LEGAL APPRAISAL OF MARINE BIODIVERSITY CONSERVATION IN NIGERIA: LESSONS FROM THE UK AND THE USA

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Abstract

The aim of this paper was to appraise the laws on marine biodiversity conservation in Nigeria. It discussed Nigeria's unique biodiversity profile and the various factors that threaten Nigeria's reliance on biodiversity for food, medicine and economic sustainability. It then explored how jurisdiction influences Nigeria's capacity to regulate its marine resources and assesses the role of international legal frameworks, such as United Nations Convention on the Law of the Sea, 1982 in addressing global challenges like pollution and overfishing. It further discussed the challenges facing marine biodiversity conservation in Nigeria which finally led to comparative analysis using the United Kingdom and the United States of America and lessons for Nigeria from these jurisdictions. It concluded that while Nigeria has law that govern biodiversity, there is poor regulatory framework and implementation strategies regarding marine biodiversity conservation in the country. Thus, it recommended, inter alia, that there should be specific laws to support Marine Protected Areas (MPAs) with clear regulatory frameworks, enforceable by-laws and sufficient resources for enforcement agencies to effectively manage these areas.

Keywords: *Biodiversity, Marine Biodiversity Conservation, Marine Protected Areas*

1.0 Introduction

Nigeria's rich marine biodiversity is integral to the nation's socio-economic stability and environmental health. However, the country faces significant challenges in conserving these vital resources, largely due to human activities. There are various human activities that constitute threat to marine species and biodiversity conservation.[1] These activities include overfishing, illegal, unreported and unregulated (IUU) fishing, habitat destruction, and pollution from industrial, agricultural and domestic sources, pose severe risks to marine biodiversity.[2] In addition, oil spills, as seen in the Niger Delta region, significantly exacerbate biodiversity loss by causing eutrophication, oxygen depletion and long-term damage to marine habitat. These acts threaten the survival of numerous marine species, disrupt ecological balance and reduce ecosystem service. The impacts of these threats to the ecosystem and coastal communities raise the urgent need for conservation efforts. The marine ecosystems in this region are essential for sustaining food security, supporting industries, preserving cultural heritage, and enhancing public health. Yet, despite Nigeria's dependency on marine resources, inadequate regulatory frameworks and weak enforcement mechanisms have left these ecosystems vulnerable.

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[1] O F Oluduro and G N Gasu, 'A Critical Appraisal of the Legal Regime for Biodiversity Conservation in Nigeria' [2012] (8)(4*) Canadian Social Science*;249-257.
[1] *Ibid.*
[2] W Baoling, 'The Exploitation and Utilization of Marine Living Resources' [1992] (1) *Oceanic and Anthropogenic Controls of Ufe in the Pacific Ocean*:235-247.

2.0 Meaning of Marine Biological Diversity

Marine biological diversity is a term used to describe the variety of life forms and ecosystems found in oceanic and coastal environments.[3] This diversity is a critical component of global biodiversity. It includes everything from microscopic plankton to large marine mammals and vast coral reefs. Marine biodiversity is distinct from terrestrial and aerial biodiversity due to the unique physical and chemical properties of marine environments, such as salinity, pressure and the three-dimensional nature of ocean habitats.[4]

3.0 The Nigerian Perspective of Biodiversity Conservation

The Nigerian perspective on biodiversity conservation reveals a complex interaction between rich biodiversity and the pressing challenges posed by human activities. Nigeria is large a country covering 923,000 km². It is home to a remarkable range of biodiversity, ranking it among the richest in Africa.[5] With around 7,895 plant species across 338 families and approximately 22,000 species of vertebrates and invertebrates, Nigeria's biodiversity includes 1,489 microorganism species, diverse forests and wildlife populations that contribute significantly to food, medicine, industry, and cultural heritage.[6] However, this biodiversity is under severe threat due to human pressures such as agriculture, infrastructure development, urbanisation and wetland destruction. Many Nigerians remain unaware of these threats, which has led to biodiversity loss. In particular, species such as the Nile crocodile and various trees face extinction. The threat to biological diversity in Nigeria shows the need for immediate conservation efforts.

The value of biodiversity in Nigeria extends to food security, providing a crucial gene pool to improve food crop productivity and resilience, especially during periods of food scarcity. The forests yield fruits, vegetables and leaves, which supplement diets, while wild animals supply protein. Certain plants like the baobab and *Pakia biglobosa*, are culturally and nutritionally significant, reflecting biodiversity's essential role in Nigerian food systems. Furthermore, biodiversity supports agriculture through pollination, soil fertility and pest control. This also helps to contribute to ecosystem health and sustainable crop production. This reliance underscores the vulnerability of Nigeria's food systems to biodiversity loss, which would diminish agricultural productivity and food security.

In addition to food, biodiversity in Nigeria plays a pivotal role in traditional medicine, which is a primary healthcare source for many Nigerians. Various plant species like Mango, Pawpaw and *Acacia albida* are used in treating common illnesses with around 80% of the population depending on medicinal plants. The World Health Organization (WHO) has highlighted the role of biodiversity in preventing disease transmission, linking biodiversity loss to increased disease risks. This linkage between depletion of biodiversity and disease risks shows critical role that biological diversity plays in health and wellness

[3] Ebeku (n 2).
[4] *Ibid.*
[5] H Audu and G M Ayuba, 'Biodiversity Conservation in Nigeria: Contemporary Challenges for Ecologist' [2016] (18)(1) *International Journal of Innovation and Applied Studies*;331-340.
[6] *Ibid.*

in Nigeria where traditional medicine remains indispensable due to limited access to conventional healthcare, particularly in rural communities.

Economically, biodiversity provides raw materials for industries, particularly timber, rubber and pharmaceuticals, which form vital economic sectors in Nigeria. Native trees like *Afara* and *Iroko* are valuable in construction and furniture-making while rubber from *Hevea brasiliensis* supports Nigeria's rubber industry. These industries benefit from biodiversity yet often lead to its degradation due to unsustainable and over exploitation. The researcher hereby aligns with existing views of scholars to support sustainable practices in resource extraction as such healthy practices are essential to balance economic gains with conservation goals. This approach ensures long-term availability of these resources and reduce negative impacts of human activities on biodiversity.

The Nigerian government is not unaware of the devastating impacts of biodiversity loss to the food, agricultural, industrial, health and economic sectors of the country. To curtail its impact, the country has adopted various means and measures for biodiversity conservation. Conservation efforts in Nigeria are typically anchored on the establishment of protected areas such as national parks, game reserves and forest reserves, which serve as habitats for various species and ecosystems. Government and NGOs, such as the Nigerian Conservation Foundation and WWF, play critical roles in conservation. However, institutional challenges, insufficient funding and weak enforcement limit the effectiveness of these protected areas. The involvement of ecologists and resource managers in using both scientific and indigenous knowledge is crucial for creating adaptive conservation strategies tailored to Nigeria's unique ecological needs and socio-political realities. Collaboration with local communities is particularly important, as community-based conservation can enhance biodiversity protection while providing economic benefits.

While there are no formal Marine Protected Areas (MPAs) in Nigeria, local communities have traditionally practiced conservation through cultural knowledge, managing fishing schedules and protecting certain aquatic species.[7] This local stewardship highlights an opportunity to incorporate community-driven approaches into an official MPA framework, combining traditional knowledge with scientific methods to address overfishing and biodiversity loss.[8] Establishing an inclusive, institutional framework for MPAs would not only aid in biodiversity conservation but also prevent issues like by-catch, reduce fish stock collapse, and secure critical resources for coastal populations. Implementing such a framework in the Niger Delta, a biodiversity hotspot, could be a strategic move, and the approach could serve as a model for similar regions across the Congo Basin and the Gulf of Guinea.[9]

4.0 Marine Biodiversity Conservation and Jurisdiction in Nigeria

Jurisdiction plays a crucial role in marine biodiversity conservation in Nigeria, as it determines the scope of legal authority that various levels of government, agencies, and international bodies have over

[7] Homef, 'The Need to Establish Fresh Water and Marine Protected Areas in Nigeria (Policy Paper) <https://homef.org/2020/06/07/the-need-to-establish-fresh-water-and-marine-protected-areas-in-nigeria-policy-paper/> accessed 20 October 2024.
[8] *Ibid*.
[9] *Ibid.*

marine resources and activities within Nigeria's territorial waters. Nigeria's jurisdictional challenges stem from a complex interplay of national, regional and international laws.

Domestically, Nigeria has sovereignty over its internal waters and territorial sea, which extends up to 12 nautical miles from its baseline, and exercises limited sovereign rights over its Exclusive Economic Zone (EEZ), extending 200 nautical miles from the coast, as prescribed by the UNCLOS. By the provision of the UNCLOS, the sovereignty of a coastal State extends, beyond its land territory and internal waters and, in the case of an archipelagic State, its archipelagic waters, to an adjacent belt of sea, described as the territorial sea.[10] This sovereignty extends to the air space over the territorial sea as well as to its bed and subsoil.[11] The sovereignty over the territorial sea is exercised subject to this Convention and to other rules of international law.[12]

Under international law, Nigeria holds sovereignty over its internal waters and territorial sea, which extends up to 12 nautical miles from its baseline. This means Nigeria has exclusive rights over its territorial sea, granting it full authority to enforce laws, regulate use and manage resources within this area. According to article 2 of the UNCLOS, sovereignty extends to the air space over the territorial sea, as well as to its bed and subsoil, giving Nigeria comprehensive control within these bounds. Nigeria's Territorial Waters Act (TWA)[13] reinforces this by asserting that Nigeria's sovereignty encompasses a belt of sea known as the territorial waters, extending up to 12 nautical miles.[14]

Section 1 of the TWA states that 'the territorial waters of Nigeria shall for all purposes include every part of the open sea within twelve nautical miles of the coast of Nigeria (measured from low water mark) or of the seaward limits of inland waters.' The extension of Nigeria's jurisdiction to the territorial waters affirms the nation's authority to regulate activities, including fishing, conservation efforts and pollution control in these waters.

Beyond the 12-nautical-mile territorial sea, Nigeria has jurisdiction over its EEZ, which extends up to 200 nautical miles from its baseline.[15] Within this zone, Nigeria exercises sovereign rights specifically for the purpose of exploring, exploiting, conserving, and managing natural resources, both living and non-living, on the seabed, subsoil, and superjacent waters. Although the EEZ does not fall under full national sovereignty like the territorial sea, it grants Nigeria rights over marine resources, allowing for regulatory control of fishing, oil exploration, and biodiversity conservation. Nigeria's EEZ Act codifies these rights, emphasizing that Nigeria has the right to explore and exploit, conserve and manage the natural resources, whether living or non-living, of the seabed and subsoil and the superjacent waters of the EEZ.[16] This legal provision gives Nigeria the basis to impose regulations within the EEZ aimed at marine biodiversity conservation, though its effectiveness hinges on enforcement capabilities.

[10] United Nations Convention on the Law of the Sea 1982, (UNCLOS), art 2.
[11] *Ibid.*
[12] *Ibid.*
[13] Cap T5 LFN 2004.
[14] *Ibid.,* s 1.
[15] UNCLOS, arts 55 to 57.
[16] Exclusive Economic Zone Act, s 2.

While UNCLOS provides a foundation for jurisdictional authority in marine areas, Nigeria's enforcement of these rights is constrained by insufficient resources, weak governance, and lack of a comprehensive framework specifically focused on marine biodiversity. These limitations in domestic jurisdiction impede effective conservation measures, allowing unregulated activities like illegal fishing, pollution from oil spills and habitat destruction to continue.

5.0 International Law as a Tool Against Marine Biodiversity Depletion

The 2010 Deepwater Horizon oil spill exemplifies the severe threats human activities pose to marine biodiversity.[17] Over 134 million gallons of oil were released into the Gulf of Mexico over 87 days, contaminating 1,300 miles of shoreline across five states.[18] This disaster resulted in the deaths of thousands of marine mammals, sea turtles and birds, and caused significant damage to deep-sea coral habitats, which are crucial for various marine species.[19] The spill also led to long-term environmental impacts, including eutrophication and oxygen depletion in affected areas, further disrupting marine ecosystems. Such incidents highlight the profound and lasting damage that industrial activities, particularly oil exploration and extraction, can inflict on marine life and habitats. These environmental catastrophes underscore the urgent need for a strong international legal framework to conserve marine biodiversity.

Nigeria has obligations under international law to protect marine biodiversity within its jurisdiction. Article 192 of UNCLOS articulates the general obligation for states to protect and preserve the marine environment. This broad duty serves as the foundation for marine biodiversity conservation under international law, requiring all state parties to actively participate in conservation measures to mitigate harmful activities within their jurisdiction or control. By mandating this obligation, UNCLOS highlights that marine biodiversity conservation is not merely a domestic responsibility but a shared international commitment essential for the health and sustainability of global aquatic ecosystems.

This obligation is further reinforced by other provisions of the UNCLOS, which call for measures to prevent, reduce, and control pollution of the marine environment from any source, including through adopting laws and regulations to mitigate the adverse effects of oil spills and other pollutants.[20] The Nigerian government has incorporated such commitments through various national laws and policies aimed at marine and coastal protection, though practical challenges often hinder enforcement. For example, oil pollution in the Niger Delta remains a critical issue, as oil spills frequently occur within the EEZ, where regulatory oversight is more challenging. Nigeria's legal rights and obligations under UNCLOS and its national laws thus provide a framework for marine biodiversity conservation, but enforcement limitations and jurisdictional complexities complicate effective management within these marine zones.

The UNCLOS further underscores the sovereign right of states to exploit their natural resources, provided they do so in accordance with their duty to protect and preserve the marine environment.[21]

[17] National Ocean Service, 'Deepwater Horizon Oil Spill Longterm Effects on Marine Mammals, Sea Turtles' <https://oceanservice.noaa.gov/news/apr17/dwh-protected-species.html> accessed 22 October 2024.
[18] *Ibid.*
[19] *Ibid.*
[20] UNCLOS, art 194.
[21] *Ibid.*, art 193.

Article 193 of the UNCLOS balances resource exploitation with environmental conservation, recognizing the need for sustainable use of marine resources. States, while benefiting from their natural resources, are compelled to act in a way that does not endanger marine biodiversity. This balance is critical for states like Nigeria, where the economic importance of marine resources, particularly oil, can lead to environmental degradation. Article 193 of the UNCLOS thus ensures that while states have autonomy over resource management, they are also accountable for preventing environmental harm, especially to ecosystems and species that may be vulnerable to exploitation.

Article 194 of UNCLOS expands on these obligations by detailing specific measures to prevent, reduce, and control pollution from various sources that could harm the marine environment. It mandates that states must use the best practicable means to prevent pollution and regulate activities under their jurisdiction to avoid transboundary harm. Importantly, Article 194(3) specifically addresses pollution from land-based sources, vessels, and installations used for resource exploitation.[22] For instance, under article 194(3)(c), states are required to implement measures to prevent pollution from installations involved in seabed resource extraction. This provision is particularly relevant for countries with extensive oil and gas operations, such as Nigeria, as it mandates preventive and emergency measures to minimize oil spills and other environmental hazards that impact marine biodiversity. By setting these requirements, UNCLOS encourages states to adopt stringent regulations and policies that safeguard marine ecosystems from pollution and exploitation-related activities.

Under international law, states also have a duty not to transfer environmental damage or hazards from one area of the sea to another or to substitute one form of pollution for another.[23] This obligation is important because it prevents states from merely shifting pollution sources or consequences rather than addressing the root causes of environmental harm. For example, transferring hazardous waste to other regions of the sea instead of implementing safer disposal methods would be contrary to the international law of the sea and marine conservation law. This ensures a holistic approach to marine conservation, requiring states to take comprehensive measures that do not compromise other marine areas or biodiversity through indirect pollution.

The extant international legal order also encourages international cooperation for the conservation of the marine environment. The law of the sea requires states to collaborate on both global and regional levels to formulate and enforce rules, standards and procedures for marine protection.[24] This cooperation is vital for addressing issues that cross national boundaries such as migratory species conservation, regional pollution control and shared fisheries management. Through collaborative frameworks, international law seeks to facilitate collective action, which is essential for conserving marine biodiversity in shared marine spaces like the Gulf of Guinea, which directly affect Nigeria. It underscores that marine conservation efforts are most effective when states coordinate their policies and actions, thereby creating a unified response to environmental threats that affect multiple jurisdictions.

[22] UNCLOS, art 194(3).
[23] *Ibid.*, art 195.
[24] *Ibid.*, art 197.

Agreements such as the Regional Seas Programme (RSP), initiated by the United Nations Environment Programme (UNEP), foster regional collaboration on marine conservation, recognizing that marine ecosystems often span across national boundaries.[25] Through regional cooperation, countries can harmonize conservation standards, conduct joint monitoring and enforce regulations more effectively.[26] Similarly, international treaties like the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) focus on protecting migratory species that depend on specific marine habitats. Collaborative research initiatives and data sharing are also essential components of these frameworks, as they allow for deeper understanding of marine biodiversity and the development of coordinated responses to emerging threats, such as climate change.

In addition to cooperative efforts, articles 198 and 199 of UNCLOS outline specific responsibilities for states to notify others of imminent or actual marine environmental damage and to develop contingency plans for pollution incidents.[27] Article 198 of the UNCLOS states that States must promptly inform potentially affected states and relevant international organizations in cases of severe pollution threats. It further calls for joint efforts to develop contingency plans to respond effectively to marine pollution.[28] This emphasis on proactive measures reflects the importance of preparedness in marine biodiversity conservation, ensuring that states are equipped to address emergencies that could devastate marine habitats and species.

International law further provides a range of rules and doctrines that underscore the importance of marine biodiversity conservation. These doctrines establish obligations for states to protect marine ecosystems, regulate activities that could harm marine life and cooperate on a global scale. One of the foundational principles supporting these obligations is the Precautionary Principle, which asserts that the absence of complete scientific certainty should not be used as a reason to delay environmental protection measures when there is a risk of serious harm.[29] This principle is embedded in international treaties, such as the Convention on Biological Diversity (CBD) and the United Nations Convention on the Law of the Sea (UNCLOS), and has been upheld in various international cases. For instance, in the *Southern Bluefin Tuna Cases (New Zealand v. Japan*; *Australia v. Japan*),[30] the International Tribunal for the Law of the Sea (ITLOS) applied the precautionary approach to halt Japan's excessive fishing activities that endangered the Southern Bluefin Tuna population. The tribunal emphasized the need for precaution in the face of uncertain science, highlighting the principle as essential to conserving marine biodiversity.

Another critical doctrine in international law that supports marine biodiversity conservation is the Due Diligence Obligation (DDO). DDO requires states to take necessary measures to prevent significant harm to other states or areas beyond their national jurisdiction (ABNJ). This duty is well-articulated in

[25] UNEP, 'Regional Seas Programme for ocean-related SDGs' <https://sdgs.un.org/partnerships/regional-seas-programme-ocean-related-sdgs> accessed 23 October 2024.
[26] *Ibid.*
[27] *Ibid.* arts 198 and 199.
[28] *Ibid.,* art 199.
[29] Stockholm Declaration 1972, principle 15; S Marr, ' The Southern Bluefin Tuna Cases: The Precautionary Approach and Conservation and Management of Fish Resources' [2000] (11)(4) *EJIL* 815-831.
[30] (1999) 38 ILM 1624.

UNCLOS and has been reinforced in cases such as the *Pulp Mills Case (Argentina v. Uruguay)*,[31] where the International Court of Justice (ICJ) emphasized the obligation of states to conduct environmental impact assessments and prevent transboundary harm. The court found that Uruguay's failure to conduct a thorough environmental assessment of its pulp mills potentially threatened biodiversity in the Uruguay River, thus violating its duty of due diligence. By requiring states to actively prevent harm to marine biodiversity, the DDO imposes proactive measures on states, making them accountable for preventing environmental degradation both within and beyond their territorial waters.

The Principle of Sustainable Development (SD) is another key doctrine that reinforces the conservation of marine biodiversity. Sustainable development, as endorsed in international declarations like the Rio Declaration on Environment and Development and integrated into treaties like the CBD, obligates states to balance economic, social and environmental goals. In the *Advisory Opinion on Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area*,[32] ITLOS noted that states must ensure that seabed mining activities do not irreversibly harm marine ecosystems. This opinion emphasized sustainable development by recognizing that economic activities must not come at the cost of degrading marine biodiversity, particularly in the high seas and areas beyond national jurisdiction. This principle, therefore, supports marine conservation by mandating that states regulate industries such as fishing, oil drilling, and seabed mining to prevent unsustainable exploitation of marine resources.

The doctrine of Common Heritage of Mankind is also significant in the conservation of marine biodiversity, particularly in areas beyond national jurisdiction, such as the deep seabed and high seas. Under UNCLOS, the seabed beyond national jurisdiction is considered a common heritage, meaning it must be preserved for the benefit of all humanity. This doctrine ensures that marine resources are conserved and utilized in a manner that benefits present and future generations. In *the Advisory Opinion on Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area*,[33] ITLOS affirmed that states have a responsibility to conserve the marine environment in the seabed beyond national jurisdiction and must prevent activities that could cause long-term environmental harm.

Together, these measures constitute the efforts of the international community in protecting marine biodiversity, promoting transparency, accountability and swift action, all of which are crucial for safeguarding marine biodiversity in the face of unforeseen environmental hazards. They are geared towards establishing and maintaining measures that safeguard, preserve and conserve marine species.

Marine Protected Areas (MPAs) are widely recognized as one of the most effective international tools for conserving marine biodiversity. MPAs are designated areas within oceans and seas where human activities are managed to protect ecosystems, habitats and species. The establishment of MPAs is encouraged under various international frameworks such as the UNCLOS and CBD. Specifically, Goal 14 of the Sustainable Development Goals (SDGs) calls for the conservation and sustainable use of oceans, targeting the protection of coastal and marine area. MPAs help safeguard marine biodiversity

[31] (2006) ICJ Rep 113.
[32] (2011) ITLOS Case No 17.
[33] (2011) ITLOS Case No 17.

by restricting or prohibiting activities that may harm ecosystems, such as fishing, mining and oil drilling. They serve as sanctuaries where marine life can recover and thrive, providing resilience against overfishing and pollution, which are major threats to marine biodiversity globally. The establishment of MPAs, therefore, contributes significantly to preserving biodiversity hotspots and protecting endangered species by minimizing human impact in designated marine areas.

In addition to MPAs, various other practical measures have been adopted internationally to further marine biodiversity conservation. Key among these is the requirement for environmental impact assessments (EIAs), which are essential for assessing potential impacts on marine environments before initiating any significant projects, particularly in vulnerable areas. Environmental assessments are mandated by the UNCLOS[34] and are also a core component of numerous regional agreements. For example, under article 26 of the UNCLOS, states must evaluate activities that could cause substantial pollution or harm to the marine environment. This obligation to conduct EIAs ensures that projects, especially those involving oil exploration or industrial activities in marine areas, consider the ecological risks and implement mitigation measures. In addition, practices like regulated fishing quotas and seasonal restrictions help manage fish stocks sustainably, preventing overfishing and maintaining ecosystem balance. These measures, combined with technological innovations like satellite monitoring, have enhanced enforcement capabilities, which allow for real-time tracking of marine activities and improved compliance with conservation regulations.

6.0 Limitations of International Law in Conserving Marine Biodiversity

There are treaties under international law established for the conservation and preservation of marine biodiversity. However, there are notable limitations that affect their efficacy especially for coastal states like Nigeria. The Deepwater Horizon spill that occurred in the Gulf of Mexico in 2010 has revealed gaps in international regulations concerning liability, compensation, and preventive measures for offshore oil spills. It shows how weak and porous the international legal regimes are in preventing the depletion of marine biodiversity from avoidable human activities.

One major limitation is the lack of binding enforcement mechanisms within international treaties, which weakens the ability of these frameworks to ensure compliance among states. While UNCLOS and other treaties set out guidelines and obligations, enforcement largely depends on the willingness and capacity of states to comply. For example, although UNCLOS requires that states conduct EIAs and prevent pollution within their jurisdictions, there is no centralised authority to oversee compliance or sanction non-complying states. As a result of this limitation, states often overlook their treaty obligations, especially in regions where marine biodiversity is vulnerable, as enforcement hinges on state willingness and the commitments and efficacy of domestic institutions. This lack of enforceable provisions has allowed harmful activities, such as unregulated fishing and oil exploitation, to persist in many areas, contributing to significant biodiversity loss despite international protections.

Another key limitation in international marine biodiversity conservation is the issue of jurisdictional gaps and conflicts. Marine ecosystems often span multiple jurisdictions, yet UNCLOS and related treaties primarily focus on state-controlled areas, leaving areas beyond national jurisdiction (ABNJ)

[34] UNCLOS, art 206.

under limited regulation. ABNJ, which include the high seas and parts of the deep seabed, make up a substantial portion of the world's oceans and harbor significant biodiversity. However, due to weak regulatory coverage in these areas, activities such as deep-sea mining and unregulated fishing remain largely unchecked, posing severe risks to marine biodiversity. Even within EEZs, some coastal states lack the resources and technology to effectively monitor and protect their marine environments. For states like Nigeria, managing extensive marine areas with limited financial and technological resources poses a serious setback.

A third significant limitation arises from the complexity of international cooperation required for effective marine conservation. While international agreements encourage states to cooperate on marine issues, regional cooperation can be challenging due to differing national interests, economic priorities and political stability among states. In regions like the Gulf of Guinea, where Nigeria is located, these factors often impede collaborative efforts to conserve marine biodiversity. Countries within the same regional frameworks may prioritize economic activities such as oil exploration and commercial fishing. This can create conflicts over shared resources and eventually hinder efforts targeted at conserving marine species. Also, international treaties require extensive coordination among multiple stakeholders, including governments, regional bodies, and non-state actors. This coordination can be resource-intensive. Without dedicated funding or political will, it is difficult to sustain long-term conservation efforts. Coastal states where economic dependency on marine resources is high often struggle to align national development goals with conservation objectives set by international law, which make it difficult and almost impossible to enforce international measures in those regions.

7.0 The Challenges and Limitations of Enforcement of Marine Biodiversity Conservation in Nigeria

Marine biodiversity conservation in Nigeria faces several significant challenges, which are primarily driven by socio-economic, environmental and governance factors. These problems have far-reaching implications for the health of marine ecosystems and the livelihoods of communities that depend on them.[35] One of the most pressing issues is overfishing, which depletes fish stocks and disrupts marine ecosystems. Illegal, unreported, and unregulated (IUU) fishing exacerbates this problem, as it often involves the use of destructive fishing methods that harm marine habitats. The lack of effective monitoring and enforcement mechanisms allows these activities to continue unchecked, leading to a decline in fish populations and biodiversity. Marine pollution is another critical problem affecting biodiversity conservation in Nigeria. Industrial discharge, agricultural runoff, and improper waste disposal contribute to the contamination of marine environments. Oil spills, in particular, have had devastating effects on marine life, especially in the Niger Delta region. These pollutants can cause long-term damage to marine ecosystems, affecting the health and survival of various species.[36]

Coastal development and land reclamation projects often lead to the destruction of critical marine habitats such as mangroves, coral reefs and seagrass beds. These habitats are essential for the survival of many marine species, providing breeding grounds, food, and shelter. The loss of these habitats due

[35] O Ebikapaye and others, 'Governing the Environmental Impact of Dredging: Consequences for Marine Biodiversity in the Niger Delta Region of Nigeria' [2020] (2) (3) *Insights in Mining Science and Technology*;76-84.
[36] O Imarhiagbe and others, 'A Review of the Biodiversity Conservation Status of Nigeria' [2020] (4) (1) *Journal of Wildlife and Biodiversity*;73-83.

to human activities significantly reduces marine biodiversity and disrupts ecological balance. Climate change also poses a significant threat to marine biodiversity in Nigeria. Rising sea temperatures, ocean acidification, and sea-level rise impact marine ecosystems and species.[37] Coral reefs, for instance, are highly sensitive to temperature changes and can suffer from bleaching events.[38] Also, changes in ocean currents and weather patterns can affect the distribution and abundance of marine species.[39]

Lack of funding is another challenge facing marine biodiversity conservation in Nigeria. Effective marine biodiversity conservation requires adequate funding and resources, which are often lacking in Nigeria. Insufficient financial support limits the capacity of conservation programs and initiatives to address the various threats to marine biodiversity. This includes the ability to conduct research, implement conservation measures, and enforce regulations. The governance framework for marine biodiversity conservation in Nigeria is often weak and fragmented. There is a lack of coherent policies and effective implementation strategies. Also, coordination among different government agencies and stakeholders is often poor, leading to gaps in conservation efforts. Corruption and lack of political will further hinder the enforcement of existing regulations and the development of new policies.

One major challenge facing marine biodiversity conservation in Nigeria is the lack of fully functional Marine Protected Area (MPA). Without a doubt, MPAs are essential for preserving biodiversity, managing aquatic ecosystems and supporting ecosystem services that benefit coastal communities. However, Nigeria currently lacks formally established MPAs or freshwater protected areas, and there are no national initiatives for mangrove restoration or marine park designation. Despite Nigeria's rich coastal and marine resources, including habitats for fish, aquatic mammals, reptiles, and other marine species, the absence of formal protection leaves these resources vulnerable. This gap in protection means that Nigeria's coastal waters, especially in biodiversity-rich areas like the Niger Delta, are exposed to unregulated activities and environmental pressures, which often result in a significant decline in marine species and ecosystem health.

The Nigerian coastline faces extensive environmental challenges due to climate change, flooding, pollution from agricultural and industrial effluents and extensive oil and gas exploration. Activities such as shipping, tourism and agriculture also place significant stress on marine ecosystems. This degradation reduces the delivery of essential ecosystem services, impacting food security, water quality and livelihoods in coastal communities. In the Niger Delta, oil spills have exacerbated this situation, causing widespread eutrophication, oxygen depletion and decreased fish reproduction levels. For instance, in 2024, Aiteo, a Nigerian energy firm, halted up to 50,000 barrels per day of oil production at its Nembe Creek facility in Bayelsa State following a leak.[40] This incident contributed to environmental degradation, affecting local communities reliant on fishing and farming.[41] In addition, studies have shown that oil spills in the Niger Delta have resulted in eutrophication and oxygen depletion in lagoon

[37] E S Poloczanska and others, 'Responses of Marine Organisms to climate change Across Oceans' [2016] (3) *Frontiers in Marine Science*.
[38] *Ibid.*
[39] *Ibid.*
[40] T Owolabi, 'Nigeria's Aiteo halts up to 50,000 bpd oil output after leak' <https://www.reuters.com/business/energy/nigerias-aiteo-shuts-production-oml-29-due-oil-leak-2024-06-19/?utm_source=chatgpt.com> accessed 20 October 2024.
[41] *Ibid.*

systems, particularly around urban centers, leading to decreased fish reproduction levels and waterborne diseases.[42] Thus, the lack of MPAs prevents Nigeria from effectively addressing the cumulative environmental impacts of these activities, hindering the restoration and resilience of its marine ecosystems.

Marine biodiversity conservation in Nigeria is further limited by the lack of effective environmental monitoring and enforcement.[43] Generally, effective conservation of marine biodiversity requires robust environmental monitoring and enforcement of relevant laws. However, in Nigeria, there is often a lack of organized and consistent environmental monitoring exercises.[44] This gap makes it difficult to detect and address anthropogenic perturbations in a timely manner. Also, the enforcement of environmental regulations is often weak, allowing harmful activities such as illegal dredging and unregulated waste disposal to continue unchecked.[45] The absence of a comprehensive monitoring framework and the involvement of unqualified personnel in environmental assessments further exacerbate the problem.[46]

8.0 Lessons from other Jurisdictions

The United Kingdom

The United Kingdom has implemented taken several legal steps to regulate and protect marine biodiversity within its jurisdiction, primarily through the establishment of Marine Protected Areas (MPAs). As of March 2024, the UK expanded its MPA network by introducing byelaws to safeguard an additional 4,000 square kilometers of vital marine habitats and species in 13 English offshore MPAs. These measures are enforced institutionally by the Marine Management Organisation (MMO), which the UK government established with the aim of protecting vulnerable ecosystems from activities such as bottom trawling, which can cause significant ecological damage.

In addition to MPAs, the UK has enacted legislation to protect specific marine species. Various marine species are protected under UK wildlife laws from intentional disturbance, capture, injury or killing.[47] This includes regulations against the possession or sale of certain species. This protective means seeks to ensure their conservation regardless of their location within or outside protected areas.[48] The UK also actively participates in international efforts to conserve marine biodiversity. In September 2023, the UK signed the Ocean Conservation Pledge (OCP), committing to protect at least 30% of its marine area by 2030.[49] Furthermore, the UK has endorsed the High-Level Panel Leader's Communiqué, urging ocean-based action across climate, fisheries, pollution management, and mobilizing finance. These

[42] A A Ikhumetse and others, 'A Critical Review of Oil Spills in the Niger Delta Aquatic Environment: Causes, Impacts, and Bioremediation Assessment' [2022] (194) (816) Environmental Monitoring Assessment; IUCN, 'Sustainable S Remediation and Rehabilitation of Biodiversity and Habitats of Oil Spill Sites in the Niger Delta' <https://portals.iucn.org/library/sites/library/files/documents/2013-061.pdf> accessed 20 October 2024.
[43] O Ebikapaye and others, 'Governing the Environmental Impact of Dredging: Consequences for Marine Biodiversity in the Niger Delta Region of Nigeria' [2020] (2) (3) *Insights in Mining Science and Technology*;76-84.
[44] *Ibid.*
[45] *Ibid.*
[46] *Ibid.*
[47] UK Government, 'Marine species & wildlife: protection' <https://www.gov.uk/government/publications/protected-marine-species> accessed 29 October 2024.
[48] *Ibid.*
[49] UK Government, 'UK pushes protections for international marine biodiversity' <https://www.gov.uk/government/news/uk-pushes-protections-for-international-marine-biodiversity> accessed 29 October 2024.

commitments align with global initiatives to halt and reverse biodiversity loss. They also demonstrate the UK's dedication to international cooperation in marine conservation.

United States of America

The United States of America employs a multifaceted approach to regulate and conserve marine biodiversity, integrating legislative frameworks, protected area designations and collaborative initiatives. A cornerstone of this effort is the Endangered Species Act (ESA) of 1973, which provides for the conservation of species that are endangered or threatened throughout all or a significant portion of their range, and the ecosystems upon which they depend. The ESA mandates federal agencies to ensure that their actions do not jeopardize the continued existence of listed species or destroy or adversely modify their critical habitats. Also, the Marine Mammal Protection Act (MMPA) of 1972 prohibits the 'take' of marine mammals in US waters and by US citizens on the high seas, aiming to maintain sustainable populations of marine mammals.

To safeguard critical marine habitats, the US government has established an extensive network of MPAs. These MPAs are designated to conserve marine ecosystems, preserve cultural resources, and sustain fisheries productivity. Also, the National Marine Sanctuaries Act (NMSA) authorizes the designation of national marine sanctuaries to protect areas of special national significance. The Biden-Harris Administration has worked hard to fulfill the President's goal to protect and conserve at least 30% of U.S. waters by 2030.[50] As of 2024, the US has designated 15 national marine sanctuaries and two marine national monuments, covering over 620,000 square miles of marine and Great Lakes waters.[51] These protected areas are managed to balance conservation objectives with sustainable use, ensuring the protection of diverse marine life and habitats.

The US also engages in collaborative efforts to enhance marine biodiversity conservation. The Marine Biodiversity Observation Network (MBON), for instance, is a partnership among federal agencies, academic institutions, and non-governmental organizations aimed at monitoring and understanding changes in marine biodiversity. MBON integrates data from various sources to inform conservation strategies and policy decisions. Furthermore, the US participates in international agreements such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) to regulate the trade of marine species and combat illegal exploitation.

Lessons for Nigeria

a. Both the UK and the USA have established extensive networks of MPAs and enforce byelaws and regulations to protect marine habitats and species. Nigeria can learn from this by expanding its own MPA network, focusing on vulnerable marine areas like the Niger Delta.
b. The UK and the USA have enacted specific laws to protect certain marine species from harm, disturbance and exploitation, regardless of whether they are within MPAs. Nigeria could implement similar species-specific protections and focus on endangered or threatened species

[50] USGS, 'The National Ocean Biodiversity Strategy' <https://www.usgs.gov/publications/national-ocean-biodiversity-strategy> accessed 30 October 2024.
[51] Monterey Bay Aquarium, 'Monterey Bay National Marine Sanctuary turns 30; New Sanctuaries are in the Works' <https://www.montereybayaquarium.org/stories/a-milestone-year-for-marine-protection> accessed 30 October 2024.

within its marine ecosystems. Such legislation would not only protect species but also promote sustainable use by restricting activities like illegal poaching and trade.

c. Both countries actively engage in international conservation efforts, such as the Ocean Conservation Pledge and CITES wherein they commit to protect marine environments on a global scale. Likewise, Nigeria could strengthen its international partnerships by signing pledges and agreements focused on marine biodiversity conservation and collaborating on regional initiatives with neighbouring Gulf of Guinea countries.

9.0 Conclusion

In this paper, the author has extensively discussed the regulate the conservation of marine biodiversity at national, regional and international levels. It has underscored the importance of marine biodiversity to Nigeria's socio-economic and environmental health, from supporting food security and economic development to safeguarding cultural heritage and public health. However, it argued that Nigeria's marine ecosystems face serious threats from human activities such as overfishing, habitat destruction, pollution, and, notably, oil spills in the Niger Delta. Although international laws like the UNCLOS and other decisions and doctrines of international environmental law provide a solid foundation for marine conservation, there is poor implementation and enforcement due to the horizontal nature of international law and its reliance on the willingness and commitments of states. It further demonstrated that while Nigeria has law that govern biodiversity, there is poor regulatory framework and implementation strategies regarding marine biodiversity conservation in the country. Drawing from the best practices of other jurisdictions, this paper pointed out potential pathways for Nigeria to strengthen its approach to marine biodiversity conservation.

10.0 Recommendations

The paper recommends as follows:

1. The government should prioritise establishing a network of MPAs, especially in biodiversity-rich areas such as the Niger Delta. There should be specific laws to support MPAs with clear regulatory frameworks, enforceable by-laws and sufficient resources for enforcement agencies to effectively manage these areas. The inclusion of community-managed conservation areas would leverage local knowledge and participation, similar to the UK's approach, for broader support and sustainability.
2. The National Assembly should establish a dedicated National Marine Biodiversity Conservation Authority (NMBCA) through legislative action. This institution should focus exclusively on marine biodiversity, responsible for creating, implementing and monitoring conservation policies and coordinating restoration programme.
3. The National Assembly should enact specific laws that protect endangered and vulnerable marine species against intentional harm, capture and unsustainable exploitation, regardless of location within or outside MPAs.
4. To address the funding gap for marine biodiversity conservation, the government should establish a dedicated Marine Conservation Fund. This fund could be sourced from government allocations, environmental levies on industries, and contributions from international

conservation bodies. The fund would provide consistent financial support for essential conservation activities.

5. Capacity building and public awareness programmes are vital to educate coastal communities and the general public about the importance of marine biodiversity and the risks associated with activities like overfishing and pollution. Nigeria should implement education campaigns, create community outreach programmes and town hall meetings to encourage the participation of coastal communities in marine conservation efforts.