

An Analysis of Nigeria's Biodiversity Governance: Policies, Institutions, and Challenges

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Abstract

Nigeria's biodiversity richness gets attention in the literature because of the dangers against it. Nigeria's oil spills are the most known problem regarding environmental policies. However, it is not the sole reason why Nigeria experiences biodiversity loss. It is a complex matter composed of conflictual needs, interests, and desires of actors that are state agencies, market stakeholders, and civil society members. There is a necessity of investigating the governance aspect of Nigeria's biodiversity loss, which is not state-oriented work. There should be an orientation towards dynamics beyond regime effectiveness and regime interaction to understand how civil society is positioned during the governance process that cannot be ignored. This study investigates to what extent Nigeria has "good governance" of biodiversity conservation. It has been found that although the attempts have been unsuccessful, Nigerian governments are aware that a governance approach is needed to solve biodiversity loss. However, lack of local authority and disconnection between civil society and governments prevent a healthy working governance process.

Keywords: Nigeria, Biodiversity Conservation, Biodiversity Governance, Governance Approach

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Nijerya'nın Biyoçeşitlilik Yönetimi Üzerine Bir Analiz: Politikalar, Kurumlar ve Zorluklar

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Öz

Nijerya'nın biyoçeşitlilik zenginliği, karşı karşıya olduğu tehlikeler nedeniyle en çok tartışılan konulardan biridir. Nijerya'daki petrol sızıntıları çevre politikalarıyla ilgili en bilinen sorundur. Ancak Nijerya'nın biyolojik çeşitlilik kaybı yaşamasının tek nedeni bu değildir. Mesele, devlet kurumları, piyasa paydaşları ve sivil toplum üyelerinin aralarında bulunduğu aktörlerin çatışan ihtiyaç, çıkar ve arzularından oluşan çok daha kompleks bir konudur. Devlet odaklı bir çalışma olmayacak şekilde Nijerya'nın biyoçeşitlilik kaybının yönetim yönünün araştırılması ihtiyacı bulunmaktadır. Sivil toplumun yönetim sürecinde nasıl konumlandığı göz ardı edilediğinden dolayı rejimin etkinliği ve rejim etkileşiminin ötesindeki dinamiklere yönelik bir araştırma gerekmektedir. Bu çalışma, Nijerya'nın biyoçeşitliliğin korunmasında ne ölçüde "iyi yönetime" sahip olduğunu araştırmaktadır. Çalışma sonucunda, her ne kadar girişimler başarısız olsa da, Nijerya hükümetlerinin biyoçeşitlilik kaybını çözmek için yönetim yaklaşımına ihtiyaç duyulduğunun farkında oldukları tespit edilmiştir. Bulgulara göre; yerel otorite eksikliği ve sivil toplum ile hükümetler arasındaki kopukluk sağlıklı işleyen yönetim sürecini engellemektedir.

Anahtar Kelimeler: Nijerya, Biyoçeşitlilik koruması, Biyoçeşitlilik yönetimi, Yönetim yaklaşım

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Introduction

With its 36 autonomous states, 774 local governments, over 250 ethnic groups, and over 210 million population, Nigeria represents a cultural endowment in Sub-Saharan Africa. The country is also composed of rich biodiversity of species and ecologies in 923,769 square kilometers of area. There are approximately 900 bird species, 135 reptile species, 109 amphibian species, and 648 fish species¹ that some of which are in danger.² Government-led policies are protecting such natural richness diversity. However, two questions have been pushed in Nigerian biodiversity which are; what is it protected from? and how is it protected? An answer to the first question would provide threats against biodiversity conservation, while the second one would bring governance-oriented investigation.

The economic structure of Nigeria, which is the country that produces around 6 quadrillions of Btu oil per year, heavily relies on energy production. Oil accounts for about 90% of total exports and 75% of the government's revenue.³ After oil, agriculture holds the most significant share of the economy, which holds one fourth of the country's GDP.⁴ Both oil and agricultural production is the most significant revenue sources for the country and the main threats to biodiversity. Oil spillage, gas flaring, and pipeline explosions in Nigeria are the most known ones.⁵ However, some other threats endanger biodiversities such as hunting, overfishing, and some local groups' sacred habits. Such a complex interaction between humans and nature has led Nigeria to be one of the most debated biodiversity loss cases in the literature.⁶ Protecting Nigerian biodiversity richness is also another matter.⁷ Such protection ways can only be

¹ USAID. "Nigeria Biodiversity and Tropical Forests 118/119 Assessment," The United States Agency for International Development, 2013.

² IUCN Red List. "IUCN Red List of Threatened Species. Version 2013," accessed February 10, 2022, www.iucnredlist.org

³ EIA. "Nigeria." 2022, accessed February 10, 2022. <https://www.eia.gov/international/overview/country/nga>; FAO. "FAO's Information System on Water and Agriculture: Country Profile - Nigeria." 2016. Accessed February 10, 2022.

⁴ World Bank. "Nigeria Biannual Economic Update," updated 2018, accessed February 10, 2022, <http://documents.worldbank.org/curated/en/769551524576691390/pdf/WP-NigeriaBiannualEconomicUpdateAprilFinalVersionPUBLIC.pdf>.

⁵ Obinna C.D. Anejonu, Precious-Ann.N Ahiaramunnah, and Chinenyendo J. Nri-ezedi, "Hydrocarbon Pollution in the Niger Delta: Geographies of Impacts and Appraisal of Lapses in Extant Legal Framework," *Resources Policy* 45 (2015): 65-77.

⁶ L. Luiselli, and G. C. Akani, "An Indirect Assessment of the Effects of Oil Pollution on the Diversity and Functioning of Turtle Communities in the Niger Delta, Nigeria," *Animal Biodiversity and Conservation* 26(1), (2002): 57-65;

Collins N. C. Ugochukwu and Dr. Jürgen Ertel, "Negative Impacts of Oil Exploration on Biodiversity Management in the Niger Delta Area of Nigeria," *Impact Assessment and Project Appraisal* 26 (2), (2008): 139-147;

Anejonu, Ahiaramunnah and Nri-ezedi, "Hydrocarbon Pollution in the Niger Delta: Geographies of Impacts and Appraisal of Lapses in Extant Legal Framework," 65-77.

⁷ Adesina Temitayo Bello and Joseph Amadi, "Oil Pollution and Bio-Diversity Conservation in Nigeria: An Assessment of Legal Framework," *Journal of Geoscience and Environment Protection* 7, (2019): 354-371;

discovered with a governance approach. Then, the main question would be asked as to what extent does Nigeria have “good governance” of biodiversity conservation?

This study argues that Nigerian governments are aware of the danger of biodiversity and its causes. There are attempts at policy, institution, and organization levels for a solution. More importantly, Nigerian governments have realized that state-society complexity requires a governance approach that considers civil society dynamics in the policy-making process. However, they fail to include local groups in the policy-making process. Despite attempts that have evolved and widened through time, the disconnection between civil society and governments and the lack of local authority power have not been solved. Our findings could not be derived if the regime approach was followed. Only the governance approach that has a structural analysis via the state-economy-civil society nexus, which would see the context beyond the regulatory framework, would fill the gap in the literature. Regime effectiveness needs more than institution and policy-oriented perceptions. Actors’ needs and interests should also be considered.

The rest of the study is composed of five chapters. Firstly, the literature review will be presented. As part of it, biodiversity matter will be introduced and defined. Later, how biodiversity is conserved and what biodiversity governance is, are discussed. In the last part of this chapter, how Nigerian biodiversity is interpreted will be reflected. The second chapter describes the governance approach and indicates how to operationalize it in the Nigerian biodiversity conservation case. The third chapter, where the analysis is made, will provide the richness of Nigerian biodiversity, the threats against it, and how governments attempt to solve biodiversity loss. Fourthly, the discussion follows. Lastly, the research will be concluded.

1. Literature Review

1.1. A Matter of Biodiversity

Maintaining a healthy natural environment is a fundamental issue because humanity’s demand from nature creates competitiveness among people, as individuals, groups, or nations, and thereby demolishes the capability of nature to provide the supplies that humanity needs. Biodiversity, one of the contemporary problems for nature’s healthy working organization, reflects the contemporary competitiveness among people and the struggle between people and nature. It provides “the variability among living organisms” including “diversity within species, between species and of ecosystems.”⁸ Thus, there are three types of diversity. Firstly, species diversity covers the gene flows occurring under natural conditions.⁹ Genetic diversity,

Eucharia Oluchi Nwaichi and Justice Obinna Osuoha, “Has the National Policy on Environmental Pollution Control in Nigeria been Neglected in the Niger Delta Region? An update,” *Environment, Development and Sustainability* (2021): 1-24.

⁸ Article 2 CBD. “Article 2. Use of Terms,” 2006, accessed February 10, 2022. <https://www.cbd.int/convention/articles/?a=cbd-02>.

⁹ O. G. Amokaye, *Environmental Law and Practice in Nigeria 7th*. (Lagos: MIJ Professional Publishers Ltd., 2014)

secondly, refers to several gene varieties within species.¹⁰ Lastly, ecosystem variety includes a variety of habitats, ecological processes, and diversity within the ecosystems.¹¹

What causes biodiversity loss directly and indirectly then? In other words, how do human needs interfere with the self-sufficient working mechanism? One of the most worked issues in this area is based on energy production. Oil spillage, gas flaring, and pipeline explosions are the most direct negative causes of biodiversity loss.¹² Energy production, which means the economic growth of a country and economic income for some, is the most visible one.¹³ Corruption and mismanagement of wealth undermine the governance of biodiversity; thereby, existing problems can become more significant. However, negative impacts of energy production on biodiversity conservation do not only seem in the ecology sphere but also at the societal level.¹⁴ There is also a matter of cultural diversity that is undermined by the long-term impacts of the oil spill and gas flaring occurrences.¹⁵ How biodiversity has negatively been impacted by energy production has been witnessed in various cases such as shallow subtidal reef corals in Panama, turtle communities in Nigeria, and fish in Amazon aquatic biodiversity.¹⁶ However, besides the direct impact of energy production, there are other causes for biodiversity loss, such as pollution, the introduction of alien species, overexploitation, climate change, loss of habitat, population growth, and weak institutional mechanisms.¹⁷

1.2. Biodiversity Governance

Besides climate change's global impact on biodiversity loss, it is already a global issue even though it is heavily observed locally.¹⁸ Globalized interconnectedness of contemporary times at multi-levels (e.g., local, national, regional, global) among multiple stakeholders (e.g.,

¹⁰ S. N. Okiwelu and D. I. Anyanwu. *Dictionary of Ecology, Conservation and Environmental Sciences* (Lagos: Niyi Faniran, 2003), 16.

¹¹ Bello and Amadi, "Oil Pollution," 354-371.

¹² Anejionu, Ahiamunnah and Nri-ezedi, "Hydrocarbon Pollution," 65-77.

¹³ BC. Anwadike, "Biodiversity Conservation in Nigeria: Perception, Challenges and Possible Remedies," *Current Investigations in Agriculture and Current Research* 8, no. 4, (2020): 1109-1115.

¹⁴ Stephanie E. Chang, Jeremy Stone, Kyle Demes, and Marina Piscitelli, "Consequences of Oil Spills: A Review and Framework for Informing Planning," *Ecology and Society* 19, no. 2, (2014).

¹⁵ Daniele Codato et al., "Oil Production, Biodiversity Conservation and Indigenous Territories: Towards Geographical Criteria for Unburnable Carbon Areas in the Amazon Rainforest," *Applied Geography* 102, (2019): 28-38.

¹⁶ Hector M. Guzman, Jeremy B. C. Jackson, and Ernesto Well. "Short-term Ecological Consequences of a Major Oil Spill on Panamanian Subtidal Reef Corals," *Coral Reefs* 10 (1991): 1-12; Luiselli and Akani, "An Indirect Assessment," 57-65; Valter M. Azevedo-Santos et al., "Amazon Aquatic Biodiversity Imperiled by Oil Spills," *Biodiversity and Conservation* 25, no. 3, (2016): 1-4.

¹⁷ B. Belim Imtiyaz, P. Dhoni Sweta, and K. Kaba Prakash, "Threats to Marine Biodiversity," In *Marine Biodiversity: Present Status and Prospects*, eds. P. Santhanam and P. Perumal, 21-26. (Delhi: Narendra Publishing House, 2011).; Anwadike, "Biodiversity Conservation in Nigeria," 1109-1115.

¹⁸ Taber D. Allison, Terry L. Root, and Peter C. Frumhoff, "Thinking globally and siting locally - renewable energy and biodiversity in a rapidly warming world," *Climate Change* 126 (2014): 1-6.

governments, companies, NGOs, and local groups) require governance-oriented investigations. In the case of biodiversity conservation, governance-related actions have been taken. The Rio Conference of Convention on Biodiversity has been the leading conference on biodiversity conservation under the global governance agenda.¹⁹ It was the time that International Relations (IR) orientations started switching “from the government to governance” because of increasing attention on society.²⁰ While biodiversity loss is a matter between human needs and nature supply, biodiversity conservation can be achieved by considering state-society complexity. Not considering the social aspect would push us to consider regime literature that interprets international regimes as the core of effective international mechanisms. However, there is more need for emphasis on civil society.²¹

The path to biodiversity governance is passing through environmental governance literature. Although there has been growing discussion on intergovernmental environmental agreements based on principles, norms, rules, and decision-making procedures, state-society complexity requires more than regime effectiveness and regime interaction. Public participation in biodiversity governance, stakeholder perceptions, and outcomes matter as much as the legal framework.²² The governance process is simply composed of political, economic, and social actors. However, neoliberal dominance behind the government-market-civil society nexus should also be placed at the forefront.²³ It is not a process led by either economic or political dynamics.

There have been some case-study-oriented works that followed the biodiversity governance perspective. For example, Langholz and Krug worked with non-state actors and private park-protected areas in Australia. Visseren-Hamakers et al. compared the interaction efficiency of governance function between the Great Apes Survival Project and the Critical Ecosystem Partnership Fund.²⁴ There is also a work on multi-level biodiversity governance that compares

¹⁹ The Rio Conventions. “The Rio Conventions.” 1992. Accessed February 10, 2022. <https://www.cbd.int/rio/>

²⁰ J. Rosenau and E. Czempiel (Eds.), *Governance without Government: Order and Change in World Politics*. (Cambridge: Cambridge University Press, 1992).

²¹ P.M. Haas, R.O. Keohane, and A. Levy M. (Eds.), *Institutions for the Earth: Sources of Effective International Environmental Protection* (Cambridge, MA: MIT Press, 1995); N. Quental, J. Lourenço, and F Nunes da Silva, “Sustainable Development Policy: Goals, Targets and Political Cycles,” *Sustainable Development* 19, no. 1 (2011): 15-29.

²² Ingrid J. Visseren-Hamakers, “Partnerships and Sustainable Development: The Lessons Learned from International Biodiversity Governance,” *Environmental Policy and Governance* 23, (2013): 145-160.; J.C. Young et al., “Does Stakeholder Involvement Really Benefit Biodiversity Conservation?” *Biological Conservation* 158, (2013): 359-370.

²³ D. A. Harvey, *Brief History of Neoliberalism* (Oxford: Oxford University Press, 2005).

²⁴ Jeffrey A. Langholz and Wolf Krug, “New Forms of Biodiversity Governance: Non-State Actors and the Private Protected Area Action Plan,” *Journal of International Wildlife Law and Policy* 7, (1-2) (2004): 9-29.; Ingrid Jacoba Visseren-Hamakers, Pieter Leroy and Pieter Glasbergen, “Conservation Partnerships and Biodiversity Governance: Fulfilling Governance Functions through Interaction.” *Sustainable Development* 20, (2012): 264-275.

11 cases across the European Union.²⁵ Multiplicity denotes various levels within jurisdictional, spatial, administrative, etc. scales, while decentralized governing authority exists.²⁶ Suskevics' study seeks four legitimacy criteria (i.e., rule compatibility, accountability, inclusion, and transparency) in a multi-level governance context.²⁷ Complex governance dynamics regarding multiple levels are also compared between Finland, Greece, Poland, and the UK cases or investigated in the Ethiopia case.²⁸ Here in this part, the Nigerian case becomes vital because of its rich biodiversity and unique nature for the IUCN Red List.²⁹

1.3. Biodiversity Conservation in Nigeria

Nigeria is symbolically important for biodiversity conservation because it composes both species and ecological biodiversity.³⁰ Oil spillage, gas flaring, and pipeline explosions have been the center of biodiversity-oriented studies.³¹ A widely discussed theme of the literature is how energy production, directly and indirectly, impacts biodiversity conservation and how many species have been affected. Negative impacts on turtle communities, agricultural products, plants, and animal diversity in different ecological spaces (i.e., forests) have been selected as the core focus of the works.³² More specifically, the Niger Delta is a focused region because of its rich biodiversity and extensive oil production/spillages.³³ However, this research has found that other important dynamics undermine biodiversity conservation in Nigeria. Energy production is one of the most influential but not the sole cause.

Besides energy production's negative impact on biodiversity conservation and the negativity in Nigerian biodiversity generally, how the government handles the issue is another sphere. In other words, legal frameworks have been collected to show the change in government policies.³⁴ Government efforts regarding oil pollution have supported legal and institutional

²⁵ Monika Suskevics, "Legitimacy Analysis of Multi-Level Governance of Biodiversity: Evidence from 11 Case Studies across the EU," *Environmental Policy and Governance* 22, (2012): 217-237.

²⁶ Richard Cowell et al., "Rescaling the Governance of Renewable Energy: Lessons from the UK Devolution Experience," *Journal of Environmental Policy & Planning* 19, no. 5 (2017): 480-502.

²⁷ Suskevics, "Legitimacy Analysis of Multi-Level Governance of Biodiversity: Evidence from 11 Case Studies across the EU," 217-237.

²⁸ Riikka Paloniemi et al., "Public Participation and Environmental Justice in Biodiversity Governance in Finland, Greece, Poland and the UK," *Environmental Policy and Governance* 25, (2015): 330-342; Tolera Senbeto Jiren et al., "Integrating Food Security and Biodiversity Governance: A Multi-level Social Network Analysis in Ethiopia," *Land Use Policy* 78, (2018): 420-429.

²⁹ IUCN Red List, "IUCN Red List of Threatened Species. Version 2013."

³⁰ Luiselli and Akani, "An Indirect Assessment," 57-65; Ugochukwu and Ertel, "Negative Impacts," 139-147.

³¹ Luiselli and Akani, "An Indirect Assessment," 57-65; Nwaichi and Osuoha, "Has the National Policy," 1-24.

³² Luiselli and Akani, "An Indirect Assessment," 57-65; Ugochukwu and Ertel, "Negative Impacts," 139-147; Anejionu, Ahiamunnah and Nri-ezedi, "Hydrocarbon Pollution," 65-77.

³³ NDES (Niger Delta Environmental Survey), *Niger Delta Environmental Survey, Phase 2 Report. Hydrology and Hydrodynamics*, 1998; Anejionu, Ahiamunnah and Nri-ezedi, "Hydrocarbon Pollution," 65-77; Nwaichi and Osuoha, "Has the National Policy," 1-24.

³⁴ Bello and Amadi, "Oil Pollution," 354-371.

actions related to biodiversity. National policy orientation on oil pollution and national statutory and legal frameworks on environmental protection have also been researched.³⁵ Alternatively, the conservation practices of Nigeria are another matter regarding the interaction between governments and NGOs.³⁶ However, an investigation of legal frameworks looks close to the regime analysis, which would preclude stakeholders' interests and expectations. On the one hand, the sole consideration of government actions would ignore the state-market-society nexus.³⁷ On the other hand, attention to NGOs participation would not provide the entire process of Nigerian biodiversity governance.³⁸ Remaining of the research, biodiversity governance should be cleared out first, and then it should be implied in the Nigerian case specifically to fill the gap in the literature.

2. Governance Theory

State-society complexity requires more than formal institutions and legal frameworks. In addition to governmental actions, societal actors' market and civil society sections should be considered.³⁹ State-oriented research can only handle governments, while regime analysis can only investigate formal institutional frameworks. However, governance-led IR research should pay more attention to the role of non-state actors.⁴⁰ It reflects the international biodiversity governance as a total of public and private international initiatives.⁴¹ The core theme of the governance perspective is how public sectors interact with private and societal spheres. However, it requires a distinction of policy stages: agenda setting, policy development, implementation, meta governance, and enhancing participation.⁴²

Agenda setting recognizes the new issues. *Policy development* seeks to develop public and private policies. *Implementation* applies policies to reality, which carries from theory to practice. *Metagovernance* seeks coordination in the governance system. Lastly, *participation* targets to improve policies with feedback on policy implementations. Such governance reflects one state's policy process. However, governance comprises both process and structure.⁴³ Biodiversity governance is structurally broader than one nation's dynamics. There is an interaction between international agreements and local resource management rules.⁴⁴ Thus, a distinction between

³⁵ Nwaichi and Osuoha, "Has the National Policy," 1-24.

³⁶ Anwadike, "Biodiversity Conservation in Nigeria," 1109-1115.

³⁷ Bello and Amadi, "Oil Pollution," 354-371; Nwaichi and Osuoha, "Has the National Policy," 1-24.

³⁸ Anwadike, "Biodiversity Conservation in Nigeria," 1109-1115.

³⁹ A. van Zeijl-Rosema, R. Cörvers, R. Kemp, and P. Martens, "Governance for sustainable development: A Framework," *Sustainable Development* 16 (2008): 410-421.

⁴⁰ Allison, Root and Frumhoff, "Thinking Globally," 1-6.

⁴¹ Visseren-Hamakers, "Partnerships and Sustainable Development," 145-160.

⁴² Visseren-Hamakers, "Partnerships and Sustainable Development," 147.

⁴³ Tolera Senbeto Jiren et al., "Integrating Food Security," 420-429.

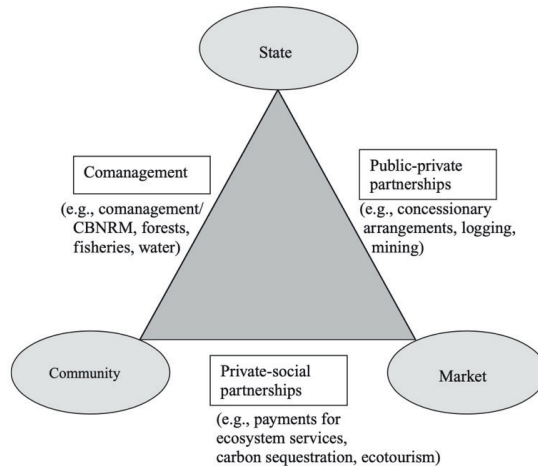
⁴⁴ Jouni Paavola, Andrew Gouldson, Tatiana Kluvánková-Oravská, "Interplay of Actors, Scales, Frameworks and Regimes in the Governance of Biodiversity" *Environmental Policy and Governance* 19, no. 3 (2009): 148-158.

global, national, and local levels should be considered carefully. Examples of global biodiversity governance attempts, such as the Rio Earth Summit of 1992, 2010 Biodiversity Target of the Convention of Biological Diversity (CBD), CBD Strategic Plan 2011-2020, and 20 Aichi Biodiversity Targets prove it.⁴⁵

Process stages would not be enough to see the governance context. The interaction of state-market-civil society should also be described clearly to have a structural analysis. It is interaction across the social and institutional aggregations. Here in this part, Lemos and Agrawal's community-based natural resource management formulation can be followed (see Figure 1).⁴⁶ Three major forms have been identified the state, market, and community. *Co-management* happens between state and community. *Public-private partnerships* exist when there is an interaction between state agencies and market actors. *Private-social partnerships* can be constructed when there is correspondence between community and market actors. The trigger factor in this formulation is having a coherent role.

Decentralized authorities of three spheres should be cleared out. Decentralized authority in the governance process can even be observed in state-led centralized authority systems.⁴⁷ Since this research defines community as civil society, both of these terms will be used in the rest of the research as the same.

Figure 1. Healthy Working Governance Formulation⁴⁸



⁴⁵ The Rio Conventions, "The Rio Conventions," 1992; CBD, "2010 Biodiversity Target," (2002) accessed February 11, 2022. <https://www.cbd.int/2010-target/>; CBD, "Strategic Plan for Biodiversity 2011-2020, Including Aichi Biodiversity Targets," (2010) accessed February 11, 2022. <https://www.cbd.int/sp/>; CBD, "Aichi Biodiversity Targets," (2020) accessed February 11, 2022, <https://www.cbd.int/sp/targets/>

⁴⁶ Maria Carmen Lemos and Arun Agrawal, "Environmental Governance," *Annu. Rev. Environ. Resour* 31, (2006): 297-325, 310.

⁴⁷ Meir Alkon and Audrye Wong, "Authoritarian Energy Transitions Undermined? Environmental Governance Cycles in China's Power Sector," *Energy Research & Social Science* 68, (2020): 1-13.

⁴⁸ Lemos and Agrawal, "Environmental Governance," 297-325, 310.

As mentioned above, Nigerian biodiversity conservation has been investigated under the legal framework in the literature; however, the literature does not cover the actor's interests and expectations. With biodiversity richness, Nigeria became a signatory to the CBD in 1994, but which steps of progress have followed it should be worked. "To what extent does Nigeria have "good governance" of biodiversity conservation?" question is the core aim of this research to find out. To achieve this, primary online documents were collected from the CBD's, the Nigerian governments' and the United States Agency International Development (USAID)'s, which collaborates with the Nigerian government on biodiversity conservation websites. Since biodiversity is not isolated from the other spheres of social-economic-political life, related topics (e.g., agriculture, energy) have also been considered to reflect actors' decisions and structural dynamics. Studies that provide actors' opinions have been given a priority. Although local languages in the country have not been known by the author, the English language, as the official one, has provided rich resources for the research.

3. Analysis of Nigeria's Biodiversity

Nigeria is a country composed of 36 autonomous states. There are 774 local governments in the third tier. It has 250 distinct ethnic groups as a reflection of the cultural endowment. Its high population, which is over 140 million, brings humanity-related biodiversity loss causality into more center of the debate. The country's economy is the largest in the Sub-Saharan region and relies heavily on oil income. Oil accounts for about 90% of total exports and 75% of the government's revenue.⁴⁹ After oil, agriculture holds the biggest share of the economy, which holds one of the fourth of the country's GDP.⁵⁰

3.1. Richness and Evenness Biodiversity of Nigeria

Nigeria has a variety of terrain and climate (see Figure 2). There are various ecosystem types in these lands, namely, tropical forests, and savanna-grasslands, which have heavily been converted into agricultural lands, inland water resources, and marine resources.⁵¹ Protected areas are legally 13,93% of total terrestrial.⁵² In addition to it, there is also genetic diversity. The country is a center of diversity for many taxa such as Cowpea, West African Okra, West Africa Rice, yams, Bambara groundnut, Kerstin's groundnut, African yam bean, and winged bean.⁵³ There are also important food crops that are Guinea corn/sorghum, millet, maize, rice, cassava, yam, cocoyam, and cowpea. In terms of the diversity of forage species, there are 2,200 verified

⁴⁹ FAO, *FAO's Information System*, 2016

⁵⁰ World Bank, *Nigeria Biannual*, 2018.

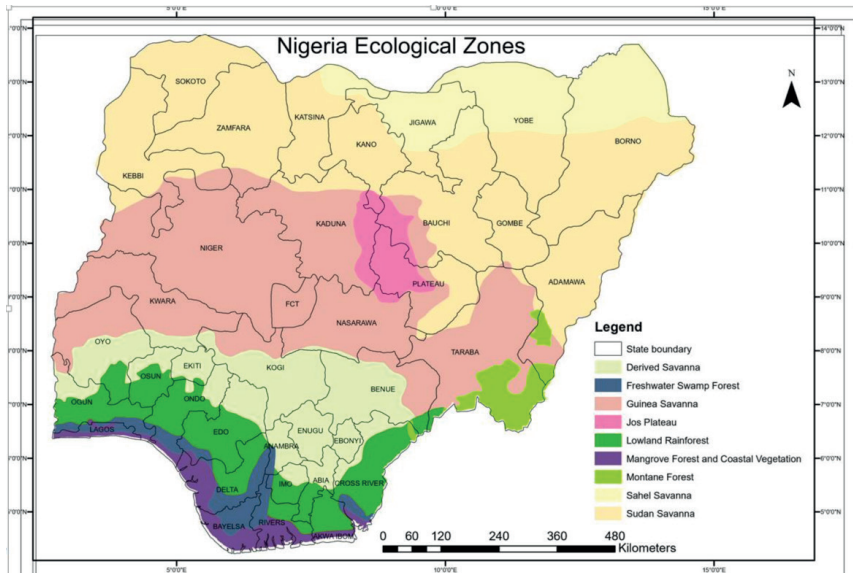
⁵¹ USAID. *Usaid/Nigeri a Foreign Assistance Act 118/119 Tropical Forest And Biodiversity Analysis*, The United States Agency for International Development, 2020.

⁵² Protected Planet, *Nigeria*, 2022, accessed February 11, 2022. <https://www.protectedplanet.net/country/NGA>.

⁵³ NCGRB, *State of Plant Genetic Resources for Food and Agriculture in Nigeria (1996-2008)*, accessed February 11, 2022. <http://www.fao.org/pgrfa-gpa-archive/nga/Nigeria2.pdf>.

nutritious species, including 600 blades of grass, 540 herbaceous legumes, 380 browse species, and over 600 others of lower nutritional values.⁵⁴

Figure 2. Nigeria Ecological Zones⁵⁵



However, Nigeria has a total of 309 threatened species in the following taxonomic categories: Mammals (26), Birds (19), Reptiles (8), Amphibians (13), Fishes (60), Molluscs (1), other Invertebrates (14) and Plants (168).⁵⁶ Some primate species, which are under biodiversity loss threat, are the Cross River gorilla, the Nigeria-Cameroon chimpanzee, the baboon-sized drill, the white-throated monkey, Sclater's guenon, the Niger Delta red colobus monkey, Preuss's red colobus monkey, Preuss's guenon.⁵⁷ There are also mammals scarcity for giraffes, cheetahs, forest elephants, wild dogs, African lions, and leopards.⁵⁸ There are approximately 900 bird species, 135 reptile species, 109 amphibian species, and 648 fish species.⁵⁹ They are protected under several categories, which are 7 National Parks, which are the reservoir of biodiversity, 11 Ramsar Sites, 2 World Heritage Sites, 994 Forest Reserves, 1 Biosphere Reserve, and sacred groves many in number (see Figure 3).⁶⁰

⁵⁴ NCGRB, *State of Plant Genetic*, 2008.

⁵⁵ FREL. "Federal Republic of Nigeria National Forest Reference Emission Level (FREL) for the Federal Republic of Nigeria," Federal Department of Forestry Federal Ministry of Environment Federal Republic of Nigeria, 2019.

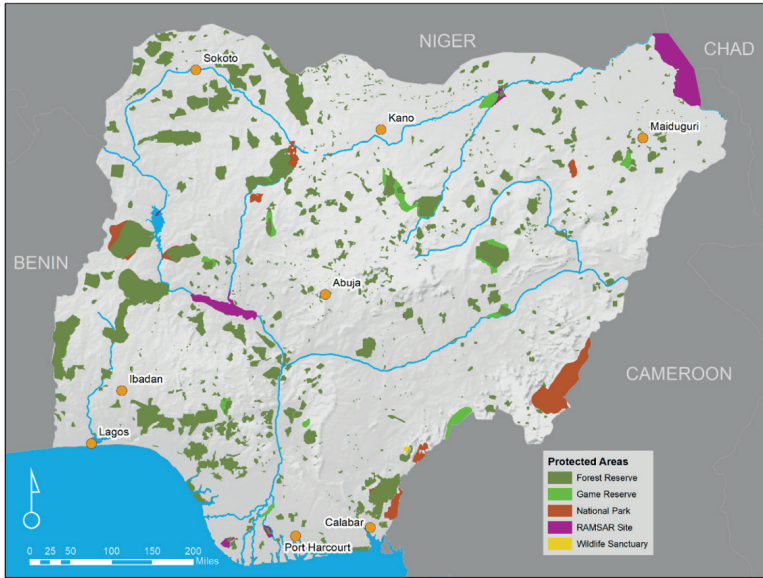
⁵⁶ IUCN Red List, "IUCN Red List of Threatened Species. Version 2013."

⁵⁷ USAID, *Nigeria Biodiversity*, 2013.

⁵⁸ USAID, *Nigeria Biodiversity*, 2013.

⁵⁹ USAID, *Nigeria Biodiversity*, 2013.

⁶⁰ UNDP, *Niger Delta Biodiversity Project* (Federal Ministry of Environment, Additional Partners: Ministry of Niger Delta; Niger Delta Development Commission Ministry of Petroleum Resources; Oil Production Trade

Figure 3. Protected Areas in Nigeria by Type⁶¹

The value of biodiversity is tremendous for the Nigerian population. Firstly, biodiversity provides more than half of the population's food requirements.⁶² More than half of the population relies on the terrestrial and aquatic resources of the Niger River Basin.⁶³ Thus, biodiversity and food are inseparable. Secondly, Nigerian biodiversity of the forest, marine, and wetland resources provide an income for ecotourism, which generate foreign exchange and economic benefits to host communities.⁶⁴ In total, the commercial value of biological diversity in Nigeria exceeds the cost of conservation measures by more than \$3 billion.⁶⁵ Thirdly, there are also cultural values.⁶⁶ Lifestyles, customs, norms, and artistic products are outcomes of integration between cultural heritage and biodiversity. Moreover, spiritual consultations and traditional medicines and herbs are also for community benefits. Lastly, more than 65% of Nigerians are engaged in biodiversity-related jobs and occupations, such as farming, fishing,

Sector, Lagos Chamber of Commerce), 2012; *NBSAP, Federal Republic of Nigeria National Biodiversity Strategy and Action Plan 2016-2020*, Federal Ministry of Environment, 2015.

⁶¹ USAID, *USAID/Nigeria A Foreign Assistance*, 2020, 127.

⁶² NFNBR, *Nigeria: Fifth National Biodiversity Report*, 2015.

⁶³ AFDB, *African Development Bank Group: Programme for Integrated Development and Adaptation to Climate Change in the Niger Basin*, 2018, accessed February 11, 2022. <https://www.afdb.org/en/documents/document/multinational-programme-for-integrated-development-and-adaptation-to-climate-change-in-the-niger-basin-pidacc-appraisal-report-109273>.

⁶⁴ NBSAP, *Federal Republic of Nigeria*, 2015.

⁶⁵ CBD, "Nigeria - Main Details Biodiversity Facts," 2022, accessed February 11, 2022, <https://www.cbd.int/countries/profile/?country=ng#facts>.

⁶⁶ NFNBR, "Federal Republic Of Nigeria Fourth National Biodiversity Report." 2010. Abuja.

logging, livestock rearing, agricultural and forest resources marketing, sawmilling and wood processing, and manufacturing.⁶⁷

3.2. Threats to Nigeria's Biodiversity

The first threat to biodiversity conservation is deforestation and habitat degradation. Because of agriculture's increasing contribution to the economy, deforestation has increased. From 2000 to 2010, more than 463,360 hectares of forestland were lost, 118,570 hectares of which were converted to cropland.⁶⁸ There are also energy development projects that undermine biodiversities, such as hydroelectric power plants, oil refineries, and oil export terminals.⁶⁹ Secondly, overexploitation causes threats. They are led by hunting, poaching, bush burning, and illegal fishing. The third threat is climate change which causes degradation of Nigerian ecosystems via flooding and drought. Nigeria experienced an increase in average annual temperature of 0.8°C between 1960-2006.⁷⁰ The fourth threat is invasive species. Approximately twenty-five invasive alien plant species have been identified in Nigeria.⁷¹ Lastly, pollution and waste management are triggered by industrialization, urban development, and mining operations.⁷²

Mentioned threats are driven by rapid population growth and urbanization, poverty and lack of alternative livelihoods, corruption, inadequate management capacity, insufficient data collection and transparency, conflict and insecurity, lack of environmental and biodiversity awareness, and international demands for natural resource products.⁷³ Firstly, high population brings more demand from nature. Secondly, two of the most significant revenue sources come from oil and agriculture, which causes biodiversity degradation. Also, around half of the country's population is thought to be living on less than \$1.90 a day.⁷⁴ Thirdly, corruption is a significant challenge throughout all levels of federal, state, and local government organizations in Nigeria.⁷⁵ The fourth and the fifth causes are derived from similar dynamics. 'Management incapacity' and 'insufficient data collection' reasons are identified by even government sources

⁶⁷ NFNBR, "Nigeria," 2015, 19.

⁶⁸ Ronnie MacPherson, "Final report of the Land Degradation Neutrality Target Setting Programme," 2019, accessed February 11, 2022, <https://www.unccd.int/sites/default/files/relevant-links/2019-04/LDNTSP-EvalReport%20final.pdf>.

⁶⁹ USAID, *USAID/Nigeri A Foreign Assistance*, 2020.

⁷⁰ NSNC, *Nigeria's Second National Communication Under The United Nations Framework Convention On Climate Change*, 2014, accessed February 11, 2022, <https://unfccc.int/sites/default/files/resource/nganc2.pdf>.

⁷¹ Temitope I. Borokini, "Invasive Alien Plant Species in Nigeria and their Effects on Biodiversity Conservation," *Tropical Conservation Science* 4 no. 1 (2011): 103-110.

⁷² NFNBR, *Nigeria*, 2015.

⁷³ NFNBR, *Nigeria* 2015.; USAID, *USAID/Nigeria Foreign Assistance*, 2020.

⁷⁴ Odoligie Imarhiagbe, Wisdom Oghenevwogaga Egboduku, and Beluchukwu Joseph Nwankwo, "A Review of the Biodiversity Conservation Status of Nigeria," *Journal of Wildlife and Biodiversity* 4, no.1, (2020): 73-83.

⁷⁵ TICPI, *Transparency International, Corruption Perception Index: Nigeria*, 2018, accessed February 11, 2022, <https://www.transparency.org/news/feature/cpi2018-subsaharan-africa-regional-analysis>.

via recognizing the lack of transparency, and policy and legislation constraints.⁷⁶ Sixthly, ongoing conflicts and insurgent groups (e.g., Boko Haram) can only be economically supported by the oil trade, which would undermine biodiversity and other natural resource trades (e.g., timber).⁷⁷ Seventhly, because of enormous poverty, ordinary citizens pay more attention to having economic income than natural biodiversity conservation. Lastly, international attention on Nigerian oil sources triggers illicit trade and corruption.

Thus, the threats and drivers behind the threats to biodiversity conservation can be simply classified as economic, environmental, social, and political. However, the solution requires an administrative attempt to create a hybrid of economic, social, and political dynamics. It can only be achieved via a governance approach. How Nigerian governments have approached biodiversity governance will be analyzed now.

3.3. Policy, Legal, and Institutional Framework of Nigerian Biodiversity

To investigate the good governance aspect of Nigerian biodiversity conservation, policy, legal and institutional framework related to environmental policies should be given briefly.

3.3.1. International Agreements and Organizations

Nigeria signed the CBD in 1992 and ratified it in 1994. However, there have also been other international treaties and agreements that Nigeria signed to comply with international environmental considerations. Here is the list of international treaties and agreements, which are related to fostering the conservation and better management of forests, wildlife and biodiversity resources, which have been signed and ratified by Nigeria (see Table 1).

Table 1. International Treaties to which Nigeria is a Signatory

| Title | Signature | Ratification |
|---|-----------|--------------|
| Convention on Fishing and Conservation of Living Resources of the High Seas | 1961 | |
| Fort Lamy Convention (management of Lake Chad) | 1964 | unknown |
| African Convention on the Conservation of Nature and Natural Resources | 1968 | 1974 |
| Convention on World Cultural and Natural Patrimony | | 1974 |
| Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) | 1974 | 1974 |
| Convention on Mignatory Species | 1979 | 1987 |
| Convention for Cooperation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region | 1981 | 1984 |
| United National Convention of the Law of the Sea | 1982 | 1986 |
| Vienna Convention on Protection of the Ozone Layer | 1985 | 1988 |

⁷⁶ NFNBR, *Nigeria*, 2015.

⁷⁷ ICG, *International Crisis Group: Stopping Nigeria’s Spiraling Farmer-Herder Violence*, 2018, accessed February 11, 2022, <https://d2071andvip0wj.cloudfront.net/262-stopping-nigerias-spiralling-farmer-herder-violence.pdf>.

| | | |
|--|------|------|
| The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal | 1989 | 1991 |
| Convention on Biological Diversity | 1992 | 1994 |
| United Nations Framework Convention on Climate Change | 1992 | 1994 |
| The Convention to Combat Desertification | 1994 | 1997 |
| The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade | 1998 | 2001 |
| Cartagena Protocol on Biosafety | 2000 | 2003 |
| Ramsar Convention on the Conservation of the Wetlands of International Importance Especially as Water Fowl Habitat | 2000 | 2005 |
| Stockholm Convention on Persistent Organic Pollutants | 2001 | 2004 |
| International Convention for the Prevention of Pollution From Ships | 2002 | |

Source: Author's Elaboration from Primary Sources⁷⁸

In addition to international agreements, there are also international organizations related to biodiversity conservation that have been integrated with Nigerian governments (see Table 2). This list also includes international NGOs.

Table 2. International Organizations and their Scopes on Nigerian Biodiversity Conservation

| Agencies | Scope of agencies |
|---|---|
| Arcus Foundation | Funds projects aimed at conserving and protecting great apes. |
| BirdLife International | A global partnership of conservation organizations that strives to conserve birds, their habitats and global biodiversity. |
| Comprehensive Africa Agriculture Development Program (CAADP) | Aims to help African countries reach a higher path of economic growth through agriculture-led development. |
| West and Central African Council for Agricultural Research and Development (WECARD) | Contributing to sustainable reduction of poverty and food insecurity in West and Central Africa. |
| Conservation International (CI) | An international NGO that has identified the Guinean forests of West Africa as a focal biodiversity hotspot. |
| Consultative Group on International Agricultural Research (CGIAR) | Reducing poverty and hunger, improve human health and nutrition, and enhance ecosystem resilience through high-quality international agricultural research, partnership and leadership. |
| Bill & Melinda Gates Foundation | Currently providing more than USD \$400 million in funding to partner organizations that are operating health and development programs across Nigeria. |
| Green Actors of West Africa Network (GAWA) | A network of organizations involved in the environmental and conservation movements. |
| The International Union for the Conservation of Nature (IUCN) | Providing science-based recommendations for the remediation and rehabilitation of biodiversity and habitats of oil spill sites in the Niger Delta. |

⁷⁸ USAID, The United States Agency for International Development, *Nigeria Biodiversity And Tropical Forestry Assessment Maximizing Agricultural Revenue in Key Enterprises For Targeted Sites (Markets)*, 2008; USAID. *Nigeria Biodiversity*, 2013.

| | |
|---|--|
| The Lake Chad Basin Commission (LCBC) | An intergovernmental organization presents principles of environmental management and cooperation, establishes a long-term vision for the sustainable development of the Lake Chad Basin |
| Leventis Foundation Nigeria | Focuses on the training of young farmers in modern agricultural methods |
| Natural Heritage Institute (NHI) | An international NGO with a mission to restore and protect the natural functions that support water-dependent ecosystems and the services |
| Niger Delta Development Commission (NDDC) | A partnership between UNDP and petroleum corporations in 2000 with the mission of facilitating the rapid, even and sustainable development of the Niger Delta. |
| Rainforest Alliance (RA) | An international NGO that promotes sustainable farming and forest management methods. |
| Savanna Conservation | Works to preserve savannas and against desertification |
| Wildlife Conservation Society (WCS) | An international NGO has been supporting conservation and conservation-related research in Nigeria since 1996. |
| World Wildlife Fund for Nature (WWF) | An international NGO that worked to develop and strengthen protected areas in Nigeria |

Source: Author's Elaboration from Primary Sources⁷⁹

3.3.2. National Policies and Legislation

Nigerian constitution includes two main statements related to the environment in chapter two: “In furtherance of the social order, exploitation of human or natural resources in any form whatsoever for reasons, other than the good of the community, shall be prevented” and “The state shall protect and improve the environment and safeguard the water, air, and land, forest, and wildlife.”⁸⁰ There are also environment-related national legislations and policies (see Table 3).

Table 3. The List of Environment-Related National Legislations and Policies of Nigeria.

| National legislations and policies | Year |
|--|------------------------------|
| Oil Pipelines Act | 1956 |
| Live Fish (Control of Importation) Act | 1965 |
| Oil in Navigable Waters Decree | 1968 |
| Petroleum Decree | 1969 |
| Petroleum (Drilling and production) Regulations | 1969 |
| Quarries Decree | 1969 |
| Land Use Decree | 1972 |
| Navigable Waters Declaration Decree | 1978 |
| National Parks Decree | 1979, 1991, 1999 |
| Endangered Species (Control of International Traffic) Act | 1983 |
| Gas Re-Injection (Amendment) Decree | 1985 |
| Nigeria Atomic Energy Commission Decree | 1985 |
| Federal Environmental Protection Agency (FEPA) Decree | 1988, (amended in 1992, 199) |
| Natural Resources Conservation Council Decree | 1989 |
| National Environment Protection (Pollution Abatement in Industries and Facilities Generation Wastes) Regulations | 1991 |

⁷⁹ USAID, *Nigeria Biodiversity*, 2008.; USAID, *Nigeria Biodiversity*, 2013.

⁸⁰ Constitution of the Federal Republic of Nigeria of 1999, “Constitution,” accessed February 11, 2022, http://www.nigeria-law.org/ConstitutionOfTheFederalRepublicOfNigeria.htm#Chapter_2.

| | |
|--|-----------------------------|
| National Environmental Protection (Effluent Limitations) Regulations | 1991 |
| National Environmental Protection (Management of Hazardous Wastes) Regulations | 1991 |
| Environmental Impact Assessment Decree | 1992 |
| National Policy on Conservation of Biological Diversity | 1999 |
| National Policy on the Environment | 1999 (amended in 2006-2007) |
| Biosafety Policy | 2006 |
| National Environmental Standards and Regulations Enforcement Agency Act | 2006 |
| National Forestry Policy | 2006 |

Source: Author's Elaboration from a Primary Source ⁸¹

Policies and legislation are the primary tools, but biodiversity conservation aims also include creating public awareness via the Federal Ministry of Information, the Broadcasting Organization of Nigeria, and the Newspapers Proprietors Association of Nigeria, the Nigerian Guild of Editors⁸². The Nigerian Conservation Foundation has also played a role in helping to shape and implement environmental education programs in the country for pushing education and awareness in environmental and conservation matters⁸³. Thus, there have been attempts for integration with society besides regulatory moves.

As part of biodiversity conservation policies, the National Biodiversity Strategy and Action Plan (NBSAP) have been implemented and revised because of successful implementation.⁸⁴ 14 SMART national targets, their implementations, and action review results have been concluded.⁸⁵ Later, they have been followed up over time.⁸⁶ The main headlines of the plan that are increasing biodiversity awareness in the society, the adaptation of a national ecosystem-based spatial planning process and plans, restoration and sustainable management of degraded ecosystems, management plans for habitats of endemic and threatened plants and animals, seeking the genetic diversity of cultivated plants and domesticated animals, identifying pollution sources, controlling invasive species, supporting community participation and increasing biodiversity fund.⁸⁷ This plan also constitutes the Biodiversity Steering Committee (BSC), which oversees the process of NBSAP implementation. It is made up of civil servants, bureaucrats, senior scientists, and community leaders. However, setting up the National Committee on Biodiversity is necessary, which would have inter-ministerial composition and cut across gender, civil society, resource user groups, and the private sector.⁸⁸ Despite

⁸¹ USAID, *Nigeria Biodiversity*, 2013, 11.

⁸² NFNBR, *Nigeria First National Biodiversity Report*, 2001.

⁸³ USAID, *Nigeria Biodiversity*, 2008.

⁸⁴ NFNBR, "Federal Republic of Nigeria," *Nigeria First National Biodiversity Report*, 2010

⁸⁵ NBSAP. "Federal Republic of Nigeria," 2015.

⁸⁶ UNEP. *6th National Report for the Convention on Biological Diversity: Nigeria. UNEP Clearing House Mechanism of the Convention on Biological Diversity*, 2018a. accessed February 11, 2022.; UNEP, *Interim National Report on the Implementation of the Nagoya Protocol*, The Access and Benefit-Sharing Clearing-House, 2018b.

⁸⁷ NBSAP. "Federal Republic of Nigeria," 2015.

⁸⁸ NFNBR. "Nigeria," 2015.

all attempts, the Nigerian government has recognized that there is inadequate collaboration between ministries, lack of integration with local groups, inadequate legislative reforms, insufficient finances, lack of community-based initiatives, and difficulty in coordinating various actors.⁸⁹

3.3.3. National Institutions

There is no single government agency solely devoted to biodiversity conservation in Nigeria; however, the FME departments most relevant to the conservation of biodiversity and forest resources are Environmental Assessment, Desertification Control, Forestry, Pollution Control, and Environmental Health, Erosion, Flood Control, and Coastal Zone Management, National Parks Service, and the National Oil Spill and Detection Agency. A special Climate Change Unit has also been created and put under the charge of the FME. Other related ministries and agencies (see Table 4):

Table 4. Relevant Ministries and Institutions Involved with the Environment.

| Ministries and Institutions | Relevant agency under the ministries |
|---------------------------------------|--|
| Federal Ministry of Agriculture | Agricultural Research Council of Nigeria |
| Federal Ministry of Water Resources | |
| Federal Ministry of Rural Development | National Biotechnology Development Agency |
| National Planning Commission | |
| National Council on the Environment | |
| Energy Commission of Nigeria | |
| Some research institutions | <ul style="list-style-type: none">• Cocoa Research Institute of Nigeria• Forestry Research Institute of Nigeria in Ibadan• Institute of Agricultural Research and Training• International Institute for Tropical Agriculture in Ibadan• National Center for Genetic Resources and Biotechnology• National Cereals Research Institute in Badaggy• National Horticultural Research Institute in Ibadan• National Root Crop Research Institute in Umudike• Nigerian Institute for Oil Palm Research• Moor Plantation in Ibadan• Rubber Research Institute of Nigeria in Benin |

Source: Author’s Elaboration from a Primary Source⁹⁰

Besides the mentioned institutions, there is also the National Council for Environment (NCE), which was established in 1990 to be an inclusive forum of environmental stakeholders across Nigeria that meets annually to discuss environmental challenges and potential solutions,

⁸⁹ NFNBR. “Nigeria,” 2015, 120.

⁹⁰ USAID, *Nigeria Biodiversity*, 2013.

and the Ecological Fund, which was established as a financing mechanism to support a wide range of initiatives that promote improved environmental management.

As part of Nigeria's activities on behalf of the Convention for Biological Diversity (CBD), several Linkage Centers have been established in Nigerian universities and institutes to consolidate and disseminate this information.⁹¹ They are:

- Linkage Center for Forests, Conservation, and Biodiversity (Abeokuta) is designed to focus on coordinating data and research relevant to biodiversity conservation;
- Linkage Centers for Arid Environments (Maiduguri);
- Linkage Centers for Freshwater Environments (Minna);
- Linkage Centers for Highlands/Montane Environments (Jos);
- Linkage Centers for Delta Environments (Port Harcourt);
- Linkage Centers for Marine and Coastal Environments, in conjunction with Nigerian Institute for Oceanography and Marine Biology (Lagos).

In addition to those, some NGOs have biodiversity conservation responsibilities, such as the Nigerian Conservation Foundation, Forestry Association of Nigeria, Nigerian Field Society, Savanna Conservation, Centre for Environment Renewable Natural Resources Management Research and Development, and Nigerian Environment Action Study Team.

However, some business-related stakeholders should not be forgotten, such as the Ministry of Petroleum Resources, Nigeria National Petroleum Corporation, Nigerian Petroleum Development Company Limited, National Petroleum Investment Management Services, and Pipelines Products Marketing Company Limited.⁹²

Principally, local government councils have the responsibility for enforcing all regulations that touch on the forest, wildlife, and biodiversity conservation. However, local governments seem weak institutions, unable to deliver on their mandates.⁹³ Niger Delta case is the best-known case for it.

3.4.4. Donor Organisations

There are also funder organizations that help with the international projects that link agriculture, transportation, and infrastructure improvement (see Table 5).

⁹¹ USAID, *Nigeria Biodiversity*, 2013, 15.

⁹² UNDP, *Niger Delta Biodiversity Project*, 2012.

⁹³ USAID, *Nigeria Biodiversity*, 2008.

Table 5. The list of International Collaborator Organizations.

| Projects/Organisations | Scopes |
|--|---|
| <ul style="list-style-type: none"> The Canadian International Development Agency (CIDA) The United Kingdom's Department for International Development (DFID) | Pioneering a model forests concept for Cross River State and supporting community work around protected areas in Cross River State |
| Fadama Development Project | Empowering rural populations to improve their incomes by sustainably using land and water resources for irrigation farming, fish farming, and livestock production |
| Integrated Management of Invasive Aquatic Weeds Project | Fighting against the proliferation of aquatic plants and minimize the residual impact of these weeds in four shared water bodies in West Africa. |
| Lake Chad Sustainable Development Support Program (PRODEBALT) | To promote sustainable development in the Lake Chad Basin |
| Gesellschaft für Internationale Zusammenarbeit (GIZ) | <ul style="list-style-type: none"> Improving the livelihoods of small-scale cocoa farmers. Supporting the programme has been developed to set up a productive network of business development centers in the Niger Delta (Together with the Foundation for Partnership Initiatives in the Niger Delta (PIND Foundation) established by Chevron). Supporting the Sustainable Water Resources Management for Lake Chad project (in cooperation with the German Federal Institute for Geosciences and Natural Resources (BGR)) |
| United Nations (UN) | Helping and supporting some projects, such as; <ul style="list-style-type: none"> Environmental Governance Project, Implementing the UN Framework Convention on Climate Change (UNFCCC), Niger Delta Biodiversity Project, National Capacity Needs Self-Assessment (NCSA) for Environmental Management the Nigeria for the Revision of the National Biodiversity Strategy and Action Plans and Development of the Fifth National Biodiversity Report the Implementation of the Stockholm Convention on Persistent Organic Pollutants (POPs) in Nigeria Implementation of the National Biosafety Framework of Nigeria The Guinea Current Large Marine Ecosystem (GCLME) Operating a Community-Based Natural Resource Management Program in the Niger Delta. |
| United States Fish & Wildlife Service (USFWS), Office of International Affairs | Helps a project on a project on the red colobus monkey in the Niger Delta |
| World Bank | Some projects, such as, <ul style="list-style-type: none"> Fadama Integrated Land Management Project Nigeria Erosion and Watershed Management Project Nigeria – Kainji Hydropower Rehabilitation Project PCB Management Project Scaling Up Sustainable Land Management (SLM) Practice, Knowledge, and Coordination National Urban Water Sector Reform Project EarthCare Solid Waste Composting Project Local Empowerment and Environmental Management Project (LEEMP) |

Source: Author's Elaboration from Primary Sources⁹⁴

There is also commercial sectors' integration despite only a few examples⁹⁵. They collaborate with local groups and universities. International oil companies (e.g., Shell, Chevron, Texaco, and Exxon/Mobil) lead these projects, while Nigeria has one of the most significant oil spills in the world. There are also some other attempts, for example, 11 International oil companies also founded a consortium to control oil spills and Niger Delta Environmental Survey was established by Shell.⁹⁶ It should not be forgotten that since the commitment to corporate

⁹⁴ USAID, *Nigeria Biodiversity*, 2008; USAID, *Nigeria Biodiversity*, 2013.

⁹⁵ USAID, *Nigeria Biodiversity*, 2008.

⁹⁶ Ugochukwu and Ertel, "Negative Impacts," 139-147.

social responsibility is weak in terms of the concept of biodiversity, companies' policies and plans concerning biodiversity are challenging.⁹⁷ Biodiversity obligations are not translated into concrete policy with management measures that can be understood. Secondly, the United Cement Company of Nigeria has constructed a significant cement plant on the Cross River National Park border that will eventually produce 2.5 million tons of cement a year. Thirdly, the Leventis family of corporations, which has a variety of businesses in Nigeria but is the most conspicuous as the sole bottler and distributor of Coco-Cola products there, also helps society. Fourthly, as part of the cocoa producers, the Sustainable Tree Crop Program, which was supported in part by the World Cocoa Foundation, and individual cocoa companies, has developed a farmer field school program for small-scale cocoa farmers in Cross River State.

Overall, biodiversity is a topic that receives little attention in Nigeria. Other pressing priorities in resource use, job creation, and economic development tend to dominate. Despite the paucity of biodiversity-specific provisions in Nigerian law and minimal environmental policies, current relevant laws and policies contain sufficient "biodiversity-friendly" provisions to allow and support biodiversity promotion programs and capacity building.

Discussion

Nigeria carries ecosystem, animals, and plant richness, which is in danger because of various threats (see section 4.2.). Not only the big corporations' ambitious policies to increase capital but also local people's needs and interests also contribute to threats against biodiversity conservation. However, in addition to *economic* and *social* dynamics, there are also *political* ones, such as corruption, security problems, etc. Thus, there is an interaction between nature's supply and human demands, which are determined by the state-market-civil society nexus, in the biodiversity loss of Nigeria. Nigerian governments are aware of the problems.⁹⁸ It leads to agenda-setting, which is the first step of the governance process. Joining the CBD in 1992 and investigating the necessity of biodiversity conservation have been the initial state.⁹⁹ Moreover, the time of joining the international agreements and collaboration with international organizations also prove the awareness of the danger (see Table 1). However, the governance process requires action in addition to recognition.

Policies and legislations have been created at the national level in compliance with international attempts. There are legislative attempts to stop energy production's side effects and support environmental conservation, including biodiversity. Thus, there are strong reflections on *agenda setting* and *policy development*. Founding institutions, creating the NBSAP, joint programs with international donors, and creating a collaboration between state agencies, business-related stakeholders, and civil society (local people, universities, NGOs) are the *implementation* outcomes. Such coordination-seeking also proves the *meta governance*

⁹⁷ UNDP, *Niger Delta Biodiversity Project*, 2012.

⁹⁸ NFNBR, *Nigeria*, 2015.

⁹⁹ NFNBR, *Nigeria First National Biodiversity Report*, 2001.

orientation. There is an awareness of necessity “from the government to governance”.¹⁰⁰ However, the recognition of “inadequate collaboration between ministries, lack of integration with local groups, inadequate legislative reforms, insufficient finances, lack of community-based initiatives and difficulty of coordinating various actors”, which is the latest stage of the governance process (i.e., *participation*), shows where government policies fail.¹⁰¹ Awareness and actions do not always solve biodiversity conservation. Why the governance process fails can be investigated via structural configuration.

Biodiversity loss in Nigeria is caused by the activities in all three core levels, which are state (i.e., weak institutions, corruption, and conflicts), economy (i.e., energy production, illegal fishing, farming, and hunting), and civil society (i.e., culture, economic interests that undermine local governments’ authorities). As mentioned, the Nigerian government attempts to solve the problems via a governance approach. For example, joint international agreements, collaboration with international organizations and donors, creating national policies, and founding national institutions prove what can be done at the state level. Funders’ participation in the process is not only a matter of state but also in the economic sphere. However, it is not enough economically. Some economic actors in Nigeria (e.g., oil companies, and cocoa producers) contribute to the biodiversity loss. While energy and agriculture are two of the most considerable revenue for governments, these sectors’ activities cannot be adequately checked. Environmental considerations and the economic interests of countries become conflictual at this point. Despite legislative attempts for stopping oil spills, for example, international oil companies’ actions are not checked well. Even those companies seek environmental support programs in these countries to have discursive power, where those supports’ economic income comes from is ignored. Thus, there is a problem in terms of public-private partnerships. However, it also undermines private-social partnership in Nigerian biodiversity governance. For example, the Niger Delta is one of the most affected regions by oil spills, so the local people directly confront health and biodiversity loss issues. Moreover, corruption in the energy production process leaves local people foreclosed. It makes an understanding between companies and the community impossible. Attempts for increasing awareness of biodiversity conservation become meaningless because community interests are directly impacted by companies’ actions. Moreover, undermined local authority and corruption block having a co-management. There is always a disconnection between state authority and local people despite government attempts.

“Good governance” accommodates a collaboration between multiple stakeholders at multi-levels. However, what it seems in the Nigerian case does not fit what is needed. If we had looked only from a regime perspective, we could argue that Nigerian governments integrate with international institutions via agreements. Moreover, those are followed by national-level regulations. However, the interaction inside of the regime between local, national, and international levels reflects regime effectiveness. Besides the regulatory level attempts, actors’

¹⁰⁰ Rosenau and Czempiel, “Governance without Government,” 1992.

¹⁰¹ NBSAP, “Federal Republic of Nigeria,” 2015.

participation should also be considered. Lack of local authority, which is recognized by national governments themselves, prevents civil society participation. It leads that civil society's cultural values or health-related problems are left at the back seat in comparison to companies and government officials' interests. The lack of regime interaction supports the power gap between biodiversity governance stakeholders. It, then, reflects on increasing the disconnection between state and society. It is an important matter because governance contradictorily includes both state-led policies and decentralized authority structures. Government actions and awareness are needed on the one hand, but authority should be distributed to the various stakeholders.

Conclusion

While Nigeria's biodiversity has been discussed in the literature, the threats against it mainly have been considered. Although some studies have been investigating government policies, a governance approach that would follow the process and clear the structural dynamics has been missing. This study has found that Nigerian governments are aware of the danger of biodiversity and its causes. Although state-society complexity is considered, they fail to include local groups in the policy-making process. The misconnection between civil society and governments has not been solved despite attempts, in addition to the existent reality of a lack of local authority. Regime analysis could not find the dynamics beyond the regulatory aspects of Nigeria's biodiversity governance dynamics. The process of governance, which considers civil society needs and participation, provides steps through time. Agenda setting, policy development, implementation, meta governance, and enhancing participation stages of governance have helped to see what went wrong. Then, the analysis of the state, market, and civil society spheres has shown what has been missing among those three.

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