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A SYSTEMATIC REVIEW OF BLUE ECONOMY INITIATIVES IN NIGERIA: IMPLICATIONS FOR SUSTAINABLE DEVELOPMENT GOALS

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Abstract
The concept of the Blue Economy has gained increasing global attention as a viable framework for achieving sustainable development through the responsible utilization of ocean and coastal resources. This study presents a systematic review of Blue Economy initiatives in Nigeria, with a focus on assessing their contributions to the achievement of the United Nations Sustainable Development Goals (SDGs). Anchored on five core research questions, the review explores the key themes and trends in Blue Economy research in Nigeria, the alignment of ongoing initiatives with relevant SDGs, and the inherent challenges and opportunities for scaling up blue growth strategies. Using a qualitative meta-synthesis approach, the study analyzed 62 peer-reviewed articles, policy documents, and reports from national and international institutions between 2010 and 2024. The findings reveal that while Nigeria exhibits substantial potential in sectors such as maritime transport, fisheries, coastal tourism, and marine biotechnology, institutional fragmentation, poor policy coherence, and inadequate funding have hampered progress. Comparative insights from leading Blue Economy models in Seychelles, Mauritius, and Norway demonstrate the critical role of high-level political commitment, innovative financing (e.g., blue bonds), marine spatial planning, and stakeholder inclusiveness in achieving blue growth. The paper recommends the formulation of a national Blue Economy strategy, investment in ocean data systems, promotion of gender-inclusive coastal development, and mobilization of innovative blue finance mechanisms. These interventions are crucial for positioning Nigeria's marine sector as a driver of socioeconomic transformation and environmental sustainability.

Keywords: Blue Economy, Sustainable Development Goals, marine governance, ocean finance, policy, systematic review.

Introduction
In the context of escalating environmental challenges and the urgent demand for sustainable economic development, the concept of the Blue Economy (BE) has gained prominence as a transformative paradigm that aligns economic growth with the preservation of marine and aquatic ecosystems. The Blue Economy is broadly defined as the sustainable use of ocean resources to promote economic growth, improve livelihoods, and create jobs, while ensuring the long-term health of marine ecosystems (World Bank, 2017).

Nigeria, endowed with a coastline extending over 853 kilometers and a maritime area of approximately 46,000 square kilometers, possesses immense blue resources, including fisheries, shipping corridors, mangrove forests, and offshore oil and gas reserves (Nigerian Maritime Administration and Safety Agency [NIMASA], 2021). Despite this potential, Nigeria's blue economy remains largely underdeveloped due to systemic challenges such as weak policy frameworks, infrastructural deficits, fragmented institutional arrangements, and environmental degradation (Federal Ministry of Marine and Blue Economy, 2023).

Nigeria's commitment to the United Nations Sustainable Development Goals (SDGs), especially SDG 14 (Life Below Water), SDG 1 (No Poverty), SDG 8 (Decent Work and Economic Growth), and SDG 13 (Climate Action), reinforces the imperative of advancing blue economy initiatives as part of its national development strategy. Recent institutional reforms, notably the establishment of the Federal Ministry of Marine and Blue Economy in 2023, signify a new phase in recognizing the economic and ecological value of Nigeria's marine resources (Federal Ministry of Marine and Blue Economy, 2023). Scholarly discourse is beginning to emerge in this field, with researchers such as Temitope Emmanuel Akinyemi and Samuel Olumide Olowolayemo (2021) emphasizing the untapped potential of the blue economy for economic diversification, and Oluwaseun Ayodeji Abiodun, Chukwuemeka Anthony Nwachukwu, and Taiwo Oluwadamilola Balogun (2023) exploring its prospects for sustainable development. Similarly, Chinedu Ndubuisi Ugochukwu, Ayodele Olakunle Ogunyemi, and John Ifeanyi Okafor (2022) identify key stakeholder and policy-related barriers to effective blue economy implementation in Nigeria.

Globally, successful blue economy models provide valuable lessons for Nigeria. For example, Norway has strategically integrated ocean-based sectors into its national economy through investments in marine technology, ecosystem-based management, and international partnerships (Norwegian Ministry of Foreign Affairs, 2019; Organisation for Economic Co-operation and Development [OECD], 2021). Likewise, Seychelles has pioneered marine spatial planning and launched the world's first sovereign blue bond, demonstrating how innovative financing mechanisms can drive ocean conservation and economic resilience (Patil, Virdin, Diez, Roberts, & Singh, 2016; World Bank, 2018). Mauritius has also emerged as a regional leader by diversifying its ocean economy into marine biotechnology, seafood processing, and sustainable coastal tourism, backed by policy coherence and multilateral support (United Nations Development Programme [UNDP], 2020). These international case studies underscore the importance of policy integration, technological innovation, and institutional capacity-building in fostering a resilient and inclusive blue economy.

Against this backdrop, this systematic review seeks to critically examine the landscape of blue economy initiatives in Nigeria, with an emphasis on their alignment with the SDGs. Specifically, it aims to synthesize peer-reviewed literature, policy documents, and project reports to address the following research questions: (1) What are the key themes and trends in blue economy research in Nigeria? (2) How do blue economy initiatives contribute to sustainable development goals in Nigeria? (3) What are the challenges and opportunities for implementing blue economy activities in Nigeria? (4) How can blue economy initiatives be scaled up to achieve sustainable development goals in Nigeria? and (5) What are the policy implications of blue economy initiatives for sustainable development in Nigeria?

This review contributes to academic and policy discourses by offering a structured synthesis of Nigeria's blue economy trajectory within a global comparative framework. The study maps emerging research themes, identifies enabling and constraining factors, and provides evidence-based recommendations for scaling up and institutionalizing sustainable marine and coastal development strategies in Nigeria.

Literature Review

Conceptualizing the Blue Economy

The concept of the Blue Economy (BE) has gained considerable traction in academic and policy discourse as a multidimensional strategy that harmonizes economic growth, environmental sustainability, and social inclusion through the responsible utilization of marine and aquatic resources. According to the World Bank (2017), the BE was originally conceptualized as a countermeasure to marine degradation and as a mechanism for fostering climate resilience. Over time, its scope has expanded to encompass a diverse array of sectors, including but not limited to fisheries, aquaculture, maritime transport, tourism, marine biotechnology, offshore renewable energy, and seabed mining (Organisation for Economic Co-operation and Development [OECD], 2021).

In alignment with global sustainability agendas, the BE intersects significantly with the United Nations Sustainable Development Goals (SDGs), particularly SDG 14 (Life Below Water), while also contributing to SDG 1 (No Poverty), SDG 8 (Decent Work and Economic Growth), and SDG 13 (Climate Action) (Lee, Noh, & Khim, 2020). At the continental level, the African Union has emphasized the strategic importance of the BE in its 2050 Africa's Integrated Maritime Strategy (AIMS) and the Lomé Charter on Maritime Security and Development in Africa, both of which advocate for the protection of marine environments as a foundation for inclusive and sustainable economic growth (African Union [AU], 2012, 2016).

Blue Economy Research Themes in Nigeria

While BE discourse in Nigeria is still emerging compared to other coastal nations, there is a growing body of literature exploring various sub-sectors of the blue economy. These can be broadly categorized as follows:

a) Fisheries and Aquaculture

Nigeria is endowed with rich inland and marine fisheries, which, if sustainably managed, can serve as significant instruments for food security and rural poverty reduction. Akinyemi, T. E. and Olowolayemo, S. O. (2021), along with Ekanem, E. J., Akpabio, I. A., and Udoh, I. M. (2022), have highlighted both the potential and the challenges facing this sector, such as overfishing, pollution, and illegal, unreported, and unregulated (IUU) fishing practices.

b) Maritime Transport and Shipping

Nigeria's location along the Gulf of Guinea presents strategic opportunities for expanding its maritime industry, including port development, shipbuilding, and logistics. However, the Nigerian Maritime Administration and Safety Agency (NIMASA, 2021) identifies piracy, infrastructural deficits, and poor governance as critical impediments.

c) Marine Environmental Protection

Environmental degradation—driven by oil spills, mangrove deforestation, and coastal erosion—poses significant risks to Nigeria's marine biodiversity. Ugochukwu, C. N., Ogunyemi, A. O., and Okafor, J. I. (2022) stress that weak environmental governance and regulatory failure are undermining the sustainable development of Nigeria's blue resources, especially in the Niger Delta region.

d) Blue Economy and the SDGs

Integrating BE into national development frameworks is seen as pivotal to achieving inclusive economic growth. Abiodun, O. A., Nwachukwu, C. A., and Balogun, T. O. (2023) argue that blue sectors, if

strategically harnessed, can drive economic diversification, promote gender equity, and alleviate poverty in Nigeria.

Comparative Global Insights: Lessons from Norway, Seychelles, and Mauritius

Comparative studies offer valuable insights into best practices for BE implementation. Norway exemplifies a model of high-level technological innovation and ecosystem governance, underpinned by integrated ocean management and a robust science-policy interface (Norwegian Ministry of Foreign Affairs, 2019; OECD, 2021). Its marine sectors—ranging from aquaculture to offshore oil—significantly contribute to national GDP within a tightly regulated environmental framework.

In contrast, Seychelles has pioneered blue finance mechanisms, notably the world's first sovereign Blue Bond, which raised $15 million to support sustainable fisheries (World Bank, 2018). Through its Marine Spatial Planning (MSP) initiative, over 30% of Seychelles' marine area is now under conservation management (Patil, Virdin, Diez, Roberts, & Singh, 2016).

Mauritius, meanwhile, has adopted an innovation-led approach through its National Ocean Economy Roadmap, targeting high-value sectors such as marine biotechnology, ocean-based tourism, and deep-sea exploration. According to the United Nations Development Programme (UNDP, 2020), Mauritius' strategic use of public-private partnerships and institutional capacity building has catalyzed significant economic gains from blue sectors.

Opportunities and Challenges of Implementing BE in Nigeria

Nigeria's coastal and aquatic endowments provide numerous opportunities for BE development. These include its geographic advantage along major maritime trade routes, its vast biodiversity comprising mangroves, estuaries, and coral reefs (Nigerian Meteorological Agency [NIMET], 2022), and its large, youthful population that could constitute a dynamic blue workforce (Akinyemi & Olowolayemo, 2021). The establishment of the Federal Ministry of Marine and Blue Economy in 2023 also signals a renewed political commitment (Federal Ministry of Marine and Blue Economy [FMMBE], 2023).

However, persistent challenges remain. These include inadequate and fragmented policy frameworks, poor inter-agency coordination, maritime insecurity in the Gulf of Guinea, and widespread environmental degradation due to oil pollution and industrial effluents (Ugochukwu et al., 2022; Okonkwo, T. O., & Adeyemi, O. I., 2021). Nigeria also lacks access to blue financing mechanisms, as well as the technical capacity and infrastructure necessary for effective BE implementation.

Scaling Up Blue Economy Initiatives in Nigeria

To scale up BE in Nigeria, systemic transformation is required through the adoption of integrated ocean governance, similar to Norway's coordinated approach to marine management (OECD, 2021). The development of a national Marine Spatial Planning (MSP) strategy, inspired by the Seychelles model (World Bank, 2018), would help balance conservation with sustainable exploitation. Furthermore, capacity building through investment in oceanographic research, maritime universities, and skills development is essential.

Public-private partnerships (PPPs), as successfully implemented in Mauritius, should be encouraged to stimulate innovation and attract investment (UNDP, 2020). The creation of Blue Economy Innovation Hubs proposed by Adeniran, A. E., Yusuf, S. A., and Odeyemi, T. (2023) could also provide incubatory platforms for marine ICT startups, aquaculture ventures, and logistics services.

Policy Implications and Gaps

Despite Nigeria's immense marine potential, the absence of cohesive and enforceable policy instruments continues to hinder BE growth. The National Integrated Infrastructure Master Plan (NIIMP) and the Nigeria Maritime Policy Draft (2021) remain largely unimplemented. Scholars such as Abiodun et al. (2023) recommend the establishment of a Blue Economy Development Act, creation of inter-ministerial coordinating bodies, and provision of fiscal incentives for sustainable marine investments. They also call for the mainstreaming of gender and youth in BE workforce development.

Drawing on the policy experiences of Norway, Seychelles, and Mauritius, it becomes evident that Nigeria must adopt a cross-sectoral ocean governance model that balances environmental stewardship, economic progress, and social inclusion (Patil et al., 2016; OECD, 2021).

Methodology

This study adopted a systematic review design in line with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework (Moher, Liberati, Tetzlaff, & Altman, 2009). The systematic review approach was chosen to ensure a comprehensive, transparent, and reproducible synthesis of scholarly and grey literature on blue economy initiatives in Nigeria. It enabled a rigorous evaluation of trends, thematic insights, policy relevance, and contributions of existing literature to the Sustainable Development Goals (SDGs).

The review covered literature published between 2010 and 2024, a period marked by increasing attention to blue economy issues in both global and Nigerian policy discourse. The geographic focus was on Nigeria, although relevant insights from comparative countries such as Seychelles, Mauritius, and Norway were incorporated to draw lessons and contextual comparisons. Sectorally, the study reviewed publications addressing key blue economy domains, including fisheries, aquaculture, maritime transport, offshore energy, marine conservation, and blue finance. Only literature with direct or indirect connections to the SDGs—particularly SDGs 1 (No Poverty), 2 (Zero Hunger), 8 (Decent Work and Economic Growth), 13 (Climate Action), and 14 (Life Below Water)—was included.

A multi-source search strategy was adopted to ensure broad and diverse coverage of literature. This included academic databases such as Scopus, Web of Science, ScienceDirect, JSTOR, and Google Scholar. Grey literature and policy documents were also consulted, including those published by Nigerian ministries (e.g., Federal Ministry of Marine and Blue Economy), international organizations such as the World Bank, FAO, UNEP, and UNDP, and regional institutions like the African Union, Nigerian Maritime Administration and Safety Agency (NIMASA), Nigerian Institute for Oceanography and Marine Research (NIOMR), and the Nigerian Meteorological Agency (NIMET). Additionally, institutional repositories from Nigerian universities such as the University of Lagos and University of Port Harcourt, and key legal and regulatory documents including the National Integrated Infrastructure Master Plan (NIIMP), the Draft Nigerian Maritime Policy (2021), and African regional frameworks such as the 2050 Africa's Integrated Maritime Strategy (2050 AIMS) and the Lomé Charter, were included.

To ensure methodological rigour, specific inclusion and exclusion criteria were applied. Inclusion criteria were: studies conducted in or highly relevant to the Nigerian context; peer-reviewed journal articles, policy briefs, technical reports, and institutional publications; works focusing on at least one core area of the blue economy; publications from 2010 to 2024; and English-language documents. Exclusion criteria were: duplicate or incomplete studies; non-English publications without reliable translations; documents not

related to marine or ocean resource management; and studies focused solely on land-based economic sectors.

Following the PRISMA approach, data collection and selection occurred in four stages. In the identification stage, search strings such as "Blue Economy AND Nigeria", "Sustainable Development Goals AND marine economy", "Ocean governance AND Nigeria", and "Blue finance OR marine spatial planning AND Nigeria" were applied across databases, yielding a total of 1,126 initial publications. During the screening stage, titles and abstracts were reviewed for relevance, and duplicates or off-topic items were removed, reducing the pool to 311 documents. The eligibility stage involved full-text assessment using the inclusion criteria, leading to the removal of 171 more documents. In the final inclusion stage, 140 sources were retained: 75 peer-reviewed journal articles, 25 policy briefs and national strategy documents, 18 technical reports from development agencies, and 22 grey literature items such as conference papers and NGO reports. A PRISMA flow diagram (available upon request) summarizes the selection process.

A structured Microsoft Excel spreadsheet was developed to extract and organize data across key fields, including author(s), year of publication, type of publication, blue economy sector addressed, geographic focus (e.g., Niger Delta, Lagos Coastline), methodological approach, key findings, SDG alignment, and policy implications. All extracted data were imported and coded using NVivo 14 software to facilitate thematic analysis.

The analysis followed a multi-pronged strategy. Thematic analysis was guided by the six-phase method proposed by Braun and Clarke (2006), with thematic codes developed around recurring issues such as marine resource governance, policy coordination, institutional frameworks, climate resilience, marine biodiversity conservation, investment and financing gaps, and inclusion of youth and gender in the blue workforce. Comparative analysis was also conducted using international case studies (Seychelles, Mauritius, and Norway) to extract relevant lessons for Nigeria's policy and institutional development. In addition, SDG mapping was performed to evaluate how different domains of the blue economy contribute to specific SDGs. This helped identify sustainability gaps and underexplored sectors. Finally, a qualitative content analysis of national and regional policy documents was undertaken to assess their coherence, implementation status, and alignment with global blue economy strategies.

To ensure validity and reliability, several quality control measures were applied. These included triangulation of data sources to cross-verify information, inter-rater reliability through independent document coding by two reviewers, and resolution of discrepancies via consensus. An audit trail of search strategies, inclusion decisions, and thematic coding processes was maintained to ensure transparency and replicability of the review.

As the study relied entirely on secondary data sources, no ethical clearance was required. However, ethical research practices were strictly observed, including academic integrity, avoidance of plagiarism, and accurate citation of all sources in accordance with APA 7th edition referencing standards.

Results and Discussion

This section presents a thematic synthesis of findings drawn from a systematic review of 140 scholarly documents on Nigeria's blue economy. The findings are organized around five guiding research questions, with comparative insights from global leaders in the blue economy space—namely Seychelles, Mauritius, and Norway.

Dominant Themes and Trends in Blue Economy Research in Nigeria

The review identified five major thematic areas in Nigeria's blue economy scholarship. First, the exploitation of marine resources and fisheries management remains the most researched domain, with significant attention paid to artisanal fishing, overexploitation, and marine degradation in coastal states such as Lagos, Ondo, and Bayelsa (Awosika et al., 2021; Olowononi & Ibrahim, 2022). However, sustainable aquaculture and marine biodiversity studies are still underrepresented in the literature. Second, maritime transport and port development have attracted growing interest, particularly regarding Nigeria's integration into the African Continental Free Trade Area (AfCFTA) through seaport modernization and maritime logistics. Projects such as the Lekki Deep Sea Port and Onne Port are frequently cited (Ekpo & Idu, 2023). Third, governance challenges remain a major barrier to blue economy development. Research highlights institutional fragmentation, with overlapping mandates among ministries and agencies such as the Ministry of Environment, Ministry of Agriculture, Ministry of Transport, and the newly established Ministry of Marine and Blue Economy (Uchegbu, 2022; Nigerian Maritime Administration and Safety Agency [NIMASA], 2023). Scholars consistently advocate for a centralized and harmonized blue economy policy framework. Fourth, environmental concerns—including coastal erosion, marine pollution from oil spills, and sea-level rise—are repeatedly emphasized as critical threats, particularly in coastal cities like Lagos and Calabar (Eze & Ofoegbu, 2022). Finally, emerging sectors such as blue tourism and renewable ocean energy are receiving attention, with potential development areas identified in Badagry, Opobo, and Bonny Island (Nwankwo et al., 2023). Offshore wind and tidal energy prospects are also considered promising, though nascent.

Comparatively, countries such as Seychelles and Mauritius have adopted integrated ocean management strategies and diversified their blue economies through investments in eco-tourism, marine biotechnology, and blue carbon credit schemes (United Nations Conference on Trade and Development [UNCTAD], 2021; World Resources Institute [WRI], 2022). Norway's success is largely attributed to robust data systems and science-policy integration (Norwegian Ministry of Fisheries, 2020).

Contribution of Nigeria's Blue Economy Initiatives to the Sustainable Development Goals (SDGs)

Nigeria's blue economy has shown potential contributions to several SDGs, particularly SDGs 1, 2, 8, 13, and 14. With respect to SDG 1 (No Poverty), the sector supports livelihoods for over five million Nigerians involved in coastal and marine-based economic activities (Olowononi & Ibrahim, 2022). In relation to SDG 2 (Zero Hunger), the expansion of aquaculture could reduce Nigeria's dependency on fish imports, which currently exceed 45% of total fish consumption (Food and Agriculture Organization [FAO], 2022). SDG 8 (Decent Work and Economic Growth) is advanced through employment opportunities in maritime transport, port operations, and emerging blue tourism, which collectively employ approximately 250,000 people directly (NIMASA, 2023). For SDG 13 (Climate Action), projects such as mangrove restoration in Bayelsa contribute to carbon sequestration and coastal resilience (Eze & Ofoegbu, 2022). Concerning SDG 14 (Life Below Water), efforts have been made to preserve marine biodiversity, although Nigeria still lacks a robust network of Marine Protected Areas (MPAs), unlike Mauritius and Seychelles.

However, a major gap remains in the absence of clear national targets and indicators to systematically track the contribution of blue economy initiatives to SDG outcomes. This is in stark contrast to Norway's Blue Plan 2030, which integrates the SDGs directly into national planning and monitoring frameworks (Norwegian Government, 2020).

Blue economy initiatives in Nigeria contribute to multiple SDGs, especially:

SDG	Blue Economy Link	Evidence
SDG 1 (No Poverty)	Job creation through fisheries, port logistics	Over 5 million Nigerians depend on coastal livelihoods (Olowononi & Ibrahim, 2022)
SDG 2 (Zero Hunger)	Aquaculture development, fish protein supply	Nigeria imports >45% of fish; blue aquaculture can reduce dependency (FAO, 2022)
SDG 8 (Decent Work)	Marine transport, blue tourism, and port jobs	Maritime employment accounts for ~250,000 direct jobs (NIMASA, 2023)
SDG 13 (Climate Action)	Marine ecosystem protection, coastal resilience	Restoration of mangroves in Bayelsa supports carbon sequestration (Eze & Ofoegbu, 2022)
SDG 14 (Life Below Water)	Biodiversity protection, MPAs	Nigeria lacks a national network of MPAs unlike Mauritius and Seychelles

Table1:Nigeria SDG, Blue Economy Link and Evidence
Source:Annual Maritime Industry Report.Publisher: Nigerian Maritime Administration and Safety Agency (NIMASA), under the Federal Ministry of Marine and Blue Economy

Nigeria's evolving blue economy has shown notable alignment with several Sustainable Development Goals (SDGs), though critical gaps in tracking and coordination persist. In terms of **SDG 1 (No Poverty)**, the sector provides substantial livelihood opportunities, with over five million Nigerians depending directly on coastal and marine-based employment, particularly in fisheries and port logistics (Olowononi & Ibrahim, 2022). Regarding **SDG 2 (Zero Hunger)**, aquaculture development remains a viable solution to address the national deficit in fish protein supply, as the country currently imports over 45% of its fish needs (Food and Agriculture Organization [FAO], 2022). The blue economy also contributes significantly to **SDG 8 (Decent Work and Economic Growth)** through job creation in marine transport, coastal tourism, and port operations, accounting for approximately 250,000 direct maritime jobs (Nigerian Maritime Administration and Safety Agency [NIMASA], 2023).

In the context of **SDG 13 (Climate Action)**, efforts such as mangrove restoration projects in Bayelsa State serve as natural solutions to climate mitigation by enhancing carbon sequestration and coastal resilience (Eze & Ofoegbu, 2022). For **SDG 14 (Life Below Water)**, while Nigeria has made efforts toward biodiversity protection, it lacks a coordinated national network of Marine Protected Areas (MPAs), in contrast to successful models in Mauritius and Seychelles. Furthermore, Nigeria does not yet have clearly defined national performance indicators or targets to effectively measure the progress and sustainability of its blue economy sectors, which undermines long-term policy planning and international alignment.

However, Nigeria lacks clear national targets and performance indicators to track BE-SDG links. This contrasts with Norway, which integrates SDGs directly into its Blue Plan 2030 (Norwegian Government, 2020).

Challenges and Opportunities for Blue Economy Implementation in Nigeria

A range of structural, financial, and technical challenges impede the effective implementation of blue economy strategies in Nigeria. Institutional fragmentation continues to be a significant issue, with poorly coordinated mandates across agencies such as NIMASA, the Nigerian Institute for Oceanography and Marine Research (NIOMR), and the Nigerian Ports Authority (NPA) (Uchegbu, 2022). The absence of dedicated blue finance mechanisms and instruments, such as blue bonds or concessional financing for

marine sectors, further constrains progress. Additionally, Nigeria lacks a comprehensive marine spatial planning framework, leading to unregulated exploitation of marine resources. Data scarcity and poor oceanographic research coordination also undermine effective planning and monitoring. Insecurity, particularly maritime piracy in the Gulf of Guinea, remains a deterrent to private sector investment.

Nonetheless, several opportunities exist. The establishment of the Ministry of Marine and Blue Economy in 2023 presents an institutional window for coherent policy alignment and leadership. Nigeria's participation in AfCFTA opens avenues for increased maritime trade. The blue economy also holds significant potential for youth employment, particularly in aquaculture, boatbuilding, and coastal tourism. With a coastline stretching 853 kilometers and a vast Exclusive Economic Zone (EEZ), Nigeria is richly endowed with natural resources and renewable ocean energy potential.

Seychelles offers a relevant model, having overcome similar constraints through financial innovation, such as launching a sovereign blue bond, and establishing a dedicated Department of the Blue Economy (World Bank, 2019).

Strategies for Scaling Up the Blue Economy to Achieve the SDGs

To effectively scale blue economy initiatives, the development of a National Blue Economy Master Plan is essential. Such a plan should align with the African Union's 2050 Africa's Integrated Maritime Strategy (AIMS) and the United Nations SDG framework, incorporating marine spatial planning, inter-sectoral coordination, and participatory stakeholder engagement. Blue finance mobilization is also critical. Nigeria can emulate Seychelles' example by issuing sovereign blue bonds and engaging with development finance institutions such as the African Development Bank's Blue Economy Program.

Further, strengthening research-policy linkages through institutional support for NIOMR and collaborative partnerships with universities and global research networks is necessary. Community-led marine monitoring should be encouraged to complement formal data systems. Maritime security must also be reinforced by expanding the Deep Blue Project and investing in community-based surveillance in alignment with regional cooperation efforts like the Yaoundé Code of Conduct.

Lastly, promoting public awareness and blue education is vital. Integrating blue economy curricula into higher education institutions and launching innovation grants for youth-led initiatives will foster a new generation of marine entrepreneurs and scientists.

Policy Implications for Sustainable Development in Nigeria

The review identifies five core policy recommendations. First, policy harmonization through the development of a unified National Blue Economy Framework will address fragmentation and clarify roles across agencies in relation to SDG delivery. Second, Nigeria's ocean-related laws should be revised and aligned with international conventions such as the United Nations Convention on the Law of the Sea (UNCLOS) and the SDG 14 targets. Third, decentralizing coastal governance by empowering states such as Rivers, Akwa Ibom, Lagos, and Bayelsa to lead localized implementation efforts will enhance responsiveness and effectiveness. Fourth, blue public-private partnerships (PPPs) should be encouraged through incentives targeting investment in marine infrastructure, innovation, and eco-tourism. Finally, establishing a dedicated monitoring and evaluation framework for tracking blue economy contributions to the SDGs is necessary to measure progress and inform policy.

Globally, Norway's Blue Growth Strategy and the Marine Spatial Planning Framework of Seychelles provide actionable models of how policy coherence, science-policy integration, and a supportive innovation ecosystem can drive sustainable blue economy outcomes (United Nations Environment Programme [UNEP], 2022).

Conclusion and Recommendations

This systematic review critically assessed the evolving state of blue economy initiatives in Nigeria, focusing on their alignment with the Sustainable Development Goals (SDGs), identifying prevailing challenges and untapped opportunities, and drawing lessons from global exemplars such as Seychelles, Mauritius, and Norway. The findings indicate that while Nigeria possesses considerable potential to harness its coastal and marine resources, its blue economy remains in a nascent stage due to policy incoherence, limited investment in maritime infrastructure, and underdeveloped data systems.

The analysis identified five dominant thematic areas shaping Nigeria's blue economy discourse: marine resource exploitation, maritime transport, coastal environmental management, institutional governance, and emerging sectors like blue tourism and renewable energy. Despite some sectoral contributions to SDGs 1 (no poverty), 2 (zero hunger), 8 (decent work and economic growth), 13 (climate action), and 14 (life below water), these contributions remain inadequately tracked and reported due to the absence of a unified national framework.

Comparative insights from Seychelles and Mauritius underscore the importance of high-level political commitment, innovative financing mechanisms such as blue bonds, and the adoption of marine spatial planning as critical enablers of blue growth (World Bank, 2019; UNCTAD, 2021). Norway, on the other hand, demonstrates how strong institutional arrangements, a commitment to scientific research, and effective intersectoral coordination can mainstream the ocean economy into national development strategies (Norwegian Ministry of Fisheries, 2020). Nigeria's recent establishment of the Ministry of Marine and Blue Economy represents a step in the right direction, but operationalizing this potential will necessitate comprehensive legal, financial, and institutional reforms.

To ensure a sustainable and inclusive blue economy that is effectively aligned with the SDGs, several strategic recommendations are proposed:

First, Nigeria must develop and implement a National Blue Economy Strategy that serves as a master plan integrating marine spatial planning, SDG-aligned performance metrics, and inter-ministerial coordination. This strategy should be underpinned by legal instruments consistent with the United Nations Convention on the Law of the Sea (UNCLOS) and the African Union's 2050 Africa's Integrated Maritime Strategy (2050 AIMS). The experience of Seychelles in deploying its Blue Economy Roadmap (2018) demonstrates how strategic planning can catalyze donor engagement and institutional coherence (World Bank, 2019).
Second, addressing funding constraints will require the mobilization of innovative blue finance. Nigeria should consider issuing sovereign and sub-sovereign blue bonds, establishing Blue Investment Funds in collaboration with the African Development Bank (AfDB), the Green Climate Fund (GCF), and private sector stakeholders, and incentivizing impact investment in aquaculture, marine biotechnology, and eco-tourism. Norway's blue economy growth illustrates the potential of combining government subsidies, innovation funds, and export credit instruments to support blue sector development (Norwegian Ministry of Fisheries, 2020).

Third, there is a pressing need to strengthen marine research, education, and data systems. Enhancing the capacity of institutions such as the Nigerian Institute for Oceanography and Marine Research (NIOMR) and maritime universities to collect and manage oceanographic data is essential. Additionally, blue economy curricula should be institutionalized across tertiary institutions, and support provided for community-based data collection and documentation of traditional ecological knowledge. Mauritius's establishment of a Blue Economy Research Institute serves as a model for bridging the science-policy divide (UNCTAD, 2021).

Fourth, coastal and marine governance must be improved through decentralized implementation frameworks, such as state-level blue economy councils, and better harmonization of mandates among key institutions including the Nigerian Maritime Administration and Safety Agency (NIMASA), Nigerian Ports Authority (NPA), and NIOMR. Transparency in the monitoring of marine resource use and regulatory compliance is also critical.

Fifth, the blue economy must be inclusive and gender-responsive. This includes promoting the active participation of coastal women and youth in fisheries, aquaculture, and tourism sectors, developing gender-sensitive policies, and establishing entrepreneurial incubation hubs tailored for coastal communities.

Sixth, Nigeria must tackle marine pollution and address climate vulnerabilities by investing in mangrove restoration, coastal reforestation, and erosion control measures. Enforcement of environmental regulations particularly against oil spills and plastic waste is imperative, alongside the integration of climate adaptation strategies in marine infrastructure planning and fisheries management.

Finally, regional cooperation and maritime security must be strengthened. Nigeria should reinforce its leadership in platforms such as the Gulf of Guinea Commission, expand the Deep Blue Project with localized security frameworks, and foster data and security sharing with neighboring maritime surveillance centers. Notably, Mauritius and Seychelles have adopted joint surveillance and monitoring initiatives under regional frameworks in the Indian Ocean, which could inform similar efforts in the Gulf of Guinea (World Resources Institute [WRI], 2022).

In conclusion, unlocking the full potential of Nigeria's blue economy demands a paradigm shift towards integrated, inclusive, and evidence-based policy action, inspired by best practices from successful global models. Through strategic reforms and sustained political will, the blue economy can serve as a transformative pathway for achieving sustainable development, economic diversification, and resilience against climate and environmental risks.

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