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GAS FLARING IN NIGERIA'S NIGER DELTA: LEGAL CHALLENGES AND LESSONS FROM NORWAY'S REGULATORY FRAMEWORK

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ABSTRACT

Gas flaring remains a persistent environmental and human rights challenge in the Niger Delta region of Nigeria, exacerbated by inadequate enforcement of extant laws. This article employs a doctrinal and comparative methodology to critically examine the legal frameworks governing gas flaring in Nigeria, including the 1999 Constitution, the Petroleum Industry Act, the Flare Gas (Prevention of Waste and Pollution) Regulations, and the Environmental Impact Assessment Act. It highlights the adverse effects of gas flaring, such as environmental degradation, health risks, and economic losses, and juxtaposes Nigeria's approach with Norway's successful gas flaring abatement regime. The findings reveal that while Nigeria has adequate laws, their enforcement remains weak due to infrastructural deficits and a lack of political will. The article recommends stricter enforcement of existing laws, investment in gas utilization infrastructure, and adoption of international best practices, such as Norway's regulatory oversight and technological advancements, to eliminate gas flaring and promote sustainable development in the Niger Delta.

Keywords: Gas Flaring; Niger delta; Legal framework; Environmental protection

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Gas Flaring in Nigeria's Niger Delta: Legal Challenges and Lessons from Norway's Regulatory Framework

1. INTRODUCTION

Globally, gas flaring is recognized as a major contributor to greenhouse gas emissions and environmental degradation, with severe implications for climate change and public health. This issue is particularly acute in resource-rich developing nations like Nigeria. Nigeria's Niger Delta region is home to Africa's largest wetland, the continent's largest mangrove forest, and its third-largest drainage basin.[1] Due to the exploration for crude oil, which began by the German business in 1908, referred to as the Nigerian Bitumen Corporation, it is today overflowing with gas flaring sites.[2] Thereafter, Shell D'Arcy was awarded the rights for exclusive exploration in 1937, the oil prospection was suspended in 1946 due to the Second World War and resumed in 1951 when the first oil well was drilled at Ihuo at Owerri in Imo state. The breakthrough came in 1956 as the first successful oil well pumped out oil at Oloibiri in Bayelsa state, while the first exportation took place in 1958[3]. Crude oil production started modestly in Nigeria in 1958 in two oil fields, one at Oloibiri and the other at Afam, which yielded some 5,100 barrels per day.[4] From this modest beginning, Nigeria's oil sector has expanded in leaps and bounds with about 606 oilfields (comprising 355 onshore and 251 offshore) and about 5,284 oil wells all over the Niger Delta region[5]. From these oil fields, Nigeria has been producing millions of barrels of oil that peaked at some point at 2.5 million barrels per day (mbpd).

Crude oil has associated gas, which must be separated at the point of exploitation. Three standard options are available[6] to oil companies, namely: re-injecting the gas into the ground for future reuse, deploying gas-capturing equipment to harvest gas for domestic and commercial purposes, and flaring the gas into the atmosphere. The last option, gas flaring, is quite easy and therefore attractive to oil companies. Gas flaring began almost at the same time as oil extraction by Shell-BP in the early sixties[7]. The Nigerian

1 Uchegbulam, I., Aliyuda, A. and John, Y.M., 'Sustainable Environment: A Comprehensive Evaluation of the Effects of Gas Flaring in the Niger Delta, Nigeria' (2022) 26 Journal of Applied Sciences and Environmental Management 929.

2 Giwa, S.O., Oluwakayode, O.A. and Olasunkanmi, O.A., 'Baseline Black Carbon Emissions for Gas Flaring in the Niger Delta Region of Nigeria' (2014) 20 Journal of Natural Gas Science and Engineering 373.

3 Obi, N., Akuirene, A., Bwititi, P., Adjene, J. and Nwose, E., 'Impact of Gas Flaring on Communities in Delta Region of Nigeria, Narrative Review Part 1: Environmental Health Perspective' (2021) 7(3) International Journal of Scientific Reports 186.

4 Steyn, P., 'Oil Exploration in Colonial Nigeria, 1903–58' (2009) 37(2) The Journal of Imperial and Commonwealth History 249.

5 Anifowose, B., Lawler, D., Van der Horst, D., and Chapman, C., 'Evaluating Interdiction of Oil Pipelines at River Crossings Using Environmental Impact Assessments' (2014) 46(1) Area 4.

6 Agboola, O.M., Nwulu, N.I., Egelioglu F., and Agboola, O.P., 'Gas Flaring in Nigeria: Opportunity for Household Cooking Utilization' (2011) 2(2) Intl J Thermal & Environmental Engineering 69.

7 Sharif, H.A., 'Gas Flaring: When Will Nigeria Decarbonize Its Oil and Gas Industry' (2016) 42 Intl J Economy, Energy & Environment 17.

government announced[8] in December 2017 that there were 178 active gas-flaring sites in the country. However, reports from Gas Flare Tracker, a data portal that monitors live data of active flare sites within countries, indicated the existence[9] of 222 active gas-flaring sites across the Niger Delta.

Gas flaring has been a recurring decimal in the Niger Delta. The practice became a legal issue from as early as 1969 when the Nigerian government outlawed routine gas flaring and directed International Oil Corporations (IOCs) operating in the country to comply within five years by taking steps toward gas utilization. This directive was unmet, leading to a revised target in 1984, which also failed due to weak enforcement and industry resistance. The menace continues unabated primarily due to the non-enforcement of extant applicable laws by the Nigerian government. Beyond environmental degradation, gas flaring imposes severe public health consequences. Numerous studies and reports have identified a strong correlation between gas flaring and respiratory diseases such as asthma, bronchitis, and lung cancer among local populations. Other documented health effects include increased cases of leukaemia, skin and eye irritation, miscarriages, and reproductive abnormalities. Prolonged exposure to flared gases has also been linked to premature aging and neurodevelopmental disorders in children.

Furthermore, gas flaring releases significant volumes of greenhouse gases, notably carbon dioxide and methane, which exacerbate global climate change. In Nigeria, the climatic impacts are already visible through rising temperatures, unpredictable rainfall patterns, increased desertification in northern regions, and frequent flooding in coastal zones. These environmental changes threaten agricultural productivity and food security, particularly for vulnerable communities. The continued release of pollutants from gas flaring also acidifies rain, damages soil fertility, and leads to the extinction of aquatic species—posing long-term threats to Nigeria's rich biodiversity. If unabated, gas flaring is likely to accelerate ecological degradation, compromise climate resilience, and undermine the health and sustainability of both local communities and ecosystems in the Niger Delta.

This article argues that the persistence of gas flaring in Nigeria stems from weak enforcement of existing laws and inadequate infrastructural development. It proposes that addressing these challenges through strict enforcement, strategic investment, and the adoption of proven international practices is crucial to eradicating gas flaring and fostering sustainable development in the Niger Delta.

To support this argument, this article sets out to critically examine the legal and institutional frameworks governing gas flaring in Nigeria's Niger Delta and to expose the persistent enforcement gaps that have allowed the

[8] Eboh, M., 'FG Discovers 178 Gas Flare Sites across Nigeria' Vanguard (8 December 2017) <https://www.vanguardngr.com/2017/12/fg-discovers-178-gas-flare-sites-across-nigeria/> accessed 8 December 2024.

[9] BudgIT, 'Gas Flaring: A Real and Present Danger' (2018) <http://yourbudgit.com/wp-content/uploads/2018/04/Gas-flaring-new2.compressed-1.pdf> accessed 12 November 2024.

practice to continue despite regulatory efforts. It aims to assess the environmental, health, and socio-economic implications of gas flaring within the context of Nigeria's constitutional and international human rights obligations. Furthermore, the study evaluates the effectiveness of Nigeria's legal instruments — such as the 1999 Constitution, the Petroleum Industry Act, the Environmental Impact Assessment Act, and the Flare Gas (Prevention of Waste and Pollution) Regulations — in addressing the problem. By employing a comparative approach, the paper also investigates the regulatory framework adopted by Norway to drastically reduce gas flaring, with a view to identifying practical lessons that Nigeria can adopt. Ultimately, the study seeks to propose actionable reforms that strengthen enforcement, close infrastructural gaps, and align Nigeria's gas flaring practices with international environmental standards to promote sustainable development in the Niger Delta.

2. EFFECTS OF GAS FLARING

Scholars like Diugwu *et al,*[10] Nyong[11] and Ukala[12] have argued that gas flaring is one of the most challenging environmental and energy problems all over the world in recent times and one of the most contentious energy and environmental issues that has been lingering for decades in the world today.[13] The exothermic combustion of associated gas releases a significant amount of heat. Fish, as cold-blooded aquatic animals, are sensitive to such a water temperature rise.[14] Reports reveal premature hatching of fish eggs before their gestation period due to an unusual temperature rise of the aquatic habitat.[15] No significant farm practice is currently going on at the Niger Delta mainly[16] due to the flared gas effects. The water toxicity from acid rain and heating from the flare stacks has made the fish extinct, while the people eating the surviving intoxicated fish in turn get poisoned since biological law has it that once a unit in a food chain is infected, its dependents will be affected.[17] Other health issues associated[18] with flared gas which have been reported in Niger Delta includes blindness, aggravated Asthma, Chronic Bronchitis, Cancer, Leukaemia, reduced lung function, Pneumonia, impotency, miscarriages, stillbirths and other reproductive disorders as well

[10] Diugwu, I.A., Ijaiya, M.A., Mohammed M., and Egila, A.E., 'The Effect of Gas Production, Utilisation, and Flaring on Economic Growth' (2013) 4 Scientific Research, Natural Resources 341.
[11] Nyong, R.U., 'Empirical Analysis of Determinants of Natural Gas Flaring in Nigeria' (MSc thesis, Umea University 2016) <https://www.diva-portal.org/fulltext01.pdf> accessed 15 March 2022.
[12] Ukala, E., 'Gas Flaring in Nigeria's Niger Delta: Failed Promises and Reviving Community Voices' (2011) 2 Wash & Lee J Energy Climate & Environment 100.
[13] Ubani, E.C., and Onyejekwe, I.M., 'Environmental Impact Analyses of Gas Flaring in the Niger Delta Region of Nigeria' (2013) 4(2) Am J Sci & Ind Res 247.
[14] Aloamaka, P.C., 'Navigating the Climate Crisis: Exploring International Law's Evolution and Application' (2024) 6 GLS Law Journal 48.
[15] Uchegbulam et al., 'Sustainable Environment' (n 1).
[16] *Ibid*.
[17] *Ibid*.
[18] Emam, A.E., 'Gas Flaring in Industry: An Overview' (2016) 57(5) Petro & Coal 532.

as dysfunctional immune system. The noise and heat have become major causes of insomnia and heat rashes, respectively, in addition to disruption[19] of the wake-sleep rhythm of residents, especially those in proximity to flare facilities. Gas flaring has been suspected to affect[20] the unborn children through transferred toxicities. Gas flaring causes Gas[21] acid rains, which eat through impoverished villagers' roofing, deteriorate their structures, and poor communities typically lack the resources to replace their roofs more regularly.[22] Additionally, acid rain has a detrimental effect on soil fertility and is linked to lower food yields, which results in starvation in the Niger Delta.[23]

3. LEGAL FRAMEWORK GOVERNING GAS FLARING

Applicable laws on gas flaring, such as the 1999 Constitution of the Federal Republic of Nigeria (CRFN), the Petroleum Industry Act (PIA), the Flare Gas (Prevention of Waste and Pollution) regulations and the Environmental Impact Assessment Act (EIA Act) will be discussed in this section.

3.1 The 1999 Constitution

Nigeria's 1999 Constitution highlights the significance of environmental preservation through its "Fundamental Objectives and Directive Principles of State Policy" outlined in Section 20. This section requires the State to protect the nation's land, water, air, forests, and wildlife while promoting and preserving the environment. These principles provide an ideological and policy framework for governance and development, serving as a moral guide for government responsibilities. However, they are non-justiciable, meaning they cannot be challenged in a court of law.

Nevertheless, a notable reprieve exists through the African Charter on Human and Peoples' Rights (ACHPR), which Nigeria has domesticated through the African Charter (Ratification and Enforcement) Act. This means that its provisions are enforceable in Nigerian courts. Article 24 of the Charter expressly guarantees the right to a general satisfactory environment favourable to development, transforming environmental protection into a justiciable human right. Thus, individuals and communities can rely on the Charter to seek legal redress for environmental degradation, as seen in landmark cases such as *Jonah Gbemre v. Shell Petroleum Development Company of Nigeria Ltd & Ors*,[24] where the Federal High Court upheld the right to a

[19] Ekpoh, I.J., and Obia, A.E., 'The Role of Gas Flaring in the Rapid Corrosion of Zinc Roofs in the Niger Delta Region of Nigeria' (2010) 30 Env 347.
[20] Uchegbulam et al., 'Sustainable Environment' (n 1).
[21] Nnimmo, B., 'Gas Flaring' <https://www.justiceinnigerianow.org/gas-flaring> accessed 17 October 2024.
[22] Mrabure, K.O., and Ohimor, B.O., 'Unabated Gas Flaring Menace in Nigeria. The Need for Proper Gas Utilization and Strict Enforcement of Applicable Laws' (2020) 46 Commonwealth Law Bulletin 753.
[23] *Ibid*.
[24] (2005) 6 AHRLR 152.

clean and healthy environment based on the combined force of the Constitution and the African Charter.

The provisions in the Constitution regarding environmental rights are complemented by its guarantees of fundamental human rights. Sections 33 and 34, which protect the rights to life and human dignity, have been argued to implicitly include the right to a safe, healthy, and pollution-free environment. This interpretation aligns with international instruments for human rights, reinforcing the idea that environmental degradation infringes on these fundamental rights. Furthermore, Section 12 of the Constitution mandates that International Treaties ratified by the National Assembly must become Nigerian law.

Nigeria's commitment to international environmental standards is evident in its ratification of several key instruments, such as the Rio Declaration on Environment and Development. Principle 10 of the Declaration emphasizes public participation in environmental decision-making and access to environmental information.[25] The African Charter on Human and Peoples' Rights (ACHPR), domesticated as Nigerian law, also incorporates environmental rights. Article 24 provides for the right to a general satisfactory environment favourable to development, while Article 21 protects peoples' rights to freely dispose of their natural resources. These provisions emphasize how crucial it is to protect the environment as a fundamental component of human rights.

In the case of *Jonah Gbemre v. Shell Petroleum Development Company of Nigeria Ltd & Ors*,[26] the plaintiff sought a landmark decision from the Federal High Court, Benin Division, concerning the detrimental effects of gas flaring on the environment and human health. In addition to harming the environment and public health, the plaintiff argued that gas flaring violated fundamental human rights protected by the ACHPR and the 1999 Constitution of Nigeria.

The plaintiff requested several declarations and reliefs, including:

1. A declaration that the constitutionally guaranteed rights to life and dignity of the human person, as provided under Sections 33(1) and 34(1) of the 1999 Constitution, and reinforced by Articles 4, 16, and 24 of the African Charter, inherently include the right to a clean, pollution-free, and healthy environment.
2. A declaration that the ongoing gas flaring by Shell Petroleum Development Company (Shell) and the Nigerian National Petroleum Corporation (NNPC) as part of their oil exploration and production activities in the Iwherekan community violates the fundamental rights to life (including a healthy environment) and human dignity, as protected by Articles 4, 16, and 24 of the

[25] Awhefeada, U.V., Aloamaka, P.C., and Kore-Okiti, E.T., 'A Realistic Approach towards Attaining Sustainable Environment through Improved Public Participation in Nigeria' (2023) 8 International Journal of Professional Business Review.

[26] (2005) 6 AHRLR 152.

African Charter, along with Sections 33(1) and 34(1) of the 1999 Constitution.

3. A declaration that Shell's and NNPC's failure to conduct an environmental impact assessment (EIA) in the Iwherekan community, as mandated by the EIA Act's Section 2(2), constituted an infringement on the community's basic rights to human dignity and life.
4. A declaration that the provisions of Section 3(2)(a)(b) of the Associated Gas Re-Injection Act and Section 1 of the Associated Gas Re-Injection (Continued Flaring of Gas) Regulations (1984**)**, which allow for continued gas flaring under certain conditions, were declared to be incompatible with the rights to life and dignity guaranteed by Articles 4, 16, and 24 of the African Charter and Sections 33(1) and 34(1) of the Constitution.
5. An order for a perpetual injunction restraining Shell and NNPC, their agents, servants, contractors, or any other representatives, from further engaging in gas flaring activities in the Iwherekan community.
6. An order directing the Attorney General of the Federation to collaborate with the Federal Executive Council to initiate a legislative amendment of the Associated Gas Re-Injection Act, ensuring compliance with constitutional provisions.

Justice Nwokorie CV delivered a landmark judgment, granting the reliefs sought by the Iwherekan community. This case has been widely regarded as a significant precedent in environmental law and human rights litigation in Nigeria, emphasizing the judiciary's role in addressing environmental degradation and enforcing fundamental rights. Despite this decision, enforcement of the judgment remains a significant challenge, underscoring systemic issues in environmental governance in Nigeria.

This case is anticipated to establish a significant precedent for addressing environmental degradation through judicial intervention in Nigeria. It underscores the judiciary's potential as a vital instrument for enforcing environmental rights and holding corporations accountable for harmful practices. However, despite the commendable ruling from the Federal High Court and the existence of relevant legal provisions, gas flaring continues unabated in the Iwherekan community. This persistent environmental violation highlights the Nigerian government's failure to effectively direct and empower regulatory bodies to enforce the applicable laws against International Oil Companies (IOCs). The absence of stringent enforcement mechanisms and political will undermines the court's decision and exacerbates degradation of the Niger Delta's environment. Addressing these challenges requires robust enforcement strategies, increased accountability, and a renewed commitment to protecting the rights and environment of affected communities.

3.2 The Petroleum Industry Act, 2021

The much-anticipated Petroleum Industry Act[27] (PIA) came into being on the 16th of August, 2021, to 'provide legal, governance, regulatory and fiscal framework for the Nigerian petroleum industry, the development of host communities and for related matters'. It can be seen from sections 104-107 of the PIA, 2021, that there are various exemptions in the form of allowances that the PIA has provided for a license holder to pay a fine as a penalty for flaring gas. These provisions align with international standards and underscore the government's commitment to minimizing environmental harm and maximizing the economic potential of associated gas. Since there are still exemptions to flare gas, whatever provisions on gas flaring are counterproductive. This is because it can still be abused by those who would rather flare gas than re-inject it back into the reservoir. There is still a need to have a robust mechanism for prohibiting a significant amount of gas flaring. Notwithstanding the PIA's provisions regarding the government's determination to end gas flaring and enhance related gas utilization, the PIA's successful implementation may be hampered by the significant infrastructure gap that must be filled to address the five essentials of the gas market: (1) gas availability; (2) affordability; (3) deliverability; (4) funding; and (5) regulatory framework. It is necessary to address certain sensitive issues that will work adversely against the application of the PIA, like the domestic gas pricing, which is currently insufficiently profitable to attract investors to the market. The government must prioritize the conclusion of these and more problems impeding the industry's expansion to guarantee that any laws or rules enacted towards ending gas flaring and promoting utilisation of gas can accomplish their goals because doing so will draw in the much-needed private sector investment for the expansion of infrastructure and gas resources.

Gas flaring still continues unabatedly despite the coming into force of the PIA since 2021. A lot needs to be done through the Nigerian government to abate the menace of gas flaring by strictly enforcing applicable extant laws on erring IOCs accordingly.

3.3 Criminal Code

The main forces opposing the ongoing gas flaring in Nigeria have been the Nigerian judiciary and civil society activism, especially that of nongovernmental organizations.[28] According to Ladan,[29] the Nigerian environment can be protected from the prevalence of gas flaring by using section 234 of the Criminal Code. By the Code's Section 234(f), anyone who

[27] It repealed the Petroleum Act and a host of other laws pertaining to the oil industry.

[28] Ekhator, E.,'Improving Access to Environmental Justice under the African Charter: The Roles of NGOs in Nigeria' (2014) 22 Afr J Intl & Comp L 63 for an extensive analysis of the roles of NGOs in improving access to environmental justice in Nigeria.

[29] Ladan, M., 'Access to Environmental Justice in Oil Pollution and Gas Flaring Cases as Human Rights Issue in Nigeria' (Paper presented at a Training Workshop for Federal Ministry of Justice Lawyers, Institute for Oil and Gas Law, Abuja, 28–30 November 2011) <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2336093> accessed 5 January 2025, 37.

inflicts harm or annoyance on the general public faces a misdemeanour and a two-year prison sentence. The sub-section's vague wording makes it easy for oil companies to avoid accountability. Additionally, section 234, its subsections, and other pertinent sections of the Act do not specifically include phrases like "oil firms" or "gas flaring." Also, the inability to apply the punishment of incarceration to IOCs is another issue with Nigeria's Criminal Code, which is a stronghold for environmental protection (and gas flaring). Furthermore, because the Nigerian state is unable or unwilling to prosecute such instances, the statutory penalty for breaking the code—six months or a year in prison—does not serve as a powerful deterrence against gas flaring.[30] Candidly, applicable laws on gas flaring have prioritized financial gains before eradicating the scourge in Nigeria.[31]

3.4 Flare Gas (Prevention of Waste and Pollution) Regulations, 2018

This regulation is a key instrument in Nigeria's legislative framework aimed at reducing gas flaring and promoting the efficient utilization of associated gas. These regulations, issued under the powers conferred by the Petroleum Act and the Associated Gas Re-Injection Act, provide comprehensive guidelines to minimize the harmful environmental, social, and economic impacts of gas flaring.

Over the years, the Nigerian gas industry has been notorious for gas flaring. By lowering the environmental risks resulting from gas flaring, preventing the ongoing natural resource depletion, and generating economic and social advantages from gas flare monitoring, the Regulation aims to protect the environment. The Nigerian federal government's right to get or use related gas at the flare for free without having to pay royalties is reaffirmed in Regulation 2. Regulation 12 expressly forbids producers or license holders from routinely flaring gas unless a ministerial certificate is in place. Additionally, it stipulates that gas flaring from green field projects that have not yet begun oil and gas production is prohibited. Producers who generate at least 10,000 barrels of oil every day are subject to a gas flare payment of $2.00 (#613)/28.317 standard cubic meters (one thousand cubic feet) of gas flared within any designated OML or marginal field, under the "polluter pays principle."[32] Gas flare costs $0.50 for 28,317 standard cubic meters when production is less than 10,000 barrels.[33] The prior gas flare payment of #10/Mscf (a thousand standard cubic feet per day) was significantly increased by these new payments. By imposing noticeably larger payments, the federal government seeks to deter the practice of gas flaring. Even if the latest regulations' provisions are commendable, the government must make a concerted effort this time to strictly enforce the

30 Ebeku, K., *Oil and the Niger Delta People in International Law: Resource Rights, Environmental and Equity Issues* (Rudiger Koppe 2006) 46.
31 *Ibid*.
32 Mrabure and Ohimor, 'Unabated Gas Flaring Menace' (n 22).
33 *Ibid*.

regulations on negligent Multinational Oil Companies (MOCs).[34] This is because the government has implemented a number of regulations and measures to either directly or indirectly prohibit gas flaring ever since oil production started in 1956.

3.5. The Environmental Impact Assessment Act

The Environmental Impact Assessment Act[35] (EIAA) serves as the cornerstone legislation for the regulation of Environmental Impact Assessments (EIAs) in Nigeria. Enacted in 1992, the EIAA directly aligns with Principle 17 of the *Rio Declaration on Environment and Development*, which mandates the evaluation of the environmental effects of proposed projects to promote sustainability.[36] This framework emphasizes the assessment of both positive and negative impacts on the natural environment, [37] ensuring that environmental risks are identified and mitigated before project implementation.[38]

At the heart of the EIAA is the principle of mitigation.[39] The Act requires developers, including oil companies, to conduct EIAs when the scope, nature, or location of a project indicates a significant likelihood of environmental harm.[40] This provision is particularly critical in Nigeria's Niger Delta region, where oil and gas operations, including gas flaring, have caused severe environmental degradation. When a planned project's scope, nature, and location make it likely to have a substantial environmental impact, oil firms are required by the EIAA to prepare an EIA.[41] By mandating EIAs, the EIAA aims to prevent harmful practices and foster accountability in the energy industry.

According to Odje,[42] the EIAA has the potential to compel energy operators, both prospective and existing, to comply strictly with established environmental guidelines. If implemented effectively, the Act could significantly curb environmental pollution in the Niger Delta and other affected regions. However, as is often the case with many well-intentioned laws, the EIAA has been undermined by poor compliance[43] and enforcement.[44] Oil and gas companies, as well as regulatory agencies, have failed to adhere fully to the requirements of the Act, leaving communities vulnerable to the adverse effects of industrial activities.

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34 *Ibid*.
35 Cap. E12, Laws of the Federation of Nigeria 2004. It shall hereinafter be referred to as EIAA.
36 United Nations, *Rio Declaration on Environment and Development* (1992).
37 Ijaiya, H., 'The Development of Environmental Laws in Nigeria: An Assessment' (2012) 3 Rivers State University Law Journal of Public Law 98.
38 *Ibid*.
39 *Ibid*.
40 EIA Act, s 2(1).
41 EIA Act, s 2 (2).
42 Odje, A.M., *Our Bleeding Earth; The Search for Medication: Lectures on Niger Delta, Human Rights and the 1999 Constitution* (Crown of Splendour 2016) 58.
43 Yusuf, A.O., 'The Intersections of Law, Environment and Corporate Governance in Nigeria' (2011) 2 (2) University of Ibadan Law Journal 176
44 *Ibid*.

A notable critique of EIAA compliance comes from a 1994 Greenpeace International report titled *Shell-Shocked*. The report highlighted that no adequate EIA had been conducted in the Niger Delta before the commencement of oil exploration activities, despite the region's ecological sensitivity.[45] Shell, one of the major operators in the region, claimed to have conducted EIAs since 1982.[46] However, independent investigations found no substantial evidence to support this assertion. This gap between corporate claims and on-the-ground realities has fuelled distrust and exacerbated the environmental challenges in the Niger Delta.

The environmental hazards caused by gas flaring underscore the importance of effective EIA implementation. Communities near flare sites have reported significant ecological and health impacts, including toxic emissions, acid rain, and the contamination of soil and water.[47] These conditions have devastated local ecosystems and undermined livelihoods dependent on farming and fishing. Indigenous people's accounts of environmental hazards largely align with scientific findings, illustrating the severe consequences of gas flaring in the region.

In light of these issues, gas flaring should not merely be viewed as an industrial by-product but as a violation of the rights of affected populations. Gas flaring releases pollutants that harm the environment and public health, infringing on the constitutional rights to life and dignity as guaranteed under Sections 33 and 34 of Nigeria's 1999 Constitution. The practice also contravenes international environmental standards, such as those articulated in the *African Charter on Human and Peoples' Rights*.

4. NORWAY'S GAS FLARING MITIGATION FRAMEWORK

Norway's petroleum exploration and production industry began to take shape in the late 1960s, and the country's first oil field began fully producing oil in 1971.[48] Air pollutants, gas flaring, and petroleum activities are all monitored by the Norwegian Petroleum Directorate (NPD), a division of the petroleum ministry.[49] Except for the volumes needed for protection throughout routine operations, gas flaring is prohibited by the Petroleum Act of 1996 without the Ministry of Petroleum and Energy's approval.[50] In Norway, each business requesting a gas flaring authorization must specify the safeguards it has set up against the environmental impact of gas flaring. Norway's carbon emissions were also decreased by the restriction on flaring,

45 Mrabure and Ohimor, 'Unabated Gas Flaring Menace' (n 22).
46 *Ibid*.
47 Edu, O.K., 'Environmental Impact Assessment: Policy and Law in Nigeria' in MOU Gasiokwu (ed), *Ecology: Concept, Politics and Legislation* (Chenglo Publishers 2013) 411–412.
48 Norwegian Petroleum, 'Norway's Petroleum History' (Norwegian Petroleum, 2023) <https://www.norskpetroleum.no/en/framework/norways-petroleum-history/> accessed 5 January 2025.
49 Imoisi, S.E., and Eshemo-Omo, I., 'An Overview of the Applicable Laws in the Nigeria Petroleum Industry' (2024) 6 Public Policy and International Affair Academic Journal 1.
50 *Ibid*.

and more reductions were made after the government imposed a carbon fee in 1990 to promote increased gas use.[51] According to the Petroleum Act, environmental preservation and safety must be considered when conducting oil exploration and development. Over the past two decades, Norway has achieved remarkable success in reducing gas flaring. The amount of gas flared is far less than the amount of crude oil produced, but crude oil output was around six times higher during that period.[52] However, Nigeria continues to be among the top seven gas-flaring countries globally, contributing a substantial portion to global flaring.[53] In contrast, Norway, whose crude oil production is approximately 25% higher than Nigeria's at 1.79 million barrels per day,[54] flares about 3% of its entire production of natural gas, a rate regarded as the global benchmark.[55] Norway's success in achieving such low flaring rates can be attributed to the implementation of stringent regulatory frameworks, consistent and forward-looking government petroleum policies, and an efficient gas transportation infrastructure. The country's petroleum directorate enforces these regulations, ensuring compliance and accountability across the sector. These measures contrast sharply with Nigeria, which continues to face challenges in enforcing effective flaring regulations and developing necessary infrastructure. By leveraging these robust strategies, Norway has set a global standard for gas flaring reduction, showcasing the critical role of governance and infrastructure in addressing environmental issues in the gas and oil sector.

5. KEY INSIGHTS FOR NIGERIA ON GAS FLARING MITIGATION STRATEGIES

A comparative analysis of gas flaring abatement strategies reveals that the effectiveness of measures depends significantly on a country's governance structures and infrastructure. Norway has achieved remarkable success in minimizing gas flaring through stringent regulatory frameworks, clear legislation, and enforced licensing requirements that mandate detailed plans for gas utilization. Moreover, Norway has heavily invested in advanced technology and infrastructure, allowing the country to recoup its investment within five years through profits from captured and marketed gas.[56] In contrast, Nigeria, despite having legal frameworks like the

51 Mrabure and Ohimor, 'Unabated Gas Flaring Menace' (n 22).
52 *Ibid*.
53 World Bank, *Global Gas Flaring Tracker Report* (June 2024) <https://thedocs.worldbank.org/en/doc/d01b4aebd8a10513c0e341de5e1f652e-0400072024/original/Global-Gas-Flaring-Tracker-Report-June-20-2024.pdf> accessed 5 January 2025.
54 CEIC Data, *Norway Crude Oil Production* (2023) <https://www.ceicdata.com/en/indicator/norway/crude-oil-production> accessed 5 January 2025.
55 World Bank, *Global Gas Flaring Tracker Report* (n 47).
56 Zhdaneev, O.V., and Frolov, K.N., 'Technological and Institutional Priorities of the Oil and Gas Complex of the Russian Federation in the Term of the World Energy Transition' (2024) 58 International Journal of Hydrogen Energy 1418.

Associated Gas Re-Injection Act, continues to struggle with enforcement, under-investment in infrastructure, and insufficient political will.[57]

The lack of adequate infrastructure in Nigeria, particularly under Joint Venture Agreements (JVAs) with multinational oil companies, hinders effective associated gas (AG) utilization.[58] The National Gas Master Plan has yet to achieve its objectives due to funding challenges and a failure to execute policies comprehensively. In order to stop the dangerous gas flaring practice, Nigeria must draw lessons from Norway by strengthening enforcement mechanisms, investing in technological infrastructure, and enhancing domestic AG utilization. By adopting these strategies, Nigeria can align its gas management practices with global standards, realizing both environmental and economic benefits.

6. CONCLUSION

The menace of gas flaring in the Niger Delta continues to pose significant environmental, health, and socio-economic challenges despite the existence of robust legal frameworks. While Nigeria has made attempts to regulate and reduce gas flaring through various legislative and policy measures, the lack of strict enforcement, infrastructural deficits, and inadequate political will have undermined these efforts. The comparative analysis with Norway's effective gas flaring regime reveals that clear legislation, substantial investment in infrastructure, and strong regulatory oversight are pivotal to addressing the issue.

To eliminate gas flaring in Nigeria, the government must prioritize the strict enforcement of existing laws and regulations while closing loopholes that allow for exemptions. Investment in technology and infrastructure for gas capture and utilization should be pursued to transform associated gas into a valuable resource. Additionally, the adoption of international best practices, such as those employed in Norway, can serve as a model for the sustainable management of Nigeria's gas resources.

Addressing these challenges requires a multi-stakeholder approach involving government agencies, international oil corporations, civil society, and local communities. By committing to these measures, Nigeria can mitigate the harmful effects of gas flaring, ensure environmental sustainability, and uphold the rights to life and dignity as enshrined in its Constitution. Ultimately, the elimination of gas flaring will contribute significantly to the sustainable development of the Niger Delta and the nation at large.

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[57] Olujobi, O.J., 'Analysis of the Legal Framework Governing Gas Flaring in Nigeria's Upstream Petroleum Sector and the Need for Overhauling' (2020) 9 Social Sciences 132.

[58] Obialor, N.I., 'Harnessing Foreign Investments with Environmental Sustainability in Nigeria's Oil and Gas Sector: Legal Issues and Solutions' (SSRN, 10 June 2024) <https://ssrn.com/abstract=4999457 or http://dx.doi.org/10.2139/ssrn.4999457> accessed 5 January 2025.

REFERENCES

Agboola, O.M., Nwulu, N.I., Egelioglu, F., and Agboola, O.P., 'Gas Flaring in Nigeria: Opportunity for Household Cooking Utilization' (2011) 2(2) International Journal of Thermal and Environmental Engineering 69

Aloamaka, P.C., 'Navigating the Climate Crisis: Exploring International Law's Evolution and Application' (2024) 6 GLS Law Journal 48

Anifowose, B., Lawler, D., Van der Horst, D., and Chapman, C., 'Evaluating Interdiction of Oil Pipelines at River Crossings Using Environmental Impact Assessments' (2014) 46(1) Area 4

Awhefeada, U.V., Aloamaka, P.C., and Kore-Okiti, E.T., 'A Realistic Approach Towards Attaining Sustainable Environment Through Improved Public Participation in Nigeria' (2023) 8 International Journal of Professional Business Review

BudgIT, 'Gas Flaring: A Real and Present Danger' (2018) <http://yourbudgit.com/wp-content/uploads/2018/04/Gas-flaring-new2.compressed-1.pdf> accessed 12 November 2024

CEIC Data, 'Norway Crude Oil Production' (2023) <https://www.ceicdata.com/en/indicator/norway/crude-oil-production> accessed 5 January 2025

Diugwu, I.A., Ijaiya, M.A., Mohammed, M., and Egila, A.E., 'The Effect of Gas Production, Utilisation, and Flaring on Economic Growth' (2013) 4 Scientific Research, Natural Resources 341

Edu, O.K., 'Environmental Impact Assessment: Policy and Law in Nigeria' in MOU Gasiokwu (ed), *Ecology: Concept, Politics and Legislation* (Chenglo Publishers 2013) 411–412

Ebeku, K., *Oil and the Niger Delta People in International Law: Resource Rights, Environmental and Equity Issues* (Rudiger Koppe 2006)

Eboh, M., 'FG Discovers 178 Gas Flare Sites Across Nigeria' *Vanguard* (8 December 2017) <https://www.vanguardngr.com/2017/12/fg-discovers-178-gas-flare-sites-across-nigeria/> accessed 8 December 2024

Ekpoh, I.J., and Obia, A.E., 'The Role of Gas Flaring in the Rapid Corrosion of Zinc Roofs in the Niger Delta Region of Nigeria' (2010) 30 Environment 347

Emam, A.E., 'Gas Flaring in Industry: An Overview' (2016) 57(5) Petro and Coal 532

Giwa, S.O., Oluwakayode, O.A., and Olasunkanmi, O.A., 'Baseline Black Carbon Emissions for Gas Flaring in the Niger Delta Region of Nigeria' (2014) 20 Journal of Natural Gas Science and Engineering 373

Ijaiya, H., 'The Development of Environmental Laws in Nigeria: An Assessment' (2012) 3 Rivers State University Law Journal of Public Law 98

Imoisi, S.E., and Eshemo-Omo, I., 'An Overview of the Applicable Laws in the Nigeria Petroleum Industry' (2024) 6 Public Policy and International Affair Academic Journal 1

Ladan, M., 'Access to Environmental Justice in Oil Pollution and Gas Flaring Cases as Human Rights Issue in Nigeria' (Paper presented at the Training Workshop for Federal Ministry of Justice Lawyers, Institute for Oil and Gas Law, Abuja, 28–30 November 2011) <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2336093> accessed 5 January 2025

Mrabure, K.O., and Ohimor, B.O., 'Unabated Gas Flaring Menace in Nigeria: The Need for Proper Gas Utilization and Strict Enforcement of Applicable Laws' (2020) 46 Commonwealth Law Bulletin 753

Nnimmo, B., 'Gas Flaring' (Justice in Nigeria Now, 2024) <https://www.justiceinnigerianow.org/gas-flaring> accessed 17 October 2024

Norwegian Petroleum, 'Norway's Petroleum History' (Norwegian Petroleum, 2023) <https://www.norskpetroleum.no/en/framework/norways-petroleum-history/> accessed 5 January 2025

Nyong, R.U., 'Empirical Analysis of Determinants of Natural Gas Flaring in Nigeria' (MSc thesis, Umea University 2016) <https://www.diva-portal.org/fulltext01.pdf> accessed 15 March 2022

Obialor, N.I., 'Harnessing Foreign Investments with Environmental Sustainability in Nigeria's Oil and Gas Sector: Legal Issues and Solutions' (SSRN, 10 June 2024) <https://ssrn.com/abstract=4999457> accessed 5 January 2025

Odje, A.M., *Our Bleeding Earth; The Search for Medication: Lectures on Niger Delta, Human Rights and the 1999 Constitution* (Crown of Splendour 2016)

Olujobi, O.J., 'Analysis of the Legal Framework Governing Gas Flaring in Nigeria's Upstream Petroleum Sector and the Need for Overhauling' (2020) 9 Social Sciences 132

Sharif, H.A., 'Gas Flaring: When Will Nigeria Decarbonize Its Oil and Gas Industry' (2016) 42 International Journal of Economy, Energy and Environment 17

Steyn, P., 'Oil Exploration in Colonial Nigeria, 1903–58' (2009) 37(2) The Journal of Imperial and Commonwealth History 249

Ubani, E.C., and Onyejekwe, I.M., 'Environmental Impact Analyses of Gas Flaring in the Niger Delta Region of Nigeria' (2013) 4(2) American Journal of Scientific and Industrial Research 247

Uchegbulam, I., Aliyuda, A., and John, Y.M., 'Sustainable Environment: A Comprehensive Evaluation of the Effects of Gas Flaring in the Niger Delta, Nigeria' (2022) 26 Journal of Applied Sciences and Environmental Management 929

Ukala, E., 'Gas Flaring in Nigeria's Niger Delta: Failed Promises and Reviving Community Voices' (2011) 2 Washington and Lee Journal of Energy, Climate, and Environment 100.

United Nations, *Rio Declaration on Environment and Development* (1992)

World Bank, *Global Gas Flaring Tracker Report* (June 2024) <https://thedocs.worldbank.org/en/doc/d01b4aebd8a10513c0e341de5e1f652e-0400072024/original/Global-Gas-Flaring-Tracker-Report-June-20-2024.pdf> accessed 5 January 2025

Zhdaneev, O.V., and Frolov, K.N., 'Technological and Institutional Priorities of the Oil and Gas Complex of the Russian Federation in the Term of the World Energy Transition' (2024) 58 International Journal of Hydrogen Energy 1418

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Authors' Contributions (in accordance with ICMJE criteria for authorship)

Contribution	*Author 1*	*Author 2*
Conceived and designed the research or analysis	Yes	No
Collected the data	No	Yes
Contributed to data analysis and interpretation	Yes	Yes
Wrote the article/paper	Yes	Yes
Critical revision of the article/paper	Yes	Yes
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The author(s) solemnly declare(s) that this research has not involved any human subject (body or organs) for experimentation. It was not a clinical research. The contexts of human population/participation were only indirectly covered through literature review. Therefore, an Ethical Clearance (from a Committee or Authority) or ethical obligation of Helsinki Declaration does not apply in cases of this study or written work.

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