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Blue Economy and Job Creation in Nigeria: Exploring Opportunities for Youth Employment in Marine-Based Industries

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Abstract
Nigeria's extensive maritime resources offer a trans-formative pathway for economic diversification and youth employment through the blue economy. With a coastline of over 850 kilometers and an Exclusive Economic Zone (EEZ) extending 200 nautical miles, the country is well positioned to develop marine-based industries such as fisheries, aquaculture, maritime transport, shipbuilding, coastal tourism, and offshore energy. Despite this potential, the blue economy contributes less than 4% to Nigeria's GDP, though it could generate over $70 billion annually and create more than 2.5 million jobs across value chains. The artisan fisheries sector alone supports over 8 million Nigerians but remains under-exploited due to limited infrastructure, outdated practices, and inadequate capacity development. Similarly, coastal tourism, which contributes over $1.5 trillion globally-accounts for less than 1% of Nigeria's tourism revenue, revealing a significant growth opportunity. Furthermore, the nation loses approximately $10 billion annually to illegal, unreported, and unregulated (IUU) fishing-an economic drain that could otherwise support employment and marine sustainability. Maritime transport handles nearly 90% of Nigeria's international trade by volume but suffers from infrastructural deficits and low indigenous participation. Given that over 70% of Nigeria's population is under 30 years old and youth unemployment exceeds 40%, strategic focus on blue economy sectors presents a credible solution to widespread joblessness. Realizing this potential requires targeted investments, youth-focused skill development, and inclusive policy frameworks that prioritize sustainability and local content participation. Unlocking the blue economy is not only an economic imperative but a generational opportunity for Nigeria's emerging workforce.

Keywords: Blue economy, Youth employment, Marine industries, Nigeria, Coastal development, Sustainable jobs

Introduction
The concept of the blue economy has gained significant global traction as a sustainable pathway for harnessing ocean resources to drive economic growth, environmental preservation, and social inclusion. It encapsulates all economic activities associated with oceans, seas, and coastal areas, emphasizing sustainability, innovation, and equitable participation (World Bank, 2017). Globally, the blue economy contributes an estimated $2.5 trillion annually to GDP and supports over 31 million jobs, particularly in fisheries, maritime transport, coastal tourism, and offshore renewable energy (OECD, 2016). Yet, despite the global enthusiasm, scholars like

Silver, J. J., Gray, N. J., Campbell, L. M., Fairbanks, L. W., & Gruby, R. L. (2015) argue that the blue economy is also a contested development paradigm, shaped by differing socioeconomic and political interpretations.

For developing nations such as Nigeria, which boasts a coastline stretching over 850 kilometers along the Atlantic Ocean and an Exclusive Economic Zone (EEZ) of about 200 nautical miles, the blue economy offers a trans-formative opportunity to diversify the national economy beyond its historical dependence on crude oil (Okafor & Nwankwo, 2020). Nigeria's marine and coastal endowments remain significantly underutilized, contributing less than 4% to the national Gross Domestic Product (GDP) (Nnanguma, 2025). Yet, projections suggest that full capitalization of marine-based sectors could generate over $70 billion annually and create more than 2.5 million jobs (NIMASA, 2022).

Despite this immense potential, multiple structural and institutional bottlenecks hinder Nigeria's capacity to develop a thriving blue economy. For example, the fisheries and aquaculture sector, which directly supports over 8 million individuals, is plagued by infrastructural deficits, outdated fishing techniques, post-harvest losses, limited financing, and inadequate skill development (FAO, 2021). The challenge is compounded by illegal, unreported, and unregulated (IUU) fishing, which drains the economy of an estimated $10 billion annually and threatens both marine biodiversity and job creation (Udeke & Olorunfemi, 2022). Nevertheless, inland aquaculture—especially catfish and tilapia farming—has shown encouraging progress in states such as Delta, Ogun, and Rivers, where youth-led enterprises are emerging with government and private-sector support (Adebayo & Ezenagu, 2021).

In the area of maritime transport and logistics, Nigeria relies on seaborne routes for about 90% of its international trade. However, poor port infrastructure, congested terminals, high turnaround times, and limited local participation allow foreign shipping lines to dominate trade routes, leading to significant capital flight and missed employment opportunities (Akinyemi, 2020). Igbokwe and Olayiwola (2021) recommend establishing Special Economic Zones (SEZs) in key coastal cities such as Lagos, Warri, and Port Harcourt to attract foreign direct investment (FDI), stimulate youth employment, and boost indigenous engagement in marine engineering, shipbuilding, and port services.

Equally under-exploited is coastal and marine tourism, a $1.5 trillion global industry that contributes less than 1% to Nigeria's tourism revenue, despite the country's picturesque coastlines and rich cultural and marine heritage (Adebayo & Ezenagu, 2021). Barriers such as poor infrastructure, environmental degradation, and insecurity have slowed growth in this sector. Nonetheless, comparative examples from Seychelles, Kenya, and Cape Verde illustrate how sustainable marine tourism, when well-developed, can generate jobs for local tour operators, artisans, and hospitality workers while preserving marine ecosystems (UNDP, 2023).

Given Nigeria's demographic structure—where over 70% of the population is under 30 years of age and youth unemployment exceeds 40%—the blue economy offers a generational opportunity for sociolect-economic transformation (National Bureau of Statistics [NBS], 2023; UNDP, 2023). As Nnanguma (2025) posits, tapping into the employment potential of the blue economy requires youth-focused policies, inclusive skill acquisition programs, and public-private partnerships to foster innovation, enterprise, and local content. Aderibigbe and Agbebi (2021) further argue that integrating marine-oriented curricula into technical and vocational education will help prepare the youth for careers in ocean-based industries.

Emerging policy interest, such as the formulation of a National Ocean Economy Strategy, reflects growing recognition of the blue economy's promise for Nigeria (Oshikoya & Ojo, 2020). This includes marine sectors like shipping, fisheries, aquaculture, offshore energy, shipbuilding, and tourism—each of which can generate extensive employment if driven by effective governance, strategic investment, inclusive participation, and environmental stewardship.

In summary, unlocking Nigeria's blue economy is not merely an economic ambition but a strategic imperative to tackle youth unemployment, enhance livelihoods, promote regional development, and solidify the country's role as a leading maritime nation in West Africa. While the potential is vast, its realization demands a

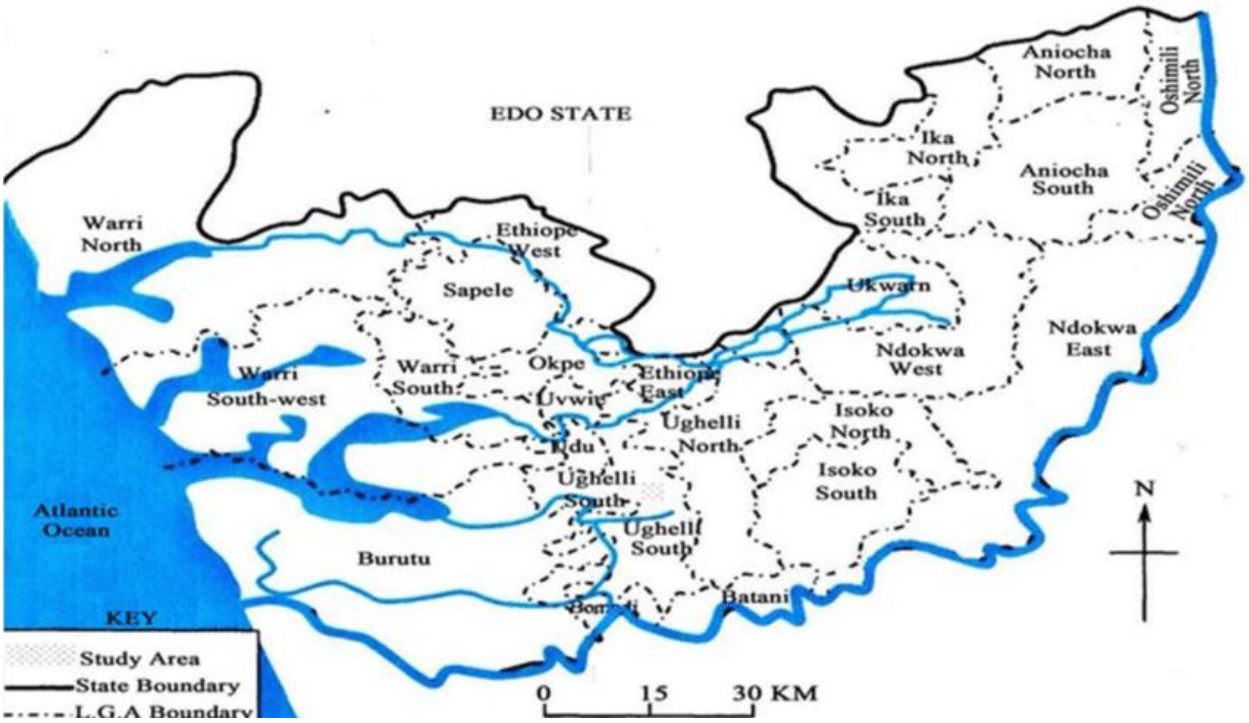
comprehensive, youth-centered, and environmentally sustainable approach. This paper thus explores the intersection between the blue economy and youth job creation, with a focus on practical strategies, systemic barriers, and trans-formative interventions that can turn Nigeria's marine potential into sustainable and inclusive growth.

Materials and Methods

Research Design

This study adopted a descriptive survey research design, suitable for capturing perceptions, challenges, opportunities, and patterns relating to the blue economy and youth employment in Nigeria. The design enabled the collection of both quantitative and qualitative data to explore the sociolect-economic dimensions of marine-based industries, including fisheries, aquaculture, maritime transport, shipbuilding, and coastal tourism. This approach is consistent with social science research that seeks to investigate emerging economic paradigms and their effects on labor markets (Creswell & Creswell, 2018).

Study Area



Source: Ministry of Lands and Survey, Asaba. (n.d.). *Map of Delta State showing the 25 Local Councils*. Retrieved April 19, 2025, from https://www.researchgate.net/figure/Map-of-Delta-State-showing-the-25-Local-Councils-Source-Ministry-of-Lands-and-Survey_fig1_381560636

The research was conducted in **Delta State**, a coastal state located in the Niger Delta region of southern Nigeria. Delta State was chosen due to its strategic location along the Atlantic coastline, rich endowment of marine resources, and existing marine-based economic activities such as fishing, crude oil exploration, inland aquaculture, and coastal tourism (Aderibigbe & Agbebi, 2021). The state has a high concentration of artisan fishing communities and potential youth labor pool, making it a representative location for investigating the blue economy's employment potential. Key local government areas surveyed included **Warri South, Burutu, Bomadi, and Okerenkoko**.

Population and Sampling Technique

The study population comprised youths aged 18 to 35 years, local fishers, aquaculture entrepreneurs, maritime workers, coastal tourism actors, and policy stakeholders within Delta State. A multi-stage sampling technique was used. First, four coastal LGAs were purposely selected based on the presence of active marine-based industries. Second, stratified random sampling was employed to select respondents within each LGA based on sectoral involvement (fisheries, transport, tourism, etc.). A total of 400 respondents were selected, with 100 drawn from each LGA.

This sample size was determined using Yamane's (1967) formula:
n=N1+N(e)2n = \frac{N}{1 + N(e)^2}

Where:

- n = sample size
- N = total estimated population (approx. 12,000 youths across sectors in study LGAs)
- e = margin of error (0.05 for 95% confidence level)

Applying this yields a minimum sample size of 387, rounded up to 400 for broader representation.

Data Collection Instruments

Data were collected using structured questionnaires, Key Informant Interviews (KIIs), and Focus Group **Discussions (FGDs):**

1. **Questionnaires:** These were used to obtain quantitative data on respondents' demographic characteristics, involvement in blue economy sectors, access to skills training, employment status, income levels, and perceptions of policy support. The questionnaire included both close-ended and Likert-scale questions and was pre-tested for reliability (Cronbach's Alpha = 0.82).
2. **Key Informant Interviews:** Conducted with government officials from the Nigerian Maritime Administration and Safety Agency (NIMASA), Ministry of Youth Development, local government chairmen, and leaders of fishery cooperatives. These interviews explored policy frameworks, investment patterns, and challenges hindering marine-based employment growth.
3. **Focus Group Discussions:** FGDs involved groups of 8–10 participants including youth fishers, aquaculture farmers, women entrepreneurs in tourism, and community leaders. Discussions focused on lived experiences, livelihood changes, gender dynamics, and prospects of youth involvement in the blue economy.

Data Analysis

Quantitative data from the questionnaires were analyzed using descriptive and inferential statistics via SPSS version 26. Descriptive statistics such as frequencies, percentages, and means were used to summarize respondent characteristics and sectoral participation. Chi-square tests and cross-tabulations were used to assess associations between variables such as youth employment status and access to marine-sector training.

Qualitative data from KIIs and FGDs were transcribed, coded, and analyzed thematically using the NVivo 12 software. Key themes included: infrastructure challenges, policy gaps, access to finance, gender inclusion, and innovation barriers. These narratives were used to triangulate quantitative findings and offer deeper insights into the socio-political ecology of the blue economy in Nigeria.

Ethical Considerations

Ethical clearance was obtained from the Research and Ethics Committee of Modibbo Adama University, Yola. Respondents were informed of the study's objectives and gave written consent. Anonymity, confidentiality, and voluntary participation were ensured throughout the research process. No respondent was coerced, and participants were free to withdraw at any time without repercussions.

Results and Discussion

Demographic Profile of Respondents

Out of the 400 administered questionnaires, 386 were retrieved and found valid for analysis, representing a response rate of 96.5%. The age distribution of respondents revealed that 67.3% were between 18 and 30 years, underscoring the predominance of youth in coastal livelihoods. Male respondents constituted 58.5%, while females made up 41.5%, indicating substantial but slightly lower female engagement, particularly in fish processing and coastal tourism sectors.

Education-wise, 43% had secondary education, while 28% possessed post-secondary qualifications, reflecting a moderate level of formal education among coastal youth. This suggests a readiness to acquire vocational or technical skills relevant to marine-based employment, if accessible (Creswell & Creswell, 2018).

Sectoral Involvement and Employment Status

Data showed that 32.6% of respondents were engaged in artisanal fisheries, 21.5% in aquaculture, 15.8% in maritime logistics, 12.3% in coastal tourism, and 10.4% in boat repair and maintenance, while the remainder (7.4%) were involved in miscellaneous services such as marine transportation and petty trade. Of the total respondents, 58.3% were self-employed, and 24.1% were unemployed, highlighting a clear gap in formal job placements despite the sector's potential.

A Chi-square test of independence ($\chi^2 = 17.82$, $p < 0.05$) revealed a statistically significant relationship between access to training and employment in marine-based activities. This affirms findings by Aderibigbe and Agbebi (2021), who argue that skill acquisition remains a critical barrier to full participation in blue economy sectors.

Access to Blue Economy Resources and Training

Access to skills development programs and financing emerged as the most cited barriers to effective youth engagement. Only 29.4% of respondents had received any form of vocational or technical training related to marine industries. Similarly, 70.1% reported no access to micro-credit or start-up capital, thereby limiting their capacity to scale operations or formalize businesses.

These findings corroborate Udeke & Olorunfemi (2022), who note that Nigeria's youth face systemic marginalization from ocean-based economic policies due to weak institutional support and poor policy implementation. Participants in FGDs emphasized the need for decentralized training centers, mobile aquaculture clinics, and incentives for youth-led marine entrepreneurship.

Challenges and Infrastructural Gaps

Qualitative data highlighted multifaceted challenges affecting blue economy job creation. These included:

- Poor landing sites and jetties in Warri South and Burutu, limiting fishing operations and post-harvest activities.
- Lack of cold storage facilities, leading to post-harvest losses of up to 30% in some fishing communities.
- Maritime insecurity, particularly in the Bomadi axis, where youth expressed fear of pirate attacks and illegal bunkering activities.
- Weak transport links and tourism infrastructure, affecting the growth of eco-tourism in areas like Okerenkoko.

The above reflects findings by Akinyemi (2020), who argues that infrastructural decay in Nigeria's maritime sector is a critical constraint to economic diversification. Similarly, inadequate enforcement of environmental regulations exacerbates coastal erosion and marine pollution, further threatening the sustainability of livelihoods (FAO, 2021).

Policy Perception and Institutional Support

When asked to rate the effectiveness of government interventions, 68% of respondents rated them as "poor" or "very poor." Respondents cited lack of youth consultation in policy making, poor monitoring of projects, and corruption as key reasons for ineffective outcomes. While NIMASA and the Ministry of Blue Economy have launched several initiatives, such as youth maritime cadet-ship schemes and the Deep Blue Project, these remain concentrated in urban areas and often inaccessible to rural or peril-urban youths (NIMASA, 2022).

KIIs revealed that much of the support goes to politically connected individuals, while genuine community actors are left out of decision-making. This supports Silver et al.. (2015), who argue that global blue economy frameworks often replicate socio-political exclusions unless actively restructured to promote inclusivity.

Opportunities and Aspirations

Despite the constraints, the research found strong optimism among young people regarding the prospects of the blue economy. When asked whether they would pursue careers in marine-based industries if given adequate training and support, 81.2% responded positively. Youths in aquaculture expressed interest in value chain expansion into feed production and fish processing. Tourism actors expressed interest in building sustainable tour packages, cultural displays, and eco-friendly transport.

This aspirational trend echoes UNDP's (2023) view that African youth are not disinterested in the blue economy but are limited by systemic barriers. Nigeria, with over 70% of its population below 30, has an unmatched demographic advantage that can be leveraged for marine economic transformation (NBS, 2023).

The study reinforces the position that the blue economy offers Nigeria a pathway to diversify its economy and address youth unemployment, but only if supported by intentional investments in education, infrastructure, and inclusive policies. The high rate of self-employment in artisan fisheries and aquaculture suggests that marine industries are already absorbing labor informally, but require capacity strengthening to increase productivity and sustainability.

Moreover, gender inclusion remains a critical consideration, as women were found to be more engaged in post-harvest processing and marketing, yet less represented in leadership or ownership structures. This aligns with FAO (2021), which emphasizes gender-responsive blue economy strategies.

The lack of functional maritime education and localized blue-tech hubs limits innovation and digital adoption, making Nigeria's youth less competitive in the global marine labor market. As such, the findings echo Adebayo and Ezenagu (2021), who stress the urgency of aligning national skills development policies with blue economy opportunities.

In conclusion, the blue economy in Nigeria presents not just an economic opportunity, but a generational imperative to address unemployment, rural poverty, and underdevelopment. However, this will require coordinated efforts across sectors, youth-centered governance, and a deliberate focus on equity and sustainability.

Conclusion and Policy Imperatives for Unlocking Nigeria's Blue Economy

The blue economy presents a trans-formative and multidimensional opportunity for Nigeria to address its twin challenges of high youth unemployment and economic over dependence on fossil resources. This study has revealed that Nigeria's marine-based sectors—particularly fisheries, aquaculture, maritime logistics, shipbuilding, and coastal tourism—hold untapped potential for mass employment, enterprise development, and inclusive growth. Despite the country's vast ocean resources and a demographic structure dominated by youth, systemic challenges such as poor infrastructure, lack of access to training and finance, environmental degradation, and weak governance continue to stifle job creation within the blue economy.

Empirical evidence from Delta State shows that while young people are actively engaged in informal marine activities—especially in artisan fisheries and aquaculture—the majority operate without formal training, access

to capital, or institutional support. Maritime logistics and coastal tourism also remain under-exploited due to insecurity, environmental risks, and poor planning. Furthermore, the study established a strong positive correlation between access to blue economy training and youth employment status, underscoring the need for capacity-building interventions and targeted inclusion strategies.

Respondents overwhelmingly rated existing government interventions as inadequate, citing lack of grassroots consultation, elite capture of opportunities, and fragmented institutional mandates. Yet, despite these limitations, a majority of young people expressed willingness and enthusiasm to engage in blue economy ventures if given the enabling support. This signals that Nigeria's marine economy is not constrained by a lack of interest, but rather by policy and structural disconnects that prevent the sector from flourishing.

Unlocking this potential requires a paradigm shift in how marine sectors are planned, financed, and governed. It demands that youth—who constitute more than 70% of Nigeria's population—be positioned not as passive beneficiaries but as strategic drivers of innovation, labor, and enterprise in the country's ocean economy. In doing so, Nigeria can simultaneously achieve sustainable development, gender inclusion, regional competitiveness, and environmental stewardship.

In light of the above, the following integrated policy and programmatic recommendations are proposed to actualize the promise of Nigeria's blue economy for youth employment and economic diversification:

1. Develop and Implement a National Blue Economy Youth Employment Strategy (NBEYES):
   The Federal Government, through the Ministry of Blue Economy and Ministry of Youth and Sports Development, must craft a coordinated national strategy tailored to youth inclusion. This strategy should map high-potential sub-sectors, promote gender equity, and integrate climate-resilient and sustainable practices, aligning with Sustainable Development Goal 14 (UN, 2020).
2. Establish Marine Vocational Training Centers and Blue-Tech Hubs:
   In collaboration with institutions such as the Nigerian Maritime University, Okerenkoko, and the private sector, the government should launch Marine Vocational Training Centers (MVTCs) and Blue-Tech Hubs. These centers should provide practical training in fisheries technology, marine mechanics, digital navigation, aquaculture, and sustainable tourism. They should also facilitate linkages with employment and entrepreneurship pathways (UNDP, 2023).
3. Promote Access to Finance for Youth-Led Marine Enterprises:
   Youth cooperatives and micro-enterprises in marine sectors must be supported through targeted micro-credit schemes, startup grants, and insurance packages. Government agencies such as the Bank of Industry (BOI) and NIRSAL Microfinance Bank should create blue economy–specific financial products to lower barriers to entry for youth entrepreneurs.
4. Revitalize Coastal Infrastructure and Promote Port-Led Development:
   Critical investments are needed in jetties, cold storage systems, eco-tourism infrastructure, and inland waterways. Public-private partnerships (PPPs), blue economy bonds, and donor-supported blue financing models should be explored to fund port modernization and rural marine infrastructure (Akinyemi, 2020).
5. Enhance Governance, Institutional Coordination, and Youth Participation:
   To address policy fragmentation, the proposed Nigerian Blue Economy Council should adopt a multi-stakeholder governance model. This body should include youth representatives, community leaders, researchers, and private-sector actors to ensure transparency, accountability, and localized decision-making (Silver et al. 2015).
6. Strengthen Maritime Security and Environmental Sustainability:
   Security forces, including the Nigerian Navy and Marine Police, must work with local stakeholders to establish community-led marine surveillance systems. Additionally, sustainability must be embedded in all blue economy policies through programs such as mangrove restoration, anti-plastic campaigns, and marine protected areas (FAO, 2021).

7. Scale Up Awareness and Blue Economy Literacy:
   Nationwide campaigns are needed to raise awareness about the blue economy's opportunities, especially in rural and peri-urban communities. School curricula and vocational programs should incorporate blue economy literacy to instill interest and foundational knowledge from an early age (Aderibigbe & Agbebi, 2021).

In conclusion, the blue economy is not just an economic frontier for Nigeria—it is a generational imperative. Its success will hinge on how intentionally the country includes its youth in the planning, development, and ownership of marine-based industries. By unlocking this economic domain through inclusive policies, deliberate investments in human capital, and sustainable resource governance, Nigeria can shift from resource dependence to marine resilience. The voices of youth, heard clearly throughout this study, are not calling for charity but for opportunity, access, and recognition as co-builders of a sustainable blue economy. Empowering them will not only change their lives but chart a new economic destiny for the nation.

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