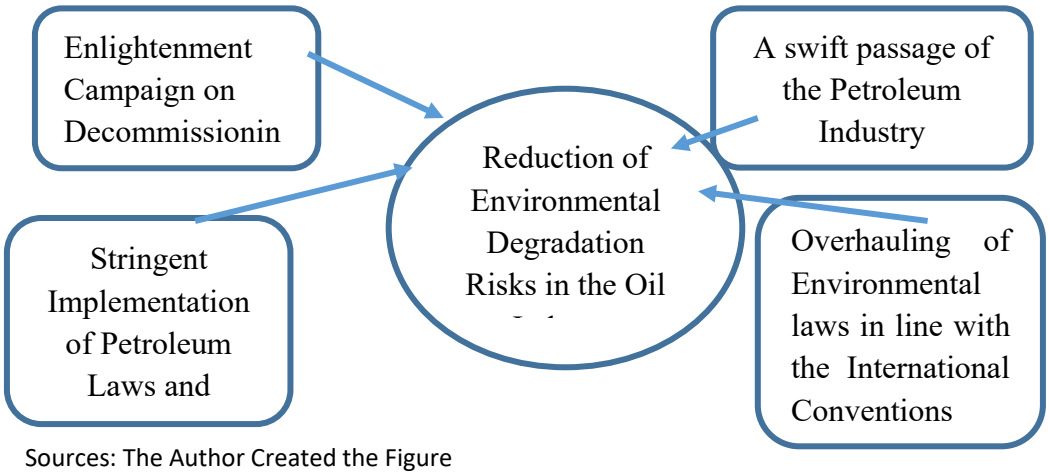
The use of an irrevocable letter of credit and bank guarantee which are often executed in form of agreement to provide funds for decommissioning but subject to annual renewal after the review of the decommissioning plan and cost. A bank guarantee will enhance access to funding for decommissioning after the due diligence exercise has been done.

Insurance policy, an insurance company assumes risk liability to mitigate environmental liabilities such as exploration and decommissioning obligations during the whole of the project life. Company guarantees and guarantee by the third parties to assuage the fear of default risks by the subsidiary company. Acceptance of a parent company guarantee will boost confidence in the corporate financial buoyancy of the company concerning payment for decommissioning costs. A bond is also a good option upon the fulfilment of the terms and conditions. Cash deposit or upfront payment may assuage the fear of non-performance of decommissioning obligations of oil and gas installations after production has ceased. Advance payment could be paid into an interest yielding bank account designated "Decommissioning and abandonment Account or Funds". Collateral and

secured interest, pledging of property whether fixed or movable or other assets of economic value, higher or just exactly proportional market value to fulfil financial obligation of decommissioning. Environmental laws should attract stringent sanctions for non-compliance to serves as a deterrent to would-be offenders[52].

7.3 Figure 1: Hybrid Model for the Transformation of Nigeria's Upstream Petroleum Industry

The study has designed a hybrid model for the transformation of Nigeria's upstream petroleum industry.



Sources: The Author Created the Figure

Conclusion and Policy Implications

The study advocates the need for effective decommissioning to strengthen the regulatory framework for mainstreaming decommissioning of petroleum industry assets to guarantee the sanctity of the global environment and to prevent the damage of marine life. National legislation on oil and gas installation decommissioning are inadequate. The use of financial security provisions, assets or significant guarantees can mitigate the risk of abandonment or non-decommissioning of oil and gas infrastructures by oil companies. This will promote a robust decommissioning legal regime in the sector through the use of collaterals from oil and gas companies to guarantee the fulfilment of such international obligations.

[52]*Ibid,* note 17.

Decommissioning of oil and gas production facilities and installations has attracted global attention due to the cost but unsuccessful exploration may relieve the parties of their decommissioning obligations since there would not have been any oil and gas facilities and installations in place. Decommissioning of oil and gas assets after the end of exploration and production activities. The study advocates the enactment of the Petroleum Industry reform bills,

Petroleum Industry Governance Bill, Petroleum Industry Administration Bill into laws to strengthen the petroleum industry regulatory framework in Nigeria. A comprehensive regulatory framework on offshore decommissioning that will combat environmental degradation risks in Nigeria's upstream petroleum sector should be enacted by the National Assembly to meet the need and aspirations of the current generation's without jeopardizing the ability of the future generations.

Recommendations

The "Polluter pay principle" is the international best practice on decommissioning of oil and gas offshore installations and whosoever is responsible for pollution must bear the cost of combating such pollution. The proposed Petroleum Industry Governance Bill should make detailed provisions for offshore oil and gas installations. A commission or agency should be established to monitor and to ensure compliance with national laws, regulations and conventions.

Environmental Guidelines and Standards for the Petroleum Industry in Nigeria (EGASPAN) fails to make adequate provisions for offshore decommissioning. It is suggested that the guideline should be overhauled accordingly. "Decommissioning Fund" which is a form of financial security oil and gas companies or consortium of oil and gas companies utilise to secure funding for decommissioning obligations or costs should be introduced or enacted in the pending Petroleum Industry Governance Bill and upon default in payment, the Federal Government will be at liberty to draw the full amount of the fund from such designated account. This will encourage compliance with decommissioning obligations by oil and gas companies.

Decommissioning funds should be legislated upon rather than making it a contractual arrangement between NNPC and multinational oil firms against insolvency as applicable in the United Kingdom where the UK

Energy Act 2008 provides that insolvency does not apply to decommissioning funds set aside to protect and to Sustaining national oil wealth the pending Petroleum Industry Governance Bill can further be enriched with the decommissioning fund provision. Also, there is the need to overhaul our national laws in conformity with the international conventions, standards and contractual arrangements making international oil companies liable and responsible for decommissioning offshore oil and gas installations.

Host nations are to put in place legal and financial provisions for decommissioning with obligations or liabilities for disused offshore structures to prevent adverse effects on living resources of the marine environment or other endangered species.

There is the need to strengthen the national legal framework on decommissioning in the petroleum sector for restoration of the environment to its original status and wellness via comprehensive and scientific decommissioning.

The National Oil Spill Detection and Remediation Agency should be assigned the responsibility for coordinating decommissioning activities in the oil and gas industry in Nigeria. Alternatively, separate agencies can be established for decommissioning of infrastructure, environment, and host community.

There is a need for codification of UNEP Recommendations for Ogoniland Cleanup as a legislative framework for the governance of environmental decommissioning and passage of the Petroleum Host and Impacted Communities Development Bill into law as the legislative framework for the host community decommissioning. An environmental governance law that codifies and consolidates pollution control laws devoid of overlap is needed for environmental sustainability.

As a way of strengthening regulatory frameworks for decommissioning subsector of the petroleum industry, the study recommends strict adherence to regional and international agreements and conventions on decommissioning of oil and gas assets. On the need to strengthen the institutions the study reiterates the call for the enactment into law of the Petroleum Industry Reform Bill.

There is a need for the imminent repeal of the existing Petroleum Act and proposed replacement with the Petroleum Industry Governance Bill. This bill should be fast-tracked and geared towards making adequate

provisions for offshore decommissioning with stringent sanctions for defaulting oil licensees and lessees in the event of default. Payment of heavy fines, corporate criminal liability, revocation of oil licence is hereby recommended.

A swift passage and amendment of the Petroleum Industry Governance Bill into law with the sound provision on offshore decommissioning and abandonment in the country is urgently desired as it has strong potential to combat resource curse, environment degradation risks and for sustainable development of the sector. Section 4(1) of the Petroleum Industry Governance Bill made provision for the establishment of the commission to be in charge of the petroleum matters including decommissioning and abandonment of offshore oil and gas assets. It is hoped that through the bill, environmental impacts of oil production will be addressed, the standard of living will improve local communities, investors will be encouraged to invest in the sector

There is the need for a comprehensive review of the Joint Venture or Multi-Lateral Agreement between Nigeria, the international oil companies and the host communities such Joint Venture Agreement should include equitable distribution of the proceeds from the sale of crude oil and decommissioning and abandonment obligations. There is a need for an aggressive enlightenment campaign on decommissioning of oil and gas assets by the government. This will be improved environmental management and governance in the sector.