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Inclusion of Incentive and Punitive Measures in Multilateral Environmental Agreement: A Suggestion on How the United Nations Framework Convention on Climate Change Can be Utilized to Influence the Reduction of Gas Flaring in the Oil and Gas Exploration Fields of Nigeria

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INCLUSION OF INCENTIVE AND PUNITIVE MEASURES IN MULTILATERAL
ENVIRONMENTAL AGREEMENT: A SUGGESTION ON HOW THE UNITED NATIONS
FRAMEWORK CONVENTION ON CLIMATE CHANGE CAN BE UTILIZED TO
INFLUENCE THE REDUCTION OF GAS FLARING IN THE OIL AND GAS
EXPLORATION FIELDS OF NIGERIA.

A dissertation submitted to the faculty in partial fulfillment of the requirements for the degree of
Doctorate in Juridical Studies (S.J.D.) in environmental law at the Elisabeth Haub School of Law
at Pace University

BY

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ABSTRACT

Gas flaring is categorized as one of the important contributors to greenhouse gases, which increases the risk of global warming and climate change. The overdependence of the modern economy and most industrial technologies on fossil fuels has created a situation in countries where fossil fuels are exploited. The governments rely majorly on the revenue from exporting oil. The IOCs that are engaged in the mining of oil and gas have been able to influence policy and law enforcement on gas flaring to such an extent that the National laws are not enforced, or the stipulated fines are abysmally low that they sound ridiculous when compared to the damage to the environment and the effect of this gas flaring and environmental degradation on the unborn generation.

International law is a system of rules and principles that govern the relations and dealings of nations with each other, and has a role to play where the actions of a nation affect other nations. Climate change and global warming affect the whole planet therefore, the treaties relating to global warming and climate change should be applied in a way that makes it effective to curtail unnecessary and harmful gas flaring from Nigeria.

The UNFCCC and the subsequent Kyoto protocol, and the Paris agreement have all been lenient with the responsibilities placed on developing nations because of the need for development and the negligible contributions to global warming but unfortunately developing nations are usually disproportionately affected by global crises and that is the more reason why there needs to be a system to help develop the gas exploration technology in Africa to reduce the global warm, and also reduce the over-reliance of Europe energy market on one source.

The CDM system developed in the Paris agreement can be used as a reliable tool to achieve the necessary incentives to reduce gas flaring in Nigeria if there is the political will by interested nations and the Nigerian Government

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I am very grateful to My parents' Pastor and Mrs. Olanrewaju who have always supported my academic sojourn financially and emotionally and have always inspired me to strive for excellence. It is worthy to note that my parents encouraged me to pursue this degree even when I was not sure I would be able to do it.

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TABLE OF CONTENT

1.0 Chapter 1: A Critical Examination of The Menace of Gas Flaring in Nigeria.....	9
1.1 General Introduction.....	9
1.2 General Discussion on Gas Flaring.....	13
1.2.1 Gas Flaring in Nigeria.....	19
1.2.2 Impact of Gas Flaring.....	28
1.3 Literature Review.....	34
2.0 Chapter 2: The Legal and Regulatory Framework of the Nigerian Petroleum Industry.....	41
2.1 The Legal Regime for Gas flaring in Nigeria.....	60
2.2 An Analysis of The Petroleum Industry Act 2021.....	88
2.2.1 A Review of the Important Provision in the Petroleum Industry Act (2021).....	91
2.2.2 Analysis of the Consequential Provisions in The Petroleum Industry Act (2021).....	93
2.2.2.1 Chapter 1: Vesting of Oil Interests in The Nigerian State.....	93
2.2.2.2 Chapter 2: General Administration.....	104
2.2.2.3 Chapter 3: Petroleum Host Community Development (PHCD)....	104
2.2.2.4 Chapter 4: Petroleum Industry Fiscal Framework (PIFF)	106
2.2.2.5 Chapter 5: Miscellaneous Provisions.....	107
2.3 Gas flaring management under the Petroleum Industry Act 2021 (‘PIA’)	110
2.4 A Brief Comparison of The Petroleum Industry Act and The Previously Existing Laws That Control the Oil and Gas Industry in Nigeria.....	114

2.5 Brief Critique of What Could Have Been Better in the Petroleum Industry Act (2021)	115
3.0 Chapter 3: Overview of The United Nations Framework Convention on Climate Change and The Accompanying Treaties	118
3.1 Introduction	118
3.2 The United Nations Framework Convention on Climate Change	120
3.2.1 Prologue to the UNFCCC	124
3.2.2 Effects Of the UNFCCC On International Climate Negotiations	130
3.2.3 The Dangerous Anthropogenic Interference	131
3.2.4 Benchmark Interpreting Article 2 of the UNFCCC	131
3.2.5 Common but Differentiated Responsibilities	134
3.2.6 Data Gathering and Reporting	136
3.2.7 Administrative Institutions, Structure, and Process	137
3.3 The Conference of Parties (“The Cop”)	137
3.3.1 Nigeria’s contribution to COP26	151
3.3.2 Impact of the COPs on gas flaring in Nigeria	153
3.4 The Kyoto Protocol	153
3.4.1 Challenges Of the Kyoto Protocol	156
3.5 The Paris Agreement	155
3.5.1 Influence Of the Paris Agreement on Nigeria’s Climate Policies	166
3.5.2 The Clean Development Mechanism (CDM)	177
3.5.3 Gas Flaring CDM Projects– The Nigerian Perspective	178
3.5.4 Impact on gas flaring in Nigeria	181

3.5.5	Criticisms of the CDM and its replacement by SDM.....	184
3.5.6	Way Forward for Nigeria Under the Paris Agreement.....	186
4.0	Chapter 4: The Effect of the UNFCCC on Gas Flaring from Fossil Fuel Mining.....	188
4.1	The Inter-Governmental Panel on Climate Change (IPCC).....	192
5.0	Chapter 5: Gas Flaring Vis-A-Vis Deforestation and Forest Degradation.....	195
5.1	Redd+ efforts towards International transferred Mitigation Outcomes (ITMOs) under Article 6 of the Paris Agreement.....	199
6.0	Chapter 6: Conclusion	206
6.1	Recommendations.....	208
6.1.1	Implementation of established treaties and Resolutions.....	208
6.1.2	Recommendations for the Nigerian Petroleum Industry Act 2020 On Curbing Gas Flaring	210
6.1.3	Action Points.....	211
	Bibliography.....	216

CHAPTER 1

1.0 EXAMINATION OF THE MENACE OF GAS FLARING IN NIGERIA

1.1 General Introduction

Nigeria has a distinguished seat among countries rich in natural resources because different resources can be found in the different parts of Nigeria. They include but are not limited to gold, tin, coal, bitumen, iron ore, limestone, oil, natural gas, etc. The nation is also blessed with very fertile soil and conducive tropical weather that make agricultural activities thrive, such that the production of commercial crops like cocoa, oil palm, coffee, and cotton were major foreign exchange-earners before the discovery and development of the oil and gas industry in Nigeria.

Since the discovery of crude oil in the town of Oloibiri in the Delta region of River Niger in 1956, there has been a major shift in the major commodities that earn foreign exchange and contribute to government revenue, leading to a neglect of the commercial agricultural sector of the Nigerian economy, and a steady decline in exploration and mining activities of other natural resources such as coal, tin, and bitumen. This decline can be attributed to the following factors which include but are not limited to; relative abundance of oil and gas; relatively less stringent rules governing the oil exploration in Nigeria; the available technology needed for mining and refining; the availability of ready market for crude oil in Europe, China, India, and North America and the relatively high income generated when compared to the exploration and mining of other natural resources¹.

¹Venables, Anthony J., 2016 Using Natural Resources for Development: Why Has It Proven So Difficult? *Journal of Economic Perspectives*. 30 (1): 161–184. doi:10.1257/jep.30.1.161

Nigeria is still a developing economy according to most modern economists, although a country rich in different natural resources and human capital, the over-reliance on one particular source of revenue to form the mainstay of the economy at the expense of generating wealth from a variety of revenue source has plagued the nation with the resource curse, otherwise known as the paradox of plenty. This refers to the paradox that; countries with an abundance of natural resources (such as fossil fuels and certain minerals) tend to have less economic growth, lesser democratic government, and worse development outcomes than countries with fewer natural resources².

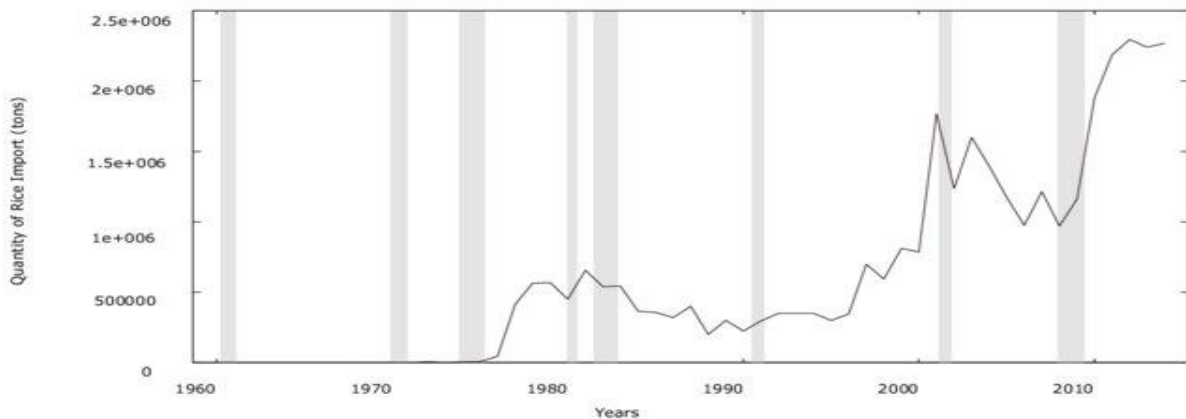
Over the years, the discovery and exploration of oil and gas in Nigeria have led to the decline in government assistance and effort geared to boost agricultural activities. Successive governments have continued to pay lip service to their willingness to boost the agricultural sector over the years, and this has led to Nigeria becoming a major importer of agricultural goods that were being exported from the country before the discovery of oil and gas. An example is a fact that Nigeria remains the highest importer of rice and dairy products in Africa and the 3rd highest in the world after China and the Philippines in 2017.³ Before 1960, rice was not imported into Nigeria rather there was a stable production sufficient to meet the needs of the nation⁴. Unfortunately, this decline

²Venables Supra note 1

³ Ademola Asunloye., 2019 <https://businessday.ng/research-reports/article/nigeria-still-the-largest-rice-importing-country-in-africa/>

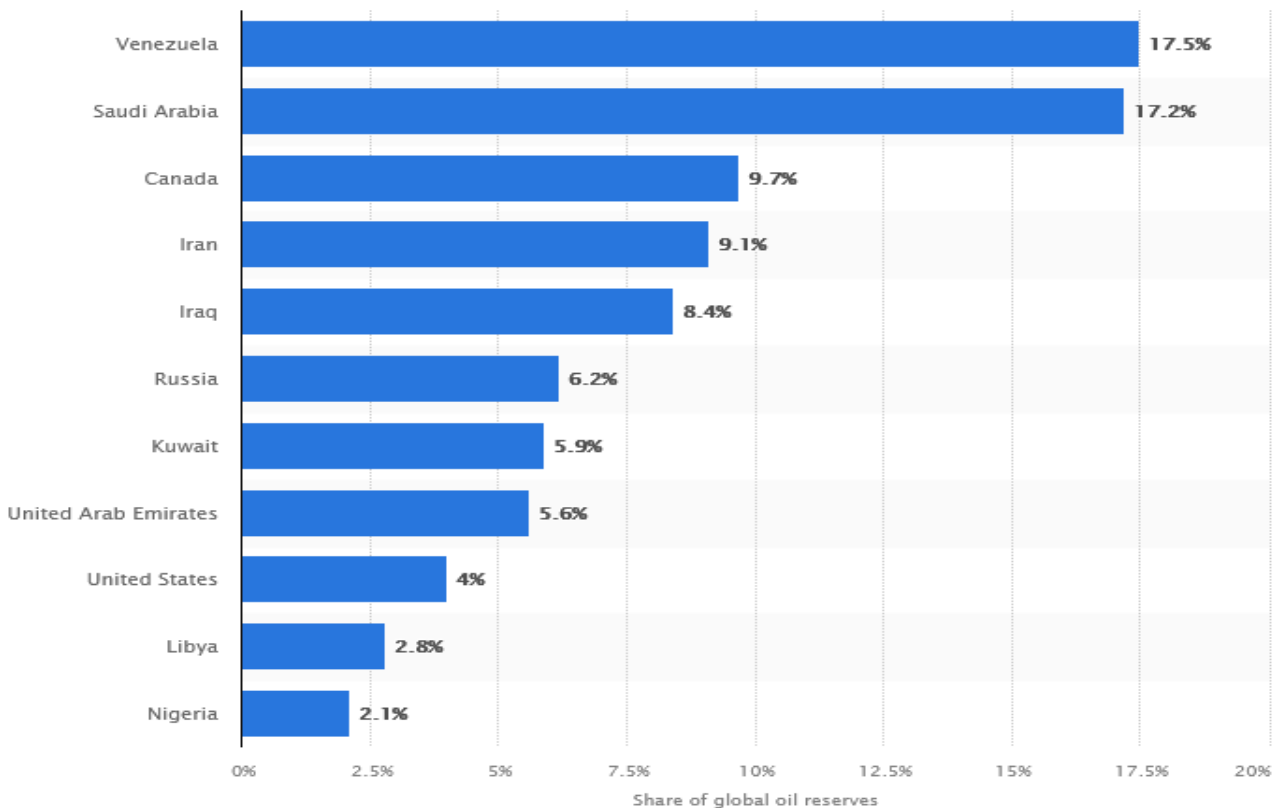
⁴ *The graph shows the trend of rice import in Nigeria since the commencement of commercial oil exploration in Nigeria

in productive agricultural activity has not been limited to rice production but has been observed to be spread across all economic activity.



4

Sunday Brownson Akpan., 2015. Roles of Political and Economic Environments on Agricultural Commodity Import
This graph shows the shares of world oil reserves as at 2020 published by www.statista.com



Demand in Developing Economy: A Case Study of Rice Sub-Sector in Nigeria. International Journal of Economics and Finance 7(12):84 DOI: 10.5539/ijef.v7n12p84

The intense environmental degradation that characterizes all major oil extraction sites in the oil-rich Niger-Delta region of Nigeria is also a validation of the resource curse theory. The majority of the cities, towns, and villages close to oil and gas mining sites in Nigeria have been known to suffer from periodic oil spillage, destruction of the forests and natural habitats of wild animals, pollution of surrounding water bodies, gas flaring, acid rain and air pollution attributed to oil mining activities, all of which open the host community to various health hazards, impact their environmental condition, hampers commercial and agricultural activities, etc. In an environmental assessment sponsored by the United Nations Environment Programme (UNEP) in 2011, it was revealed that over 2,000,000 barrels of oil had been spilled in over 2,976 separate oil spills in Ogoniland, Rivers State which is just a small fraction of the oil mining sites in Nigeria. The assessment exposed the extensive oil pollution and severe health risks posed by continuous spillage of crude oil to the residents⁵.

In 2010, the New York Times in its June 16 publication wrote that; *“The Niger Delta, where the wealth underground is out of all proportion with the poverty on the surface, has endured the equivalent of the Exxon Valdez spill every year for 50 years by some estimates. The oil pours out nearly every week, and some swamps are long since lifeless. Perhaps no place on earth has been as battered by oil, experts say, leaving residents here astonished at the nonstop attention paid to the gusher half a world away in the Gulf of Mexico....As many as 546 million gallons of oil spilled into the Niger Delta over the last five decades, or nearly 11 million gallons a year, a team of*

⁵Friends of the Earth International., 2019. A journey through the oil spills of Ogoniland. Retrieved <https://www.foei.org/news/oil-spills-ogoniland-nigeria-shell>

experts for the Nigerian government and international and local environmental groups concluded in a 2006 report...’’⁶

Also, the huge earnings and lack of financial transparency have been linked to the high rate of corruption and fiscal irresponsibility in the Nigerian government and this has, in turn, affected the development of critical infrastructure and decay in existing public infrastructure. Also, the gradual loss of value of the Naira in comparison to other currencies over the years has been linked to corruption in government parastatals and fiscal irresponsibility which are all not unconnected to the discovery and development of the oil and gas sector in Nigeria.⁷

The most significant negative effect of oil and gas mining in Nigeria which validates the resource curse and forms the basis for this dissertation is the recurrent anomaly of gas flaring in Nigeria. Gas flaring is a major source of air pollution, and it generates a significant amount of greenhouse gases which contributes to the overall burden of global warming and ultimately climate change. The problem of gas flaring in Nigeria and its overall global consequence would form the focus of this dissertation.

The dissertation would also summarize the significant history of oil and gas exploration in Nigeria while highlighting the major milestones of oil and gas mining development. A section of this dissertation would be dedicated to the legal framework regulating Nigeria’s oil and gas industry.

⁶Nossiter, A., 2010. Half a World from the Gulf, A Spill Scourge 5 Decades Old. The New York Times, [online] section A page 1. Available at: <<https://www.nytimes.com/2010/06/17/world/africa/17nigeria.html>> [Accessed 20 October 2020].

⁷Solina Kennedy, M. B.-T., 2021. Nigeria’s Petroleum Industry Bill: A missed opportunity to prepare for the Zero-carbon future. Columbia Center on Sustainable Investment, 5.

Also, a section of this dissertation would focus on the United Nations Framework Convention on Climate Change. Nigeria is a signatory to this convention; therefore, this research would be exploring ways by which the convention can be enforced to incentivize the Nigerian state to regulate or completely stop gas flaring on its oil exploration sites. The Kyoto Protocol⁸ and the Paris agreement which are the accompanying treaties to the UNFCCC⁹ would be explored in detail along with gas flaring management and its intersection with deforestation.

The final section of this dissertation would focus on possible efforts that can aid and encourage the reduction in the volume of greenhouse gases that are flared during oil and gas extraction activities in Nigeria.

1.2 General Discussion on Gas Flaring.

Oil has been used for thousands of years before the development of the combustion engine. In areas where oil is found in shallow reservoirs, crude oil or gas seeps may naturally develop, and some oil could be collected from seepage or tar ponds. Historically, there have been tales of eternal fires which are now known to be locations where oil and gas escaped from the earth and ignited.

⁸ The Kyoto Protocol is an offshoot agreement that operationalizes the United Nations Framework Convention on Climate Change by committing industrialized countries and economies in transition to limit and reduce greenhouse gases (GHG) emissions in accordance with agreed individual targets. It was adopted on 11 December 1997, and it entered into force on 16 February 2005. Currently, there are 192 Parties to the Kyoto Protocol.

⁹ The United Nations Convention on climate change is a convention that entered into force on 21 March 1994. It has 197 countries as members that have ratified the Convention and are called Parties to the Convention. The main objective of the Convention is to stabilize greenhouse gas concentrations "at a level that would prevent dangerous anthropogenic (human-induced) interference with the climate system." And preventing "dangerous" human interference with the climate system is the sole aim of the UNFCCC. It states that "such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened, and to enable economic development to proceed in a sustainable manner."

In 1859, “Colonel” Edwin Drake drilled the first successful oil well on a farm in northwestern Pennsylvania and this led to the international development of the oil and gas industry¹⁰.

Today, oil and gas are produced on almost every continent, though the volume of production differs as they range from the small 100 barrels per day private wells to the offshore 3000-meter-deep wells in large water bodies that produce up to 4000 barrels of oil per day accompanied by huge gas release. In 2002 the World Bank estimated that 108 billion cubic meters of natural gas are flared annually and that this was on the same level as consumption in France and Germany. It also noted that gas flared in Africa is estimated to be around 37 billion cubic meters and can be used to produce 200 Terawatt hours (TWh), which is about 50 percent of the current power consumption of the African continent, and more than twice the level of power consumption in sub-Saharan Africa (excluding the Republic of South Africa). However, these estimates are conservative and the current estimates for global gas¹¹. A significant volume of gas produced with crude oil is flared and Nigeria is the seventh-highest gas flaring nation in the world, with a daily flare of about an 800million standard cubic feet¹²

Natural gas that comes from oil wells is typically termed “associated gas.” This gas can exist separately from oil (free gas) or dissolved in crude oil (dissolved gas). Natural gas from gas and condensate wells in which there is little or no crude oil is termed “non-associated gas.” Gas wells

¹⁰Devold, H., 2013. Oil and Gas production handbook: An introduction to oil and gas production, transport, refining, and petrochemical. Oslo: ABB Oil and Gas.

¹¹Nkem-Obi, A. A., 2021. Impact of gas flaring on communities in Delta region of Nigeria, narrative review part 1: environmental health perspective. International Journal of Scientific Report, 186-193.

¹²Id

typically produce only raw natural gas. However, condensate wells produce free natural gas along with semi-liquid hydrocarbon condensate. Whatever the source of the natural gas, once separated from crude oil (if present), it commonly exists in mixtures with other hydrocarbons, principally ethane, propane, butane, and pentanes. In addition, raw natural gas contains water vapor, hydrogen sulfide (H₂S), carbon dioxide, helium, nitrogen, and other compounds¹³.

In gravity separation, the good flow is fed into a horizontal vessel. The retention period is typically five minutes, allowing gas to bubble out, water to settle at the bottom and oil to be taken out in the middle. The pressure is often reduced in several stages (high-pressure separator, low-pressure separator, etc.) to allow controlled separation of volatile components. A sudden pressure reduction might allow flash vaporization leading to instability and safety hazards¹⁴.

The first method is to reinject the gas to the ground for future reuse which is the most environmentally friendly method for separating crude oil from the associated gases.¹⁵ Fortunately, re-injection helps effectively recover oil in oil wells and compensates for reduced production due to reservoir depletion. The second method is the conversion of the natural gas content of the associated gases for domestic and commercial use, which involves acquiring technological infrastructures for the liquification process and transportation of the liquified natural gas¹⁶. The

¹³NaturalGas.org. 2013. Processing Natural Gas. [online] Available at: <<http://naturalgas.org/naturalgas/processing-ng/>> [Accessed 19 August 2020].

¹⁴Devold Supra note 8

¹⁵ Sadiq J.Z, M. K., 2019. Geothermal Well Test Analysis Fundamentals, Applications, and Advanced Techniques. Academic Press.

¹⁶Oil and Gas Business |petroleum Online. 2022. Oil & Gas Business | Petroleum. [online] Available at: <<https://ihrdc.com/e-learning-solutions/oil-and-gas-business/>> [Accessed 16 September 2021].

third which is more commonly used and referred to as the easiest method of separating associated gases from crude oil is to flare the associated gases into the atmosphere. Under this third method, a controlled system burns the gas or associated gas.¹⁷ This is what is known as gas flaring, and this process takes place at the extreme of a flare stack¹⁸.

To put it simply, gas flaring is the practice of burning off natural gas when it is brought to the surface in a place where there is no infrastructure to make use of it. It is the disposal of natural gas or associated gas that comes with crude oil during oil exploitation and exploration activities. This means that gas flaring is an operational waste of energy resources that encourages greenhouse gas emissions in the petroleum sector.¹⁹

Although flaring is more common than venting, both activities routinely occur during oil and natural gas development as part of drilling, production, gathering, processing, and transportation operations. Flaring is the process of combusting natural gas and oxygen at the wellhead using a dedicated flame, which converts methane (and other combustible gases) to carbon dioxide, water, and heat. Combustible gases are flared most often due to emergency relief, overpressure, process upsets, startups, shutdowns, and other operational safety reasons. Venting refers to the direct release of natural gas into the atmosphere, to maintain safe conditions during the different phases of the treatment process. According to the United States Department of Energy, technically, venting is more harmful from a greenhouse gas perspective because the methane that is vented is

¹⁷ IHRDC Id

¹⁸IOGP Publications library., 2022. Flaring and venting in the oil and gas exploration and production industry | IOGP Publications library. [online] Available at: <<https://www.iogp.org/bookstore/product/flaring-and-venting-in-the-oil-and-gas-exploration-and-production-industry/>> [Accessed 10 November 2020].

¹⁹Oil and gas producers Id

a more potent greenhouse gas than the carbon dioxide that results from flaring²⁰. It should be noted that venting is less frequent in oil exploration fields when compared to flaring of gas which is a constant activity in most oil and gas fields. Venting and flaring infrastructure vary by location and typically gases are piped to a remote location, usually elevated structures, and released or burned in an open flame in the open air using a specially designed burner tip, auxiliary fuel, steam, or air system. Developed countries have however moved away from the practice of flaring and venting due to the waste of resources it occasions and the provision of the requisite infrastructures required to utilize the gas in situ. On the contrary, developing countries still have difficulties with the provision of such infrastructures at the place of production coupled with the high costs of transportation making flaring and venting a prevalent practice.

Over the past two decades and especially during the last five years, flaring has become more common, with the rapid development of unconventional, tight oil and shale gas resources. As crude oil production has outpaced the buildout of gathering and transportation infrastructure to move the natural gas to market, gas associated with oil production, but that is undeliverable to a market, has been increasingly vented or flared. This is a particular challenge in hydrocarbon gas liquids-rich areas, and the economics of any given oil field situation can dictate that the more valuable oil produced where gas delivery infrastructure is inadequate, the more the associated gas would be flared.²¹

²⁰U.S Department of Energy., 2021. Flaring and Venting Reduction Research and Development Activities. Washington D.C: United States Department of Energy.

²¹Id

To offer context to this paper, it is best to consider the definition or meaning of gas flaring. To start with, gas flaring has been defined to mean a combustion device to burn associated, unwanted, or excess gases and liquids released during normal or unplanned over-pressuring operations in many industrial processes, such as oil-gas extraction, refineries, chemical plants, coal extraction, and burning, and from landfills. Gas flaring is a significant source of greenhouse gases emissions. Gas flaring has also been defined as the process through which associated natural gas is flared during oil production when barriers to the development of gas markets and gas infrastructure prevent it from being used. It is a practice in which the natural gas associated with petroleum extraction is burned off in the atmosphere rather than being removed by alternative means such as subterranean re-injection or confinement to storage tanks for eventual sale.

According to Eniscuola Energy and Environment, the term gas flaring indicates the combustion of gas (without energy recovery) in an open flame that burns unceasingly at the top of flare stacks in oil production sites . In much simpler terms, flaring mainly happens when gas is produced as a byproduct of oil extraction. If there is no infrastructure to put this “associated gas” to productive use, it is simply burned off.

From these definitions, it is discernable that gas flaring is a worrisome practice that results in the waste of gas that could have been converted to more profitable uses. Also, toxic pollutants such as sulfur dioxide are released into the air, with damning consequences on both the environment and the health of humans. On top of that, revenue is lost to the practice.

According to World Bank reports, between 150 to 170 billion m³ of gases are flared or vented annually, amounting to about \$ 30.6 billion, which is equivalent to one-quarter of the United States’ gas consumption or 30 % of the European Union’s gas consumption annually . In the same

vein, there are hotspot countries or regions where the level of flaring spikes high, thus contributing much more to the global gas flaring emission. Nigeria falls under this category.

It has been argued that the problem of developing nations such as Nigeria is the absence of resources and a substructure to revitalize such gases. Therefore, the option of gas flaring is favored. As long as these countries possess limited financial resources to undertake gas flaring reduction projects, there is no end in sight to the problem of gas flaring

1.2.1 Gas Flaring in Nigeria

The history of gas flaring in Nigeria is inextricably linked to the development of the Nigerian oil and gas industry, particularly exploration and production. Precisely, exploration of oil and gas in Nigeria began in 1908 with the very first discovery made in the Niger Delta Region in 1956. The discovery was made by Shell British Petroleum (now Royal Dutch Shell) at Oloibiri village in present-day Bayelsa State located in the Niger Delta.

It is worth noting that the British government is convinced of the prospects of oil exploration in Nigeria had introduced the 1946 oil mineral ordinance²² which stated that:

“The entire property in and control of all mineral oils, on under or upon any lands in Nigeria, and of all rivers, streams, and watercourses throughout Nigeria, is and shall be vested in the crown. Save in so far as such rights may, in any case, have been limited by any express grant made before the commencement of the Act”

Gas flaring in Nigeria could be traced to the first efforts to prospect and find oil in Nigeria in 1906. With the discovery of oil in commercial quantity in 1956 and the first-ever crude oil export from

²² Oil mineral ordinance. 1946 Legislated for the former British colony of Nigeria.

Nigeria taking place in 1958, gas flaring also started officially in the country²³ and has been on the rise ever since. Besides from containing oil, the numerous delta region oil wells also contain large quantities of natural gas. The reserves have been estimated at 1422 billion cubic meters.²⁴ Over 75% of the separated solution gases (mostly methane) from oil fields are burnt off. Even more, of the 115 billion cubic meters of gas flared globally every year as previously highlighted, Nigeria alone accounts for flaring about 23 billion cubic meters.²⁵ When compared to the total according to the U.S. Energy Information Administration (EIA), the volume of U.S. natural gas that was reported as vented and flared in 2019 reached the highest average annual level of 1.48 billion cubic feet per day (Bcf/d) since 1961.²⁶ Some other sources opine that Nigeria accounts for about 12.5 percent of the gases flared annually.

The 1946 Oil Mineral Ordinance was said to have completed a process begun by the 1914 Ordinance by presenting a situation whereby the Nigerian petroleum resources became British owned, to be produced by British petroleum companies in the interest of British industry

Moving forward, natural gas emerged in Nigeria as a key energy resource during exploration for crude oil. Gas reserves in Nigeria grew as the government gave incentives to increase the nation's oil reserve base. To be precise, the development of natural gas started in 1963 with the sale of gas to industries around the gas fields in Ughelli and Aba. The volume of gas produced more than the

²³Osuoka, A. A., 2005. Gas Flaring in Nigeria. A Human Rights, Environmental and Economic Monstrosity. Amsterdam (Netherlands); Friends of the Earth International.

²⁴Odeyemi, O. O. A., 1985. Petroleum industry and its pollution potential in Nigeria. Oil and Petrochemical pollution 2, 223-229.

²⁵Olukoya, S., 2008. Climate-Nigeria: Inefficient Gas Flaring Remains Unchecked. <http://www.ipsnews.net/news>. (Accessed, 15 February 2009)

²⁶ US department of energy supra note 18

industry requirement was consequently flared. This was the genesis of the practice of gas flaring in the country.

Oil companies have since then continued this trajectory of flaring large volumes of gas. So much so that a company such as Agip, an Italian oil company had by 2002, flared gas continuously and consistently for 30 years in Akaraolu, a small fishing village situated in the Niger Delta. Interestingly, just as is the case in Akaraolu, most of the other gas flare sites in the country are located in local communities where rural people live.

Another prime example is Rumuola, a community in Port Harcourt, Rivers State, where Shell Company flares gas just about 300 meters from the nearest dwelling house. The preponderance of evidence available suggests that gas flaring takes place primarily in the Niger Delta where all or most of the flare sites in the country are situated²⁷.

In the succeeding paragraphs, the existing legal regime that regulates gas flaring in the Nigerian oil and gas industry would be exhaustively discussed.

Nigeria exemplifies a country engaged in the ‘race to the bottom’ theory to attract foreign direct investment (FDI), especially in the oil and gas industry. It is argued that by having a weak regulatory regime in the oil and gas sector, the Nigerian government is attracting FDI via the instrumentality of the foreign oil multinational corporations (MNCs) that operate in the oil and gas sector through investments in refineries, chemical plants, oil rigs, and landfills that permits gas flaring with limited regulation and extremely low fines for environmental pollution that occurs through the burning of flammable gas. Most of the gas flaring that occurs in Nigeria is linked to

²⁷ Uwem Udok, Gas Flaring in Nigeria: Problems and Prospects. (2017) <https://www.eajournals.org/wp-content/uploads/Gas-flaring-in-Nigeria-Problems-and-Prospects.pdf>

the burn-off that occurs when the extra gas escapes from associated gas in condensate wells during oil drilling and other oil-related activities in the sector.²⁸ In Nigeria, the extra cost of maintaining expatriates and the need for private security personnel to protect the expatriates, indigenous staff and the oil exploring facilities located in volatile riverine areas where the indigenous youths are constantly trying to force the oil companies to pay them before any crude oil exploration has been linked to the presumption gas flaring and oil spillage that would probably occur and this is seen as a social waiver that permits the environmental pollution²⁹ Today, over 115 billion cubic meters of gas are flared or vented into the atmosphere annually.³⁰³¹

According to a paper published by the Environmental Rights Action/ Friends of the Earth in conjunction with the Climate Justice Programme, it is believed that roughly 2.5 billion cubic feet of gas associated with crude oil is wasted in this way every day. This is equal to 40% of all Africa's natural gas consumption in 2001, and the annual financial loss to Nigeria is about US \$2.5 billion. The paper concludes that these flares have contributed more greenhouse gases than all of sub-

²⁸Ekhtator, E., 2009. Regulation of Labour Standards: An International perspective. *Globalization and Development of Africa Journal*, 11.

²⁹Agboola, O. N., 2011. Gas Flaring in Nigeria: Opportunity for Household Cooking Utilization. *International Journal of Thermal and Environmental Engineering.*, 69-74.

³⁰Iyorakpo, J., 2015. Impact of Gas Flaring on the Built Environment: The Case of Ogba/Egbema/Ndoni Local Govt Area, Rivers State, Nigeria. *European Scientific Journal*, 11(26).

³¹The Canadian Association of Petroleum Producers has also defined gas flaring as the controlled burning of natural gas that cannot be processed for sale or use because of technical or economic reasons. Canadian Association of Petroleum Producers, Flaring & Venting, Retrieved Oct. 10, 2012, Available at: <http://www.capp.ca/environmentCommunity/airClimateChange/Pages/FlaringVenting.aspx>

Saharan Africa combined.³² According to the World Bank, Nigeria and six other countries including the United States, Russia, Iraq, Iran, Venezuela, and Algeria produce have together produced some 40 percent of the world's oil each year, they have also accounted for roughly two-thirds (65 percent) of global gas flaring³³ and this shows a troubling trend which needs to be addressed.

The necessary infrastructure needed to avoid gas flaring is summarized below to properly contextualize why gas flaring is prevalent in the Nigerian oil and gas extraction industry.

1. Compressing natural gas and trucking it short distances for use as a fuel

Natural gas can be captured and compressed (CNG) at the Well-pad and trucked to a gas processing plant or to a location where it is used as a fuel. This approach may be economically feasible at wells relatively close to a processing plant or other location where gas can enter the pipeline system (20 to 25 miles, or fewer). It may also be economically feasible if the compressed gas can be used to power equipment within the producing field.³⁴

2. Extracting natural gas liquids from the pre-flare gas stream

Natural gas liquids can be removed from associated gas using mobile equipment located at the well pad and trucked away for sale. Such systems work best with associated or wet natural gas streams, which are rich in gas liquids. Once separated, the remaining light hydrocarbons— methane (C1), ethane (C2), and other volatile organics—or gas are

³² The World Bank., Strategic gas plan for Nigeria joint UNDP/world bank energy sector management assistance programme [ESMAP] [February 2004], page 13 paragraph 1.13.

³³IOGP Publications library. Supra

³⁴ US department of energy supra note 18

otherwise flared. Commercial systems that can capture pentane (C5) and heavier hydrocarbons (C5+) are simple and inexpensive, and only reduce flaring volumes by a limited amount. Technologies that also capture propane (C3) and butane (C4) recover a larger portion of the input gas and result in less flaring and do require a larger initial investment. Higher rates of flare reduction can be achieved by coupling NGL recovery with other technologies where the residual dry gas remaining can be captured and trucked offsite as CNG or used for onsite power generation. This approach only makes economic sense in niche situations where gas composition and nearby NGL market conditions align.³⁵

3. Small-scale, gas-to-methanol, or gas-to-liquids conversion plants systems are available to convert natural gas to chemicals or fuels and some of them have been marketed toward flaring reduction. Some aspects of these systems have not been adapted, sized, or optimized for application to U.S. flaring situations as evidenced by their lack of widespread application. Novel combinations of existing technology elements must be conceived and tested to prove technical and economic capabilities. Researchers will develop technologies to upgrade flared gas into industrially relevant chemicals. There may also be an opportunity to leverage solid oxide fuel cell technology research in combination with chemical upgrading.³⁶
4. Converting natural gas to electric power using small-scale generators: A variety of technologies are available for local power generation, including the use of reciprocating engines and gas turbines to generate electricity. Local load systems work best when using lean associated gas (e.g., the residual gas after NGL recovery). To make economic sense,

³⁵Id

³⁶Id

all these approaches require a constant nearby demand for electric power or the option of selling power to the local grid.³⁷

5. Utilizing gas that would otherwise be flared for beneficial use within the field Captured natural gas can be used for onsite power generation, space heating, or for other purposes through small-scale combined heat and power systems. The disparity between the volumes of gas being flared and the volumes required for such end uses makes this solution unlikely to be economic. While onsite technology solutions have been tested and found to work, many have not been widely deployed, generally due to unfavorable economics when compared to the alternative of flaring. The capital cost of installation (or the rental cost), plus the costs of operation, currently do not appear to justify the widespread application of these solutions.³⁸³⁹
6. Converting captured gas to liquefied natural gas and trucking it short distances for use as a fuel Natural gas can also be liquefied and trucked to a location where it can be used as a fuel. This may be appropriate when the gas does not require extensive conditioning (cleaning and treating of gas). Small LNG plants can produce up to 100,000 gallons of LNG daily which can then be transported to power plants and other markets. Gas-to-liquids conversion systems are operating in some parts of the United States; however, these

³⁷Id

³⁸Charles Udosen, 2009, Fifty Years of Oil Exploration in Nigeria: The Paradox of Plenty. *Global Journal of Social Sciences*, 8(2), 37-47.

³⁹ US department of energy supra note 18

applications are not widely used within producing shale plays where the gas flaring occurs.⁴⁰

“The cost implication for the above methods can be seen in the scene at play in the article published by Reuters on Nigeria’s gas flaring predicament “Although Nigeria’s Department of Petroleum Resources (DPR) approved 200 bidders in February, it said in June, when the sites should have been awarded, that the process was delayed by six weeks due to coronavirus-related restrictionsIf this bidding round doesn’t succeed, that’s the end of it,” said `Gbite Adeniji, a lawyer who helped design the programme as a technical advisor at Nigeria’s Ministry of Petroleum, adding that roughly \$3 billion is needed to commercialize the remaining flares, with site costs ranging from \$20 million to \$100 million”⁴¹.

The reason for Nigeria’s significant role in gas flaring globally is not difficult to see. Like most developing nations that double as oil and gas producing nations, the inadequate infrastructure to collect, treat, transport, and utilize the associated gases, as well as the location of the production site being remote from the market demand (such as offshore sites), makes gas flaring the viable option for a country such as Nigeria⁴². To put it simply, the wastage of gases through flaring is carried out in Nigeria due to the infrastructure deficit associated with processing, storing, and transporting.

⁴⁰Id

⁴¹George, L., 2020, Nigeria's pioneering gas flaring plan risks going down in flames. Retrieved from Thomson Reuters: <https://www.reuters.com/article/us-nigeria-oil-gasflaring-insight/nigerias-pioneering-gas-flaring-plan-risks-going-down-in-flames-idUSKBN26L195>

⁴²Soltanieh, M., Zohrabian, A., Gholipour, M. and Kalnay, E., 2016. A review of global gas flaring and venting and impact on the environment: Case study of Iran. *International Journal of Greenhouse Gas Control*, 49, pp.488-509.

Although the gas flared can be converted into several downstream applications including electricity which is a major bottleneck in Nigeria or cooking gas which is beginning to overtake kerosene and coal in terms of domestic or household application, oil and gas companies instead flare the gases owing to the inadequate resources for the conversion and utilization of gases⁴³.

Technological deployment necessary for capturing flared and vented gases varies across producing regions and some solutions currently exist to capture gas that would otherwise be flared. This technology can convert it into useful products or for onsite use to facilitate the production of other petroleum products. While there are commercially available technologies for capturing and monetizing flared gas, these options are not yet employed in Nigeria due to the current market conditions which have failed to provide a viable economic alternative to the cheap cost of flaring and venting during routine field production. Commercial alternatives to flaring include compressing the natural gas and trucking it short distances for use as a fuel for oilfield activities, extracting natural gas liquids from the flare gas stream to reduce the flared volume, and converting the gas to electricity using small-scale generators, among others. Presently Nigeria has the Nigeria Liquefied Natural Gas company which is involved in the production of and distribution of domestic liquified gas but unfortunately, produces at a cost that is too low for other companies to compete commercially. While concentrated infrastructure and technologies exist to capture and monetize natural gas at various petroleum refineries and chemical plants, a distributed network of technologies and infrastructure are needed to effectively reduce daily venting and flaring

⁴³Enetimi I.S., 2017. A Review of Impacts of Gas Flaring on Vegetation and Water Resources in the Niger Delta Region of Nigeria. *International Journal of Economy, Energy, and Environment.*, 48-55.

marketable volumes in oil mining fields and on the sea. These distributed technology alternatives to reduce flared volumes are often not currently cost-competitive⁴⁴.

1.2.2 Impact of Gas Flaring in Nigeria

As noted earlier, gas flaring involves the combustion of associated gas generated during various processes including oil and gas recovery, coalbed methane production, petrochemical process, and landfill gas extraction; all of which leave lasting negative impacts on the environment. The implications of this infamous act range from air pollution to climate change occasioned by greenhouse emissions, health complications for inhabitants, acid rain, and water pollution, amongst others. A common feature of the above-listed is the adverse effect on both humans, animals, and the environment. Being a practice that is widespread throughout the Niger Delta, including areas close to the local population, the identified consequences are unsurprising and can only be the direct outcomes of such damaging practice. In effect, gas flaring does not only pose a revenue loss for the Federal Government of Nigeria, but it is also a major contributor to social, medical, and environmental degradation.

The categories of each impact will be examined in the ensuing paragraphs.

a) Air Quality

With the release of noxious fumes into the atmosphere during the flaring process, gas flaring has become a major source of air pollution, especially in the Niger Delta region and the other flare sites across the country. The local effect of this pollution is hardly mentioned, rather, the effect of gas flaring on climate change seems to be the only effect that is emphasized, and thus limited

⁴⁴ US department of energy supra note 18.

studies are done in this direction in the region. Specifically, the environment is polluted by sulfur oxides and carbon dioxide which are released at levels that oftentimes exceed both national and international guidelines. Apart from compromising the quality of the atmosphere, most of the air pollution in the region is observed to have local and regional effects such as the formation of acid rain, water pollution, soil pollution, impacts on plants and wildlife, effects on materials and artifacts and recently contributing to the global warming effects. In a study carried out in the Niger-Delta region of Nigeria by Obia, Ajah Ekpeni et.al, on the “role of Sulphur dioxide and gas flare particulates on the corrosion of galvanized iron roof sheets in the south-south region of Nigeria”, it was discovered that gas flaring that yields Sulphur dioxide that mixes with an aerosol of other pollutants in the atmosphere and these pollutant mixtures are mostly responsible for galvanized iron roof corrosion in the region and it, therefore, would have a long-lasting effect on the health condition of the citizenry in the region.⁴⁵

b) Emission of Greenhouse Gases/Climate Change

Aside from the immediate challenge of air pollution, there is also the long-term problem of climate change accelerated by the greenhouse (GHG) emissions caused by the gas flaring process. The gases released contain methane (CH₄) with ethane as well as carbon dioxide are considered the principal greenhouse gases. Together, they contribute about 80% to global warming today.⁴⁶

⁴⁵ Obia, Ajah & Okon, H.E. & Ekum, S.A. & Onuegbu, A.E. & Ekeng, P.O., 2011. The role of Sulphur dioxide and gas flare particulates on the corrosion of galvanized iron roof sheets in south-south region of Nigeria. Scientific Research and Essays. 6. 5734-5740. 10.5897/SRE11.833.

⁴⁶ Ajugwo, A. (2013). Negative Effects of Gas Flaring: The Nigerian Experience. Journal of Environment Pollution and Human Health, 6-8.

An estimated 35 million tons of carbon dioxide and 12 million tons of methane are released into the environment in the Niger Delta⁴⁷.

Asides from these major elements, gas flaring also releases about 250 other toxins inclusive of carcinogens such as benzopyrene, benzene, carbon disulfide (CS₂), and carbonyl sulfide (COS); metals like mercury, arsenic, and chromium; sour gas with hydrogen sulfide H₂S and sulfur dioxide (SO₂); as well as nitrogen oxides (NO_x)⁴⁸

These gases are known to have increased the average global temperature by about 0.5 degrees centigrade in the last 100 years.⁴⁹ The impact of this has been felt in the increased flooding in cities along Nigeria's coastal lines with Lagos being the most severely hit in recent years, as well as rising sea levels and tidal waves in the country. This impact would be the focus of this study and would be looked.

c) Acid Rain

Progressively, another impact of gas flaring is acid rain or precipitation which is a term used to describe overly acidic precipitation of all kinds - sleet, frost, dew, mist, and fog - as well as dry particles that fall to the earth and form acids when they come in contact with moisture.⁵⁰ While

⁴⁷Ojijiagwo, E., 2017. Development of a Sustainable Framework to Manage Flare Gas in an Oil and Gas Environment. University Of Wolverhampton. A thesis submitted in partial fulfilment of the requirement of the University of Wolverhampton for a PHD.

⁴⁸Mokhatab, S. P., 2008. Handbook of Natural Gas Transmission and Processing.

⁴⁹Penner, J. E., 1999. Aviation and the Global Atmosphere: A Special Report of the Intergovernmental Panel on Climate Change. Cambridge: Cambridge University Press.

⁵⁰Mohamed, E et. al. 1985. "The American West's Acid Rain Test", World Resources Institute, Energy and Resources Group, University of California at Berkeley.

acid rain can be a natural phenomenon, the primary cause is human.⁵¹ This perhaps validates claims made by the Friends of the Earth (FOE) when they linked acid rains to gas flaring activities. This is because the primary causes of acid rain are emissions of sulfur dioxide (SO₂) and nitrogen oxides (NO) which combine with atmospheric moisture for the formation of sulfuric acid and nitric acid, respectively.⁵² From being toxic to the human body to condemning the water body and making it unfit for use, to increasing the pH levels of the soil and environment, it is clear that acid rain is a danger to both humans and the environment.

Driving the point closer home, the concentration of acid in rainwater appears to be higher in the Niger Delta region in Nigeria and begins to decrease further away from the region.⁵³ This is due to the high volume of gas flaring carried out in this region combined with the presence of crude oil and gas reserves. Studies on the impacts of gas flaring on rainwater quality for domestic use in certain Niger Delta states revealed that the temperature, taste, color, conductivity, total dissolved, salts, and alkalinity were altered when compared to the permissible limits specified by National Agency for Food and Drug Administration and Control and other related agencies.⁵⁴

d) Vegetation

⁵¹Id

⁵²Ojijiagwo supra note 43

⁵³Uyigwe E and Agho M., 2007 Coping with Climate Change and Environmental Degradation in the Niger Delta of Southern Nigeria.http://priceofoil.org/content/uploads/2007/06/07.06.11%20-%20Climate_Niger_Delta.pdf

⁵⁴Dami, A., Ayuba, H. and Amukali, O., 2012. Effects of Gas Flaring and Oil Spillage on Rainwater Collected for Drinking in Okpai and Beneku, Delta State, Nigeria. *Global Journal of HUMAN SOCIAL SCIENCE Geography & Environmental Geosciences*, 12(13), pp.26-30.

Closely related to the impact of gas flaring on the water is its impact on vegetation. It has been submitted that gas flaring tends to affect several plants species⁵⁵, especially their productivity and growth.⁵⁶ The impact weighs more on food crops necessary for the survival of the residents of indigenous people resident in the surrounding towns and villages. By way of illustration, it has been discovered that gas flaring decreases the length and weight of cassava.⁵⁷ Based on a survey study in the Niger Delta region, 77% of the residents believe that gas flaring affects vegetation and agricultural activities.⁵⁸ This is substantiated by studies that reveal that gas flaring affects the nutritional and bioactive components of vegetation, such as vegetables and similar consumables such as the bitter leaf, waterleaf, scent leaf, fluted pumpkin leaf, etc.⁵⁹

e) Health Risks

Gas flaring has also been linked to health complications for the population exposed to gas flaring sites. According to a preliminary survey carried out by Akoroda⁶⁰, there has been an emergent

⁵⁵Achi, C., 2003. Hydrocarbon exploitation, environmental degradation, and poverty: the Niger Delta experience. Diffuse Pollution conference, Dublin. Pp32-36.

⁵⁶Ozabor, F and Obisesan, A., 2015. Gas flaring: Impact on Temperature, Agriculture and the people of Ebodei in Delta state, Nigeria. *Journal of sustainable society*. 4(2):5-12.

⁵⁷Lawanson, A. O., 1984. The Effects of Waste-Gas Flares on the Surrounding Cassava Plantations in the Niger Delta Regions of Nigeria. Retrieved from international Society for tropical root crops: http://www.istrc.org/images/Documents/Symposiums/Sixth/6th_symposium_proceedings_0041_section_3_239.pdf

⁵⁸Adewale, O. O., 2015. The Impact of Gas Flaring in Nigeria. *International Journal of Science, Technology and Society*, 3(2), 40-50.

⁵⁹Ifemeje, J. C., 2015. Effect of Gas Flaring on the Anti-nutritional Composition of Four Green Leafy Vegetables from Eleme in Rivers State, Nigeria. *Columbia International Publishing International Journal of Environmental Pollution and Solutions*, 31-37.

⁶⁰Akoroda. M., 2000. Remediation Response in the Nigeria Delta. Paper Presented at a Seminar to mark Anniversary of Jesse Fire Disaster. Lagos: Nigeria Institute of International Affairs.

trend of carcinogenic diseases in the Niger Delta, traceable to the exposure of these people to the radioactive elements of gas flaring.

Properties of gas flaring such as carbon dioxide, nitrogen dioxide, sulfur dioxide benzene, xylene, toluene, and carcinogen compounds (dioxin and benzopyrene) have been linked with leukemia, chronic bronchitis, asthma as well as infertility. Even more, bone marrow damage, anemia, severe nervous system damage, kidney and lungs damage, memory loss, vision, and hearing disabilities are some of the health complications associated with prolonged and sustained exposure to gas flaring.⁶¹

f) Economy

Finally, gas flaring in Nigeria is not without economic implications. According to a report by PWC Nigeria, the Nigerian economy lost NGN233 billion (US\$761.6 million) to gas flaring in 2018 alone. This figure translates to 3.8% of the total global cost of US\$20billion in the same year.⁶² Statistics from the Africa Energy Portal are even grimmer. While the organization asserts that the country is currently losing over \$2.5billion per annum (N954 trillion) because of severe gas flaring from 178 flare sites nationwide, these statistics are expected to hit \$9 trillion in the next 10 years.⁶³

⁶¹Oshwofasa B. A., 2012. Environmental Degradation and Oil Industry Activities in the Niger-Delta Region. African Journal of Scientific Research., 45-52.

⁶² PWC Nigeria. 2018. Assessing the impact of Gas flaring on the Nigeria Economy. Available at: <https://www.pwc.com/ng/en/publications/impact-of-gas-flaring-on-the-nigerian-economy.html#:~:text=According%20to%20the%20World%20Bank,global%20total%20cost%20in>

⁶³ Africa-energy-portal.org. 2020. Gas Flaring - Nigeria loses \$2.5bn yearly | Africa Energy Portal. [online] Available at: <<https://africa-energy-portal.org/news/gas-flaring-nigeria-loses-25bn-yearly>> [Accessed 18 February 2021].

The country loses substantial funds which could have been injected into the economy to gas flaring every year and there seems to be no end in sight to this financial rut.

1.3 Literature Review on Gas Flaring in Nigeria

The Nigerian oil and gas industry, being a major sector of the economy has been the subject of numerous debates and scholarly discussions amongst economists and environmentalists, which has created several reactions that have impacted other dependent sectors in the economy.

Environmentalists seem to be at the front of this discourse - decrying the harmful impact of gas flaring, not only on humans but also on the environment. Scholars such as Farina argue that gas flaring is among the most challenging and critical environmental and climatic issues the world has had to grapple with in recent times⁶⁴, even more in Nigeria. Some of the existing literature on gas flaring is considered in the succeeding paragraphs.

Gas flaring has adverse effects on health, properties, and the economy

The emissions of air pollutants as by-products of gas flaring in the Niger Delta, for instance, at high concentrations of fine particulate matter cause respiratory problems, cerebrovascular disease, ischemic heart disease, and lung cancer.

It is important to note that most of the comprehensive studies conducted in different parts of the world have entailed monitoring air pollution levels and the health of inhabitants over considerable periods. Though no large-scale comprehensive research on the impact of air pollution on health has been carried out in the Niger Delta, however, several short-term studies have been carried out in the Niger Delta, where it was discovered that there is a relationship between air pollutants from

⁶⁴Farina M. F., 2010. "Flare Gas Reduction: Recent Global Trends and Policy Considerations," GE Energy Global Strategy and Planning.

gas flaring and associated human health problems. It was found that there are higher chances of residents who live close to gas flaring sites developing respiratory diseases, eye, and skin irritation over time in areas with long gas flaring history when compared to areas with no gas flaring.

Various researchers such as Anslem O. Ajugwo, in his article titled “Negative Effects of Gas Flaring: The Nigerian Experience”⁶⁵, have established the direct negative effects of gas flaring on the environment and human health including contamination of the atmosphere and deformities in children. But what about the indirect risks—deforestation being a major one—which are already at play, and whose larger-scale effects are not only prevalent in the Niger Delta region.

Further on deforestation, about 95 percent of Mubi’s population depends on fuel sourced from forests in the form of firewood for cooking (typically for use by bakeries, rice processing outlets, as well as eateries, and/or restaurants). This is so because most people get this fuel either for free or at a very low price, leading to hundreds of trees going down every month. Now, this happens not just in Mubi, but virtually everywhere in Nigeria. In other words, forests in Nigeria are continuously pushed to the brink of extinction even though the country is blessed with an abundant gas deposit that is, however, wasted. This fiasco is hardly ever spoken about, and it often leaves hanging the question, “what if the gas being wasted was refined and converted into cooking gas set at a price so low that ordinary Nigerians would only have to worry about buying a gas cylinder?”

Some literature on gas flaring also referenced the Polluter Pays Principle (PPP). The objective of the foregoing principle is to compel the polluter to internalize environmental externalities from

⁶⁵ Ajugwo Supra at Pg. 27

economic activities.⁶⁶ According to (Gómez-Baggethun and Ruiz-Pérez, 2011)⁶⁷ in the article “*Evaluation of The Commodification of Ecosystem Services*”, the principle states that the economic agent causing environmental damage should bear the economic costs of the negative externality. In Nigeria, the natural gas flaring penalty and the carbon tax have been identified as the vehicle for operating the PPP in the country. Both the flaring penalty and the carbon tax have been grossly inefficient in tackling the gas flaring in the country and stimulating the required technological innovation.

Corruption at nearly all tiers of the Nigerian government also seems to contribute to this inefficiency. Fredriksson and Sevensson have shown in their paper, “*Political Instability, Corruption and Policy Formation: The Case of Environmental Policy*”, that a higher corruption level in an economy inhibits the effectiveness of environmental regulations.⁶⁸ Linking government efficiency with environmental quality, Sanglimsuwan has posited that government efficiency affects the quality of the environment because it enhances the effectiveness of policies implementation.⁶⁹ Sundstrom in his article, “*Corruption in the Commons: Why Bribery Hampers Enforcement of Environmental Regulations in South Africa Fisheries*” in fact posited that the

⁶⁶EEA (European Environment Agency) 1995 Environment in the European Union 1995: Report for the Review of the Fifth Environmental Action Programme, Edited by Keimpe Wieringa, Luxembourg: Office for the official publications of the European Union

⁶⁷ Gómez-Baggethun, E. and Ruiz-Pérez, M., 2011. Economic valuation and the commodification of ecosystem services. *Progress in Physical Geography: Earth and Environment*, 35(5), pp.613-628.

⁶⁸Fredriksson P.G., Svensson J., 2003. Political instability, corruption, and policy formation: the case of environmental policy. *Public Econ.*, 87 (7), pp. 1383-1405

⁶⁹Sanglimsuwan, K. S., 2011. Carbon Dioxide Emissions and Economic Growth: An Econometric Analysis. *International Research Journal of Finance and Economics*, 67: 97-102.

curbing of corruption increases the performance of environmental regulations in natural resources management which also extends to the context of gas flaring.⁷⁰

More so, Evans and Farina in their paper, “*The Age of Gas & The Power of Networks*” have also highlighted the need for Nigeria to have a large technological investment program to be able to optimize its natural gas resource and induce growth because technology is important for the expansion of the natural gas market.⁷¹ Indeed, different researchers have concluded that in most industrialized oil-producing nations such as Norway, companies that extract petroleum products process the natural gas or re-inject the same into the field, and only 1% of the gas is flared. This is unlike Nigeria where over 60% of the associated gas is flared.⁷² With more demand for natural gas in the country and the availability of the required technology to capture and utilize the gas, companies would be more predisposed towards gas utilization instead of flaring it.

Beyond the technology, it has also been argued that carbon pricing can catalyze natural gas flaring abatement. Speaking on how to facilitate this, Stepp and Atkinson have submitted that the carbon pricing regime must be multilayered, predictable, and transparent.⁷³ On the other hand, there has also been agitation from multinational companies on why strict (unreasonably high) environmental

⁷⁰ Sundström, A., 2013. Corruption in the commons: why bribery hampers enforcement of environmental regulations in South African fisheries. *International Journal of the Commons*, 7(2), 454–472.

DOI: <http://doi.org/10.18352/ijc.370>

⁷¹ Evans, P. and Farina, M., 2013. *The Age of Gas and The Power of Networks*. [online] Ge.com. Available at: <<https://www.ge.com/news/sites/default/files/6235.pdf>> [Accessed 21 February 2022].

⁷² Agboola, M. O., 2011. Gas Flaring in Nigeria: Opportunity for Household Cooking Utilization. *International Journal of Thermal and Environmental Engineering*, 73.

⁷³ Stepp, M., and Atkinson, R.D., 2011. An Innovation Carbon Price: Spurring Clean Energy Innovation While Advancing U.S. Competitiveness.

penalties are often ineffective if there are institutional constraints, such as subsidies on competing energy sources in developing outlets for associated natural gas.

Bringing it home, Odionu⁷⁴ in his thesis titled *“Mitigation of Greenhouse Gas Emissions from Gas Flaring in Nigeria: Perspectives on Law and Regulation”* asserted that while Nigeria has demonstrated its commitment toward climate change mitigation by signing the Paris Agreement, Nigeria is yet to enact any law on climate change that could also impact the flaring of natural gas. Oluduro⁷⁵ in his article, *“The Legal Implications of Gas Flaring on Climate Change in Nigeria”* he has argued that the extant environmental laws and constitutional provisions on environmental protection, relating to climate change in Nigeria are inadequate, especially in comparison with countries such as Ecuador, Dominican Republic, and Bolivia.

Notwithstanding the known fact that gas flaring in Nigeria is a long-standing problem that has defied government regulatory orders, the above-cited literary works have examined the economic implications of gas flaring and the onus on the government to find a way to curb it by all legal and harmless means possible. Gas flaring is a menace that must be addressed, its impact on climate change and humans is a cause for concern. While gas flaring might have been permissible decades ago owing to the level of technology available at the time, today, there ought to be no tolerance for gas flaring based on the sophistication of the technology to capture and utilize gas available today, hence what is lacking is not the know-how but the political will and effort by political and industry leaders.

⁷⁴Odionu, G., 2018. *Mitigation of Greenhouse Gas Emissions from Gas Flaring in Nigeria: Perspectives on Law and Regulation*. LLM. The University of Saskatchewan Saskatoon.

⁷⁵ Oluduro, Olubisi., 2014. The Legal Implications of Gas Flaring on Climate Change in Nigeria. 29 *Journal of Law, Policy and Globalization* 171

Also on solution lines, as will be fleshed out in the course of the work, a key policy available for Nigeria to mitigate natural gas flaring is carbon pricing. This is because carbon pricing can stimulate technological innovation and natural gas flaring abatement. It has been shown that carbon pricing and innovation have a positive effect on productivity. This is because carbon pricing has been proven to drive innovation in technologies and business models promoting resource efficiency and productivity growth. The required condition for these to occur is that the carbon pricing regime must be multilayered, predictable, and transparent. Specifically, a significantly higher CO₂ emission tax compared to Pigouvian levels could act as the catalyst for the development of emission reduction technologies⁷⁶. Stepp and Atkinson also described carbon tax as a straightforward method of increasing productivity, innovation, and economic growth.

If nothing, the visible impact of gas flaring on the water body, the vegetation and agricultural life, the atmospheric condition as well as the health of people resident in the Niger Delta where gas flaring is most practiced since the region hosts the country's crude oil and natural gas reserves should be enough to spur and drive key players in the Nigeria oil and gas industry to begin to become intolerant of gas flaring in the country.

The foregoing concerns have often soiled the relationship between oil and gas host communities in Nigeria. Thankfully the Petroleum Industry Act 2021 (PIA)⁷⁷ has taken steps to address this problem by creating the Host Community Development Trust Fund (the "HCDTF") whose purpose will be to among others, foster sustainable prosperity, provide social and economic benefits from petroleum to host communities and nurture pleasant co-existence between licensees

⁷⁶Rosendahl, K.E. 2004. Cost-effective environmental policy: implications of induced technological change. *Journal of Environmental Economics and Management*, v. 48, p. 1099–1121

⁷⁷ Petroleum Industry Act 2021 Act No 6 (Nigeria) An Act to provide Legal, Governance, Regulatory and Fiscal Framework for the Nigerian petroleum Industry, The Development of Host Communities, and Related Matters.

or lessees, and host communities. Specifically, the law stipulates that existing host community projects must be transferred to the HCDTF, and each settler must make an annual contribution of an amount equal to 3 percent of its operating expenditure for the relevant operations from the previous year. In addition, the PIA stipulates a penalty for failure to comply with host community obligations, including revocation of license. Further, a licensee or lessee shall be liable to pay a penalty prescribed according to the Flare Gas (Prevention of Waste and Pollution) Regulations⁷⁸ and it is interesting to note that the Commission shall have the right to take free of charge, natural gas that is destined for flaring at the flare stack.⁷⁹ The consequence of the above provisions of the PIA is that the legislature is desirous of eliminating gas flaring as a concept that has been a major source of concern to the environment.⁸⁰ The above effects of gas flaring on the Nigerian citizens and the lackluster effort to tackle this menace by the government of Nigeria have propelled this research, using the United Nations mechanisms to address climate change and recommending measures that can be put in place from a policy and legal standpoint.

⁷⁸ Flare Gas (Prevention of Waste and Pollution) Regulation 2018. Available online: <https://ngfcp.dpr.gov.ng/media/1120/flare-gas-prevention-of-waste-and-pollution-regulations-2018-gazette-cleaner-copy-1.pdf> (accessed on 15 June 2022).: The regulation aims to reduce the environmental and social impact caused by the flaring of methane/natural gas in Nigeria. Also, see section 106 of the Petroleum Industry Act 2021

⁷⁹ Ibid

⁸⁰ The PIA now provides that the licensee or lessee producing natural gas within 12 months of the effective date, shall submit a natural gas flare elimination and monetization plan to the Commission, which shall be prepared in accordance with regulations made by the Commission under this Act.

CHAPTER 2

2.0 The Legal and Regulatory Framework of the Nigerian Petroleum Industry

While oil exploration and prospecting can be traced as far back as the early 1900s, with prospecting activities of Shell BP in Northern Nigeria, the discovery of oil in commercial quantity was made in 1956 near Oloibiri Village in Rivers State. The discovery is credited to Shell D'Arcy, an English oil company that was granted the first concession for the exploration and mining of oil in Nigeria. Production followed in just two years after discovery, with the company recording an average production of 6000 barrels of oil per day (Bopd).

Presently in Nigeria, the Federal government owns and retains the ownership of all mineral resources situated on land and water bodies, while the land use act vests ownership of lands in urban areas to the State government to hold in trust for the citizens of each state and the lands in rural areas are held in trust by the Local government for the indigenous people of each local government. Meanwhile, the Constitution of the Federal Republic of Nigeria⁸¹, the Land Use Act,⁸² and the Petroleum Act⁸³, amongst others, vest the total ownership and control of mineral resources in the Federal government, to the detriment of the States, Local Governments, and the local communities wherein the mineral resources are situated.

On the 29th of March 1978, the Land Use Act was enacted to have effect over all the 923,768 sq/km of land that makes up Nigeria. Before the enactment, there were varying land laws that

⁸¹ Constitution of the Federal Republic of Nigeria [Nigeria], Act No. 24, 5 May 1999, (as amended) Available online: https://publicofficialsfinancialdisclosure.worldbank.org/sites/fdl/files/assets/law-library-files/Nigeria_Constitution_1999_en.pdf

⁸² Land Use Act (1979) Nigeria. LFN 2004

⁸³ Petroleum Act (1969) Nigeria. (Chapter 350 LFN 1990)

governed land tenure systems in different parts of Nigeria. These laws were not uniform and varied depending on the region and prevailing customs of the different ethnic tribes, despite the existence of the varying laws, the problems of land tenure were prevalent in every region of the nation. One major problem was the difficulty in obtaining land by the government in major urban centers for national development because of land speculations, racketeering, and the high cost of compensation usually demanded by the landowners whenever the government acquired land to execute its projects. Consequently, the Federal Government made the move to unify the land tenure system that would be applicable throughout the nation, streamline and simplify ownership of land in Nigeria, and set up the Land Use Panel in 1977 with certain terms of reference. The references were considered and adopted by the government which promulgated the Land Use Act of 1978⁸⁴

In the decades to follow, Nigeria's oil and gas industry would overtake traditional industries like agriculture and tourism to become the mainstay of the Nigerian economy. Successive Nigerian governments have become heavily dependent on the sector for funding the country's budget and sadly, the frivolous living of government officials. As of September 2020, over 90 percent of Nigeria's export value was generated by the mineral fuels, oils, and distillation products sector, accounting for approximately 58 billion U.S. dollars. The sector also contributed to about nine percent of the country's GDP⁸⁵

⁸⁴Opafunso Z.O., 2015. Effects of the 1978 Land Use Act on Sustainable Mining and Petroleum Industries in Nigeria. Arts Social Sciences Journal, 106.

⁸⁵Varrela, S., 2020. Statista. Retrieved from Statista.com:

Statista. 2021. *Nigeria: contribution oil sector to GDP 2018-2021* / Statista. [online] Available at:

<https://www.statista.com/statistics/1165865/contribution-of-oil-sector-to-gdp-in-nigeria/#:~:text=Nigeria's%20oil%20sector%20contributes%20to,the%20same%20period%20of%202019>

With the role that the petroleum industry plays in Nigeria's economy and overall existence, it is not hard to see why the sector is one of the most heavily regulated industries in the country. To be precise, Nigeria operates a command-and-control regulatory framework in the oil and gas sector⁸⁶. Through the Nigerian National Petroleum Corporation, the Nigerian government is directly involved both in the upstream and downstream sectors of the country's oil and gas industry while regulation is carried out through the Ministry of Petroleum Resources.

This paper will examine the antecedents of the numerous developments in the Nigerian oil and gas industry, ranging from the legal framework to the policy documents, and the ultimate impact on gas flaring within the region. As mentioned earlier, Nigeria is replete with a plethora of laws and regulations governing its major income stream – the oil and gas industry, this section will more particularly consider the functionality or otherwise of these laws in curbing environmental degradation, the level of compliance with the regulations, and the resulting impact on the environment.

In maintaining control over the petroleum industry as well as creating an atmosphere void of sharp practices, Nigeria has developed an extensive legal and regulatory framework for the industry. Various laws currently regulate different areas and sectors of the oil and gas industry. The remainder of this section explains the laws and policies that make up Nigeria's legal and regulatory framework. A few important observations can be drawn from this analysis, including the new Petroleum Industry Act 2021 which repealed several laws in the oil sector and provided a legal,

[Accessed 21 December 2021].

⁸⁶Oshionebo, E., 2009. *Regulating Transnational Corporations in Domestic and International Regimes: An African Case Study*. University of Toronto Press.

governance, regulatory and fiscal framework for the Nigerian petroleum industry, and the development of host communities.

- **The Constitution of the Federal Republic of Nigeria 1999⁸⁷ – Ownership of Natural Resources**

The Nigerian Constitution is considered the country's grundnorm⁸⁸ and is the principal legislation from which other legislations derive their validity. The constitution contains provisions that laid the foundation upon which the entire superstructure of the Nigerian oil and gas industry is built. Importantly, the Constitution vests the total ownership and control of mineral resources, including oil and gas deposits, in the federal government. Section 44 (3)⁶⁶ provides that:

“Notwithstanding the foregoing provision of this section, the entire property in and control of all minerals, mineral oils, and natural gas in, under, or upon any land in Nigeria or in, under, or upon territorial waters and the Economic Zone of Nigeria shall vest in the Government of the Federation and shall be managed in such manner as may be prescribed by the National Assembly.”

Further, the Constitution provides that mines and minerals, including oil fields, oil mining, geological surveys, and natural gas are the exclusive preserve of the federal government of Nigeria

Many have asserted that the plausible argument that can be advanced in support of the Federal Government's ownership of the country's natural resources, inclusive of the nation's oil and gas

⁸⁷ The current Constitution of the Federal Republic of Nigeria was adopted in 1999. It is the fourth constitution since independence from the United Kingdom in October 1960 after those of 1960, 1963 and 1979.

⁸⁸The term is a coinage of the jurist and legal philosopher, Hans Kelsen and commonly used to describe a country's constitution. It simply means that the constitution is the basic and supreme law of the land, and no law must be contrary to its provisions.

deposits, is that these resources should be viewed as public goods and the government's intervention in their exploitation amounts to a case of public use.⁸⁹ To put it differently, the federal government is to manage and hold the mineral resources in trust and on behalf of the Nigerian people.

To further strengthen this position, the Exclusive list or schedule of exclusive powers in the Constitution allows all matters relating to the regulation and management of the oil and gas industry exclusively to the Federal Government⁹⁰. Some of these matters include export duties, mines, and minerals (including oil fields, oil mining, geographical surveys, and natural gas), incorporation and regulation of corporate bodies, and taxation of profits, capital gains, and incomes.

It is noteworthy that Section 44 of the 1999 Constitution of the Federal Republic of Nigeria together with the thought that it expresses is replicated in several other legislation such as the Exclusive Economic Zone Act (Act, {2004⁹¹}), the Minerals and Mining Act⁹², and importantly, the Land Use Act. Ako posits that due to the unique impacts of the Land Use Act on the inhabitants of the Niger Delta (especially in the expropriation of land by the government), the Act was the final jigsaw that confirmed the totality of the federal government's ownership of mineral resources

⁸⁹George Akpan, The Failure of Environmental Governance and Implications for Foreign Investors and Host States- A Study of the Niger Delta Region of Nigeria, 1 INT'L ENERGY L. & TAX'N REV. 1 (2006)

⁹⁰sagay, I., 2008. Nigeria: The Unfinished Federal Project. In: *Eighth Justice Idigbe Memorial Lecture*. [online] Benin. Available at:

<<http://www.nigerianlawguru.com/articles/constitutional%20law/NIGERIA%20THE%20UNFINISHED%20FEDERAL%20PROJECT.pdf>> [Accessed 13 December 2021].

⁹¹ Exclusive Economic Zone Act (2004) Nigeria. LFN 2004

⁹² Minerals and Mining Act (No. 34 of 1999) Nigeria. Amended 2007

in Nigeria⁹³. On the other hand, Ayodele- Akaakar contends that with the enactment of the Offshore Oil Revenue Decree in 1971⁹⁴, the totality of the Federal Government's ownership and control of mineral resources in Nigeria was confirmed. Herein, the Offshore and Oil Decree Act abrogated the ownership rights of the states over mineral resources in their extant continental shelves, title to territorial waters, and revenue (rents) accruing from the petroleum or oil and gas operations in such states.⁹⁵ Under this law, ownership and control of mineral resources were now vested in the Federal Government.

Thus, the Nigerian Government as the owner of the mines and natural resources contracts exploration rights to various stakeholders under the established licensing regimes, while reaping enormous revenues through royalties and taxes. Under Section 2(1) of the Act, only Nigerian citizens or companies incorporated in Nigeria can validly partake in the oil and gas industry. Such participatory activities include oil exploration, drilling, production, storage, refining, and transportation.⁸⁰ Under Section 2 of the Act, companies can be granted various rights including oil exploration licenses to explore for petroleum, a prospecting license, and an oil mining lease.

Arguably, the provisions of the Constitution vesting exclusive ownership on the Federal Government have been used by the Federal Government to milk the Niger Delta of its wealth.

⁹³Ako, R., 2009. Nigeria's Land Use Act: An Anti-Thesis to Environmental Justice. *Journal of African Law*, 289-304.

⁹⁴ Offshore Oil Revenue Decree (1971) Nigeria.

⁹⁵Ayodele-Akaakar F., 2001. Appraising the Oil and Gas Laws: A Search for Enduring Legislation for the Niger Delta Region. *Journal of Sustainable Development in Africa*, 7-8.

Access to oil revenue by states and communities in Nigeria has been one of the triggers of the unending conflicts in the Niger Delta.

- **The Petroleum Act – Governance of the Industry**

Principally, the focus of the Petroleum Act⁹⁶ is the governance of petroleum matters in Nigeria, its territorial waters, and the Exclusive Economic Zone (EEZ) (Iloba-Aninye). The preamble of the Act gives an insight into the purpose of the Act when it provided that the Petroleum Act is:

“An Act to provide for the exploration of petroleum from the territorial waters and the continental shelf of Nigeria, and to vest the ownership of, and all offshore and onshore revenue from petroleum resources derivable therefrom in the Federal Government”⁹⁷.

The Petroleum Act is the principal legislation as far as issues relating to petroleum exploration and production in Nigeria are concerned. Its provisions cover issues such as oil exploration, prospecting and mining licenses, the establishment of petroleum refineries, control of petroleum products, offenses in connection with the marketing of petroleum products, rights of pre-emption, and price control. It appears that the main thrust of the Act is on the downstream sector of the petroleum industry. Hence, it dwells on such issues as oil exploration and production, refineries and their establishment, and the powers of the Honorable Minister of Petroleum in that respect. As mentioned earlier, the Act is principally focused on the exploration and ownership of petroleum in the country. It, therefore, made little to no provision for the regulation of gas flaring in Nigeria.

⁹⁶ Petroleum Act Supra

⁹⁷ Petroleum Act. Preamble.

The Act is structured into 2 parts which are the principal provisions and the schedules. Whilst the first part deals with all issues relating to ownership and power of assignment of oil exploration rights and licenses, the schedules contain the laid down procedures for oil exploration licenses. oil prospecting licenses, oil mining leases and their respective assignments, terminations, revocations and fees, rents, and royalties.

Providing on the powers of the Minister of Petroleum⁹⁸, Section 2 (1) (a)-(c) of the Act provides that the Oil exploration license, Oil prospecting license, and Oil mining lease may be granted by the Minister subject to the Act. Section 2(2) established a strict framework through which licenses can be granted, which is to the effect that a license can only be given to a company registered under the Companies and Allied Matters Act⁹⁹.

The major feature of the Act is the mode of control exercised over the sector by the Minister of Petroleum Resources. Some of the powers of the Minister include the right to grant and revoke the license, as previously highlighted, as well as the power to make regulations, amongst others.¹⁰⁰

It is argued on many fronts that these powers have been abused and have also been subject to litigation in a wide array of cases¹⁰¹).

⁹⁸ Petroleum Act.

⁹⁹ The Companies and Allied Matters Act, 2020.

This Act provides for the incorporation of companies, limited liability partnerships, registration of business names and the incorporation of trustees of non-profit organization.

¹⁰⁰Shekarau, B., 2016. A Critical Analysis of The Regulatory Regimes of the Petroleum Industry in Nigeria. LLM. Faculty Of Law, Ahmadu Bello University, Zaria.

¹⁰¹Ekhato, E. O., 2016. Public Regulation of the Oil and Gas Industry in Nigeria: An Evaluation. Annual Survey of International & Comparative Law, 43-91.

The Nigerian courts have also given judicial support to this Act. In the Supreme Court case of *NNPC & Attorney General of the Federation v. FAMFA Oil Ltd*¹⁰²[2012], the court held that the Nigerian government must adhere to the process enshrined in the Petroleum Act and the Constitution when exercising its right to participate in any oil block or well in the oil and gas industry.

Moving forward, one of the major weaknesses of the Petroleum Act and the procedures it lays down on licensing and other regulatory measures is the susceptibility of these processes to corrupt practices. This is attributable to the absence of consultation as well as poor regulation in the allocation process, an ill that greatly characterized the Nigerian military era. Allocation of oil licenses and blocks should be more competitive and transparent by allowing the government to advertise the available blocks, the selection standards, and the number of different bids received including the selection criteria.

Another significant problem with the Petroleum Act is that it fails to address the environmental effect of petroleum exploratory activities. Most of the regulations are concerned with the safety of the personnel working in the oil wells and the safety precautions to be observed during oil exploration activities, which speak to the issue of gas flaring or its impact on the environment. This may not be unconnected to the fact that at the time the Act was enacted which was shortly after the discovery of oil in commercial quantities, the major focus of the government was revenue generation and financial rewards with no consideration for the resulting environmental and health impact.

¹⁰² *NNPC & Attorney General of the Federation v. FAMFA Oil Ltd* [2012] Nigerian Weekly Law Report 148 (SCN), p.17.

- **Oil Pipeline Act – Licensing for Oil Pipelines / Environmental Concerns**

Another important legislation within the legal framework for the oil and gas industry in Nigeria is the Oil Pipeline Act.¹⁰³ The long title of the Act provides that the Act is to make provision for licenses to be granted for the establishment and maintenance of pipelines incidental and supplementary to oilfields and oil mining and purposes ancillary to such pipelines.

Section 4 (1) of the Act made provisions for the grant of a permit to survey routes for an oil pipeline that would be used for the transportation of mineral oil, natural gas, and other related products. Therefore, this Act logically applies to the pipeline necessary for the transportation of natural gas from oil fields and mining sites but realistically, the application of this Act has been predominantly focused on the pipeline of crude oil and its liquid refined product.

The Section explicitly provides:

“Any person may make an application to the Minister in accordance with the provisions of this Act and of any regulations made thereunder for the grant of a permit to survey the route for an oil pipeline for the transport of mineral oil, natural gas, or any product of such oil or such gas to any point of destination to which such person requires such oil, gas or product to be transported for any purpose connected with petroleum trade or operations.”¹⁰⁴

¹⁰³ Oil Pipelines Act 1956 (Chapter 338)Laws of the Federation of Nigeria 1990. An Act to make provision for licences to be granted for the establishment and maintenance of pipelines incidental and supplementary to oilfields and oil mining and for purposes ancillary to such pipelines

¹⁰⁴ Oil Pipelines Act Section 4(1)

Although not expressly stated, the Act has as part of its set goals the protection of the environment. Principally, the holder of a permit to survey is expected to take all reasonable steps to avoid damage to any land entered upon. Where there is any damage done, the holder is expected to compensate the owner, the objection can be made by any person whose land or interest in land may be injuriously affected by the grant of a license but, where a licensee is granted, the holder is expected to pay compensation to any person whose land or interest in land has been injuriously affected or any person suffering damage because of or as a consequence of the holder's negligence to make good damage. Additionally, the Act prohibits the *“alteration in the flow of water in a navigable waterway, or the construction of works, in, under or over any navigable waterway that might obstruct or interfere with the free and safe passage of vessels, canoes or other craft”*, by an oil pipeline licensee. In addition, a licensee is also prohibited from making *“any construction in, under or over, or depositing materials in or altering the flow of water required for domestic, industrial or irrigational use, thereby diminishing or restricting the quantity of water available for these purposes or constructing works or making deposits in any waterways that would cause flooding or erosion without the prior permission in writing of the Minister”*.

Importantly, the Act in Section 17(4) expressly provides that “every license shall be subject to the provisions contained in this Act as in force at the date of its grant and to such regulations concerning public safety, the avoidance of interference with works of public utility in, over and under the land included in the license and the prevention of pollution of such land or any waters as may from time to time be force”. Also, the Act contains provisions that grant access to government officials to carry out routine inspections and ensure that licensees carry out their activities in strict compliance with the license requirements, most of which are largely about environmental protection, particularly land and waters.

Despite containing forward and progressive provisions, the main failure of the Oil Pipeline Act is that it fails to make restoration of land upon which compensation is paid compulsory¹⁰⁵. While Section 21 of the Act provides for compensation to be paid to families and communities adversely affected by the activities of a licensee, this approach fails to provide a clear guide as to how this compensation received would be applied to restoring the land as well. The standard of living as well as the level of education in local communities where licensees base their operation makes it such that the restoration of land from the harm done to it is the least of the concern of the communities or landowners when they eventually receive compensation.

More so, the Act in restricting its environmental control policies and provisions to lands and waters made no express provision for transmission of oil and gas through pipelines on the air quality of the environment or gas flaring. However, one must consider the possible outcomes of oil pipelines which include explosion and fire disaster which affects not just the offenders but also innocent third parties through the negative impact on the air quality. Indeed, the Act places the duty to construct, maintain and operate pipelines on the licensee¹⁰⁶ with no duty on the licensees to monitor and protect their pipelines from damages by any third party; or being held strictly liable in the case of any resulting damage or pollution arising from any act of a third party. This method rarely avails victims of oil pollution in Nigeria because of the defense of sabotage which the Act defined as willful damage caused by a third party. This is in addition to the paucity of fines awarded against the oil companies by the Nigerian courts to protect the economic base of the nation – the petroleum industry.

¹⁰⁵Fagbohon O., 2010. *The Law of Oil Pollution and Environmental Restoration*, Odade Publishers, Lagos.

¹⁰⁶ Section 3 of the Act.

Nigeria could learn from the success of the US Oil Pollution Act 1990 (USOPA)¹⁰⁷, being an Act aimed at establishing liability for damages resulting from oil pollution and also establishing a fund for the payment of compensation for such damages and other related purposes.¹⁰⁸ The USOPA, although targeted at pollution from tankers, not pipelines, has been successful in reducing oil spill incidents arising from tankers and vessels because it incorporated not only preventive measures, it also established research bodies on pollution activities, incorporated preparedness, emergency, and response plans; and strict liability regimes for payment of compensation of those who were not only exposed to oil pollution but who would potentially suffer its impact.¹⁰⁹

- **Petroleum Profit Tax Act – Tax Regime of the Industry**

This is the main Act regulating the taxation of the oil and gas industry. While other Acts are relevant in the tax regime of the petroleum industry such as the Company Income Tax Act (CITA) LFN 2004¹¹⁰, the Education Tax Act LFN 2004¹¹¹ and the Value Added Tax (VAT) LFN 2004,¹¹² the Petroleum Profit Tax Act (PPTA) LFN 2004¹¹³ is the cornerstone upon which the tax regime of the petroleum industry is built.

Some of the methods through which the Nigerian government generates revenue under the regime of the Petroleum Profit Tax Act include Direct Tax on the profits of Oil Companies; Signature Bonuses; Rents paid in respect of concessions and grants made to oil companies under the

¹⁰⁷ Oil Pollution Act of 1990 (33 U.S.C 27001 note) as amended by PL 106-580 of December 29, 2000.

¹⁰⁸Id

¹⁰⁹Ibid

¹¹⁰ Companies Income Tax Act (CITA), Cap C21, LFN 2004 (as amended)

¹¹¹ Education Tax Act CAP E4 LFN 2004. Repealed by Tertiary Education Trust Fund Act 2011 Act No. 16

¹¹² Value Added Tax (VAT) CAP V1 LFN 2004, (as amended)

¹¹³ Petroleum Profits Tax Act, Cap P13 LFN 2004 (as amended)

Petroleum Act; Premiums; Revenue from Royalties; Bank Charges; and Fees charged and paid in connection with the application, grant, and assignment of Oil Exploration and OPLs, OMLs, Permits to Survey the route of proposed oil pipelines, Production Sharing, and Service Agreements, and Marginal fields allocations.

It is worth mentioning that to determine a company's profit in a fiscal year under the PPTA regime, the assessment must be carried out 12 calendar months beginning on 1st January and terminating on 31st December of the same year. Under the Petroleum Profit Tax Act, every company engaged in petroleum operations is required by section 281 to *"make up accounts of its profits and losses arising from those operations,"* for each accounting period. Under section 31(1), it is stipulated that not later than two months after the commencement of each accounting period of a company, the company shall deliver to the Federal Inland Revenue Service (in the form prescribed by the FIRS) the company's estimated tax for the period. In addition, Section 35(1) of the Act authorizes the FIRS to make assessments of the tax (in the form and manner provided by it) of a company for its accounting period based on the amount of chargeable profits, assessable tax, and chargeable tax.

One of the problems that bedevil taxation in Nigeria is the problem of the falsification of companies' account audits. This is a major concern considering that it is the company's audited account submitted to the tax authority that is depended on for tax assessment. In other words, it is the audited accounts submitted by the companies that guide the tax authorities in the assessment of chargeable taxes due to the company. The PPTA is not exempted from this approach as Section 9 of the Act provides that any company engaged in petroleum operation must submit its audited accounts showing its profit and losses to the FIRS to enable them to assess chargeable taxes due to the company.

The challenge with this approach however is that the PPTA operates under the presumption that there are regularities in the audited accounts as presented by the companies and the FIRS not being an auditing firm may not deem it fit to re-audit the already presumed audited accounts submitted to them but rather merely assess the chargeable taxes due to the company from the information they have before them whether it is true or false. This is however a challenge that could be turned around for the betterment of the oil industry. A major concern in the formulation of stringent regulations on gas flaring in Nigeria is the assumption that the deployment of the required technology will reduce returns to the government, given the huge capital expended in the sector development. The regulator can put in place measures to ensure better enforcement of the existing tax audit and collection regimes to make up for any shortfall resulting from lost revenue because of more stringent gas flaring regulations.

Another problem with the PPTA is the issue of penalties. The penalty prescribed under the PPTA is so insignificant in terms of cost in modern-day Nigeria to a company engaged in petroleum operations. These are all significant issues that must be addressed.

- **Nigerian Oil and Gas Industry Local Content Development Act – Indigenous Participation¹¹⁴**

¹¹⁴ Nigerian Oil and Gas Industry Local Content Development Act – Indigenous Participation 2010 Act No. 2 Cap. P10, LFN 2004. Available online <https://ncdmb.gov.ng/nc-act.pdf>

It was created as a law to provide for the development of indigenous content in the Nigerian oil and gas industry. The law also establishes the Nigerian Content Monitoring Board, This Board has the responsibility to manage the coordination, monitoring and implementation of the local content law. The local content law is supposed to help increase indigenous participation in the oil and gas industry/sector of the economy by prescribing minimum thresholds for the use of local services and to promote the employment of Nigerian staff in the industry.

In addition to the clamor for more resource control, several African countries after independence also determined that more indigenous people should take ownership and control of their natural resources for exploitation and transformation into economic growth. In the pursuit of this objective, several policies and laws have been implemented by governments.

Within the context of the Nigerian Petroleum Industry, some of the laws that have embodied this idea are the Petroleum (Drilling & Production) Regulations¹¹⁵, Industrial Training Fund, Petroleum Technology Development Fund¹¹⁶, and National Office of Technology Acquisition Act¹¹⁷. These laws were however not enough to cover the entire petroleum industry.

The enactment of the Nigerian Oil and Gas Industry Content Development Act¹¹⁸ seeks to increase indigenous participation in the Oil and gas industry by prescribing minimum thresholds for the use of local services and materials and ensuring the transfer of technology and skill to Nigerian indigenous workers in the oil and gas exploration industry.

Part of the defining feature of the Act is that it is comprehensive, running into 107 sections, and applies to all operators, contractors, and other entities involved in any project in the oil and gas industry. In addition, the Act also takes precedence over all other existing enactments and laws in respect of all matters and operations industry that pertain to Nigerian content carried out in the oil and gas. A Nigeria Content Development and Monitoring Board (the Board) has been established

¹¹⁵ Petroleum (Drilling and Production) (Amendment) Regulations, 2019

¹¹⁶ Petroleum Technology Development Fund Act. (2019), Cap P15. LFN 2004

¹¹⁷ National Office for Technology Acquisition and Promotion (NOTAP), was established by Decree No. 70 of 1979, amended by Decree No. 82 of 1992 now referred to as NOTAP Act Cap N68 LFN 2004

¹¹⁸ Nigerian Oil and Gas Industry Content Development Act. (2010) Cap. P10, LFN 2004.

and vested with the responsibility to implement the provisions of the Act, make procedural guidelines, and monitor compliance by operators within the oil industry.

The Act sets out general obligations which are applicable either by reference to the operators and participants in the Oil and Gas Industry or activities taking place in the Oil and Gas industry. The overall local content policy objective and obligation imposed in respect of transactions within the oil and gas industry are set out in Section 3(1) of the Act which provides that Nigerian independent operators shall be given first consideration in the award of oil blocks, oil field licenses, oil lifting licenses and all projects for which contract is to be awarded in the Nigerian oil and gas industry subject to the fulfillment of such conditions as may be specified by the Minister.

In furtherance of this objective, the Act also gives preferential treatment to all Nigerian companies operating in the industry. As a basic principle, the Act requires that the promotion of Nigerian content development shall be a major concern in all projects and operations in the oil industry. It then goes on to say that Nigerian independent operators shall have first consideration in the award of oil blocks, lifting licenses, and in all projects for which contracts are to be awarded. This principle applies to all spheres of the industry not only "*contracting*" but also the employment of staff and labor, staff training and procurement of goods, materials, services, etc.

It is also worth mentioning that the Local Content Act and the idea it represents cannot be used to encourage mediocrity. Section 3(2) of the Act incorporates a significant precondition for getting the coveted exclusive preferential treatment. It stipulates "*demonstrable capacity to perform*" as a key criterion for the preferential award of jobs.

Another advantage that the Act affords Nigerian companies besides from preferential treatment is the technology transfer. Section 44 stipulates that corporate IOCs are required to have a program

of incentives to promote the transfer of technology and skills and Section 45 encourages the formation of joint ventures and other forms of alliances.¹¹⁹

The promotion of '*Nigerian human material*' as an aspect of Nigerian Content is dealt with in Sections 28 to 35 of the Act¹²⁰. The general clause in this regard is Section 28(1) of the Act which stipulates that "*Nigerians shall be given first consideration for employment and training in any project executed by any operator or project promoter*". Drawing from this, the Nigerian Content Plan submitted by operators or project promoters shall include an employment and training plan which complies with Section 29 of the Act. Section 30 and 31 also make it an obligation for operators to provide training to Nigerians where Nigerians are not employed because of a lack of training and to provide a succession plan for a Nigerian to understudy an expatriate for a maximum period of 4 years.

Finally, Section 34 of the Act provides that a "*Labour Clause*" be inserted in "*projects or contracts*" mandating the use of a minimum percentage of Nigerian workers as may be stipulated by the board. Finally, all operators and companies operating in the Nigeria oil and gas industry shall employ only Nigerians in their junior and intermediate cadre. Concerning legal representation and financial services, Section 51 of the Act provides that actors in the Petroleum industry can only retain the services of a Nigerian Legal Practitioner or a firm of legal practitioners. In the same vein, Section 52 provides that all actors in the industry in need of financial services must only engage the services of Nigerian financial institutions.

¹¹⁹Agboola, M. O., 2011. Gas Flaring in Nigeria: Opportunity for Household Cooking Utilization. International Journal of Thermal and Environmental Engineering, 73.

¹²⁰ Nigerian Oil and Gas Industry Local Content Development Act – Indigenous Participation

Again, any proposed reform to reduce gas flaring could be vulnerable to the objection that such reforms would reduce money generated for the government or harm local Nigerian-owned businesses or employees. It is therefore important to understand the mechanisms that generate revenues for the government and Nigerians to be able to effectively analyze how more stringent controls on gas flaring would impact those revenues.

The Petroleum Industry Act 2021 – Moving into the Future

The Nigerian petroleum industry has recorded several setbacks and agitations from reform ranging from environmental to economic and socio-political concerns. The pre-existing laws have all been unable to address the recurring menace of gas flaring significantly and effectively in Nigeria. As a result, over the last 20 years, there have been various attempts at reforming the petroleum industry in Nigeria. However, none of these attempts has yielded any tangible result until the National Assembly introduced the Petroleum Industry Act (PIA) 2021.

It is worthy of note to state that the oil and gas industry has a significant impact on Nigeria's economy. Although the industry contributes less than 10% to the country's gross domestic product, it, however, contributes about 90% of the foreign exchange earnings and 60% of total income. Consequently, any adverse change in the industry will have a big and long-term impact on the economy. This is the reason why successive governments have remained focused on the sector despite various discussions on diversifying the economy. The Petroleum Industry Act aims to establish legal, governance, regulatory and fiscal framework for the Nigerian Petroleum Industry, the Host Communities, and related matters.

The Petroleum Industry Act is expected to restructure the Nigerian petroleum industry, introducing a paradigm shift. The bill is to introduce a framework to privatize the Nigerian National Petroleum

Corporation (NNPC) theoretically enabling external fundraising, although the timing and precise form of the privatization is unclear¹²¹.

The PIA was built on previous attempts that have been made to conclude upon an agreeable draft of legislation that would be wholesome and cater to every area of the industry, including untested areas such as host community funding, a viable fiscal regime for gas, and incentives for midstream and upstream petroleum operations. The Act was first introduced as a Bill in 2008 as a response to these concerns.

The specific objectives of the Act include the promotion of actions, plans, and policies to:

- create an efficient regulatory entity,
- increase petroleum exploration and production,
- deregulate the downstream sector of the industry,
- establish a viable national oil company,
- boost domestic gas supply,
- enhance transparency and accountability in the industry, among other objectives.

Drawing from the original Petroleum Industry Bill, the Petroleum Industry Governance Bill has the main objectives as follows:

1. The creation of efficient and effective governing institutions with clear and separate roles for the petroleum industry.

¹²¹Hamish McArdle., 2015. <https://iclg.com/alb/14703-nigeria-s-petroleum-industry-bill-the-path-to-reform-and-prosperity>

2. Establishment of a framework for the creation (out of existing government-owned entities) of commercially oriented and profit-driven entities that will ensure value-add and internationalization of the petroleum industry.
3. The promotion of transparency and accountability in the petroleum industry.
4. Creation of a conducive business environment for operators in the petroleum industry.

Summarily, it can be argued that the proponents of the Bill intend to ensure that there is a high level of transparency in the Nigerian Petroleum Industry whilst at the same time ensuring that the industry is commercially driven and attractive to potential investors. President Muhammadu Buhari eventually signed the bill into law on August 16, 2021, marking a new era for the Nigerian petroleum industry. The new Act will be examined in comprehensive detail in the next section. It is hoped that this new law regulating the petroleum industry will be in tandem with current climatic realities to be effective for administrative policies and regulations governing the oil and gas industry must be clear, transparent, practical, and consistent for them to achieve the intended purpose.

2.1 The Legal Regime for Gas Flaring Regulation in Nigeria

The prior sections explain the historical development and current laws governing the oil and gas sector generally in Nigeria within which regulation of gas flaring is also situated, as well as identify important proposals for legal reform. This section will now explain in detail the specific legislations that were made to reduce gas flaring in the oil and gas exploiting industry in Nigeria.

Gas flaring is one of the major hot spots within Nigeria's oil and gas industry, and for several reasons. One of them is the role this process plays in the production of oil and gas in the country. The level of technology in the industry favors gas flaring which is cheaper than reinjection and

other means that would be beneficial to the environment and the citizens of Nigeria. This has several implications.^{122 123}

Beyond the impact gas flaring has on the environment, there are also talks about the impact gas flaring has directly on the health of humans. The toxic gases emitted from flare sites have serious health impacts which include respiratory illnesses like Asthma, painful breathing, and chronic bronchitis. Other illnesses that are gas flare-related include cancer and blood disorders like leukemia¹²⁴ This paper would extensively examine the problem of gas flaring in Nigeria from the law-making perspective. Precisely, an examination of the legal framework that addresses and regulates gas flaring in Nigeria would form the core of this paper.

The conflicting concerns about the health impact of gas flaring seemed to have inspired the legal and institutional framework for gas flaring in place in Nigeria. Before the enactment of the regulation on gas flaring, the Petroleum Act 1969¹²⁵ remained the primary law regulating oil and gas exploration activities in Nigeria. The Petroleum (Drilling and Production) Act 1979¹²⁶ made under the Petroleum Act, provided that the licensee or lessee of an Oil Mining License (OML) shall, not later than five years after the commencement of production, submit to the Minister of Petroleum Resources, a feasibility study, program, or proposals that it may have for the utilization

¹²² For one, potential revenue running into millions of dollars is lost with the gas flared. Aside from this, there is also renewed agitation from environmentalists on the impact of gas flaring on the environment including the atmosphere, and water bodies, particularly those of communities in which flare sites are situated. Global warming, owing to the release of greenhouse gases is a major concern

¹²³Generon, 2019 <https://www.generon.com/what-is-gas-flaring-why-is-it-done-alternatives/>

¹²⁴Anosike. C.R., 2010. Unhealthy Effects of Gas Flaring and Way forward to Actualize the Stopping of Gas Flaring in Nigeria <https://onepetro.org/SPENAIC/proceedings-abstract/10NAICE/All-10NAICE/SPE-136970-MS/108666>

¹²⁵ Petroleum Act 1969 supra

¹²⁶ Petroleum (Drilling and Production) Act 1979 supra

of any natural gas that has been discovered in the relevant area.¹²⁷ Regulation 43 of the Petroleum (Drilling and Production) Act provides thus:

“Not later than five years after the commencement of production from the relevant area, the licensee or lessee shall submit to the minister, any feasibility study, programme, or proposals that he may have for the utilization of any natural gas, whether associated with oil or not, which has been discovered in the relevant area.”

Unfortunately, this provision of the law which required oil companies to submit their strategies for gas utilization was not seen to be mandatory and no penalty was provided for defaulters. Again, oil companies were permitted to flare gas for five years before submitting the feasibility report¹²⁸, because of this lacuna, a concrete step to regulate gas flaring in Nigeria was reached in 1979 with the enactment of the Associated Gas Re-Injection Act.

The Associated Gas Re-Injection Act 1979¹²⁹ (as amended) became the first anti-gas flaring regulatory framework in Nigeria.¹³⁰ The primary intent and purpose of the Act were to phase out gas flaring in Nigeria, it was the statutory response to the environmental impacts of gas flaring. In its recital, it is stated to be an Act to compel every company producing oil and gas in Nigeria to submit the preliminary program gas re-injections and detailed plans for implementation of gas re-

¹²⁷Otiotio, D., 2013. Gas Flaring Regulation in the Oil and Gas Industry: A Comparative Analysis of Nigeria and Texas Regulations. Oklahoma

¹²⁸ Id

¹²⁹ Associated Gas Re-Injection Act (1979). Cap. P10 (Nigeria). This was an Act to compel every company producing oil and gas in Nigeria to submit preliminary programs for gas re-injection and detailed plans for implementation of gas re-injection

¹³⁰ Anti-Gas Flaring Regulatory Framework in Nigeria. Cap 26 Laws of the Federation of Nigeria 2010.

injection. Besides requiring oil and gas producing companies to submit a detailed plan for either the re-injection or commercial use of all associated gas produced by 1st October 1980, the Act categorically made gas flaring illegal from 1st January 1984.¹³¹ While one would expect that this Act brings an end to gas flaring in Nigeria or perhaps reduce it to the barest minimum, the Act would not survive for long. It has been argued that the Nigerian government was hesitant to enforce the 1984 flare prohibition deadline since oil revenues contribute about 90% of Nigeria's foreign exchange earnings.¹³² In place of the Associated Gas Re-Injection Act 1979, the Associated Gas Re-Injection Act 1984¹³³ was promulgated. Moving away from the stance of the 1979 Act of the total prohibition of Gas Flaring in Nigeria, the 1984 Act allowed the petroleum minister to authorize gas flaring that cannot be re-injected or utilized. This authorization could be granted to companies upon the payment of fees to be determined by the minister. The penalty for flaring gas after the 1st of January 1984 without the permission of the Minister was forfeiture of the company's oil mining concessions.¹³⁴

To put things in perspective, the 1984 Act allowed companies to flare gas upon the payment of fees as determined by the petroleum minister. While these fees have generated some revenue for the government, the amount received pales insignificant when compared to the millions of dollars that the country loses annually to gas flaring as previously demonstrated. Statistics from the

¹³¹Ejiogu, A., 2013. Gas Flaring in Nigeria: Costs and Policy. *Energy & Environment*, 24(6), pp.983-998.

¹³²Sonibare, J. and Akeredolu, F., 2006. Natural Gas Domestic Market Development for Total Elimination of Routine Flare in Nigeria's Upstream Petroleum Operations. *Energy Policy*, 34, 743-753.
<http://dx.doi.org/10.1016/j.enpol.2004.07.006>

¹³³Continued Flaring of Gas Regulation 1984 the Associated Gas Re-Injection Regulation. [S.L. 43 of 1984
<https://www.iea.org/policies/8672-associated-gas-re-injection-regulation>

¹³⁴Ibid

Nigerian Bureau of Public Enterprises also reveal that Nigeria loses between US\$500 million and US\$2.5 billion to gas flaring. (World Bank Group).

Progressing, rather than expressly prohibit gas flaring, the Nigerian government, owing to the country's lack of infrastructure to capture and utilize the gas flared, instead favored an incentive approach to reduce gas flaring. The government would proceed to provide a system of incentives to encourage companies in the oil and gas industry to capture and utilize gas rather than flare it. This policy was brought to the fore through the Associated Gas-Framework Agreement (AGFA)¹³⁵ of 1992 which introduced a package of financial incentives for the utilization of natural gas.¹³⁶

Aside from the incentives of a tax holiday for three years as well as the creation of a contractual relationship between companies and the government contained in the AGFA 1992. Subsequently, in 1988 the Nigerian Government also added more incentives to encourage a pro-utilization stance by oil companies. Some of the additional incentives include exemption on custom duties and VAT on gas-related development equipment, an increase of the tax holiday from 3 years to another 5 to 7 years, exemption of taxes on dividends earned during the tax holiday, the introduction of investment capital allowance of 15%, among others.

In the years that followed, successive governments became more focused on eliminating gas flaring in Nigeria although this has not been met with commensurate planning. Therefore, with legislation came ultimatums that were never met. As such, while the Associated Gas Re-injection Act was enacted to prohibit gas flaring on 1 January 1984, the gas flaring ultimatum date was later

¹³⁵

¹³⁶Ibid

changed to December 2003. The ultimatum was further moved to 2006 and was changed again from January 2008 to December 2008.¹³⁷

Still, on ultimatums, the Gas Flaring (Prohibition and Punishment) Act, 2009,¹³⁸ was enacted with a gas flaring time limit fixed for 31 December 2010. As this ultimatum date was no longer feasible, the deserted Petroleum Industry Governance Bill set a 2012 deadline which together with the bill was also deserted. Fast forward to 2016, the Gas Flaring Prohibition and Punishment Bill, 2016, set the ultimatum for gas flaring to December 2016. Also, the deserted PIGB bill of 2012 was replaced with the Petroleum Industry Governance Bill 2017 which rather than setting deadlines seeks to outlaw gas flaring. To date, this bill is yet to be passed into law.

Also, about the bills, there is the Associated Gas Re-Injection (Amendment) Bill 2010¹³⁹, which does not seem to be any different from the Associated Gas Re-Injection Act of 1984 since it still allows gas to be flared with the consent of the Minister of Petroleum. In 2018, the Nigerian President, in his capacity as the Minister of Petroleum resources signed the Flare Gas (Prevention of Waste and Pollution) Regulations, 2018¹⁴⁰ into law. The Regulations seek to minimize the environmental and social impact caused by flaring natural gas, protect the environment, prevent waste of natural resources, and create social and economic benefits from gas flare capture.¹⁴¹ It is

¹³⁷Olujobi, O. J., 2020. Analysis of the Legal Framework Governing Gas Flaring in Nigeria's Upstream Petroleum Sector and the Need for Overhauling. *Social Sciences*, 132.

¹³⁸ Gas Flaring (Prohibition and Punishment) Act (2009) LFN 2004

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¹⁴¹Obayomi W., 2018. Highlights of the Flare Gas (Prevention of Waste and Pollution) Regulations <https://home.kpmg/ng/en/home/insights/2018/10/Highlights-of-the-Flare-Gas-Prevention-of-Waste-and-Pollution-Regulations-2018.html>

noteworthy that while the Regulation provides the prohibition against flaring of natural gas, one must not be misled by the language. The regulations although generally prohibiting gas flaring make exceptions for producers that are issued certificates by the petroleum minister based on the provisions of the Associated Gas Re-Injection Act.¹⁴²

The regulation also increased payment for gas flaring. Companies that produce at least 10,000 barrels of oil per day shall be liable to a flare payment of \$2 per 28.317 standard cubic meters (1,000 standard cubic feet (SCF)) of gas flared. However, companies which produce less than 10,000 barrels per day shall be liable to a flare payment of \$0.5 per 28.317 standard cubic meters (1,000 standard cubic feet (SCF)) of gas flared.¹⁴³

Moving forward, the Gas Flaring (Prohibition and Punishment) Bill 2020¹⁴⁴ is currently before the Nigerian Senate and seems set to be passed into law soon. One of the highlights of this bill is that it ensures that natural gas is not flared or vented in any oil and gas production operation, block, field, onshore or offshore, or any gas facility.¹⁴⁵ Clause 11(a) of the bill provides that,

“Any person who flares gas after December 31, 2020, contrary to section 4 of this Act, commits an offense under this Act, and shall be liable on conviction to pay a fine which shall not be less than the cost of gas at the international market.”

¹⁴²Ibid

¹⁴³Ibid

¹⁴⁴ Bill for an Act to prohibit Flaring of National Gas in Nigeria and for other matters connected therewith, 2020(SB.174) Available online: <https://placbillstrack.org/upload/SB174.pdf>

¹⁴⁵Jimoh, A. and Olayinka, C., 2019. Senate penalises gas flaring in new bill, offenders to pay N10 million fine. The Guardian, [online] Available at: <<https://guardian.ng/news/senate-penalises-gas-flaring-in-new-bill-offenders-to-pay-n10-million-fine/>> [Accessed 8 December 2020].

This means that the latest ultimatum for the prohibition of gas flaring in Nigeria was set for December 31, 2020, by the Gas Flaring (Prohibition and Punishment) Bill 2020.

It is also important at this juncture to consider the Polluter Pays Principle (PPP) which underlies most of the legislation created for the oil and gas industry in Nigeria. The principle is traceable to the words of Plato who asserts that *"if anyone intentionally spoils the water of another ... let him not only pay damages but purify the stream or cistern which contains the water..."*¹⁴⁶

The principle essentially means that the producer of goods or other items should be responsible for the cost of preventing or remediating any pollution that the process causes. This includes environmental costs as well as those involving people or property.¹⁴⁷ Unfortunately, this principle has not been effectively applied in the country. The Nigerian government particularly has shown laxity in the enforcement of the PPP which is perhaps due to the country's dependence on the oil and gas industry.

Even more, the polluter pays principle is yet to be wholly made applicable to environmental pollution from gas flaring, with the laws in place giving companies a field day to flare gas in the exchange for the payment of stipends. This is a major sour point in Nigeria's legal and institutional framework to address the country's gas flaring situation. The Flare Gas Regulations¹⁴⁸ at best operate a trivialized rendering of the principle. The regulation provides for the payment of a carbon tax¹⁴⁹ which does not candidly represent the essence of the polluter pays principle.

¹⁴⁶Jowett B, (1953) The Dialogues of Plato: The Laws, vol. 4, book 8, section 485(e), translated by Oxford: Clarendon Press (4th ed.), 1953.

¹⁴⁷Park, D.P. Energy Law and the Environment. Taylor and Francis 2002 p.16

¹⁴⁸ Prevention of Waste and Pollution (2018) The Flare Gas Regulations. <https://ngfcp.dpr.gov.ng/media/1120/flare-gas-prevention-of-waste-and-pollution-regulations-2018-gazette-cleaner-copy-1.pdf>

¹⁴⁹Nnona, G., 2003. New Policy Regime for Gas in Nigeria a Perspective on Tax and Related Incentives. Journal of

Also, within the context of gas flaring in Nigeria, certain institutions come to play. The first is the Ministry of Petroleum Resources (MPR) responsible for the creation of all policies that relate to the oil and gas industry. The responsibilities of the MPR are duly carried out through the Department of Petroleum Resources (DPR), which is a body under the Ministry of Petroleum Resources.

There is also the Nigerian National Petroleum Corporation (NNPC) established according to Section 1, Decree No. 33 of 1973¹⁵⁰ of the Federal Republic of Nigeria. Among others, the NNPC has an inspectorate and commercial responsibility, which allows it to manage and overlook the operations of its subsidiaries within the oil and gas industry, like the Nigeria Gas Company (NGC). Also, the Federal Ministry of Environment (FMENV) is the highest authority in terms of environmental management in Nigeria. The FMENV oversees the Oil and Gas Pollution Control Unit of the DPR and as part of its duty, also drafted the National Environmental Management Act (NEMA Act), which incorporated the policy on gas flaring elimination as well as gas utilization in Nigeria.

The Niger Delta Development Commission (NDDC) was set up by the government to replace the Oil Mineral Producing Area Development Commission (OMPADEC) in 2000. Among other responsibilities, the NDDC addresses the environmental challenges that are associated with the activities that are related to engineering and production in Nigeria.

The current situation in the gas industry reveals a clear reluctance on the part of the Nigerian government to prohibit gas flaring in the country. If nothing, the pattern of unmet deadlines for the

Energy and Natural Resources Law 20: 285–302

¹⁵⁰ Nigerian National Petroleum Corporation Act. No 33 of 1977. Chapter 320. Laws of the Federal Republic of Nigeria 1990.

total prohibition of gas flaring and the inability of the government to mete out appropriate sanctions to defaulters within the current gas flaring and utilization regime is clear evidence in this regard. To put it simply, the country's regulatory and institutional framework on gas flaring is not only insufficient but also grossly inefficient.

The Acts and Bills

There is an abundance of legislation that addresses the Nigerian gas flaring problem. Some of the laws that have been enacted in this regard include the 1973 Petroleum Amendment Decree¹⁵¹, the 1979 Associated Gas Re-Injection Act, the 1985 Associated Gas Re-injection (Amendment) Decree, the 2004 Associated Gas Re-injection (Amendment) Act, the Petroleum Industry Bill, and finally, the 2010 Associated Gas Re-injection Bill.¹⁵²

It is also worth noting that Nigeria is a signatory to several international instruments targeted at reducing gas flaring globally such as the Nation Framework Convention and Climate Change (UNFCCC) and Kyoto protocol aimed to reduce gas flaring¹⁵³. Nigerian courts are also not left behind in responding to gas flaring as they have made express pronouncements on gas flaring in cases such as *Gbemre v. Shell Petroleum Development Co*¹⁵⁴, where the court “*ordered the respondents and their servants or workers from further flaring of gas in the applicant's community (Niger Delta) and to take immediate steps to stop the further flaring of gas.*”

¹⁵¹ Petroleum (Uniform Prices of Petroleum Products) Order 1973 subsidiary Decree to the Petroleum Act 1969
supra

¹⁵² Olabode A. Oyewunmi, Adebukola E. Oyewunmi, Managing Gas Flaring and Allied Issues in the Oil and Gas Industry: Reflections on Nigeria, Mediterranean Journal of Social Sciences: Vol. 7 No. 4 (2016): July 2016

¹⁵³ MAES (2013)

https://ec.europa.eu/environment/nature/knowledge/ecosystem_assessment/pdf/5th%20MAES%20report.pdf

¹⁵⁴ All Human Right Law Review (AHRLR), (2005) <https://www.chr.up.ac.za/downloads>

Each of these Nigerian legislations would now be considered serially.

- **The 1999 Nigerian Constitution**

While the constitution does not explicitly speak to gas flaring in any of its provisions, some sections set the tone for more gas flaring-specific legislation. To be precise, Section 33(1) and 34(1) of the Constitution guarantees the right to life and the right to dignity of human persons.

These sections provide:

Section (33)(1) “every person has a right to life, and no one shall be deprived intentionally of his life, save in execution of the sentence of a court in respect of a criminal offense of which he has been found guilty in Nigeria”

Section (34)(1) “every individual is entitled to respect for the dignity of his person...”

It can be argued that these rights are necessarily contingent on the availability of a clean and healthy environment. For example, where the environment is poisoned and begins to impact the health of people in the environment, the right to life is clearly under attack. In the same vein, an atmosphere poisoned by noxious fumes and greenhouses gases is a violation of the right to dignity of the person.¹⁵⁵

¹⁵⁵ Olujobi and Olusola-Olujobi have argued that Section 3(2)(a)(b) of the Associated Gas Rejection Act which allows gas to be flared with the consent of the Minister of Petroleum is in contravention of the 1999 Constitution that guarantees right to life and right to dignity of human person and is therefore null and void in line with section 1(3) of the 1999 Constitution (as amended). There is however not much support for this submission, considering that there is no judicial pronouncement that gives credence to this position.

- **The Petroleum Act and the Petroleum Regulation of 1969¹⁵⁶**

The Petroleum Act 1969 is not only the primary but also the most extensive legislation that regulates the Nigerian petroleum industry before the Petroleum Industry Act was passed into law.¹⁵⁷ The Petroleum Act 1969 also vests in the state, the entire ownership and control of oil and gas in, under, or upon any lands including land covered by water, which is in Nigeria; or is under the territorial waters of Nigeria; or forms part of the continental shelf or Exclusive Economic Zone of Nigeria.¹⁵⁸ It is worth mentioning that this provision on ownership does not impede the right to receive compensation for damage suffered or that occurred from petroleum exploration activities in the sector such as gas flaring¹⁵⁹.

Importantly, the Act also addressed the accompanying environmental hazards as the act encouraged oil companies to submit oil-development schemes that specified potential solutions to

¹⁵⁶ Petroleum Act 169 supra

¹⁵⁷ Supra note 136.

¹⁵⁸ This provision of the Petroleum Act is a restatement of the provision of the Nigerian Constitution that grants the Nigerian government ownership of the mineral resources in the country. To be precise, the Constitution vest the total ownership and control of mineral resources, including oil and gas deposits, in the federal government. Section 44 (3)66 provides that: “Notwithstanding the foregoing provision of this section, the entire property in and control of all minerals, mineral oils and natural gas in, under or upon any land in Nigeria or in, under or upon territorial waters and the Economic Zone of Nigeria shall vest in the Government of the Federation and shall be managed in such manner as may be prescribed by the National Assembly.”

Also, the Exclusive list in the Constitution allots all matters relating to the regulation and management of the oil and gas industry exclusively to the Federal Government. (Itse Sagay, Nigeria: The Unfinished Federal Project, Paper presented at the Eighth Justice Idigbe Memorial Lecture at the University of Benin Nigeria (Apr. 30, 2008), <http://www.nigerianlawguru.com/articles/constitutional%20law/NIGERIA%20THE%20UNFINISHED%20FEDERAL%20PROJECT.pdf>)

¹⁵⁹Oke, Y., 2012. Beyond Power Sector Reforms: The Need for Decentralized Energy Options (DEOPs) for Electricity

Governance in Nigeria. *Nigerian Journal of Contemporary Law* 18: 67.

such environmental hazards.¹⁶⁰ Quite relevant to this paper is the provision of Section 9 (1)(b) (iii) of the Act which grants powers to the Minister of Petroleum to make regulations relating to licenses and leases granted for the prevention of pollution of watercourses and the atmosphere. For this paper, ‘Pollution of Atmosphere’ could be implied as gas flaring as it’s a source of atmospheric pollution. However, no other specific provisions on air emissions from gas utilization exist anywhere under the Petroleum Act.¹⁶¹

In addition, under the regime of the Act, there was a provision for 5 years after commencement of oil production in an area, after which licensees and leases were to submit a feasibility study program that speaks to the utilization of natural gas. Unfortunately, this provision as noble as it was, was defective as it made no provision for any penalty or sanction for defaulters of this provision. The result is that producers gave no regard to this provision, especially considering that the industry lacked the infrastructure to utilize natural gas instead of flaring it¹⁶².

To put it simply, the oil companies in Nigeria did not comply with the Act, nor has the Act been implemented by the regulatory agencies in the sector against oil companies for the feasibility plan.

¹⁶⁰Eferiekose Ukala., 2011. Gas Flaring in Nigeria’s Niger Delta: Failed Promises and Reviving Community Voices’) 2 Washington and Lee Journal of Energy, Climate, and the Environment, 97, 108 <accessed 27 July 2016>

¹⁶¹Okukpon, I., 2010. Phasing-Out Gas Flaring in Nigeria: A Critical Assessment of the Regulatory Regime. University of Cape Town.

¹⁶² Morrison G.M., Yeh S., Eggert AR., Yang C., Nelson JH., Greenblatt JB., 2015. Comparison of low-carbon pathways for California. Climate Change; 131 p:545–57.

**•Associated Gas Re-Injection Act 1979 and the Associated Gas Re-injection
(Continued Flaring of Gas) Regulations of 1985¹⁶³**

Within the context of the legal framework on gas flaring in Nigeria, the Associated Gas Re-Injection Act is one of the most important. Unlike the Petroleum Act, the Associated Gas Re-Injection Act precisely and specifically addresses gas flaring in Nigeria. The Act was enacted to regulate the incessant gas flaring carried out by multinational oil corporations within the Nigerian petroleum industry¹⁶⁴. The Act required these companies to mandatorily submit a preliminary gas re-injection program and implementation plan in their various oil fields.

Most importantly, this Act also provided a deadline on gas flaring in Nigeria, precisely 1 January 1984. After this deadline, the lawmakers intended that gas flaring would become prohibited after the deadline provided. In addition, a drastic penalty of forfeiture of concession and repair or restoration of any reservoir in the field per good oilfield practice was imposed on any defaulters after that date.

In support of these submissions, Section 3 of the Act is very relevant to this paper. It states as follows:

1. Subject to subsection (2) of this section, no company engaged in the production of oil or gas shall after 1st January 1984 flare gas produced in association with oil without the permission of in writing of the minister.

¹⁶³ Associated Gas Reinjection (Continued Flaring of Gas 1984) Regulation. Available online:

<https://placng.org/i/wp-content/uploads/2019/12/AssociatedGasReinjectionAct.pdf>

¹⁶⁴ Azubuike S. Ekwere, Aniekan E. Edet, Solomon J. Ekwere., 2012. "Groundwater chemistry of the Oban Massif, South-Eastern Nigeria." *Ambiente & Água - An Interdisciplinary Journal of Applied Science*, Vol. 7, núm.1, pp.51-66 [Accessed 12 August 2021]. ISSN: 1980-993X. <https://www.redalyc.org/articulo.oa?id=92823615005>

- 2. Where the minister is satisfied after 1st January 1984 that utilization or re-injection of the produced gas is not appropriate or feasible in a particular field or fields, he may issue a certificate in that respect in the production of oil or gas*
- a. Specifying such terms and conditions, as he may at his discretion choose to impose, for the continued flaring of gas in the particular field or fields.*
- b. Permitting the company to continue to flare gas in the particular field or fields if the company pays such sum as the Minister may from time to time prescribe for every 28.317 standard cubic meters (SCM) of gas flared”*

Unfortunately, the undoing of the Act was the inclusion of the clause that allows the Minister to issue a certificate to oil companies who are unable to meet up with the target deadline of 1 January 1984, to continue flaring, subject to payment of minimal penalty. The result of this was that all the oil companies took up the alternative of paying the prescribed fee for gas flaring rather than undertaking the expensive gas re-injection projects.¹⁶⁵ This led to the failure of the Act as the objective of the Act simply became unachievable.

The problem with the Act was further exacerbated by the fact that the Act contained no provisions as regard payment of fines by the defaulters and the oil companies were still allowed to flare gas with the permission of the Minister of Petroleum.

¹⁶⁵Olujobi, O. J., 2020. Analysis of the Legal Framework Governing Gas Flaring in Nigeria’s Upstream Petroleum Sector and the Need for Overhauling. Social Sciences, 132.

Seeing that the deadline contained under the Act was no longer feasible, the Act was amended. In January 1985, the Associated Gas Re-injection (Continued Flaring of Gas) Regulations (AGRA Regulation) were promulgated. These regulations are made according to the powers of the Minister in Section 5 of the 1979 Act (which relates to the powers of the Minister in respect of the conditions wherein an oil company may continue the flaring of gas). Section 1 of the AGRA Regulation regulates the issuance of certificates authorizing the continuation of gas flaring in particular fields when the following conditions are met:

- (a) where more than seventy-five percent of the produced gas is effectively utilized or conserved.
- (b) where the produced gas contains more than fifteen percent impurities, such as N₂, H₂S, CO₂, etc. which render the gas unsuitable for industrial purposes.
- (c) where an ongoing utilization program is interrupted by equipment failure:

Provided that such failures are not considered too frequent by the Minister and that the period of anyone interruption is not more than three months.

- (d) where the ratio of the volume of gas produced per day to the distance of the field from the nearest gas line or possible utilization point is less than 50,000 SCF/KM:

Provided that the Gas to Oil ratio of the field is less than 3,500 SCF/bbl that it is not technically advisable to re-inject the gas in that field.

- (e) where the Minister, in appropriate cases as he may deem fit, orders the production of oil from a field that does not satisfy any of the conditions specified in these Regulations.

Thus, it is arguable that gas flaring is allowed under Nigerian law because the petroleum minister can legally permit the continuation of gas flaring by oil multinationals if any of the conditions are

met by oil companies.¹⁶⁶ The regulations have emphasized economic benefits rather than ending the scourge of gas flaring in Nigeria¹⁶⁷. Furthermore, Kassim-Momodu argues that “the effect of these regulations is the possible exemption of over 50% of the oil fields from the provisions of the Act.”¹⁶⁸ Also, the fines provided by the law against gas flaring are minimal (Adeniji, 2012)¹⁶⁹ and the government keeps shifting the gas flaring end date.¹⁷⁰ Consequently, gas flaring continues unabated and particularly as the sanctions do not serve as a deterrent to oil MNCs in Nigeria.¹⁷¹

- **Environmental Impact Assessment Act of 1992 (EIAA)**¹⁷²

The EIA Act was enacted after the 1992 Earth Summit to consolidate the gains of the conference particularly Principle 17 of Agenda 21¹⁷³. To be precise, the Act is geared toward regulating the operational activities of the oil companies which may have an impact on the environment either

¹⁶⁶Ekhato, E. O., 2016. Public Regulation of the Oil and Gas Industry in Nigeria: An Evaluation. *Annual Survey of International & Comparative Law*, 43-91.

¹⁶⁷Ebeku, K., 2006. Oil And the Niger Delta, People in International Law – Resource Rights, Environmental and Equity Issue. URL: www.ogel.org/article.asp?key=2057 <Accessed 02 August 2021>

¹⁶⁸Kassim-Momodu, M., 1987. Gas Re-Injection and the Nigerian Oil Industry. *Journal of Private & Property Law*, 69.

¹⁶⁹ In 2009, the Nigerian government developed the National Gas Pricing and Supply regulations, which increased gas flaring fines to US \$3.50 for every MScf of gas flared.

¹⁷⁰Emeseh, E., 2011. The Niger Delta Crisis and the Question of Access to Justice. In C. a. Obi. *Oil, and Insurgency in the Niger Delta: Managing the Complex Politics of Petro violence* (p. 55). London: Zed Books.

¹⁷¹Orji, U. J., (2014). Moving from Gas Flaring to Gas Conservation and Utilization in Nigeria: A Review of the Legal and Policy Regime. *OPEC Energy Review*, 149-183.

¹⁷² Environmental Impact Assessment Act, No. 86 (1992, As amended) LFN 2004 Available online: <https://ngfcp.dpr.gov.ng/media/1061/environmental-impact-assessment-eia-decree-no-86-1992.pdf>

¹⁷³Nwoko, C., 2013. Evaluation of Environmental Impact Assessment System in Nigeria greener *Journal of Environmental Management and Public Safety*

directly or indirectly except exempted by law¹⁷⁴. One of the defining features of the Act is that it makes it mandatory for all companies both in the public and private sector of the economy, before embarking on any project or activity, to assess the environmental effects of such a project or activity.

The EIA Act makes it an offense to embark on a project without first carrying out EIA. Upon conducting EIA, a company is required to submit the report to the National Environmental Protection Agency. Before a decision is given by the Agency, experts in the relevant area, government agencies, members of the public, and other interest groups are invited to make their comments. This participatory model has been termed a “pluralist approach to regulation” because it promotes the synergy of diverse groups (such as NGOs, ordinary members of the public, and the government) in the environmental impact assessment discourse in Nigeria¹⁷⁵. Also, under Section 25 of the EIAA, in mandatory study activities projects, EIA reports shall be published and made available to the public in selected places and any person or individual can file comments on the conclusions and recommendations of such reports.

Under Section 57, a public registry is expected to be established by the Federal Ministry of Environment containing information and records for enhanced public participation and access to justice. Furthermore, public participation in environmental assessment is pronounced in the review panel stage. Under Section 17(1)(c), comments filed by private individuals are taken into consideration in the review panel. Here, public concerns about the potential environmental impacts

¹⁷⁴Afinotan, L.A. and Ojakorotu, V., 2009 The Niger Delta Crisis: Issues, Challenges and Prospects. *African Journal of Political Science and International Relations*, 3, 191.

¹⁷⁵Oshionebo, E., 2009. *Regulating Transnational Corporations in Domestic and International Regimes: An African Case Study*. University of Toronto Press.

of a project may prompt the Federal Ministry of Environment to refer such to a review panel or mediation.¹⁷⁶ The Review Panel accentuates public participation in environmental impact assessments in Nigeria. Under Section 37(b), proceedings in the review panel stage are expected to be conducted in public “in a manner that offers the public an opportunity to participate in the assessment.”

Under Section 8 of the EIAA, an adequate period is expected to elapse wherein comments by the public are expected to be scrutinized before any proposed project is approved or authorized. Also, under Sections 9(1) – (2), the decisions reached must be in written form and made available to any interested person or group. Under Section 9(3), if no interested person or group is requested for the report, the agency can publish it in any form wherein members of the public or interested parties interested in the project shall be notified.

It is important to observe that a major drawback of the Act is a lack of enforcement. In practice, EIA Certificates are obtained long after the commencement of production activities thereby making a mockery of the intention of the EIA. Poor quality of EIA reports and weak participation of indigenous communities in EIA processes are major challenges of the Act. Most oil and gas projects in Nigeria commenced before the enactment of the Act, hence the lack of prior EIA. It has also been argued that the aforementioned provisions on public participation are not strictly adhered to in the EIA process and it is often at the discretion of the project developer¹⁷⁷. For example, the case of the Lagos State/ Huron Project which was an Independent Power Project (IPP) arrangement between the Lagos State Government (a state in Nigeria), Enron Power Nigeria Limited, and Yinka

¹⁷⁶ EIAA, sections 22(1)(b)(ii), 26(a)(ii), (27)(b).

¹⁷⁷ Ako, R., 2008. Resolving the Conflicts in Nigeria’s Oil Industry: A Critical Analysis of the Role of Public Participation. University of Kent, United Kingdom.

Folawiyo Power Limited.¹⁷⁸ The idea of the IPP was to improve the epileptic power supply in Lagos State. Enron Nigeria Limited requested that the environmental impact assessment, which is a mandatory requirement in emergency power barges projects, should be jettisoned due to the urgency of the project¹⁷⁹.

Omorogbe avers that it appears an EIA was not conducted during the project.¹⁸⁰

Also, the lack of willpower and enforcement deficiencies in Government, coupled with corruption has made it possible for oil and gas companies flaring gas to obtain EIA certificates despite the enormous environmental impacts of their activities. This Act has been presented severally before the National Assembly for amendment.¹⁸¹ The major amendments include replacing the National Environmental Protection Agency with NESREA. Also, the inclusion of local communities as part of those to be given notice in their local language is a welcome development. This makes room for transparency. This is also important because most rural communities where gas flaring occurs usually use the heat from the gas flare to dry their farm produce and staple foods, ignorant of the health implication.

¹⁷⁸¹⁷⁸ Omoregbe, Y., 2002. The Legal Framework for Public Participation in Decision-making on Mining and Energy Development in Nigeria: Giving Voices to the Voiceless. In D. Z. eds., Human Rights in Natural Resource Development: Public Participation in Sustainable Development of Mining and Energy Resource (pp. 565-77). Oxford University Press.

¹⁷⁹ Id

¹⁸⁰ Id

¹⁸¹ The Environmental Impact Assessment Act provides for the operation and maintenance of a public register which gives the public access to information on potential hazards likely to impact negatively on environmental health and safety. The Environmental Impact Assessment (Amendment) Bill was first presented to the Nigerian Senate in 2010 by Senator Grace Bent and in 2016 by Senator Clifford Ordia, and at the House of Representatives in 2017 by Hon. Samuel Ikon.

- **Flare Gas (Prevention of Waste and Pollution) Regulations 2018¹⁸²**

On the 28th of June 2017, the Federal Government of Nigeria, through the Federal Executive Council, approved the National Gas Policy¹⁸³ (Templars, 2018). The background to this policy is the government's attempt to arrest the country's gas flaring problem, especially the oil and gas producing fields in the country.

The situation becomes even more real when in 2017, the country ranked as the 6th largest gas flaring country in the world, flaring 7.6 billion cubic meters of gas in that year. Gas flaring constitutes an egregious energy waste practice in the Nigerian petroleum industry and has significant detrimental effects on the environment and the Nigerian economy.

The Policy criticized the gas flaring regime as incentivizing gas flaring overutilization as the negligible flare charge of NGN10/MsCf (which is less than 1cent per MsCf) under the current gas flaring regime provided a cheaper option for operators compared to gas commercialization. In reacting to routine gas flaring, the Policy advocates a vision of 2020 to stop flaring, A target that will be enabled by the development of flare capture projects and the enforcement of applicable sanctions.

In 2018, the President of the Federal Republic of Nigeria, in his capacity as the Minister of Petroleum Resources and reliance on section 9(1) of the Petroleum Act issued the Flare Gas

¹⁸²Flare Gas (Prevention of Waste and Pollution) Regulation 2018. Available online:

<https://ngfcp.dpr.gov.ng/media/1120/flare-gas-prevention-of-waste-and-pollution-regulations-2018-gazette-cleaner-copy-1.pdf>

¹⁸³Templars LLP., 2018. Flare Gas (Prevention of waste and pollution) Regulations, 2018 <https://www.templars-law.com/flare-gas-prevention-waste-pollution-regulations-2018/>

(Prevention of Waste and Pollution) Regulations of 2018, being part of the pursuits of the objectives of the National Gas Policy.

The Regulations focus on the reduction of the environmental and social impacts of gas flaring, preventing waste of natural gas resources, and creating social and economic benefits from gas flare capture. The Regulations aim to incentivize the commercialization of flare gas because of the zero-royalty regime but disincentivize continued gas flaring through the imposition of a new flaring fee regime.¹⁸⁴ The Regulations also underpin the implementation of the NGFCP, especially the permit bidding process. If properly implemented and enforced, this piece of subsidiary legislation will erase the historical narrative of Nigeria's associated gas wastage.

Section 3 of the Regulation provides that the Minister may authorize a "Qualified Applicant" selected further to a bid process to take flare gas on behalf of the Federal Government. Sub-section 2 further provides that a Producer may apply to the Minister to utilize Flare Gas for commercialization after satisfying some conditions, one of which is that such application must be made by the producer on behalf of a midstream subsidiary corporate entity. In other words, a producer (which would most likely be an upstream company) must incorporate a midstream company to enable it to apply to utilize flare gas for commercialization from its exploration and production activities.

However, the regulation creates a lacuna here, as there are no further provisions on the application process after a mid-stream entity has been incorporated. After incorporation of the mid-stream entity, does such an entity apply and go through the same bid process as other third-party investors

¹⁸⁴ Notwithstanding the fact that the production of flare gas is borne out of the E&P efforts of an upstream concessionaire, an upstream producer who intends to commercialize the flare gas may only undertake this through its midstream subsidiary (existing or prospective) or under the aegis of an approved flare-out project.

or is there another application regime to be followed? The regulations do not provide these details and hence the lacuna. This is a minor omission and can easily be addressed by releasing further guidelines on the application process for Permit Holders and Producers alike. Another condition that must be satisfied by a producer applying to utilize flare gas is that the producer must show that such application will not affect any flare gas volume that is being offered in a bid process conducted by the Federal Government or assigned to a Permit Holder.

Reg. 3(3) goes on to provide that a Producer is free to utilize associated gas for its purposes provided that such utilization shall not reduce the flare gas volume that is subject to a bid processor has been assigned to a permit holder. This provision implies that it infringes on the rights of operators of OMLs and Marginal Fields to associated gas produced from the oil wells. As a holder of an OML or Marginal Field Operator, one should be able to utilize all gas produced if it has not been directed to the flare site. Perhaps this provision is targeted at flare gas alone and not associated gas.

However, if the regulation has been correctly drafted, it creates a problem. The purpose of this provision is to protect the Permit Holder who has acquired an interest in a specific volume of flare gas after acquiring permits and signing the necessary contractual documentation. It is possible that in the future a producer may want to utilize associated gas, which he/she is entitled to as the holder of an OML or Marginal Field Operator. Such utilization of associated gas could reduce the amount of flare gas volume a Permit Holder is entitled to, especially if the associated gas being utilized by the producer was previously being diverted to a flare site for flaring. If such a scenario becomes a reality, how can it be resolved? These are the issues that the government and regulatory authorities must closely look at to come up with further guidelines to address this issue.

Reg. 14 of the Regulation also refers to another avenue where a producer may commercialize flare gas under a “Producer’s Approved Flare Out Project”. This provision seems to create a different platform where a producer can commercialize flare gas different from the one provided for under Reg. 3(2) of the Regulation. Thus, a producer seeking to utilize flare gas for commercial purposes has two options to pursue: such producer can apply to the Minister under Reg. 3(2) of this Regulation or can pursue the option of undertaking a Producer’s Approved Flare Out Project. This Project is intended to be commenced by the Producer, which approval is subject to certain criteria by the Department of Petroleum Resources. This development permits the bidders to choose which flare site out of the 178 flare sites in the country to bid for, the gas price, the end market or gas product and the technology to be employed.

Section 8 of the Regulation provides for a “Permit to Access Flare Gas” which is issued on an exclusive basis by the Minister. The Permit authorizes a Permit Holder to take flare gas from one or more flare sites as designated on the Permit on behalf of the Federal Government to utilize or dispose of it in any manner authorized by the Federal Government. The Permit specifies the amount/volume of flare gas that the permit holder is entitled to. Furthermore, subsection 3 provides that a Permit to Access Flare Gas will only be issued to a Nigerian Company that is not a Producer. This means that holders of oil mining leases and marginal fields are not eligible to access or utilize flare gas. The result of this provision is that it creates a new class of participants in the oil and gas industry and confirms the Federal Government’s intention to treat gas as a separate commodity from crude oil. In addition to the issuance of the permits, the Regulation also provides for the validity and revocation of permits if certain terms and conditions are not satisfied.

Section 12 of the Regulation in clear terms prohibits the routine flaring of gas by producers or permit holders unless according to a certificate issued by the Minister further to the provisions of

the Associated Gas Re-Injection Act. Section 12 also provides that there shall be no gas flaring from any Greenfield project (i.e., projects where no oil & gas production has commenced).

Interestingly, the Regulations provide for revocation of certificate for continued flaring and permit to access gas flare. The Minister reserves the right to revoke any issued Gas Flare Certificate for failure by the Producer to comply with the Regulations. In addition, Permit to Access Gas Flare can be withdrawn under certain circumstances. These include situations where it is determined that the Permit Holder had obtained the Permit based on inaccurate information or declared bankrupt or where the Gas Supply Agreement to be signed between the FG and the Permit Holder is terminated under its terms.

The Regulations also established a regime for payment for gas flaring. In keeping with the “Polluter pays principle”, producers who produce 10,000 barrels of oil or more per day will be liable to the Federal Government for a gas flare payment of \$2.00(N613)/28.317 standard cubic meters (one thousand cubic feet) of gas flared within any OML or designated marginal field. Where production is less than 10,000 barrels, the gas flare payment is \$0.50 28.317 standard cubic meters. These new gas flare payments represent a significant increase on the previous gas flare payment of N10/Mscf. The Federal Government hopes to de-incentivize the practice of gas flaring through the imposition of significantly higher payments. It is expected that this will be a veritable tool to not only disincentivize gas flaring but further ensure a significantly improved rating of Nigeria when compared to the world’s top gas flaring countries.

Another important aspect of the Regulations is the penalties put in place. The Regulations stipulate a penalty of N50,000 or an imprisonment term of not more than six months where an authorized agent of a Producer supplies inaccurate or incomplete Flare Gas Data to the Department of Petroleum Resources. The Regulations also impose an additional daily penalty of \$2.50 per 1,000

SCF of gas flared or vented within the OML, where a Producer fails to meet the following requirements:

- (a) provide Flare Gas Data
- (b) supply accurate complete Flare Gas Data
- (c) provide a Qualified Applicant with access to any flare site
- (d) provide a Permit Holder with access to any flare site
- (e) prepare, maintain, or submit the logs or records, or reports as required in the Regulations
- (f) install metering equipment within the time required to do so by the DPR
- (g) agree to enter into a Connection Agreement with a Permit Holder.

The Regulations have been issued to govern and implement the Nigeria Gas Flare Commercialization Programme (NGFCP), which is aimed at harnessing Nigeria's flare gas for sustainable value and wealth creation. According to the Group Managing Director of the Nigerian National Petroleum Corporation (NNPC), about 7% of Nigeria's gas is currently being flared at 178 sites. Given the mandatory payments imposed by the Regulations, there is a strong incentive for Producers to comply and significantly reduce the amount of gas flared. There is also the risk that continuing non-compliance can result in the suspension of operations or termination of the mining license of a Producer.

However, there are some concerns as to whether Government can realize its desired objectives, given the claim by some Producers that a significant amount of the gas currently being flared is due to safety reasons, which the Regulations allow. There are also concerns regarding implementation. Most of these regulations on gas commercialization are still a mirage in the

Nigerian oil industry owing to the lack of implementation. As of February 2021, the Speaker of the Federal House of Representatives, Mr. Femi Gbajabiamila, was still saying that the government is working on ensuring strict compliance with the 2018 flare gas prevention of waste and pollution regulations and implementation of the Nigeria Gas Flare Commercialization Programme.

- **The National Environmental Standard Regulation Enforcement Agency (Establishment) Act (NESREA) 2007¹⁸⁵**

The objectives of this Act include the protection and development of the environment, the protection of its biodiversity, and facilitating the sustainability of its extractive resources. In carrying out this objective, Sections 7 and 8 of the Act set up mobile courts for the speedy trial of those that violate its provisions. Unfortunately, a fundamental problem of the Act was that it excluded oil companies from their operations. Another shortcoming of the Act was that it restricted the penalties for violations of its rules to only penal sanctions and therefore made no room for civil remedies for victims of environmental laws infringements.

Under the Act, oil companies are also excluded from environmental audits and from establishing a repository for the implementation of mechanisms on environmental standards. It is unclear what the reason for this action is. To be precise, the exclusion of oil and gas companies' environmental degradation and pollution from the scope of the agency appears to be a serious legislative setback in combating gas flaring in Nigeria's mid-stream and upstream petroleum sector.

¹⁸⁵National Environmental Standards and Regulation Enforcement Agency (NESREA) Act 2007. Available online: <http://lawsofnigeria.placng.org/laws/nesrea.pdf> The Act annulled the Federal Environmental Protection Agency Act (FEPA), 1988

It is however important to note that the Act made provision for combating gas flaring by oil companies by providing for the sanction of incarceration, no more than ten (10) for individuals in companies responsible for gas flaring. It is however submitted that this sanction is inadequate considering the damaging effects of gas flaring in Nigeria.

Section 20(4)(5) of the Act empowers the Minister of Petroleum to combat gas flaring. In performing his duties, the Minister may award a special license to flare for a short period. Failure to conform to the Act attracts punishment, not above the sum of N500,000,000.00. This penalty sum is expected to be very much effective, compared to the penalty sums of N50,000 or N500,000 in other laws on gas flaring.

Also, Section 27(2) of the Act prohibits the release of deleterious substances into the air, land, and water in Nigeria with a fine not above N100,000 or one-year incarceration if committed by a legal entity upon conviction, and the agency can impose a supplementary fine of N50,000 on defaulters for each day that the infringement continues. These penalties appear too meager to combat the environmental degradation in the sector.

An additional remedy such as restoration should be added to the remedies to discourage environmental abuses and gas flaring by oil companies.

The Bills

Aside from the current laws that regulate gas flaring in the country, some bills speak to gas flaring in Nigeria. For the sake of this paper, the Gas Flaring (Prohibition and Punishment) Bill 2017 will be briefly considered, while the new Petroleum Industry Act will be examined in comprehensive detail.

- **Gas Flaring (Prohibition and Punishment) Bill 2017**

The focus of the bill is to abolish the flaring of gas by 1 January 2030. The Gas Flaring (Prohibition and Punishment) contains provisions like those of the PIB and they both are after the same objective in the context of gas flaring. The Bill is being enacted with wider participation from stakeholders. The Bill also provides a legal framework for the National Gas Flare Commercialization program.

The bill consists of 22 sections and includes sections on sanctions for inaccurate data collation and submission by the lessee, gas flaring fee, powers of the minister to make regulations, as well as the repeal of the Associated Gas Re-injection Act 2004¹⁸⁶ The bill also seeks to ensure that natural gas shall not be flared or vented in any oil and gas production operation, block or field, onshore or onshore, or gas facility which shall commence operations after the commencement of the Act¹⁸⁷ (Umoru, 2019).

Also, the Bill provides incentives for gas reinjection and penalties for flaring. However, the weakness of the Bill is the lack of clarity of the perimeter for the tax incentives which leaves room for ambiguous interpretations.

2.2 An Analysis of The Petroleum Industry Act 2021¹⁸⁸

Oil and gas account for about 10% of Nigeria's entire Gross Domestic Product (GDP), with Nigeria possessing an estimated crude oil reserve of 37 billion reserves and another 200 trillion cubic feet of natural gas. Still, the path to reforms has never been smooth for the all-important industry. The modern reforms of Nigeria's Oil and Gas Industry can be traced back to the Oil and Gas Sector

¹⁸⁶Declan H., 2016. <http://legalempereors.blogspot.com/2016/11/what-gas-flaring-prohibition-bill-will.html>

¹⁸⁷ Umoru H., 2019. <https://www.vanguardngr.com/2019/04/senate-passes-bill-prohibiting-gas-flaring/>

¹⁸⁸ Petroleum Industry Act 2021. Available online: <http://www.petroleumindustrybill.com/wp-content/uploads/2021/09/Official-Gazette-of-the-Petroleum-Industry-Act-2021.pdf>

Reform Implementation Committee of the Olusegun Obasanjo Administration (OGIC), which was inaugurated on April 24, 2000. At the end of its deliberations, the Oil and Gas Sector Reform Implementation Committee (OGIC) recommended the creation of a national oil and gas policy and the need to separate commercial institutions in the oil and gas sector from the regulatory and policy-making institutions in Nigeria, among many other salient provisions.

However, due to time constraints, the Olusegun Obasanjo administration was not able to follow through on the recommendations of the OGIC after its tenure elapsed on May 29, 2007. Upon arrival to the office on May 29, 2007, the Umaru Musa Yar'adua presidency announced a broad institutional reform of existing Nigeria's oil and gas policy. This proposed framework was based on the recommendations of Olusegun Obasanjo's OGIC committee.

On September 7, 2007, the Umaru Musa Yar'Adua administration appointed Dr. Rilwanu Lukman to chair a reconstituted OGIC with a mandate to transform the broad provisions in the NOGP into functional institutional structures that can facilitate the propelling of the national economy to a GDP level comparable to the top 20 largest worldwide economies by 2020. However, due to the collapse of that administration because of President Umaru Musa Yar'adua's demise, the administration was not able to follow through on its proposals for Nigeria's oil and gas industry.

In July 2012, the Goodluck Ebele Jonathan administration presented a new version of the Petroleum Industry Bill as prepared by the OGIC committee to the National Assembly for consideration and eventual enactment. However, while there was a passage of the bill in 2015 at the level of the House of Representatives of the 7th National Assembly, the bill failed to pass through the Senate of that same assembly, up until the tenure of the administration ended in May

2015. It was often said that naked ambition, machinations of power, and overt self-interest all prevented the Petroleum Industry Bill (PIB) from being successful at the 7th Assembly.

In 2015, the Muhammadu Buhari administration proposed passing the Petroleum Industry Bill (PIB) in four separate bills: Petroleum Industry Governance Bill; Fiscal Regime Bill; Upstream and Midstream Administration Bill; Petroleum Host Communities Bill.

Internally, the administration prioritized the safe passage of the Petroleum Industry Governance Bill because it addressed core challenges facing the oil and gas sector, like the establishment of the Nigerian Petroleum Regulatory Commission, an independent regulatory commission that subsumed the current functions of the Department of Petroleum Resources (DPR) and the Petroleum Products Pricing Regulatory Agency (PPPRA). The PIGB also proposed the unbundling of the Nigerian National Petroleum Corporation (NNPC) into two splinter limited liability companies with interests in the joint venture assets of the upstream sector and the production sharing contract assets. The overall objective of the PIGB was to promote transparent and effective accountability in the oil sector, concerning the new institutions created.

The PIGB was passed by the Nigerian Senate in May 2017 and the House of Representatives passed the same bill into law on January 25, 2018. However, President Muhammadu Buhari failed to assent to the bill when it was presented before him in August 2018, citing constitutional and legal reasons, one of which was the 10% of profits that was proposed to be retained by the Petroleum Regulatory Commission, which the president cited as being too much and to the detriment of the revenue of federal, states and local governments in Nigeria.

On July 1, 2021, the House of Representatives passed the Petroleum Industry Bill into law after President Muhammadu Buhari presented a more comprehensive Petroleum Industry Bill to the

National Assembly in September 2021. The Nigerian Senate passed the Petroleum Industry Bill on July 2, 2021, and President Muhammadu Buhari signed the Petroleum Industry Bill into law on August 16, 2021.

2.2.1 A Review of the Important Provisions in the Petroleum Industry Act (2021)

The explanatory memorandum of the Petroleum Industry Act (2021) states that the Act provides a legal, governance, regulatory, and fiscal framework for the Nigerian petroleum industry and the development of host communities.

The Act consists of **five chapters, 319 sections, and eight schedules**. **Chapter one** of the Act maps out the governance of Nigeria’s petroleum industry and the regulatory institutions tasked with superintending the affairs of petroleum in Nigeria. **Part one of chapter one** vests petroleum in the Nigerian state while **part two of chapter one** codifies the powers of Nigeria’s Minister of Petroleum. **Part three of chapter one** establishes the objectives, functions, duties, and powers of the “**Nigerian Upstream Regulatory Commission**” while **part four of chapter one** establishes the accompanying “**Nigerian Midstream and Downstream Petroleum Regulatory Authority**”. **Part five of chapter one** establishes the makeup of the “**Nigerian National Petroleum Company Limited**”. **Chapter two** of the Act deals with the ways and means of managing and administering petroleum resources in Nigeria.

Part one of chapter two highlights the objectives and management of petroleum resources in Nigeria while **part two of chapter two** details the legal administration of upstream petroleum operations in Nigeria, especially as they affect the environment. This part outlines the laws guiding the creation of a “national grid system”, the granting of a petroleum exploration license, the bidding and award process of field rounds, and many other related administrative exercises.

Part three of chapter two enshrines the general administration of midstream and downstream petroleum operations in Nigeria. This part busies itself with matters relating to license applications, licensing regulations, compensation for acquisition of land, and other related matters. **Part four of chapter two** deals with the administration of midstream and downstream gas operations while **part five of chapter two** is about the administration of midstream and downstream petroleum liquids operations in Nigeria. **Part six and seven of chapter two** contain provisions about all the other matters related to midstream and downstream operations in Nigeria and the common provisions for upstream, midstream, and downstream petroleum operations in Nigeria.

Chapter three of the Act provides a legal and governance framework for the development of host communities. The objectives and regulations in this chapter speak directly to the development of oil-producing communities in Nigeria. **Chapter four** of the Act addresses the fiscal framework of Nigeria's petroleum industry. **Part one of chapter four** contains the objectives and general administration of the fiscal framework of the petroleum industry. **Part two of chapter four** stipulates how hydrocarbon tax should be administered while **part three of chapter four** legally delineates how chargeable tax should be ascertained. **Part four of chapter four** speaks to the ascertainment of chargeable profits and consolidation for tax purposes while **part five of chapter five** addresses the chargeable persons.

Part six of chapter four gives a legal description of the applicability, accounts, and particulars of entities who have tax liability while **part seven** addresses the appeals of tax liability. **Parts eight, nine, and ten** contain provisions about the collection, recovery, and repayment of tax, the offenses and penalties for tax-related crimes, and the application of companies' income tax to petroleum operations, respectively. **Part eleven of chapter four** contains general provisions.

Chapter five of the Act contains miscellaneous provisions, including the processes for commencement of legal proceedings, the filing of a pre-action notice, the processes for a transfer of assets, and liability to the Nigerian Upstream Regulatory Commission, among a handful of other salient provisions.

2.2.2. Analysis of the Consequential Provisions in The Petroleum Industry Act (2021)

2.2.2.1. Chapter 1: Vesting of Oil Interests in The Nigerian State

Section 1, Part one, Chapter one of the Act vests the property and ownership of petroleum within Nigeria and its territorial waters, continental shelf, and exclusive economic zone in the Government of the Federation of Nigeria.

A. Minister Of Petroleum

Under **Section 3(1)** of the Petroleum Industry Act (2021), Nigeria's Minister of Petroleum has the power to formulate, monitor, and administer government policy in the petroleum industry; supervise the affairs and operations of the petroleum industry in Nigeria; report developments in the petroleum industry to the government; represent Nigeria at international organizations on petroleum matters; promote an enabling environment for investment in the Nigerian petroleum industry and negotiate treaties or other international agreements on petroleum on behalf of the Government of the Federation of Nigeria.

The minister also has to grant, revoke and assign interests in the petroleum prospecting licenses and petroleum mining leases subject to a recommendation by the Nigerian Upstream Regulatory Commission and through the processes established in the Act; delegate in writing to the Chief Executive of the Nigerian Upstream Regulatory Commission any power the Act confers on the

Minister; approve the regulatory fees of the Nigerian Upstream Regulatory Commission and Nigerian Midstream and Downstream Petroleum Regulatory Authority and direct the suspension of petroleum operations in any area in Nigeria in the case of a threat to life or violation of the Act.

Other powers of the Minister of Petroleum as granted to him by **Section 3 (2)** of the Act includes the fact that he can order a cutback of crude oil or condensate production in Nigeria in the context of international oil pricing agreements supported by Nigeria.

The Minister can also prevent petroleum or petroleum products from being marketed in any part of Nigeria in a national emergency and he has the power to give general policy directives to the Nigerian Upstream Regulatory Commission and the Nigerian Midstream and Downstream Petroleum Regulatory Authority. **Section 3 (5)** of the Act provides that any general policy directive that the Minister issues must be published under the Federal Government Gazette.

B. The Nigerian Upstream Regulatory Commission (“The Commission”)

Section 4 - 28 of the Act clearly outlines the roles, functions, powers, administrative composition, and operational makeup of the Nigerian Upstream Regulatory Commission ("The Commission"). **Section 4(1)** of the Petroleum Industry Act (2021) establishes the “Nigerian Upstream Petroleum Regulatory Commission” which shall be a body corporate with perpetual succession and a common seal.

The Commission shall have the power to acquire, hold and dispose of property and to sue and be sued in its name. The Commission shall be responsible for the technical and commercial regulation of upstream petroleum operations in Nigeria. **Section 6** of the Act provides that the objectives of the Commission include regulating the technical, operational, and commercial upstream petroleum

operations in Nigeria; ensuring compliance with all applicable laws and regulations governing upstream petroleum operations in Nigeria; ensuring that upstream operations are carried out in a manner to minimize waste and achieve optimal government revenues; promoting healthy, safe, efficient and effective conduct of upstream operations in an environmentally safe manner and ensuring the implementation of the technical standards and practices applicable to the upstream petroleum sector.

The Commission has the duty of implementing government policies for upstream petroleum operations in Nigeria as directed by the Minister of Petroleum; promoting an enabling environment for investment in upstream petroleum operations in Nigeria; ensuring strict implementation of environmental laws that guide upstream petroleum operations in Nigeria; ensure the implementation of national policies that guide upstream operations and ensure the implementation of other policies that are consistent with the provisions of the Act.

C. The Technical Regulatory Functions of The Nigerian Upstream Regulatory Commission

Section 7 of the Act outlines the technical regulatory functions of the Commission. The technical regulatory functions of the Nigerian Upstream Regulatory Commission include: enforcing and implementing laws that relate to upstream oil operations; ensuring compliance with national and international upstream petroleum operations; monitoring and regulating safety and environmental standards relating to upstream petroleum operations, which includes the management of petroleum reserves, installations, and the development and production activities within the onshore, frontier, shallow water and deep offshore acreages of Nigeria.

Other technical regulatory functions of the Nigerian Upstream Regulatory Commission include administering, monitoring, and enforcing compliance with the terms and conditions of leases and

licenses granted to a company carrying out upstream oil operations; setting and enforcing regulations for the construction of plants and facilities to be used in the upstream petroleum operations; keeping all the relevant public registers of licenses, leases, beneficial ownership and awards of upstream petroleum operations in Nigeria; carrying out tests and investigations to monitor the activities of upstream petroleum operation licensees and establishing and enforcing standards relating to upstream oil operations.

The Nigerian Upstream Regulatory Commission also has technical regulatory functions to undertake an evaluation and management of national reserves; maintain a Nigerian petroleum industry data bank; require licenses, leases, and permit holders to provide and publish information relating to their operations in line with the provisions of the Act and the National Data Repository Regulation of 2020; supervise and ensure accurate certification of the equipment used for metering upstream petroleum operations and publish reports and statistics on upstream oil operations in Nigeria.

The Nigerian Upstream Regulatory Commission must advise the Minister on fiscal, operational, technical, and related matters affecting upstream oil operations in Nigeria; issue permits and other authorizations necessary under an upstream license or lease; establish special laboratories to provide data storage, testing, quality assurance and certification for upstream petroleum operations; perform technical evaluation of submissions made to the Commission by licensees, and permit holders in the upstream oil industry and keep records, data, and reports obtained from upstream oil operations.

The Nigerian Upstream Regulatory Commission must manage and administer data regarding unallocated acreage; conduct bidding rounds for the award of petroleum prospecting licenses and

petroleum mining leases; provide assistance for companies operating in the upstream petroleum industry where the companies ask for it and the commission deems it fit to assist; approve field development plans for upstream petroleum operations and monitor its execution and determine the payment of royalties and all the other charges for upstream operations in Nigeria.

The Nigerian Upstream Regulatory Commission also has the technical duty to compute and ensure the payment of royalties, fees, and other charges for upstream petroleum operations under the Act or any other regulation; establish parameters and codes of conduct for licensees, lessees, and permit holders in the upstream petroleum operations; monitor the financial viability of licensees, lessees and permit holders in the upstream petroleum operations and develop, maintain and publish a database of upstream petroleum operations.

D. The Commercial Regulatory Functions Of The Nigerian Upstream Regulatory Commission (“The Commission”)

Section 8 of the Act outlines the commercial regulatory functions of the Commission. The Nigerian Upstream Regulatory Commission has commercial regulatory functions to review and approve the commercial aspects of field development plans in the upstream petroleum operations; develop cost studies and benchmarks for the evaluation of upstream petroleum operations and allocate petroleum production quotas in conjunction with NNPC Limited. **Section 8 (d)** of the Act also grants the Commission powers to be in charge in a case where fixed vessels provide fully integrated upstream and midstream petroleum operations.

E. The Functions of The Nigerian Upstream Regulatory Commission ("The Commission") Concerning Frontier Basins

Section 9 of the Act lists out the functions of the Commission concerning frontier basins. These functions include promoting the exploration of frontier basins in Nigeria; developing exploration strategies for the exploration of unassigned frontier acreages in Nigeria; identifying opportunities and increasing information about the petroleum resources base in frontier basins in Nigeria; undertaking studies, analyzing, and evaluating unassigned frontier basins in Nigeria.

Section 9 (4) of the Act states that The Commission shall maintain a "**Frontier Exploration Fund**" which shall be **30% of NNPC Limited's profit oil and profit gas in the production sharing, profit sharing, and risk service contracts.** **Section 9 (5)** of the Act provides that the NNPC Limited shall transfer the 30% of profit oil and gas under subsection 4 of the Act to the "Frontier Exploration Fund" escrow account dedicated for the development of frontier acreages and utilize the funds to carry out exploration and development activities in the frontier acreages, **subject to appropriation by the National Assembly.**

Section 10 of the Act outlines the general powers of The Commission. They include; enforcing the provisions of any regulation that concerns upstream petroleum operations in Nigeria; sealing up premises engaging in upstream petroleum operations in contravention of the Act; ensuring compliance with nuclear safety and radiation, in line with the Nuclear Safety and Radiation Act; requires lessees, licensees and permit holders to public specific information about upstream oil operations and issuing guidelines following the Act as they matter to upstream oil operations. Other powers of The Commission include recommending to the Minister the revocation or suspension of licenses or leases following the Act; possessing access to the right of way of offices and installations where data is stored or upstream activities are carried out, to inspect the facility.

The Commission also has the power to impose special terms on a petroleum prospecting license, petroleum exploration license, or any petroleum mining lease at the grant of a renewal of the license or lease.

F. The Governing Board of The Nigerian Upstream Regulatory Commission ("The Board Of The Commission")

Section 11 of the Act provides that there is established a Governing Board responsible for the general administration of the Commission. **Section 11 (2)** of the Act provides that the board shall consist of: one non-executive chairman, two non-executive commissioners, the chief executive of the Commission, two other executive commissioners who are responsible for finance and accounts and exploration and acreage, one representative of the Nigerian Midstream and Downstream Petroleum Regulatory Authority not below the rank of Director, one representative of the Ministry of Petroleum not below the rank of Director, one representative of the Ministry of Finance not below the rank of Director.

Section 11 (3) - (7) stipulates the terms of appointment, qualification, tenure, and mode of delegating powers required of members on the board, including the fact that all appointments to the board shall be made by the President subject to confirmation by the Senate, except for the ex-officio members on the board.

Section 12 of the Act describes the functions of the board, including the fact that the board shall be responsible for the formulation of policy, supervision, and giving strategic direction to the Commission. **Section 13 - 24** of the Act outlines the critical operational workings of the Board of the Commission and the Commission. **Section 24 (1)** of the Act provides that the board of the Commission shall maintain a fund known as the "**Commission fund**" into which all the money

accruing to the Commission shall be paid and all expenditures of the Commission shall be subject to appropriation by the National Assembly. The fund of the Commission shall be used to meet approved budgetary obligations of the Commission.

Section 26 (1) of the Act expressly gives the Commission special powers to investigate any business relating to upstream petroleum operations in Nigeria where it believes that illegal upstream operations are going on; conduct surveillance on crude oil and natural gas installations where it believes that illegal upstream petroleum activities are going on; enter any upstream facility where the crude oil or natural gas is produced or treated and enter any premises at a reasonable time where data records of upstream petroleum operations are stored.

Section 27 of the Act provides that the special powers of the Commission shall be performed by the **Special Investigation Unit of the Commission**, or anyone authorized by the Commission.

G. The Nigerian Midstream and Downstream Petroleum Regulatory Authority

Section 29 (1) establishes the Nigerian Midstream and Downstream Petroleum Regulatory Authority. The Authority shall be a body corporate with perpetual succession and a common seal.

Section 29 (2) of the Act states that the Authority shall have the power to acquire, hold and dispose of property, and sue and be sued in its name.

Section 29 (3) of the Act states that the Authority shall be responsible for the **technical and commercial regulation** of the midstream and downstream petroleum operations in the petroleum industry. **Section 31 of the Act** states that one of the key objectives of the Authority shall be to regulate midstream and downstream operations, including technical, operational, and commercial

activities; ensure safety in the midstream and downstream petroleum operations, and promote a competitive market for midstream and downstream petroleum operations.

Section 32 of the Act states that the functions of the Authority shall be to regulate and monitor technical and commercial operations in the midstream and downstream petroleum operations in Nigeria. **Section 32(b)** details all the functions of the Authority, including the fact that the Authority shall provide a pricing and tariff framework for all processing, transportation, and storage of crude oil and natural gas in Nigeria.

Section 34 of the Act establishes a Governing Board for the Authority, which consists of nine members, as enshrined in **Section 34 (2)**. **Section 47 (1)** of the Act provides that the Authority shall maintain a fund, referred to as the “Authority Fund” into which all the funds of the Commission shall be paid. The Authority Fund shall be applied to meet budgetary obligations of the Authority, as enshrined in **Section 47 (3)**.

Section 49 (1) of the Act states that the Authority shall have special powers to inspect and examine any business or activity relating to midstream or downstream petroleum operations under the Act, especially where it believes that illegal midstream or downstream petroleum operations are going on.

Section 52 (1) of the Act provides for a “**Midstream and Downstream Gas Infrastructure Fund**”, chaired by the Minister of Petroleum, which shall acquire, hold, dispose of property, and sue and be sued in its name. **Section 52 (7)** of the Act provides that the source of the Midstream and Downstream Infrastructure Fund shall be 0.5% of the wholesale price of petroleum products and natural gas sold in Nigeria, which shall be collected from customers.

Per Section 52 (7) (d) of the Act, money received from gas flaring penalties shall be under **Section 104 (4)** of the Act and the money shall be used for environmental remediation and the benefit of the host communities that the settlor has violated.

H. Part 5 — Nigerian National Petroleum Corporation Limited

Part five of the Act introduces the Nigerian National Petroleum Corporation Limited ("NNPC Limited"). **Section 53 (1)** of the Act provides that the Minister shall within six months of the commencement of the Act cause to be incorporated under the Companies and Allied Matters Act a limited liability company which shall be called Nigerian National Petroleum Company Limited.

Section 53 (3) of the Act provides that ownership of all shares in NNPC Limited shall be vested in the Government at incorporation and held by the Ministry of Finance and the Ministry of Power equally, on behalf of the Federation.

According to Section 53 (5), shares of the NNPC Limited held by the Government are not transferable under any means possible unless approved by the Government and endorsed by the National Economic Council on behalf of the Federation. By **Section 53 (6) of the Act**, any sale or transfer of shares of NNPC Limited can only be through an open, transparent, and competitive process, and the shares to be sold by the Ministry of Finance and the Ministry of Petroleum shall be of equal proportion.

Section 53 (7) of the Act states that NNPC Limited shall conduct its affairs on a commercial basis and efficiently and profitably without using government funds. They must also declare dividends as a public company and retain 20% of their earnings to grow the business. **Section 53 (8)** of the Act states that where NNPC Limited has a participating interest or 100% license in a lease or

license, NNPC limited shall pay its requirement of all fees relating to the lease or license to the Government as a company. **Section 54 (1)** of the Act states that the Minister of Petroleum shall determine the assets that should be transferred to NNPC Limited within 18 months (18) of the commencement of the Act and shall transfer them within that time.

Section 54 (3) provides that NNPC shall cease to exist when all the assets that were not transferred to NNPC Limited have been extinguished or have been transferred to the Government. **Section 58** of the Act provides that there shall be a Board for NNPC Limited which shall perform its duties according to the Petroleum Industry Act, Companies and Allied Matters Act, and the Articles of Association of the company.

According to **section 59 (2)** of the Act, the board of the NNPC shall be appointed by the President and they shall consist of 11 members, including a non-executive Chairman and the Chief Executive of NNPC Limited. Under **section 63 (1)**, the board of the NNPC shall be responsible for the strategic guidance and determining the business structure of NNPC Limited. **Section 64** of the Act states that one of the key objectives of NNPC Limited shall be to carry out petroleum operations on a commercial basis, comparable to that of private companies operating similar businesses, including an exemption to the Public Procurement Act, the Fiscal Responsibility Act, and the Treasury Single Account.

Section 64 (b) of the Act states that NNPC Limited shall be vested as the concessionaire of all Production Sharing Contracts (PSC), Profit Sharing, and Risk Service Contracts as the national oil company on behalf of the Federal Government of Nigeria, in line with its competencies. The NNPC Limited is also to lift and sell royalty oil and tax oil on behalf of the Commission and the Service respectively for an agreed commercial fee, according to **Section 64 (c)** of the Act.

NNPC Limited must engage in the business of renewables and other energy investments, according to **Section 64 (h)** of the Act, and it must maintain the role of NNPC under **Section 54 of the Act**, as enshrined in **Section 64 (j)** of the Act.

2.2.2.2. CHAPTER 2 — GENERAL ADMINISTRATION

Section 66 (of Chapter 2 of the Act outlines the broad objectives of the general administration of petroleum operations in Nigeria. **Section 66 (1)** of the Act states that the objectives of the General Administration in the petroleum industry shall be to promote the exploration and exploitation of petroleum resources in Nigeria for the benefit of the Nigerian people.

The objectives of the general administration in Nigeria's petroleum industry must promote the efficient, effective, and sustainable development of the petroleum industry, liberalization of the downstream Petroleum industry, and an orderly, fair, and competitive commercial environment within the petroleum industry. **Section 66 (2)** of the Act provides that the provisions in this chapter apply to the persons and activities connected to the petroleum industry in Nigeria.

2.2.2.3. CHAPTER 3—Petroleum Host Community Development (PHCD)

Chapter 3 introduces the Petroleum Host Community Development (PHCD) which has the following objectives:

- To foster sustainable prosperity within host communities.
- To provide direct social and economic benefits from petroleum operations to host communities.
- To enhance peaceful and harmonious co-existence between licensees or lessees and host communities; and

- To create a framework to support the development of host communities.
- The PHCD is expected to improve the quality of life of the host communities' population and improve accountability in the management of the host communities' development trust (HCDT or "the Trust") fund.

Some of the significant provisions of the framework of PIA for the Trust are as follows:

Section 235 of the Act requires a settlor or a group of settlors under a joint operating agreement to incorporate an HCDT. The Trust is to aid the development of the economic and social infrastructure of the communities within the petroleum-producing area. Where the HCDT is incorporated by a group of settlors under a joint operation, the operator under the agreement will be responsible for the Trust on behalf of the other parties. Section 234 of the Act requires the Commission to make regulations that will govern the implementation of the HCD. Section 240 of the PIA requires each settlor to contribute 3% of its actual operating expenditure in the upstream petroleum operations in the preceding calendar year to a fund established by the Trust. The CDT may also be funded by donations, gifts, grants, or honoraria (received to achieve its objectives) and interests accruing to the Trust's reserve fund. Section 236 pegs the timeframe within which to inaugurate the HCDT failing which the implication will be revocation of the lease or license after being informed in writing by the Commission or Authority (Section 238).

Section 257(2) of the Act foist responsibility and accountability amongst the host communities regarding petroleum assets operated in their respective communities by providing for the forfeiture of the host community's entitlement to any contribution to the extent of the cost to repair damages to the petroleum and designated facilities or disruption to production activities within the host community caused by an act of vandalism, sabotage, or civil unrest. Therefore, the amount to be

contributed by the settlor to the Trust shall exclude the computed cost of such repairs or disruption in petroleum productions. It is believed that the contribution made towards the HCDDT will help in assuaging the repercussions of gas flaring on the host communities while also arresting the incessant vandalism and unrest that usually flows from the agitations of the host communities.

2.2.2.4. CHAPTER 4: Petroleum Industry Fiscal Framework (PIFF)

It introduces the following objectives:

Fiscal Provisions:

- To establish a progressive fiscal framework that encourages investment in the Nigerian petroleum industry, balancing rewards with risk and enhancing revenues to the Federal Government (FG).
- To provide a forward-looking fiscal framework that is based on core principles of clarity, dynamism, and fiscal rules of general application.
- To establish a fiscal framework that expands the revenue base of the FG, while ensuring a fair return for investors.
- To simplify the administration of petroleum tax; and
- To promote equity and transparency in the petroleum industry fiscal regime.

The Act amends and repeals various laws that have implications for the oil and gas industry. It provides for the current Petroleum Profits Tax (PPT) to be split into two namely: Hydrocarbon Tax (HT) and Companies Income Tax (CIT). The HT, together with CIT, will apply to companies engaged in upstream petroleum operations. The fiscal and tax amendments in the PIB will apply upon:

- conversion of existing Oil Prospecting Licenses (OPLs) and Oil Mining Leases (OMLs) to Petroleum Prospecting Licenses (PPLs) and Petroleum Mining Licenses (PMLs).
- termination or expiration of unconverted licenses, and c. renewal of OMLs. Consequently, holders of OPLs and OMLs that do not convert to PMLs will continue to be taxed under the current PPT Act pending the expiration of their licenses.

Introduction of HT Regime: The Act introduces the Hydrocarbon Tax (HT), which will be chargeable on the profits of upstream petroleum companies in the onshore and shallow water.

The HT applies to crude oil, field condensates, and natural gas liquids from associated gas.

The PIA seeks to amend the sections on deductions allowed and deductions not allowed thereby canceling certain costs as allowable deductions such as bad debts, gas flare fees, penalties, etc. (Section 264). The Act also restricts the allowable deductions claimable in each accounting period for the determination of the HT payable to 65% of the gross revenues determined at the measurement points.

2.2.2.5. Chapter 5 Miscellaneous Provisions

This chapter provides generally legal proceedings, pre-action notice, savings provisions, interpretation, transfer of assets, and projects amongst others. Some highlights of this chapter are provided below:

- Legal Proceedings & Pre-Action Notice: The Act provides that the provisions of the Public Officers Protection Act (POPA) will apply concerning any suit instituted against the Commission or the Authority or any of its executives, directors, officers, or employees. In addition, all actions or claims to be brought against the foregoing persons

under the PIA must be brought within three months of the accrual of the cause of action (Section 308).

- Repeals and Consequential Amendments:

The Act provides that the provisions of the PIA are subject to the Constitution but will however prevail if found to be inconsistent with the provisions of other laws. Specifically, the Act provides for the repeal of the following laws-

- Associated Gas Re-Injection Act
- Hydrocarbon Oil Refineries Act
- Motor Spirits (Returns) Act
- Nigerian National Petroleum Corporation (Projects) Act
- Nigerian National Petroleum (NNPC) Act
- Petroleum Products Pricing Regulatory
- Agency (Establishment) Act
- Petroleum Profit Tax Act (upon the completion of the conversion process under Section 92 of the PIA)
- Deep Offshore Inland Basin Production Sharing Contract Act (upon the completion of the conversion process under Section 92 of the PIA)

Savings Provisions: The Act provides that any existing Act, subsidiary legislation or regulation, guideline directive, and Order made under any law which has been repealed or amended by the PIA will continue to subsist to the extent that it does not contravene the provisions of the PIA until it is revoked or replaced by an amendment or another subsidiary legislation.

Furthermore, any OPL or OML granted under the Petroleum Act, 1969 which is subsisting as of the effective date of the PIA will continue to subsist only subject to the fulfillment of certain terms

and conditions listed under the PIA. Hence, the Act specifically states that the following laws will remain applicable concerning the affected OPLs and OMLs until the termination or expiration of their tenures.

- Petroleum Act
- Petroleum Profit Tax Act
- Oil Pipelines Act
- Deep Offshore and Inland Basin Production Sharing Contracts Act
- Any other laws or regulations that are consistent with the principle in Section 92(6) of the PIA.

In addition, any other licenses, leases, certificates, authority, or permits which was issued by the Department of Petroleum Resources, Petroleum Products Pricing and Regulatory Agency, or Petroleum Equalization Fund, which had effect before the effective date of the PIA will continue to have effect for the remainder of its period of validity.

Transfer of Assets, Liabilities, Employees, Projects, etc.: The Act provides for the transfer of all rights, obligations, assets, and liabilities vested in the Petroleum Inspectorate and the Department of Petroleum Resources to the Commission, and for employees in these institutions to become employees of the Commission under no less favorable terms. Also, rights, obligations, assets, and liabilities held by the DPR, Petroleum Pricing and Product Regulatory Agency, and the Petroleum Equalization Fund (Management Board) will be transferred to the Authority. More so, any existing host community development project being handled by any Settlor will be transferred to a host community development trust, which will be established according to the provisions of the Act.

2.3 Gas Flaring Management Under the Petroleum Industry Act 2021 ('PIA')

An age-long concern for host communities is the continuous degradation of their environment and habitat from gas flaring associated with oil drilling. Gas flaring has been attributed to unfavorable cost-benefit outcomes to the operators in the sector that may choose to harness and monetize associated gas. The cost of processing gas for sale is generally adjudged higher than the benefits that would be derived from commercializing the processed gas. As such, associated gas is preferred to be flared or vented by operators.¹⁸⁹

The Federal Government set up policies to reduce gas flaring and improve the petroleum sector but faced slow growth. There were still gaps in the governance, infrastructure, and accountability. It became necessary to reform the entire petroleum sector in Nigeria. Better regulations, better returns on investment. The national move led to the birth of the Petroleum Industry Bill in 2000. Several attempts to pass the bill into law were unsuccessful for two decades until it was finally passed into law in August 2021 as the Petroleum Industry Act (2021).

The PIA made Provisions to Curb Gas Flaring and also compensated Host Communities. Considering the environmental impact of gas flaring, the PIA has upheld the prohibition of gas flaring in previous laws, except for a few circumstances in which there is no other reasonable option than to flare gas. As part of the efforts to manage the flaring of gas, the Commission requires upstream operators that produce natural gas to submit, within 12 months of the effective date of

¹⁸⁹KPMG, 2021, Petroleum Industry Bill (PIB) 2021 - A Game Changer, Available at [https://assets.kpmg/content/dam/kpmg/ng/pdf/tax/petroleum-industry-bill-\(pib\)-2020-%20a-game-changer.pdf](https://assets.kpmg/content/dam/kpmg/ng/pdf/tax/petroleum-industry-bill-(pib)-2020-%20a-game-changer.pdf) (Accessed on 3 January 2022)

the PIA, a natural gas flare elimination and monetization plan to the Commission. This is expected to be prepared in accordance with regulations made by the Commission under the PIA.¹⁹⁰

The PIA makes provision for the Nigeria Upstream Regulatory Commission, which will be responsible for commercial and technical regulation of upstream petroleum operations. The Upstream refers to the identification, extraction, and production of raw materials. A report¹⁹¹ by the Africa Energy Portal stated that Nigeria loses 2.5 billion dollars yearly because of severe gas flaring from 178 flare sites nationwide. To curb the continuation of this wanton waste by the elimination of natural gas flaring and venting is one of the key goals of the upstream commission.

According to Section 104(1) of the PIA, there are a few cases where gas flaring is permissible:

- in the event of a disaster
- under the terms of a Commission-issued exception.
- in accordance with existing regulations, as an acceptable safety practice.

Section 107 provides for exemptions from the provision of section 104 which penalize gas flaring.

Section 107 provides that the Commission or the Authority may grant a permit to a Licensee or Lessee to allow the flaring or venting of natural gas for a specific period -

- a) where it is required for facility start-up; or
- b) for strategic operational reasons, including testing.

The PIA imposes penalties on companies for gas flaring from upstream operations and allocates the revenue generated to be used for environmental remediation and relief of the impacted host

¹⁹⁰Section 108 of the PIA.

¹⁹¹ Udeme Akpan., (2020) Gas flaring: Nigeria loses \$2.5bn yearly., Nigerian Vanguard News February 18, 2020
<https://www.vanguardngr.com/2020/02/gas-flaring-nigeria-loses-2-5bn-yearly/>

communities. The fiscal framework of the PIA provides for penalties for gas flaring arising from midstream operations. Revenues from these penalties will accrue to the Midstream and Downstream Infrastructure Fund and will be used to finance midstream and downstream infrastructure investment. The objective is to compensate the host community for the environmental damage caused by the flaring or venting.

This is a good development; however, the penalty must be steep enough to achieve its intended purpose. If it is not, oil companies will continue to flare gas if doing so minimizes their cost more than the penalty adds to it. Under the PIA, the sole power to grant, issue, modify, cancel, or terminate all licenses, permits, and authorizations for midstream and downstream petroleum operations is vested in the Nigerian Midstream and Downstream Petroleum Regulatory Authority ('the Authority'), which means the imposition of sanctions for gas flaring in the midstream and downstream sector is solely vested in the Authority.

The income from penalties of gas flaring is now an additional fund created under the PIA for the midstream and downstream gas operations known as the Midstream and Downstream Gas Infrastructure Fund (MDGIF). The MDGIF seeks to ensure equity investments of Government-owned participating or shareholder interests in the infrastructure of midstream and downstream gas operations. Also, Section 106 of the PIA provides for the licensee to install metering equipment in every facility from which natural gas may be flared for measuring the amount of gas being flared. This is expected to track the amount of gas been flared. However, this will be inadequate to compute and regulate the amount of gas been flared on these sites.

In addition to the usual disallowable expenses, section 104(3) of the Act introduces Penalties and gas flare fees as non-deductible expenses and ineligible for cost recovery barring oil companies

from deducting the financial cost of gas flaring fees and penalties from the calculation of Company Income tax to be remitted.

The PIA like previous legislations prohibited gas flaring and made provisions to that effect but was not without its shortcomings. Some of the major shortcomings are:

- a) Failed to outrightly prohibit gas flaring, instead, it creates room for continuation of gas flaring under exceptions with discretionary granting of a license by the Minister to oil companies to continue flaring turning gas flaring into discretionary permit-granting.
- b) There is no evidence of adequate commitment to climate change and energy transition in line with the Paris Agreement.
- c) The provisions, which criminalize and penalize gas flaring, do not adequately take into consideration the state of Nigeria's gas infrastructure.
- d) There is no timeline for the elimination of gas flaring.
- e) Flaring penalties are now solely left to the Minister to determine through regulation.
- f) These provisions are too vague to suitably police gas flaring; an area equally vital to the economic/environmental state of the nation.
- g) The inclusion of provisions on environmental pollution (gas flaring) and penalties against polluters is a welcome development, however, it is a let-down that the PIA does not fully address the hitherto weak implementation of sanctions which many Nigerian regulations and statutes are victims of.

Also, while the creation of the Environmental Remediation Fund is a step in the right direction as regards remediation of communities that host gas flare sites, however, the PIA failed to adequately address the environmental concerns of the host communities as there are no effective guidelines or structure on how the funds will be applied for the remedial process.

2.4 A Brief Comparison of The Petroleum Industry Act and The Previously Existing Laws That Control The Oil And Gas Industry In Nigeria

The Petroleum Industry Act is the principal statute that beams a searchlight on the overall operation and judicious administration of the oil and gas industry in Nigeria. However, there are adjacent laws that play a tangential role in the administration of oil and gas in Nigeria. The Petroleum Industry Act repeals **10 statutes** previously in force in Nigeria. The Act also amends some other statutes that speak directly to the oil and gas industry in Nigeria while it upholds the provision of a few statutes that give solid legal backing to the oil and gas industry in Nigeria.

These are all the laws that previously affected the petroleum industry in Nigeria before the enactment of the Petroleum Industry Act (2021):

1. The Nigerian Constitution
2. The Petroleum Industry Act (2004)
3. The Land Use Act
4. The Petroleum Profits Tax Act
5. The Deep Offshore and Inland Basin Production Sharing Contracts Act
6. The Nigerian National Petroleum Corporation Act
7. The Associated Gas Re-Injection Act
8. The Environmental Impact Assessment Act
9. The Companies and Allied Matters Act

10. The Federal Inland Revenue Service (Establishment) Act
11. The Education Tax Act
12. The Niger Delta Development Commission (Establishment) Act¹⁹²
13. The Nigerian Oil and Gas Industry Content Development Act
14. The Nigerian Extractive Industries Transparency Initiative Act
15. The National Oil Spill Detection and Regulation Agency (Establishment) Act
16. The Petroleum industry act and The Oil Pipelines Act
17. The Hydrocarbon Oil Refineries Act
18. The Harmful Waste (Special Provisions) Act
19. The Petroleum Industry Act and The NNPC (projects) Act
20. The Petroleum Industry Act and The Motor Spiritual Act

The Petroleum Industry Act (2021) however maintains the relevance of significant laws like the Nigerian Constitution (1999), the Land Use Act, the Companies and Allied Matters Act (2021), the Federal Inland Revenue Service Act (2007), the Education Tax Act (2004), the Niger Delta Development Commission Act (2004) and all such other relevant statutes in Nigeria.

¹⁹² Niger Delta Development Commission Act 2000 CAP N86 LFN 2004. Available online: https://www.chr.up.ac.za/images/researchunits/bhr/files/extractive_industries_database/nigeria/laws/Niger-Delta%20Development%20Commission.pdf

2.5 Brief Critique of What Could Have Been Better in the Petroleum Industry Act (2021)

a) Reduction of Over-Regulation

There is the prospect of overregulation in the Nigerian petroleum industry with the creation of the Nigerian Upstream Petroleum Regulatory Commission ("Commission") and the Nigerian Midstream and Downstream Petroleum Regulatory Authority ("Authority").

The Act could have established only one regulatory authority in the Nigerian petroleum industry. That way, stakeholders can be certain that the era of needless bureaucratic processes is behind the Nigerian petroleum industry.

b) Increase in Allocation to The Host Communities Trust

A significant number of Nigerians believe that the 3% of operating expenses of settlors allocated to the petroleum host communities under the act is too little. This view is also strongly held by indigenes of the host communities themselves.

The Act could have earmarked 5% of each settlors operating expenses to the host communities' trust. This way, host communities will have no course to maintain any doubt about the sincerity of the government's interests for them, and their well-being.

c) Reduction In Allocation to The Frontier Exploration Fund

The 30% allocation of Commission profit oil to the frontier exploration fund is too much. While it is agreed that frontier exploration is important, 10% of the Commission profit oil would have still done a stellar job at helping Nigeria achieve the discovery of new petroleum sites.

d) Reduction in the Monopolistic Tendencies of the Provisions of the Act

Certain provisions in the Act, like **Section 109(3) and Section 317 (8)** of the Act which deal with a license to refine crude oil and to import crude oil shortfalls into the domestic market stand to benefit only well-established refiners in the petroleum industry. The Act could have been more circumspect of these provisions to avoid tilting the already lopsided nature of Nigeria's petroleum industry into the hands of a few monopolists.

CHAPTER 3

3.0. OVERVIEW OF THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE AND THE ACCOMPANYING TREATIES

3.1. Introduction

Climate Change is the defining issue of our time, and we are at a defining moment. From shifting weather patterns that threaten food production to rising sea levels that increase the risk of catastrophic flooding, the impacts of climate change are global in scope and unprecedented in scale. This situation however did not begin in recent times, it had always been a front-burner issue in the previous century, with concerned individuals, organizations, and bodies raising awareness of the degradation of the environment and the need to protect the climate. Each year, mankind injects approximately six billion tons of carbon into the atmosphere from the burning of fossil fuels (IPCC, 1992),¹⁹³ as well as a substantial (although still uncertain) amount from deforestation. Since the advent of the industrial revolution, atmospheric concentrations of carbon dioxide have risen by more than twenty-five percent, from 280 to more than 350 parts per million (ppm). Scientists estimate that if current patterns of emissions continue unchecked, the increasing concentrations of carbon dioxide, together with parallel increases in other trace gases such as methane and nitrous oxide, will cause the average global warming in the range of 0.2 to 0.50 C per decade, or 2 to 50 C (3.6 to 90 F) by the end of the century.¹⁹⁴ Such a temperature rise, more rapid than at any time in human history, could have severe effects on coastal areas, agriculture, forests, and human health.

¹⁹³ Reported that best estimate for annual global fossil fuel emissions in 1989 and 1990 is 6.0 + 0.5 billion tons of carbon.

¹⁹⁴ In 1992, the IPCC noted that the net rate of global warming is likely to be less than was predicted in 1990 because of the effects of sulfates and ozone depletion. Available online at <https://www.ipcc.ch/report/climate-change-the-ipcc-1990-and-1992-assessments/>

In response to this threat, the U.N. General Assembly established the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change (INC) in December 1990, with the mandate to negotiate a convention containing "appropriate commitments" in time for signature at the U.N. Conference on Environment and Development (UNCED) in June 1992. The INC met six times between February 1991 and May 1992 and adopted the U.N. Framework Convention on Climate Change on May 9, 1992. The Convention was opened for signature at UNCED, where it was signed by 154 states and the European Community.

Given the complexity of both negotiations, which involved more than 140 states with very different interests and ideologies, and the causes, effects, and policy implications of global warming, reaching an agreement at all in such a limited period was a considerable achievement. The final text is significantly more substantive than either the bare-bones convention advocated by some delegations or previous framework conventions dealing with transboundary air pollution¹⁹⁵ and depletion of the ozone layer.¹⁹⁶

This part of the paper will give an overview of the Convention and consider its impacts on the environment particularly its efficacy in addressing issues surrounding the reduction of greenhouse emissions, climate change, and general environmental degradation. In so doing, we will examine the accompanying treaties like the Kyoto Protocol and the Paris Agreement, which also constitute the world's response to climate change. This work will also understudy the initial and continuing responsibility of the various countries of the world to the Convention and evaluate its significance in the developing corpus of international environmental law.

¹⁹⁵ Convention on Long-Range Transboundary Air Pollution, Nov. 13, 1979, T.I.A.S. No. 10541, 18 I.L.M. 1442

¹⁹⁶ Vienna Convention for the Protection of the Ozone Layer, Mar. 22, 1985, T.I.A.S. No. 11097, 26 I.L.M. 1529

3.2. The United Nations Framework Convention on Climate Change

The United Nations Framework Convention on Climate Change (“UNFCCC” or the “Convention”) is an international environmental treaty produced at the United Nations Conference on Environment and Development (UNCED), informally known as the Earth Summit, held in Rio de Janeiro from June 3 to 14, 1992. It is one of the three Rio Conventions adopted at the Rio Earth Summit – the others being the UN Convention on Biological Diversity and the Convention to Combat Desertification. Signed in 1992 at the United Nations Conference on Environment and Development, the UNFCCC constitutes the foundational climate agreement that has provided the platform for most subsequent international climate agreements. The Convention is an international mechanism for addressing climate change and has been ratified by a broad cross-section of both developed and developing countries, including the United States. The goal of the convention is to “prevent dangerous human interference in the climate system.” Achieving this goal is controversial despite the broad international consensus behind the convention.

The Convention entered into force on 21 March 1994 and has been ratified by 197 countries. In structure and content, the UNFCCC is styled as a framework convention for the Protection of the Ozone Layer and the Convention. While the Convention does not commit states to specific limitations on greenhouse gas emissions, it recognizes climate change as a serious threat and establishes a basis for future action. First, it defines as a common long-term objective the stabilization of atmospheric concentrations of greenhouse gases "at a level that would prevent dangerous anthropogenic interference with the climate system."¹⁹⁷ Second, to guide future work, it sets forth principles relating to inter-and intra-generational equity, the needs of developing countries, precaution, cost-effectiveness, sustainable development, and the international

¹⁹⁷ Article 2 of the Convention

economy.¹⁹⁸ More importantly, it establishes a process designed to improve our information base and reduce uncertainties, encourage national planning, and produce more substantive international standards should scientific evidence continue to mount that human activities are changing the Earth's climate.

The parties announced a goal of stabilizing GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system and developed country parties agreed to adopt national policies to mitigate climate change with the “aim” of returning to their 1990 levels of anthropogenic emissions of GHGs. The UNFCCC was designed primarily to begin and support a process for future, and more detailed, agreements about how to respond to climate change.¹⁹⁹

“Multilateral treaties are now routinely developed in a process that begins with a ‘framework’ agreement, where the parties acknowledge the existence of a problem or threat, and commit to cooperative action, without undertaking substantive obligations. As knowledge and consensus grow within this framework, the agreement is supplemented by a series of protocols and amendments imposing progressively more specific and more stringent obligations on the treaty parties”²⁰⁰. Owing to the increasing scientific evidence about the risks of climate change, the need for a further negotiated agreement became necessary. This led to the UNFCCC’s birthing of both

¹⁹⁸ Article 3 of the Convention

¹⁹⁹Kuh, K. (2018). The Law of Climate Change Mitigation: An Overview. *Encyclopedia of the Anthropocene*, 505-510.

²⁰⁰David Hunter, J. S. (2011). *International Environmental Law and Policy*. New York: Foundation Press/Thomson Reuters.

the Kyoto Protocol and Paris Agreement which will be discussed in more detail in the latter part of this work.

The UNFCCC is also the name of the United Nations Secretariat charged with supporting the operation of the Convention, with offices in Haus Carstanjen, Bonn, Germany. From 2006 to 2010 the head of the secretariat was Yvo de Boer; on May 17, 2010, his successor, Christiana Figueres from Costa Rica was named. On 18 May 2016, United Nations Secretary-General, Ban Ki-moon (as he then was) appointed Patricia Espinosa of Mexico as Executive Secretary of the United Nations Framework Convention on Climate Change (UNFCCC). The Secretariat, augmented through the parallel efforts of the Intergovernmental Panel on Climate Change (IPCC)²⁰¹, aims to gain consensus through meetings and the discussion of various strategies.

- **The Annex I, Annex II, and Developing Countries**

Parties to the UNFCCC are classified as:

- i. Annex I countries – industrialized countries and economies in transition.
- ii. Annex II countries – developed countries which pay for costs of developing countries: and
- iii. Non-Annex I countries - Developing countries.

i. Annex I Countries

There are 41 Annex I countries including the European Union. These countries are classified as industrialized countries and countries in transition: Australia, Austria, Belarus, Belgium, Bulgaria, Canada, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, India, Japan, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russian Federation,

²⁰¹ To be discussed in greater details at the later part of this work.

Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, United States of America.

Annex I countries that have ratified the Protocol have committed to reducing their emission levels of greenhouse gasses to targets that are mainly set below their 1990 levels. They may do this by allocating reduced annual allowances to the major operators within their borders. These operators can only exceed their allocations if they buy emission allowances or offset their excesses through a mechanism that is agreed by all the parties to UNFCCC.

ii. Annex II Countries

Annex II countries are a sub-group of the Annex I countries. They comprise the OECD members, excluding those that were economies in transition in 1992. There are 23 Annex II countries and the European Union. Turkey was removed from the Annex II list in 2001 at its request to recognize its economy as a transition economy. These countries are classified as developed countries that pay for the costs of developing countries: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, South Korea, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States of America

iii. Developing Countries

Developing countries are not required to reduce emission levels unless developed countries supply enough funding and technology. Setting no immediate restrictions under UNFCCC serves three purposes- (a) it avoids restrictions on their development because emissions are strongly linked to industrial capacity; (b) they can sell emissions credits to nations whose operators have difficulty meeting their emissions targets, and (c) they get money and technologies for low-carbon investments from Annex II countries.

Nigeria has also been categorized into this group because of its developing status. Nigeria and all African nations are also categorized in this group. In essence, countries that produce half of the world's fossil fuel which is a major cause of global warming are not required to reduce their emissions even if it comes from gas flaring from oil mining fields.

Developing countries may volunteer to become Annex I countries when they are sufficiently developed. Some opponents of the Convention argue that the split between Annex I and developing countries is unfair and that both developing countries and developed countries need to reduce their emissions unilaterally. Some countries claim that the costs of following the Convention requirements will stress their economy. Other countries point to research, such as the Stern Review²⁰², that calculates the cost of compliance to be less than the cost of the consequences of doing nothing.

3.2.1. Prologue to the UNFCCC

In the latter half of the 1980s, as more scientists and policymakers began to see climate change as an imminent threat rather than a distant possibility, a consensus gradually developed that those states should negotiate a legally binding convention to address the problem²⁰³. Global warming is the type of collective action problem that is often thought to require international collaboration for a solution. Given the global nature of the problem, unilateral action will not provide significant benefits if others continue to pollute. Thus, states are likely to take potentially costly action to curb

²⁰²Stern, N. (2006). Stern Review on The Economics of Climate Change (pre-publication edition) - Executive Summary. London: HM Treasury.

²⁰³ See Final Documents of the Ninth Conference of Heads of State or Government of the Movement of Non-Aligned Countries, Belgrade, Sept. 4-7, 1989, reprinted in U.N. Doc. A/44/551-S-20870, Annex [hereinafter Ninth Conference of Heads of State]; Council Resolution of 21 July 1989 on the Greenhouse Effect and the Community, 1989 O.J. (C 183) 4 ("the conclusion of an international agreement on climate change is necessary").

greenhouse gas emissions only if they have some assurance that other states will take similar actions. An international agreement helps to provide that assurance, particularly if it has strong mechanisms to encourage compliance²⁰⁴.

Initially, two legal models were suggested. One approach, advocated by Canada, was to develop a general framework agreement on the "law of the atmosphere,"²⁰⁵ and then address specific atmospheric issues such as global warming, acid rain, and ozone depletion in subsidiary protocols²⁰⁶. The rationale for this approach was that it recognized the interdependence of various global atmospheric problems. The Toronto Conference Statement supported this approach, calling for the development of "a comprehensive global convention as a framework for protocols on the protection of the atmosphere."²⁰⁷ In February 1989, Canada sponsored a meeting in Ottawa of legal and policy experts on the law of the atmosphere, with the hope of beginning discussions on a framework convention.²⁰⁸ (Hereinafter Ottawa Statement).

²⁰⁴ Nitze, W. A. (1990). The Greenhouse Effect: Formulating A Convention.

²⁰⁵ Such an agreement was intended to parallel the U.N. Convention on the Law of the Sea, Dec. 10, 1982, 21 I.L.M. 1261

²⁰⁶ Cameron, D. Z. (1990). Global Warming and Climate Change: An Overview of the International Legal Process. American University International Law Review, 249-290.

²⁰⁷ See generally Proceedings of the World Conference on the Changing Atmosphere: Implications for Global Security, Toronto, June 27-30, 1988, WMO & U.N. Environment Program (UNEP), WMO/OMM Doc. 710 (1989) [hereinafter Toronto Conference Proceedings].

²⁰⁸ Protection of the Atmosphere. (1989). Statement of the Meeting of Legal and Policy Experts on the Protection of the Atmosphere. Ottawa.

The second approach called for a convention specifically on climate change. At the opening of the Ottawa meeting, Mostafa Tolba, the Executive Director of the United Nations Environment Programme (UNEP), strongly criticized the "law of the atmosphere" model as politically unrealistic, arguing instead for a more narrowly focused convention on global warming²⁰⁹. Although the elements of a framework convention on the law of the atmosphere were discussed at the Ottawa meeting, attention turned to this alternative approach. The Ottawa meeting discussed the possible elements of a climate change convention, recommended the use of the Vienna Ozone Convention format for guidance, and suggested consideration of protocols on the various greenhouse gases, deforestation/reforestation, and a world climate trust fund.

However, neither the Toronto nor Ottawa meetings were governmental, and as of early 1989, a governmental decision had not yet been made to negotiate a climate change convention. The 1988 U.N. General Assembly resolution on climate change had spoken merely of "a possible future international convention on climate," but it had not authorized negotiation of a convention²¹⁰. In the IPCC, the United States forestalled the creation of a separate legal group, questioning the need for negotiations and arguing for more scientific study instead.²¹¹.

In the spring of 1989, pressure intensified on the United States to negotiate a climate convention²¹². After a White House attempt to dilute the Congressional testimony of a NASA

²⁰⁹Tolba, M. (1989). A Step-by-step Approach to Protection of the Atmosphere. *International Environmental Law Journal*, 304.

²¹⁰ Protection of Global Climate for Present and Future Generations of Mankind, G.A. Res. 53, U.N. GAOR, 43rd Sess., Supp. No. 49, at 133, 134, U.N. Doc. A/43/49 (1988)

²¹¹Weisskopf, M. (1989, May 6). Sununu Blocked Plan to Seek Convention on Global Warming. *Washington Post*, p. A2.

²¹²Peterson, C. (1989, May 9). Experts, OMB Spar on Global Warming. *Washington Post*, p. A1.

scientist resulted in public embarrassment,²¹³ the United States finally reversed its position and announced on May 12 that it would support the negotiation of a framework convention on climate change.²¹⁴ Several weeks later, the UNEP Governing Council adopted a resolution requesting UNEP to begin preparations for the negotiations and recommending that the negotiations begin as quickly as possible after the adoption of the IPCC's First Assessment Report.²¹⁵

In October 1989, the United States, in its capacity as chair of IPCC's Response Strategies Working Group, organized a multi-disciplinary workshop on implementation measures attended by representatives from forty-three governments.²¹⁶ Participants recognized the inadequacy of existing legal instruments and the need for a framework convention on climate change, modeled on the Vienna Ozone Convention and framed to gain the adherence of the largest number of states. They also agreed that the convention should include, at a minimum, general principles of cooperation and a legal and institutional framework for "monitoring and assessing climate change and for developing and implementing responses. Some delegations suggested that the convention should include binding commitments and control measures, as well as a clear mechanism for providing financial assistance, but they could not obtain a consensus on these points. Without deciding which elements should be included in the convention, the workshop elaborated a list of

²¹³ See *Climate Surprises: Hearings Before the Subcomm. on Science, Technology and Space of the Senate Comm. on Commerce*, 101st Cong., 1st Sess., 143-47 (1989)

²¹⁴ *US Relents on Greenhouse Treaty*. (1989, May 26). *File World News Digest*.

²¹⁵ UNEP: Report of the Governing Council on the Work of Its 15th Session, U.N. GAOR, 44th Sess., Supp. No. 25, at 167, U.N. Doc. A/44/25 (1989).

²¹⁶ See generally Report of the 2nd Session of IPCC Working Group III/Response Strategies Working Group, Geneva, Oct. 2-6, 1989, WMO & UNEP [hereinafter IPCC Legal Measures Report].

possible elements, which were refined and ultimately included in the Response Strategies Working Group report the following year.²¹⁷

In December 1989, the U.N. General Assembly adopted a resolution supporting the UNEP decision to begin preparations for the negotiations. The following September, UNEP, and World Meteorological Organization (WMO) convened an open-ended ad hoc working group of government representatives to consider the ways, means, and modalities for the negotiations.²¹⁸ The group recommended, inter alia, that a single negotiating process be established to discuss both policy issues and legal instruments. However, participants could not agree on whether protocols should be negotiated simultaneously with the Convention²¹⁹ or on who should organize and conduct the negotiations: a negotiating committee under the auspices of WMO and UNEP, in essence, carrying forward the IPCC process, or a special conference under the authority of the U.N. General Assembly.²²⁰ Western countries tended to support the former option, while many developing countries, who felt excluded from the IPCC, preferred the second option.²²¹ Developing countries tended to see climate change in developmental as well as environmental terms, given its implications for industry, transportation, and agriculture. Moreover, they argued that climate change is a political and not merely a technical issue. For both reasons, they felt that

²¹⁷ IPCC, *Climate Change: The IPCC Response Strategies* 263-68 (1990) [Hereinafter IPCC Response Strategies].

²¹⁸ See generally Report of the Ad Hoc Working Group of Government Representatives to Prepare for Negotiations on a Framework Convention on Climate Change, Geneva, Sept. 24-26, 1990, UNEP/WMO Doc. Prep./FCCC/L./REPORT [hereinafter INC Preparatory Meeting Report].

²¹⁹Id.

²²⁰Id.

²²¹ The question of who should conduct the negotiations had been looming in the background for some time. In 1989 and early 1990, most observers assumed that the negotiations, like the IPCC, would be conducted under the joint auspices of UNEP and WMO. Accordingly, these two organizations took the lead in the initial preparations for the negotiations. As developing countries became more actively involved in the climate change issue, however, the equation changed.

it should be addressed under the auspices of a political body - namely the U.N. General Assembly - rather than by more technical agencies like UNEP and WMO.

At its forty-fourth session, the General Assembly implicitly accepted this position by stating in a resolution that the General Assembly was "the appropriate forum for concerted political action on global environmental problems."²²² On December 21, 1990, the U.N. General Assembly adopted Resolution 45/212, establishing the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change (INC) as "a single intergovernmental negotiating process under the auspices of the General Assembly."²²³ While the General Assembly directed the INC to "take into account" the work of the IPCC, and invited UNEP and WMO to make "appropriate contributions" to the negotiation process, it nevertheless called for the establishment of an ad hoc secretariat.

Moving forward, between February 1991 and May 1992, the INC held five sessions. Under the terms of the U.N. General Assembly resolution establishing the INC, each negotiating session could last only two weeks, and the INC was to complete its work in time for the Convention to be signed at UNCED. The discussions in the INC followed a pattern common to international negotiations. At first, little progress was apparent. During most of 1991, states debated procedural issues and enunciated and reiterated their positions instead of bridging their differences by finding compromise formulations or engaging in tradeoffs or deals. Where they disagreed about a provision, participants simply bracketed the language in question (to indicate the disagreement) or added alternative formulations. At the end of the year, much if not most of the text remained bracketed - sometimes in brackets within brackets within brackets.²²⁴ This sparring process,

²²² G.A. Res. 44/207.

²²³ G.A. Res. 45/212

²²⁴ Death by 1,000 Brackets. (1991, December 10). *Economist*, p. 2

although frustrating to those seeking rapid progress, played a necessary role by allowing states to voice their views and concerns. They learned about and gauged the strength of other states' views. They sent up trial balloons and explored possible areas of compromise. Indeed, without this mutual learning process, it is hard to imagine that agreement would have been possible.

Real negotiations, however, began only in the final months before UNCED. Given the public visibility of the UNCED process, most delegations wished to have a convention to sign in Rio.²²⁵

As one critic quipped, "The INC was doomed to succeed." Thus, when it became clear in the spring of 1992 that the United States would not accept definitive targets and timetables, that Western states would insist on some role for the Global Environmental Facility (GEF), and that developing countries would not accept strong commitments or implementation machinery, delegations finally got down to the hard work of crafting compromise language and produced a text that the INC adopted on the final night of the negotiations. After several INC sessions and following a general discussion on the final text, the Convention was finally adopted by acclamation on the evening of May 9, 1992.

3.2.2 Effects of the UNFCCC on International Climate Negotiations

Some of the most significant ways that the UNFCCC has influenced and continues to shape, international climate negotiations are described below.

3.2.3 The Dangerous Anthropogenic Interference Benchmark

Biology is central to the agreed goals of the UNFCCC. Indeed, article 2 of the Convention reads:

The ultimate objective of this Convention goes thus:

²²⁵ Even those states that might have preferred total failure were unwilling to accept responsibility for that failure by blocking consensus.

“... stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened, and to enable economic development to proceed sustainably.”

The UNFCCC recognizes the importance of biological systems in assessing when climate change must be stopped. The convention benchmark of “dangerous interference” is measured against three areas of impact which are sustainable development, agricultural productivity, and ecosystem response. The convention wants climate change to be arrested in a time frame that allows ecosystems to “adapt naturally” to climate change, in a manner that does not impede sustainable development and maintains agricultural productivity.²²⁶

3.2.4 Interpreting Article 2 of the UNFCCC

The ultimate objective of the UNFCCC is to prevent "dangerous" anthropogenic (i.e., human) interference in the climate system. As is stated in Article 2 of the Convention, this requires that GHG concentrations are stabilized in the atmosphere at a level where ecosystems can adapt naturally to climate change, food production is not threatened, and economic development can proceed sustainably. By recognizing the need to stabilize atmospheric concentrations of greenhouse gases, the objective acknowledges climate change as a problem and helps legitimize it as a matter of international concern. Some commentators have interpreted Article 2 as favoring

²²⁶Hannah, L. (2007). Climate Change Biology. In L. Hannah, Mitigation: Reducing Greenhouse Gas Emissions, Sinks, and Solutions (pp. 339-356). Academic Press.

prevention of, over adaptation to, climate change.²²⁷ The text, however, appears to be neutral on this question, since it condemns only those interferences with the climate system that are "dangerous." To the extent that adaptation to climate change is possible, such change could be viewed as benign.

The exact legal status of the Convention's stabilization objective has been the subject of varying discussions. Some early proposals relating to the objective phrased it as a collective commitment, binding on all the parties.²²⁸ Although the Secretariat categorized the proposals on objectives as "general obligations" in a compilation document²²⁹ as ultimately adopted, Article 2 uses declarative language and does not characterize the objective as a commitment. Also unclear is whether Article 2 falls under the category of "object and purpose" contained in the Vienna Convention on the Law of Treaties.²³⁰ If so, signatories to the Climate Change Convention would have a duty not to defeat the stabilization objective²³¹ In what may have been an attempt to prevent "objective" from being equated with "object and purpose," the Convention adds the qualification "ultimate."

Furthermore, scholars have maintained that Article 2 confirms the claim that the UNFCCC was not meant for the reduction of aviation emissions but general emissions that could lead to climate change. The scholars also observed that since the idea behind the drafting of this Convention did

²²⁷ Some support for this proposition is found in the provision that measures should be taken within a time frame that allows ecosystems to adapt naturally.

²²⁸ Set of Informal Papers Provided by Delegations, INC/FCCC, 2d Sess., Provisional Agenda Item 2, at 4, U.N. Doc. A/AC.237/Misc.1/Add.1 (1991)

²²⁹ Compilation of Possible Elements for a Framework Convention on Climate Change, INC/FCCC, 2d Sess., Provisional Agenda Item 2, U.N. Doc. A/AC.237/Misc.2/Rev.1 (1991)

²³⁰ Article 18

²³¹ *Id.*

not foresee the need to include aviation emissions in the articles of the Convention and there has been no explicit provision for the aviation sector throughout the Convention, it means the convention lacks jurisdiction for effective control over the reduction of aviation emission.^{232 233}

They claim that the need to improve on this limitation led to the emergence of the Kyoto protocol 1997, as a more specific regulatory regime on greenhouse gases with Article 2 (2) which transfers sectoral regulation of aviation emission to the international civil aviation organization (ICAO). Therefore, the absence of explicit jurisdiction for aviation emissions denied the UNFCCC the power to effectively contribute to the reduction of aviation emissions.

Also, the vagueness of the ultimate objective of the UNFCCC is put forward as a factor affecting the contribution of UNFCCC to the reduction of aviation emissions. As noted in the article (2) of the convention, the ultimate objective is to “stabilize all greenhouse gases concentration in the atmosphere at a certain safe level to prevent dangerous anthropogenic interference with the climate system”. Stabilization as a term of objective is considered too vague because it is devoid of qualification and specific measures. This stabilization does not also state the quantity of level to which aviation emissions shall be reduced but rather gives a general statement. This aspect of the vague term of objective has led to a problem of agreeing on a specific long-term mitigation target, in the subsequent negotiations by a member state to the convention.²³⁴ Therefore, many have

²³² Ground-level aircraft idling and taxiing at airports emit volatile organic compounds (VOCs), nitrogen oxides (NOx), particulate matter (PM), and sulfur dioxide (SO₂) into the atmosphere. These compounds are known to have significant health and environmental impact. Experts say commercial air travel accounts for about 3 to 4 percent of total U.S. greenhouse gas emissions.

²³³ Sanchez, F. H. (2014). *The Principles and Practice of International Aviation Law*. Cambridge University Press.

²³⁴ Thomas, L. (2003). A Comparative Analysis of International Regimes on Ozone and Climate Change with Implication for Regime Design. *Colombia Journal of Transnational Law*, Vol 4., 795.

considered the vagueness of the objective set out in article 2 of the UNFCCC as a barrier to progress in achieving a reduction in aviation emissions.

3.2.5 Common but Differentiated Responsibilities

The UNFCCC endorses the concept of common but differentiated responsibility (CBDR) in the climate context. This means that while developing country parties are expected to contribute to climate mitigation, because of superior capacity to undertake mitigation and greater contribution to the problem of climate change as a result of historical emissions, developed countries are expected to “take the lead in combating climate change and the adverse effects thereof.”²³⁵ The Convention repeatedly references the need to promote sustainable economic growth, particularly in developing countries; developing countries are subject to less stringent reporting and other requirements than developed countries under the Convention, and the performance of developing country parties is expressly conditioned on the adequate provision of financial support and technology transfer from developed country parties.

The principle has, from the beginning, underpinned the international efforts to address climate change²³⁶. The principle is a defining feature of the international climate change regime given that it recognizes that parties vary both in their levels of responsibility for climate change and in their capacities to cope with it. As a universally accepted principle, CBDR provides a basis for differentiating among parties²³⁷ (Centre for Climate and Energy Solutions, 2015). Its origin dates

²³⁵ Article 3(1) UNFCCC *supra*

²³⁶Rajamani, L. (2013). Differentiation in the Emerging Climate Regime. *Theoretical Inquiries in Law*, Vol. 14.1, 152-171.

²³⁷Centre for Climate and Energy Solutions. (2015, June). Differentiation in a 2015 Climate Agreement. Retrieved from Centre for Climate and Energy Solutions: <https://www.c2es.org/publications/differentiation-2015->

from 1990 at the Second World Climate Conference, where countries recognized the principle of equity and the common but differentiated responsibility of countries at different levels of development²³⁸, and in the Rio Declaration of 1992; its principle 7 states that:

*“In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.”*²³⁹.

The CBDR, as articulated above, anticipates the concept of capability, when referring to finance and technology²⁴⁰. Whilst, in parallel, the UNFCCC uses similar languages and includes explicitly the aforementioned concept; Article 3.1 reads:

“The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities.”

Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof. The CBDR principle is also mentioned in Article 4.1 of the Convention; where it stated ‘their specific national and regional development priorities, objectives and circumstances’ when referring to the commitments of the Parties. The addition of the term

²³⁸ UNFCCC. (1993, May). The Second World Climate Conference. Retrieved from <https://unfccc.int/resource/ccsites/senegal/fact/fs221.htm>

²³⁹ UNCED. (1992). The Rio Declaration on Environment and Development. Rio de Janeiro: United Nations.

²⁴⁰ Harald Winkler, L. R. (2013). CBDR & RC in a regime applicable to all. Climate Policy, Vol. 14.1, 102-121.

‘respective capabilities’ infers that there are two bases for differentiation: one based on capability, and another based on the contribution to environmental harm (Rio Principle 7). The principle can also be found in numerous UNFCCC Conference of Parties (COP) decisions, including the Bali Action Plan of 2007²⁴¹, the Copenhagen Accord of 2009,²⁴² and the Cancun Agreements of 2010.²⁴³

Also, the CBDR principle was the basis for the burden-sharing disposition under the Kyoto Protocol²⁴⁴.

3.2.6 Data Gathering and Reporting

The UNFCCC instituted a process for countries to generate and share data about domestic GHG emissions. Under the UNFCCC, all parties are required to submit national GHG inventories, and developed country parties are required to submit more detailed descriptions of mitigation policies and projections of the projected impact of these policies on GHG emissions.²⁴⁵ The data collected through the UNFCCC have proved important to developing a scientific understanding of the climate problem, and later agreements have built upon the UNFCCC’s reporting requirements.

3.2.7 Administrative Institutions, Structure, and Process

The UNFCCC has provided the basic institutional structure for the negotiation and adoption of a series of protocols, modifications, and agreements related to the Convention's mandate, most recently the Paris Agreement. The Convention established a Conference of the Parties, a

²⁴¹ UNFCCC, Decision 1/CP.13, Bali Action Plan, UN Doc. FCCC/CP/2007/6/Add.1.

²⁴² UNFCCC, Decision 2/CP.15, Copenhagen Accord, UN Doc. FCCC/CP/2009/11/Add.1.

²⁴³ UNFCCC, Decision 1/CP.16, The Cancun Agreements: Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention. UN Doc. FCCC/CP/2010/7/Add.1.

²⁴⁴ Kyoto Protocol to the United Nations Framework Convention on Climate Change, 10 December 1997, UN Doc. FCCC/CP/1997/L.7/add. 1, 37 International Legal Materials (1998), 22.

²⁴⁵ Article 4(1)

secretariat, and subsidiary bodies that oversee the implementation of the Convention and related instruments within its mandate.

3.3 The Conference of Parties (“The COP”)

The COP is the supreme decision-making body of the Convention. All States that are Parties to the Convention are represented at the COP, at which they review the implementation of the Convention and any other legal instruments that the COP adopts and take decisions necessary to promote the effective implementation of the Convention, including institutional and administrative arrangements.²⁴⁶

The COP brings together signatories of the United Nations Framework Convention of Climate Change (UNFCCC) every year to discuss how to address the climate change menace. The parties to the Convention have met annually since 1995 in COP to negotiate the Kyoto Protocol to establish legally binding obligations for developed countries to reduce their greenhouse gas emissions and to assess progress in dealing with climate change. Since 2005 the Conferences have met in conjunction with Meetings of Parties of the Kyoto Protocol (MOP), and parties to the Convention that are not parties to the Protocol can participate in Protocol-related meetings as observers. The various COPs will be succinctly discussed in subsequent paragraphs.

The first UNFCCC Conference of Parties took place in March 1995 in Berlin, Germany. It voiced concerns about the adequacy of countries' abilities to meet commitments under the Body for Scientific and Technological Advice (SBSTA) and the Subsidiary Body for Implementation (SBI).

²⁴⁶ UNFCCC website available at <https://unfccc.int/process/bodies/supreme-bodies/conference-of-the-parties-cop> (Accessed on 23 December 2021).

COP 2 took place in July 1996 in Geneva, Switzerland. It predominantly reflected a U.S. position statement presented by Timothy Wirth, former Under Secretary for Global Affairs for the U.S. State Department at that meeting, which -

1. Accepted the scientific findings on climate change proffered by the IPCC in its second assessment (1995).
2. Rejected uniform "harmonized policies" in favor of flexibility; and
3. Called for "legally binding mid-term targets.

The COP 3 which took place in December 1997 in Kyoto, Japan outlined the greenhouse gas emissions reduction obligation for Annex I countries, along with what came to be known as Kyoto mechanisms such as emissions trading, clean development mechanism, and joint implementation. Most industrialized countries and some central European economies in transition (all defined as Annex B countries) agreed to legally binding reductions in greenhouse gas emissions of an average of 6 to 8% below 1990 levels between the years 2008–2012, defined as the first emissions budget period.

COP 4 witnesses the adoption of a 2-year "Plan of Action" to advance efforts and to devise mechanisms for implementing the Kyoto Protocol, to be completed by 2000. During COP4, Argentina and Kazakhstan expressed their commitment to take on the greenhouse gas emissions reduction obligation, the first two non-Annex countries to do so.

Whilst COP 5 did not reach a major conclusion, COP 6 centered on discussions and controversy over the United States' proposal to allow credit for carbon "sinks" in forests and agricultural lands, satisfying a major proportion of the U.S. emissions reductions in this way; disagreements over consequences for non-compliance by countries that did not meet their emission reduction targets; and difficulties in resolving how developing countries could obtain financial assistance to deal

with adverse effects of climate change and meet their obligations to plan for measuring and possibly reducing greenhouse gas emissions. At COP 6, parties were able to reach agreements on:

- a) Flexible Mechanisms: The "flexibility" mechanisms that the United States had strongly favored when the Protocol was initially put together, including emissions trading; Joint Implementation (JI); and the Clean Development Mechanism (CDM) which allow industrialized countries to fund emissions reduction activities in developing countries as an alternative to domestic emission reductions. One of the key elements of this agreement was that there would be no quantitative limit on the credit a country could claim from the use of these mechanisms provided domestic action constituted a significant element of the efforts of each Annex B country to meet their targets.
- b) Carbon sinks: It was agreed that credit would be granted for broad activities that absorb carbon from the atmosphere or store it, including forest and cropland management, and re-vegetation, with no overall cap on the amount of credit that a country could claim for sinks activities. In the case of forest management, Appendix Z establishes country-specific caps for each Annex I country. Thus, a cap of 13 million tons could be credited to Japan (which represents about 4% of its base-year emissions). For cropland management, countries could receive credit only for carbon sequestration increases above 1990 levels.
- c) Compliance: Final action on compliance procedures and mechanisms that would address non-compliance with Protocol provisions was deferred to COP 7 but included broad outlines of consequences for failing to meet emissions targets that would include a requirement to "make up" shortfalls at 1.3 tons to 1, suspension of the right to sell credits for surplus emissions reductions, and a required compliance action plan for those not meeting their targets.

- d) Financing: There was agreement on the establishment of three new funds to help with needs associated with climate change: (1) a fund for climate change that supports a series of climate measures; (2) a least-developed-country fund to support National Adaptation Programs of Action; and (3) a Kyoto Protocol adaptation fund supported by a CDM levy and voluntary contributions.

At the COP 7 meeting in Marrakech, Morocco from October 29 to November 10, 2001, negotiators wrapped up the work on the Buenos Aires Plan of Action, finalizing most of the operational details and setting the stage for nations to ratify the Kyoto Protocol. The completed package of decisions is known as the Marrakech Accords which included:

- a) Operational rules for international emissions trading among parties to the Protocol and for the CDM and joint implementation.
- b) A compliance regime that outlined consequences for failure to meet emissions targets but deferred to the parties to the Protocol, once it came into force, the decision on whether those consequences would be legally binding.
- c) Accounting procedures for the flexibility mechanisms.
- d) A decision to consider at COP 8 was how to achieve a review of the adequacy of commitments that might lead to discussions on future commitments by developing countries

COP8 took place from October 23, – to November 1, 2002. It adopted the Delhi Ministerial Declaration²⁴⁷ that, amongst others, called for efforts by developed countries to transfer technology

²⁴⁷https://unfccc.int/cop8/latest/delhidecl_infprop.pdf Last accessed 13 November 2021

and minimize the impact of climate change on developing countries. It is also approved the New Delhi work program²⁴⁸ on Article 6 of the Convention.²⁴⁹

COP9 took place between December 1 to 12, 2003. The parties agreed to use the Adaptation Fund established at COP7 in 2001 primarily in supporting developing countries better adapt to climate change. The fund would also be used for capacity-building through technology transfer.

COP10 discussed the progress made since the first Conference of the Parties 10 years earlier and its future challenges, with special emphasis on climate change mitigation and adaptation. To promote developing countries better adapt to climate change, the Buenos Aires Plan of Action was adopted. The parties also began discussing the post-Kyoto mechanism, on how to allocate emission reduction obligations following 2012, when the first commitment period ends.

COP 11 (or COP 11/MOP 1) took place between November 28 and December 9, 2005, in Montreal, Quebec, Canada. It was the first meeting of the Parties (MOP-1) to the Kyoto Protocol since their initial meeting in Kyoto in 1997. It was therefore one of the largest intergovernmental conferences on climate change ever. The event marked the entry into force of the Kyoto Protocol. Hosting more than 10,000 delegates. The Montreal Action Plan is an agreement hammered out at the end of the conference to "extend the life of the Kyoto Protocol beyond its 2012 expiration date and negotiate deeper cuts in greenhouse-gas emissions."

COP 12/MOP 2 took place between November 6 and 17, 2006 in Nairobi, Kenya. The discussions avoided any mention of reducing emissions. There was a disconnect between the political process and the scientific imperative, however, certain strides were made at COP12, including in the areas of support for developing countries and clean development mechanisms.

²⁴⁸https://unfccc.int/files/meetings/cop_16/conference_documents/application/pdf/20101204_cop16_cmp_art6.pdf

Last accessed 13 November 2012

²⁴⁹ Article 6 of the UNFCCC is about education, training and public awareness

The parties adopted a five-year plan of work to support climate change adaptation by developing countries and agreed on the procedures and modalities for the Adaptation Fund. They also agreed to improve the projects for a clean development mechanism.

COP 13/MOP 3 followed between December 3 and December 15, 2007, at Nusa Dua, in Bali, Indonesia. Agreement on a timeline and structured negotiation on the post-2012 framework (the end of the first commitment period of the Kyoto Protocol) was achieved with the adoption of the Bali Action Plan (Decision 1/CP.13). COP 14/MOP 4 took place from December 1 to 12, 2008 in Poznań, Poland. Delegates agreed on principles for the financing of a fund to help the poorest nations cope with the effects of climate change and they approved a mechanism to incorporate forest protection into the efforts of the international community to combat climate change. Negotiations on a successor to the Kyoto Protocol were the primary focus of the conference.

COP 15 adopted the Copenhagen Accord in which countries put forward political declarations to continue working towards addressing climate change and reducing emissions. One of the key elements was the recognition of the long-term goal of limiting the global average temperature increase to no more than 2 degrees Celsius above pre-industrial levels. Parties agreed that this goal would be reviewed in 2015, also to consider the strengthening of the long-term goal to 1.5 degrees Celsius. Several parties, including all the major economies, put forward pledges to reduce emissions by 2020. Developed countries promised to provide USD 30 billion for the period 2010-2012, and to mobilize long-term finance of a further USD 100 billion a year by 2020 from various sources, to fund mitigation and adaptation activities in developing countries.

The Copenhagen accord called for the establishment of the Green Climate Fund, a Technology Mechanism, and a REDD+ mechanism, and reiterated the need for improved MRV of actions by developed and developing countries in line with the existing and future COP guidelines.

The COP 17 took place from 28 November to 9 December 2011 in Durban, South Africa. It aimed to establish a firm set of commitments among participating countries to reduce country-level carbon emissions and to agree to the mechanisms that were required to achieve carbon emissions reductions as a global effort to contain the disastrous effects of anthropogenic climate change. It ended with an agreement to work towards preparing and adopting a comprehensive greenhouse gas reduction “protocol, legal instrument or another outcome with legal force by 2015 applicable from 2020” (the Paris Agreement). The meeting also included negotiations on bridging the gap between the pledges made by parties so far and the level of reductions needed to limit the rise of global temperature to below 2°C above pre-industrial levels. Parties agreed to carry out a fresh review of the long-term global goal (LTGG), based on the most recent scientific evidence and data, and to ascertain the pertinence of a 1.5-degree threshold and what needs to be done collectively to prevent the rise of temperature above the agreed level. Parties recognized the need for a greater ambition of reduction pledges compared to those put forward in the Cancun Agreements. Parties agreed to close negotiations under two then existing tracks: long-term cooperative action and further commitments under the Kyoto Protocol, and to continue working together under the Ad Hoc Working Group on the Durban Platform for Enhanced Action (ADP) to achieve the ultimate objective defined in Article 2 of the Convention. COP17 further agreed on the second commitment period of the Kyoto Protocol and its commencement on 1 January 2013.

At COP 18, governments concluded the work that had begun in Bali in 2007 on Long-Term Cooperative Action under the Convention and agreed on a firm timetable for the adoption of a universal climate change agreement by 2015, to come into force in 2020. At COP 19, Parties agreed on a firm timetable to secure the adoption of a new global climate change agreement in 2015, to come into force in 2020. During negotiations at COP 20 in Lima, Peru, parties agreed on

loose arrangements for bringing forward their “intended nationally determined contributions” to the Paris agreement. They also forwarded “elements for a draft negotiating text,” compiling issues and options put forward, but explicitly disclaiming any “convergence,” and leaving the door open to further proposals. The Lima decision reiterated an invitation from Warsaw to each UNFCCC Party to submit to the Secretariat its INDC towards achieving the objective of the Convention. All INDCs²⁵⁰ are to be communicated in a clear, transparent, and understandable way. Without clarity, transparency, and understanding of INDCs, it would not be possible to quantify and judge the proposed contributions. However, it is for each Party to decide what these qualifiers do mean in their case.

The decision also specified that the information provided by Parties together with their INDC (the upfront information, or UFI) may include (for each Party to decide) as appropriate in the light of different national circumstances several specific information. Inter alia, countries are invited to provide, if they wish (since the decision specifies that they may do so), quantifiable information on the reference point including, as appropriate, a base year, time frame for implementation, or period of implementation proposed for their contributions, scope and coverage of proposed INDCs, planning processes, assumptions and methodological approaches, including those for estimating and accounting for anthropogenic GHG emissions, and, as appropriate, removals.

At COP 21 in Paris, parties to the UNFCCC reached a landmark agreement to combat climate change and to accelerate and intensify the actions and investments needed for a sustainable low carbon future. The Paris Agreement builds upon the Convention and – for the first time – brings all nations into a common cause to undertake ambitious efforts to combat climate change

²⁵⁰ Intended Nationally Determined Contributions. They are non-binding national plans highlighting climate actions, including climate related targets for greenhouse gas emission reductions, policies and measures governments aim to implement in response to climate change.

and adapt to its effects, with enhanced support to assist developing countries to do so. As such, it charts a new course in the global climate effort.

At COP 22, there was a meeting to discuss the implementation of the Paris Agreement; and an occasion for policymakers, countries, and organizations to announce new strategy plans, initiatives, and finance changes. In Marrakech, the Parties reaffirmed their commitment to the full implementation of the Paris Agreement and agreed to finalize the detailed rules for its implementation within two years. To demonstrate an unwavering commitment to the full implementation of the Paris Agreement and help to achieve the goals set out therein, countries took ambitious parallel action outside of the negotiation halls. Those actions included –

- a) The UNFCCC and the Parties to the Convention announced their reaffirmed resolve for international climate action with the release of the Marrakech Action Proclamation. The Proclamation is a celebration of the momentum of political commitment to climate change and the mobilization of non-state actors. As this COP was nicknamed the “implementation” COP, the document concludes with an emphasis on this being the time for action.
- b) Parties to the UNFCCC also announced the establishment of a new fund called the Capacity-Building Initiative for Transparency (CBIT). As its name suggests, the trust fund with US\$50 million pledged will go to strengthening the capacity of developing countries to meet the enhanced transparency requirements of the Paris Agreement.
- c) Another outcome was the announcement of the UNFCCC’s 2050 Pathways Platform. Following the Paris Agreement, Parties should express long-term, low-carbon development strategies, and the platform is meant to facilitate the sharing of resources, knowledge, and experiences of deep decarbonization planning.

- d) Meanwhile, the Climate Vulnerable Forum (CVF) was assembled. The CVF is a global partnership of 48 of the least-developed and low- and middle-income developing countries—all of which are disproportionately affected by the consequences of climate change. The CVF was also formed to hold industrialized countries accountable for the consequences of climate change.
- e) Finally, the launch of the NDC Partnership brought together 33 countries and 9 international institutions to accelerate climate action on the ground and advance sustainable development.

COP 23 made progress on implementing the Paris Agreement and agreed on a work plan for 2018. It also gave a strong signal that countries remain committed to the UN climate process, despite the United States' intention to withdraw from the Paris Agreement. Key outcomes of the 2-weeks deliberation include –

- a) The Fiji Momentum for Implementation, which confirms the goal to adopt the Paris Rulebook at COP24 in Katowice, Poland, also sets out the design of the facilitative dialogue – now renamed the Talanoa dialogue²⁵¹ – which launched in January 2018. This also clarifies that global stock takes on pre-2020 efforts will occur at both COP24 and COP25.
- b) The Talanoa dialogue will be structured around three main questions: where are we; where do we want to go; and how will we get there?

²⁵¹ The Talanoa Dialogue is a process designed to help countries implement and enhance their Nationally Determined Contributions by 2020

- c) A mandate for the chair of the Subsidiary Body for Scientific and Technological Advice (SBSTA) to prepare an informal document for the three components of Article 6 – essentially a draft negotiating text – ahead of SBSTA 48 in April/May 2018.
- d) The option to add an extra negotiating session in September/October 2018; will be decided at SBSTA 48.
- e) Adoption of the Gender Action Plan, which aims to ensure a role for women in all climate change decisions and projects, both at a national and international level.
- f) The establishment of the Local Communities and Indigenous People’s Platform, to both support the role of indigenous communities in the climate change response and recognize the responsibility of governments to respect their rights when deciding climate policies.

The COP 24 had one main objective: to conclude the discussions on the implementation of the Paris Agreement by formally adopting a set of rules (dubbed the “Paris rulebook”) detailing how to apply the provisions of this treaty. Parties, therefore, agreed on a deadline for hashing out the Paris rulebook, which is the operating manual needed for when the global deal enters into force in 2020; starting a new international climate regime under which all countries will have to report their emissions and progress in cutting them every two years from 2024. A compilation of the Paris rulebook documents (without rules for carbon trading) was adopted at COP 24 along with other decisions and action points that bring minor progress in specific areas such as finance, gender, and indigenous peoples. The text provides a single set of rules for all countries while allowing developing countries to apply them flexibly. The major highlights of the text include:

- a) Clarity and Transparency: the rulebook indicates what information parties should communicate to facilitate the clarity, transparency, and understanding of the nationally determined contributions (NDCs) they must submit every five years as provided by Article

4 of the Paris Agreement. Further, it specifies what information parties should report demonstrating progress toward the achievement of their NDCs and their commitment to climate finance, and how the information communicated will be reviewed under the transparency framework established by Article 13 of the Paris Agreement.

- b) Conducting the Global stocktake: The rulebook also clarifies how the periodic assessment of collective progress toward the achievement of the goal of the Paris Agreement – known as the “global stocktake” — will be conducted, and how the implementation and compliance mechanism of the Paris Agreement will fulfill its mandate. As stated in Article 15, this mechanism, which consists of an expert-based committee, has the function of facilitating the implementation of, and promoting compliance with, the provisions of the Paris Agreement in a transparent, non-adversarial, and non-punitive manner.

The final decision adopted by the COP24 only “invited parties to consider the outcome” of the Talanoa Dialogue in preparing their next NDCs. The text did not explicitly indicate that parties should increase their ambition by 2020. Even though roughly 50 parties — including Canada — have already expressed their willingness to submit increased climate pledges in 2020, the results of COP24 suggest that many parties are still reluctant to agree on a text that could in any way call into question their autonomy under the Paris Agreement. Overall, COP 24 failed to deliver on the most fundamental issues such as raising the ambition of national contributions, implementing human rights in the Paris Rulebook, and ensuring fair and reliable support for developing countries to assist them in their efforts to combat global warming and its accompanying effects.²⁵²

²⁵² Saint-Geniès, G. d. (2018, December 19). Nationally-Determined Ambition a Sticking Point at COP24. Retrieved from CIGI online: <https://www.cigionline.org/articles/nationally-determined-ambition-sticking-point->

The 25th Conference of Parties to the UNFCCC was held in Madrid, Spain from 2nd to 13th December 2019. COP25 was intended to be the launchpad for the full implementation of the Paris Agreement post-2020. At COP25, countries agreed to table their new and improved carbon curbing plans at COP26 in 2020. Developed nations agreed to honor their commitments on climate change before the end of 2020. Countries and several non-state actors committed to net zero emissions by 2050 – the new Climate Ambition Alliance.²⁵³ Parties also agreed on a new 5-year Gender Action Plan expected to support the implementation of gender-related decisions and mandates in the UNFCCC.

However, countries failed to reach a consensus on several more-contentious (technical and non-technical) issues including, among others, negotiations related to Art. 6 of the Paris Agreement, financing of the global climate action, transparency reporting requirements, and (common) timeframes for climate commitments. They agreed that the issues will be resolved at the next COP. Overall, COP25 did not make any progress on both technical and important issues such as Art. 6 and the ambitious climate action plans.

COP26 was held in Glasgow, Scotland, from 31 October to 13 November 2021. It brought together world leaders to discuss ways of ensuring limiting warming temperatures to 1.5 degrees, reducing global emissions by half in 2030, and reaching net Zero by 2050. The summit also analyzed the promise to raise \$100 billion per year to tackle issues around climate change globally.²⁵⁴ The meeting saw the emergence of the Glasgow Climate Compact. The agreement - although not

²⁵³ See <https://unfccc.int/news/climate-ambition-alliance-nations-renew-their-push-to-upscale-action-by-2020-and-achieve-net-zero> Retrieved 22 November 2021.

²⁵⁴ Olanrewaju Oyedele, (2021). COP26: Flooding, Food Scarcity, Cholera, Insecurity; Climate Change Takes on Deeper Significance For Nigeria by available at <https://www.dataphyte.com/latest-reports/climate/cop26-flooding-food-scarcity-cholera-insecurity-climate-change-takes-on-deeper-significance-for-nigeria/> (Accessed on 4 February 2022).

legally binding - will set the global agenda on climate change for the next decade. By the end of COP26, 151 countries had submitted new climate plans (known as nationally determined contributions, or NDCs) to slash their emissions by 2030. Nigeria submitted its own in 2016 with an updated version submitted in 2021.

The Glasgow decision calls on countries to “revisit and strengthen” their 2030 targets by the end of 2022 to align them with the Paris Agreement’s temperature goals. It also asks all countries that have not yet done so to submit long-term strategies to 2050, aiming for a just transition to net-zero emissions around mid-century. “In addition, the Pact asks nations to consider further actions to curb potent non-CO2 gases, such as methane, and includes language emphasizing the need to “phase down unabated coal” and “phase-out fossil fuel subsidies.” This marked the first-time negotiators have explicitly referenced shifting away from coal and phasing out fossil fuel subsidies in the COP decision text. The summit recognized the importance of nature for both reducing emissions and building resilience to the impacts of climate change, both in the formal text and through a raft of initiatives announced on the sidelines.

At COP26, countries also made bold collective commitments to curb methane emissions, halt and reverse forest loss, align the finance sector with net-zero by 2050, ditch the internal combustion engine, accelerate the phase-out of coal, and end international financing for fossil fuels, to name just a few. Glasgow was a platform for launching innovative sectoral partnerships and new funding to support these, to reshape every sector of the economy at the scale necessary to deliver a net-zero future.²⁵⁵

²⁵⁵Mountford, H., Waskow, D., Gonzalez, L., Gajjar, C., Cogswell, N., Holt, M., Fransen, T., Bergen, M. and Gerholdt, R., 2021. Wri.org: COP26 – Key Outcomes From the UN Climate Talks in Glasgow : Carbondioxide Removal. [online] Carbondioxide-removal.eu. Available at: <<https://www.wri.org/insights/cop26-key-outcomes-un->

3.3.1 Nigeria's Contribution to COP26

At Glasgow, President Muhammadu Buhari led the Nigerian delegation to the Glasgow summit and made three presentations – one at the main conference and two during side events. Although the contents of the three presentations seem to differ slightly from the revised or updated INDCs submitted to the COP26 Secretariat earlier in July 2021, they are bold, far-reaching, and ambitious, especially coming from a leading crude oil (fossil energy) producing and exporting developing country from Africa. Hence, Nigeria is at a crossroads of international climate change policy.

President Buhari committed that Nigeria will cut its carbon emission to net zero by 2060. The President told world leaders that the goal of transitioning from fossil fuel to clean energy, reaching a net-zero ambition for greenhouse gas emissions would require critical infrastructure to be in place in developing countries. Nigeria's major contribution to the summit was its pledge of becoming Net Zero Emissions compliant by the year 2060.

Significantly, the President spoke against the background of the Climate Change Bill passed by the National Assembly to provide a legal and inclusive framework for achieving low carbon emissions, green growth, and ultimately sustainable economic development. Concretely, the President invited international partners of Nigeria to invest in gas as part of the efforts to achieve a just energy transition. From the tone and tenor of President Buhari's statement, which is typical of the leaders of developing countries, some arduous negotiations still lie ahead to achieve a significant reduction in carbon emission.

While China and India managed to tone down the COP26 outcome on coal, South Africa is already gaining concessions of over \$8 billion on “phasing out” or “phasing down” coal. Compared to

[climate-talks-glasgow?utm_campaign=wriclimate&utm_source=climatedigest_2021-11-22&utm_medium=email&utm_content=title](https://www.climate-talks-glasgow?utm_campaign=wriclimate&utm_source=climatedigest_2021-11-22&utm_medium=email&utm_content=title) > [Accessed 14 December 2021].

some other countries that seek concessions on the necessary energy transition, Nigeria sounded more constructive and responsive in the difficult situation facing the world.

As a takeaway from COP26, Nigeria needs to promote environmental awareness at home while taking the leadership steps to forge a continental position for African countries to negotiate with rich countries on the matter of climate change. African countries direly need the funds to mitigate the impacts of climate change on the continent.

3.3.2 Impact of the COPs on Gas Flaring in Nigeria

Demonstrating its commitment to the various climate protection policies and decisions, Nigeria is a signatory to the 2001 Global Gas Flaring Reduction Partnership principles that aim at a flare-out date of 2030. In compliance with the UNFCCC, Nigeria submitted its Nationally Determined Contribution which amongst other things pledged to end gas flaring by 2030. Nigeria and the NNPC have committed to the “Zero Routine Flaring by 2030” initiative of the World Bank. It has unequivocally recognized gas flaring as unsustainable from resource management and environmental perspective and agreed to co-operate to eliminate routine flaring no later than 2030. Now, recent Gas flaring satellite data reveals that Nigeria has remained one of the top seven countries since 2012. Between 2016 and 2020, Nigeria flared 1 252.26 trillion cubic feet of natural gas into the atmosphere. In 2005, Nigeria’s courts ruled that oil companies stop flaring gas in the Niger Delta. The judgment was made in a case filed by the Iwherekan community against Shell Petroleum Development Company, Nigerian National Petroleum Corporation, and Nigeria’s Attorney General. The court held that gas flaring was unconstitutional as it violated people’s right to life and dignity. However, oil companies continue to be the leading offenders, despite gas flaring being illegal since 2005.

Despite many commitments to act, the race to Zero Routine Flaring by 2030 in Nigeria is undermined by inconsistent policies, weak implementation, and an apparent lack of political will by successive administrations. Between 1969 and 2020, 10 deadlines to end gas flaring in the Niger Delta were changed. oil companies would rather pay a fine of \$3.50 per 1 000 standard cubic feet for gas flaring than stop the practice.

Nigeria has now enacted the PIA and provided in its section 104(4) environmental remedy and relief to host communities affected by gas flaring. But what's needed is a commitment to an environmental management plan that reduces the damaging practice in the Niger Delta. Whilst these legal frameworks are commendable, as a stakeholder in oil-producing Africa, Nigeria still has a long way to go to actualizing its NDCs and going beyond paying mere lip service to international environmental protection commitments. She must find better infrastructure to accommodate excess natural gas through conversion and utilization. One way is to convert excessive gas to generate electricity. The action will, among others, increase government revenue and help meet Goal 13 of the Sustainable Development Goals (SDGs) and pledge of Zero Routine Flaring – all by 2030.

3.4 THE KYOTO PROTOCOL

As mentioned earlier, considering increasing scientific evidence about the risks of climate change, it soon became evident to policymakers that a further negotiated agreement might be necessary. The UNFCCC set no mandatory limits on greenhouse gas emissions for individual countries and contains no enforcement mechanisms. In that sense, the Convention is considered legally non-binding. Instead, it provides for updates (called "protocols") that would set mandatory emission limits. The principal update is the Kyoto Protocol, which has become much better known than the UNFCCC itself.

The Kyoto Protocol is the first implementing agreement of the UNFCCC. Fundamentally, the principle of common but differentiated responsibilities, enshrined in the UNFCCC resulted from a common understanding that the industrialized nations were then the principal actors responsible for climate change occurring because of industrial emissions. In line with this principle, a group of developed countries and economies in transition (EITs) agreed to take up binding emission reduction targets under a protocol that was adopted in Kyoto, Japan, on 11 December 1997. The Kyoto Protocol was first agreed upon in December 1997 in Kyoto, Japan, although ongoing discussions were needed between 1998 and 2004 to finalize the “fine print” of the agreement.

In December 1997, delegates at The Third Conference of the parties to the UNFCCC (COP 3) in Kyoto, Japan, agreed to a Protocol to the UNFCCC that commits developed countries and countries in transition to a market economy to achieve quantified emission reduction targets. These industrialized countries and countries of the former Soviet bloc (known collectively as “Annex I Parties” under the UNFCCC) agreed to reduce their overall emissions of six greenhouse gases by an average of 5% below 1990 levels between 2008-2012 (the first commitment period), with specific targets varying from country to country. The Protocol also established three flexible mechanisms to assist Annex I parties in meeting their national targets cost-effectively: an emissions trading system; joint implementation (JI) of emission reduction projects between Annex I parties; and the Clean Development Mechanism (CDM), which allows for emission reduction projects to be implemented in non-Annex I Parties (developing countries). Following COP 3, parties began negotiating many of the rules and operational details governing how countries will implement and measure their emission reductions.

Under the terms agreed in Kyoto, the Protocol only enters into force following ratification by 55 Parties to the UNFCCC, and if these 55 countries included enough Annex, I Parties that at least

55% of that group's total carbon dioxide emissions for 1990 were represented. The Protocol finally entered into force as a legally binding document on 16 February 2005 with the ratification of Russia. Kyoto set emissions reductions targets for 37 industrialized countries including Annex I parties representing 63.7% of Annex I greenhouse gas emissions in 1990. By December 2007, the Protocol had been ratified by 177 countries. The carbon market established on its ratification has provided a strong precedent for trading in emissions reductions. The emissions reductions of Kyoto are modest—generally, less than 10% of 1990 levels—but the agreement and its widespread acceptance (184 countries have ratified) provide important international momentum for action on climate change.

Kyoto Protocol calls for relatively modest reductions in GHG emissions, setting an average goal of 5% below 1990 levels for developed countries. The protocol does not set reduction targets for developing countries on the principle that the developed countries that have created the problem should take the first steps to clean it up. However, rapidly developing economies such as those of China and India will have a huge impact on GHG emissions in the future. The Kyoto Protocol committed most of the Annex I signatories to the UNFCCC (consisting of members of the Organization for Economic Co-operation and Development and several countries with “economies in transition”) to mandatory emission-reduction targets, which varied depending on the unique circumstances of each country. Other signatories to the UNFCCC and the protocol, consisting mostly of developing countries, were not required to restrict their emissions.

The protocol provided several means for countries to reach their targets. One approach was to make use of natural processes, called “sinks,” that remove greenhouse gases from the atmosphere. The planting of trees, which take up carbon dioxide from the air, would be an example. Another approach was the international program called the Clean Development Mechanism (CDM), which

encouraged developed countries to invest in technology and infrastructure in less-developed countries, where there were often significant opportunities to reduce emissions. Under the CDM, the investing country could claim the effective reduction in emissions as a credit for meeting its obligations under the protocol. An example would be an investment in a clean-burning natural gas power plant to replace a proposed coal-fired plant. A third approach was emissions trading, which allowed participating countries to buy and sell emissions rights and thereby placed an economic value on greenhouse gas emissions. European countries initiated an emissions-trading market as a mechanism to work toward meeting their commitments under the Kyoto Protocol. Countries that failed to meet their emissions targets would be required to make up the difference between their targeted and actual emissions, plus a penalty amount of 30 percent, in the subsequent commitment period, beginning in 2012; they would also be prevented from engaging in emissions trading until they were judged to comply with the protocol. The emission targets for commitment periods after 2012 were to be established in future protocols.

3.4.1. Challenges of The Kyoto Protocol

Although the Kyoto Protocol represented a landmark diplomatic accomplishment, its success was far from assured. Indeed, reports issued in the first two years after the treaty took effect indicated that most participants would fail to meet their emission targets. Even if the targets were met, however, the ultimate benefit to the environment would not be significant, according to some critics, since China, the world's leading emitter of greenhouse gases, and the United States, the world's second-largest emitter, were not bound by the protocol (China because of its status as a developing country and the United States because it had not ratified the protocol). Other critics claimed that the emission reductions called for in the protocol were too modest to make a detectable difference in global temperatures in the subsequent several decades, even if fully

achieved with U.S. participation. Meanwhile, some developing countries argued that improving adaptation to climate variability and change was just as important as reducing greenhouse gas emissions.

At COP18 held in Doha, Qatar, in 2012, delegates agreed to extend the Kyoto Protocol until 2020. They also reaffirmed their pledge from COP17, which had been held in Durban, South Africa, in 2011, to create a new, comprehensive, legally binding climate treaty by 2015 that would require greenhouse-gas-producing countries—including major carbon emitters not abiding by the Kyoto Protocol (such as China, India, and the United States)—to limit and reduce their emissions of carbon dioxide and other greenhouse gases. The new treaty, planned for implementation in 2020, would fully replace the Kyoto Protocol. The landmark Paris Agreement, signed by all 196 signatories of the UNFCCC in 2015, effectively replaced the Kyoto Protocol.

3.5 THE PARIS AGREEMENT

At COP 17 in Durban, parties to the UNFCCC agreed to work towards developing, a protocol, another legal instrument, or an agreed outcome with legal force applicable to all Parties (to the UNFCCC)". In December 2015, 196 countries subscribed to the Paris Agreement – a legally binding agreement that sets out the pathway towards a climate-neutral, resilient future for the globe. In the run-up to the Paris COP, 186 countries submitted to the UNFCCC Secretariat their Intended Nationally Determined Contributions (INDCs), outlining steps that these countries intend to take to participate in the joint global effort of limiting temperature rise to well below 2°C and to pursue efforts to limit the temperature increase to 1.5°C. The Agreement will enter into force when at least 55 Parties to the Convention, accounting in total for at least an estimated 55 percent of the total global greenhouse gas emissions [will] have deposited their instruments of ratification, acceptance, approval, or accession” to the UNFCCC.

Whilst parties still had to work out the details - and this would be done not only in the run-up to the next COP in Marrakesh but also in the following years until the new agreement kicked in from 2021. The Paris Agreement offers a clear direction towards a long-term goal, a decision to monitor and regularly strengthen joint action, a commitment to transparency of action, and support for countries in need concerning finance, technology, and capacity building to bring about real change. Developed countries will continue to provide and mobilize climate finance to support developing countries, mobilizing USD 100 billion a year until 2025. A new, higher, collective financial goal will be adopted from 2026 onwards.

Parties agreed to five-year cycles` of action. In continuation of their INDCs, all parties to the Agreement are expected to undertake and communicate ambitious (new or updated) action plans with a view of achieving jointly the purpose of this Agreement. Each party's successive NDC will represent a progression beyond that party's current NDC and reflect its higher ambition in the light of different national circumstances. A global stocktake will enable parties to judge whether these joint efforts are on track and inform the implementation of their action plans. This is the first global agreement that provides a common framework for the global efforts to fight climate change for developed and developing countries. These efforts will take into account such crucial issues as equity, sustainable development, and poverty, with the provision of support and developing countries taking the lead.

The preamble of the Agreement highlights a broad set of issues and priorities to be considered when implementing the Agreement and undertaking climate action. This includes the acknowledgment that Parties should when taking action to address climate change, respect, promote and consider their respective obligations on human rights, as well as the rights of

Indigenous peoples. The preamble also considers the importance of a just transition of the workforce and the creation of decent work and quality jobs.

The Paris Agreement's central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Additionally, the agreement aims to increase the ability of countries to deal with the impacts of climate change, and at making finance flows consistent with low GHG emissions and climate-resilient pathways. To reach these ambitious goals, appropriate mobilization and provision of financial resources, a new technology framework, and enhanced capacity-building are to be put in place, thus supporting action by developing countries and the most vulnerable countries, in line with their national objectives. The Agreement also provides for an enhanced transparency framework for action and support.

The Paris Agreement differs from the Kyoto Protocol in that concerning the joining threshold, it does not discriminate between developed and developing countries. Based on intended nationally determined contributions (INDCs) submitted by 187 out of 196 countries - Parties to the UNFCCC. All parties to the Paris Agreement undertake to mitigate GHG emissions, with progressive ambition and a regular global stocktake every five years to check the collective progress on the pathway to achieve the global goal of holding the increase in the global average temperature to well below 2 degrees Celsius above pre-industrial levels, making efforts to keep the rise of global temperature below 1,5 degrees Celsius (PA, Art. 2.1). To achieve that, all Parties should strive to formulate and communicate long-term low greenhouse gas emission development strategies, mindful of Article 2 considering their common but differentiated responsibilities and respective capabilities, in the light of different national circumstances.” (PA, Art. 4.19)

The Agreement envisages that a balance between anthropogenic emissions by sources and removals by sinks of GHG will be achieved in the second half of this century, with global peaking of GHG emissions and rapid reductions thereafter (PA, Art. 4.1). In their INDCs, developed countries „should continue taking the lead by undertaking economy-wide absolute emission reduction targets”, while developing countries are encouraged to move over time towards economy-wide emission reduction or limitation targets in the light of different national circumstances.” Actions of developing countries will continue to be conditional on support, as it is under the Convention. The Agreement envisages ratcheting up the ambition of the INDCs every five years, in line with recommendations of the global stocktake. This will be possible with transparency as one of the building blocks of the Agreement, and with all countries accounting for their emissions.

The Paris Agreement recognizes adaptation as a global issue. Parties agreed on one global adaptation goal (PA, Art.7.1). On adaptation issues, countries agreed to strengthen cooperation, improve the effectiveness and durability of action results, and formally recognize the adaptation efforts of developing countries. Countries will periodically communicate their adaptation plans. Many details of the implementation will have to be decided by countries, beginning in May 2016. The Decision Adopting the Paris Agreement includes a work plan for the period before entry into force of the Agreement. The Agreement underlines the importance of adaptation and support to the most vulnerable countries. Adaptation is treated with an importance that previously was attributed to mitigation only. It introduced a cycle of action for strengthening adaptation efforts which is like the cycle of mitigation action.

The Paris Agreement is a key element under the UNFCCC, and it contains several principles and initiatives that will help countries reach the Paris Agreement goals, including-

- a) Mitigation of GHGs: All Parties must submit GHG emission reduction targets (referred to as nationally determined contributions or NDCs) and update these targets every five years. Each country determines its own NDC to reflect its most ambitious effort following its national circumstances.
- b) Adaptation and Loss and Damage: The Paris Agreement calls for all countries to strengthen cooperation to enhance adaptation efforts, build resilience, and reduce vulnerability to climate change. It calls for all Parties to engage in adaptation planning processes and encourages them to submit and periodically update an adaptation communication outlining their priorities, implementation, and support needs, plans, and actions.
- c) The Paris Agreement also recognizes the importance of averting, minimizing, and addressing loss and damage associated with climate impacts, and urges Parties to work cooperatively, along with other bodies and expert groups, to enhance understanding, action, and support related to losses and damages.
- d) Carbon Markets: it provides a framework for countries to participate in international carbon markets using Internationally Transferred Mitigation Outcomes (ITMOs), whereby emission reductions or removals that occur in one country are transferred for use towards another country's NDC. Such international cooperation can allow for higher ambition in reducing global emissions, unlock new emission reduction opportunities, and mobilize investments in low-carbon solutions from both government and the private sector.
- e) Support for developing countries: The provision of financial and other support to help developing countries implement climate policies is an issue of central importance in multilateral climate negotiations. In support of the Paris Agreement, Canada pledged C\$2.65 billion over five years in climate finance to pursue ambitious action on climate

change in developing countries. The provision of climate finance will continue to be a key element for promoting continued global action on climate change.

- f) Global stocktake: A global stocktake will take place every five years starting in 2023 to assess the collective progress in implementing the provisions of the Agreement. The stocktake will consider mitigation and adaptation actions undertaken by all countries, and the adequacy of financial, technical, and capacity-building support.
- g) Transparency framework: The Paris Agreement requires all Parties to regularly report on and undergo a review of their GHG emissions, climate action, and progress towards their targets. This transparency system is essential to building trust amongst countries and fostering accountability, as well as tracking collective progress and gathering necessary data to strengthen the global response to climate change. Donor countries are also required to provide regular reporting on their provision of climate finance.

To make the Paris Agreement fully operational, a work program was launched in Paris to develop modalities, procedures, and guidelines on a broad array of issues. Since 2016, Parties work together in the subsidiary bodies (APA, SBSTA, and SBI) and various constituted bodies. The Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA) met for the first time in conjunction with COP 22 in Marrakesh (in November 2016) and adopted its first two decisions.

The Paris Agreement, adopted through Decision 1/CP.21, also addresses crucial areas necessary to combat climate change. Some of the key aspects of the Agreement are set out below:

- a) Long-term temperature goal (Art. 2) – The Paris Agreement, in seeking to strengthen the global response to climate change, reaffirms the goal of limiting global temperature

increase to well below 2 degrees Celsius while pursuing efforts to limit the increase to 1.5 degrees.

- b) Global peaking and 'climate neutrality' (Art. 4) –To achieve this temperature goal, Parties aim to reach global peaking of greenhouse gas emissions (GHGs) as soon as possible, recognizing peaking will take longer for developing country Parties, to achieve a balance between anthropogenic emissions by sources and removals by sinks of GHGs in the second half of the century.
- c) Mitigation (Art. 4) – The Paris Agreement establishes binding commitments by all Parties to prepare, communicate and maintain a nationally determined contribution (NDC) and to pursue domestic measures to achieve them. It also prescribes that Parties shall communicate their NDCs every 5 years and provide information necessary for clarity and transparency. To set a firm foundation for higher ambition, each successive NDC will represent a progression beyond the previous one and reflect the highest possible ambition towards enhancing their mitigation efforts.
- d) Sinks and reservoirs (Art.5) –The Paris Agreement also encourages Parties to conserve and enhance, as appropriate, sinks and reservoirs of GHGs as referred to in Article 4, paragraph 1(d) of the Convention, including forests.
- e) Voluntary cooperation/Market- and non-market-based approaches (Art. 6) – The Paris Agreement recognizes the possibility of voluntary cooperation among Parties to allow for higher ambition and sets out principles – including environmental integrity, transparency, and robust accounting – for any cooperation that involves internationally transferal of mitigation outcomes. It establishes a mechanism to contribute to the mitigation of GHG

emissions and support sustainable development and defines a framework for non-market approaches to sustainable development.

- f) Adaptation (Art. 7) – The Paris Agreement establishes a global goal on adaptation – of enhancing adaptive capacity, strengthening resilience, and reducing vulnerability to climate change in the context of the temperature goal of the Agreement. The adaptation efforts of developing countries should be recognized.
- g) Loss and damage (Art. 8) – The Paris Agreement recognizes the importance of averting, minimizing, and addressing loss and damage associated with the adverse effects of climate change, including extreme weather events and slow onset events, and the role of sustainable development in reducing the risk of loss and damage.
- h) Finance, technology, and capacity-building support (Art. 9, 10, and 11) – The Paris Agreement reaffirms the obligations of developed countries to support the efforts of developing country Parties to build clean, climate-resilient futures, while for the first time encouraging voluntary contributions by other Parties. The agreement also provides that the Financial Mechanism of the Convention, including the Green Climate Fund (GCF), shall serve the Agreement. International cooperation on climate-safe technology development and transfer and building capacity in the developing world are also strengthened: a technology framework is established under the Agreement and capacity-building activities will be strengthened through, inter alia, enhanced support for capacity-building actions in developing country Parties and appropriate institutional arrangements. Climate change education, training as well as public awareness, participation, and access to information (Art 12) are also to be enhanced under the Agreement.

- i) Climate change education, training, public awareness, public participation, and public access to information (Art 12) are also to be enhanced under the Agreement.
- j) Transparency (Art. 13), implementation, and compliance (Art. 15) – The Paris Agreement relies on a robust transparency and accounting system to provide clarity on action and support by Parties, with flexibility for their differing capabilities of Parties. In addition to reporting information on mitigation, adaptation, and support, the Agreement requires that the information submitted by each Party undergoes international technical expert review. The Agreement also includes a mechanism that will facilitate implementation and promote compliance in a non-adversarial and non-punitive manner and will report annually to the CMA.
- k) Global Stocktake (Art. 14) – A “global stocktake”, to take place in 2023 and every 5 years thereafter, will assess collective progress toward achieving the purpose of the Agreement in a comprehensive and facilitative manner.

Parties also recognized the need to strengthen the knowledge, technologies, practices, and efforts of local communities and indigenous peoples, as well as the important role of providing incentives through tools such as domestic policies and carbon pricing. The signatories of the UNFCCC meet annually at the Conference of the Parties (COP) to confer on further reductions of GHG emissions and increase environmental protection. Through the UNFCCC there have been two agreements signed by nations in the UN to formally declare emission reduction goals. These are the Kyoto Protocol (1997) and the Paris Agreement (2015). While the Kyoto Protocol and Paris Agreement both set out to address climate change, there are some notable differences between them. Unlike the Kyoto Protocol, which established top-down legally binding emissions reduction targets (as well as penalties for non-compliance) for developed nations only, the Paris Agreement requires

that all countries—rich, poor, developed, and developing—do their part and slash greenhouse gas emissions. To that end, greater flexibility and national ownership are built into the Paris Agreement: No language is included about the commitments countries should make; nations can set their own emissions targets (NDCs) consistent with their level of development and technological advancement.

While the Paris Agreement does not have harsh penalties for countries not meeting their targets, it does have a robust system of monitoring, reporting, and reassessing individual and collective country targets over time to move the world closer to the broader objectives of the deal. And the agreement sets forth a requirement for countries to announce their next round of targets every five years—unlike the Kyoto Protocol, which aimed for that objective but didn’t include a specific requirement to achieve it. Under the Kyoto Protocol, the original commitment was to decrease overall emissions by 5% from 1990 levels while the Paris Agreement’s overall goal was to limit global temperatures to 1.5 degrees Celsius above pre-industrial levels.

3.5.1 Influence of the Paris Agreement on Nigeria’s Climate Policies

In 2015, Nigeria prepared its Intended Nationally Determined Contribution (INDC)²⁵⁶. Following approval by President Buhari and submission to the UNFCCC, Nigeria presented its INDC at the COP21 in Paris in December 2015. In March 2017, President Buhari ratified the Paris Agreement, paving the way for a new era of action on climate change. As a party to the Paris agreement and as part of its NDCs, Nigeria committed to cutting its carbon emissions unconditionally by 20 percent or conditionally by 45 percent with international support by 2030. In March 2021, Nigeria

²⁵⁶ In her NDC, Nigeria has unconditionally pledged a 20% emissions reduction below Business as Usual (BAU) by 2030, and a 45% conditional commitment which can be achieved with financial assistance, technology transfer and capacity building from the more advanced and more willing international partners that care a lot about issues of climate change.

revised its NDCs to include clean cooking as a way of ensuring a conversion from cooking fuels such as kerosene and charcoal to eco-friendly cooking gas and efficient wood stoves.

Nigeria has developed several policies as part of its climate action, including the national climate change policy and response strategy, which took effect in 2012 to respond to the negative impacts of climate change and foster economic development to help achieve a climate-resilient country; the national climate change policy adopted by the Federal Executive Council (FEC) in 2013 to form the basis for a climate change law; and the short-lived national climate pollutant action plan approved in 2019 to improve air quality and fight climate change.

All these policies were geared towards a single purpose — to mitigate and fight the challenges of climate change. At the inception of the current administration, the President had committed to tackling climate change to help Nigeria grow a sustainable economy while cutting down on its carbon emission. However, it has not been such a smooth ride for the federal government. Climate change still poses grievous threats to the country. This has significantly affected her economic development in areas such as agriculture and food security, drought in arid regions in northern Nigeria, flooding and sea-level rise in coastal communities, soil erosion, and landslides in the southern part of the country.

Having set up its NDCs as stipulated under the Paris agreement, these factors still show that Nigeria needs to step up in its climate action if it means business. In response to this, the Nigerian Government has enacted several laws and climate policies. A widely notable of these laws is the newly enacted Petroleum Industry Act 2021. Before the signing of the Paris Agreement in 2017, Nigeria had been a signatory to the UNFCCC since 1994. President Buhari's assent to the Petroleum Industry Bill was met with fanfare, especially by rights groups and advocates who had expended time and resources calling for its passage. The Act holds lots of promises as it ends a

20-year effort to reform Nigeria’s oil and gas sector, intending to create an environment more conducive for the growth of the sector and address legitimate grievances of communities most impacted by extractive industries.

The Act attempts to address a key number of issues bedeviling the Nigerian petroleum and the consequential effects on the climate, one of such is the persisting menace of gas flaring. The Act has upheld the prohibition of gas flaring, except for a few circumstances in which there is no other reasonable option than to flare gas. The only recognized few instances where gas flaring may be allowed by the Act are as follows:

- i. In the case of an emergency
- ii. Pursuant to an exemption granted by the Nigerian Upstream Regulatory Commission (the “Commission”).
- iii. As an acceptable safety practice under established regulations.

Section 104 of the Act in a bid to fulfill its obligations under the UNFCCC and similar Conventions, demands strict adherence to a gas flaring plan. A licensee or lessee producing natural gas is expected to, within 12 months of the effective date, submit a natural gas flare elimination and monetization plan to the Commission, which shall be prepared under regulations made by the Commission under the Act. A Licensee or Lessee who fails to adhere to the provision shall pay a penalty prescribed according to the Flare Gas (Prevention of Waste and Pollution) Regulations. Monies received in respect of gas flaring penalties for upstream petroleum operations are to be utilized for environmental remediation and relief of the host communities impacted. However, gas flare penalties in respect of midstream operations are to be transferred to the Midstream and Downstream Gas Infrastructure Fund to be used for midstream and downstream gas infrastructure investment in the affected host communities.

It is worthy of note that the prescribed penalty on gas flaring comes with a proviso, “*the Commission may, however, grant a permit to a Licensee or Lessee to allow the flaring or venting of natural gas for a specific period where it is required for facility start-up or strategic operational reasons, including testing.*”

Before the passage of the Act, recommendations were made by experts, and reports were submitted. One of such is ‘Nigeria’s Petroleum Industry Bill: A Missed Opportunity to Prepare for the Zero-Carbon Future’²⁵⁷ by the Columbia Center on Sustainable Investment (CCSI) which followed up on an earlier report ‘Equipping the Nigerian National Petroleum Corporation (NNPC) for the Low-Carbon Transition: How Are Other National Oil Companies Adapting?’²⁵⁸, that explored how to reform NNPC, building on international best practices and lessons learned from other National Oil Companies (NOCs). The latter report gave recommendations bordering on “diversifying away from oil, investing in clean energy sources, and improving governance” as essential steps for Nigeria to effectively break free from its oil dependence. The latter also recommended the development of an energy transition plan and including principles of climate change governance in the petroleum industry reform agenda.

However, it appears that the National Assembly passed the bill and the President assented to same without considering much of the recommendations made in the latter report, thereby shutting the

²⁵⁷ Solina Id at pp. 13

<https://ccsi.columbia.edu/sites/default/files/content/docs/blog/Nigeria%E2%80%99s%20Petroleum%20Industry%20Bill.pdf> Retrieved 22 November 2021

²⁵⁸ Toledano, P., Javier, P., Mebratu-Tsegaye, T. and Brauch, M., 2022. Equipping the Nigerian National Petroleum Corporation for the Low-Carbon Transition How Are Other National Oil Companies Adapting?. 1st ed. [ebook] New York: Columbia Center on Sustainable Investment, pp.12,16,. Available at: < <https://ccsi.columbia.edu/sites/default/files/content/docs/CCSI-NNPC-Nigerian-National-Petroleum-Corporation-Low-Carbon-Transition-rev.pdf> > [Accessed 22 November 2021].

door to one of the most effective ways of reducing Nigeria’s reliance on income from fossil fuels for its much-needed economic and infrastructural development. Indeed, in its overview of the Petroleum Industry Bill which eventually translated into the Act, the Columbia Centre for Sustainable Development described the legal framework as a “small step when Nigeria needs a leap” and observed that “it ultimately fails to account for climate change, acknowledge the Paris Agreement, and address the need for diversification to adequately prepare Nigeria for the energy transition that is already underway”.

Nigeria had earlier committed to the Intended Nationally Determined Contribution (INDC) to reduce greenhouse gas emissions by 20% in addition to the National Renewable Energy and Energy Efficiency Policy²⁵⁹ with the vision to generate 30,000 megawatts (MW) of electricity by 2030 from renewable energy contributing 30% of the generation mix. Ahead of COP 26 at Glasgow, Nigeria submitted an updated NDC on 30 July 2021²⁶⁰. In the updated NDC, the Nigerian government proposed to mitigate four greenhouse gases: carbon dioxide (CO₂), Methane (CH₄), nitrous oxide (N₂O), and hydrofluorocarbons (HFCs), as against the three GHG (CO₂, CH₄, and N₂O) indicated in the earlier submitted NDC. The updated NDC reflects higher ambition, higher quality, and higher national buy-in. Notable revisions include

²⁵⁹See Federal Ministry of Power Nigeria. (2015). NATIONAL RENEWABLE ENERGY AND ENERGY EFFICIENCY POLICY (NREEEP) APPROVED BY FEC FOR THE ELECTRICITY SECTOR. 1st ed. [ebook] Abuja Nigeria., p.17. Available at: < <http://admin.theiguides.org/Media/Documents/NREEEP%20POLICY%202015-%20FEC%20APPROVED%20COPY.pdf> > [Accessed 25 November 2021].

²⁶⁰ See <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Nigeria%20First/NIGERIA%202021%20NDC-FINAL.pdf> Retrieved 25 November 2021.

- a) update of baseline business as usual (BAU) projections, using more accurate and recent economic growth projections; estimated BAU 2030 emissions are now at 453 MTCO₂e, increasing 31 percent from a 2018 baseline of 347 MTCO₂e;
- b) raising economy-wide mitigation targets to 47 percent, with 20 percent of emissions unconditional. The updated ambition includes improved reduction projections for the waste sector and new gases, including short-lived climate pollutants (SLCPs) and hydrofluorocarbons (HFCs). Nigeria recommitted to its unconditional contribution of reducing carbon emissions by 20 percent below Business-as-Usual by 2030.

However, commendable as these revisions may be, the Petroleum Industry Act 2021 (“PIA”) failed to acknowledge these projections. It may be argued that the Petroleum Industry Bill already passed the third reading at the National Assembly and is ready for the President’s assent at the time the NDCs were reviewed. But the 2017 NDC was in existence at the time the Bill was drafted, yet it failed to address the decarbonizing of the energy industry- renewables, carbon capture, hydrogen, and the upgrading of power infrastructure. While other countries are consciously planning for life beyond fossil fuels, Nigeria’s PIA is obsessed with applying 10 percent of revenue from acreage rents to subsidize petroleum exploration in frontier basins for reserves that may not be worth much after 2030. If the comprehensive legal framework for the petroleum industry (a major contributor to climate change) could make this omission, it would be hard to determine the country’s determination to implement its updated NDC so-called.

The Yale Environmental Performance Index (EPI) 2020 rates Nigeria 151 among 180 countries in the world and 25 in Sub-Saharan Africa in environmental performance in 2020. This puts Nigeria among the nations that must redouble national sustainability efforts along all fronts. The low EPI

scores indicate the need for greater attention to the spectrum of sustainability requirements, with a high priority focus on critical issues such as air and water quality, biodiversity, and climate change. Following the submission of the updated NDC, the Nigerian government claimed to have demonstrated its intention to accelerate the implementation of the NDC, stating that it has “through the Department of Climate Change sought Climate Action Enhancement Package’s support to make sure the country was ready to operationalize its updated NDC. With Islamic Development Bank’s support, sub-national officials across all 36 States were trained to plan for climate action at the local level and raise community awareness of the NDC and the national climate agenda. With the Environmental Resources Centre, the Federal Ministry of Environment organized a Legal Working Group of legislative experts and policymakers to strengthen the national climate agenda’s policy framework, including revisions to the Climate Change Bill. Additionally, the African Development Bank ensured the private sector is equipped with the tools and information necessary to invest in putting the NDC to work”.²⁶¹

Recently, the Department of Climate Change under the Federal Ministry of Environment sought the passing of the climate change bill into law to establish “a legal instrument that would address the myriads of climate change actions and challenges in the country”. The Climate Change Bill was earlier presented to the presidency but was refused assent in 2019. The president’s reason was that the scope and guiding principle of the bill “replicate the function of the federal ministry of the environment which is charged with mainstreaming climate responses and actions into government policies but does not suggest the scrapping of the ministry”.

²⁶¹See Ndcpartnership.org. 2021. Nigeria’s Updated NDC is Ambitious and Inclusive | NDC Partnership. [online] Available at: <https://ndcpartnership.org/news/nigeria%E2%80%99s-updated-ndc-ambitious-and-inclusive> [Accessed 25 November 2021]

On Thursday, 18 September 2021, President Muhammadu Buhari signed the Climate Change Bill into law. The Act provides for amongst other things, the mainstreaming of climate change actions and the establishment of a National Council on Climate Change. It also paves the way for environmental and economic accounting and a push for a net-zero emission deadline plan in the country. This is a commendable development as the President had earlier committed during the world leaders' summit of the just concluded United Nations Climate Change Conference, COP26, in Glasgow, the UK that Nigeria will cut its carbon emission to net zero by 2060.

A notable aspect of the Act includes its provision for nature-based solutions such as REDD+ and environmental-economic accounting and the push for a net-zero emissions deadline for Nigeria. In the context of REDD+, the Act, in section 28, provides for the establishment of the REDD+ registry at sub-national levels for “capturing REDD+ activities in Nigeria, including updates on Forest Reference Emission Level (FREL).” It also makes provision for the National Council on Climate Change to provide fiscal support for REDD+ activities in Nigeria. Also, in furtherance of its projection for sustainable development anchored on climate and biodiversity responsibilities, the Act in Section 29 provides for the development of natural capital accounts by the National Bureau of Statistics and the use of the data from the accounts in making National Development Plans.

This is the first time that a legal text mentions REDD+ and environmental-economic accounting in Nigeria.²⁶² The provisions are reproduced below:

Section 27: Nature-based solutions

²⁶² These provisions were results of engagements and provision of technical support in the review and redrafting of the bill by GLOBE Nigeria. See <https://gef6.globelegislators.org/node/301> Retrieved 22 November 2021.

“The Council shall promote and adopt nature-based solutions to reducing GHG emissions and mitigating climate change issues in Nigeria”

Section 28: Establishment of the REDD+ Registry

“(1) The Federal Ministry responsible for Environment shall set up a registry with sub-national nodes, for capturing REDD+ activities in Nigeria, including updates on Forest Reference Emission Level (FREL).

(2) In this section, “REDD+” means Reducing Emissions from Deforestation and Forest Degradation and the role of conservation, sustainable management of forests, and the enhancement of forest carbon stocks.

(3) The Council may in fulfillment of Nigeria’s climate change obligations, provide financial support for REDD+ activities.”

Other key aspects of the Climate Change Act are modeled after those of the UK and Ireland, although it also has many innovative aspects specially designed to adapt to the unique Nigerian situation. The Act provides that the government shall set five-year carbon budgets in the context of a National Climate Change Action Plan which should be ratified by the Federal Executive Council. The budgets are supposed to advance efforts to achieve net-zero GHG emission reduction between 2050 – and 2070. The five-year budget shall be broken down into the annual carbon budget for each of the years that make up the five-year cycle. President Buhari has, at COP26, already committed Nigeria to a net-zero carbon target by 2060. The first carbon budget is to be submitted for approval not later than 12 months from the date that the bill is signed by the President, so now no later than 18th November 2022. Subsequent carbon budgets are to be submitted for approval not later than 12 months to the date of the expiration of the current budget cycle. While the Federal Ministry of Environment is tasked with setting the carbon budget, the

new law provides for a National Council on Climate Change that will oversee the implementation of the National Climate Change Action Plan.

The National Climate Council is a major innovation in the Act intended to suit the largely bureaucratic nature of governance in Nigeria. Headed by the President who will serve as the Chairman, the Council will supervise the activities and help the Environment Ministry to coordinate the implementation of sectoral targets and guidelines needed to achieve the National Climate Change Action Plan. The Council shall administer a Climate Change Fund established under the new Act and play a key role in mobilizing financial resources to support climate change actions throughout the country. This reflects an understanding of the security implications of climate change in Nigeria and the central role that finance will play in facilitating climate action and green transition in the country. It is instructive to note that the Act seeks to democratize climate governance through the inclusion of representatives of the private sector, youth, women groups, people with disabilities, and civil society organizations in the Council.

The Council will be served by a Secretariat situated at the Presidency that is headed by a Director-General who shall serve as the Secretary to the Council. Secretariat shall advise and assist the Council in the performance of the Council's functions and duties including the monitoring, verification, and reporting on the extent to which the national emission profile is consistent with the carbon budget.

The new climate change law is significant in many ways. It sends a strong positive message to the world that Nigeria understands the enormity and urgency of the climate change challenge and is serious to implement the net-zero carbon pledge made by President Buhari at COP26 in Glasgow. A high-level body such as the National Council on Climate Change is about the only organ in Nigeria that can be reasonably expected to facilitate the coordination of the various ministries,

departments, and agencies whose engagement and active participation would be required to meet the urgent and enormous task of national deep decarbonization required to achieve the ambitious climate target, and steer the country on the path of just green transition to ensure climate-resilient development of the country in the coming decades.

Also, a National Climate Change Council will go a long way in assisting the Federal Ministry of Environment in the goal of setting a national platform for the mobilization and disbursement of trillions of climate investments needed to scale up and accelerate the green transition efforts in Nigeria in the coming months and years.

To succeed in the task of fighting climate change Nigeria will need a large scale of climate finance from both domestic and international sources. With the implementation of the country's NDC projected to cost about USD177 billion by 2030, only a body as high profile as the National Council on Climate Change can be expected to oversee the task of mobilizing such an amount in the context of dwindling oil revenue and a world that is moving away from fossil fuel. Nigeria is in a difficult place in terms of climate change. It is extremely vulnerable to climate change. At the same time, it is also very dependent on oil for its foreign exchange earnings and therefore also vulnerable to the transition risks associated with climate change.

Hence, nothing short of a bold institutional arrangement and action will save Nigeria from climate change. The Climate Act represents such a bold action and if well implemented gives Nigeria a fighting chance. It is hoped that the country will get to the plenty of work needed to translate this bold action into concrete policies that will document the emission profiles of the key sectors of the economy, produce credible decarbonization pathways for the country, strengthen the resilience of the country against climate change impacts and unlock trillions of dollars in climate investment needed to secure the transition.

3.5.2 The Clean Development Mechanism (CDM)

The CDM is one of three flexible mechanisms defined under the Kyoto Protocol to the UNFCCC which allows developed countries to undertake GHG emission reduction (or emission removal) projects, in developing countries, to counteract their domestic emissions. Each CDM project generates Certified Emissions Reduction (CER) units, where one CER is equivalent to one tonne of carbon dioxide (CO₂) or its equivalent to the other GHGs. The CDM is defined in article 12 of the Kyoto Protocol. The mechanism allows a party with emission reduction commitments, listed in Annex B of the Kyoto Protocol, to implement abatement projects in a developing country and, upon verification, to receive CERs for the abatement. The party obtaining the credits can use them to obtain compliance with its national or Kyoto Protocol emission reduction objectives.²⁶³

The CDM is harnessing the entrepreneurial power of markets and the private sector to meet goals on sustainable development and climate change. It provided a framework to estimate the impact of that effort, and attempt to account for and price it, thereby mobilizing financial flows to reduce emissions in developing countries. It has also contributed to sustainable development and technology transfer and knowledge between countries.

The CDM not only offers opportunities for sustainable development but also brings important co-benefits, such as poverty reduction, access to energy-efficient lighting and cooking, improvement of air quality and living conditions, reduction of costs, and generation of jobs and skills. The rationale behind the CDM is that emission reductions should be undertaken where it costs the least,

²⁶³ UNFCCC.CDM Website: The Clean Development Mechanism, Available at <https://unfccc.int/process-and-meetings/the-kyoto-protocol/mechanisms-under-the-kyoto-protocol/the-clean-development-mechanism> (Accessed on 24 January 2022).

as greenhouse gas (GHG) emissions abatement is a global public good and the geographical location of emission reductions does not matter for the global stock of GHG.

Article 12 imposes further conditions on the emission reductions obtained under the CDM. For instance, emission reductions are to be obtained through a voluntary agreement that benefits the non-Annex I country, which in turn should yield real long-term measurable benefits for GHG mitigation. Also provided in Article 12 of the Kyoto Protocol, is the important condition of additionality for certified emission reduction (CERs) to be created under the CDM.²⁶⁴

3.5.3 Gas Flaring CDM Projects– The Nigerian Perspective

As noted earlier, a CDM is a project that allows industrialized countries that are subject to emission reduction targets to develop or finance projects that reduce greenhouse gas (GHG) emission in non-Annex 1 countries in exchange for emission reduction credits.²⁶⁵ A CDM project thus reduces carbon emissions through an agreement between an emitter in a developed country and a project owner in a developing country such that the emitter provides infrastructure and capital to the project owner in the developing country to the amount of carbon credit generated by the project owner in the developing country. This credit which is often referred to as a certified emission reduction or “CER” is then used by the emitter in the developed country.

In terms of Article 12 of the Kyoto Protocol, the broad goals of the CDM are to assist developing countries to the Kyoto Protocol to achieve sustainable development as well as to assist developed

²⁶⁴ See Article 5 of the Kyoto protocol

²⁶⁵ Dechezlepretre, A., Glachant, M., Meniere, Y., 2008; The Clean Development Mechanism and the international diffusion of technologies: an empirical study. *Energy Policy*, 36, pp.1273–1283

country parties to the Kyoto Protocol in achieving compliance with part of their emission reduction commitment under Article 3 of the Kyoto Protocol (Treck, 2004).

The specific objectives of a CDM project are to aid developing countries in achieving outcomes such as poverty reduction, cost-effective emissions reductions as well as environmental benefits thus contributing toward sustainable development.²⁶⁶

In 2015, UNEP confirmed a total number of 12 CDM projects in Nigeria with these projects spread across different industries and engaged in different project activities (CDM, 2015). Nigeria has hosted a total of 7 different types of CDM projects within its provinces with the most common technology being fugitive emissions reduction projects and landfill gas projects. Fugitive emission reduction projects and landfill gas projects collectively represent 59% of all CDM projects in Nigeria²⁶⁷. Below is a table of some of the important CDM projects in Nigeria ²⁶⁸

S/N	Project	Project Summary
1.	Recovery of associated gas that would otherwise be flared at Kwale oil gas processing plant, Nigeria	The capture and utilization of the majority of associated gas previously sent to flaring at the Kwale plant (Kwale OGPP)

²⁶⁶ Zomer, R., Trabucco, A., Bossio, D. and Verchot, L., 2008. Climate change mitigation: A spatial analysis of global land suitability for clean development mechanism afforestation and reforestation. *Agriculture, Ecosystems & Environment*, 126(1-2), pp.67-80.

²⁶⁷ Pillay, S., 2016. An Assessment of Clean Development Mechanism Project Contribution to Sustainable Development in Nigeria. *International Business & Economics Research Journal (IBER)*, 15(6), pp.315-328.

²⁶⁸ CDM, (2016A); CDM, (2016B); CDM, (2016c); CDM, (2016d); CDM,(2016e); CDM, (2016f); CDM, (2016g); CDM, (2016h); CDM, (2016i); CDM, (2016j)

2.	Pan Ocean Gas Utilization Project	The purpose of the project is to eliminate gas flaring at the Ovade-Ogharefe oil field operated by Pan Ocean Oil Corporation (Nigeria) in a Joint Venture Partnership with Nigerian National Petroleum Corporation (NNPC).
3.	Efficient Fuel Wood Stoves for Nigeria	The purpose of the project activity is the dissemination of up to 12,500 efficient fuel wood stoves (SAVE80) and heat-retaining polypropylene boxes (hereafter referred to as the SAVE80 system) in different states located in the Guinea Savannah Zone of Nigeria, at subsidized prices.
4.	Recovery of gas at the Asuokpu /Umutu Field, Nigeria	The purpose of this project activity is to recover gas that is currently, and in the future would be, flared at Asuokpu/Umutu Marginal Field located in block OML 38 in Nigeria and to deliver it to the domestic market for productive use as an energy product.
5.	Municipal Solid Waste (MSW) composting facility	The project activity involves the production of high-quality compost from Municipal Solid Waste (MSW) by using advanced composting technology.
6.	Afam Combined Cycle Gas Turbine Power Project	The “project activity”, called Afam VI (“the project”) is a 650 MW grid-connected combined cycle gas turbine (CCGT) fueled by natural gas.
7.	LFG project in Nigeria	The project activity is to build, operate and maintain a landfill gas collection and flaring system on landfills in Lagos

8.	Kainji Hydropower Rehabilitation Project, Nigeria	The project covers the rehabilitation of units 5, 6 and 12 of the Kainji Hydropower powerhouse
9.	Recovery and Utilization of Associated Gas from the Obodugwa and neighboring oil fields in Nigeria	The purpose of this project activity is to implement the infrastructure to allow for the utilization of the associated gas that is currently flared from two oil fields in OML561 in Delta State Nigeria thereby reducing the flaring of associated natural gas and thus emissions of CO ₂ into the atmosphere.
10.	Lafarge WAPCO Partial Substitution of Alternative Fuels in Cement Facilities Project in Nigeria	The project activity will partially replace fossil fuels used in pyro-processing with lower-carbon alternative fuels, primarily biomass residue, thus resulting in measurable reductions of GHG (CO ₂) emissions in Nigeria.

3.5.4 Impact of CDM on gas flaring in Nigeria

All projects in the sample showed a clear goal of reducing greenhouse gas emissions. The methods of reducing emissions include the reduction in flaring as well as the replacement of fossil fuels. The benefits were classified as direct for 90% of the projects since the primary objective of the projects was to reduce emissions.²⁶⁹ (Pillay, 2016).

However, these CDMs cannot tackle the problem of gas flaring in Nigeria under the existing scenarios. Despite its intuitive theoretical appeal and potential economic prospects and environmental benefit, it appears somewhat difficult to fathom the real impact of CDM projects in the Nigerian context. For example, combined emission reduction from the 4 CDM projects in the

²⁶⁹ Pillay, S., 2016. An Assessment of Clean Development Mechanism Project Contribution to Sustainable Development in Nigeria. *International Business & Economics Research Journal (IBER)*, 15(6), pp.315-328.

oil and gas industry in Nigeria based on the project design document for a country that flared the most gas in the world behind the Russian Federation is a paltry 4,880,462 tons of CO₂ per annum. Furthermore, the presence of CDM is very insignificant when compared to the estimated 43 million tons of CO₂ emission from routine gas flaring alone annually.²⁷⁰ Consequently, argued that based on simple numerical analysis, Africa and the Least Developed Countries (LDCs) have been lagging far behind in CDM projects.²⁷¹

Against this backdrop,²⁷² Figueres et.al theorized that the CDM project is a deliberate measure and a false market solution to environmental protection that permits polluters to earn carbon credits and at the same time, to continue to flare gas. Ostensibly, these kinds of arrangements encourage the MNOCs to be rewarded bountifully for halting action that in the first instance is illegal. In the simplest of terms, it is political gimmicks that further encouraged the MNOCs not to invest in green technologies such as gas re-injection that can eliminate routine gas flaring. It is the priority of the MNOCs in Nigeria to continue to extract oil and gas with the least possible cost with a maximum profit, and at the same time to earn CERs from CDM which amount to double standards²⁷³.

Thus, Bassey argued that relying on the CDM initiative as a major solution to solve the flaring in Nigeria justifies the desire to do nothing to tackle the problem because it takes longer times to

²⁷⁰ Agbonifo, Philip Ejoor; 2015. Reforming the Clean Development Mechanism (CDM) To Tackle the Environmental Policy Gap in The Nigeria Oil and Gas Industry.; *Journal of Sustainable Development in Africa* (Volume 17, No.2) 65-76

²⁷¹ Lütken, S., 2011. Indexing CDM distribution.

²⁷² Figueres, C. and Streck, C., 2009. The Evolution of the CDM in a Post-2012 Climate Agreement. *The Journal of Environment & Development*, 18(3), pp.227-247.

²⁷³ Agbonifo, Id at Page 182

negotiate CDM project registration²⁷⁴. This is not unconnected to the reason very few projects have so far been established in the oil and gas sector since inception despite Nigeria being a renowned gas flaring country. The ultimate victims are the oil and gas-producing communities and the ecosystem. Therefore, the CDM has not proven to be an effective way to tackle routine gas flaring but appears to be a way to fund the non-ending of gas flaring in Nigeria, a manifestation that gas flaring will continue unabated. Olsen K. H. and Fenhann, J. A, 2009 have similarly noted that CDM blueprint submissions for Nigerian projects point to a picture of challenging economics in an uncertain policy environment and tense security conditions.

The main objective of CDM is to stimulate growth in green energy and promote sustainable development. However,²⁷⁵ noted that “the sustainable development goal of the CDM point to the fact that the CDM has been more effective in reducing mitigation costs for industrialized countries than in contributing to sustainability in developing countries”. This is consistent with the views expressed by N. Bassey, 2008 that there is a strong political will to allocate very scarce financial and human resources to enforce further dispossession of the poor developing countries by the MNOCs from abroad in the name of CDM. For example, the Kwale-Okpai and Asuokpu/Umutu gas recovery and utilization CDM projects, whose very existence is decried by environmental degradation owing to their inability to eliminate routine gas flaring, amount to rewarding unethical corporate MNOC’s failure in environmental protection. This is in addition to the financial

²⁷⁴ Bassey N., 2008, Gas Flaring: Assaulting Communities, Jeopardizing the World; National Environmental Consultation, Abuja, December 2-12

²⁷⁵ Figueres C., Streck C.;2009.; The Evolution of the CDM in a Post-2012 Climate Agreement., The Journal of Environment and Development; 18:227

investments in small-scale CDM projects that are often insufficient to cover the overall high CDM transaction costs.²⁷⁶

CDM has proved to be a huge success for climate protection in many parts of the world, particularly in China, India, Brazil, Mexico, and Malaysia as they possess the key factors that drive and influence the CDM attractiveness globally. Unfortunately, that is not the case in Nigeria as the efficacy of the CDM as an instrument of environmental sustainability to curtail the excessive gas flaring and its attendant environmental consequences in the Niger Delta region of Nigeria is still very much in question. CDM project concept in the Nigerian oil and gas industry ought to be an intervening vehicle and a solution to the problem of environmental degradation, but it appears to be scratching the problem of environmental protection on the surface. The foregoing indicates a strong need for reform. The CDM Projects in Nigeria are nowhere near achieving the NDCs nor are they contributing any noticeable improvement to the gas flaring menace in the country.

3.5.5. Criticisms of the CDM and its replacement by SDM

Notwithstanding its projected and actual benefits, the effectiveness of the CDM globally has been subjected to scrutiny and the succeeding items summarily highlight the criticisms, as follows:

- a. Over-concentration of reduction projects on industrial gases, such as HFC and N₂O, in the context of the CDM. For instance, the CDM projects are overly concentrated in China and India, with both nation-states accounting for over 67 percent of all projects. A look at CDM projects producing and selling credits reveals that nearly two-thirds of emissions reductions involve neither CO₂ nor energy production neglecting forestry and reafforestation project.

²⁷⁶ Boyd, E., Hultman, N., Timmons Roberts, J., Corbera, E., Cole, J., Bozmoski, A., Ebeling, J., Tippman, R., Mann, P., Brown, K. and Liverman, D., 2009. Reforming the CDM for sustainable development: lessons learned and policy futures. *Environmental Science & Policy*, 12(7), pp.820-831.

- b. False assumptions: One of the challenges of the CDM was keeping up with technological progression over time. Partly because of these assumptions, a vast majority of carbon offsets are very likely not additional, measurable, or real - meaning that they would have happened anyway.
- c. The approval process is overly complex and time-consuming. The body administering the process, the CDM Executive Board, does not have enough resources.
- d. The CDM is not promoting enough technology transfer to the developing world; in some cases, projects were created for the main purpose of generating CER units.

The foregoing bottlenecks have led to agitations that the CDM be scrapped. Hence, in the 2015 Paris Agreement, which sets out the framework for global climate action after 2020, there was the establishment of the Sustainable Development Mechanism (SDM) in Article 6.4. Since the end of the second commitment of the Kyoto Protocol in 2020, the CDM regime theoretically ended in 2020 as there remains no legal basis for using the CERs issued by the CDM, however, the CDM has no expiration date and has in theory, remained operational beyond 2020. The goals of the SDM are to promote higher ambition that contributes to emission reductions and sustainable development and deliver overall mitigation of greenhouse gas emissions through incentivizing successfully mitigated GHG emissions. While it shares several of the characteristics of its predecessor, the CDM. The SDM operates in a world where all countries have climate mitigation targets. This is contrary to the design of the CDM which was established as a pure offsetting mechanism for a bifurcated world.

To address this crucial difference between the two mechanisms, the SDM will have to take the commitments of all countries into account and re-evaluate the CDMs to learn from the CDM experience notably its approach to additionality, and how it provides perverse incentives against

further climate action. Currently, countries are discussing the possibility of migrating registered CDM activities into the new regime. Critically, the SDM needs to be accompanied by a larger strategy to implement broader climate policies to help developing countries achieve their targets. The different legal frameworks of the Kyoto Protocol and the Paris Agreement led to several challenges in implementing the SDM. The Kyoto Protocol's commitment periods ended in 2020. Parties now need to actively decide how to transition the protocol's instruments and its institutions, including the CDM in the Paris framework.

The author believes that transitioning from CDM to SDM will act as a catalyst for advancing the new mechanism rather than acting as a hurdle to its success. The CDM however will be required to fill the inevitable void before SDM is in full force; CDM will catalyze the growth of SDM and put prices on an upward trajectory rather than depress it; finally, by removing the trust deficit of the CDM, it will strengthen the climate ambition and environmental integrity in the long run.

The new project activities under the SDM are likely to take at least 3 years before they can issue new credits, just as CDM projects did. In this void, existing CERs will act as an incentive to continue emission reduction efforts by registered projects until new projects under SDM are eligible to issue the credits. The analysis also shows that demand from Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) and Nationally Determined Contributions (NDCs) commitments post-2020 will be enough to fully absorb the supply of about 2.5 billion CERs before 2024. The proposed SDM will build itself on the experience gained from CDM and will have a broader scope in terms of environmental integrity, and the use of carbon credits. If the SDM builds on existing CDM methodologies, it will strengthen the governance mechanism for integrity and additionality.

Lastly, private sector actors have invested heavily in eligible projects under the CDM and are likely to be the ones investing in SDM. Trust deficit in the market mechanism must be removed to provide a strong perception of legal certainty to the CDM and SDM so that investments in emission reduction projects are only increased and not halted.²⁷⁷

3.5.6 Way Forward for Nigeria

From our discussion above, CDM projects in Nigeria are heavily skewed in favor of greenhouse gas reductions. The by-products of the implementation of technologies to reduce greenhouse gas reductions would increase employee benefits and economic sustainable development benefits. The employment benefits would arise out of the employment of skilled staff which is required to manage and implement the project as well as infrastructure development which would also require construction work being performed. They are thus seen as indirect benefits arising from the projects.

However, Nigeria has not recorded much success and sustainable development from its CDM projects. Going forward, Nigeria needs to put in place realistic policies for the CDM projects. This may include two options;²⁷⁸ The first is the establishment of international benchmark standards in respect of sustainable development. An example would be that a project must provide a report on the improvement of the greenhouse gas emissions, generate some local infrastructure development as well as generate a certain level of employment in the project area.

²⁷⁷Rashmi, R. and Ahuja, R., 2022. Discussion Paper on Clean Development Mechanism as Catalyst for Sustainable Development Mechanism Under Article 6.4. [online] Teriin.org. Available at: < <https://www.teriin.org/policy-brief/discussion-paper-clean-development-mechanism-catalyst-sustainable-development> > [Accessed 24 January 2022]. (Accessed on 24 January 2022).

²⁷⁸ Pillay supra

A second option could include the generation of an international list of sustainable development benefits which could be amended by individual countries for circumstances or situations within their countries²⁷⁹.

The first option could work in Nigeria provided the benchmarks are both realistic and complete. The second option would require a considerable amount of effort and cooperation between countries since they would be required to mutually agree on a comprehensive list of sustainable development benefits. Since the second option would not wholly be within the control of the Government of Nigeria the first option would be easier to implement in the short term.

²⁷⁹ Boyd, E., Hultman, N., Timmons Roberts, J., Corbera, E., Cole, J., Bozmoski, A., & Liverman, D. M., (2009).; Reforming the CDM for sustainable development: lessons learned and policy futures; Environmental Science & Policy, 12(7), 820-831

CHAPTER 4

4.0: The Effect of the UNFCCC on Gas Flaring from Fossil Fuel Mining

Fossil fuels are rock-like, gas, or liquid resources that are burned to generate power. They include coal, natural gas, and oil, and are used as an energy source in the electricity and transportation sectors. They're also a leading source of the world's global warming pollution. Natural gas's climate emissions are not only generated when it's burned as a fuel at power plants or in our homes. The *full* global warming impact of natural gas also includes methane emissions from drilling wells and pipeline transportation.

Methane, the main component of natural gas, is a much more potent greenhouse gas than carbon dioxide—some 34 times more effective at trapping heat over a 100-year timescale and 86 times more effective over a 20-year timescale²⁸⁰. Preliminary studies and field measurements show that these so-called “fugitive” emissions range from 1 to 9 percent of total natural gas lifecycle emissions. Methane losses must be kept below 3.2 percent for natural gas power plants to have lower lifecycle greenhouse gas emissions than coal²⁸¹. Oil drilling can also produce methane. Although it can be captured and used as an energy source, the gas is often either vented or flared. Flaring the gas converts it from methane to carbon dioxide, which reduces its impact but still releases additional greenhouse gases into the atmosphere. The World Bank estimates that 5.3 trillion cubic feet of natural gas, the equivalent of 25 percent of total US consumption, is flared

²⁸⁰G. Myhre., D. Shindell, F.-M. Bréon, W. Collins, J. Fuglestad, J. Huang, D. Koch, J.-F. Lamarque, D. Lee, B. Mendoza, T. Nakajima, A. Robock, G. Stephens, T. Takemura and H. Zhang., 2013. Anthropogenic and Natural Radiative Forcing.

²⁸¹Alvarez, R. S., 2017. Greater focus is needed on methane leakage from natural gas. PNAS 109, 6435-6440.

annually worldwide, generating some 400 million tons of unnecessary carbon dioxide emissions²⁸².

The relationship between fossil fuels and climate change is clear. Anthropogenic climate change mainly results from the combustion of fossil fuels such as coal, oil, and gas (with fossil fuel combustion accounting for 69% of global greenhouse gas emissions in 2010);²⁸³ The UNFCCC which is the embodiment of international agreement on climate policies approaches fossil-fuel supply issues only obliquely. Article 4.8, however (covering adverse effects of response measures) mentions countries whose economies are highly dependent on income generated from the production, processing, and export, and/or on the consumption of fossil fuels and associated energy-intensive products as one type of actor potentially adversely affected by response measures that target carbon emissions. It notes funding and technology transfer as potential actions to meet these countries' specific needs. The Paris Agreement makes no mention of fossil fuels, leaving states to develop policies and measures tailored to national circumstances.

Fossil fuel supply is not an explicit part of UNFCCC guidance on developing NDCs nor are supply-side strategies a separate category in NDC synthesis reports. This enables producers to remain 'strategically ignorant' about the type and pace of change necessary²⁸⁴. The territorial approach followed by UNFCCC and IPCC in their guidance on inventories is also problematic in failing to

²⁸²GGFR and The World Bank., 2016. Global Gas Flaring Reduction Partnership (GGFR): Improving energy efficiency & mitigating impact on climate change.

²⁸³van Asselt, H., Kulovesi, K., 2017. Seizing the opportunity: tackling fossil fuel subsidies under the UNFCCC. *Int Environ Agreements* 17, 357-370.

²⁸⁴Piggot, G., 2017. The influence of social mobilization on supply-side climate policy. Manuscript submitted for publication.

recognize actions (such as restricting fossil fuel exports) that might have an effect beyond a country's jurisdiction. However, the call for countries to take supply-side action – both within and outside the UN climate change process – is growing.²⁸⁵ There is an increasing recognition in policy and academic circles that to avoid dangerous climate change, most fossil fuel reserves will need to be left in the ground.^{286,287} Most fossil fuel reserves will need to be left in the ground if we are to avoid dangerous climate change and meet the Paris Agreement's goal of keeping global warming “well below” 2°C. This is a daunting challenge for as far as many countries are concerned, fossil fuel extraction and trade are central to energy security and economic development.

At COP26, more than 40 nations made new commitments to phase out coal power, including Indonesia, Vietnam, Poland, South Korea, Egypt, Spain, Nepal, Singapore, Chile, and Ukraine. In a new ‘Global Coal to Clean Power Transition Statement’, countries also committed to scaling up clean power and ensuring a just transition away from coal.²⁸⁸ But several of the biggest coal consumers were notably absent from the accord, including China and India, which together burn roughly two-thirds of the world's coal, as well as Australia, the world's 11th-biggest user of coal

²⁸⁵Five hundred and thirty-five non-governmental organizations (NGOs) have signed the Lofoten Declaration, which highlights the need to put an end to fossil fuel development and manage the decline of existing production. See the Lofoten Declaration at <http://www.lofotendeclaration.org/> Retrieved 25 November 2021. This call was echoed by Climate Action Network International, which represents more than 1,300 NGOs (Climate Action Network International 2018). In addition, the Suva Declaration – signed by leaders from Pacific Island governments, the private sector and civil society – called for dialogue on an “international moratorium on the development and expansion of fossil fuel extracting industries”. See <http://greenbusiness.solutions/wp-content/uploads/2017/08/Suva-declaration-on-climate-change.pdf> Retrieved 25 November 2021.

²⁸⁶ IEA., 2012. World Energy Outlook 2012, IEA, Paris <https://www.iea.org/reports/world-energy-outlook-2012>

²⁸⁷ McGlade, C., Ekins, P. (2015). The geographical distribution of fossil fuels unused when limiting global warming to 2 °C. . Nature, 517, 187–190.

²⁸⁸ See <https://unfccc.int/news/end-of-coal-in-sight-at-cop26> Retrieved 25 November 2021.

and a major exporter. The United States, which still generates about one-fifth of its electricity from coal, also did not sign the pledge. In a separate commitment, 20 countries, including the US, pledged to end public financing for "unabated" fossil fuel projects abroad by the end of 2022. Such projects burn fossil fuels, like coal, oil, and natural gas, without using technology to capture the CO₂ emissions. Dozens of organizations also signed up to the pledge, with several major banks agreeing to stop financing the coal industry.

According to International Energy Agency, the decision to move away from coal would limit global warming to 1.8C. Countries must of course deliver on their promises for this prediction to be a reality. "It is an important step but is not enough. We must accelerate climate action to keep alive the goal of limiting global temperature rise to 1.5 degrees", said António Guterres in a video statement released at the close of the two-week meeting. The UN chief added that it is time to go "into emergency mode", ending fossil fuel subsidies, phasing out coal, putting a price on carbon, protecting vulnerable communities, and delivering the \$100 billion climate finance commitment. Also, in a joint statement by signatories to the coal commitment, "investing in unabated fossil-related energy projects increasingly entails both social and economic risks... and has ensuing negative impacts on government revenue, local employment, taxpayers, utility ratepayers, and public health".

As the world is gradually moving towards sealing coal's fate and embracing the environmental and economic benefits of building a future that is powered by clean energy, most countries like South Africa, Poland, Nigeria, and India will need major investments to make their energy sectors cleaner. None of the energy commitments are binding and there is no *big stick* to force countries to do this. We are at a critical stage and the world must embrace solid ambitions to fuel the movement toward renewable energy. It is hoped that major financiers such as China, Japan would

reconsider investing in clean energy as noted by UK Energy Minister, Greg Hands, “ending international finance for all unabated fossil fuels is the next critical frontier we must deliver on; we must put public finance on the right side of history.”

4.1 The Inter-Governmental Panel on Climate Change (IPCC)

The Intergovernmental Panel on Climate Change (IPCC) is a United Nations panel established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) in 1988. Headquartered with the WMO in Geneva, Switzerland, the IPCC assesses peer-reviewed literature and industry practices to determine the impact of and possible responses to climate change associated with global warming. While it produces no research of its own, its members—divided into three working groups and a task force—assemble reports from hundreds of scientists and policymakers from around the globe. These are analyzed and distributed as special papers or as more-comprehensive assessment reports. In 2007 the IPCC shared, with Al Gore, the Nobel Peace Prize for disseminating knowledge about human-caused climate change.

Between 1990 and 2021 the IPCC released six assessment reports (AR1–AR6) and several special reports that described the current state of greenhouse gases (GHGs) in Earth’s atmosphere, trends in greenhouse gas emissions, and their likely effects on atmospheric processes, economies, and ecosystems. The reports also made projections using a suite of scientific modeling techniques to predict the state of several variables (average near-surface air temperatures, sea levels, average ocean pH, sea ice extent, drought frequency, etc.) out to the year 2100.

The special report released in 2018 noted that human beings and human activities are responsible for a worldwide average temperature increase of between 0.8 and 1.2 °C (1.4 and 2.2 °F) of global warming above benchmark averages—that is, average global temperature levels set before the start

of the Industrial Revolution. However, since the fifth assessment report (AR5), published in 2014, all but a few nations are instituting carbon reduction plans as part of the Paris Agreement, which endeavors to keep global warming to 1.5 °C (2.7 °F) above preindustrial levels. The authors noted that they had high confidence that the world would reach 1.5 °C above benchmark averages sometime between 2030 and 2052 should carbon emissions continue at their present rate.

Released in 2021, the sixth assessment report (AR6)²⁸⁹ noted that human beings had produced an “unequivocal” influence over Earth’s climate system as human-generated GHGs have increased in Earth’s atmosphere. The report also revealed that global surface temperatures for the years 2000 to 2020 were 0.99 °C (1.8 °F) higher than benchmark averages and that since 1980 a succession of decadal global temperature averages had been higher than those measured in any preceding decade. These developments have driven glacial retreat, Arctic Sea ice loss, and a poleward shift in the planet’s climate zones. The authors noted that even under the very low GHG emissions scenario (which assumed that GHG emissions stabilize and decline), global surface temperatures would reach 1.2–2.0 °C (2.1–3.6 °F) by 2050 before declining slightly to 1.0–1.8 °C (1.8–3.2 °F) above benchmark averages by 2100. However, under the intermediate scenario (which assumed that GHG emissions would remain steady), global surface temperatures would be expected to reach 2.0 °C (3.6 °F) by mid-century, later increasing to 2.1–3.5 °C (3.8–6.3 °F) by 2100.

Thus, unless there are rapid, sustained, and large-scale reductions of climate change-causing greenhouse gas emissions, including CO₂, methane, and others, the goal of limiting global warming to 1.5°C compared to pre-industrial levels, as enshrined in the Paris Agreement, will be beyond reach. This assessment of the latest science is a severe warning regarding the well-being

²⁸⁹ See [Ipcc.ch](https://www.ipcc.ch/report/ar6/wg1/). 2021. Climate Change 2021: The Physical Science Basis. [online] Available at: [<https://www.ipcc.ch/report/ar6/wg1/](https://www.ipcc.ch/report/ar6/wg1/) > Retrieved 25 November 2021.

of human society and all life on Earth. It is testimony to the fact that efforts to reduce greenhouse gas emissions over the past decades have been wholly insufficient. In a report by the UNFCCC,²⁹⁰ an initial synthesis of submitted new or updated NDCs early in 2021 showed that collective efforts fall far short of what is required by science to limit global temperature increases by the end of the century to 2C, let alone the desired objective of less than 1.5C.

The points toward the fact that countries of the world still have a lot to do in sustaining the planet, and as noted by the UN, “pursuing efforts towards 1.5°C through the implementation of ambitious NDCs is essential for our future and future generations’ well-being”.

²⁹⁰UNFCCC. (2021). UN Climate Statement. UN.

CHAPTER 5

5.0. GAS FLARING VIS-A-VIS DEFORESTATION AND FOREST DEGRADATION

The associated impacts of gas flaring can be divided into direct and indirect contributions which are evaluated based on their influence on changes to the ecosystem. One of the major indirect contributions of gas flaring in Nigeria is the deforestation and forest degradation process that occur because of gas flaring. Despite the enormous benefits of the mangroves such as the supply of various goods and provision of valuable ecological services to humanity, serving as habitat for different species of animals, provision of medicinal ornaments, etc, there has been a continuous depletion of the forest in the Niger Delta region of Nigeria caused primarily by crude oil exploration and exploitation activities, especially gas flaring and venting. It is worth asking: in what way has gas flaring contributed to such drastic change in our forest and ecosystem at large?

The impact of land contamination from gas flaring on the mangrove ecosystem is intertwined with the socio-economic activities and health of local communities in the Niger-Delta region of Nigeria. The effect of oil spillage and acid rain which is a consequence of gas flaring is forest degradation and deforestation through soil degradation which then affects crop yield and harvest. Gas flaring and consequent carbon dioxide emissions are one of the major causes of deforestation and forest degradation causing erratic rainfalls, erosion, flooding, overheating, climate change, etc.²⁹¹

During gas flaring, the product gas (carbon{iv}oxide) is emitted into the immediate vicinity of the flare with enormous global warming potential and impacts negatively on the forest bringing about

²⁹¹Stephen C. Nwanya., 2011. Climate change and energy implications of gas flaring for Nigeria,; International Journal of Low-carbon technologies, Volume 6, Issue 3, Available at <https://doi.org/10.1093/ijlct/ctr007> (Accessed on 10 January 2022).

biodiversity and vegetation depletion. The CO₂ emissions from a complex relationship with other anthropogenic gases reduce the capacity of the atmosphere to filter out the sun's harmful ultraviolet radiations which further impact the photosynthesis process as well as saturate the environment with carbon dioxide hastening deforestation. Thermal pollution arising from gas flaring can be seen in the plant, vegetative covers, and mangrove forests in the Niger-Delta region of Nigeria indicating signs of chlorosis and stress. As the plants and trees die off, there is an increased harvest of them for fuelwood which further leads to deforestation.²⁹² There is a strong link between increased demand and supply of fuelwood in Nigeria with gas flaring as the continued failure to create wealth from Nigeria's flared gas and the missed opportunity to develop alternative ways of using the flared gas to meet the energy needs of households in both rural and urban areas is responsible for the increasing demand of fuelwood. Results from research show that an annual average of 2040 MJ of fuelwood is consumed in Nigeria, 77.3% of the sourcing is done by children.²⁹³ The gas burned at wells could go a long way towards providing this energy sourced from fuelwood which will lead to a corresponding reduction in the percent of equivalent carbon dioxide emissions into the atmosphere from flaring.

According to Shiva Makki, in the 2009 essay, 'Deforestation: Disastrous Consequences for the Climate and Food Security':²⁹⁴

Deforestation devastates biodiversity and natural habitats and degrades natural resources. In the developing world, 1.6 billion people depend on forests for their

²⁹²Forestry Monitoring Evaluation and Coordinating Unit (FORMECU)., 2010. Projected Demand-Supply Gap from 1994-1996 Nigerian National Agricultural Research Strategy Plan, Ibadan, African Book Builders Limited.

²⁹³Unaeye H. C., 2000. Socio-economic analysis of fuelwood sourcing and consumption in Imo State, Nigeria, A Master of Science Thesis; University of Nigeria Nsukka,

²⁹⁴ Godwin Uwadilachi. Id

food, fuel, and livelihoods. The real economic value of forests is much greater than the short-term benefits of logging or clearing land for agriculture. In the longer run, the loss of biodiversity, habitat, and natural resources will affect food production... But the most serious consequence of them all may be global warming.

Besides fuelwood collection, there are many other reasons why deforestation persists including; indiscriminate logging and the desertification of land which makes land unfit to grow trees as a result of wastes released into rivers or water bodies by petrochemical industries, leading to soil erosion. All of these are critical drivers of the persistent increase in greenhouse gas emissions that create climate change, deforestation, and forest degradation.²⁹⁵

Furthermore, various studies have been carried out on the impact of gas flaring on biodiversity, especially vegetation in the Niger Delta region of Nigeria. Biological diversity or Biodiversity is the total variability within all living organisms and the ecological complexes they inhabit. Humans depend on biodiversity because it is the human life support (the source of our food, medicines, timber, and many other products). Anthropogenic activities (gas flaring) have endangered most of this biological diversity. Studies have been carried out by researchers to determine the impact of air pollution arising from gas flaring which revealed negative effects of the former on species distribution and composition in the region. Plants and indeed entire vegetation are known to exhibit physiological responses to environmental stress, such as temperature changes, tramping and

²⁹⁵ Godwin Uwadilachi., 2020. Towards a Gas-Flaring-Free Nigeria: Rescuing Our Forests from the Brink of Extinction, Available at <https://republic.com.ng/december-20-january-21/towards-a-gas-flaring-free-nigeria/> (Accessed on 7 January 2022).

contamination of air with a high concentration of toxic gaseous and other particulate pollutants such as dust.²⁹⁶

The study carried out by the HSOA Journal of Environmental Science Current Research²⁹⁷ has shown that gas flaring has affected vegetation composition in terms of species richness, dominance, and density. The study reveals variation in the number of species in the control and the gas flare sites a total of eighty (80) species from sixty quadrats in five (5) sites, with the control (Igwuruta-Ali) having the highest number of species (22), Oyigbo and Yorla gas flare sites has sixteen (16) and fifteen (15) species respectively. Bomu and Ebocha gas flare sites have fourteen (14) and thirteen (13) species respectively. The index of community computed showed dissimilarity in species composition between the gas flare sites and the control site. The analysis shows that there is a significant difference between species composition in the gas flare sites and the control. This difference could be attributed to gas flaring and anthropogenic activities.

The study showed a variation in the vegetation frequency (number of species), number of families, and density between the control and the gas flare sites. The study also revealed dissimilarity between species in the gas flare site and the control. Based on these, it is recommended among others, to stop the flaring of gas and channel it towards small-scale utilization through electricity and household energy needs such as cooking gas.

²⁹⁶ Bakpo, M. and Emejuru, S., 2019. Gas Flaring and Biodiversity Depletion In Nigeria: A Study Of Selected Gas Flare Sites In Rivers State, Nigeria. *Environmental Science: Current Research*, [online] 2(2), pp.1-5. Available at: <<https://www.heraldopenaccess.us/openaccess/gas-flaring-and-biodiversity-depletion-in-nigeria-a-study-of-selected-gas-flare-sites-in-rivers-state-nigeria>> [Accessed 10 January 2022].

²⁹⁷ Id.

5.1. Redd+ efforts towards International transferred Mitigation Outcomes (ITMOs) under Article 6 of the Paris Agreement

Meeting the ambitious goals of the Paris Agreement will not be possible without halting deforestation, enhancing forest restoration, and reducing agricultural emissions. The land sector can contribute about 25–30 percent of the progress needed to meet the 1.5°C goals formulated under the Paris Agreement. The entry into force of the Paris Agreement under the UNFCCC brings new opportunities for countries to cooperate in protecting tropical forests. Its article 5.6 gives full recognition to activities that reduce emissions from deforestation and forest degradation, conserve forests, sustainably manage forests or enhance forest carbon stocks (together referred to as REDD+), as part of a long-term framework of international climate action.²⁹⁸

Article 6 of the Paris Agreement recognizes the role of voluntary cooperation to achieve global climate goals and raise the level of ambition to tackle climate change. Specifically, Article 6.2 allows for new forms of bilateral or plurilateral cooperation among countries. Article 6.4 offers an opportunity to reduce greenhouse gas (GHG) emissions from a variety of processes and mechanisms. One of such co-operative approaches provided for by Article 6 is the internationally transferred mitigation outcomes (ITMOs), geared at increasing ambition and promoting sustainable development. However, rules involving the use of ITMOs have yet to be agreed upon by the parties to the United Nations Framework Convention on Climate Change (UNFCCC). Under the Paris Agreement, the term *Mitigation Outcomes* (MOs) replaces most forms of

²⁹⁸Andrew Howard, Charlotte Streck, Raoni Rajão., 2017. Options for Enhancing REDD+ Collaboration in the Context of Article 6 of the Paris Agreement. November Available at: <https://s31207.pcdn.co/wp-content/uploads/2019/07/CollaborationArticle6.pdf> (accessed on 8 January 2022)

international carbon credits. MOs generated in a country could be transferred to another country, thereby becoming **Internationally Transferred Mitigation Outcomes (ITMOs)**.

Creating mitigation outcomes involves four main steps:

- the application of a methodology to quantify mitigation outcomes from a project.
- the establishment of monitoring, reporting, and verification systems.
- validation or independent assessment of the quality of the mitigation activity.
- and an institutional process for authorization and trade of mitigation outcomes.

ITMOs are not specifically defined yet and could take many forms, including linking emission trading systems (ETs) across jurisdictions, investment in emission reduction projects, technology transfers, and even credits from REDD+ schemes. Article 6 could therefore be a useful way to channel technology, finance, and capacity building from developed to developing countries.

REDD projects deliver significant benefits to both communities and the environment. 5.5 million hectares of tropical forest area are lost each year. Emissions from deforestation and land degradation are cumulatively responsible for up to 20% of global greenhouse gas emissions. While forests are critical in contributing to climate change mitigation and adaptation, they also play a role in water provision, biodiversity conservation, and cultural heritage and community livelihoods. REDD+ projects are geared toward reducing emissions from deforestation and forest degradation, conserving, and enhancing the forest carbon stocks, and sustainably managing forests.

The values gleaned from REDD+ projects are:

- a) Mitigation of climate change by supporting forest-friendly projects that improve livelihoods.

- b) Support targeted projects that reduce deforestation pressures and use local resources more sustainably in Asia, Africa, and Latin America.
- c) Incentivize behavioral changes for poor migrants, slash-and-burn farmers, and forest-based communities.
- d) Provide training and capacity building to improve resource use, harvesting methods, and effective resource management.
- e) Protect habitats for hundreds of forest species including endangered primates, birds, and medicinal plant species.

An article 6 collaboration is an opportunity to reduce emissions cost-effectively since mitigation can be performed where costs are lower.²⁹⁹ In simple terms, the first mechanism would allow a country that has beaten its Paris climate pledge to sell any overachievement to a nation that has fallen short of its own goals. This overachievement could be in terms of emissions cuts but might also cover other types of targets, for example, some countries have set goals for renewable energy capacity or forest expansion. Carbon credits could, for example, be generated by an emissions-saving factory upgrade or the restoration of an area of forest.

REDD+ has the potential to deliver social and environmental benefits beyond GHG emission reductions. These include biodiversity habitat, flood prevention, and other environmental services provided by forests. REDD+ sets out several safeguards that should be promoted and supported

²⁹⁹Article 6 of the Paris Agreement: <https://www.energimyndigheten.se/en/cooperation/swedens-program-for-international-climate-initiatives/cooperationunder-the-parisagreement/article-6-of-the-paris-agreement/> (Accessed on 10 January 2022).

by REDD+ projects, including the conservation of natural forests and biological diversity and the participation of relevant stakeholders, in particular indigenous peoples and local communities.³⁰⁰

While REDD+ is designed under the UNFCCC as a mechanism for results-based payments, where the ownership of ERs remains with (or within) the host country, COP decisions do not rule out the use of carbon markets. In this context, it is also conceivable that Articles 5 and 6 of the Paris Agreement be used to establish bilateral or plurilateral REDD+ cooperative approaches that rely on the transfer of REDD+ mitigation outcomes between countries. As Article 6.2 allows for a broad range of initiatives and provides Parties with greater discretion to determine their terms for cooperation, REDD+ activities may be able to generate emission reductions recognized as ITMOs.

On the 13th of November 2021, six years after the adoption of the Paris Agreement by 196 countries at COP-21, negotiators finally completed the “Article 6 rulebook,” which allows for cooperation among countries in meeting and going beyond their NDCs. The implementation guidance of Article 6.2 defines criteria for ‘*cooperative approaches*’ and corresponding adjustments, and the rules and modalities for ‘*Article 6.4 activities*’ embrace all sectors and do not exclude any activities or methodologies. In doing so, they retract past discrimination against nature-based solutions by the CDM. REDD+ activities, such as avoided deforestation or avoided conversion, afforestation, reforestation, or sustainable forest management, can be developed under both implementation modalities of Article 6 (Art. 6.2 and 6.4) if they comply with the respective international and national rules. The Art. 6.4 Supervisory Body will have to approve

³⁰⁰Greiner. S., Chagas.T., Krämer.N., Michaelowa. A., Brescia. D., Hoch.S., 2019. Moving towards next-generation carbon markets: observations from article 6 pilots. https://www.climatefinanceinnovators.com/wp-content/uploads/2019/06/Moving-toward-next-generation-carbon-markets_update-june-2019-1.pdf (Accessed 8 January 2022).

methodologies that account for emission reductions and removals, and any activity must obtain host country approval to qualify for Article 6 transactions. Since Article 6 treats the land sector like any other sector, there is no special treatment. REDD+ gets neither discriminatory nor preferential treatment.

The forest sector, including REDD+ programs, must comply with Article 6 rules, like any other sectoral mitigation effort. Cooperation under Article 6.2 gives participating Parties significant flexibility to define the modalities of their engagement. To participate in an Article 6 transaction, Parties must comply with involved reporting requirements and have the ability to account for mitigation outcomes, track carbon credits, and make corresponding adjustments.

Countries transfer emission reductions under the modalities of Article 6.2 of the Paris Agreement in return for transfer-based payment. Article 6.2 enables countries to transfer reductions in emissions and increases in removals that may be used by acquiring countries toward the achievement or overachievement of their NDCs. Article 6.2 allows countries much flexibility to cooperate through such “transfer-based finance” according to their terms, as long as the transactions meet the quality criteria of environmental integrity and transparency, including in governance. Countries may engage in REDD+ through government-to-government transactions that transfer emission reductions without issuing them as carbon credits. Once transacted, emission reductions can no longer count against the transferring country’s NDC. Transfer-based transactions under Article 6.2 are likely to apply additional accounting and quality criteria that supplement the rules of the WFR. In turn, forest countries can acquire access to additional markets and/or demand a higher price for emission reductions.

Countries can use Article 6 to involve private and public entities in REDD+ implementation. The private sector plays an important role in implementing REDD+, and Article 6 may be used to

provide additional incentives for private-sector investments. Article 6 enables the issuance of carbon credits that can link government-to-government cooperation to carbon pricing programs involving the private sector. This can be part of country-driven instruments under Article 6.2 or be via the centralized crediting mechanism under Article 6.4. Countries could authorize private and public entities to develop programs that will generate emission reductions and be “nested” into national accounting. These programs would earn carbon credits (or payments) that could be used domestically and/or transferred internationally. Countries may also implement carbon-pricing instruments (emission trading or carbon tax systems) that allow the use of international REDD+ credits to meet national compliance obligations.

Countries generate emission reductions under Article 6.4 for specific activities nested into REDD+. Many REDD+ programs form part of comprehensive land-use strategies that include activities that may be eligible for the generation of emission reductions under Article 6.4. REDD+ transfer-based payments could be linked to such activities that allow the measuring of emission reductions with a higher degree of certainty. Support for a subset of activities, integrated into REDD+ accounting, could address concerns relating to environmental integrity while lowering the risk that the transfer of emission reductions leads to the nonachievement of a country’s NDC.

Countries can negotiate and implement joint NDCs. Under Article 4.16, countries could decide to elevate the REDD+ emission reduction goals of one or a group of countries to a joint NDC. A joint REDD+ under NDCs could be formulated among several goals for tropical forest countries that share a particular forest biome or face similar deforestation threats. While cooperating countries would still need to meet their targets individually, the jointly implemented actions would not lead to a transfer of emission reductions between the countries. Further, activities that do not generate emission reductions or removals cannot generate mitigation outcomes under Article 6. The

Glasgow decisions clarify that “emissions avoidance”— formulated to respond to proposals to credit decisions not to extract fossil fuels, but also applicable to protect forests that are not under immediate threat—cannot generate any eligible mitigation outcomes.³⁰¹

DEFORESTATION FOR ENERGY

Charcoal production, wood fire cooking, and agricultural activities are the major intentional activities that contribute to deforestation. The impact of gas flaring, oil spillage and other harmful effects of industrialization and oil mining also contribute substantially to deforestation in Nigeria.

Unfortunately, it is sad to realize that a growing number of Nigerians living below the poverty line of \$2 per day have to rely on wood and charcoal to meet their energy needs despite Nigeria having so much natural gas that is flared on a daily basis. This flared gas can be utilized to meet the energy needs of its citizen, and the forest that is gradually being destroyed could help in the carbon sink effort toward reversing climate change.

Nigeria is the biggest charcoal producer in Sub Saharan Africa. A large amount of wood is harvested from Nigerian forests for this charcoal production for energy. The Nexus of charcoal-land use change-energy imposes a considerable burden on the amount of wood that must be extracted from the forest for charcoal production. Therefore, charcoal production is linked to deforestation and forest degradation.³⁰²

³⁰¹Charlotte Streck., (December 2020). What does the Article 6 Rulebook mean for REDD+?, Available at <https://www.ecosystemmarketplace.com/articles/what-does-the-article-6-rulebook-mean-for-redd/> (Accessed on 8 January 2022).

³⁰² Lansu, A., Bos, J., Ivens, W. (2020). The Impact of Charcoal Production for Energy on Tropical Rainforest Resources in Nigeria.\ EGU General Assembly Conference. Available online at <https://ui.adsabs.harvard.edu/abs/2020EGUGA..2211780L/abstract>

There needs to be appropriate sensitization in Nigerians' rural areas about the harmful effect of cutting down forests to serve as an energy source. But before such sensitization can be effective, there is a need for an alternative source of energy for the rural dwellers who need a source of energy for their domestic needs.

Using the sustainable development mechanism, governments of developed nations can embark on projects that could divert gas flared into adequate home use.

There have been instances where the open flame from wood fires used for cooking led to bush fires that destroyed farmlands and forests.

CHAPTER 6

6.0. CONCLUSION

The relatively high flaring of gas in Nigeria has been attributed to many factors, including lack of infrastructure at some oil fields, a limited number of reservoirs suitable for gas re-injection, expensive nature of developing and installing of pipeline networks, limited local, regional and international market and difficult terrain of the Niger Delta, which hinder the harnessing of the product for positive uses. Gas flaring constitutes irresponsible environmental behavior and should be deterred in the interest of the environmental safety of endangered individuals and communities.

Despite the long list of legal instruments discussed above regulating gas flaring, it is observed that there is currently no efficient legal framework for gas flare management in Nigeria. The enforcement of laws needs more efficiency on the part of human, regulatory, and statutory authorities. It is also observed that the absence of advanced technologies to capture flared gas for electricity generation and adequate infrastructure, such as storage and processing facilities for conversion of gas to cashable use, continues to impede the elimination of gas flaring in Nigeria.

Also, the shortcoming of anti-gas flaring laws and the lack of will on the part of those implementing the laws contribute to the continued state of gas flaring pollution in Nigeria. It is the view of the writer that for there to be effective regulation of gas flaring, the Acts must be comprehensive and provide for the computation and reporting of volumes of gas flared and vented, which would, in turn, provide for precise data about gas flaring and venting volumes to the regulatory authorities for combating the menace in the sector.

In this Dissertation, we have evaluated several efforts made by the Federal Government of Nigeria to tackle gas flaring via legislation and the success and failure made so far. Suggestions were made,

where suitable, for addressing the flaws. It is an expectation that regulatory authorities employ practical means of monitoring compliance concerning the volume of gas flared or vented, vis-à-vis the permissible levels of gas utilization. Further, strict implementation, monitoring, and enforcement of the Nigeria Gas Flare Commercialization Programme will save the huge revenues lost to gas flaring which could have been utilized for infrastructure development and to enhance the power supply in the country. The strict implementation of environmental protection laws would enhance ecological development and the financial viability of oil-producing communities in Nigeria, in addition to providing a healthy environment for members of the host communities.

A national gas transmission grid is needed for easy access to gas by potential users in Nigeria to enhance gas utilization and development through private sector participation projects with detailed and practicable gas policy for the nation to encourage gas investors and to end over-reliance on impromptu policy statements by public officials as governing policies in the sector. To make the regulation efficient, the regulatory authorities must enforce anti-flaring laws without fear or favor to ensure total compliance with the anti-flaring and other environmental laws to combat gas flaring in Nigeria's midstream sector. The optimal development of gas reserves with more advanced technologies will provide enormous economic benefits to Nigeria and the African continent, if executed adequately by the regulatory authorities, assigned the responsibilities of enforcing the laws for combating gas flaring and other environmental degradations in the sector.³⁰³

A cursory look at the impact of the newly enacted Petroleum Industry Act in combating the menace of gas flaring in Nigeria was made, the shortcomings were laid bare, and recommendations were

³⁰³ Olusola Joshua and Olusola-Olujobi, Temilola: The appraisal of the legal framework regulating gas flaring in Nigeria's upstream petroleum sector: how efficient? Available at <http://iaeme.com/Home/issue/IJARET?Volume=10&Issue=3> (Accessed on 20 January 2022).

made. While the PIA offers a lot in terms of aggregating the regulatory, legal, fiscal, and management of the Nigerian Petroleum industry, it left a lot of questions unanswered regarding gas flaring monitoring, management, and elimination as well as the restitution of the host communities which are the victims of gas flaring. While we recognize the PIA's provisions on punitive measures for gas flaring, we reckon a select few paragraphs of the PIA on the environmental hazards, is an implied indictment of the legislator's indifference to an important issue.

6.1. RECOMMENDATIONS

6.1.1 Implementation of established treaties and Resolution

This recommendation offers to exhort better enforcement and implementation of existing laws, treaties, resolutions, and regulations. One significant reform that could enhance the enforcement and implementation of all environmental laws in Nigeria, including those relating to gas flaring, would be the adoption of a rights-based approach with opportunities for citizen enforcement. Nigeria is a signatory to a plethora of treaties, conventions, and international environmental laws.

The Human Rights Council which is an inter-governmental body within the United Nations system and is responsible for the promotion and protection of all human rights around the globe has in resolution 48/13 established that having a clean, healthy, and sustainable environment is a human right. The United Nations should encourage the domestication of this right and ratification in the various constitution of member states. Moreso, recognized rights should be implemented and made justiciable in a way that citizens of a state can enforce this human right through the judicial process. Nigeria especially would benefit from this. All the fundamental objectives and directive principles of governance entrenched in the provisions of Chapter 2 of the Nigerian Constitution need to be

made justiciable and enforceable in Nigerian courts. This would majorly put leaders on their toes and pay due attention to governance and not mere rulership. The threat of legal action would incentivize oil corporations, the Ministry of Environment, Ministry of petroleum to be culpable and liable for damages that stem from gas flaring and its associated effect.

The UNFCCC has recognized that climate change and environmental destruction affect millions of people across the world, and it also established that the most vulnerable segments of the population are more affected by environmental degradation. Since Nigeria is a signatory to most of the environmental treaties. The National government of Nigeria should be obliged to fulfill its obligations.

In sixty National constitutions, drafters around the globe have explicitly enshrined some form of obligation to protect the environment or other people's environmental rights, one thousand bilateral and 350 multilateral agreements designed to protect the environment have been entered into by various nations.

During the World Conference on Human Rights in Vienna (1993) More than one hundred governmental representatives declared that the dumping of toxic waste is a threat to the right to life. There have been cases at international tribunals that have also confirmed that the duty not to cause environmental harm is a norm of customary international law. the Trail Smelter arbitration recognized the principle that international liability may arise from transboundary activity that causes serious environmental harm. The U.N. Human Rights Committee noted that the scope of any sovereign's right to pursue economic development is necessarily limited by the state's human rights obligations under international law. It is one of the established universal norms of customary international law that taking actions that may be expected to cause lingering and severe harm to the environment and may prejudice the health or survival of a population is not acceptable and

likewise is acts that would cause environmental damages and deprive a people of its subsistence. Furthermore, the World Bank and the international monetary fund are financial organizations that have an effective influence on Nigeria`s monetary policies, they can help incentivize the Nigeria Government to enforce this right just as they have helped encourage national governments to desist from torture.

6.1.2 Recommendations for Nigeria`s Petroleum Industry Act 2020 On Curbing Gas Flaring

The following recommendations will ensure the smooth running of the newly enacted Petroleum Industry Act:

- **Increased watchfulness of the National Assembly:**

The new Petroleum Industry Act provides for actions that must be taken almost immediately, including the establishment of the NNPC Limited not later than six months after the commencement of the Act.

To this Act, the 9th National Assembly must be alive to its responsibilities to make sure that salient provisions of the Act are not flagrantly disobeyed and ensure that erring public servants who do so are made to face the full wrath of the law.

- **Commercial operations Of NNPC Limited:**

To 'compete' with private sector players in the petroleum industry as enshrined by the Petroleum Industry Act, the NNPC Limited must ensure that it has the technical capacity and the mental fortitude to undertake this exercise.

To this wise, the NNPC Limited must stock its ranks with some of the best and the brightest energy experts in Nigeria and across the globe. Only by doing so can it carry out profitable activities under its new commercial mandate.

- **Judicious use of the Host Communities Trust**

Although host communities are disgruntled with the 3% allocation of the operating expenses of settlers to the host communities' trust, nonetheless the allocation is significant. Host communities must ensure to use the money allocated to them under the Petroleum Industry Act to develop their communities. Failure to do so will only result in environmental degradation of their homeland, along with poor living and welfare conditions.

6.3 How Nigeria Can Take Advantage of the Europe Energy Crisis

In the wake of Russia's invasion of Ukraine, several sanctions were imposed on Russia by Western nations, thereby threatening the critical supply of Russian gas to European markets. The withdrawal and disruption of supply channels from Russia, as the second-largest gas producer globally and the biggest supplier of natural gas to Europe, would not only send Europe into a deeper energy crisis but also caused price hikes globally.

This poses a great opportunity for Nigeria to expand and improve its global market. It can take advantage of the outcome to attract the investments required to build infrastructure that would enable them to expand exploration, production, and exportation to meet the anticipated increase in demand in Europe. Investing Nations can also earn carbon credit by financing the numerous projects that would be required to establish transatlantic pipelines.

Recently, Nigeria with other African producers such as Algeria and Niger, signed the Declaration of Niamey during the Economic Communities of West African States (ECOWAS) Mining and Petroleum Forum (ECOMOF) - paving the way for the construction of the multi-billion, 4,128km Trans-Saharan Gas Pipeline, which will run through the three countries into Europe. Once completed, the pipeline is expected to transport 30 billion cubic meters of gas per annum which Europe will desperately need to meet demand. This is an opportunity for the country to attract funding for the project rollout and expand its production and exportation capabilities to Europe.

With the implementation of the African Continental Free Trade Agreement in January 2021, cross-border pipeline networks and gas trade have improved. African countries are now able to enhance natural gas trade across the continent, with simplified procedures, reduced tariffs, and market liberalization expanding opportunities.

Nigeria and Africa have significant natural gas reserves that can not only be leveraged to accelerate socio-economic growth but can be used to supply Europe with much-needed energy. Africa's resources have the potential to transform the global energy space, and with the right investment and development, the continent will emerge as a frontrunner in global gas supply. It is however unfortunate to see that Nigeria is currently unable to meet the export supply standard and hitherto unable to take economic advantage of the Europe gas crisis.

Nigeria needs to ramp up its production. The African Energy Chamber (AEC) – in its Q1 2022 Outlook – predicts Nigeria to increase gas production from 2016 by about 1,550 billion cubic feet to up to 1,780 billion cubic feet in 2022. These production increases if actualized will enable Nigeria to increase domestic capacity, ensuring energy security both domestically and continentally, while creating the opportunity to scale-up exports to European markets.

For one, the Declaration of Niamey is a step in the right direction. For efficiency and results, Nigeria must leverage the experience gained from CDM projects, to conduct an SDM project that would tackle gas flaring by leaning towards re-injection of associated gas, whilst also being another source of gas for Europe and international markets. This of course requires improvement of policy planning and enactment to make it an attractive market to partner with.

6.4 Action Points

Considering all that has been discussed, this thesis recommends the following cure-alls to the prevalent issue of gas flaring:

- a. A three-year transition period when gas flaring must be phased out altogether. Those that continue to do it will be doing so under stiff penalty.
- b. Operating companies should not only be made to get insurance covers to cover cases of environmental disasters arising from their operations and this should be a condition precedent to the granting and renewal of oil mining licenses in Nigeria.
- c. To bring gas flaring to an end, facilities for gathering, storing, and processing gas must be built, and the end products properly harnessed for onward distribution to consumers. Furthermore, it is not just enough to require oil companies to install measurement equipment for measuring the amount of gas being flared as contained in Section 201. This must be matched with a corresponding capacity of regulatory agencies to independently verify, track and measure gas volumes produced and flared. The findings of the Nuhu Ribadu-led Petroleum Revenue Special Task Force (PRSTF) show that the agency responsible for collecting gas flare penalties, the Department of Petroleum Resources (DPR), is currently unable to independently

track and measure gas volumes produced and flared. It depends largely on the information provided by the operators.

- d. The penalty for gas flaring is a penalty for harmful behaviour that hampers the health of the community, hence, the funds should not be used to build infrastructures in the downstream sector rather they should be used for remediation, investment, and development in the communities.
- e. Environmental protection laws must have adequate provisions for combating oil and gas pollution, degradation, and gas flaring. The NESREA Act 2007, should be amended to extend its purview to oil and gas sector pollution and other environmental degradation in the sector to combat gas flaring, and the law should provide penalties for defaulters; an unambiguous effective law is a means to the preservation of law and order.
- f. Section 20 of the 1999 Constitution (as amended) on the enforcement of environmental objectives should be overhauled and moved to the Fundamental Human Rights in chapter four of the 1999 Constitution, thereby making environmental infringements justiciable. This would thus protect and guarantee a healthy and sustainable environment. The right to a healthy environment would deter gas flaring by oil companies through the payment of monetary damages to the Federal Government and the victims of their environmental degradation, thereby promoting stringent compliance with the anti-flaring policies and other enabling environmental laws in the sector. And in recognizing the cumbersome process of amending the constitution, a statute with enforceable environmental objectives should be promulgated to give section 20 some immediate consequence when violated by defaulters.

- g. The Federal Government should increase electricity generation in Nigeria through the use of gas to earn more revenues for the Federal Government through the local utilization and exportation of gas.
- h. There is a need for more gas pipeline networks to be created to enhance the domestic usage of gas and to reduce its flaring. Gas prices should be reasonable and competitive with other forms of energy, which are dictated by the market forces. This will encourage investors to invest in the sector, deter the waste of gas resources, and reduce environmental risks.³⁰⁴
- i. Award of oil mining licenses to investors should be to establish functioning private modular crude.
- j. Deforestation also impacts the efforts to reach the Paris agreement goals as the forest is recognised as an important carbon sink that helps in cleaning up the green house gases in the atmosphere. Therefore REDD+ should be a priority for the Nigerian government in reaching the goals stated at the last COP in Glasgow. Efforts should be made to ensure that charcoal production that causes forest degradation and deforestation should be totally outlawed, as a lot of trees are cut to produce this charcoal.
- k. Domestic Energy from deforestation should also be tackled. The government of Nigeria alongside the international community should make effort to supply cleaner energy form refined natural gas to poor communities using a sustainable plan in order to reduce the number of trees cut down to be used as wood fire and other energy sources.

³⁰⁴ Olujobi, Olusola Joshua and Olusola-Olujobi, Temilola, 2019., The Appraisal of Legal Framework Regulating Gas Flaring in Nigeria's Upstream Petroleum Sector: How Efficient? International Journal of Advanced Research in Engineering and Technology, 10(3),pp. 234-250.? Available at <http://iaeme.com/Home/issue/IJARET?Volume=10&Issue=3> (Accessed on 20 January 2022).

1. Finally, a sustainable development mechanism (SDM) has to be developed by the Nigeria government and could be sponsored by a willing Annex 1 country which would be focused on ensuring that natural gas and other clean energy sources adequate for urban and middle income homes is produced at a sustainable lower cost that would ensure that wood fire for cooking becomes unappealing to most Nigerians.

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