BIODIVERSITY CONSERVATION AND BUSINESS IN NIGERIA: EVALUATING PRIORITIES ACROSS KEY BUSINESS SECTORS.

ABSTRACT

Biodiversity loss presents an escalating threat to ecological stability and economic resilience, particularly in developing economies such as Nigeria, where land-use pressures from business operations are intensifying. This study critically examines how biodiversity conservation is prioritized and integrated within corporate sustainability disclosures across five key business sectors in Nigeria: Oil & Gas/Power, Agriculture, Infrastructure, Manufacturing, and Financial Services. Drawing on content analysis of 100 publicly available sustainability reports, the research evaluates biodiversity inclusion using a custom framework aligned with international standards such as the Global Reporting Initiative (GRI 304) and the Kunming-Montreal Global Biodiversity Framework. Six criteria with 30 Attributes were applied to assess sectoral performance. The findings reveal a systemic underperformance in the overall biodiversity disclosure, with only 14% of attributes fully addressed, 21.5% partially addressed, and a striking 64.5% not addressed at all. While the agriculture and oil & gas/power sectors demonstrated comparatively stronger integration, performance across infrastructure, manufacturing, and financial services was consistently weak. Key areas such as biodiversity monitoring, restoration, and institutional investment were largely absent from corporate reporting. This study concludes that biodiversity remains a marginal concern in Nigerian corporate ESG frameworks and sustainability reports. To address this gap, the research advocates for enforceable, sector-specific biodiversity disclosure requirements, improved access to ecological data, and incentive-based mechanisms to encourage biodiversity-positive business practices. Embedding biodiversity as a core pillar of corporate sustainability is critical not only for ecological preservation but also for long-term economic resilience and international ESG alignment.

Keywords: Biodiversity, Conservation, ESG, Global Report Initiative (GRI), KBA, EIA, Nigeria, Sustainability.

1.0 INTRODUCTION

Biodiversity, the variety of life on Earth, from genes to species to ecosystems, is a cornerstone of global ecological and economic stability. It underpins essential ecosystem services such as food production, climate regulation, and water purification, while also contributing to cultural identity, human health, and sustainable livelihoods (IPBES, 2019; Dasgupta, 2021). Globally, over one million species face extinction, with ecosystem degradation now ranked among the most severe threats to business and economic development (World Economic Forum, 2023).

Nigeria's biodiversity richness is particularly notable. As the most populous country in Africa, it encompasses four ecological zones—coastal, rainforest, savanna, and Sahel—and is home to over 4,700 vascular plant species, 1,000 bird species, and a diverse array of mammals, amphibians, and reptiles (IUCN, 2024). Despite its environmental richness, it remains extremely vulnerable to numerous threats. Extended periods of harmful developmental practices have seen widespread destruction of habitats, pollution, deforestation, and reduction in population levels across several species. Infrastructure projects, like the Lagos–Ibadan Expressway, have seen the expansion and fragmentation of forest edges and increased forest clearance in surrounding areas by 28% between 2010 and 2020 (Unegbu et al., 2024). In the Niger Delta, continued events of oil spills, gas flaring, and industrial effluents continue to compromise mangrove ecosystems and poison freshwater sources (UNEP, 2011).

Among several processes, corporate actions have proven influential catalysts. Sectors like oil and gas, agriculture, real estate, and manufacturing have been major contributors in environmental degradation; yet, biodiversity remains often as an afterthought in corporate investment decisions concerning environmental, social, and governance (ESG) issues (Nwankwo et al., 2023). Though carbon emissions and social indicators mostly prevail in the sustainability disclosures landscape, biodiversity hardly crops up in quantifiably or transparently expressible terms. This relative inattention comes in spite of mounting evidence which now shows that losses in biodiversity represent critical risks in corporate entities, value chains, and long-term profitability sustainability (World Economic Forum, 2023).

In light of the factors mentioned above, the current study aims to assess how biodiversity conservation is included and prioritized as part of the sustainability reporting practices utilized by major business sectors in Nigeria. Even as environmental factors are increasingly incorporated into corporate thinking, biodiversity remains one area of corporate responsibility that remains poorly reported and integrated. Following rising environmental concerns related to the oil and power/gas, agriculture, infrastructure, manufacturing, and financial services sectors, this investigation explores the extent to which corporate entities recognize and respond to their effects regarding biodiversity. Using sector-driven analyses of corporate reports regarding biodiversity, the study provides better comprehension into how corporations in Nigeria can bring their

actions into line with conservation goals. It identifies biodiversity as a critical asset that must be seen as a critical element and not as an external regulatory requirement, thus aiding long-term economic viability and environmental stewardship across several sectors.

2.0 LITERATURE REVIEW

Nigeria has earned the name as one of the most ecologically rich nations in West Africa due to the wide variety of environments it boasts. Some of them are grasslands, freshwater wetlands, and coastal mangroves (Oyekunle, 2024). They are teeming with numerous plant and animal species, consisting of 864 avian species, 285 mammals, 203 reptiles, 117 species of amphibians, 775 fish species, and more than 4,700 species of higher plants (Oyekunle, 2024). In addition to the value they hold in nature, they offer crucial services such as regulating the climate through control of weather and temperature, cleaning water, ensuring healthy soil, and creating employment and food for numerous Nigerians.

Nigeria has numerous animals and plants, yet it is losing numerous species now. This is primarily because trees are being felled, homes of animals are being destroyed, the environment is being polluted, and excessive natural resources are being consumed. Farming, logging, constructing new sites, and urban expansion are the major causes of tree loss, and Nigeria has one of the highest levels of tree felling in the globe (Awojulugbe, M., 2024; UNEP, 2024). Coastal forests, which are highly significant in fishing, carbon storage, and shoreline protection, are increasingly damaged through oil spills, industrialization, and reckless alteration of their habitats (Oyekunle, 2024).

The government in Nigeria has designated over 1,160 forest reserves and numerous national parks, but the protected sites do not function very well. There are issues with inadequate funds, inadequate personnel, and weak administration that have contributed to continued degradation of the environment (Fitz et al., 2022). Although there are regulations and blueprints for the conservation of nature, they do not function very well due to weak enforcement, ambiguously defined roles for agencies, and inadequate resources (Oyekunle, 2024).

Biodiversity loss is harmful to the environment and also poses severe economic challenges. Disturbance in the ecosystem has implications for food systems, increases society's vulnerability to climate change, and damages livelihoods (Awojulugbe, M., 2024; UNEP, 2024). For companies, this implies greater risks in asset management, problems in their value chain, and losses in reputation. Thus, conserving biodiversity remains critical for national resilience and long-term business prosperity. It frequently gets omitted in national strategies and business strategies, which implies that when decisions regarding the use of land, construction of important infrastructural developments, and industrialization take place, conservation remains overlooked (EnviroNews, 2017; Climate Policy Initiative et al., 2021).

Biodiversity Conservation Legal Frameworks in Nigeria

Nigeria has developed a layered biodiversity governance framework comprising both national legislation and institutional frameworks, supported by its commitment towards International Environmental Agreements. Those steps act as important means for balancing the interplay between the economy and the environment, in particular in sectors that make major environmental impacts, namely oil and gas, agriculture, forestry, infrastructure, and tourism.

National Legislative Systems

At the national level, several legislative acts govern the governance of biodiversity:

- **The National Biodiversity Strategy and Action Plan (NBSAP)** provides Nigeria's leading domestic policy in harmony with the Convention on Biological Diversity (CBD). It outlines 14 strategic goals intended for promoting conservation, the sustainable use of resources, and private sector involvement in practices that take biodiversity in land use into account (Federal Ministry of Environment, 2015).
- **The Environmental Impact Assessment (EIA) Act (Cap E12 LFN 2004)** provides that all major developments must go through environmental screening before they can be granted approval and thus enable the inclusion of biodiversity considerations in the planning process (Adebayo & Okonkwo, 2023).
- **The National Park Service Act (Cap N65 LFN 2004)** outlines the legislatory basis for the creation and running of protected sites. It encourages the adoption of sustainable tourism methods and provides funds for backing conservation efforts in and around national parks (Babarinde, J. A., & Ojo, O. T. (2023).
- **The Wildlife Conservation Act (Cap 57 LFN 1985)** gives directives towards the conservation of wildlife habitats and species, thus directly aiming at forestry, agriculture, and tourism practitioners whose operations overlap with sensitive systems (Izah, S. C., & Seiyaboh, E. I., 2018).
- **Forestry Act (Cap 51 LFN 1958)** controls forest resources utilization and encourages sustainable forestry through mechanisms like permit systems, enforceable law and regulations, and replanting incentives (FAO, 2015).
- **The Endangered Species Act (Cap E9 LFN 2004)** harmonises its provisions with the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), thus regulating the trade and commercial use of protected species (NESREA, 2011).

International Legislative Framework

Nigeria's conservation frameworks are further reinforced by participation in key international agreements:

- **Convention on Biological Diversity (CBD):** Nigeria ratified the CBD in 1994 and aligns national policies with its three objectives—biodiversity conservation, sustainable use, and equitable benefit sharing.
- **CITES (1973):** Domesticated through the Endangered Species Act, this treaty controls international trade in endangered species to prevent over-exploitation.
- **United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement:** While primarily climate-focused, both indirectly influence biodiversity through mechanisms like REDD+ (Reducing Emissions from Deforestation and Forest Degradation).
- **Convention on Wetlands of International Importance (Ramsar Convention):** Nigeria is a contracting party and has designated several Ramsar sites, highlighting the importance of wetland conservation for migratory birds and ecosystem services.
- **Convention on Migratory Species (CMS):** This convention supports Nigeria's efforts to protect transboundary species and promotes cross-border conservation coordination.

These instruments obligate Nigeria to harmonize its biodiversity laws and sectoral policies with global conservation targets, such as the Kunming-Montreal Global Biodiversity Framework adopted in 2022.

Institutional Frameworks

Several national and subnational institutions are tasked with implementing biodiversity policy:

- **Federal Ministry of Environment (FME**): The central authority for biodiversity policy, housing key departments like Forestry and Wildlife, and responsible for permitting, policy oversight, and public-private conservation partnerships (Altıparmak, S. O., 2022).
- **National Environmental Standards and Regulations Enforcement Agency (NESREA):** Enforces environmental laws, particularly biodiversity-related standards in high-impact sectors like oil and gas, manufacturing, and agriculture (NESREA, nd.).
- **National Park Service (NPS):** Oversees national parks and wildlife reserves, promoting eco-tourism and community conservation initiatives (William, J. V., 2025).

- **State Ministries of Environment and Forestry Departments:** At the subnational level, these bodies ensure compliance with forest laws and conservation programs, especially in rural and resource-rich regions (Aondoakaa et al., 2023).
- **Nigerian Sustainable Banking Principles (NSBP):** Introduced by the Central Bank of Nigeria (CBN), this framework guides financial institutions to incorporate ESG and biodiversity risks into their decision-making processes (CBN, 2012).
- **Civil Society and NGOs:** Organizations like the Nigerian Conservation Foundation (NCF), WildAid Nigeria, WWF, and Green Recovery Nigeria contribute through biodiversity research, CSR partnerships, and advocacy for nature-positive business models

Business Operation Impacts on Biodiversity Conservation in Nigeria

The conservation of biodiversity in Nigeria is increasingly undermined by sector-specific economic activities, particularly those involving large-scale land use change, pollution, and resource extraction (Anwadike, B. C., 2020). Industries such as oil and gas, manufacturing, agriculture, power/energy, and real estate development are among the most ecologically disruptive due to their extensive environmental footprints and weak integration of biodiversity considerations in operational planning (Hald-Mortensen, C. (2023).

a. Infrastructure Sector

The rapid expansion of Nigeria's infrastructure sector, including expressways, gas corridors, bridges, and the booming real estate market, is significantly reshaping land use and accelerating biodiversity loss. This trend now rivals the long-standing ecological impacts of oil and gas operations (Olaniyan, O., & Adegoroye, A. (2024). In contrast to oil and gas projects, which are geographically confined to licensed zones in the Niger Delta, real estate development is spatially unbounded. It extends into forest edges, riparian zones, and Key Biodiversity Areas, contributing to widespread ecological disruption

Infrastructure development in Nigeria has been shown to cause significant and lasting ecological disruption. The expansion of major projects such as the Lagos–Ibadan Expressway has intensified forest-edge effects, while the construction of gas pipelines and high-tension pylons has fragmented habitats and facilitated the spread of invasive species (Toriola-Coker et al., 2022). In urban centres, unchecked sprawl around Abuja has led to the loss of over 24,000 hectares of woodland and a 38 percent decline in bird diversity, while hospitality and resort developments have driven substantial mangrove depletion in Lekki (Aniekwe, S., & Igu, N., 2019).

These environmental impacts are further compounded by weak regulatory oversight and the proliferation of medium-scale projects that often proceed without adequate environmental safeguards, placing Nigeria's ecologically sensitive regions at increasing risk.

b. Oil and Gas/ Power Sector

The oil and gas sector remains a cornerstone of Nigeria's economy, contributing the largest share of export revenues and serving as a driver of national infrastructure development. Despite its economic significance, the sector is also one of the most ecologically damaging, particularly in the Niger Delta—an area globally recognized for its high biodiversity and ecological sensitivity (Njoku et al.,2025).

Oil and gas operations in Nigeria are known to cause serious environmental degradation. Activities such as oil spills, gas flaring, and pipeline construction have led to habitat fragmentation, contamination of groundwater, mangrove destruction, and population declines in fish and bird species (Onyena, A. P., & Sam, K., 2020). Although these impacts are severe, they are spatially concentrated in licensed zones, mostly in the Niger Delta and offshore regions. In contrast, the power sector, closely tied to gas infrastructure, has a much broader geographic footprint. Power plants, transmission lines, and blending facilities cut across forest and savanna ecosystems, threatening Key Biodiversity Areas (Chukwuka et., 2018).

The power sector is not left out, as its hydropower infrastructure also contributes to ecological disruption. Dams such as Kainji and Jebba have significantly altered natural flood regimes, reduced fish diversity, and degraded downstream wetlands (Diji, C. J. (2019). While oil and gas projects are generally more regulated and better documented than sectors like real estate, enforcement of biodiversity safeguards remains inconsistent. The expanding footprint of gas-powered energy infrastructure, if left unchecked, may rival or even surpass upstream oil activities in its cumulative impact on Nigeria's biodiversity, particularly as the country accelerates its electrification agenda (Oyedepo, S. O., 2012).

c. Manufacturing Sector

Nigeria's manufacturing sector plays a vital role in the country's economic diversification efforts, encompassing industries such as cement, food and beverages, textiles, chemicals, and packaging (Cookey, I. F., 2025). While this sector contributes significantly to industrial growth, it is increasingly associated with habitat loss and environmental degradation, particularly in areas surrounding industrial parks and free-trade zones.

Manufacturing operations in Nigeria are known to exert considerable ecological pressure. The establishment of factories along urban and peri-urban fringes frequently converts wetlands, riparian buffers, and secondary forests into impermeable surfaces. In addition, upstream quarrying for raw materials, especially limestone, contributes to soil erosion and the suppression of native vegetation (Ohwo, O., 2015), thereby fragmenting habitats and weakening ecosystem resilience. These spatial impacts are further compounded by pollution arising from industrial processes. Water-intensive food and beverage plants discharge nutrient-rich effluents, while textile and dye industries release persistent organic pollutants and heavy metals that diminish aquatic invertebrate diversity and contaminate downstream ecosystems (Randhawa, J. S., Gupta, P., & Das, A., 2020). Moreover, many medium-sized manufacturers continue to operate using outdated Environmental Impact Assessments (EIAs) and without biodiversity management plans, resulting in cumulative ecological impacts that frequently escape regulatory monitoring and intervention (Alade, K. T., Ojo, O. J., & Adejuwon, A. A. (2025).

d. Agricultural Sector

Agriculture remains a foundational pillar of Nigeria's economy, employing over 70 percent of the rural population and contributing more than a quarter of the national GDP (National Bureau of Statistics, 2022). While vital for livelihoods and food security, the sector's continuous expansion, driven by both subsistence farming and commercial agribusiness, is now a major driver of biodiversity loss across the country (IPBES, 2019).

Agricultural activities in Nigeria are widely recognized for their ecological footprint. The conversion of natural habitats into farmland is the most immediate threat, displacing native species and disrupting ecological processes. In regions such as North Central and the Southwest, both smallholder farms and large-scale plantations, especially for cassava, maize, and oil palm, have replaced significant stretches of forest and woodland, leading to declines in pollinators, birds, and small mammals (Ikuemonisan, E.S., 2024). In Cross River State, for instance, agricultural encroachment accounted for over half of the forest loss observed near conservation zones between 2000 and 2020 (Ikuemonisan, E. S., 2024).

The sector also threatens biodiversity through the excessive use of agrochemicals. Poorly regulated application of fertilizers, herbicides, and pesticides contributes to soil degradation and contaminates adjacent water bodies, diminishing populations of invertebrates, amphibians, and other aquatic organisms vital to ecosystem balance (Uwazuruike et al., 2023). Runoff from farmlands has been linked to increased nutrient loads in rivers and wetlands, driving eutrophication and the decline of freshwater biodiversity. As Nigeria's demand for food and agricultural land intensifies, the sector's unchecked expansion risks further undermining the country's already vulnerable biodiversity.

e. Financial Service Sector

Although the financial sector does not directly alter habitats, it enables biodiversity loss through its financing decisions. Investments in agriculture, real estate, and infrastructure projects often proceed without robust environmental safeguards, indirectly supporting habitat destruction and species loss (Azizi, L., Scope, C., Ladusch, A., & Sassen, R., 2025). Despite the Central Bank of Nigeria's Sustainable Banking Principles (CBN, 2012), biodiversity considerations remain poorly integrated across the sector (Adebiyi et al., 2025).

Most banks and institutional investors provide limited disclosures on biodiversity risks or funding for nature-positive initiatives (Adebiyi et al., 2025). Yet the sector holds transformative potential through green bonds, biodiversity credits, and ESG-linked financing tools, which remain underutilized despite some uptake by institutions like InfraCredit and the Development Bank of Nigeria**.**

3.0 MATERIALS AND METHODS

This study used a desk-based document analysis method to assess how well biodiversity conservation is incorporated into business operations in Nigeria. To determine the current level of biodiversity commitment and action, we reviewed the sustainability reports of 100 companies across five sectors in Nigeria (20 reports per sector) to see how biodiversity conservation is integrated into their operations, decision-making, and external reports. We selected five sectors — Oil and Gas/Power, Manufacturing, Agriculture, Infrastructure, and Financial Services based on their ecological significance, operational scope, reporting frequency under national and international biodiversity frameworks, and their exposure to different levels of biodiversity risk throughout their operational lifespan (as defined by F&C, 2004).

3.1 Data Source & Evaluation Method

A comprehensive desk study was undertaken on the 100 corporations' sustainability disclosures in Nigeria's five major sectors, examining 20 reports in each sector. This study was conducted in 2025. For the sake of obtaining a representative sample size of 100 sustainability disclosures, it was necessary to include reports spanning several years because there were not enough disclosures in any single year to support the study's inclusion criteria. Addison, P. F. E., Bull, J. W., and Milner-Gulland, E. J. (2019) maintain that the very basic idea behind the sustainability report lies in the communication of a wide array of unrelated corporate information. This information can include Environmental Impact Assessments (EIAs), Environmental Management Plans (EMPs), reports pertaining to Corporate Social Responsibility (CSR), Environmental, Social, and Governance (ESG) reports, and other non-financial or financial disclosures reflecting environmental responsibility.

The research methodology used systematic web surveys through Google, using specifically targeted descriptors including "Sustainability," "ESG," and "CSR," together with corporate names, industry codes, and the word "Nigeria." Where possible, the search results were narrowed to include documents in readily available PDF format. Additionally, apart from reports, corporate websites were scanned and included in the analysis if they included time-stamped and verifiable claims or actions which unveiled relevant information regarding biodiversity.

Content analysis was conducted in order to detect concepts and selected keywords related to biodiversity, for example, "Biodiversity," "Biodiversity Action Plan" (BAP), "Conservation," "GRI 101," "GRI 304," "Biodiversity Conservation," "Ecosystem," "Species," and "Sustainable Development Goals" (SDGs). This analysis follows the broad definition introduced by the Convention on Biological Diversity (CBD, 2017). In particular, some terms regarding habitats, for instance, "Wetlands," "Water Bodies," and "Forests," were used because they are often used as indicators of biodiversity in corporate environmental disclosures.

In cases in which biodiversity was mentioned in reports, additional information was assessed in terms of characteristics and indicators in line with the Global Reporting Initiative (GRI) Biodiversity Standard, as well as in reporting guidelines used by Boiral (2016) and the United Nations Sustainable Development Goals (SDGs) as outlined by Addison et al. (2019), in addition to some frequently used biodiversity standards.

3.2 Validity/Reliability of Evaluation Instrument

In-depth assessment of biodiversity conservation, prioritization, actions, and stakeholder engagement was undertaken throughout the sectors identified using criteria and attribute frameworks inductively developed (Patton, 2002; Global Reporting Initiative (GRI), 2016a; Addison et al., 2019; Michael et al., 2023). Frameworks utilized throughout this analysis include important research studies conducted by Boiral, O. (2016), Addison et al. (2019), Bunnefeld, N., Hoshino, E., & Milner-Gulland, E. J. (2011), and by Michael et al. (2023). Individually, the studies selected have laid the foundation for assessing the degree regarding which biodiversity conservation has been integrated into corporate sustainability frameworks, most especially through accounting and reporting processes. A total of 100 sustainability reports were reviewed based on a framework comprising six criteria, each with five attributes:

1. Integration of Biodiversity into Business Strategy
2. Management and Prevention of Biodiversity Impacts
3. Protection, Restoration, and Enhancement
4. Monitoring, Evaluation, and Use of Scientific Data
5. Engagement, Participation, and Capacity Building

6. Investment in Biodiversity and Accountability

In total, **thirty (30)** distinct attributes were developed and applied to assess the extent and quality of biodiversity conservation inclusion in business sector operations (see **Appendix B** for the full attributes).

3.4 Method of Data Analysis

Each biodiversity-related attribute (Appendix B) was evaluated across 100 sustainability reports from five key sectors using a binary-weighted scoring system.

Each report received a score of **1** if the attribute was fully addressed, demonstrated by clear strategies and measurable indicators, typically fulfilling 4–5 attributes; **0.5** if moderately addressed, with partial or vague references (1–3 attributes fulfilled); and **0** if the attribute was not mentioned at all.

To enhance objectivity and minimize evaluator bias, the assessments were conducted independently by multiple reviewers and subsequently harmonized through group discussions to ensure inter-rater consistency. Following this, the Biodiversity Conservation Inclusion Index (BII) formula was applied to generate the respective index scores.

Biodiversity Conservation Inclusion Index (BII) is calculated as:

$$BII=A+0.5B/N$$

Where:

- **A** = Number of attributes fully addressed
- **B** = Number of attributes moderately addressed
- **N** = Total number of biodiversity-related attributes assessed (30)

To statistically evaluate differences in biodiversity conservation prioritization and inclusion across the five sectors, a one-way Analysis of Variance (ANOVA) was conducted using the Statistical Package for the Social Sciences (SPSS).

4.0 RESULTS

The results are organized by thematic criteria and analyzed for sectoral differences through descriptive statistics, percentage distributions, ANOVA, post-hoc tests, and graphical illustrations. These findings provide insight into the degree of biodiversity mainstreaming within corporate sustainability disclosures in Nigeria**.**

4.1 Overview of Biodiversity Conservation Across Sampled Key Business Sectors

Table 1: Biodiversity Conservation Inclusion in Sampled Sustainability (n=100)

Criteria	Attributes	Sampled Report by Sector					
		Oil & Gas/Power Sector	Agriculture Sector	Infrastructure Sector	Manufacturing Sector	Financial Service Sector	Total
1. Integration of Biodiversity into Business Strategy	1 2 3 4 5	1(9) 0.5(5) 0(6)	1(7) 0.5(8) 0(5)	1(1) 0.5(8) 0(11)	1(4) 0.5(3) 0(13)	1(4) 0.5(8) 0(8)	1(25) 0.5(32) 0(43)
	Total	**20**	**20**	**20**	**20**	**20**	**100**
2. Management and Prevention of Biodiversity Impacts	6 7 8 9 10	1(3) 0.5(9) 0(8)	1(12) 0.5(3) 0(5)	1(0) 0.5(1) 0(19)	1(0) 0.5(3) 0(17)	1(0) 0.5(2) 0(18)	1(15) 0.5(18) 0(67)
	Total	**20**	**20**	**20**	**20**	**20**	**100**
3. Protection, Restoration, and Enhancement	11 12 13 14 15	1(4) 0.5(7) 0(9)	1(8) 0.5(7) 0(5)	1(1) 0.5(0) 0(19)	1(0) 0.5(1) 0(19)	1(0) 0.5(2) 0(18)	1(13) 0.5(17) 0(70)
	Total	**20**	**20**	**20**	**20**	**20**	**100**
4. Monitoring, Evaluation, and Scientific Data Use	16 17 18 19 20	1(1) 0.5(8) 0(11)	1(2) 0.5(9) 0(9)	1(0) 0.5(0) 0(20)	1(0) 0.5(4) 0(16)	1(1) 0.5(0) 0(19)	1(4) 0.5(21) 0(75)
	Total	**20**	**20**	**20**	**20**	**20**	**100**
5. Engagement, Participation, and Capacity Building	21 22 23 24 25	1(6) 0.5(8) 0(6)	1(10) 0.5(5) 0(5)	1(0) 0.5(1) 0(19)	1(1) 0.5(3) 0(16)	1(0) 0.5(3) 0(17)	1(17) 0.5(20) 0(63)
	Total	**20**	**20**	**20**	**20**	**20**	**100**
6. Investment in Biodiversity and Accountability	26 27 28 29 30	1(1) 0.5(7) 0(12)	1(5) 0.5(8) 0(7)	1(0) 0.5(1) 0(19)	1(0) 0.5(4) 0(16)	1(4) 0.5(1) 0(15)	1(10) 0.5(21) 0(69)
	Total	**20**	**20**	**20**	**20**	**20**	**100**

Score = 1: *The attribute was fully and clearly addressed in the report, including detailed strategies, measurable indicators, or SMART (Specific, Measurable, Achievable, Relevant, and Time-bound) goals.*

Score = 0.5: *The attribute was partially addressed, evidenced by vague references, general commitments, or one-off activities.*

Score = 0: *The attribute was not mentioned or implied in the report*

Table 1 provides a comparative summary of how 100 sustainability reports (20 per sector) addressed biodiversity conservation across six thematic criteria, each with five attributes. Using a binary-weighted scoring system (1 = fully addressed, 0.5 = partially addressed, 0 = not addressed), the analysis reveals that biodiversity integration is uneven across sectors.

The Oil & Gas/Power and Agriculture sectors show relatively stronger performance, particularly in strategic integration and impact management, with several reports fully addressing key biodiversity attributes. In contrast, the Infrastructure, Manufacturing, and Financial Services sectors demonstrated limited inclusion, often failing to report on biodiversity monitoring, restoration, or investment. The weakest areas overall were Monitoring and Scientific Data Use and Investment in Biodiversity, where most reports across all sectors scored zero. These findings highlight sectoral disparities in biodiversity disclosure and the need for improved regulatory standards and reporting consistency, especially in sectors with large ecological footprints.

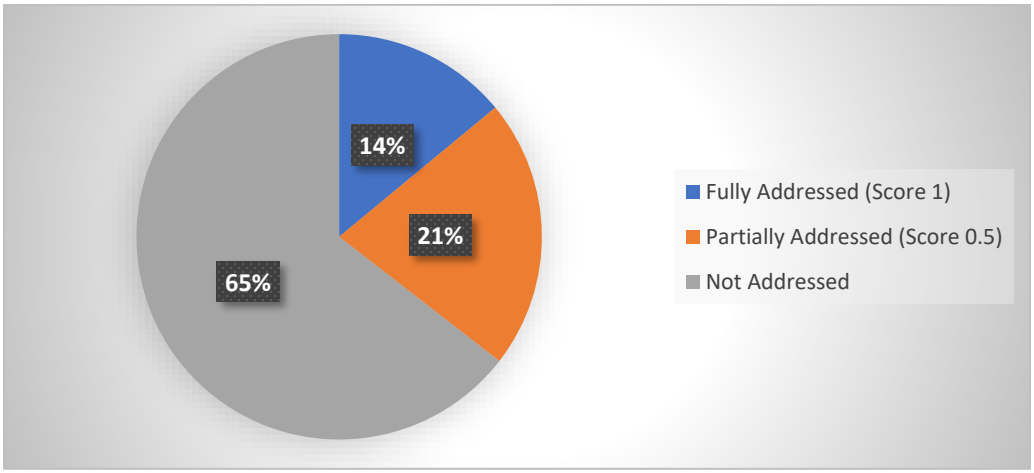


Figure 1: Overall Biodiversity Inclusion Across All Sectors
Source: Research Data 2025

Figure 1 illustrates the overall extent to which biodiversity considerations are integrated into corporate sustainability reporting across five key sectors in Nigeria. Out of all the possible attributes, only 14% were fully addressed with clear strategies and measurable indicators, while 21.5% were partially addressed through vague references or general commitments. A substantial 64.5% of attributes were not mentioned at all. This distribution reflects a critical shortfall in the prioritization and operationalization of biodiversity within corporate sustainability disclosures, underscoring the need for stronger regulatory frameworks, targeted reporting guidelines, and enhanced corporate accountability to address biodiversity loss in Nigeria.

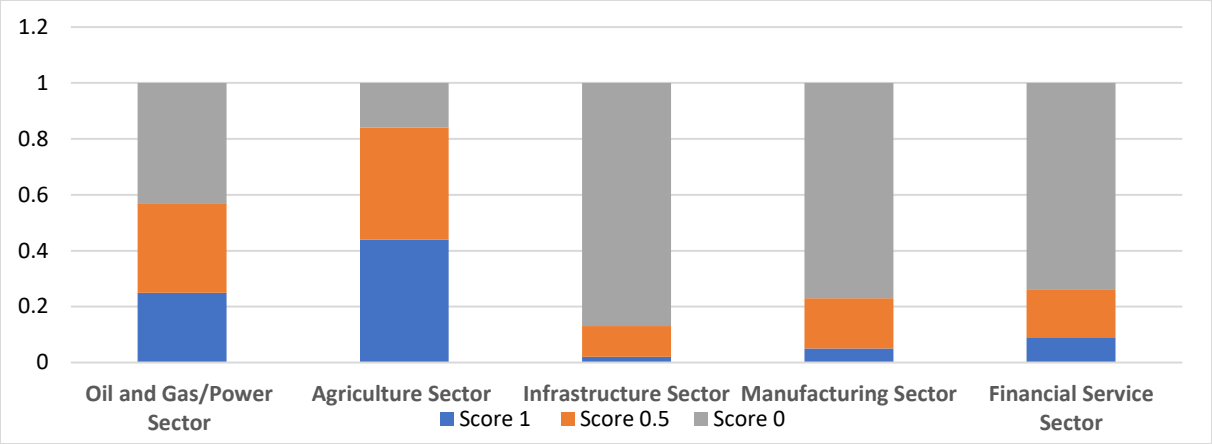
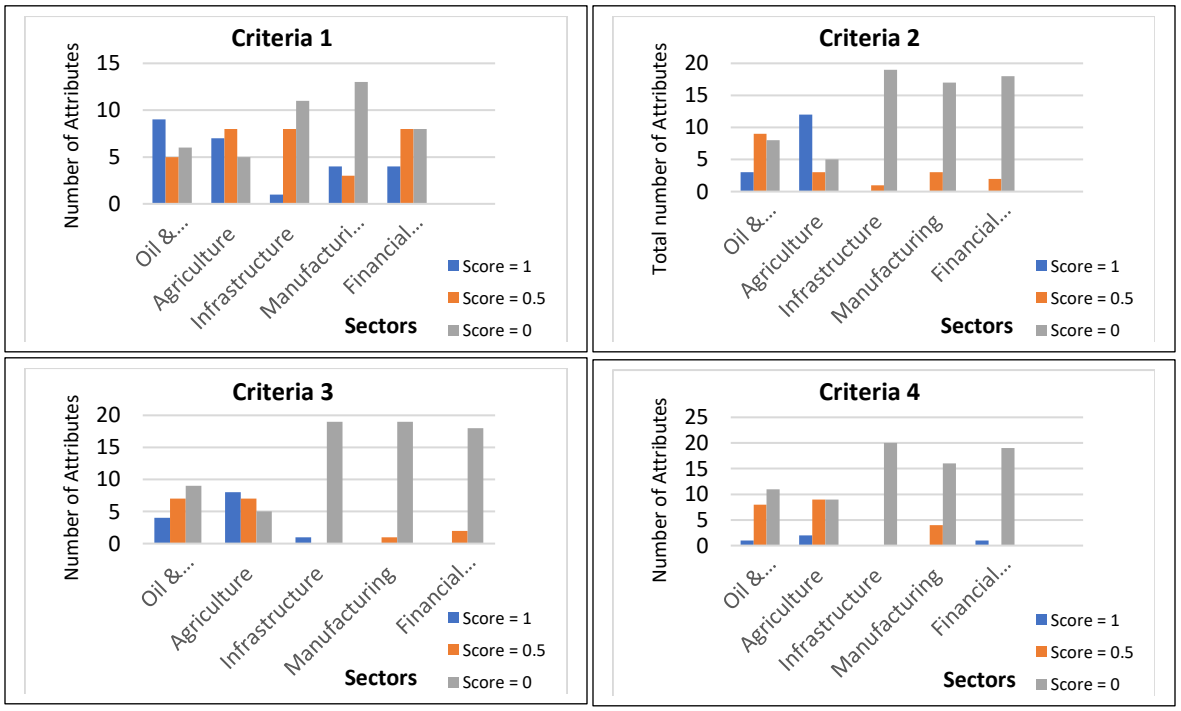


Figure 2: Mean Biodiversity Conservation Inclusion Scores Across Sectors
Source: Research Data 2025

The agriculture sector recorded the highest mean for full inclusion at 0.37, followed by the oil and gas/power sector at 0.30. Both sectors also showed relatively higher partial inclusion means of 0.31 (agriculture) and 0.27 (oil and gas/power). Conversely, the infrastructure and manufacturing sectors reported the lowest full inclusion means of 0.03 and 0.08, respectively, with a dominant no-inclusion mean of 0.89 and 0.84, indicating minimal engagement with biodiversity concerns. The financial services sector, while slightly better than infrastructure and manufacturing, still showed a high no-inclusion mean of 0.79, suggesting that biodiversity considerations remain largely absent from corporate sustainability disclosures in this sector, as shown in **Figure 2**. These results show the uneven prioritization of biodiversity across Nigeria's economic sectors and point to a pressing need for enhanced regulatory frameworks and sector-specific ESG requirements, especially for sectors with significant ecological footprint



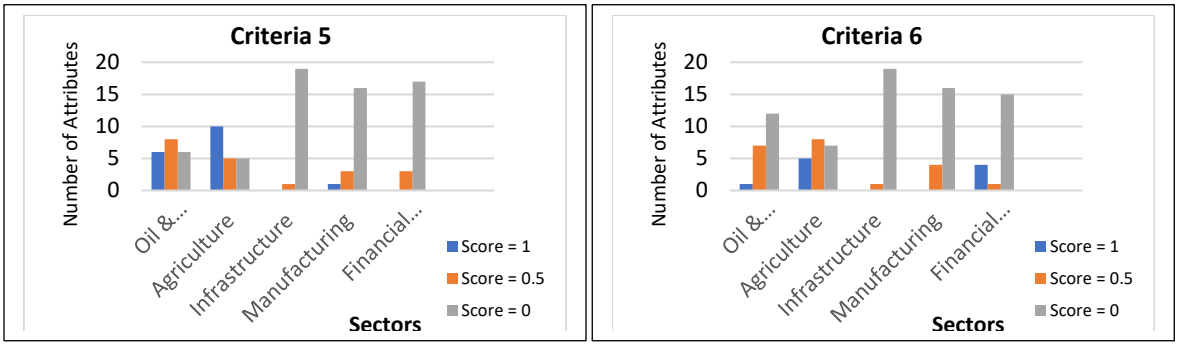


Figure 3: Variation in Biodiversity Performance Across Sectors by Criteria (1-6)

Source: Research Data 2025

Criterion 1: Integration of Biodiversity into Business Strategy

Attributes 1–5 of Appendix B address this criterion.

This criterion assesses how biodiversity is integrated into strategic goals, risk management, and governance. The Oil & Gas/Power sector led, with 45% of attributes fully addressed, 25% partially addressed, and 30% not addressed, reflecting the sector's exposure to international ESG standards and corporate sustainability frameworks. Agriculture followed, with 35% of attributes fully addressed and 40% partially addressed, likely influenced by voluntary certification schemes that encourage but do not require biodiversity alignment.

In contrast, the Infrastructure sector showed limited integration, with just 5% of attributes fully addressed and 55% not addressed. The reports analyzed for this study also revealed that infrastructure companies prioritized community development, economic value creation, human capital development, and social cohesion over biodiversity conservation and broader environmental protection. Manufacturing and Financial Services also underperformed, with 65% and 40% of attributes, respectively, not addressed, highlighting that biodiversity remains a low strategic priority outside land-intensive sectors.

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Criterion 2: Management and Prevention of Biodiversity Impacts

Attributes 6–10 of Appendix B address this criterion.

This criterion assesses risk management tools, such as avoidance, minimization, and offset strategies.

The Agriculture sector led the field, with 60% of attributes fully addressed, 15% partially addressed, and 25% not addressed. This indicates a relatively proactive approach to biodiversity impact management. Oil & Gas/Power recorded 15% of attributes fully addressed, 45% partially addressed, and 40% not addressed. Infrastructure,

Manufacturing and Financial Services had 0% of attributes fully addressed. Of particular concern is the Infrastructure sector, where 95% of attributes were not addressed at all. Manufacturing and Financial Services also showed high levels of non-addressed attributes—85% and 90%, respectively—indicating limited engagement with biodiversity impact considerations across these sectors.

Criterion 3: Protection, Restoration, and Enhancement of Biodiversity

Attributes 11–15 of Appendix B address this criterion.

This criterion measures whether firms go beyond mitigation to actively restore or enhance biodiversity. Agriculture was the highest performer, with 40% of attributes fully addressed, 35% partially addressed, and 25% not addressed, reflecting the influence of regenerative practices and donor-supported rehabilitation programs. The Oil & Gas/Power sector followed with 20% full, 35% partial, and 45% not addressed, indicating that while some companies engage in post-extraction restoration, others omit it entirely.

The Infrastructure sector showed minimal inclusion—5% full, 0% partial, and 95% not addressed, suggesting that post-construction land restoration is rarely institutionalized. Manufacturing and Financial Services performed even worse, each recording only 0–5% partial inclusion and over 90% of attributes not addressed, highlighting a striking absence of proactive biodiversity efforts across both industrial and financial landscapes.

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Criterion 4: Monitoring, Evaluation, and Use of Scientific Data

Attributes 16–20 of Appendix B address this criterion.

This criterion assesses whether organizations systematically collect and apply biodiversity data. Performance was weak across all sectors. Agriculture led slightly, with 10% of attributes fully addressed, 45% partially addressed, and 45% not addressed, indicating some awareness but limited institutional capacity for monitoring and evaluation.

The Oil & Gas/Power sector followed, with 5% full, 40% partial, and 55% not addressed, reflecting reliance on ad hoc biodiversity assessments that are often disconnected from strategic planning. The Infrastructure sector scored 0% for both full and partial inclusion, with 100% of attributes not addressed, suggesting a complete absence of monitoring frameworks. Manufacturing (20% partial, 80% not addressed) and Financial Services (5% full, 95% not addressed) also lack data-driven biodiversity reporting. These findings reinforce that in the absence of clear regulatory obligations, biodiversity measurement remains a blind spot in corporate sustainability efforts.

Criterion 5: Engagement, Participation, and Capacity Building

Attributes 21–25 of Appendix B address this criterion.

This criterion evaluates how companies engage stakeholders and build institutional capacity for biodiversity. Agriculture achieved the highest level of engagement, with 50% of attributes fully addressed, 25% partially addressed, and 25% not addressed likely due to its close interaction with rural communities and participation in environmental stewardship schemes.

The Oil & Gas/Power sector followed, with 30% full, 40% partial, and 30% not addressed, suggesting that some companies are moving toward inclusive planning and local partnerships. In contrast, the Infrastructure sector showed significant neglect, with 0% full, 5% partial, and 95% not addressed, highlighting a largely transactional approach to stakeholder involvement. Manufacturing (5% full, 15% partial, 80% not addressed) and Financial Services (0% full, 15% partial, 85% not addressed) reflected only token or project-specific engagement, lacking sustained institutional commitment to biodiversity capacity building.

Criterion 6: Investment in Biodiversity and Accountability

Attributes 26–30 of Appendix B address this criterion.

This criterion measures dedicated funding and transparent reporting on biodiversity initiatives. Agriculture showed the strongest performance with 25% full inclusion, 40% partial, and 35% non-addressed, reflecting moderate financial commitment, often linked to CSR or donor funding.

Financial Services followed with 20% full, 5% partial, and 75% non-addressed, reflecting nascent efforts to integrate nature into financial instruments, though still limited in scale. Oil & Gas/Power recorded 5% full, 35% partial, and 60% non-addressed, indicating that biodiversity investment remains non-strategic or externalized to offset schemes. Infrastructure and Manufacturing each scored 0% full inclusion, with 95% and 80% of their attributes, respectively, not addressed. This finding reinforces the lack of internal budgeting or tracking for biodiversity performance in capital-intensive and production-driven sectors.

Table 2: One-Way ANOVA: Sectorial Differences in Biodiversity-Performance Scores

Source of Variation	**SS**	**df**	**MS**	**F**	**p-value**
Between groups (Sectors)	17.34	4	4.335	**48.31**	< .001
Within groups	42.65	585	0.073		
Total	59.99	589			

The ANOVA results reveal a statistically significant difference in biodiversity inclusion scores across sectors in Nigeria. The between-group variation (SS = 17.34, df = 4, MS = 4.335) produced an F-value of 48.31 with a **p-value <** .001, indicating that the mean scores vary significantly among sectors.

The within-group variation (SS = 42.65, df = 585, MS = 0.073) reflects relatively low variability within each sector. Overall, the total variance accounted for was 59.99 across 589 observations. These results confirm that sectoral differences strongly influence biodiversity performance in corporate sustainability reporting as shown in **Table 2.**

DISCUSSION

The findings of this study reflect a deep structural challenge: biodiversity conservation is still marginal in the sustainability agendas of most Nigerian business sectors, despite mounting ecological and regulatory pressures. Among the five sectors analyzed, the agriculture and oil & gas/power sectors demonstrated relatively greater efforts to incorporate biodiversity into strategic frameworks, stakeholder engagement, and, to some extent, operational risk management. These sectors' direct dependence on natural ecosystems may explain their comparatively higher sensitivity to conservation issues.

Yet, across all sectors, critical biodiversity attributes such as monitoring and evaluation, scientific data use, and investment in conservation efforts remain glaringly underdeveloped. For example, infrastructure and manufacturing companies consistently failed to integrate biodiversity concerns into project planning or restoration strategies, despite their significant land use and ecological disruption. This omission suggests that biodiversity is not yet viewed as a core operational risk or performance indicator in these industries.

Even more concerning is the financial sector's passive role. Although it holds significant leverage through investment policies and loan portfolios, biodiversity risk is scarcely addressed in financing decisions. The potential for biodiversity-positive financing tools such as green bonds or nature-based investment funds remains largely untapped.

The sectoral disparities confirmed by the ANOVA ($p < .001$) further highlight a fragmented approach to biodiversity governance in Nigeria. Most corporate sustainability efforts are still driven by climate-related metrics (e.g., carbon emissions) and community development targets, with biodiversity sidelined or reduced to symbolic commitments. Without enforced reporting standards and biodiversity-specific ESG requirements, this trend is likely to persist.

A consistent thread across the data is the lack of scientific grounding in biodiversity management. Less than 10% of reports referenced baseline ecological data or biodiversity indicators, reflecting poor alignment with global reporting standards such as GRI 304, GRI 301, and the Kunming-Montreal Global Biodiversity Framework. The near-absence of investment in biodiversity conservation actions, especially ecological restoration, suggests a critical underappreciation of biodiversity’s role in long-term business resilience.

Businesses must recognize that degraded ecosystems undermine not only natural capital but also economic continuity, risk resilience, and market credibility. Conservation must evolve from being a compliance issue to becoming a core business value, embedded in strategic planning, financing, and operational delivery across all sectors.

CONCLUSION

Conservation of biodiversity has become a primary rather than a secondary activity. It's important that all sectors in Nigeria make this element run through all their process of operation, from construction all the way through the decommissioning process. This study shows that, despite Nigeria's extensive environmental resources and vulnerability, biodiversity is poorly integrated into corporate sustainability processes. Widespread prevalence of unsound measures and unclear environmental indicators, in place of measurable and scientifically substantiated conservation protocols, indicates a basic lack of appreciation for biodiversity in corporate decision processes.

The examination indicates that, in spite of the highly biodiversity-dependent sectors like agriculture and oil and gas sectors, the level of strategic alignment remains weak. In addition, in sectors like infrastructure, manufacturing, and banking, biodiversity remains undervalued, despite the significant impacts these sectors have on the use of the land and the functionality of the ecosystem.

The implications for this lack of attention are broad. Businesses that do not take into account biodiversity factors will face not only reputational and regulatory issues but also greater vulnerability to supply chain disruptions, climate change risks, and longer-term financial losses. Businesses that take the lead in biodiversity conservation will be better positioned to attract sustainable capital, meet cross-border ESG standards, and play important roles in support of nationally and globally aligned conservation goals.

In changing the current course, Nigeria needs to apply enforceable biodiversity reporting standards aligned with the international guidelines, including the Global Reporting Initiative (GRI) and the Convention on Biological Diversity (CBD) goals. Standardizing biodiversity indicators and creating sectoral benchmarks is critical in driving uniformity and responsibility. Initiatives like tax incentives for restoration efforts or financing tied to Environmental, Social, and Governance (ESG) factors should also be introduced as drivers of actions supportive of biodiversity. The achievement of major biodiversity preservation in Nigeria’s commercial landscape requires an overall shift in concept from the disjointed, reactive methods of adherence to a compliance-driven model to a proactive and integrated model of environmental stewardship. By mainstreaming biodiversity into corporate sustainability’s basic principles, Nigeria can unlock the full potential ecologically and economically that lies embedded in its natural capital.

RECOMMENDATION

To strengthen biodiversity conservation within Nigeria's business environment, this study proposes the following actionable recommendations:

1. **Mandate Sector-Specific Biodiversity Disclosures**: Regulatory bodies should enforce mandatory biodiversity reporting, tailored by sector and aligned with global standards like GRI 304 and the Kunming-Montreal Framework.
2. **Provide Incentives for Biodiversity-Positive Actions**: The government should offer tax reliefs, concessional loans, and access to green bonds for companies that invest in conservation, especially in high-impact sectors.
3. **Embed Biodiversity in ESG and EIA Frameworks**
   Regulatory updates are needed to treat biodiversity as a core risk factor in ESG reporting and Environmental Impact Assessments across all industries.
4. **Promote Collaborative Conservation Partnerships**
   Encourage joint efforts between companies, communities, NGOs, and the government to support landscape-level biodiversity conservation initiatives.
5. **Build Business Capacity on Biodiversity Integration**
   Develop training, toolkits, and technical guidance to address knowledge gaps and enhance corporate ability to incorporate biodiversity in strategy and reporting.
6. **Establish a National Biodiversity Accountability Index**
   Create a public dashboard to track and rank companies' biodiversity performance, fostering transparency and competition toward better outcomes.
7. **Harness Financial Sector Influence**
   The Central Bank and commercial banks should integrate biodiversity criteria into lending, investment, and risk assessment frameworks.
8. **Improve Access to Biodiversity Data**
   Strengthen business access to ecological datasets and impact indicators, and require their use in sustainability planning and reporting.

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LIST OF APPENDICES

Appendix A: List of Sustainability, CSR & Environmental Report used for this Study.

SN	COMPANY (NIGERIA OPERATIONS)	LATEST REPORT YEAR	REPORT TITLE (PDF)	SECTOR	LINKS
1	Seplat Energy Plc	2023	*Sustainability & Energy Transition Report*	Oil & Gas/ Power and Energy	https://www.seplatenergy.com/media/nqujey5g/seplat-energy_sustainability-report_2023_screen.pdf
2	NNPC Ltd	nd	*NNPC Sustainability Overview*	Oil & Gas/ Power and Energy	https://staging1977.nnpcgroup.com/sustainability
3	Oando Plc	2022	*Sustainability Report*	Oil & Gas/ Power and Energy	https://cdn.prod.website-files.com/66c74241707b8ed970d83f84/681e7b2ed95b4469693e774e_Oando%2BPlc-%2B2022%2BSustainability%2BReport-compressed.pdf
4	Shell (SPDC)	2024	*Shell Sustainability Report 2024*	Oil & Gas/ Power and Energy	https://www.shell.com/sustainability/reporting-centre/reporting-centre-archive/_jcr_content/root/main/section_2106585602/tabs/tab/text_copy/links/item0.stream/1742906426699/4ef5cfa607e5e308ad8a68fc3ddffbe6342f8fa8/shell-sustainability-report-2023.pdf
5	Chevron Nigeria Ltd	2023	*2023 Corporate Sustainability Report*	Oil & Gas/ Power	https://www.chevron.com/-/media/shared-media/documents/chevron-sustainability-report-2023.pdf
6	TotalEnergies EP Nigeria	2024	*Sustainability & Climate Progress Report*	Oil & Gas/ Power and Energy	https://totalenergies.com/system/files/documents/2024-03/totalenergies_sustainability-climate-2024-progress-report_2024_en_pdf.pdf
7	ExxonMobil Corporation	2022	*Sustainability Report 2022*	Oil & Gas/ Power and Energy	https://corporate.exxonmobil.com/-/media/global/files/sustainability-report/publication/exxonmobil-sustainability-report.pdf
8	Azura Power West Africa Ltd	2022	*Sustainability Report*	Gas/ Power and Energy	http://azurapower.com/wp-content/uploads/2024/04/Azura-Power-SR-2022_opt.pdf
9	Egbin Power Plc	nd	*SLB Sustainability Overview*	Oil & Gas/ Power and Energy	https://www.slb.com/-/media/files/sustainability/2024/sustainability-report-2024.ashx
10	Halliburton Energy Services	2023	*Halliburton 2023 Annual & Sustainability Report*	Oil & Gas/ Power and Energy	https://www.annualreports.com/HostedData/AnnualReportArchive/h/NYSE_HAL_2023.pdf
11	Baker Hughes Nigeria	2023	*Corporate Responsibility Report*	Oil & Gas/ Power and Energy	https://dam.bakerhughes.com/m/642d3eeb585f4405/original/Sustainability-Report-2023.pdf
12	Conoil Plc	2023	*Environmental Accounting and Financial Performance of Conoil Plc in Nigeria*	Oil & Gas/ Power and Energy	https://eajournals.org/ejaafr/wp-content/uploads/sites/16/2024/03/Environmental-Accounting.pdf
13	Addax Petroleum	2018	*Sustainability Report 2018*	Oil & Gas/ Power and Energy	https://www.addaxpetroleum.com/doc/Addax-Petroleum-Sustainability-Report-2018.pdf
14	Aradel Holdings	2019	*Sustainability Reports*	Oil & Gas/ Power and Energy	https://www.aradel.com/wp-content/uploads/2023/07/Aradel-Website-2021-Sustainability-Report.pdf
14	MRS OIL NIGERIA PLC	2019	*Sustainability Policy*	Oil & Gas/ Power	https://www.mrsoilnigplc.net/documents/MRS%20Sustainability%20Report.pdf
15	Sahara Group	2023	*Sustainability Report*	Oil & Gas/ Power and Energy	https://www.sahara-group.com/wp-content/uploads/2023/11/Sahara-Group-Sustainability-Report_Reduced.pdf
16	Nigeria LNG Limited (NLNG)	2022	*Sustainability Report*	Oil & Gas/ Power and Energy	https://www.scribd.com/document/717264778/NLNG-2022-Report-Facts-and-Figures f
17	Waltersmith	nd	*Waltersmith Sustainability Overview*	Oil & Gas/ Power and Energy	https://waltersmithng.com/sustainability/
18	Oriental Energy Resources	2022	*Oriental Energy Resources Limited ESG Statement 2022*	Oil & Gas/ Power and Energy	https://orientalenergy.com.ng/wp-content/uploads/2024/12/ESG-STATEMENT-2022.pdf
19	Niger Delta Exploration & Production Plc	2019	*NDEP Sustainability Report*	Oil & Gas/ Power and Energy	https://www.aradel.com/wp-content/uploads/2023/07/Aradel-Website-2019-Sustainability-report.pdf
20	Ardova Plc	2022	*Ardova Sustainability Report*	Oil & Gas/ Power	https://cms.ardovaplc.com/reportfiles/finance/16771607422017%20Annual%20Reports.pdf

Agriculture					
21	Olam Agri Nigeria (Olam Group)	2023	*Olam Group Limited Additional ESG Information 2022*	Agriculture	https://www.olamgroup.com/content/dam/olamgroup/investor-relations/ir-library/annual-reports/annual-reports-pdfs/2022/ogl_additional_esg_information_report_2022.pdf
22	Flour Mills of Nigeria Plc	2023	*Sustainability Report*	Agriculture	https://www.fmnplc.com/reports/2023%20_Flour%20Mill%20of%20Nigeria_Sustainability%20Report.pdf
23	Dangote Sugar Refinery Plc	2022	*Sustainability Report*	Agriculture	https://sugar.dangote.com/wp-content/uploads/2024/07/DSR-2023-Sustainability-Report.pdf
24	Presco Plc	2022	*Environmental Management*	Agriculture	https://www.presco-plc.com/corporate-responsibility/environmental-commitment/
25	Okomu Oil Palm Plc	2022	*2022 Sustainability Report*	Agriculture	https://okomunigeria.com/wp-content/uploads/2024/07/2024-03-19-Sustainability-report_compressed.pdf
26	Siat Group	2023	*Sustainability Report Key Indicators 2023*	Agriculture	https://www.siat-group.com/wp-content/uploads/2024/10/SIAT-Sustainability-report-2023-KPI-report.pdf
27	PZ Wilmar (Joint Venture)	2023	*Sustainability Report*	Agriculture	https://www.wilmar-international.com/docs/default-source/default-document-library/sustainability/sr2023.pdf
28	Livestock Feeds Plc	2023	*Annual Report (Incl. CSR)*	Agriculture	https://www.livestockfeedsplc.com/livestockreports/Livestock-Sustainability-Report.pdf
29	Bama Farms (by GB Foods Nigeria)	2021	*Environment/ Sustainability Overview*	Agriculture	https://www.thegbfoods.com/protecting-the-environment/
30	Nigerian Breweries Plc (Agric value chain)	2014	*Sustainability Report*	Agriculture	https://www.nbplc.com/sustainability/ --- https://www.nbplc.com/wp-content/uploads/2021/11/BABW2030-commitments-onepager.pdf
31	Nestlé Nigeria Plc	2024	*Reporting Template on Sustainable Financial Principles for The Nigerian Capital Market*	Agriculture	https://www.nestle-cwa.com/sites/g/files/pydnoa346/files/2024-03/nigeria-plc-sustainability-report.pdf
32	Promasidor Nigeria Ltd	2024	*Environmental Standards*	Agriculture	https://promasidor.com/en/about/environmental-and-quality/
33	Ellah Lakes Plc	nd	*ESG Initiatives Overview*	Agriculture	https://ellahlakes.com/?page_id=232
34	Harvestfield Industries Ltd	2021	*Environmental Impact and Social Assessment*	Agriculture	https://ead.gov.ng/wp-content/uploads/2020/06/Harvest-field.pdf
35	Syngenta Group	2024	ESG Report 2024	Agriculture	https://www.syngentagroup.com/sites/default/files/2025-04/Syngenta-Group-ESG-Report-2024.pdf
36	BUA Foods Plc	2023	*Annual Social Impact Overview*	Agriculture	https://www.buafoodsplc.com/our-impact-esg/
37	Nasco Group	nd	*CSR & Environment Overview*	Agriculture	https://www.nasco.net/csr/environmental-sustainability/
38	Grand Cereals Ltd	nd	*CSR Overview*	Agriculture	https://grandcereals.com/corporate-social-responsibility-2/
39	Saro Africa Group		*CSR Overview*	Agriculture	https://www.saroafrica.com/sustainability
40	Amo Byng Nigeria Ltd	nd	*Sustainability Overview*	Agriculture	https://amobyng.com.ng/sustainability/
Manufacturing					
41	Dangote Cement Plc	2024	*Dangote-Cement-2024-Sustainability-Report*	Manufacturing	https://dangotecement.com/wp-content/uploads/2025/05/Dangote-Cement-2024-Sustainability-Report.pdf
42	BUA Cement Plc	nd	*Sustainability Overview*	Manufacturing	https://www.buacement.com/sustainability
43	Lafarge Africa Plc (Holcim Group)	2023	*lafarge-africa-plc-2022-sustainability-report_final*	Manufacturing	https://www.lafarge.com.ng/sites/nigeria/files/2024-02/lafarge-africa-plc-2022-sustainability-report_final-update-1-1.pdf

44	Nigerian Breweries Plc	2014	*Sustainability Report*	Manufacturing	https://www.nbplc.com/wp-content/uploads/2021/11/NB-SLR-2014.pdf
45	Guinness Nigeria Plc	2023	*Sustainability & Responsibility Report*	Manufacturing	https://guinness-nigeria.com/diageo-corporate-media/media/fzlbrc4y/2023-guiness-sustainability-report-final.pdf
46	Nestlé Nigeria Plc	2022	*CSV & Sustainability Report*	Manufacturing	https://www.nestle-cwa.com/sites/g/files/pydnoa346/files/2023-03/Nestle%CC%81%20Nigeria%20PLC%20Sustainability%20Report%202022.pdf
47	Unilever Nigeria Plc	2024	*nigeria-sustainability-report-2024*	Manufacturing	https://www.unilevernigeria.com/files/nigeria-sustainability-report-2024.pdf
48	PZ Cussons Nigeria Plc	2023	*Strategic Report 2017*	Manufacturing	https://www.pzcussons.com/wp-content/uploads/2019/08/6910_PZ_Cussons-Plc-AR17_STRATEGIC_TP-LR.pdf
49	UAC Nigeria	2022	*Sustainability Annual Report*	Manufacturing	https://www.uacnplc.com/wp-content/uploads/2024/05/UACN-ANNUAL-REPORT-2023.pdf
50	Cadbury Nigeria Plc	nd	*Sustainability & Impact Overview*	Manufacturing	https://www.marketscreener.com/quote/stock/CADBURY-NIGERIA-PLC-10394523/news/CADBURY-NIGERIA-SUSTAINABILITY-REPORT-44718755/
51	Procter & Gamble P&G	2019	*Environmental Sustainability Report*	Manufacturing	https://downloads.ctfassets.net/oggad6svuzkv/7nSofG7XXtcYERIz5Vm3Xc/c8f716206225387fc9f7fe14ffbbac07/updated_citizenship_report_2019_environmental_sustainability.pdf
52	International Breweries Plc	nd	*Sustainability Overview*	Manufacturing	https://www.international-breweries.com/sustainability
53	Beta Glass Plc	2023	*Beta Glass Plc Sustainability Policy*	Manufacturing	https://www.betaglass.com/media/azqneu3z/bg-sustainability-policy.pdf
54	African Foundries Ltd (Steel)	2021	*Social & Environmental Overview 2017*	Manufacturing	https://www.africanfoundries.com/images/AFL-SocialEnvironmentalOverview2017.pdf
55	FrieslandCampina Wamco	nd	*Sustainability Report*	Manufacturing	https://www.frieslandcampina.com.ng/ng/contribution-to-united-nations-sdgs/
56	Berger Paints Nigeria Plc	nd	*CSR and ESG Overview*	Manufacturing	https://bergerpaintsnig.com/sustainability/
57	Coca-Cola Hellenic Bottling Nigeria	2023	*Sustainability Report*	Manufacturing	https://www.coca-colacompany.com/content/dam/company/us/en/reports/coca-cola-business-sustainability-report-2022.pdf
58	Honeywell Flour Mills Plc	2024	*Annual Reports and Financial Statements*	Manufacturing	https://drive.google.com/file/d/1dM97CbwsJ8aqMAJ8Lu1VeMHOPoWjSJOk/view
59	Dantata Plastics	nd	*Sustainability Overview*	Manufacturing	https://dantataplastic.com/2023-sustainability-report/
60	Olam Group	2022	*ESG Report*	Manufacturing	https://www.olamgroup.com/content/dam/olamgroup/investor-relations/ir-library/annual-reports/annual-reports-pdfs/2022/ogl_additional_esg_information_report_2022.pdf
Infrastructure					
61	Nigeria Railway Corporation (NRC)	2022	*Sustainability Report*	Infrastructure	https://nrc-app-prod.objects.frb.io/assets/NRC-Group-Sustainability-Report-2023.pdf
62	InfraCredit Nigeria	2022	*CSR and ESG Overview*	Infrastructure	https://infracredit.ng/update/wp-content/uploads/2024/11/2023-Sustainability-Report-v3.pdf
63	IHS Nigeria	2024	*Sustainability Highlights*	Infrastructure	https://www.ihstowers.com/content/dam/ihs/corporate/documents/sustainability/Sustainability-reports/2024-Sustainability-Report.pdf
64	UPDC Plc	2020	*Sustainability Report*	Infrastructure	https://updcplc.com/wp-content/uploads/2024/05/UPDC-Plc-2020-Annual-Report.pdf
65	Mixta Africa (Nigeria)	2021	*CSR Report*	Infrastructure	https://mixtafrica.com/wp-content/uploads/2024/08/Annual-Report-FY-2023_FA.pdf
66	Adron Homes & Properties Ltd	2023	*Grains for Growth: ESG Report*	Infrastructure	https://adronhomesproperties.com/corporate-special-responsibility/
67	Lekki Deep Sea Port / LFTZ	2021	*Sustainability Highlights*	Infrastructure	https://www.lagosfreezone.com/media/1903/lfz-sr23-071124_singles.pdf
68	Julius Berger Nigeria Plc	2023	*Sustainability Report*	Infrastructure	https://www.julius-berger.com/fileadmin/julius_berger_nigeria_pictures/5_0_sustainability/2024.08.07_jbn_sustainability_report_2023.pdf
69	Dutum Group Ltd	nd	*Sustainability Overview*	Infrastructure	https://dutumgroup.com/csr/

70	Dorman Long Engineering Limited	nd	*ESG Report*	Infrastructure	https://www.dormanlongeng.com/esg/
71	Reynolds Construction Company (Nigeria) Limited	nd	*Sustainability Overview*	Infrastructure	https://rccnigeria.com/compliance-and-ethics/
72	Craneburg Construction Ltd	2023	*Sustainability & Responsibility Report*	Infrastructure	
73	World Bank	nd	*Sustainability Overview*	Infrastructure	https://www.worldbank.org/en/projects-operations/environmental-and-social-framework
74	Dantata & Sawoe Construction Co.	2019	*Sustainability Summary Report*	Infrastructure	https://www.ccc.net/wp-content/uploads/2020/08/ccc-sustainability-report-2018-2019.pdf
75	Lagos Free Zone	2023	*Sustainability Report*	Infrastructure	https://www.lagosfreezone.com/media/1884/sustainability-report-2023.pdf
76	Arab Contractors Nigeria Ltd	2022	*Sustainability Initiatives Summary*	Infrastructure	https://www.ccc.net/wp-content/uploads/2020/08/ccc-sustainability-report-2018-2019.pdf
77	Federal Ministry of Works & Housing	2022	*Sustainability & Impact Report*	Infrastructure	
78	Nigeria Sovereign Investment Authority (NSIA)	2022	*CSR & Environmental Report*	Infrastructure	https://nsia.com.ng/sustainabiliy-reports/sustainability-report-2023/
79	Nigerian Ports Authority (NPA)	2023	*Sustainability Report*	Infrastructure	
80	ITB Nigeria Ltd	nd	*Sustainability & Environment Overview*	Infrastructure	https://www.itbng.com/itb-about-us
Financial Service					
81	Access Holdings Plc (Access Bank)	2022	*Sustainability Report*	Financial Service	https://theaccesscorporation.com/wp-content/uploads/2024/02/Access-Holdings_Sustainability-Report-2022_Connecting-Opportunities-for-a-Resilient-Future-1_compressed.pdf
82	Zenith Bank Plc	2023	*Sustainability Report*	Financial Service	https://www.zenithbank.com/sustainability_report_2022/index.html https://www.zenithbank.com/csr/
83	Guaranty Trust Holding Co. (GTCO)	2024	*ESG Report*	Financial Service	https://gtco-plc.files.svdcdn.com/production/csr-reports/2020-report/CSR_Report_2020.pdf?dm=1621916430
84	FBN Holdings Plc (FirstBank Group)	2023	*Sustainability Report*	Financial Service	https://www.firstbanknigeria.com/downloads/FBNHCo_2023_Sustainability_Report.pdf
85	United Bank for Africa Plc (UBA)	2023	*Annual Sustainability & Responsibility Report*	Financial Service	https://www.ubagroup.com/wp-content/uploads/2024/07/UBA-ANNUAL-SUSTAINABILITY-REPORT-2023.pdf
86	Stanbic IBTC Holdings Plc	2022	*CSV & Sustainability Report*	Financial Service	https://www.stanbicibtcbank.com/static_file/Nigeria/nigeriabank/Downloads/Stanbic%20IBTC%20Holdings%20Sustainability%20Report%202022.pdf
87	Fidelity Bank Plc	2023	*Sustainability Summary Report*	Financial Service	https://www.fidelitybank.ng/documents/Fidelity_Bank_Sustainability_Climate_Report_2023.pdf
88	FCMB Group Plc	ND	*Sustainability Report*	Financial Service	https://www.fcmb.com/sustainability/index.html
89	Sterling Bank Plc	2022	*Sustainability Initiatives Summary*	Financial Service	https://sterling.ng/wp-content/uploads/2023/11/Sustainability-Report-2022-fvd-1.pdf
90	Wema Bank Plc	2023	*Sustainability & Impact Report*	Financial Service	https://wemabank.com/csr file:///C:/Users/PC/Downloads/638578649205448897_2023_sustainability_report-Wema_Bank.pdf
91	Union Bank of Nigeria Plc	2019	*CSR & Environmental Report*	Financial Service	https://indd.adobe.com/view/cfa5ed03-e7c1-4078-bee5-a867f18ee4dd

92	Jaiz Bank Plc	2022	*Sustainability Report*	Financial Service	https://jaizbankplc.com/wp-content/uploads/2023/06/YEAR-2022-JAIZ-SUSTAINABILTIY-REPORT.pdf
93	Coronation Merchant Bank Ltd	2023	*CSR Overview*	Financial Service	https://www.coronationmb.com/about-us/corporate-social-responsibility/
94	Development Bank of Nigeria (DB N)	ND	*Sustainability Overview*	Financial Service	https://www.devbankng.com/sustainability
95	LAPO Microfinance Bank Ltd	2022	*Sustainability Report*	Financial Service	https://www.lapo-nigeria.org/sustainability
96	AIICO Insurance Plc	2022	*CSR and ESG Overview*	Financial Service	https://www.aiicoplc.com/about-us/corporate-social-responsibility-csr
97	Leadway Assurance Co. Ltd	2024	*Sustainability Highlights*	Financial Service	https://leadwayholdings.com/esg/
98	AXA Mansard Insurance Plc	2020	*Sustainability Report*	Financial Service	https://corporate.axamansard.com/strategy-and-committments/environmental-and-social-management-system/
99	Custodian Investment Plc	2021	*ESG Report*	Financial Service	https://custodianplc.com.ng/csr-foundation
100	NEM Insurance Plc	2020	*Annual Report*	Financial Service	https://nem-insurance.com/nem-reports/2020annual.pdf

Appendix B: Instrument of Data Collection

CRITERIA AND ATTRIBUTES FOR EVALUATING BIODIVERSITY PRIORITIZATION, CONSERVATION, AND INCLUSION IN SUSTAINABILITY REPORTS

CRITERIA	ATTRIBUTES	EXPLANATION
1. Integration of Biodiversity Conservation into Business Strategy	1. Biodiversity Policy	Presence of a formal corporate biodiversity or sustainability policy.
	2. Materiality and Risk Assessments	Inclusion of biodiversity in business risk and materiality assessments.
	3. Cross-functional Integration	Biodiversity is integrated across departments, not isolated to ESG teams.
	4. Biodiversity KPIs and Targets	Use of measurable biodiversity targets (e.g., % habitat restored).
	5. Strategic Value Recognition	Business acknowledges biodiversity as essential to ESG and operations.
2. Management and Prevention of Biodiversity Impacts	6. Mitigation Hierarchy Use	Clear application of avoid–minimize, restore–offset.
	7. Avoidance of Protected Areas	Site selection deliberately avoids protected areas (e.g., national parks, forest reserves).
	8. Avoidance of Threatened Species	Operations are planned to prevent negative impacts on the IUCN Red List or locally endangered species.
	9. Habitat Disturbance Prevention	Operational controls to prevent habitat fragmentation or pollution.
	10. Biodiversity Emergency Plans	Emergency response plans that address biodiversity-specific risks.
3. Protection, Restoration, and Enhancement	11. Land Restoration	Active rehabilitation of degraded ecosystems.
	12. Conservation Projects	Participation in species conservation or habitat management efforts.
	13. Ecological Corridors	Support for wildlife corridors and habitat connectivity.
	14. Native Species Use	Use of indigenous species in all restoration or greening projects.
	15. Biodiversity Action Plans (BAPs)	Existence of site-specific or company-wide BAPs with goals, actions, and monitoring mechanisms.
4. Monitoring, Evaluation, and Scientific Data Use	16. Baseline Assessments	Pre-project ecological studies to establish benchmarks.
	17. Indicator-based Monitoring	Tracking of biodiversity metrics like species richness or habitat extent.
	18. Use of Conservation Data	Incorporation of IUCN Red List, KBAs, or spatial biodiversity data into planning.
	19. Science Partnerships	Collaborations with universities, NGOs, or conservation experts.
	20. Transparent Reporting	Public or stakeholder disclosure of monitoring outcomes.
5. Engagement, Participation, and Capacity Building	21. Community Involvement	Local participation in biodiversity-related decision-making.
	22. Staff Training	Biodiversity-focused capacity building across all operational levels.
	23. Stakeholder Platforms	Forums for engagement with regulators, CSOs, and communities.
	24. Indigenous Knowledge Use	Integration of local ecological knowledge into biodiversity strategies.
	25. Shared Benefits	Creation of biodiversity-linked community benefits (e.g., jobs, eco-enterprises).
6. Investment in Biodiversity and Accountability	26. Biodiversity Budget	Allocated budget for biodiversity protection, monitoring, and restoration.
	27. Research Support	Support for biodiversity science, research, and applied conservation.
	28. Innovation Incentives	Funding or deploying technologies that reduce biodiversity impacts.
	29. Alignment with Global Standards	Compliance with GRI 304, TNFD, SDG 15, CBD, or IFC PS6.
	30. Natural Capital Accounting	Valuation of ecosystem services and biodiversity in financial decisions.