A study of Nigeria’s blue economy potential with particular reference to the oil and gas sector

Abubakar Hassan Hamisu

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A STUDY OF NIGERIA’S BLUE ECONOMY POTENTIAL WITH PARTICULAR REFERENCE TO THE OIL AND GAS SECTOR

By

ABUBAKAR HASSAN HAMISU
THE FEDERAL REPUBLIC OF NIGERIA

A dissertation submitted to the World Maritime University in partial fulfilment of the requirement for the award of the degree of

MASTER OF SCIENCE

In

MARITIME AFFAIRS

(OCEAN SUSTAINABILITY, GOVERNANCE AND MANAGEMENT)

2019

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Declaration

I certify that all the material in this dissertation that is not my own work has been identified, and that no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the University.

(Signature): ..................................................

(Date): 24 September, 2019.

Supervised by: Professor Clive Schofield

Supervisor’s affiliation: WMU-Sasakawa Global Ocean Institute, World Maritime University
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I am profoundly grateful to my supervisor, Professor Clive Schofield (Head of Research, Sasakawa Global Ocean Institute WMU) who did far more than could have been expected for his patient and time in seeing the realization of this dissertation, Professor I thank you most sincerely Sir.

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Abstract

This research focused on the potentialities of Nigeria’s blue economy and activities associated to it, with particular emphasis on Nigeria’s oil and gas sector. This focus on hydrocarbons developments, especially offshore, recognises the central role that oil and gas played in the Nigerian economy in recent decades. The ongoing strategic shift in oil and gas developments in Nigeria from onshore to offshore and particularly deep-water oil and gas production indicates that not only is the oil and gas sector likely to remain an enduring feature of Nigeria’s economy but will increasingly dominate Nigeria’s blue economy.

As a framework of the study, the research highlighted different definitions of blue economy and their peculiarities or particularities for different countries and contexts as well as how the blue economy concept is influenced by the unique nature of particular marine ecosystems in the world. This part of the study was informed by reading, reviewing and synthesising numerous scholarly articles, journals, documents and international conference reports on the blue economy and generally ocean governance.

The research also explores the background to Nigeria and its economy as well as the extent of Nigeria’s maritime jurisdiction on which Nigeria’s blue economy depends. In so doing the study, examines the relevant Nigeria’s boundary disputes as one of the major avenues for improving the activities of blue economy. This was based on the view that the delineation and delimitation of maritime limits and boundaries clarifies the extent of national jurisdiction which, in turn, leads to better understanding of the scope of the country’s blue economy endowments, including rights over valuable resources and activities. This part of the study was based on the international law of the sea applicable to Nigeria and neighbouring states, particularly United Nations Convention on the Law of the Sea (UNCLOS). The maritime Joint Development Zone (JDZ) between Nigeria and Sao Tome and Principe was similarly reviewed.

The latter part of the study addresses the role of the oil and gas sector in Nigeria’s economy and increasingly in its blue economy before recommendations and conclusions are offered.
KEYWORDS: Blue Economy, Ocean Governance, Marine Spatial Planning, Sustainable Development, Oil and Gas, Coastal States, Maritime Boundary, Maritime Zones, Ecosystem Based-Management, Ocean Natural Resources.
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<tr>
<td>ASAU</td>
<td>Administration of Sea Area Use</td>
</tr>
<tr>
<td>BBL</td>
<td>Billion Barrels</td>
</tr>
<tr>
<td>CLCS</td>
<td>Commission on the Limits of the Continental Shelf</td>
</tr>
<tr>
<td>DPR</td>
<td>Department of Petroleum Resources</td>
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<tr>
<td>EBM</td>
<td>Ecosystem Based Management</td>
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<tr>
<td>EEZ</td>
<td>Exclusive Economic Zone</td>
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<tr>
<td>ERGP</td>
<td>Economic Recovery and Growth Plan</td>
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<tr>
<td>FMOF</td>
<td>Federal Ministry of Finance</td>
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<td>FMOJ</td>
<td>Federal Ministry of Justice</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>ICJ</td>
<td>International Court of Justice</td>
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<td>ICM</td>
<td>Integrated Coastal Management</td>
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<tr>
<td>IORA</td>
<td>Indian Ocean Rim Association</td>
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<tr>
<td>IUUF</td>
<td>Illegal Unreported Unregulated Fishing</td>
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<tr>
<td>JDZ</td>
<td>Joint Development Zone</td>
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<tr>
<td>KM</td>
<td>Kilo Meter</td>
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<tr>
<td>LOS</td>
<td>Law of the Sea</td>
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<tr>
<td>MDA</td>
<td>Ministries, Department and Agency</td>
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<td>MFZP</td>
<td>Marine Functional Zoning Plan</td>
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<td>MPA</td>
<td>Marine Protected Area</td>
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<tr>
<td>MSP</td>
<td>Marine Spatial Planning</td>
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<tr>
<td>Acronym</td>
<td>Full Form</td>
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<tr>
<td>NIMASA</td>
<td>Nigerian Maritime Administration and Safety Agency</td>
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<tr>
<td>NNPC</td>
<td>Nigerian National Petroleum Corporation</td>
</tr>
<tr>
<td>OPEC</td>
<td>Organization of the Petroleum Exporting Countries</td>
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<tr>
<td>OTEC</td>
<td>Ocean Thermal Energy Convention</td>
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<tr>
<td>OWF</td>
<td>Offshore Wind Farm</td>
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<td>PICs</td>
<td>Pacific Island Countries</td>
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<td>SADC</td>
<td>South Africa Development Community</td>
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<td>SDGs</td>
<td>Sustainable Development Goals</td>
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<td>SIDS</td>
<td>Small Island Developing States</td>
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<td>SSF</td>
<td>Small Scale Fisheries</td>
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<td>UK</td>
<td>United Kingdom</td>
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<td>UN</td>
<td>United Nations</td>
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<td>UNCSD</td>
<td>United Nations Convention on Sustainable Development</td>
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<td>UNDP</td>
<td>United Nations Development Programmes</td>
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<td>WWF</td>
<td>World Wildlife Fund</td>
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1 INTRODUCTION

1.1 THE AIMS AND OBJECTIVES OF THE RESEARCH

The aim of this research is to fill the gap in the literature existing in the context of marine natural resources as a critical component for the implementation of Blue economy policy for the Federal Republic of Nigeria, and of course to address some compelling concern for the country to take advantage of her blue economy opportunities and to implement policies with much emphasis on offshore oil and gas.

In helping Nigeria to exploit its potential economy from the ocean, the research is aiming to achieve the following objectives:

1. To identify the notion of blue economy, and consider its benefits for the actual incorporation to the country’s overall economy.
2. To identify the major threats to the ocean and carefully examine how these can be addressed for the benefit of the ocean and thus the country.
3. To identify the contribution of the offshore oil and gas exploration to Nigeria’s economy.
4. To develop and achieve on how the idea of blue economy can boost Nigeria’s economy.

1.2 METHODOLOGY

This dissertation work adopts a desktop-based research approach and the use of traditional scholarly approaches including the collection of primary and secondary sources of data then embracing careful reading, reviewing, summarizing of documentation. The sources consulted were diverse. Primary sources included national legislation and agreements with Nigeria’s neighbours, for instance the texts of maritime boundary treaties and joint development agreements, as well as relevant national legislation. Policy documentation was also sought from many international agencies and organizations, and some Nigerian national agencies and ministries related to the subject matter to mention but few like NIMASA, NPA, and Federal Ministry of Finance. Secondary sources consulted included the journals, books, online articles and publications listed in the bibliography. No interview was conducted during the period of this research.
My approach to this research was also strengthened by some appropriate training courses such as Yeosu Academy of the Law of the Sea which improved and broadened my understanding of the Law of the Sea issues encompasses the blue economy dimensions and hence assisted in the general research approach.

1.3 LIMITATIONS
The dissertation largely employed the use of a secondary source of data, but some of the required information was not sufficient online especially Nigerian data related is limited. Efforts were made to gain access to information from some of the Ministries, Department, and Agencies (MDAs) in Nigeria were challenging and this endeavour often ended in vain. Similarly, attempts to gain interviews with Nigerian officials were unsuccessful.

1.4 RESEARCH OUTLINE
The research is divided into six chapters. The first chapter contains an introduction and general overview of the research. The second chapter contains a literature review of the related articles and publications concerning the blue economy. The third chapter contains background information on Nigeria, including land size and borders, population, economy, coastal area and length, maritime jurisdiction and zones claimed, and the dimension of Nigeria’s blue economy. The fourth chapter highlighted the role of the oil and gas sector in Nigeria’s blue economy. Chapter five involved the prospects of Nigeria’s blue economy and highlights the crucial role of the oil and gas sector in that context, at least in the short term. This chapter also includes a number of policy-oriented recommendations. Finally, the sixth chapter provides the conclusion of the research.
2 THE IMPORTANCE OF THE GLOBAL OCEAN

The world's ocean is of fundamental importance to life on planet Earth. The ocean covers 71% (two-thirds proportionally) of the Earth’s surface. The ocean regulates our climate and provides vast natural resources for human benefits. The ocean also provides humans with the basics, necessary for their needs such as food, raw materials, energy, and transportation (see further below). Furthermore, ocean provides seascape for recreational and or religious practices. Currently, there are more than 40% of the world population living in the areas within 200km of the global ocean and out of the 15 megacities in the world, 12 are coastal cities (Visbeck, 2018a, p. 1).

Oceans work on behalf of humans twenty four hours a day, seven days a week, and all year round by providing some essential services such as much of the oxygen we breathe, absorbing the excess heat and carbon we generate, recycling the water we drink and providing a significant proportion of the protein we eat (Djavidnia, Ott, & Seeyave, 2014, p. IV). Oceans and society are intricately and inextricably linked. In addition to their pivotal position in terms of regulating climate and atmospheric gases, the oceans also play a vital role in waste recycling (Costanza et al., 1999, p. 179). Humans in general also derive substantial but often overlooked and undervalued benefits from the ecosystem services the oceans provide.

Ecosystem services are the systems and context in which natural ecosystem and natural species in it benefits and sustains human life (Fisher, Turner, & Morling, 2009, p. 4)

The oceans have long been recognized as one of the human's most important sources of natural resources. Furthermore, when estimating the economic value of the marketed and non-marketed ecosystem services of the oceans, a huge contribution to human welfare and wellbeing were realized. Estimating, the ocean contributes approximately 21 trillion US$/year to human welfare (Costanza, 1999, p. 199). More recently, a conservative estimate of the total asset value of the oceans, restricted to renewable economic activities and thus excluding offshore oil and gas, put the annual “gross marine product” of the ocean at 2.5 trillion with the total asset
base of the ocean put at 24 trillion, meaning that the ocean ranks as the world’s 7th biggest economy (WWF, 2015, p. 12).

The Ocean also benefits human with the means of transportation, linking cities and countries around the world. Maritime transport is considered to be the backbone of the world economy accounting for over 80% of the world trade (UNCTAD, 2016, p. 6). The ocean also provides an enormous 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 & Fujita, 2002, p. 1).

In the process of exploring the above benefits, the ocean receives a huge amount of pressure from humans. Human activity has already been affecting all parts of the ocean body with so many stressors such as pollution and overfishing (McIntyre, 1995, p. 147). Increasing global population, rapid industrial development, and growing human wealth are all factors contributing to the increase of pressure on the ocean. Climate change, non-sustainable resource extraction, land-based pollution, and habitat degradation are threatening the economic productivity and health of the ocean in most of the developing and emerging economic countries including Nigeria (Visbeck, 2018b, p. 1). Figure 1; shows how Oceans and Seas providing some benefits to the Man and Society, and also how Oceans and Seas are experiencing pressure from Man and Society as well (Circle of Sustainability) (Visbeck, 2018: p.1).

![Figure 1. Circle of sustainability, Human-Ocean interactions highlighting ocean ecosystem services and their threats (Visbeck, 2018: p.2).](image)
Furthermore, eutrophication as a result of anthropogenic activities is a great negative impact affecting coastal and marine environments which is threatening the current and potential economic status of some countries including Nigeria (Lundberg, 2013, p. 143).

In the face of these threats to the ocean, there is an increasing need for the sustainable use of ocean resources while securing economic and social objectives simultaneously. The realization of economic growth based on the exploitation of marine natural resources, both living resources such as, fisheries, and non-living resources like hydrocarbon (petroleum resources) while preventing their degradation, overuse, and pollution (Park, Seo, Kildow, & Judith, 2014, p. 1).

Additionally, the use of ocean benefits can be in line with the initiatives in aiming to improve oceans governance in a sustainable way of exploration of the ocean resources, sustainable management of ocean resources to support livelihoods with sustainable economic policy in a more equitable benefits sharing and ecosystem resilience in the face of climate change, destructive fishing practices and external pressures (Techera, 2018, p. 8).

Within the context of sustainable interaction between ocean and human, coastal and marine policymakers have to be well understood that, a need to support and analyse the economic and social aspect of marine activities more specifically offshore hydrocarbons as a blue economy component for sustainable development (Morrissey, 2017, p. 42).

The ocean is a very important source of economic opportunities such as; tourism, transportation and port handling, aquaculture and mariculture, offshore plant engineering, pharmaceutics, seawater utilization and biodiversity conservation (Choi, 2017, p. 38).

2.1 UNDERSTANDING THE BLUE ECONOMY
There is no commonly agreed definition of the Blue Economy concept. This section outlines a broad range of statements from commentators in the emerging literature on the blue economy. The subsequent section (section 2.2) offers a comparative
The Blue Economy is an opportunity for implementing new desirable biological-economic relationships. New Zealand, describe the blue economy as a process of promulgating a transpiring notion through which the ocean is identified as a new economic possibility that is expected to bring both wealth and environmental protection (Choi, 2017, p.37).

The Chinese suggested that the Blue Economy initiative is more than an investment-institutional project. Blue Economy initiative is using new biological-economic knowledge and relations in creating new spatial rationalities, which fundamentally change how we perceive sea space and dispose of things and relations in that space (Choi, 2017), p. 38). The Blue Economy is further viewed as involving the nurturing of sustaining aquaculture and mariculture, tourism, port and transportation, offshore plant engineering, pharmaceutics, seawater utilization, renewable ocean energy, ecological restoration, and biodiversity conservation (Choi, 2017), p. 38).

Blue Economy is also perceived as an investment - institutional initiative which opens up sea space for accumulation of many benefits. Blue Economy is referring to the products generated from activities taking place at sea (Choi, 2017), p. 38). However, the Blue economy is more than an economy - making a project, but it is definitely a governmental project through spatial interventions, opening up new governable spaces and justifying particular ways of governing. The Blue economy practices of seeking economical ways to use space ironically lead to the representation of sea space as potential development space and eventually to more intensive and extractive uses of sea space (Choi, 2017), p. 39).

Blue Economy in context considers the deeper extent of resources exploitation and sustainability visions of ocean management. Blue Economy can also be considered through an accumulation of a wider biological and ecological vision and a particular critical cornerstone on investment-institutional projects. Blue Economy can be extended to consider bio-economic relations, ethics, and politics (Foley, 2017, p. 32).

Blue Economy is a concept of analyzing frame for assessing initiatives aimed at achieving sustainable ocean development and management. The Pacific Islands
Countries (PICs), defined Blue Economy as the aims of balancing sustainable economic benefits with long-term ocean health in a manner which is consistent with sustainable development and its commitment to intra- and inter-generational equity (Keen, Schwarz, & Wini-Simeon, 2018, p. 2). The Blue Economy can also be viewed as involving initiatives aimed to improve oceans governance through the sustainable use of ocean resources, the better coordination of management across scales and time and the protection of ocean’s cultural and natural integrity (Keen et al., 2018, p. 2). In particular, PICs explicitly refer Blue Economy to the sustainable management of ocean resources so as to support livelihoods, more equitable benefits sharing, and ecosystem resilience in the face of climate change, destructive fishing practices and pressures from sources external to the fisheries sector (Keen et al., 2018, p. 2). According to this conception, the Blue Economy is composed of five (5) of main components.

- Ecosystem resilience
- Economic sustainability
- Community engagement
- Institutional integration
- Technical capacity

The first three components are derived directly from the Blue Economy’s roots in the sustainable development literature (Keen et al., 2018, p. 3).

And these components can be represented in Fig. 2, below.
The five components outlined above are within a political and cultural context.

The Blue Economy can also be explained as sustainable economic development opportunities while maintaining ocean ecosystem health.

Further, (Eikeset et al., 2018) highlighted that the root of the Blue Economy is the sustainable development of sustainable use of ocean natural resources while securing economic and social objectives at the moment (Eikeset et al., 2018, p. 177).

In this context, Blue growth is meant to understand economic growth based on the exploitation of marine resources, while at the same time preventing their degradation, overuse, and pollution. Blue Economy is optimal use of ocean-based natural resources such as fisheries, transportation, offshore hydrocarbon, aquaculture, tourism and seabed mining (Eikeset et al., 2018p, p. 177).

According to the 2012 UN Conference on Sustainable Development (i.e Rio + 20), The Blue Economy was implemented within four wider dialogues concerning human-ocean relation (Silver, Gray, Campbell, Fairbanks, & Gruby, 2015, p. 137).

- Oceans as natural capital
- Oceans as good business
- Oceans as integral to Pacific Small Island Developing States (SIDS)
Oceans as small-scale fisheries (SSF) livelihoods.

The Minister of Economy and Development of Timor-Leste emphasized that the Blue economy can be more realized if all the people’s activities towards ocean are centred to the biodiversity conservation (Silver et al., 2015, p. 144).

Small Island Developing States (SIDS) described blue economy as a process of increasing benefits from their Exclusive Economic Zones (EEZs) by reducing overfishing, destructive fishing practices, Illegal Unreported Unregulated Fishing (IUU Fishing), and establishing marine resources and ecosystem resilience to climate change, because without a healthy ocean there would be no place for our lives and livelihoods (Silver et al., 2015, p. 146).

The South African government initiatives on maritime governance, tried to differentiate the terms the Blue economy and Ocean economy; the Blue economy refers to the economic potential of ocean resources together with the need to ensure the ocean health and sustainability, while the Ocean economy is the economic activities which are directly or indirectly taking place in the ocean without focusing on the oceans health but the economic gain (Potgieter, 2018, p. 51).

Blue economic activity, growth, and sustainable development depend on security, this notion creates an evident link between Blue economy and maritime security. Maritime security is an intrinsic part of national security, human security, marine safety, while the blue economy focuses on utilizing our ocean resources in a way that is compatible with sustained environmental health (Potgieter, 2018, p.51).

According to the South African Development Community (SADC), the Blue economy can be referred to as the various activities concerning the ocean such as; utilizing living marine resources, exploiting non-living marine resources, (commerce, trade & shipping), tourism & creation, maritime infrastructure & services, environmental care & ocean health and the maritime governance for sustainable development (Potgieter, 2018, p. 56).

Winder and Le Heron (2017, p. 4), explained that, when Nations, the International and legal community are opposing multiple and overlapping uses in the ocean and marine
environment, then the Blue economy has been widely prescribed as a strategy to save the world’s oceans and marine environment by enrolling in the ocean, coasts and land in new economic possibilities changes the places, scales, and dynamics by which natural resources enter into the economic systems. The blue economy is also aiming to identify the possible connections between the economic and ecological system in order to come up with a new shape of economic activities within the biological process and to expedite possibilities to deliver sustainable collective and individual benefits from the ocean (Winder & Le Heron, 2017, p. 14).

However, the Blue economy concept in New Zealand can also be referred to the bridge linking economy to ecology and ecosystem-based management (EBM) development in line with connecting social and ecological processes in formulating the view of a need to quantify social impacts and restoring economy as economic practices that are always embedded in ecological conditions (Winder & Le Heron, 2017, p. 17).

Voyer, Quirk, McIlgorn and Azmi (2018) also explained the Blue economy as a concept of utilizing the opportunities associated with the ocean, while considering and addressing its threats. In a paper published by the United Nations 2014, define the blue economy as an ocean economy that aims at the improvement of human well-being and social equity, while significantly reducing environmental risks and ecological scarcities (Voyer et al., 2018, p.3).

The World Wildlife Fund (WWF), (2015) also define the blue economy as a marine-based economy that provides social and economic benefits for the current and future generations, by contributing to food security, poverty eradication, livelihoods, income, employment, health, safety, equity and political stability, while restoring, protecting and maintaining the diversity, productivity, resilience, core functions and intrinsic value of marine ecosystems (Voyer et al., 2018, p.3).

The combining forces of World Oceans Council, the Australian Government, Indian Ocean Rim Association, the European Union and the Economist Magazine has established that most of the definitions of Blue Economy or Blue Growth include a focus on the three (3) main objectives, environmental sustainability, economic growth,
and social equity, driven by an integrated oceans governance approach and technological innovation (Voyer et al., 2018, p.4).

The Blue economy can also be seen to be consistent with wider modes in environmental management sustainability, economic development, and social equity. But also interacts with other ocean governance instruments such as Marine Spatial Planning (MSP), Ecosystem-Based Management (EBM) and Integrated Coastal Management (ICM). The blue economy is also a governance instrument which appropriately can be used to articulate the use within the oceans at global, regional and national levels (Voyer et al., 2018, p.5).

The Indian Ocean Rim Association (IORA), defines the blue economy as a subset of the ocean economy which covers all direct and indirect ocean-related activities and their economic sectors to be functioning, while regulating to the coasts of environmental damage and ecological imbalance cause exploring the ocean resources for consumption (Voyer et al., 2018, p.29).

Colgan (2003), explained that the ocean economy consists of all economic activities which acquire all or part of its inputs from the ocean or Great Lakes. And the coastal economy which is the second subset of the ocean economy consists of all economic activity in the coastal region and is thus the sum of employment, wages, and output in the region. Some of the coastal economies are the ocean economy, but the coastal economy incorporates a broader set of economic activity (Colgan, 2003, p.5).

<table>
<thead>
<tr>
<th>Extraction of non-living resources</th>
<th>Harvesting of living resources</th>
<th>Commerce and trade in and around the ocean</th>
<th>Ecosystem protection and management</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Seabed/deep seabed mining</td>
<td>● Fisheries</td>
<td>● Shipping (maritime transportation)</td>
<td>● Surveillance and maritime security</td>
</tr>
<tr>
<td>● Oil and gas</td>
<td>● Aquaculture</td>
<td>● Shipbuilding and repair</td>
<td>● Habitat protection/Restoration</td>
</tr>
<tr>
<td>● Water (desalinization)</td>
<td>● Marine biotechnology</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11
Table 1, (Voyer et al., 2018, p.6) summarizes the comprehensive concept of Blue Economy. They adapted the table from (The Economist, 2015).

The Small Island Developing States (SIDS) were the first to put forward the concept of a The Blue Economy as the ocean-based component of the Green Economy by highlighting the importance of considering the marine environment in the 2012 United
Nations Convention on Sustainable Development (UNCSD) or Rio + 20 conference, which placed a big focus on the Green Economy (Voyer et al., 2018, p.32).

From the above review, it can be deduced that blue economy encompasses all the activities taking place in the ocean with the aim of utilizing its potential benefits both living resources and non-living resources without deteriorating the health condition of the ocean.

2.2 COMPARATIVE DEFINITION OF BLUE ECONOMY

The Blue economy is a green economy in a blue world which integrates a new approach to the economic utilization of the ocean’s resources. But as of now, there is no agreed common definition of the blue economy because each country has its own unique ecosystem and marine natural resources endowment. Some countries, such as Nigeria, have offshore oil which of course will be included in their blue economy activities while some do not, the same with the other marine mineral resources.

Also the idea of ocean governance and policy making decisions vary from one country to another, as such having a common definition of blue economy is something with so many great difficulties.

Given the central role of oil and gas activities in Nigeria’s economy and the increasing role of offshore oil and gas developments in that context (see Chapters 3 and 4), a deliberately broad, inclusive, interpretation of the Blue economy is used in this study. Specifically, this means that the exploitation of seabed energy resources, notably oil and gas, are included as a Blue economy activity in the Nigerian context.
3 BACKGROUND TO NIGERIA

3.1 THE NIGERIAN SIZE AND LAND BORDERS

The Federal Republic of Nigeria lies at the extreme innermost corner of the Gulf of Guinea in West Africa (Coleman, 1958, p. 11) (see Figure 3). Nigeria shares land borders with the Republic of Niger and Chad to the North, with the Republic of Benin to the West, with the Republic of Cameroon to the east and with the Atlantic Ocean to the South (Nwilo & Badejo, 2006a, p. 1). Nigeria has multiple potential maritime boundaries including lateral maritime boundaries with Benin, as well as potentially Ghana, to the west, Cameroon to the east as well as with Equatorial Guinea and Sao Tome and Principe to the south.

Nigeria has a total land surface area of approximately 923,768 square kilometres (km²). Nigeria also has a coastline area of approximately 853 kilometres (km) directly facing the Atlantic Ocean which lies between the latitude of 4° 10’ to 6° 20’N and longitude of 2° 45’ to 8° 35E (Nwilo & Badejo, 2006, p. 1).

The country Nigeria declared her independence from the United Kingdom (UK) on the 1st of October 1960. The country currently has 36 states and its Federal Capital Territory (FCT) known as Abuja.

Figure 3, Map of Nigeria. Sourced from Geology.com (2007).
3.2 NIGERIA'S POPULATION

There are about two hundred million nine hundred and seventy-seven thousand five hundred and thirty-three (200,977,533) people in the country, with a population density of nearly 200 individuals per square kilometre. The whole population of Nigeria accounts for about 2.35% of the entire world's population, this expresses that one (1) out of every 43 people in the world is a Nigerian (World Population Review, 2019).

The country Nigeria has over five hundred (500) different ethnic groups and different languages. Among the ethnic groups in the country, the Hausa-Fulani ethnicity provides the majority. Indeed, the Hausa-Fulani accounts up to two-thirds (2/3) of the whole country’s population. A very large proportion of the Hausa-Fulani are of the Muslim faith. Nigeria uses the language of English as her official speaking language, but there are also many languages, among which the most common speaking ones are the language of Hausa, the language of Yoruba and the language of Igbo. These three languages are the most widespread apart from the official English language of the country (World Population Review, 2019).

3.3 NIGERIA’S ECONOMY

A long-standing objective for successive Nigerian governments has been affecting change in the structure of production and consumption patterns, diversification of the economic base and reducing dependence on oil, with the focus of supporting the economy in a position of sustainability for the benefit of the future. Nigeria’s economy shows a rapid growth as measured by the real gross domestic product (GDP), even though, the transformation of the various sectors of the economy are even more critical, that is a lack of the will to transform and or improve various country’s economic sectors (Sanusi, 2010, p.1)

Successive governments in Nigeria have, since independence in 1960, chased the goal of structural changes without much success. The dynamic growth of Nigeria’s economy has been largely driven by the existence and exploitation of natural resources and primary products. Initially, the agricultural sector, driven by the demand for food and cash crops production was at the centre of the growth process,
contributing 54.7% to the country’s GDP during the 1960s. The second decade of independence experiences the emergence of the oil industry as the main driver of growth to Nigeria’s economy in which almost all or most of the government expenditure rely on it. Since then, the economy has mainly revolved with the boom-bust cycles of the oil industry (Sanusi, 2010, p.1)

The Nigerian economy has flagrantly underperformed comparative to her tremendous resource endowment and her peer nations. Nigeria is the 6th largest gas reserves nation and the 8th largest crude oil reserve nation in the world. Nigeria with her current population has almost over 37 solid mineral types in commercial quantities including tin, iron ore, coal, limestone, niobium, lead and zinc (Chircop, Dzidzornu, & Oguamanam, 2016, p.61), but still the economic performance has been feeble or puny which does not display the economic development progress that might be expected for a country with these endowments (Sanusi, 2010, p.2)

Given Nigeria’s abundant natural resources, economic performance has been weak and as a result, has not delivered expected increases in the citizen's wellbeing. Nigeria’s poor economic performance is demonstrated when compared with other emerging economy countries like Asian countries, particularly Thailand, Malaysia, China, India, and Indonesia. Although these countries were far behind Nigeria in terms of Gross Domestic Product (GDP) per capita in 1970, they have now transformed their economies and are now not only far ahead of Nigeria in GDP terms, but are also major players in the world economic sectors (Sanusi, 2010, p. 2) Unfortunately, this situation shows little sign of changing and Nigeria remains in the state of poor economic performance. Nigeria’s limited economic gains are also brought into stark relief when comparing Nigeria’s economy with that of China. China is now the second (2nd) largest economy in the world, whereas back in 1970, Nigeria’s GDP per capita of US$ 233.35 placing it 88th in the world while China was ranked 114th with a GDP per capita of US$ 111.82 (Sanusi, 2010, p.2).

Political instability is arguably the primary reason for Nigeria’s economic woes, coupled with poor leadership. That is leaders with limited focus and vision towards economic development. Economic mismanagement also remains a significant contributing factor as well as endemic corruption impacting almost all government functionaries (Rose-Ackerman, 1997, p. 31).
Oil remains critical to the Nigerian economy with two-thirds (2/3) of Nigeria’s government revenues emerge from oil. The oil contributes almost 85% to the country’s GDP (Ite et al., 2013, p. 81). Nigeria supplies about 2.7% oil to the world’s market when compared with Saudi Arabia, Russia and the United States of America which contribute 12.9%, 12.7%, and 8.6% respectively (OPEC, 2018).

The Nigerian economy has different major sectors as; Primary - (Agriculture, Oil and Gas, Mining and Forestry), Secondary - (Light and Heavy Industries) and Tertiary - (Service) (FMF, 2018). As all these sectors solidly depend on import and export through maritime transportation, they greatly impact the blue economy as almost 100% of Nigeria’s crude oil and refined product are both been exported and imported respectively through the ocean.

3.4 THE NIGERIAN COASTAL LENGTH

Coastal areas provide very important habitats supporting biodiversity, ecosystems and many natural resources in the global context (Bird, 2011, p. 436). Coastal areas globally encompass the majority of the world’s most important and diverse economic activities. However, pollution and poor coastal management, population growth, global warming represent significant challenges for coastal landforms, ecosystems, and biodiversity (Danladi, Kore, & Gül, 2017, p. 493).

Nigeria has a total coastal length that has been put at 853km (Nwilo & Badejo, 2006b, p. 1). However, Fairbridge, (2004) and Finkl, (2004) morphologically estimated Nigeria coastal length as 759 km. Nigeria’s coast and coastal zone is one of the most important economic pivots in Africa and probably the most densely populated (Sexton & Murday, 1994, p. 960). The coastal area encompasses Lagos and the economically important Niger Delta region, which means it is classified into two coastal geographical zones; the western coast (the Lagos region) and the eastern coast (the Niger Delta region) (Danladi et al., 2017, p. 493).

Fairbridge, (2004) and Finkl (2004) divided the Nigerian coastal length of 759 km into five (5) distinct morphological regions (Danladi et al., 2017, p. 495) as;
3.5 PROPORTION OF THE PEOPLE LIVING ON THE COAST

Nigeria has a total of thirty-six (36) states, in which nine (9) states out of them are coastal states with the population proportion of twenty-five percent (25%), which is almost 40,195,506 of the country’s whole population (Omole & Isiorho, 2011, p. 1). In some literature, the coastal states in Nigeria are eight (8) with the exclusion of Edo State, the eight (8) coastal states which bordered or facing the Atlantic Ocean are; Akwa Ibom, Bayelsa, Cross River, Delta, Lagos, Ogun, Ondo and Rivers (Nwankwpala, 2011, p. 372).

3.6 NIGERIA MARITIME JURISDICTION AND ZONES CLAIMED

The Federal Republic of Nigeria is a party to and one of the major beneficiaries of the United Nations Convention on the Law of the Sea (UNCLOS), 1982 (Chircop et al., 2016, p. 60). Consideration of the scope of Nigeria’s maritime zones and the delimitation of its maritime boundaries is fundamental to a discussion of the country’s Blue economy potential. This is because only activities taking place within Nigeria’s maritime jurisdiction and associated coasts will contribute to its Blue economy.

Nigeria signed the Convention on the 10th December 1982 and subsequently ratified it on the 14th August 1986. The Convention came into force on the 16th of November 1994. Nigeria is entitled under the Convention to enjoy, and duly claims, a 12 nautical miles breadth territorial sea (UNCLOS, Articles 3-4), a 24 nautical miles breadth contiguous zone (UNCLOS, Article 33), an exclusive economic zone (EEZ) to a limit of 200 nautical miles (UNCLOS, Article 57) and continental shelf which at a minimum is coextensive with the exclusive economic zone (EEZ) and beyond to an outer limit of 350 nautical miles from coastal baselines or 100 nautical miles from the 2,500 meter isobath (UNCLOS, Article 76) (Chircop et al., 2016, p. 60).
The articles of the United Nations Convention on the Law of the Sea (UNCLOS) under which Nigeria enjoyed these maritime zones are:

1. **TERRITORIAL SEA**: Article (3) of the United Nations Convention on the Law of the Sea (UNCLOS) stated that “Every State has the right to establish the breadth of its territorial sea up to a limit not exceeding 12 nautical miles, measured from baselines determined in accordance with this Convention”.

2. **CONTIGUOUS ZONE**: Article (33), Paragraph 2 of the United Nations Convention on the Law of the Sea (UNCLOS) stated that “The contiguous zone may not extend beyond 24 nautical miles from the baselines from which the breadth of the territorial sea is measured”.

3. **EXCLUSIVE ECONOMIC ZONE (EEZ)**: Article (57) of the United Nations Convention on the Law of the Sea (UNCLOS) stated that “The exclusive economic zone shall not extend beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured”.

4. **CONTINENTAL SHELF**: Article (76) of the United Nations Convention on the Law of the Sea (UNCLOS) fully explained the legal regime for the purpose of the Continental shelf in paragraphs 4 - 7 of the article. Paragraph 4 *(a)* - For the purposes of this Convention, the coastal State shall establish the outer edge of the continental margin wherever the margin extends beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured, by either:

   (i) “a line delineated in accordance with paragraph 7 by reference to the outermost fixed points at each of which the thickness of sedimentary rocks is at least 1 per cent of the shortest distance from such point to the foot of the continental slope”; or

   (ii) “a line delineated in accordance with paragraph 7 by reference to fixed points not more than 60 nautical miles from the foot of the continental slope”.

Paragraph 4 *(b)* - “In the absence of evidence to the contrary, the foot of the continental slope shall be determined as the point of maximum change in the gradient at its base.”
Paragraph 5 - “The fixed points comprising the line of the outer limits of the continental shelf on the seabed, drawn in accordance with paragraph 4 (a)(i) and (ii), either shall not exceed 350 nautical miles from the baselines from which the breadth of the territorial sea is measured or shall not exceed 100 nautical miles from the 2,500 metre isobath, which is a line connecting the depth of 2,500 metres”.

Paragraph 6 - “Notwithstanding the provisions of paragraph 5, on submarine ridges, the outer limit of the continental shelf shall not exceed 350 nautical miles from the baselines from which the breadth of the territorial sea is measured. This paragraph does not apply to submarine elevations that are natural components of the continental margin, such as its plateaux, rises, caps, banks and spurs”.

Paragraph 7 - “The coastal State shall delineate the outer limits of its continental shelf, where that shelf extends beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured, by straight lines not exceeding 60 nautical miles in length, connecting fixed points, defined by coordinates of latitude and longitude”.

Conceivably, the most far-reaching issue that has stimulated change in Nigerian ocean policy in recent times was the submission concerning the outer limits of its continental shelf to the commission on the limits of the continental shelf (CLCS). The submission is now currently under consideration by the CLCS. If the Commission opts to issue positive recommendations, the Nigerian continental shelf over which the sovereign rights for the purposes of exploring and exploiting its non-living resources will be increased to some appreciable extent (Chircop et al., 2016, p.60). Fortunately, there are no any overlaps or disputes between the country and her neighs.
Nigeria had not taken any steps to optimize its claims in the delineation of baselines, contiguous zone, exclusive economic zone (EEZ) jurisdiction and the delineation of the outer limits of the extended continental shelf until recently that the need to review of the existing legislation which will enable the country to maximize all the benefits under the United Nations Convention of the Law of the Sea (Folami, 2017), which can be expressed as the country has not fully utilized its opportunity of being the party of the UNCLOS in the process of her jurisdictional maritime zones entitlements (Chircop et al., 2016, p.60).

In the year 2009, the above needed come to a climax which makes the Federal Ministry of Justice (FMOJ) to draft an executive bill aiming to a total overhaul in the country's legislation concerning of claiming maritime zones and the opportunity to
exercise any related jurisdictional rights permitted by the international law of the sea through National House of Assembly as; House Bill 170 and Senate Bill 240 labelled:


3.7 DELIMITATION OF NIGERIA’S MARITIME BOUNDARIES
Some changes in Nigeria’s political geography has demanded a domestic and bilateral proceedings for the arrangement of her maritime boundaries with her neighbouring country’s maritime boundaries (Chircop et al., 2016, p. 60).

Nigeria has negotiated a maritime boundary with the Republic of Benin, a maritime boundary and joint exploration agreement with Equatorial Guinea, Joint Development Zone (JDZ) with the Republic of Sao Tome and Principe, and maritime boundary agreement with the Republic of Cameroon (McEwen, 1991, p. 62).

3.7.1 NIGERIA AND SAO TOME AND PRINCIPE JOINT DEVELOPMENT ZONE
Nigeria and Republic of Sao Tome and Principe in 2001 finalized a treaty which resulted in establishing a joint development zone (JDZ) between them. They succeeded in establishing such largest joint development zone in the world since to date. The area covered for the joint zone is 34,504 km², which can be equal to 10,070 nm² (Schofield, 2014, p. 13).
Figure 5. Map of Nigeria-Sao Tome and Principe Joint Development Zone (Calson & Smith, 2005, p. 3648).

The Republic of Sao Tome and Principe has potential maritime boundaries with Equatorial Guinea, Gabon, and Nigeria (Dzurek, 1999, p. 101).

Figure 6. The Map depicts hypothetical median lines in the Gulf of Guinea indicating the maritime boundaries (Dzurek, 1999, p. 98).
The main reason for this joint development zone is as a result of overlapping claims in which the Southwestern limit of Sao Tome and Principe by 200 nautical mile curves or arcs from Nigeria, while its south-eastern limit approximately indicates a one-third effect line for Sao Tome and Principe against Nigeria. The empirical objective of this joint development zone is to exploit and share the natural resources of the joint zone, exclusively seabed hydrocarbon (Schofield, 2014, p. 13).

All the revenues to be obtained in the process of exploiting the natural resources within the joint zone are to be shared on the rationale of 60 percent to Nigeria while 40 percent to Sao Tome and Principe (Schofield, 2014, p. 13). The agreement establishes a joint Ministerial Council and a joint Authority, which has since been renamed the Joint Development Authority (JDA).

The Joint Development Authority (JDA) appears to share a part of the civil and administrative jurisdiction in the joint development zone (JDZ) (Biang, 2010, p. 37). Article 9(2) of the February 21 2001 Treaty (The 2001 Treaty) stated that,

"The Authority shall have juridical personality in international law and under the law of each of the States Parties and such legal capacities under the law of both States Parties as are necessary for the exercise of its powers and the performance of its functions. In particular, the Authority shall have the capacity to contract, to acquire and dispose of movable and immovable property and to institute and be party to legal proceedings."

Schofield (2005) explained the agreement under which the establishment of the joint zone between Nigeria and Sao Tome and Principe was formed in article 9(6) of the 2001 Treaty establishes a joint authority and listed out some functions in which the authority would be monitoring, article 9(6) is quoted as;

"(h) Controlling the movements into, within and out of the Zone of vessels, aircraft, structures, equipment and people;"

"(i) The establishment of safety zones and restricted zones, consistent with international law, to ensure the safety of navigation, petroleum activities,
fishing activities and other development activities and the effective management of the Zone;”

“(j) Issuing regulations and giving directions on all matters related to the supervision and control of operations, including on health, safety and environmental issues;”

“(k) The regulation of marine scientific research”

“(o) The preservation of the marine environment, having regard to the relevant rules of international law applicable to the Zone”

“(r) Requesting action by the appropriate authorities of the States Parties consistent with this Treaty, in respect of the following matters:”

“i) Search and rescue operations in the Zone”

“ii) Deterrence or suppression of terrorist or other threats to vessels and structures engaged in development activities in the Zone; and”

“iii) The prevention and remedying of pollution”.

In the case of the security and policing in the zone (Schofield, 2005, p. 112) also further explained it under article 43 of the 2001 Treaty which quoted as;

(1) “The States Parties shall...jointly conduct defence or police activities throughout the Zone…”

(2) “If and to the extent that either State Party shall fail to comply...then without prejudice to any other rights the other State Party may have, nothing in this Treaty shall prevent that other State Party from separately carrying on such activities to such an extent as it considers necessary or appropriate.”

(3) “The States Parties shall consult with each other…”

(4) “This article is without prejudice to any other basis for the conduct of defence or police activities which either State Party may have under international law”

With this Joint Development Zone (JDZ), both Nigeria and Sao Tome and Principe will jointly ensure the security of the zone, and will create a kind of consultative forum
among the parties for managing the zone properly without prejudice to either. Both parties shall benefit from the zone in terms of the exploration of living natural resources mainly fish, and non-living resources specifically hydrocarbon. Under this Joint Development Zone, the exploration of the oil and gas has already been started with the sharing formula of Nigerian and Sao Tome and Principe having 60% and 40% respectively.

3.7.2 NIGERIA AND CAMEROON MARITIME BOUNDARY AGREEMENT
Nigeria and Cameroon are neighbouring countries with adjacent coasts in the oil-rich Gulf of Guinea on the west coast of Africa, the Gulf is concave at the coastlines of the two neighbouring countries. Nigeria and Cameroon have not been able to reach an agreement on the boundary issue of their exclusive economic zones (EEZ) and continental shelves (Okafor, 2006).

The main reason for the disagreement in the past at least was their sovereignty dispute over an oil-rich land territory “the Bakassi peninsula” which is situated in the hollow of the Gulf of Guinea.

On the 26th of August 1971, the Republic of Cameroon made a claim for straight baselines along her coast and also claims a territorial sea of 50 nautical miles, but still Cameroon has not claimed an Exclusive Economic Zone (EEZ) formally, though it has asked the International Court of Justice (ICJ) to delimit an extended boundary with her neighbouring country Nigeria (Dzurek, 1999, p.99). Cameroon ratified the 1982 United Nations Convention (UNCLOS) on the 19th of November 1985.

The main maritime boundary dispute that had happened and resolved between Nigeria and Cameroon relates to an earlier maritime boundary agreement and the issue of sovereignty over the Bakassi peninsula (Dzurek, 1999, p.99).

Cameroon and Nigeria negotiated their maritime boundary delimitation in 4 April 1971. This negotiation resulted in the Maroua Declaration of 1 June 1975 constituting an extension of the delimitation of the territorial waters boundary between the two parties seaward from point 12 to point G, beyond the limits instituted by the maritime
boundary agreement of 4 April 1971 between the two states (Charney & Alexander, 1993, p.841).

The Maroua Declaration, in 1975 the two heads of States Yakubu Gowon of Nigeria and Ahmadu Ahidjo of Cameroon met in Maroua, Cameroon and signed an agreement in order to extend a 1971 boundary delimitation which divided the estuarine waters and river islands of the Cross River and related territorial sea (Charney & Alexander, 1993, p.842) and (Dzurek, 1999, p.99).

The delineated boundary endorsed by the two heads of states is represented in Figure 8 below;

Figure 8, Admiralty Chart No. 3433, maritime boundary Cameroon-Nigeria (Report Number 4-1) (Charney & Alexander, 1998), p.845).
There was an annex to the Maroua Declaration because of an error which slides in
the definition of the coordinates of point B. The real coordinates supposed to be B
(Longitude 08° 24’ 10” E and Latitude 04° 26’ 32” N) but not (Longitude 08° 26’ 32”

During the Maroua Declaration, the two Heads of State also ensure their reaffirmation
for further consideration and commitment to freedom and security of ships of the two
countries navigation in the Calabar/Cross River axis as clearly defined by

The oil and living resources existent in the estuaries of Rio del Rey were taken into
consideration in the course of extending the boundary, and the main course for that
was of having a desire to equitably divide such resources among the two parties

On 29th of March 1994, Cameroon filed a lawsuit against Nigeria at the International
Court of Justice (ICJ), at the Hague, the Netherlands, due to the too much of series
tension that continued escalating and claimed many lives of soldiers from both sides
of the countries. Cameroon was seeking a ruling for the ejection and repatriation of
Nigerian forces and stop Nigeria from claiming sovereignty over the Bakassi
peninsula (a land area which has a coastal frontage on the Gulf of Guinea) (Nicholas

Cameroon in bringing its lawsuit, however, solicited that the court (“to prolong the
course of her maritime boundary with the Federal Republic of Nigeria up to the limit
of the maritime zones which International Law places under their respective
jurisdictions”). Cameroon also advocated that the Maroua Declaration of 1 June 1975
had already partly determined the maritime boundary but noticed that Nigeria had
been questioning the validity of the Declaration (Colson & Smith, 2005, p.3605).

On the 13th of December 1995, Nigeria filed eight preceding objections concerning
the court jurisdiction and permissibility in association with the application. A judgment
was passed on the 11th day of June 1998, where the court upheld its jurisdiction
based on the declarations made by the two parties (under Article 36(2) of the statute
of the court) accepting the jurisdiction of the court and rejected 7 of the 8 preceding
objections by Nigeria, but accepted 1 (Colson & Smith, 2005, p.3605-3606).
Equatorial Guinea applied to the court seeking permission to intervene in the as a non-party during the session of written pleadings exchange in accordance with Article 62 of the statute of the court. However, after the written pleadings exchange, verbal proceedings took place in February and March 2002 and then, the court delivered the judgment on 10 October 2002. The court reaffirmed (by a vote of 13 to 3) in its judgment that the boundary embraced on 4 April 1971 between the two Heads of State and the 1975 Maroua Declaration. The court also resolved to extend the boundary from the last point (point G) of the Maroua Declaration and considered that beyond point G, the equidistance line represented an equitable delimitation. Consequently, from point G, the extension of the maritime boundary by the court follows a loxodrome having an azimuth of 270° until it reaches point X, which is said to be on the equidistance line between the coasts of the two parties (“drawn in accordance with the court’s finding that Cameroon had sovereignty over Bakassi Peninsula”). Then, the boundary continues out to sea following the equidistance line along a loxodrome having an azimuth of 187° 52’ 27” (Colson & Smith, 2005, p.3606).

It was noted by the court that the equidistance line which however it had adopted could not be extended very far because it would take no decision that might affect the rights of Bioko Island of Equatorial Guinea situated less than 24nm from the coast of Cameroon (Colson & Smith, 2005), p.3606).

Subsequent to the judgment delivered by the court in October 2002, the Secretary-General of the United Nations, Kofi Annan was able to fix an agreement between the two Heads of State, Paul Biya of Cameroon and Olusegun Obasanjo of Nigeria. The agreement was to create a Mixed Commission that would comprise representatives from both parties with United Nations facilitators under the chairmanship of the Secretary General’s Special Representative in West Africa, Ahmedou Ould-Abdallah a national of Senegal. The main motive of the purpose of the Mixed Commission is to oversee the implementation of the court’s judgment (Colson & Smith, 2005, p.3614).

3.8 BLUE ECONOMY DIMENSIONS TO NIGERIA’S ECONOMY

Economic growth is one of the pillars of all nations’ development and security. Countries with very strong economic growth are less likely to experience war or any
violent activities (Duarte, 2016, p. 97). The blue economy has recently emerged as a framework used in understanding the economic contribution of the ocean-based sectors which produces a nation’s overall economic health (see Chapter 2).

The figure below (Figure 9) addresses the core critical areas of the blue economy in an understandable way.

Figure 9, a summary of the Blue Economy activities.

The World Wildlife Fund (WWF), (2015) also define the Blue economy as a marine-based economy with that:

- “Provides social and economic benefits for current and future generations, by contributing to food security, poverty eradication, livelihoods, income, employment, health, safety, equity, and political stability”.

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“Restores protects and maintains the diversity, productivity, resilience, core functions, and intrinsic value of marine ecosystems and the natural capital upon which its prosperity depends.”

“Is based on clean technologies, renewable energy, and circular material flows to secure economic and social stability over time while keeping within the limits of one planet. (WWF Baltic Ecoregion Programme, 2015)”.

Nigeria with a coastline of about 853 km which is bordering the Atlantic ocean in the area of the Gulf of Guinea. Nigeria has a maritime area of about 46,000 km² with a significant and diversifying marine natural resources. Nigeria is a country endowed with numerous economic activities in which highest percentage depend or derive from the ocean resources, but it is explicitly cleared that Nigeria’s blue economy potentials are far not being fully harnessed and the framework policy to address this issue is strongly needed (NIMASA, 2018).

The importance of blue economy in Nigeria cannot be overemphasized, particularly maritime transport for trade, with over 95 percent of the country’s trade by volume and more than 70 percent of its value being moved around aboard ships and handled by seaports, and offshore oil and gas the maritime component of the oil and gas industry (NIMASA, 2018).

The Nigerian maritime sector plays a vital role in the country’s overall economy in the exploitation, distribution and exporting of Nigeria’s ocean natural resources. Nigeria’s overall economy benefits significantly from the country’s maritime economy sector (blue economy).

The maritime freight contributes a total of $5 billion - $6 billion annually as estimated to Nigeria’s overall economy, while offshore oil and gas (the maritime portion of Nigeria’s oil and gas industry) contribute to the overall economy as estimated a total of $8 billion annually. Fishing activities also generate to the overall country’s economy with an approximate of $1 billion annually (NIMASA, 2018).
3.9 ACTIVITIES AND RESOURCES OF BLUE ECONOMY IN NIGERIA

The blue economy comprises of all economic activities with direct reliance on the ocean natural resources. These economic activities can be classified into;

**Ocean-based activities:** are those activities that are undertaken in the ocean such as fisheries and aquaculture, offshore oil and gas, seabed mining, offshore energy wind farms, shipping and marine transportation, marine tourism, and marine construction.

**Ocean related activities:** are also those activities which use the products from the e.g. seafood processing, marine biotechnology, chemicals to mention but few, and produce products and services for the ocean and ocean-based activities such as shipbuilding and repair, port construction, communication, maritime law and insurance, and etc. (UNDP, 2018).

Attri (2016) explained that, the ocean economic activities are rapidly expanding which is driven by developments in the world population, economic growth, technology, climate change, and trade. Glancing to 2030, various ocean-based industries have the prospective to out-perform the growth of the whole world economy in terms of employment and value-added. The forecasts propounded that between 2010 and 2030 on a “business - as - usual” scenario basis. The contribution of the blue economy could be more than two times the whole world value-added extending to over USD 3 trillion (Attri, 2016, p. 4). The strong growth is particularly anticipated in marine aquaculture, offshore energy, shipbuilding and repairs, port activities and seafood processing.

The table below identified the established and emerging blue economy activities in the majority of the countries globally.

<table>
<thead>
<tr>
<th>ESTABLISHED</th>
<th>EMERGING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fisheries</td>
<td>Marine aquaculture</td>
</tr>
<tr>
<td>Seafood processing</td>
<td>Deep and ultra-deepwater oil and gas</td>
</tr>
<tr>
<td>Shipping</td>
<td>Offshore wind energy</td>
</tr>
</tbody>
</table>

33
Table 2, Established and Emerging Blue Economy Activities (Attri, 2016, p. 4).

In the case of Nigeria, the blue economy activities are far from being fully harnessed, as such Nigeria enjoy a few of the above activities. Nigeria also classified the activities into established and emerging activities (NIMASA, 2018).

**Established activities** - shipping, ports, fishing, and marine minerals mainly oil and gas.

**Emerging activities** - aquaculture, mariculture, biotechnology, and marine renewable energy.

Table below fully described the activities.

<table>
<thead>
<tr>
<th>S/N</th>
<th>CATEGORY</th>
<th>ESTABLISHED</th>
<th>EMERGING</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Commerce and trade</td>
<td>Shipping; International shipping and its associates are essential to</td>
<td></td>
</tr>
</tbody>
</table>
the Nigerian economy in which 95 percent of the country’s imports are by the sea.

**Ports;**

Nigerian economy benefits from a variety of commercial facilities which are cargo handling, bunkering, warehousing, technical services, cargo discharge, marine security, handling and stevedoring and inter-island terminal and quays.

Demand for processing and transshipment facilities as well as fuel supplies and its associated commodities.

| 2 | Food, Nutrition, and Health | Fishing; |
|   |                           | The fishing sector is critical for both the generation of national income and fish products, leading from fishing activities to revenue generation and food security. |
|   | Aquaculture;              | The demand for fish globally is anticipated to efflux in the years coming, the majority of it would emerge from aquaculture in which many of that production capacity took place in the ocean. |
|   | Mariculture;              | Virtually mariculture is not |
practicalizing (is not taking place) in Nigeria, but now the country is developing an interest in it.

**Biotechnology;**

This is harvesting the marine natural resources, processing and developing new pharmaceutical drugs, chemical products, enzymes, and other industrial products and processes.

<table>
<thead>
<tr>
<th>3</th>
<th>Energy and Raw materials</th>
<th>Marine minerals;</th>
<th>Marine renewable energy;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>The mainly marine mineral resources activities which contribute tremendously to the Nigerian blue economy is offshore oil and deposits</td>
<td>There are great possibilities for the development and existence of offshore wind farms and wave, and Ocean Thermal Energy Conversion (OTEC) in Nigeria within the near future.</td>
</tr>
</tbody>
</table>


**3.10 THREATS OF THE BLUE ECONOMY ACTIVITIES IN NIGERIA**

The entire Gulf of Guinea in which Nigeria’s coast lies, have been experiencing high numbers of piracy and armed robbery incidents which has become a growing concern
to the maritime industry and heavily jeopardizing the activities of the blue economy in the region (NIMASA, 2018).

These acts have significant implications within all the sectors of the blue economy by hampering the growth and disrupting the business of the maritime industry as a whole. African states possess meagre infrastructure and proficiencies to assure maritime security and coastal protection in which both are indispensable for establishing a viable blue economy (Rustomjee, 2018, p. 1).

Illegal, Unreported and Unregulated (IUU) fishing is also one of the greatest threats affecting blue economy activities in which almost one-fifth (1/5) of the global fisheries capture is estimated to derive from (Rustomjee, 2018, p. 1). IUU fishing is so rampant along the all Africa’s coastline and especially more on the western coast of Africa where Nigeria’s coastline is situated (Rustomjee, 2018, p. 1). Nigeria and other countries in the region are losing $1.3 billion annually to the IUU fishing as a result of overexploitation of fish stocks, particularly the operation of the unlicensed foreign industrial vessels and producing a pernicious social, economic and human consequences in the region (Rustomjee, 2016, p. 2).

Eutrophication is also another threat to the blue economy activities caused by an accumulation of nutrients and moves to the sea from industries, agriculture, and sewage discharge. Eutrophication can lead to the formation of algae bloom which change the turbidity of the seawater and reduce the intensity of the light penetrating into the deeper layers of the water causing a lot of temporary and permanent damage to the marine natural resources, indirectly affecting the blue economy activities as a whole (Visbeck et al., 2014, p. 184-191).

The blue economy activities have been suffering or threatening by the consequences of climate change as a result of a continual increase in atmospheric carbon emissions cause significant ocean warming. An increase in ocean temperature which is the most common in Nigeria, can lead to the changes in the physical properties of the sea, cause stratification, sea-level rise and changes in the ocean currents then end up generating cumulative impacts to the marine natural resources (Visbeck et al., 2014, p. 184-191).
The anthropogenic factors such as pollution from the land-based sources and marine operations, unsustainable exploitation of resources, destruction and alteration of the marine and coastal habitats as a result of coastal development activities and invasive species to mention but few, not all, are the most intense in threatening the activities of blue economy in Nigeria and in Africa as a whole (Ibrahim, 2018).

Oil spillage as a result of oil industries activities is also one of the biggest threats affecting the blue economy activities in Nigeria causing a negative impact to the marine environment of the oil producing areas by destructing the ecosystem as a whole (Kadafa, 2012, p. 38).
4 THE ROLE OF THE OIL AND GAS SECTOR IN NIGERIA’S BLUE ECONOMY

4.1 BACKGROUND OF NIGERIAN OIL AND GAS

The oil sector is the backbone of Nigeria’s economy as it provides 90 percent of the country’s export earnings. Nigeria is the largest exporter of oil in Africa and the eighth largest in the world (FMOF, 2019).

Nigeria discovered her first oil at Oloibiri in the Niger Delta region in the year 1956 by Shell British Petroleum and was first drilled in the year 1958 which is two years after the discovery (Kadafa, 2012, p. 41). Nigeria started with the production of 5,100 barrels per day of oil and continued to increase production in order to increase her revenue generation (FMOF, 2019). Nigerian oil began to play a major role in Nigeria’s economy after the civil war in 1970 (Adewuyi & Oyejide, 2012, p. 8-9).

In the year 1980, the crude oil production in Nigeria reached 2.06 million barrels per day, but in 1988 a significant decline occurred to 1.45 million barrels per day. In 1989 the crude oil production in Nigeria has changed again to a consistent increase up till 2007. Also in 2008, production dropped to 2.17 million barrels per day and it was then later increased to 2.21 million barrels per day in 2009, all, as a result of fluctuation in her share in the world oil production through the period of time (Oyejide & Adewuyi, 2011, p. 7-9).

Nigeria’s oil industry clearly plays a considerable role in the country’s economy. In 2018 her daily oil production was about 2.43 million barrels (bbl), and 1.35 tcf of gas production annually. Internationally and domestically, the Nigerian oil and gas sector employs substantial influence. The country is blessed with light and low sulphur content crude oil and natural gas, which is also of high quality, rich liquid and with a low sulphur content too (Rui et al., 2018, p. 666-680).

In the Organization of the Petroleum Exporting Countries (OPEC) and in the global energy industry as a whole, Nigeria plays a vital role in contributing a large portion of output (that is her production output). Nigeria has reserves estimated at about 37
billion barrels (bbl) of oil and 192 trillion cubic feet (tcf) of natural gas and as a result is ranked number 10 and 7th in the world respectively (Rui et al., 2018, p. 666-680).

The offshore oil deposits were discovered in Nigeria near the River delta and in Anambra River basin. The Nigeria oil is mainly produced in the area located around Port Harcourt in the Niger Delta and in Ughelli region of the country (FMOF, 2019). Of particular note for Nigeria’s Blue economy is that offshore production is projected to increase significantly in the future. Nigeria was ranked number one of countries with the largest remaining deepwater oil reserves in 2018 with an estimated 5,038 million barrels of economically recoverable oil (Offshore Technology, 2018). It is also anticipated that offshore production will overtake onshore production such that by 2022 “two-thirds of the nation’s production will stem from deep-water deposits” according to Nigeria’s state oil company (Bala-Gbogbo, 2018). Although offshore oil developments cost more, onshore fields suffer from risks of sabotage, kidnapping and crude oil theft so offshore fields are seen as being advantageous from a security viewpoint while also having advantageous fiscal terms compared to onshore wells (Bala-Gbogbo, 2018).

The country Nigeria as of 2018 produces 1,979,500 barrels per day (OPEC, 2019). The Department of Petroleum Resources (DPR), in their 2017 annual report came up with the average annual daily production of 2,066,480 barrels per day, and total annual production of 754,265,049 barrels (DPR Annual report, 2017).

<table>
<thead>
<tr>
<th>Month</th>
<th>Production (Bbls)</th>
<th>Average Daily Production (Bopd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>62,007,128</td>
<td>2,000,230</td>
</tr>
<tr>
<td>February</td>
<td>55,845,759</td>
<td>1,994,491</td>
</tr>
<tr>
<td>March</td>
<td>55,713,800</td>
<td>1,797,219</td>
</tr>
<tr>
<td>Month</td>
<td>Production</td>
<td>Sales</td>
</tr>
<tr>
<td>----------</td>
<td>------------</td>
<td>---------</td>
</tr>
<tr>
<td>April</td>
<td>57,795,906</td>
<td>1,926,530</td>
</tr>
<tr>
<td>May</td>
<td>65,066,226</td>
<td>2,098,911</td>
</tr>
<tr>
<td>June</td>
<td>64,535,312</td>
<td>2,151,177</td>
</tr>
<tr>
<td>July</td>
<td>66,663,698</td>
<td>2,150,442</td>
</tr>
<tr>
<td>August</td>
<td>67,788,008</td>
<td>2,186,710</td>
</tr>
<tr>
<td>September</td>
<td>63,147,761</td>
<td>2,104,925</td>
</tr>
<tr>
<td>October</td>
<td>64,830,540</td>
<td>2,091,308</td>
</tr>
<tr>
<td>November</td>
<td>64,463,776</td>
<td>2,148,793</td>
</tr>
<tr>
<td>December</td>
<td>66,407,135</td>
<td>2,142,166</td>
</tr>
<tr>
<td><strong>Total Annual Production (bbls)</strong></td>
<td><strong>754,265,049</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Average Annual Daily Production (bopd)</strong></td>
<td><strong>2,066,480</strong></td>
<td></td>
</tr>
</tbody>
</table>


### 4.2 CONTRIBUTION OF OIL AND GAS TO THE NIGERIA’S ECONOMY

The petroleum sector in Nigeria contributes tremendously to the country’s economy. The dominance of Nigeria’s economy by the petroleum sector in the early 1970s...
resulted in a serious decrease in the economic contribution of the agricultural sector to the country’s overall economy (Ite, Ibok, Ite, & Petters, 2013, p. 78-90).

In the year 1973 onwards, there was an overwhelming eminence of petroleum resources in Nigeria’s economy as it indicates that the sales income of crude oil was expressed as a proportion of foreign exchange earnings which was skyrocketed from 2.5 percent to 58.1 percent in the year 1970, then also to 93.6 percent in 1975 and to more than 98 percent in the 1980s (Ite et al., 2013, p. 78-90).

The contribution of the petroleum sector to the Nigerian economy can also be measured by its significance in the Gross Domestic Product (GDP). The contribution of the sector to Nigeria’s GDP was increasing steadily as in 1965 the oil accounted for 3.43 percent of the GDP. The petroleum share in GDP also increased from 9.27 percent in 1970 to 19.37 percent in 1975, in the year 2005, the figure increased to 38.87 percent. The share of the petroleum contribution in GDP then decreased marginally to 37.44 percent in 2009 (Akinlo, 2012, p. 167-168).

The contribution of the petroleum sector in monetary expression was in the year 1961 the total oil export amount was N23.1 million, which increased to N13,632.1 million in the year 1980. The export amount reduced to N11,223.7 million through the period between the early 1980s to 1985. However, the export value then escalated to N106,623.5 million in 1990, N1,920,900.4 million in 2000, N7,140,578.9 million in 2005 and N8,543,261.2 in 2009 (Akinlo, 2012, p. 167-168).

The situation of nowadays, oil-producing countries in Africa including Nigeria are suffering from the “Oil Curse” or the “Natural Resources Curse”. In spite of the large and heavy inflow of oil revenues but still, these countries experience a sluggish or stagnating economy, poor standard of living and always increasing in the high rate of corruption and authoritarian formations of government (Klieman, 2012, p. 155-165).

Nigeria can be considered as the classic example of the so-called ‘oil curse’. Nigeria was ranked fifth (5th) globally in oil production, and the country also earned more than $340 billion from oil and gas revenues since the 1970s but still almost 70 percent of the country’s population are currently living on less than one dollar per day, 43 percent have no access to clean water (Klieman, 2012, p. 155-165).
The expansion of the oil and gas industry in Nigeria since the 1970s has generated cardinal transformations in the compositional design and fiscal planning of the Federation which changed Nigeria from a diversified agro-based economy in which it was in the 1960s to the mono-resources petroleum-based economy (Iledare & Suberu, 2010).
5 PROSPECTS AND RECOMMENDATIONS

5.1 PROSPECTS OF NIGERIA’S BLUE ECONOMY

The ocean has been attracting multiple uses for a period of time through fisheries, shipping and transportation, recreation, oil and gas exploitation, the military exercise, mining, conservation and among others (Morrissey, 2017, p. 42).

5.1.1 The role of Oil and Gas in Nigeria’s future Blue Economy

The oil and gas industry in Nigeria has controlled the potential and structure of the country’s economic growth since the year 1970. The Oil and gas sector has contributed over $391.6 billion to the Nigerian government revenue between 1970 and 2005 which accounted for 77.1 percent of total government revenue over the period. Out of this amount, $118.4 billion was earned between 1999 and 2005 representing 30.2 percent. However, Nigeria has also earned over $593.6 billion from oil exports representing 96.3 percent of total foreign exchange earned between 1970 and 2005. Similarly, out of this amount, $153.1 billion or 25.8 percent was earned between 1999 and 2005 (Adenikinju, 2008, p. 131-139).

In view of the above figures and correlations of the amounts and or percentage shown that the Nigerian economy is increasing in a successive manner, and the entire Nigeria’s oil and gas sector depend on the sea, be it offshore component or onshore component the crude export is carrying out through sea and product import also carrying out via the same medium that is maritime transportation which is one of the major activities of blue economy. So as the Nigerian oil and gas increase in the future will definitely play a major role in contributing tremendously to the country’s blue economy.

According to the report “Nigeria’s Maritime Industry Forecast 2018-2019” from the Nigerian Maritime Administration and Safety Agency (NIMASA), under the Economic Recovery and Growth Plan (ERGP) oil production was projected at 2.3, 2.4 and 2.5 million barrels per day (mbpd) in the year 2018, 2019 and 2020 respectively (NIMASA, 2018).
Petroleum exploration, production, and export play a vital dominant task to Nigeria’s economy which accounts for about 90 percent of her gross earnings that has propelled agriculture away from playing a major role in the country’s economy since from the 1950s and 1960s (Odularu, 2008). It is therefore highly likely that oil will remain of fundamental importance to the Nigerian economy for the foreseeable future. Increasingly, however, this activity will form part of Nigeria’s Blue economy (broadly defined) as oil production increasingly shifts offshore (Bala-Gbogbo, 2018).

5.2 RECOMMENDATIONS

The activities or the components of the Blue economy may vary from one country to another depending on the type of the ocean and freshwater within the country as well as the coastal and natural resources endowments. Generally, the blue economy is well understood or very well known to many that it consists of or includes the following: marine transport, offshore renewable energy, fisheries, coastal tourism, climate change, marine mineral resources (Hydrocarbon, mainly), blue biotechnology (UNDP, 2018).

The World Bank in the year 2017 explicitly explained the activities of the ocean varies in each country which solidly relies on their exclusive or distinctive national context and vision embraced to reflect on their own conception of a blue economy (World Bank, 2017).

The World Bank further highlighted that, for an activity to successfully be one of the blue economy components need to satisfy the following:

- “Provide social and economic benefits for current and future generations”
- “Restore, protect and maintain the diversity, resilience, core functions, and intrinsic value of marine ecosystems”.
- “Be based on clean technologies, renewable energy, and circular material flows that will reduce waste and promote recycling of materials”.

Sourced from the World Bank (2017).

UNDP in their report, Brief policy 2018 “Harnessing the Blue Economy for Sustainable Development in Nigeria” highlighted some recommendations for Nigeria specifically
gas and oil in order to meet her national development objectives and their relation with the Sustainable Development Goals (SDGs), particularly SDGs 1, 2, 3, 5, 8, 9, 10, 11 and 13 which all for the benefits of her directly or indirectly from the sustainable utilization and conservation of oceans and seas, and also their abundant natural resources, Nigeria like many other countries in the African region needs to develop a diversified sources of growth, jobs, and prosperity (UNDP, 2018)

Figure 10, Relationships between SDG14 and the other SDGs. Sourced from UNDP Policy Brief 2018 (Harnessing the Blue Economy for Sustainable Development in Nigeria).

As the oil and gas sector has been contributing a tremendous share to Nigeria’s overall economy which even makes the country now totally focused and relied on the sector alone with little concern to the other sectors. Indeed, is not a welcome idea for Nigeria to move away totally from depending on oil sector, but the country may need to diversify her sources of earnings by making economic policies which will help the
country to depend on and benefit from many other sectors if properly harnessed in a sustainable way but certainly not only the oil and gas sector alone.

Years before the 1970s, agricultural exports were the cornerstone of the economy in Nigeria, but the oil boom in the 1970s caused the annual rate of crops exports to decline. However, the developments of the oil and gas sector dominated the Nigerian economy, still, more than 70 percent of the country’s population depends on agriculture which contributes almost 25 percent GDP share and 60 percent to the non-oil exports (Oyejide, 1986, p. 9).

Considering the past contribution of agriculture to the Nigerian economy before the 1970s, the country may strongly be recommended to revive the sector for sustainable development.

Nigeria’s non-offshore oil and gas which remain largely untapped and underdeveloped (UNDP, 2018) if fully harnessed would unlock a lot of economic benefits to the country. NIMASA in a report titled ‘Nigeria’s Maritime Industry Forecast (2018-2019) highlighted that in Nigeria the notion of the blue economy relatively unusual and new. However various economic activities that rely on or derive from ocean resources are in existence without being properly placed (NIMASA, 2018).

For Nigeria to successfully harness her blue economy potentialities in a sustainable development way so as to reduce her dependence on oil and gas a well-articulated policy is strongly needed. So many existing pieces of literature recommend the use of some oceans governance policy tools, such as; Marine Spatial Planning (MSP), Marine Protected Area (MPA) and Ecosystem-based management. These options to help Nigeria shift away from dependence on oil and gas and to help realise blue economy opportunities are discussed below.

5.2.1 MARINE SPATIAL PLANNING (MSP)
Nigeria can apply the concept of Maritime Spatial Planning (MSP) for the sustainable use of her ocean in order to improve the potentialities of harnessing its blue economy for future use.
Sue Kidd, Hannah Jones and Stephen Jay (2019) in their paper titled ‘Taking Account of Land-Sea Interactions in Marine Spatial Planning’ defined Marine Spatial Planning (MSP) as:

“a public process of analysing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic and social objectives that have been specified through a political process” (Kidd, Jones, & Jay, 2019, p.245)

Marine Spatial Planning (MSP) process normally results in preparing the complete extensive plan or policy instrument which elucidates the vision for the future spatial and temporal development arrangement of the specific marine area space (Young, 2015, p. 150).

Nigeria, when taking into consideration, MSP strives to sustain the ecosystem goods and services benefits provided by the ocean to human beings together will all other living things on the planet Earth, which is managing the marine environment with the aims of providing some mechanisms for consensus achievement among all sectors operating in a particular marine area like offshore oil and gas terminals (Pomeroy & Douvere, 2008, p. 816-822).

Agardy, Di Sciara, & Christie (2011) highlighted that in order to realize the goals for the successful benefits of the Marine Spatial Planning (MSP) towards the future sustainable harness of a blue economy, a minimum of five elements should be considered and included;

1. “Identification of priority areas, using robust analysis of existing information and databases”;
2. “Development of scenarios to help decision-makers and multilateral agencies weigh trade-offs and choices in creating various sorts of marine protected areas networks that span both coastal regions and open oceans areas”;
3. “Analysis and evaluation of current legal and institutional frameworks and potential decision-making governance structures needed for comprehensive ocean zoning”; and
4. “Creation of Regional Ocean zoning plans that capitalize on existing protected areas and resources management, take into account what is known about
priority areas for conservation, and elucidate appropriate areas for a wide range of marine uses”.

5. “Linking of regional ocean zoning with national and local management efforts in a manner that strengthens all levels of management”. (Agardy et al., 2011).

The main use of MSP in this context is to manage the ocean and accommodate other economic activities like the improvement of fishing, shipping, aquaculture, offshore renewable energy to mention but few, in order to reduce the dependency on oil and gas alone.

5.2.2 MARINE PROTECTED AREA AND ECOSYSTEM BASED MANAGEMENT

Marine Protected Area (MPA) process is one of the most powerful ways to tackle or combat marine resources overexploitation and marine ecosystem degradation for the future sustainable use (Agardy et al., 2011, p. 226). Nigeria may employ the use of MPA in protecting her oceans natural resources against overexploitation by the unregulated activities in the sea for future sustainable development use.

Marine protected areas are used in protecting and restoring ocean health for sustainable use, while Ecosystem-Based Management (EBM) is to sustain the long term magnitudes of marine ecosystems in yielding a wide scope of ecosystem services, like seafood, clean water, renewable energy, protection from coastal storms and recreational opportunities with a great concern on both ecosystem health and human wellbeing (Halpern, Lester, & McLeod, 2010, p.1).

Now in Nigeria there are not any MPA or EBM in place, but when these mechanisms are carefully planned, the shape of the country’s blue economy will improve by tackling overexploitation of the resources for the future and the issues of these mechanisms are simultaneously moving with maritime security which is however the enabler of the blue economy (Voyer et al., 2018, p. 1).
5.3 INSIGHTS FROM OTHER COUNTRIES

5.3.1 RECOMMENDATIONS FROM SOUTH AFRICA

Nigeria may be inspired by the South African strategy (Zuma, 2015), for proper harnessing her blue economy in a sustainable development way by adopting their concept. Thean Potgieter’s timely and sophisticated article ‘Oceans economy, blue economy, and security: notes on the South African potential and developments’ highlighted that, South African government’s goal is to improve delivery on growth and development opportunities in the maritime sector, it was clearly considered and articulated in South African’s National Development Plan (Zuma, 2015); Strategic vision for growth and development and Nine point plan focused at socioeconomic growth, development and transformation in various areas as stated by Thean Potgieter (Potgieter, 2018, p.53).

The Operation Phakisa oceans activities, part of the Nine-Point Plan commenced in the year 2014, the operation is to encourage the oceans economy through cooperation among government, business and civil society. The process and method of adopting Operation Phakisa by the South African government were, in turn, inspired by the Malaysian government in their plan called ‘Big Fast Results’ aiming at national development milestone, encouraging economic growth and addressing development challenges like poverty, crime, and unemployment (Potgieter, 2018, p.53).

The meaning of Operation Phakisa in Sesotho language is “Hurry up”. The first stage of the Operation Phakisa oceans governance program was to design oceans economy framework, comprising of workshops with key stakeholders from the public and private sectors, academia as well as civil society to cooperate on problem analysis, priority setting, planning and delivery modalities (Potgieter, 2018, p.53).

The Operation Phakisa in the year 2014 was estimated that through the ocean economy program it could contribute between R129 billion and R177 billion to GDP and also a targeted job creation between 800 thousand to 1 million by 2033 (Potgieter, 2018, p.54). However, there are many blue economy activities to consider but the Operation Phakisa oceans program focuses fully on the four paramount maritime
areas; maritime transport and manufacturing, offshore oil and gas exploration, aquaculture and marine protection services and governance (Zuma, 2015).

5.3.2 RECOMMENDATIONS FROM CHINA

Young Rae Choi, explicitly spotlighted that, China is a famous pioneer of the global blue economy approach and has been advocating for other countries of the world to practice the blue economy concept for sustainable use (Choi, 2017, p. 38).

The government of China was inspired to raise and improve its blue economy by particularly supporting “sustainable industries” in aquaculture and mariculture, tourism, port and transportation, offshore plant engineering, pharmaceutics, seawater utilization, renewable ocean energy, ecological restoration, and biodiversity conservation (State Council, 2013). China wanted to achieve all these by completely overhauling its ocean governance in the early 2000s with the enactment of the Law on the Administration of Sea Area Use (ASAU) and Marine Functional Zoning Plan (MFZP) (Choi, 2017, p.38).

In the year 2013, China’s ocean resources in their maritime zones constitute 6,467 billion RMB which is 9.6 percent of their national gross domestic product (GDP) but was projected to grow up to 13 percent and 15 percent by 2020 and 2030 respectively. (Choi, 2017, p.38). In the year 2017, coastal tourism in China contributes about 35 percent to GDP, while 22 percent from transportation and logistics, also 17 percent from fisheries and then 8 percent from engineering and construction.

Nigeria may wish to apply the above Chinese strategy of complete overhauling her ocean governance by developing some policies that will improve the blue economy activities, and of course in increase the country’s GDP.
6 CONCLUSION

The overall objective of this study was to explore Nigeria’s blue economy potential with particular reference to the oil and gas sector. In order to achieve this objective, four research aims were set out in Chapter 1 above, namely:

1. To identify the notion of the blue economy, and consider its benefits for the actual incorporation to the country’s overall economy.
2. To identify the major threats to the ocean and carefully examine how these can be addressed for the benefit of the ocean and thus the country.
3. To identify the contribution of the offshore oil and gas exploration to Nigeria’s economy.
4. To develop and achieve on how the idea of the blue economy can boost Nigeria’s economy.

The first two of these research aims were addressed in Chapter 2 of the study where the importance of the global ocean was explored and major threats to the ocean and coasts highlighted. Here, the growing pressures on ocean and the identification of their central significance for human wellbeing have served to intensify policy attentiveness and to the development of Local, National and International policies, roadmaps and benchmarks for sustainable ocean governance.

This Chapter also provided a literature review of scholarly writing as well as national and international plus industry and other stakeholder reports on the subject of the blue economy. It can be concluded from this review that whilst there is no commonly agreed definition of the term blue economy, nonetheless, most definitions tended to be environmental in character, frequently including the goals of sustaining economic development opportunities while maintaining ocean ecosystem health. The blue economy concept therefore generally strives to link the economic opportunities bestowed by the oceans and the urgent demand for improved environmental agent, protection and restoration. It was, however, recognised that Nigeria’s economy, and the blue economy in particular, and departs from these environmental and sustainable development-informed, ‘green’ economy understandings of the blue economy.
Chapter 3 of the thesis provided an overview and assessment of Nigeria’s geographical, legal, economic and political context. Of particular note, Nigeria is located at the Gulf of Guinea in West Africa, shares land borders with the Republic of Niger and Chad to the north, with the Republic of Benin to the west, with the Republic of Cameroon to the east and with the Atlantic Ocean to the south. The entire Gulf of Guinea where Nigeria is located, have been experiencing excessive numbers of piracy and sea armed robbery incidents which has become very rampant and growing concern to the maritime industries and heavily jeopardizing the blue economy activities in the whole region.

Nigeria has a coastal length of almost 853km. The Nigerian coastal area comprises Lagos and the economically important Niger Delta region, and that classified them into two geographical zones. The western coast (The Lagos region) and the eastern coast (The Niger Delta region). Further, Nigeria is a party member to the United Nations Convention on the Law of the Sea (UNCLOS), 1982 and one of the beneficiaries of this convention. Concerning the scope of Nigeria’s maritime zones and delimitations of her maritime boundaries is cardinal to a discussion of the country’s blue economy potential because only activities taking place within the country’s maritime jurisdiction and associated coasts will contribute to her blue economy. In order to reach a better understanding of Nigeria’s maritime jurisdiction and thus the blue economy estate and potential, the research therefore discussed the negotiated maritime boundaries of Nigeria with the Republic of Benin, a maritime boundary and joint exploration agreement with Equatorial Guinea, Joint Development Zone (JDZ) with the Republic of Sao Tome and Principe and maritime boundary agreement with the Republic of Cameroon. It was also noted that Nigeria has also submitted a request concerning the outer limits of her continental shelf to the Commission on the Limits of the Continental Shelf (CLCS) in which the submission is now currently under consideration by the CLCS. This submission is exciting in that it could confirm that a substantial area of ‘outer’ or ‘extended’ continental shelf seawards of Nigeria’s EEZ limits 200 nm from its baselines is within the country’s national maritime jurisdiction.
This discussion of Nigeria’s overall legal, political and economic context set the stage for Chapter 4 dealing with the role of the oil and gas sector in Nigeria’s economy. Here the dominant role of the oil sector as the backbone of Nigeria’s economy was explicitly established. This is underlined by the fact that the oil and gas sector provide almost 90% of the country’s export earnings. This makes Nigeria the country that is the largest exporter of oil in Africa. A key finding of the research was that not only is offshore oil and gas production one of the major components of the blue economy in Nigeria but that this is projected to increase significantly in the future. The ongoing strategic shift in oil and gas developments in Nigeria from onshore to offshore, in large part because of security concerns offshore, means that the offshore, ‘blue’, component of oil and gas sector are likely to remain of enduring an increasing significance to Nigeria’s economic and developmental future. The above-mentioned submission to the CLCS is of great potential significance as Nigeria was ranked number one of countries with the largest remaining deep-water oil reserves in 2018 with an estimated 5,038 million barrels of economically recoverable oil. It is also foresee that offshore production in Nigeria will surpass onshore production and represent an estimated two-thirds of overall production by the year 2022.

Chapter 5 of the thesis addresses the fourth research aim noted above. Discussion turns to some recommendations that were highlighted in the research for Nigeria on how to improve her blue economy activities in a more sustainable way. While it is well acknowledged that at present and for the foreseeable future Nigeria’s overall developmental future and offshore/blue economy will depend on hydrocarbons, the research identified some options for Nigeria to minimize the risks associated with the offshore hydrocarbons industry and potentially provide the opportunity for more sustainable blue economy activities to grow. These options include the use or application of Marine Spatial Planning (MSP), the establishment of Marine Protected Areas (MPAs), the application of Ecosystem-based Management (EBM) approaches, as well as Integrated Coastal Management (ICM). Also some insights from other countries in the world, notably China and South Africa were summarized here.

The research was aimed at filling in the gaps in the existing context of marine natural resources as a critical component for the implementation of blue economy policy for Nigeria, and also to address some compelling concern for the country. The research
focused on identifying the notion of the blue economy, and consider its benefits for
the actual incorporation to the country’s overall economy, while identifying the major
threats to the ocean and carefully examine how these can be resolved for the benefits
of the ocean and thus country. Additionally, also to notably identify the offshore oil
and gas and its contribution to the Nigeria’s blue and overall economy. The
approaches to ocean governance highlighted in the recommendations, it is hoped,
provide some opportunities for Nigeria to explore so that the country can gradually
move away from its present strong dependence on the oil and gas sector or, at the
least, minimize the harmful aspects of such developments.
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