

Bolstering African's Sustainable Revenue Growth in the 21st Century through the Development of Blue Economy: The Case of Nigeria

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ABSTRACT

Blue Economy is a recent concept that embraces all economic activities that depend on the sea, often related with other economic sectors, such as tourism, maritime transport, energy and fishing. Blue economy supports the sustainable growth of a nation's economy; as the oceans and seas are engines of the global economy with great potential for broadening a nation's revenue base which is a catalyst for economic growth and development. The study uncovers applicable mechanism for strengthening Nigeria's revenue through the opportunities offered by the blue economy. The study conceptually reviewed existing literature as a basis for obtaining an in depth understanding of how blue economy potentials can boost a nation's revenue generating capability with a view to making practical recommendations. The study discovered that blue economy has overwhelming potential of expanding government revenue if the economic, social, technological, cultural and environmental challenges hampering the development of the sector are properly addressed. Consequently, the study recommends strong political will and robust institutions for effective development and implementation of blue economy policies in order to bolster the nation's revenue growth based on existing international standards. There is need to establish Area-based Management, sound policy coordination and stakeholder engagement to improve revenue from blue economy in Nigeria is further suggested..

Keywords: Bolstering, Sustainable, Revenue, Growth and Blue Economy

INTRODUCTION

"Even if you never have the chance to see or touch the ocean, the ocean touches you with every breath you take, every drop of water you drink, every bite you consume. Everyone, everywhere is inextricably connected to and utterly dependent upon the existence of Sea"

———Sylvia Earle.

The above assertion reinforces the overwhelming importance of the oceans and, its indissoluble connection between humans and the oceans or water bodies in meeting human needs. The oceans have long been recognized as one of the human's most vital sources of natural resources. By estimate, the ocean contributes approximately 21 trillion US\$/year to human welfare (Costanza, 1999). More recently, a conventional estimate by WWF (2015) of the total asset value of the oceans, limited to renewable economic activities

excluding offshore oil and gas, put the annual “gross marine product” of the ocean at 2.5 trillion with the total asset base estimated at 24 trillion, connoting that the ocean ranks as the world’s 7th biggest economy.

The Ocean as well benefits human with the means of transportation, linking cities and countries around the world. Maritime transport is considered to be the mainstay of the world economy accounting for over 80% of the world trade (UNCTAD, 2016). The ocean likewise provides a massive source of potential renewable energy resources. Offshore Wind Farm (OWF) can be constructed and developed for an alternative power generation for the benefit of mankind (Pelc and Fujita, 2002).

Nigeria is losing huge revenue from blue economy due to the inability of the country to resourcefully utilize the opportunities presented by the sector (Alongi and Carbon, 2018). Even though, the country is blessed with a coastline of about 870km and about 3,000 kilometers of inland waterways with diversities of natural resources, the irresistible effects of over-dependence on oil with its attendant’s effects on Nigerian economy, has compelled the need to diversify the Nigerian economy from oil towards the blue economy paradigm.

The concept of blue or ocean economy was introduced by United Nations Conference on Sustainable Development in the year 2012 (UN, 2016). The concept consolidates all economic activities around exploration of water resources (ocean, rivers, lake, seas, etc). Blue economy indicates the use of sea, river, ocean, lake and its resources for the purpose of sustainable economic development while green economy is concerned with how to reduce carbon emissions and environmental risks or hazards in order to achieve sustainable economic development. The work of Pauli (2010) titled blue economy significantly showcased the essence and the need to further explore the concept of blue economy. In his discourse, he offered a model for supply of low cost product, job creation at local level with respect to the disruption of environment. The categories of concept embraced by blue economy as advocated by other scholars like Costa, de Freitas, Lisboa, Santos, de Fraga Bruschi, and de Moraes, (2019) and Phelan (2020) include:

- i) That concept of Blue economy is about using ocean resources for the growth of the economy; improvement of people’s lives provision of jobs and general well-being of ocean ecosystem.
- ii) To generate wealth from all marine and allied services or operations without disrupting or affecting marine ecosystem.
- iii) Deals with how to think deeply to fathom out viable method of biological solutions to industrial processes that can reduce contamination.
- iv) Blue economy seeks to reduce biodiversity loss and stimulate economic interest by integrating both economic and environmental interests.
- v) It implies commercialization of ocean resources for sustainable development.
- vi) Blue economy concept can foster irrigation for year-in, year out plant development.
- vii) It can be used for marine exhibitions and tourism across littoral states.
- viii) It can be used for the generation of renewable energy.
- ix) It can also enhance shipbuilding technology, hydrogen fuel and bio-fuel development.
- x) Providing food securing and sustainable climate change.

The Blue Economy is an evolving economic activity that have been brought into national and international

policy discourse in recent times while consolidating the great opportunities offered by oceans and seas. Blue Economy is an ocean-based equivalent to the green economy designed to advance human welfare and social equity while achieving environmentally sustainable economic growth of a nation. The term ‘Blue Economy’ is increasingly gaining acceptance, which was influenced at Rio+20 Conference that first emerged during the 2012 United Nations Convention on Sustainable Development (UNCSD). Accordingly, blue economy is envisioned as an combination of short and long term economic activities and development based on social and financial inclusion, environmental sustainability and inventions evaluated and determined on and around the sea (Amusan and Akinyemi, 2019; Voyer, Farmery, Kajlich, Vachette, and Quirk, 2020).

The global society is more attention towards the seas and oceans for economic wealth. Hence the projection that the annual economic value of maritime-related activities will reach 2.5 trillion Euros per year by the end of 2020; therefore, world’s water bodies – oceans, seas and rivers are the major source of wealth, creating trillions of dollars’ worth in goods and services as well as employing billions of people (Garland, Axon, Morrissey, Graziano, and Heidkamp, 2019). Based on the Economist Intelligence Unit report (EIU, 2015), China’s sea economy contributed \$962 billion or 10 per cent of GDP in 2014 generating 9 million employment. Similarly the United States valued its sea economy at \$373 billion in 2018 or 1.8 per cent of the gross domestic product.

Due to population growth with increasing stress on terrestrial reserves, the capability of the ocean-based economy will be faced with the impasse between: (1) environmental sustainability, (2) economic growth, and (3) social equity. The concept of ‘blue economy’ – with its origins in Africa (in Seychelles) – is aimed at harmonizing these three bottom-line objectives. In 2016, the OECD predicted that blue economy could become the key driver of global economic growth, doubling its output (from US \$1.5 to 3 trillion) and contribution to GDP equivalent (2.5% of global GDP and 1.5% of the global workforce) by 2030. On the continent of Africa, the World Bank Group (2022) reported that the blue economy generated about €275 billion in 2018, providing 49 million jobs. The EU’s blue economy directly employs about 4.45 million people and generates around €667.2 billion, with a gross value added of €183.9 billion. The African Union projected its blue economy to worth €374 billion by 2030.

In Nigeria, the increasing over-dependence on oil, added with the disruption upon global markets by COVID-19 and several limiting factors such as the oil price crash which negatively impacted on the economy has devastating consequences on the wellbeing of Nigerians and its development process. Given the alarming rate of unemployment and the challenges of job creation on the one hand and the size of capital required to invest in development projects, there is the need to diversify the Nigerian economy from oil towards harnessing the blue economy resources in order to increase its revenue base. This is so because the blue economy has the potential of expanding government revenue if the financial and environmental issues besetting the development of the sector are properly addressed.

The 2024 national budget titled “Budget of Renewed Hope” shows a proposed expenditure of NGN27.5 trillion and estimated revenue of *NGN18.32 trillion* for the 2024 fiscal year and assumed an average oil price at \$76.53 per barrel with production range between 1.7 million and 2 million barrels per day. This projection though very scintillating appeared very unrealistic in the face of dwindling oil prices in the world market which is symptomatic of irregularity of investments by the private sector; albeit not overlooking fluctuations in both global and national economic growths which could affect and hamper investment in the country. This probably informed why Mr Kyari, The MD of the Nigeria National Petroleum Corporation alerted thus: “With what we see in the market today and potentially in the year 2024 and even beyond the next two years, it is very unlikely to see \$70 per barrel oil in the market”. The contention by Mr Kyari could be borne out of the observed fluctuations in international oil prices, the constant devaluation of the Nation’s naira against the U.S. Dollar, rising interests on borrowed capitals, banks’ deteriorating interest in project financing, and most notably rising inflationary trends amongst others in Nigeria in particular and Africa in

general. These challenges confronting Nigeria and African countries suggest the need to embark upon and sought for alternative economic approaches for generating more revenue; as the revenue generated from the exploitation of blue economy resources could contribute significantly to financing of government budgets above all when the revenues are invested in sustainable projects.

Undisputedly, African countries and Nigeria stand to gain massively if they adopt and implement a sincere scheme for exploiting the resources of the blue economy considering that the continent particularly Nigeria is advantageously located within the resource-rich Gulf of Guinea (Cavaleri, Martins, Andrade, Ribeiro, and Turra, 2020;; Katila, Ala-rämi, Repka, Rendon, and Törrönen, 2019; Ocean and Biologically, 2018; Folami, 2017). This inevitably calls for the need of the country to diversify its economy to the development and exploitation of her blue economy resources. The diversification to blue economy has the capacity to leverage the country against unforeseeable events that could negatively impact on her revenue base. Against the foregoing, this study aims at demonstrating how the exploitation of the resources of Nigeria's blue economy could bolster the sustainable revenue growth of the country.

Concept of Blue Economy

Blue economy is a concept that is related with the use of ocean and water resources for the advantage of mankind. A blue economy is an evolving maritime ecological concept aimed at the sustainable exploitation of ocean resources for economic growth, citizenry well-being and national development. The concept of Blue economy is derived from the understanding that oceans have valuable assets. However, exploiting the ocean and other water resources has significant effect on environment, marine ecosystem and climate change (UN, 2012). The meaning and perspectives given to blue economy can be concisely abridged into having a sustainable ocean resources exploited without degrading the marine ecosystem, capable of providing equity, nutrition, environmental friendliness, jobs and social welfare to mankind (Juneja et al, 2021, World Bank, 2017). The blue economy refers to the utilization of oceans, seas, and coastal resources for sustainable economic development through ecosystem integrity (WWF, 2018). The blue economy gives series of opportunities for revenue generation, economic growth, clean, sustainable, and reasonable blue growth in traditional and emerging sectors ((EIU, 2015). Blue economy involves the sustainable development of aquaculture, fisheries, tourism, maritime transport, marine bio- technology, seabed mining, and renewable energy (World Bank and UNDESA, 2017). The notion of the blue economy develops from the Rio+20 Conference in 2012, which concentrated on sustainable development upon ocean-, based economies.

The concept was earlier proposed by Gunter Pauli (2010) in his book entitled “the blue economy: 10 years, 100 innovations, 100 million jobs” (World Bank, 2017). Besides, sustainable ocean-based economy might present socioeconomic advantages for present and future generations, by improving revenue generation, food security, livelihood, employment level, health status of the inhabitant, peace coexistence, and political stability (Ahmed and Thompson, 2019). Blue economy has the potential to provide the energy needs of a country if well utilized and study by Esin (2014) revealed that energy (electricity) provision has the capacity to reduce poverty in rural areas by 24%. Hamisu (2019) reiterated the number of employment that can be generated with the use and implementation of blue economy in Nigeria. This implies that, Nigeria can diversify its economy through blue economy especially starting with littoral states without much dependence on crude oil.

Blue Economy and Revenue Generation Elsewhere and in Nigeria

A number of estimates and projections indicate the potential impact of the blue economy (Wenhai et al., 2019) on revenue generation. A report by the OECD in 2016 shows that the ocean economy contributed around USD 1.5 trillion to the global economy, equivalent to 2.5% of the worldwide GDP. The report further projected that the ocean economy could double its contribution by 2030 if the right policies and

investments are made. The report specifically underscored the potential of emerging sectors such as offshore wind energy, aquaculture, and marine biotechnology to drive economic growth and create jobs (Rigaud et al., 2018). Recent report by the World Wildlife Fund (WWF) in 2019 estimated that the blue economy could generate up to USD 3 trillion in value and create up to 40 million jobs by 2030. The report emphasized the need for a sustainable blue economy that balances economic growth with environmental and social sustainability and stresses the potential of sustainable fishing, coastal tourism, and marine renewable energy to create economic opportunities (Pendleton et al., 2020). An additional study by the European Commission in 2019 revealed that the blue economy generated around 5.4 million jobs and generated around EUR 750 billion to the EU economy in 2018. The study also estimated that the blue economy could contribute up to EUR 1.3 trillion to the EU economy by 2030 when the right policies and investments are made (Dalton et al., 2019). These wide-ranging estimates and projections suggest that the blue economy can meaningfully contribute to the global economy; mainly if the resources of the blue economy are developed sustainably and responsibly.

Nigerian economy depends heavily on revenue from crude oil. Accordingly, the economy is susceptible to the volatility of the global oil prices, which is presently distressing the nation economy as the country recently entered downturn due to Covid-19 pandemic. Nonetheless, the maritime economy is becoming increasingly considerable source of improving revenue generation and prosperity to humanity (OECD, 2016). Peterside (2019) noted that:

“Revenue is crucial to economic development of any nation. A rapidly increasing population, dearth of national infrastructure, dwindling oil revenue in the face of increasing unemployment and other social economic demands all make the Blue Economy initiatives as advanced by NIMASA inevitable. Maritime professionals insist that the maritime industry has the capacity to fund Nigeria’s annual budgets if well managed and structured to take advantage of its huge untapped resources”.

It can be deduced from Peterside observation that developing blue economy resources is indeed, very crucial in the generation of the needed revenue for the socio-economic development of Nigeria. World Bank report (2019) for Blue economy resilient for Africa, reported that Blue economy generated over \$300billion for African continent in the year 2018 and generated about 49million jobs with other benefits like food security, livelihoods and tourism. According to The Guardian (2021), Blue economy has the wherewithal of generating revenue, providing jobs for unemployed youths and enhances Foreign Direct Investments. The Gross Domestic Product of Nigeria can actually be boosted by strengthening the development of Blue economy as the benefits of blue economy are still evolving. This is because, when sea and water resources are being utilized for the economic progress of Nigeria, other innovations and allied industries development will definitely emerge. According to the statement of David Hume (2020) which can be paraphrased thus:

“A nation that trades with large export and import must generate abundant number of industries and enjoy luxuries and delicacies than a nation or kingdom that rest and contented with its native commodities without exploration and exportation. Such a nation will grow powerful, richer and happier”

Across Africa, fishing is a major economic activity in the oceans, lakes, rivers and fish farms. According to a UNDP report, fishing — which is a major source of income for fishing communities in the continent — employs about 12.3 million people between the ages of 15 – 64 years either as full or part time. According to the European Commission staff-working document on blue growth report 2015, Europe’s maritime sector employs over five (5) million jobs generating almost EUR 500 billion a year, with a potential to create many more jobs. Offshore renewable energy is now a major contributor to employment, accounting for 150,000 jobs. The case of Nigeria and to large extent Africa is no difference as the blue economy has created quite a number of jobs to its citizenry. The sectors of the blue economy comprises of fisheries, ports, aquaculture, tourism, transport, coastal mining, and energy. It has breed anglers, fishmongers, traders in fishing gears, oil and gas officers, shipping clerks, seamen, seafood processing companies and the likes. The Organization for

Economic Co-operation and Development (OECD) predicts that looking to 2030; many ocean-based industries have the potential to outperform the global economy as a whole, both in terms of value added and employment.

In Kenya, the fishery sector employs more than two million people through diverse activities from fish distribution to gear and craft repair services. Also, fishery plays an important role in Kenya as it provides the local population with food and ensures stable income for fishermen and exporters. Economically speaking, the contribution of fishing to the national revenue is estimated around \$900 million USD with its potential production of 350 000 metric tons per year. (Capital Business, 2018). That is a high potential for the economy waiting to be exploited smartly to sustain economic growth as the catch seems to follow the population growth.

The blue economy also contributes to national development by serving as a source of tourism and recreational. Coastal tourism is a very important sector to the Nigerian economy and many developing countries. Tourism and recreation are major global industries that do not only bring revenue to the nation but also serves as a catalyst that attracts investors into the country. Tourism has been a major support of global jobs and has generated trillion of dollars to the participants. International tourism has grown from 25 million in 1950 to 1,035 million in 2012 and further growth of 3-4% in 2013 and the UNWTO further forecasted growth for 2030 to be around 1.8 billion. Tendencies in aging populations, rising incomes and relatively low transport costs will make coastal and ocean locations ever more attractive and lucrative. Vacation trip tourism is the fastest growing sector in the leisure travel industry; overall, average annual passenger growth rates are in the region of 7.5% and passenger expenditures are estimated in the order of US\$ 18 billion per year. The tourism consumer, however, is driving the transformation of the sector with a 20% annual growth rate in ecotourism; about six times the rate of growth of the overall industry.

According to OECD, more than 75% of vacations are spent on coastal cities all around the World. This highlights the importance of the sea in the tourism sector. In Kenya, the ocean economy of the country is constituted at 90% by tourism (David, 2017). People come to Kenya to visit many places including its coastal cities and to do recreational fishing (Capitalbusiness, 2018), which has allowed the entry of \$1.2 million USD in the country in 2017 (Victor, 2018). The majority of African countries rely on revenue from foreign nationals, especially from Europe, North and South America, Asia, and Australia. Among African countries that have benefited immensely from tourism as a source of foreign earning are Kenya, Seychelles, Botswana, Namibia, Ethiopia, Egypt, and South Africa, to name but a few (United Nations World Tourism Organization (UNWTO, 2015). Nigeria is still developing her tourism products. Hence, foreign exchange earnings from tourism are still low compared to the above-mentioned African countries. Travel and tourism contributed about 1.7% directly to the nation's gross domestic product in 2014, which was NGN1,560.2bn (World Travel and Tourism Council (WTTC, 2015). The rapid development of tourism sector and patronage will lead to increased domestic and foreign earnings. Such earnings will provide Nigerian government with means to provide and maintain infrastructural facilities, remunerate her employees, pay foreign debts, and allow for naira appreciation in the international currency market. According to Aliyu, Abdul Kadir, and Aliyu (2013), the above benefits are some of the economic impacts tourism will have on Nigeria, being one of the fastest growing industries globally.

The strength of tourism performance in poverty reduction, employment generation, and income redistribution effect on rural communities, cannot be overemphasized as other benefits of tourism development, are being enjoyed by African countries such as South Africa, Kenya, Egypt, and Ethiopia (UNWTO, 2015). Nigeria can also emulate these African countries and surpass some of them, considering the rich diversity of the country's aquatic resources. Developing coastal and marine tourism will not only unlock several of these socioeconomics benefits but also help the country to showcase her rich and diverse

natural endowments.

Energy and Submarine mining is also another area where the blue economy generates its revenue to national development. Oil will remain the dominant energy source for many decades to come but the Ocean offers enormous potential for the generation of renewable energy – wind, wave, tidal, biomass, and thermal conversion and salinity gradients. Of these, the offshore wind energy industry is the most developed of the ocean-based energy sources. Deep-sea mining has always been appealing and attractive to many countries of which Ghana is not an exception as a means of economic development and revenue generation. A Canadian company (Nautilus Minerals), and the Independent State of Papua New Guinea in April 2014 signed an agreement to begin the world's first deep sea mining for ores of copper, gold, and other valuable metals (Nautilus Minerals, 2014). Mining companies, and national governments, have leases to explore margin sediments for phosphates off Namibia, New Zealand, and Mexico (Mengerink et al., 2014). Between 2000 and 2010, the price of many non-energy raw materials increased annually by about 15%, mainly as a result of consumer demand in emerging economies (WTO, 2010). Advances in technology, as well as anxieties and unease over security of supply have encouraged mining companies to consider what the seabed can provide. By 2020, 5% of the world's minerals, including cobalt, copper and zinc could come from the ocean floors. This could rise to 10% by 2030. Global annual turnover of marine mineral mining can be expected to grow from virtually nothing to €5 billion in the next 10 years and up to €10 billion by 2030 (EC, 2012).

It is widely believed by Nigerian economist that the blue economy outputs have great capacities to boost revenue generation and reduce over dependence on oil revenue (Aura et al., 2019; Elisha, 2019; Hassanali, 2020). This portrays that the development of Nigerian blue economy is not only timely and complementary, but undeniably urgent and indispensable. However, to explore and optimize the blue economy potentials, Nigeria requires strong institutions, harmonized and comprehensive legal framework, for the successful implementation and effective utilization of the nation's blue economy resources. Therefore, the country has to explore and develop policies to harness its financial and environmental factors necessary for the development of its blue economy.

On the contrary, blue economy, assimilates the sparkling sectors of marine biotechnology, intense sea mining, off-shore renewable energy and eco-tourism amongst others. These sea assets are enclosed in the Gulf of Guinea, a major natural endowment; which means Nigeria is ignorantly seating on a blue economy with considerable opportunities to improve her revenue generation if faultlessly exploited. Therefore, a transformative approach must be taken to explore and actualize the blue economy as optimal option to counterpoise the challenges of the present and future revenue generation that impede the country's economic growth and development. Nevertheless, it is important to note that the impact of the blue economy is not just measured in terms of economic output but also in terms of its social and environmental benefits, such as improving food security, reducing poverty, and preserving marine biodiversity. The blue economy has the potential to significantly impact the economies of countries in Africa and Nigeria in particular due to the region's extensive coastline, access to the Atlantic and the rich marine biodiversity.

Sources of Data

This study relied on secondary data derived from the review of related literature obtained from published and unpublished sources such as periodicals, journals, dissertation/thesis, government publications derived mainly from the Nigerian National Bureau of Statistics (NBS) and internet resources. Literature based research methodology was therefore employed to explore the basis for augmenting revenue generation through blue activities in Nigeria; as this is germane in order to acquire a thorough understanding of the concept of the blue economy paradigm. As averred by Creswell (1994), a literature based study is library based research to understand and conceptualize a social or human problem formed through the consultation and content analysis of the extant literature. This implies that survey of literature and the development of

concepts are more desired in gaining in-depth understanding and data needed to draw inferences and come up with practical recommendations. The study involved searching google databases for key variables on the potentials of the exploitation of fishing and aquaculture, maritime transportation, coastal tourism, exploration of offshore oil and gas and energy and submarine mining sector of blue economy on revenue generation.

FINDINGS AND CONCLUSIONS

Potentials of the blue economy and Revenue Generation:

The Blue economy has enormous potentials to strengthen Nigeria's revenue base if fully exploited. Such potentials of the blue economy include:

i) Fishing and aquaculture are essential components of the blue economy, and Nigeria has a long tradition of fishing and seafood consumption. The Nation's access to the Rivers Niger and Benue, the Atlantic Ocean, the Chad Basin and several other inland waterways provides diverse opportunities in boosting her revenue. Fisheries production particularly from marine is vital for the socio-economic growth of Nigerians and its input to the nation's economic growth through the Gross Domestic Product (GDP). Nigeria is blessed with enough marine fisheries resources that could enhance increased fish production and increase her revenue generating capacity. Yet, fish supply from domestic production is far below the fish demand for export and for intake by her citizens.

According to Subsinghe et al., (2021), Nigeria imports about 45 per cent of its net domestic fish supply. Imported fish include pelagic fish such as mackerel, horse mackerel, hake, herring, blue-whiting, stock fish (dried cod) and stock fish heads from several exporting countries, such as Russia, Japan, Netherland, Denmark, Norway and China. As opined by Trend Economy (2021), It is imperative to note that while the money spent on the importation of frozen fish (excluding fish fillets and other fish meat) increased by 42.98% in 2020 when compared to 2019, the value of exportation of the same frozen fish decreased drastically by 78% with apparent consequence on the GDP and Revenue of the country.

Evidence abound that nearly 1.2 billion dollars was spent by the country on the importation of fish and fish products in the year 2020. While the export by the Nigerian fisheries sectors has been relatively still, the import of fish and fish products has been on the increase. By such colossal amount of money spent on annual fish importation, Nigeria loses massive foreign exchange with attendants' harmful impacts on her economy. As averred by Olaifa cited by Oluwarore (2018). "if this remarkable amount of money spent on importation could be channeled for internal trade within the local fish industry, it would bolster the industry's efforts and generally boost the economy".

As reported by the FAO (2019; 2020) the global export value of fish and fishery products has increased remarkably in recent decades, from US\$15 billion in 1980 to US\$ 164 billion in 2018, about 50 per cent of that total comes from the developing world, where the net export revenue that these countries receive from fish trade is larger than their exports of tea, rice, cocoa and coffee combined. It should however be noted that available estimates for 2019 revealed about a two per cent contraction in both value and quantity compared with 2018 values. And these values are expected to contract more due to the Covid19 outbreak (FAO, 2020). The increasing demand for seafood has led to a complex global system of trade in fisheries products. In the year 2020, the European Union was the largest importer of fish and fishery products worldwide with an import value of about 56.5 billion U.S. dollars (2021). In 2018, exported 480,000 Tons of fish were valued at US\$671.3 million, the majority of which was exported to the Ivory Coast (AU-IBAR, 2018). It is sad to note that while Ivory Coast keeps earning more revenue from fish exportation; Nigeria on the other hand keeps expending considerable part of her revenue on fish importation.

2) Maritime Transportation

Another contribution to revenue generation by the blue economy is the facilitation of trade and commerce. The blue economy facilitates the movements of goods and services from the manufacturer to the intended market giving value to such goods and services. The blue economy is the provider of convenient transport routes in logistics. Ships carry around 90% of all trade between countries. The blue economy enables the transport of everything from food and fuel to construction materials, chemicals, and household items.

Nigeria is blessed with an abundant ocean for foreign and territorial transportation of goods with enormous maritime resources available for the well-being of its over 200 million population. Atakpa (2021) reported that Nigeria has about 852 km of coastline water with a maritime space of about 315,240 km² and stated that the maritime space represents 34.1% of Nigeria's landmass. Also, Okoye (2021a, b) stated that Nigeria has access to 12 Nautical miles of territorial waters, 24 Nautical miles of the contiguous zone and 200 Nautical miles of international coastal waters. The country presently has nine (9) seaports with massive shipping operations.

The prominence of the Nigerian maritime industry was noticeable by the United Nations Conference on Trade and Development (UNCTAD) which ranks Nigeria highest out of the top 35 flags of registration apropos to the increase in the shares of the world merchant fleet value in 2021 (Dentons 2022). Also, the International Maritime Organisation (IMO), referring to the maritime industry, stated that Nigeria is important to Africa and the global maritime economy (Egole 2022). Onyenucheya (2022) reported that approximately 80% of shipping business on the West African coast occurs in Nigeria.

Data from the National Bureau of Statistic (NBS) shows that total transport revenue from maritime activities in the last 3 years has been roughly equivalent to the average size of the Nigerian annual budget. Import and Export values of maritime shipping transactions have been around N8trn in 2018 and 2019, which were increases from around N6trn in Q4 2017 and 7trn in Q1 2018. In Q1 and Q2 2019, the value of shipping transportation for both import and export was N8.5trn, while export alone was N4.5trn. Thus, removing all the bottlenecks that hinder efficient and effective maritime transportation and investing in the sector would significantly improve the revenue earnings of the country.

3) Coastal Tourism: The blue economy also contributes to national development by serving as a source of tourism and recreational. Coastal tourism is a very important sector to the Nigerian economy and many developing countries. Nigeria's rich marine biodiversity and natural beauty offer opportunities for recreational activities such as diving tourism, marine archaeology, surfing, cruises, eco-tourism and recreational fishing operations which when fully harnessed could meaningfully expand her revenue base and significantly contribute to the economy. Nigeria's coastal areas account for 80 percent of tourism, with beaches being the most popular destinations. Notable among the coastal and marine tourism destinations in Nigeria include Lekki and Badagry Beaches (Lagos State), Aghenebode Sand Beach (Edo State), Asaba and Otuogo Beaches (Delta State), Okpoama Beach (Bayelsa State), Ikofe and Port Harcourt Beaches (Rivers State), Ibeno Beach (Akwa Ibom State), and Calabar, Lagos, and Coconut Beaches (Cross River State).

Revenue generation from tourists' visits to coastal and marine tourism centers remains the most obvious economic benefit of coastal and marine tourism. Revenue generation can either be from domestic sources or earnings of foreign exchange, in which case it involves visits by nationals of other countries. In several emerging countries, importance is given to international tourists often at the expense of domestic tourists due to the foreign exchange earnings that complement international visits. Majority of African countries depend on revenue from foreign nationals, particularly from Europe, North and South America, Asia, and Australia. Amongst the African countries that have benefited massively from tourism as a source of foreign earning are Kenya, Seychelles, Botswana, Namibia, Ethiopia, Egypt, and South Africa, amongst others

(United Nations World Tourism Organization (UNWTO, 2015).

Nigeria is still evolving her tourism products. Hence, foreign exchange earnings from tourism are still low compared to other African countries aforementioned. Travel and tourism contributed about 1.7% directly to the nation's gross domestic product in 2014, which was NGN1,560.2bn (World Travel and Tourism Council (WTTC), 2015). The rapid growth of tourism sector and investment will lead to increased domestic and foreign earnings. Such earnings will provide Nigerian government with means to provide and maintain infrastructural facilities, remunerate her employees, pay foreign debts, and allow for naira appreciation in the international currency market. As noted by Aliyu, Abdul Kadir, and Aliyu (2013), the aforesaid benefits are some of the economic impacts tourism will have on Nigeria, being one of the fastest growing industries globally and harnessing its potentials could significantly boost Nigeria's revenue base.

3) Offshore Oil and Gas: Nigeria is a significant oil and gas producer, and offshore exploration and production are essential components of the country's economy. Nigeria has an estimated 37.2 billion barrels of proven oil reserves as of the end of 2011. The majority of reserves are located along the country's Niger River Delta and offshore in the Bight of Benin, the Gulf of Guinea, and the Bight of Bonny. Recent exploration activities are mostly concentrated in the deep and ultra-deep offshore with some activities in the Chad basin, located in the northeast of the country. The government expectation is to increase established oil reserves to 40 billion barrels in the next few years. Nigeria has four refineries with a total installed capacity of 445,000 barrels per day. However, capacity utilization is low. Accordingly, annual intake of petroleum products, which according to government is estimated at 34 million liters per day, is not fully met by internal production and has to be supplemented by imports. Developing new offshore oil and gas fields and expanding existing areas could benefit the region economically through increase GDP and revenue generation.

Nigeria's established natural gas reserves, projected at about 187 trillion standard cubic feet, are recognized to be substantially larger than its oil resources in energy terms. Gas discoveries in Nigeria are attendant to oil exploration and production activities. As of 2001, over 50% of the gas produced (mainly associated gas) was flared. Arising from the growing domestic oil consumption, a carefully optimal strategy to replace oil with gas and gas derivatives will boost the availability of more oil for export. This will also promote the conservation of the oil reserves. Besides the economic advantage, fuel substitution from oil to gas is more ecologically friendly because gas is a cleaner fuel than oil. In view of the current reserves and rate of exploitation, the estimated life-span of Nigerian crude oil is about 44 years, based on about 2mb/d production, while that for natural gas is about 88 years, based on the 2001 production rate of 1850 bscf. It is, thus, advantageously important to start major investments in the gas sector in order to sufficiently prepared for gas as a substitute for oil both for domestic needs and foreign exchange earnings.

4) Energy and Submarine Mining:

Energy and Submarine mining is also another area where the blue economy generates revenue and contributes to national development. Deep sea oil drilling is as old as the earth's history and has been in existence for long, but market forces are making the exploration and tapping of even the most isolated areas with remote reserves cost effective. It is certain that oil will remain the leading energy source for many decades to come but the Ocean offers huge prospect for the generation of renewable energy – wind, wave, tidal, biomass, and thermal conversion and salinity gradients with the offshore wind energy industry being the most developed of the ocean-based energy sources.

Deep-sea mining has always been appealing and attractive to many countries of which Nigeria is not an exception as a means of economic development and revenue generation. A Canadian company (Nautilus Minerals), and the Independent State of Papua New Guinea in April 2014 signed an agreement to begin the world's first deep sea mining for ores of copper, gold, and other valuable metals (Nautilus Minerals, 2014).

Mining companies, and national governments, have leases to explore margin sediments for phosphates off Namibia, New Zealand, and Mexico (Mengerink et al., 2014)

Between 2000 and 2010, the price of many non-energy raw materials increased annually by about 15%, mainly as a result of consumer demand in emerging economies (WTO, 2010). Advances in technology, as well as anxieties and unease over security of supply have encouraged mining companies to consider what the seabed can provide. By 2020, 5% of the world's minerals, including cobalt, copper and zinc could come from the ocean floors which could rise to 10% by 2030. Global annual turnover of marine mineral mining can be projected to grow from virtually nothing to €5 billion in the next 10 years and up to €10 billion by 2030 (EC, 2012). The government of Nigeria needs to take adequate advantage of all its coastal areas to accumulate substantial benefits from the coastal resources in its own exclusive economic zones, which will go a long way in increasing her revenue capability and contributes to national economic development.

The International Energy Agency estimates that energy from the ocean output potential is equivalent to 100–400% of current global energy (IEA, 2012). For example, countries like Cape Verde are now using energy from waves to light up remote and isolated areas. The immediate challenges of realizing the full potential of such energy are its initial high investment costs and policy issues. However, evolving innovations are bound to lower costs and the benefits are expected to flow into other maritime economic sectors, such as ports, the construction and repair of shipyards, and shipping. Science and technology will be critical in addressing the engineering and financial challenges and closing knowledge gaps.

Conclusion

The study has shown that for inexplicable reasons, Nigeria has not dedicated much attention to the development of her abundant energy resources. Her efforts have been concentrated on the development, exploitation and utilization of crude oil and gas for fiscal objectives in spite of the massive opportunities presented by her blue economy for economic growth and diversification opportunities particularly in fisheries and aquaculture, marine tourism, offshore oil and gas, and renewable energy if when fully optimize could enormously boost her revenue base. Nevertheless, to fully appreciate these opportunities, Nigeria will need to address challenges such as overfishing, pollution, and climate change and develop policies and strategies that promote sustainable and responsible use of the blue resources. Thus, if the blue economy would be given a critical looked by Nigeria government; it certainly can be a driver for Nigeria's foreign earner and economic growth. Judicious development of the blue ocean has been identified as very vital to her accelerated national development. Against this background, successive governments must realize that restructuring the blue economy policies and laws is a justification for judicious use of the ocean resources with attendants' benefits.

RECOMMENDATIONS

The study recommends strong political will and robust institutions to be put in place by Nigerian government and key stakeholders for effective development and implementation of blue economy policies in order to bolster the nation's revenue growth based on existing international standards. The need to establish Area-based Management, sound policy coordination and stakeholder engagement to improve revenue from blue economy in Nigeria by the Ministry of Marine and Blue Economy is further suggested.

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