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Environmental Legal Frameworks and Practices for Attaining Sustainable Development Goals in Nigeria and Saudi Arabia

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Abstract

Environmental conservation, ecological system and climate resilience are core aspects for achieving sustainable development goals (SDGs) in various countries including Nigeria and Saudi Arabia. However, there is less focus of attention for an in-depth and comparative analysis of legal frameworks on environmental conservations and practices towards strengthening mechanisms for achieving sustainable development goals (SDG) in Nigeria and Saudi Arabia. This paper therefore tries to investigate specific environmental legal frameworks and practices that would enhance SDGs in both countries. Content analysis (CA) was part of qualitative research was used on secondary data. Hence, various databases, library resources, and Google Scholar were used to explore relevant scholarly studies. Visualization of Similarities (VOS) was employed to identify the themes through the employment of a search strategy. The results demonstrated that both Nigeria and Saudi Arabia have specific environmental legal frameworks such as Environmental Impact Assessment Act, Harmful Waste Act, and the Climate Change Act which are meant for environmental conservation and climate change resilience. However, various initiatives regarding sustainable development goals (SDGs), laws regulating environmental protection and management transparent legal and regulatory framework and integrating indigenous practices with modern legal frameworks are highlighted to be strengthened in both countries. It is therefore suggested that stakeholders should partake actively in the efficiency and compliance of legal frameworks on environmental laws and regulations in improving environmental conservation, ecology and climate change in order to achieve overall SDGs in Nigeria and Saudi Arabia.

Keywords: Legal Frameworks, Sustainable Development Goals (SDGs), Environmental Impact Assessment Act, Harmful Waste Act, and the Climate Change Act.

Introduction

Nigeria in Sub-Sahara Africa and Saudi Arabia in South-East Asia have bilateral relationship in various sectors of economy. Undoubtedly, the preservation of global ecosystems and the conservation of natural resources are made to imperative in both countries towards attainment of sustainable development goals (SDGs) in general as well as in order to address health and welfare related challenges in the present and to envisage the future in particular. Thus, the advocacy for future requires future that fulfill the needs for achieving sustainable development through effective implementation of laws and regulations in various countries including Nigeria and Saudi Arabia (Clune and Zehnder, 2018). This is due to the fact that contemporary society places significant importance on environmental sustainability. The 2030 Agenda epitomizes the result of a comprehensive and all-encompassing deliberative process in the annals of humanity.

The 17 Sustainable Development Goals (SDGs) are characterized by their bold, sweeping, and ambitious nature, having been embraced by global leaders as crucial components of the desired

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sustainable future; a future where the world is reshaped for the benefit of all individuals (Morton, Pencheon and Squires, 2017). These objectives are intricately connected, such that progress towards one goal can facilitate advancements in others. Consequently, a holistic policy framework is essential for the attainment of the SDGs, one that carefully navigates the interconnections and trade-offs involved in pursuing specific courses of action. Given the high stakes involved, urgent transformation is imperative (Nunes, Lee and O'Riordan, 2016). The motivation for this study evolves from the fact that both Nigeria and Saudi Arabia have provided various legal frameworks for environmental sustainability and there is for an in-depth exploration and analysis of the framework towards strengthening the mechanisms and initiatives for sustainable development goals (SDGs) in the two countries.

Sustainability and law intersect in various complex ways, presenting both challenges and opportunities for fostering sustainable development. The integration of environmental regulations and commercial law plays a crucial role in shaping business practices towards sustainability, emphasizing the transition from mere compliance to strategic innovation and competitive advantage by prioritizing various activities within the organization (Ranängen, Cöster, Isaksson and Garvare, 2018). Legal frameworks need to adapt to facilitate parties in working towards a more sustainable society, especially in areas like land use that significantly impact climate change and equality (Singh and Rahman, 2021). The concept of sustainability, as defined by the Brundtland Commission, highlights the importance of meeting present needs without compromising the ability of future generations to meet their own needs, underscoring the evolving role of law in promoting sustainability globally. Legal institutions must undergo substantial transformations to align with sustainability goals, addressing challenges posed by traditional concepts like private property and civil liability.

The lack of international cooperation hinders efforts to address global sustainability issues by impeding the operationalization of commitments established in declarations and treaties. International cooperation is crucial for revitalizing global partnerships and achieving sustainable development goals, necessitating coordinated networks between countries to push cooperation beyond traditional aid frameworks (Van-Tulder, 2021). The role of law in promoting cooperation is evident in over 300 international agreements incorporating sustainable development objectives, guiding judicial decisions and fostering sustainability considerations in rulings (Calabrese, Costa, Gastaldi, Ghiron and Montalvan, 2021). Effective integration of sustainability goals across various governance levels requires tailoring strategies to fit regional and local contexts, emphasizing the importance of environmental law and international cooperation in promoting sustainable development (Williams and Robinson, 2020). Various governmental bodies worldwide have implemented an array of environmental statutes and policies to tackle issues surrounding climate change, pollution, and resource exhaustion.

Nonetheless, the extent of comparative analysis of proactive steps regarding the strategies for the alignments of legal frameworks in attaining sustainability goals in both Nigeria and Saudi Arabia remains obscured in the cursory literature. This study therefore attempts to fill this gap in the existing body of knowledge. Nonetheless, there is a gap in the cursory literature in the recent time to address this from comparative study between Nigeria and Saudi Arabia. The novelty of this study manifests from the fact that specific legal frameworks on environmental sustainability are comparatively analysed between Nigeria and Saudi Arabia. Thus, this study attempts to explore adherence to the environmental regulations in both countries which are important for attaining overall sustainable development goals. This paper therefore explores the interplay between environmental legislation and sustainable corporate behaviours, underscoring

the legal duties that corporations which targets to fulfill the protection of the environment and ensure a sustainable future in Nigeria and Saudi Arabia.

Literature Review

This part presents review of relevant literature relating to triadic aspects namely: An Overview of Sustainability Framework, Sustainable Development Goals in Nigeria and Saudi Arabia and Legal frameworks on Environmental Laws and Regulations in Nigeria and Saudi Arabia. Each of these is elucidated in the subsequent sub-headings.

An Overview of Sustainability Framework

The sustainability framework is crucial for achieving success in sustainability endeavours in the contexts of Nigeria and Saudi Arabia. It is essential to establish a robust, efficient, and scalable framework along with action plans in achieving vision 2030 by both countries. The sustainability framework used in this study tires to serve as a strategy for overall sustainability discourse in Nigeria and Saudi Arabia. It should be reiterated that the two countries have outlined the vision, strategy, goals, and objectives of sustainability, ensuring alignment with the Sustainable Development Goals (SDGs). In so doing, specific attention is given to the comparative assessment of legal frameworks on environmental protection in the contexts of Nigeria and Saudi Arabia in order to achieve the overall objectives of sustainable SDGs through the view-lens of legal provisions. A comprehensive sustainability framework with specific focus on environmental conservation must include essential components or various aspects such as air, land, water, forests, and wildlife etc. must be explicitly elaborated and they must comply with legal frameworks on environmental sustainability as literature contends (Griggs, et al., 2014). The Sustainability Framework (SF) serves as the cornerstone of a sustainability strategy through the enhancement of collaborative efforts aim to guarantee the impactful, scalable, and effective nature of overall SDGs using information communication technology as its framework (Betti, Consolandi and Eccles, 2018). The experts are expected to diligently assess sustainability objectives and goals in general and in connection with environmental conservation in particular in order to gain a deeper comprehension of the effective implementation and sustainable legal frameworks on environmental conservation (Leal Filh et al., 2021).

Subsequent discussions on the environmental laws and regulation by ascertaining clarity regarding sustainability vision in both Nigeria and Saudi Arabia. Undoubtedly, this study proposes that it is necessary for collaborative efforts among the stakeholders in order to refine and formulate efficient mechanisms for the attainment of environmental sustainability objectives and goals, identifying strategic and operational focus areas as literature contends (Abeysekera, 2022). This collaborative effort would surely lead to a well-defined pathway for achieving short-term and long-term goals on environmental conservation in order to achievement sustainability in both countries. Similarly, leveraging profound expertise in sustainable development goals and their associated targets would ensure alignment between ESG goals and relevant sustainable development goals (SDGs). This study meticulously examines specific laws and regulations (i.e., Environmental Impact Assessment Act, Harmful Waste (Special Criminal Provision) Act, and the Climate Change Act) to meet the criteria specified for environmental sustainability in both countries. It is important to note that specialized knowledge on environmental conservation would aids in crafting attainable and scalable key performance indicators (KPIs) by instilling confidence in the overall sustainability progress as literature contends (Dale, Efroymson, Kline and Davitt, 2015). It is therefore essential to actively explore legal frameworks on environmental laws and regulations towards achieving sustainable development for the overall progress in

Sustainable Development Goals in Nigeria and Saudi Arabia

In Nigeria, key legal frameworks and institutions addressing sustainability issues include laws regulating environmental protection and management, such as those governing oil and gas activities in the Niger Delta region (Babatunde, Ekundayo, Udejaja and Abubakar, 2022). Additionally, there is a need for legal and institutional frameworks to combat the COVID-19 pandemic and climate change, as highlighted by the importance of sustainable health and the incorporation of such frameworks in Nigeria's response. The country also faces challenges and opportunities for sustainable development, emphasizing the importance of aligning national financing objectives with the United Nations' Sustainable Development Goals and having a transparent legal and regulatory framework to attract international financing (Olubusola et al., 2024). Furthermore, the legal status of sustainable development in Nigeria's legal system has been examined, tracing its roots back to international instruments and national laws. Integrating indigenous practices with modern legal frameworks and fostering stakeholder dialogue are recommended strategies for sustainable conservation efforts in the region (Echendu, 2022).

To effectively preserve Nigeria's ecological system and natural wealth, a multi-faceted approach is essential. Key strategies include enhancing biodiversity conservation through robust legal frameworks and community engagement, as highlighted in a comprehensive review of conservation strategies in Nigeria (Ukpoju, Abatan, Obaedo, Balogun and Adegbite, 2023). Additionally, implementing green fiscal policies, such as carbon taxation and green bonds, can redirect financial resources towards environmental sustainability. Cultural practices, particularly those rooted in indigenous knowledge, should also be integrated into modern conservation efforts, as they have historically contributed to ecosystem preservation. Furthermore, addressing environmental degradation in the petroleum industry through stricter regulations and criminalization of harmful practices is crucial for safeguarding natural resources (Muoghalu and Akanwa, 2021). Finally, raising awareness and understanding of biodiversity among both professionals and the general public is vital for fostering a culture of conservation. Collectively, these strategies can significantly enhance Nigeria's ecological resilience and sustainability (Iyiola and Valbo-Jørgensen, 2023).

To improve waste disposal practices in Nigeria, several effective strategies can be implemented. First, the adoption of smart bins integrated with Internet of Things (IoT) technology can enhance waste management efficiency by allowing for real-time monitoring and optimization of waste collection processes, thereby reducing congestion and labour costs (Iorliam, Iorliam and Bum, 2021; Amani, Muhammad and Kamaleldin, 2023). Second, addressing infrastructural inadequacies is crucial; many areas suffer from insufficient waste collection services and storage facilities, which leads to improper disposal methods such as burning and open dumping. Furthermore, public awareness and education campaigns are essential to promote compliance with waste management regulations and encourage behavioural changes among residents. Collaborative efforts involving government, non-governmental organizations, and local communities can foster innovative solutions and improve enforcement of existing environmental laws, particularly concerning plastic pollution (Obidimma and Azubuike, 2023). Overall, a multi-faceted approach that combines technology, infrastructure development, education, and stakeholder collaboration is vital for sustainable waste disposal practices in Nigeria.

The promotion of a sustainable environmental legal framework under Nigeria's Vision 2030 can significantly impact the country's economic development by fostering a balance between

resource exploitation and environmental protection. Research indicates that the oil and gas sector, crucial for Nigeria's economy, suffers from inadequate regulations leading to severe environmental degradation and health issues, which in turn hampers economic growth (Urhie Afolabi, Afolabi, Matthew, Osabohien and Ewetan, 2020). Implementing stringent environmental standards can mitigate these impacts, promoting sustainable practices that enhance job creation and property values. Furthermore, integrating traditional conservation methods with modern legal frameworks can strengthen environmental advocacy, thereby improving compliance and fostering community engagement in sustainable practices (Raimi, 2020). However, challenges such as outdated laws and weak institutional capacities must be addressed to ensure effective implementation. Overall, a robust legal framework can drive economic growth while ensuring environmental sustainability, ultimately contributing to a more resilient economy in Nigeria.

In Nigeria, effective government initiatives to achieve Sustainable Development Goals (SDGs) include the implementation of the capability approach, enhancing volunteerism, and reforming tax and monetary policies. The capability approach emphasizes the importance of addressing inequalities, particularly for marginalized groups such as women, to ensure their voices are included in development processes (Ndubuka and Rey-Marmonier, 2019). Volunteering has emerged as a vital mechanism for grassroots development, significantly impacting areas like health and education, although it faces challenges that need addressing for optimal performance. Furthermore, effective tax policies are crucial for maximizing revenue generation, which can fund essential services and reduce economic disparities. Lastly, monetary policy adjustments, such as increasing money supply and domestic credit while managing interest rates, are essential for fostering economic growth and achieving SDGs (Jothr, Jummaa and Ambariyani, 2023). However, systemic issues like corruption and inadequate budget allocations hinder progress, necessitating urgent reforms in governance and accountability.

The initiatives of the Ministry of Economy and Planning (MEP) in Nigeria, particularly through the Economic Recovery and Growth Plan (ERGP), have had a mixed impact on achieving the Sustainable Development Goals (SDGs). While the ERGP aims to restore economic growth and enhance competitiveness, its effectiveness has been limited, with insufficient improvements in GDP growth, inflation, and unemployment rates. Additionally, the integration of SDGs into national policies has shown partial progress, with significant challenges remaining in implementation and addressing systemic issues like inequality and corruption. Moreover, specific initiatives such as energy audits and efficiency measures can significantly enhance electricity access, aligning with SDG 7, by promoting energy conservation and the use of renewable resources. However, the capability approach highlights that social policies must also address the needs of marginalized groups, particularly women, to ensure that SDGs translate into meaningful improvements in well-being. Overall, while MEP initiatives have potential, substantial gaps in execution and inclusivity hinder their effectiveness in achieving sustainable development in Nigeria.

A coordinated approach between the public and private sectors in Nigeria can significantly enhance the implementation of climate change mitigation and adaptation strategies. Public-Private Partnerships (PPPs) are crucial for mobilizing private investment and expertise, particularly in developing clean energy infrastructure, which is essential for reducing reliance on fossil fuels and improving energy access in underserved areas. The integration of Internet of Things (IoT) technology can further bolster these efforts by enabling real-time data collection and analysis, facilitating better resource management and disaster response. Additionally,

employing data mining techniques can help identify effective, evidence-based strategies tailored to Nigeria's unique vulnerabilities, such as promoting renewable energy and climate-smart agricultural practices. However, challenges such as regulatory complexities and corruption must be addressed to create an enabling environment for these collaborations. Ultimately, a synergistic approach that combines public governance with private sector innovation is vital for achieving sustainable climate resilience in Nigeria.

Furthermore, Vision 2030 embodies a sustainable outlook for the future of Saudi Arabia, with a strong focus on sustainability permeating all aspects of the Kingdom's endeavours, spanning from policy formulation and financial investments to urban planning and infrastructure development (Abubakar and Dano, 2020). The preservation of the nation's ecological system and natural wealth stands as a key strategic goal, reflecting our obligation to forthcoming generations and the fundamental role these resources play in enhancing our daily lives (Agboola, Bekun and Joshua, 2021). Saudi Arabia is actively engaged in efforts aimed at safeguarding its environment by enhancing the efficacy of waste disposal practices, initiating extensive recycling schemes, curtailing various forms of pollution, and combatting the spread of deserts. The Saudi vision entails the safeguarding and enhancement of the country's natural surroundings through an integrated approach to the protection of invaluable ecosystems. Vision 2030 is promoting sustainable agricultural methods throughout the Kingdom, aiming to furnish citizens and residents with secure access to premium-quality local produce, while simultaneously upholding water equilibrium, conserving natural resources, safeguarding indigenous plant species crucial for wildlife sustenance and habitat, fostering biodiversity restoration, and advocating for the implementation of eco-friendly energy schemes and initiatives nationwide (Islam and Ali, 2024). The Kingdom has solidified its reputation as a frontrunner in the realm of environmental sustainability endeavours through the introduction of a myriad of pioneering initiatives and large-scale projects.

In addition to the aforementioned, Saudi Arabia is dedicated to accomplishing the sustainable development goals (SDGs) and gives utmost importance to this pursuit, aligned with the Kingdom's specific context and national principles. Through a Royal Decree, the Minister of Economy and Planning is tasked with overseeing and coordinating with relevant bodies on the Sustainable Development Goals' agenda (Nasraldin Mandeli, 2019). Within this responsibility, the Ministry of Economy and Planning (MEP) has recently collaborated with domestic stakeholders to establish its national action-oriented sustainability roadmap to advance the achievements towards the SDGs. The Saudi Green Initiative focuses on enhancing Saudi Arabia's utilization of clean energy, offsetting emissions, and safeguarding the environment, in accordance with Vision 2030, with the goal of enhancing quality of life and safeguarding future generations (Rahman et al., 2022).

As a prominent global energy provider, Saudi Arabia is devoted to making a positive contribution to the global battle against climate change. Since the inception of Vision 2030, Saudi Arabia has made significant strides in addressing its distinct environmental challenges, yet there is still much work to be done (Sayfayn, 2018). The Saudi Green Initiative supervises Saudi Arabia's efforts in combating climate change, promoting comprehensive societal engagement, and fostering collaboration between the public and private sectors to accelerate climate action. The Saudi Green initiative aims to plant 10 billion trees — equivalent to rehabilitating 200 million hectares of degraded land — which accounts for 4 percent of the global endeavour to reverse land degradation and 1 percent of the global initiative to plant one trillion trees. As part of the strategy, 30 percent of the kingdom's territory — amounting to 600,000

square kilometers — will be designated as protected areas, with a focus on preserving coastal environments (Jayakrishnan, 2023).

Saudi Arabia has implemented various fiscal measures to encourage sustainable practices in the nation, such as optimizing subsidies in the energy sector to enhance energy efficiency, improve the energy mix, and redirect fiscal savings towards more sustainable development projects. Saudi Arabia has initiated actions to promote sustainable financing, with the National Centre for Privatization, Invest Saudi, and the Islamic Development Bank playing a pivotal role in enhancing the private sector's involvement in facilitating sustainable financing in the country (Ahmed, Mohieldin, Verbeek and Aboulmagd, 2015). Additionally, there are several development funds in Saudi Arabia that typically concentrate on issues pertinent to sustainable development, including the Agricultural Development Fund, the Saudi Industrial Development Funds (SIDF), and the Social Development Bank (Nurunnabi, 2017; Faye Alanazi, 2024).

Legal frameworks on Environmental Laws and Regulations in Nigeria and Saudi

Arabia

This section explains the comparativeness of legal frameworks regarding laws and regulations put in place to safeguard the environment in both Nigeria and Saudi Arabia. Undoubtedly, environmental laws and regulations, which vary across different countries, share the common goal of safeguarding the environment, human well-being, and natural resources. These laws encompass a broad spectrum of subjects including waste management, habitat preservation, air and water quality, and emission control. There are important legal frameworks on environmental laws and regulations in Nigeria and Saudi Arabia. For instance, Chapter II of the Nigerian Constitution, as amended, stipulates that government entities in the legislative, executive, and judicial branches must adhere to and implement the principles of environmental laws and regulations outlined in Chapter II. Notably, Section 20 identifies the enhancement and conservation of Nigeria's air, land, water, forests, and wildlife as state objectives as literature contends (Oyebode, 2018). This constitutional provision signifies a crucial step towards addressing environmental concerns within the country. However, despite the recognition of environmental protection in the Constitution, there are challenges such as air and water pollution, deforestation, and poor waste management that continue to impact the environment and the population. Furthermore, Section 12 dictates that any international agreements ratified by the National Assembly must be domesticated as laws in Nigeria, encompassing agreements related to environmental issues (Giangrande et al., 2019). The Constitution's focus on environmental matters underscores the importance of sustainable development, which encompasses environmental, economic, and social objectives. Efforts to enforce environmental rights in Nigeria face constitutional challenges, particularly regarding justiciability, but there is a growing momentum to recognize and enforce these rights as fundamental human rights (Ogunkan, 2022).

In Nigeria, legal frameworks on environmental laws and regulations are crucial for addressing pollution and promoting sustainable development. The National Environmental Standards and Regulations Enforcement Agency (NESREA) plays a significant role in enforcing regulations that focus on Cleaner Production Technologies in industries to mitigate pollution (Ite, Ufot, Ite, Isaac and Ibok, 2016). Additionally, the country's efforts to diversify its economy through mining and mineral exploration highlight the need for stringent laws to prevent environmental damage and ensure compliance with international best practices. However, challenges such as outdated laws, weak institutional capacity, and inadequate funding hinder effective enforcement of environmental standards, emphasizing the importance of strengthening regulatory agencies

and promoting compliance with existing laws (Olokesusi, 1998). Furthermore, legal advocacy and collaboration with NGOs and regulatory bodies are essential for bolstering environmental protection and conservation efforts in regions like South West Nigeria, where traditional practices and modern legal frameworks can work together to achieve sustainable conservation goals. In Nigeria, there is no overarching legislation or institution solely dedicated to environmental laws and sustainable practices (Tijani, 2021).

Further still, legal frameworks on environmental laws and regulations in Saudi Arabia are crucial for promoting sustainability and accountability. Studies highlight the significance of legal liability in environmental protection, emphasizing the role of laws in enforcing environmental responsibilities and reducing pollution (Alturki, 2015). Additionally, research underscores the integration of climate change risks and sustainability goals within Saudi Arabia's financial regulatory framework to enhance green finance initiatives aligned with Vision 2030. The gap between environmental legal regulations and their implementation in Saudi Arabia is explored, with practical mechanisms provided to strengthen environmental safety and promote sustainable development (Alqaisi and Almutairi, 2024). Furthermore, the legal nature of building permits is discussed as essential administrative licenses that regulate urban development and preserve the civilized character of cities and towns, aligning with the public interest and promoting sustainable urban development. Overall, these studies emphasize the critical role of legal frameworks in addressing environmental pollution, promoting sustainable practices, and ensuring the protection of ecological systems and public health (Erin, Bamigboye and Oyewo, 2022).

Saudi Arabia's environmental sustainability efforts significantly influence its economic development and international reputation. The country's reliance on energy production has spurred economic growth but also led to increased environmental pollution, highlighting a tension between economic expansion and sustainable practices. Research indicates that while urbanization and technological innovation can reduce the ecological footprint, energy consumption and economic growth often exacerbate environmental degradation. Moreover, the limited emphasis on sustainability disclosures among Saudi companies reflects a broader lack of regulatory pressure to address environmental impacts, which may hinder the country's international reputation as a responsible actor in global sustainability efforts. However, initiatives like green financing in national banks show potential for aligning economic and environmental goals, suggesting a pathway for improved sustainability practices. Overall, while Saudi Arabia's economic development is robust, its environmental sustainability efforts require more cohesive integration to enhance both its economic resilience and international standing.

Methodology

The methodological approach utilized in this study involves conducting content analysis as part of qualitative research. Prior research has majorly relied on theoretical reviews literature in order to establish linkages among various studies on different aspects such as small-scale businesses and entrepreneurship (Kraus, Mahto and Walsh, 2023). Nonetheless, there has been a noticeable lack of focus on systematic literature reviews in studies related to the comparative analysis of environmental legal frameworks and practices in the contexts of Nigeria and Saudi Arabia. This inquiry seeks to fill this gap by utilizing content analysis of cursory literature to comparatively assess environmental legal frameworks and practices in Nigeria and Saudi Arabia with the target of aligning with the sustainability goals. The study thoroughly scrutinizes and explains various academic research using content analysis (CA). Specifically, it evaluates studies concerning

policies relating to environmental legal frameworks and practices in both Nigeria and Saudi Arabia. The study explored numerous databases, library resources, and Google Scholar to pinpoint pertinent and relevant scholarly publications. Visualization of Similarities (VOS) was applied to identify the principal themes of the study. By employing language analysis as a search strategy on environmental legal frameworks and sustainability goals, the prime sub-themes were identified on environmental legal frameworks namely: Environmental Impact Assessment Act, Harmful Waste (Special Criminal Provision) Act, and the Climate Change Act while regarding sustainable development goals (SDGs), laws regulating environmental protection and management transparent legal and regulatory framework and Integrating indigenous practices with modern legal frameworks were extensively elucidated. A total of ninety-two (92) articles were meticulously selected and examined as secondary sources for this study. The meticulous comparative analysis carried out in this study thoroughly elucidates the research findings. This research makes a significant contribution to the broader literature on environmental legal frameworks and practices by providing valuable insights and guiding future empirical research in the fields of sustainable environmental conservation in the two countries.

Results and Discussion of Findings

This part explicates on the overall results of the study with the focus on the existence of specific laws relating to environmental protection and sustainability in Nigeria and Saudi Arabia, some of which are: Environmental Impact Assessment Act, Harmful Waste (Special Criminal Provision) Act, and the Climate Change Act. Each of these is elucidated in the subsequent subheadings.

Environmental Impact Assessment Act in Nigeria and Saudi Arabia

The Environmental Impact Assessment Act, commonly referred to as EIA, outlines the procedures for considering environmental impacts in both public and private projects. Several provisions within the EIA aim to prevent environmental crises. For example, Section 2(1) mandates the evaluation of projects with anticipated significant negative environmental impacts. Section 2(4) requires applicants to seek approval from the Agency before commencing projects by submitting an environmental assessment. Additionally, section 60 establishes legal accountability for violations of the Act. The Environmental Impact Assessment (EIA) Act in Nigeria plays a crucial role in identifying, preventing, and minimizing adverse environmental impacts from construction projects (Ibrahim, Sani, Gado, Ibrahim, Sulaiman and Zungum, 2020). EIA is a vital tool for sustainable development, especially in the face of increasing urbanization and industrialization that pose threats to the environment. Studies have highlighted various barriers to effective EIA implementation in Nigeria, such as unstable regulatory regimes, inadequate data availability, and poor public knowledge of legal issues. Additionally, compliance with EIA guidelines by industries in cities like Aba is influenced by factors like weak public participation, ignorance, and the cost of compliance (Orumo, Elokhin and Ksenofontov, 2021). Despite these challenges, EIA remains essential for promoting sustainable development and ensuring that projects consider environmental impacts for a more sustainable future. The Environmental Impact Assessment (EIA) Act in Nigeria plays a crucial role in mitigating environmental degradation by identifying, predicting, and evaluating the environmental effects of proposed actions and projects to ensure sustainable development. However, challenges exist in the effective implementation of EIA, such as inadequate public knowledge of legal issues, unstable regulatory regimes, and poor provision of information, which hinder its full potential in preventing adverse environmental impacts (Nwoko, 2013).

Despite efforts to integrate Environmental, Social, and Health Impact Assessment (ESHIA) to manage projects sustainably, deficiencies in screening, scoping, public participation, and monitoring persist, limiting the EIA's effectiveness in achieving sustainable development goals. Enhancements in EIA approval authorities' capacity, EIA quality, public participation, and government policies are meant to strengthen the EIA process and ensure its alignment with sustainable development objectives through the instrumentality of legal framework for environmental conservation (Emelie, 2019).

The Environmental Impact Assessment (EIA) Act in Nigeria plays a crucial role in addressing the challenges of sustainable development by identifying, preventing, and minimizing adverse environmental impacts caused by development projects. The Act serves as a legislative and scientific tool that aids decision-making for sustainable development, ensuring that projects are executed in a manner that is safe, affordable, accessible, and environmentally sustainable (Erhun, 2015). By conducting EIAs, stakeholders can assess the potential impacts of projects on the environment, thus promoting sustainable development practices that align with international agreements on environmental protection. Additionally, the Act helps in maintaining environmental biodiversity and conserving natural resources, contributing to the overall goal of achieving environmental sustainability in Nigeria (Ingelson and Nwapi, 2014). Non-compliance with the Environmental Impact Assessment (EIA) Act in Nigeria has significant implications for environmental conservation. Studies reveal that factors such as weak public participation, ignorance, ineffective legal systems, high compliance costs, and poor coordination contribute to non-compliance with EIA guidelines by industries in cities like Aba (Owoyemi and Bamigboye, 2013). Additionally, the improper siting of Petroleum Filling Stations (PFSs) near residential areas poses risks to human health and the environment due to non-compliance with established norms and criteria (Chime, 2024). Furthermore, research comparing environmental sustainability in Nigerian oil and gas companies highlights the economic consequences of non-compliance, with only a portion of entities complying with various environmental regulations (Torisola-Coker, Alaka, Bello, Ajayi, Adeniyi and Olopade, 2021). Barriers to EIA implementation for construction projects in Nigeria, such as unstable regulatory regimes and inadequate data, further emphasize the challenges posed by non-compliance with EIA regulations on environmental conservation (Babatunde, Ekundayo, Udejaja and Abubakar, 2022). Addressing these issues through improved legal frameworks, public awareness, and stakeholder involvement is crucial for promoting environmental conservation in Nigeria.

Furthermore, The Environmental Impact Assessment (EIA) Act in Saudi Arabia plays a crucial role in evaluating the environmental consequences of various activities. Studies in Saudi Arabia have highlighted the importance of EIA in assessing the impacts of events like the global outbreak of COVID-19, climate change, political conflicts. Additionally, research emphasizes the significance of conducting Radiological Environmental Impact Assessments (REIAs) for projects like nuclear power plants to analyse potential radiological impacts on the environment and population (Maglas, Najjar, Qiang, Ali, Ahmed and Alwarqi, 2024). Furthermore, investigations into rock-cutting activities in Makkah city underscore the detrimental effects on the environment and residents, such as air pollution from silica dust particles and noise pollution. These studies collectively stress the necessity of robust EIA regulations and their effective implementation to safeguard the environment and public health in Saudi Arabia. The Environmental Impact Assessment (EIA) Act in Saudi Arabia plays a crucial role in evaluating the potential environmental consequences of proposed projects, ensuring sustainable development and environmental safety (Alshuwaikhat and Mohammed, 2017). Studies have

highlighted the importance of conducting Radiological Environmental Impact Assessments (REIAs) for projects like nuclear power plants to assess the impact of radioactive releases on the environment and population (El-Taher, Alshahri and Elsaman, 2018). Additionally, the country faces challenges due to industrial waste generation and high reliance on oil resources, leading to pollution issues that necessitate a comprehensive approach for waste management and pollution control which has undoubtedly serve as impediment to implementation of environmental policies in Saudi Arabia (Algamdy, 2022). The EIA Act's scope encompasses various sectors, including energy, industry, and infrastructure, aiming to mitigate environmental risks and promote sustainable practices tailored to local contexts, ultimately contributing to global environmental initiatives. Non-compliance with the Environmental Impact Assessment Act in Saudi Arabia can have significant implications for businesses and individuals. Research highlights that the gap between environmental regulations and their implementation in Saudi Arabia is influenced by administrative, regulatory, financial, and cultural factors, leading to limited environmental disclosures in corporate reporting by promoting conducive environment for business (Alshowish, 2016). Failure to adhere to environmental laws can result in legal challenges, hindering environmental protection efforts and sustainability practices, ultimately affecting accountability and the preservation of resources for future generations. Moreover, a lack of awareness of environmental, social, and governance (ESG) practices among small and medium enterprises (SMEs) in Saudi Arabia can impede their sustainability performance, impacting various stakeholders such as managers, investors, policymakers, and the community at large (Alomari and Heffron, 2021). The Environmental Impact Assessment (EIA) Act in Saudi Arabia plays a crucial role in evaluating the potential environmental consequences of proposed projects, ensuring sustainable development and environmental safety using legal environmental principles as literature posits (Alomari and Heffron, 2023). Studies have highlighted the importance of conducting Radiological Environmental Impact Assessments (REIAs) for projects like nuclear power plants to assess the impact of radioactive releases on the environment and population. Additionally, the country faces challenges due to industrial waste generation and high reliance on oil resources, leading to pollution issues that necessitate a comprehensive approach involving waste management, recycling, and promoting green practices in industries (Alyazidi, 2016). Despite economic priorities, recent research emphasizes the significance of pro-environmental factors in influencing sustainable consumption and pollution control behaviours among local residents, indicating the need for increased environmental awareness and policy interventions to address rising pollution rates.

Harmful Waste Act in Nigeria and Saudi Arabia

The Harmful Waste Act prohibits the unauthorized transportation, disposal, or deposit of harmful waste in Nigeria's air, soil, or water bodies without a valid permit. The management of harmful waste in Nigeria faces significant challenges due to indiscriminate disposal practices, particularly with solid waste, plastic pollution, hazardous waste, and environmental degradation from crude oil exploitation (Abdel-Shafy and Mansour, 2018). The existing legislation in Nigeria regarding waste management is inadequate, leading to environmental harm, health risks, and legal loopholes that fail to address the severity of the issue (Eaton, 2017). Hazardous wastes, including industrial, medical, and household wastes, are often dumped without proper management, posing threats to public health and the environment. To address these challenges effectively, there is a pressing need for new and robust legislation that criminalizes harmful waste practices, enforces proper waste management techniques, and aligns with global best practices to ensure a sustainable environment for future generations (Umeokafor, Isaac, Jones

The Harmful Waste Act encompasses key provisions aimed at regulating hazardous waste management to enhance environmental sustainability. It defines hazardous waste, which includes toxic substances from various sources such as power plants, healthcare facilities, and industries, and emphasizes the need for proper treatment and disposal methods to mitigate health risks and environmental contamination (Ishaq, Said, Azman, Abdulwahab and Alfa, 2022). The Act promotes sustainable waste management practices, urging countries to establish limits on waste production and improve recycling and treatment processes to prevent landfill overflow in Nigeria. Furthermore, it encourages manufacturers to adopt product take-back regulations, fostering industrial ecology and reducing hazardous waste generation at the source (Nwachukwu, Orji and Ugbogu, 2013). However, challenges remain, such as the need for stable product designs and the potential for secondary environmental issues if not managed effectively. Overall, the Act's provisions are crucial for minimizing hazardous waste impacts and promoting a sustainable environment through comprehensive management strategies.

However, the implementation of the Harmful Waste Act in Nigeria faces significant challenges, primarily due to gaps between legislative intent and practical enforcement. Despite the existence of various environmental regulations, including the Harmful Waste Act, the actual management of hazardous waste remains inadequate (Ike, Ezeibe, Anijiofor and Daud, 2018). Key issues include limited resources, insufficient monitoring, and lax compliance, which hinder effective regulation and lead to indiscriminate dumping of hazardous materials, posing serious public health and environmental risks. Moreover, while there are ongoing efforts to strengthen institutional frameworks and enhance public awareness regarding hazardous waste disposal, these initiatives are often undermined by a lack of political and financial support for enforcement agencies (Salami, Adegite, Bademosi, Lawal, Olutayo and Olowosokedile, 2019). Consequently, the current state of implementation is characterized by a disconnect between established laws and their enforcement, necessitating a more proactive approach to ensure compliance and protect human health and the environment (Edemadide, 2023).

The effectiveness of the Harmful Waste Act in reducing environmental pollution in Nigeria is significantly hindered by various challenges. While the Act, alongside other regulations like the NESREA Act, aims to address pollution, its implementation faces obstacles such as inadequate enforcement, limited resources, and a gap between legislative intent and practical application (Mantu, 2019). Research indicates that mere subsidiary legislation is insufficient to combat pollution effectively; instead, a robust enforcement framework and synergy among regulatory bodies are essential. Furthermore, the criminalization of environmentally harmful practices is necessary to enhance compliance, particularly in sectors like petroleum, where pollution is rampant due to ineffective regulation. Although environmental taxes have shown promise in influencing pollution control positively, the overall regulatory framework requires significant strengthening to achieve meaningful reductions in environmental pollution in Nigeria (Rotimi, 2021). Thus, while the Harmful Waste Act is a step in the right direction, its impact remains limited without comprehensive enforcement and institutional collaboration.

Onwards, in Saudi Arabia, various types of harmful waste, including medical waste, food waste, heavy metals from industrial activities, and electronic waste, pose significant environmental and health risks are explicitly elaborated (Nasraldin Mandeli, 2019). The mismanagement of these wastes can lead to serious consequences for public health, the environment, and sustainable development efforts. To address this issue, there is a pressing need for the implementation of a

comprehensive Harmful Waste Act in Saudi Arabia. Such legislation should focus on proper waste management practices, raising public awareness about the impacts of waste generation and disposal, and encouraging behavioural changes to reduce waste production (Hadidi, Ghaithan, Mohammed and Al-Ofi, 2020). By enacting stringent regulations and promoting sustainable waste management practices, Saudi Arabia can mitigate the adverse effects of harmful waste on society and the environment, ensuring a cleaner and healthier future for all. The Harmful Waste Act in Saudi Arabia addresses the significant issue of waste management, particularly focusing on industrial and hazardous waste generated in the country. This act emphasizes the importance of recycling, reusing, and adopting a "waste to wealth" approach to mitigate environmental burdens caused by waste production and fossil fuel burning (Tsuchimoto and Kajikawa, 2022). Additionally, the act aims to educate human resources in industrial sectors to promote a greener ecosystem and reduce pollution in various forms. The management of hazardous waste in Saudi Arabia is a critical issue addressed by various studies. The Harmful Waste Act plays a significant role in regulating and managing biomedical waste, solid waste, and electronic waste in the region. Studies highlight the lack of awareness among healthcare professionals and the general public regarding the risks associated with improper waste handling (Alahmari and Alshagrawi, 2024). Additionally, the rapid population growth in cities like Bisha has led to an increase in solid waste, necessitating the implementation of smart waste management systems (Alqahtani, Alswailem, Alshabragi and Sherif, 2022). Furthermore, the inefficient disposal of solid waste in Riyadh has prompted the need for innovative waste management strategies, focusing on waste reduction, recycling, and proper disposal to mitigate environmental and financial consequences. The generation of electronic waste in Saudi Arabia is also a growing concern, emphasizing the importance of establishing formal collection systems and efficient management practices to ensure sustainable development and environmental protection (Abdullah et al., 2022). Non-compliance with the Harmful Waste Act in Saudi Arabia can lead to severe consequences such as public health risks, environmental pollution, and economic burdens. Improper handling of medical waste can result in serious infections and harm to both the public and the environment, especially due to the increased use of single-use disposable items in healthcare facilities. Additionally, the inappropriate disposal of unused or expired medications can jeopardize healthcare staff, patients, and contribute to environmental contamination. To mitigate these risks, it is crucial to enhance social awareness, implement proper waste management practices, educate the community on safe disposal methods, and establish medication disposal programs (Saeedi, Visvizi, Alahmadi and Babour, 2023). Furthermore, adopting a "waste to wealth" approach in industrial sectors, promoting recycling and reuse, and enforcing environmental laws effectively can help reduce pollution and create a greener ecosystem in Saudi Arabia (Madkhali, Duraib, Nguyen, Prasad, Sharma and Joshi, 2023).

Climate Change Act in Nigeria and Saudi Arabia

The Climate Change Act operates as a legal framework advocating for inclusive green growth and sustainable economic development, with the objective of decreasing greenhouse gas emissions. Directors of Nigerian companies are required by the Companies and Allied Matters Act (CAMA) to adhere to environmental regulations, including assessing their company's impact on the local environment (Oludoro, 2014). Businesses are legally obligated to comply with environmental legislation at various levels - local, national, and international - by obtaining licenses, disclosing emissions, and meeting specific requirements for emissions, waste management, and water usage (Olujobi, Ufua, Okorie and Ogbari, 2022). Failure to adhere to

these laws can result in fines, legal consequences, and harm to a company's reputation. Prior to undertaking specific projects, corporations in numerous jurisdictions must carry out Environmental Impact Assessments (EIAs) to identify and address environmental risks. Implementing the suggested measures from these assessments is crucial for companies to minimize their environmental footprint. Sustainable management of natural resources, as mandated by law, entails responsibly sourcing raw materials, using energy and water efficiently, and reducing waste. This approach not only enhances environmental protection but also brings about cost savings and improved long-term profitability. Certain regions may impose legal requirements on companies regarding product and supply chain sustainability, such as adhering to labelling standards and ensuring vendors comply with labour and environmental regulations as literature contends (Suleiman, Raimi and Sawyerr, 2019). Failure to meet these standards can lead to legal consequences and dissatisfaction among customers. Businesses bear considerable legal responsibilities concerning environmental liability, as they may be financially accountable for cleanup costs, restoration efforts, and compensating affected parties if their operations cause environmental harm (Edna Ateboh and Raimi, 2018). To mitigate this risk, many companies opt to purchase pollution liability insurance. Embracing sustainable practices and abiding by environmental regulations provide benefits beyond mere legal compliance, including a positive reputation, attraction of environmentally conscious investors and consumers, cost savings through reduced resource usage, opportunities for innovation, and a competitive advantage that can result in new partnerships and market prospects as literature affirms (Brown, 2022).

Similarly, Saudi Arabia is actively addressing climate change through various initiatives and strategies. The country aims to achieve net-zero greenhouse gas emissions by 2060, with a focus on direct air carbon capture and storage (DACCS) as a critical technology for meeting this target (Qiu, Iyer, Fuhrman, Hejazi, Kamboj and Kyle, 2024). Additionally, the impact of climate change on water resources and agriculture in Saudi Arabia is a growing concern, with projections indicating increased irrigation water requirements and potential crop area reductions due to rising temperatures and evapotranspiration levels (Alhejaili, 2024). Furthermore, there is a push towards integrating climate change risks and sustainability goals within Saudi Arabia's financial regulatory framework to enhance green finance initiatives aligned with Vision 2030, highlighting the importance of embedding sustainability in the financial sector and addressing challenges and opportunities within the global context of sustainable finance (Almulhim and Al-Saidi, 2023; Amuda and Alabdulrahman, 2023). Saudi government has taken proactive step through multifarious initiatives such as the Establishment of National Environmental Centers (The National Center for Meteorology, the National Center for Vegetation Cover and Combating Desertification, the National Center for Environmental Compliance, and the National Center for Wildlife). Indeed, the establishment of National Environmental Centers, including specialized centers for meteorology, vegetation cover, environmental compliance, and wildlife, enhances the country's capacity for environmental research and conservation (Abubakar and Dano, 2020). Similarly, the introduction of the National Environment Strategy demonstrates a strategic approach to addressing environmental challenges and promoting conservation efforts. In addition, the introduction of integrated waste management and recycling activities in Riyadh underscores the city's efforts to reduce waste and promote a circular economy. The creation of Special Forces for Environmental Security demonstrates the government's recognition of the importance of protecting the environment and natural resources. The launch of the Environmental Fund provides financial support for environmental projects and initiatives aimed at sustainability and conservation efforts (Alshuwaikh HM, Mohammed, 2017). These efforts underscore Saudi Arabia's commitment to mitigating climate change and transitioning towards

a more sustainable future.

Legal frameworks and policies that support sustainable development and mitigate environmental degradation are multifaceted and vary across jurisdictions (Rehman and Tanzila, Muhammad, Suliman, Saeed, and Huma, 2022). A comparative analysis of domestic and international legal frameworks reveals significant strengths and weaknesses in addressing environmental pollution, emphasizing the need for enhanced cooperation and coordination to tackle transboundary issues effectively. Furthermore, the intersection of environmental law and sustainability highlights the critical role of legal mechanisms in promoting climate resilience and protecting natural resources, particularly in the face of escalating environmental challenges (Abunadi, Amjad, Khalid, Lorena, and Jaime, 2022). Institutional frameworks are also vital, as they provide the necessary support for implementing sustainable development goals, with some countries demonstrating effective institutional arrangements while others are still developing them (Amuda and Alabdulrahman, 2023). In Asia, diverse legal instruments exist to combat land degradation, yet their fragmented execution limits their effectiveness. Overall, a comprehensive approach that integrates robust legal frameworks, effective institutions, and international cooperation is essential for advancing sustainable development and mitigating environmental degradation (Fatma and Imran, 2023).

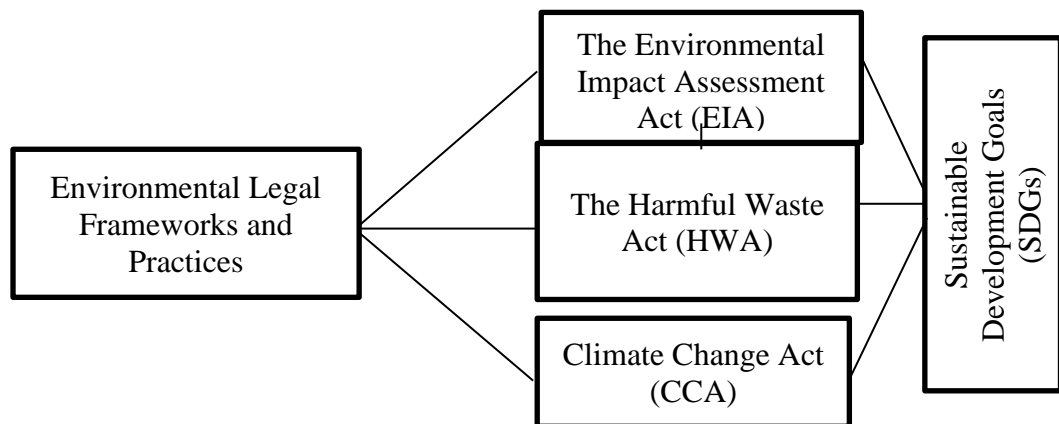


Figure 1: Conceptual Framework of the Study (Coined from: Abunadi, Amjad, Khalid, Lorena and Jaime, 2022; Rehman, Tanzila, Muhammad, Suliman, Saeed and Huma, 2022; Amani, Muhammad and Kamaleldin, 2023; Amuda and Alabdulrahman, 2023; Fatma and Imran, 2023; Fayeze Alanazi, 2024).

Conclusion and Suggestions

This paper has explicitly elaborated on specific environmental legal frameworks, laws and regulations with the target of strengthening the identified frameworks for achieving sustainable development goals (SDGs) in Nigeria and Saudi Arabia. environmental regulations and sustainable business practices are closely intertwined, with companies carrying significant legal obligations to protect the environment and ensure their long-term viability. Compliance with these laws can lead to cost savings, innovation, and a positive public image. It is imperative for businesses to recognize their pivotal role in shaping a sustainable future and to take their legal

responsibilities seriously amidst global environmental challenges. The research has elucidated the sustainability framework through the implementation of effective and efficient action plans designed to facilitate the achievement of Vision 2030, in accordance with the Sustainable Development Goals (SDGs) within the contexts of Nigeria and Saudi Arabia. More precisely, this paper has placed significant emphasis on the legislative and regulatory frameworks pertaining to environmental protection and management within these two nations. Nonetheless, specific legal structures were scrutinized in the analytical discourse of this study. It has been ascertained that both Nigeria and Saudi Arabia possess the Environmental Impact Assessment Act (EIA) as a critical instrument for sustainable development, especially in light of the increasing urbanization and industrialization that present substantial threats to environmental integrity. Likewise, the investigation extended to the Harmful Waste Act in both nations, with particular emphasis on the observation that the current legislative environment in Nigeria concerning waste management is deficient, resulting in environmental degradation, health hazards, and legislative gaps. Conversely, in Saudi Arabia, a multitude of harmful waste types—including medical waste, food waste, heavy metals from industrial operations, and electronic waste—pose considerable environmental and health challenges. Reiteratively, the study articulated the importance of the Climate Change Act in both Nigeria and Saudi Arabia as a component of efforts aimed at bolstering environmental protection within these countries. The limitation of this study lies on total reliance on secondary data; however, it has provided a substantial direction for future studies in using empirical and primary data for investigating legal frameworks on environmental protections in Nigeria and Saudi Arabia. Therefore, the following suggestions are provided:

1. That stakeholders should be engaged to provide feedback on the efficient compliance of legal frameworks on environmental laws and regulations with sustainability goals in both Nigeria and Saudi Arabia.
2. Legal experts should be involved in strengthening the frameworks for fulfilling legal compliance relating to conservation, ecology and climate in both countries.
3. That Nigeria and Saudi Arabia should engage experts in environmental conservation in order to create effective review the sustainability frameworks in both countries.
4. That key performance indicators relating to environmental conservation, ecological system and climatic resilience should be developed to assess and report on environmental sustainability progress in both countries.
5. That it is important to utilize various channels, including digital platforms to deliver effective strategies for environmental sustainability in both countries.
6. That Nigeria and Saudi Arabia should support effective mechanisms for the implementation of sustainability initiatives that would align with industry best practices and foster standards.
7. It is important to enhance management and transparency of legal and regulatory frameworks as well as integrating indigenous practices with modern legal frameworks in achieving SDGs in both countries.
8. By implementing the provisions of the Harmful Waste Act, Nigeria and Saudi Arabia can work towards achieving a more sustainable environment, aligning with global environmental initiatives and promoting a healthier living environment for citizens.

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