

CHARTING THE COURSE FOR A BLUE ECONOMY IN NIGERIA: A LEGAL AGENDA

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ABSTRACT

Ocean and coast based economic activities are increasingly being recognized as key drivers for supporting global economies. This move towards a “blue economy” is becoming widespread in view of the paucity of land resources being experienced globally by promoting sustainable and inclusive economic growth using oceanic resources. The sustainability of these ocean-based activities must however be intricately linked with the existence of a comprehensive and cohesive legal framework to align marine conservation with the extractive and exploitative endeavors. This paper analyses the potential for a blue economy in Nigeria and examines the adequacy of the existing legal regimes on marine environmental protection meant to reduce the risks of intensified ocean-based activities resulting into unsustainable environmental impacts. The paper submits that deriving sustainable wealth from ocean-based activities in Nigeria is achievable given the existing legal framework for marine environmental protection in the country. It however recommends the need to further tighten the noose around the implementation protocols of these laws to better integrate the health of the ocean ecosystem into the development of the country’s ocean resources.

Keywords: Blue economy; Sustainability; Environmental protection; Legal framework; Nigeria

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1. INTRODUCTION

The ocean and its resources are increasingly accepted widely as a viable alternative resource to meet the needs of the rising global population amidst Earth's dwindling land resources.¹ It is projected that with a substantial expansion of many of the current ocean-based economic activities, food, jobs, energy and raw materials to cater for the needs of the projected population level of 9-10 billion people would become readily available by the year 2030.² At the heart of these activities must however remain the health of the ocean ecosystem by preventing its over-exploitation, pollution, biodiversity loss and the negative effects of climate change associated with the expansion. Dealing with these problems, therefore, it is essential to develop of innovative strategies to address the changes that would unfold with the broadening of the ocean waterscape. One of such innovative strategies was the concept of a 'blue economy'. The concept was developed to underscore the importance of the health of the ocean ecosystem considered as pivotal to the sustainability of any economic policy initiative centred on the use of ocean resources.³ It consists of strategies designed to ensure the sustainable use of ocean resources for economic growth, improved livelihoods, and job creation whilst preserving the health of the ocean ecosystem.

Using Nigeria as a case study, the abundant water resources⁴ provided by nature contribute to economic growth through supporting various economic activities that depend on or derive from ocean resources.⁵ However, with the growing recognition of the importance of the ocean and its resources to global economic growth, there is the need to shift attention to other emerging opportunities derivable by a substantial expansion of the scope to which ocean resources are put to use in Nigeria. Realizing the full potentials of these resources demands sustainable action on numerous fronts to achieve a durable balance between ocean use and marine ecosystem conservation. One of such is the existence of a comprehensive and cohesive

¹ Ralph Rayner, Claire Jolly and Carl Gouldman, 'Ocean Observing and The Blue Economy' (2019) 6 *Frontiers in Marine Science*.
<<https://www.frontiersin.org/articles/10.3389/fmars.2019.00330/full>> accessed 16 April 2021.

² European Commission, 'The EU Blue Economy Report 2020' (Publications Office of the European Union 2020)
<https://blueindicators.ec.europa.eu/sites/default/files/2020_06_BlueEconomy-2020-LD_FINAL-corrected-web-acrobat-pro.pdf> accessed 19 April 2021.

³ S. Smith-Godfrey, 'Defining the Blue Economy' (2016) 12 *Maritime Affairs: Journal of the National Maritime Foundation of India*
<<https://www.tandfonline.com/doi/full/10.1080/09733159.2016.1175131>> accessed 16 April 2021.

⁴ J. O. Ayoade, 'Water resources and their development in Nigeria' *Les Ressources En Eau Et Leur Exploitation En Nigérie* (1975) 20 *Hydrological Sciences Bulletin*.

⁵ Ozigbo Emmanuel and others, 'Review of Aquaculture Production and Management in Nigeria' (2014) 4 *American Journal of Experimental Agriculture*
<<http://www.sciencedomain.org/abstract/4508>> accessed 19 April 2021.

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range of regulatory guidelines to ensure that the exploration of these ocean-based resources is done within sustainable limits. Given this premise, the present paper examines the governance regime for a blue economy in Nigeria given its importance in creating and regulating a sustainable balance between the utilization of marine resources and the protection of the marine ecosystems.

To put this in proper perspective, the paper explores the concept of a blue economy as well as its potentials for sustainable economic development in Nigeria. The existing laws on ocean based economic activities would be considered to highlight its adequacy, or otherwise, in fulfilling the objective of sustainable development in Nigeria's blue economy. The paper finds the existing ocean governance framework in Nigeria sufficient to provide a solid foundation for the smooth realization of the goals of a blue economy in the country. It however recommends the need to address the weaknesses in the enforcement of these laws geared to reduce the risks of undermining the very foundation on which the ocean economy stands.

2. BLUE ECONOMY: AN EMERGING TREND IN INTERNATIONAL ENVIRONMENTAL DISCOURSE

The term 'blue economy' was first used by Professor Gunter Pauli in his book 'The Blue Economy: 10 Years, 100 Innovations, 100 Million Jobs' to describe a wealth creation strategy using nature-inspired derivatives on the basis of environmental correctness.⁶ According to Pauli, the 'blue economy' broadly encompasses activities geared towards achieving economic growth and development based on ocean activities whilst also considering the social and environmental outcomes of these activities. The term gained international recognition through the advocacy of the Small Island Developing States (SIDS) at the Rio +20 Conference of 2012.⁷ At the conference, these States advocated for the sustainable use of their ocean resources against the backdrop of their peculiar challenges of limited land resources, environmental/ecological vulnerabilities as well geographic remoteness and isolation which does not offer them much economic footprint as mainland nations.⁸ Their argument was based on the relevance and applicability of the concept of "Green Economy".⁹ They called for the

⁶ Gunter A Pauli, *The Blue Economy: 10 Years, 100 Innovations, 100 Million Jobs* (Paradigm Publications 2010).

⁷ Jennifer J. Silver and others, 'Blue Economy and Competing Discourses in International Oceans Governance' (2015) 24 *The Journal of Environment & Development*.

⁸ Julian Roberts and Ahmed Ali, *The Blue Economy and Small States* (1st edn, Commonwealth Secretariat 2016) <https://bluecharter.thecommonwealth.org/wp-content/uploads/2018/09/BlueeconomyandSmallStates_UPDF.pdf> accessed 20 April 2021.

⁹ Lucien Georgeson, Mark Maslin and Martyn Poessinouw, 'The Global Green Economy: A Review of Concepts, Definitions, Measurement Methodologies and Their Interactions' (2017) 4 *Geo: Geography and Environment*.

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incorporation of the principles of the green economy into the management of coastal water bodies and related resources in a sustainable manner.¹⁰

The term which has grown to a purely ocean-based and ocean-related concept now goes beyond viewing the ocean solely as a mechanism for economic growth.¹¹ It comprises a range of economic activities and related policies that together determine whether the use of oceanic resources is sustainable.¹² In its report 'The Ocean Economy in 2030', the Organization for Economic Co-operation and Development (OECD) refers to the blue economy as all the activities aimed at realizing the full potentials of seas and oceans using responsible and sustainable approaches to their economic development.¹³ According to the report the blue economy concept seeks to develop strategies to maintain a durable balance between increasing ocean uses and marine ecosystems integrity. This according to the report will require actions on multiple fronts with new thinking and fresh approaches contributing possible solutions to the long-term sustainability related challenges of a growth in the ocean economy.

Abdullahel defines the concept of blue economy (also known as oceans economy) as economic and trade activities that integrate the conservation and sustainable use and management of oceans biodiversity, including maritime ecosystems and genetic sources.¹⁴ It extends beyond the exploitation of maritime and marine resources to include the consideration of the effect of these activities on the future health and productivity of these same resources. Visbeck also defines the blue economy model as one that not only focusses on the economic derivatives from the exploitation of ocean resources but also emphasizes the improvement of human well-being and social equity by ensuring the inclusion and participation of all affected social groups and sectors.¹⁵ At the core of the ocean economy as Kakonge explained whilst discussing the blue economy potentials of Kenya is the efficient and optimal use of natural marine resources within ecological limits.¹⁶ The concept ranges from sourcing and use of raw materials from the ocean where

¹⁰ Jay S. Golden and others, 'Making Sure the Blue Economy is Green' (2017) 1 *Nature Ecology & Evolution* <<https://doi.org/10.1038/s41559-016-0017>> accessed 19 April 2021.

¹¹ Michelle Voyer and others, 'Shades of Blue: What Do Competing Interpretations of the Blue Economy Mean for Oceans Governance?' (2018) 20 *Journal of Environmental Policy & Planning*.

¹² Ki-Hoon Lee, Junsung Noh and Jong Seong Khim, 'The Blue Economy and the United Nations' Sustainable Development Goals: Challenges and Opportunities' (2020) 137 *Environment International* <<https://doi.org/10.1016/j.envint.2020.105528>> accessed 20 April 2021.

¹³ OECD, 'The Ocean Economy In 2030' (OECD Publishing 2021) <<https://doi.org/10.1787/9789264251724-en>> accessed 20 April 2021.

¹⁴ Abdullahel Bari, 'Our Oceans and the Blue Economy: Opportunities and Challenges' (2017) 194 *Procedia Engineering*.

¹⁵ Martin Visbeck, 'Ocean Science Research Is Key for A Sustainable Future' (2018) 9 *Nature Communications*.

¹⁶ Amb. John O. Kakonge, 'Kenya and the Blue Economy: The Way Ahead' (2019) 8 *International Journal of Innovative Research and Development*.

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feasible to include activities that are not natural resource intensive and support sustainable patterns of consumption.¹⁷

In summary, the concept seeks to promote economic growth, social inclusion, and the preservation or improvement of livelihoods while at the same time ensuring environmental sustainability of the oceans and coastal areas.¹⁸ Its objective of sustainability fits perfectly into the framework of the United Nations Sustainable Development Goals (SDGs) which interlinks the socio economic aspects of development and environmental sustainability.¹⁹ Goal 14²⁰ of the SGDs focusses on the conservation and sustainable use of oceans, seas and marine resources for sustainable development with a view to increasing the benefits derivable from use of these resources by 2030. The targets of this goal which are sine qua non with the objectives of a blue economy will ensure that ocean resources contribute to a sustainable and inclusive development for countries. It will be able to strike a balance between the need to exploit these resources for economic development and the sustainable use of it.

3. A BLUE ECONOMY FOR NIGERIA: POTENTIAL AND OPPORTUNITIES

Although a universally accepted concept, the adoption of the blue economy concept by individual countries will depend on perceived potentials and benefits that nations can derive from subscribing to it.²¹ In Nigeria, the country's ocean resources can contribute significantly to the nation's overall development through a wide range of economically beneficial activities that derive from and are supported by these vast resources. Available statistics show that 267.3 billion m³ of surface water and 52 billion m³ of ground water are available for use in Nigeria annually and less than 10% of these enormous amounts of water resources are being

¹⁷ Michaela Garland and others, 'The Blue Economy: Identifying Geographic Concepts and Sensitivities' [2019] *Geography Compass*; Joseph O. Rasowo and others, 'Harnessing Kenya's Blue Economy: Prospects and Challenges' (2020) 16 *Journal of the Indian Ocean Region*.

¹⁸ Erika Techera, 'Achieving Blue Economy Goals: The Need for Improved Legal Frameworks across the Indian Ocean' (2019) 1 *Seychelles Research Journal* <<https://seychellesresearchjournalcom.files.wordpress.com/2019/08/achieving-blue-economy-goals-erika-techera.pdf>> accessed 20 April 2021.

¹⁹ Laura Recuero Virto, 'A Preliminary Assessment of the Indicators for Sustainable Development Goal (SDG) 14 "Conserve and Sustainably Use the Oceans, Seas and Marine Resources for Sustainable Development"' (2018) 98 *Marine Policy*.

²⁰ The focus of Goal 14 is to conserve and sustainably use the oceans, seas and marine resources for sustainable development.

²¹ UN Economic Commission for Africa, 'Unlocking the Full Potential of The Blue Economy: Are African Small Island Developing States Ready to Embrace the Opportunities?' (Economic Commission for Africa 2014) <https://www.researchgate.net/publication/305502123_Unlocking_the_full_potential_of_the_blue_economy_Are_African_Small_Island_Developing_States_ready_to_embrace_the_opportunities> accessed 20 April 2021.

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currently exploited.²² This section will focus on some of the trade and economy related opportunities in the ambit of blue economy that can be expanded or explored in Nigeria to create opportunities for economic growth, economy diversification and new investments.

3.1 Sustainable Fishing and Aquaculture

Fish and fish products are considered as an important sector of global trade.²³ The global seafood market is projected to reach approximately 155.32 billion dollars in value by the year 2023.²⁴ Most of these exports are driven by the demand in developed countries, which account for more than 75 per cent of global fish imports.²⁵ Nigeria is said to be the largest inland aquaculture producer in Sub-Saharan Africa with about 157 recorded species of fish belonging to 71 families in the Nigerian inshore waters alone.²⁶ According to a survey carried out by Rabo et al.,²⁷ of the total fish caught by African fishers totalling about 6.30 million tons during the period under survey, 3.80 million metric tons were from marine waters with Nigeria as the highest contributor in terms of total fish caught. Optimizing the natural and human resource potentials of Nigeria as a leading aquaculture country opens up the potential for increased income generation for the country and improving the livelihoods of many of its coastal communities.²⁸ Expanding the fishery and aquaculture sector in Nigeria has the potentials to prevent food insecurity, reduce unemployment in the country through job creation, generate income for individuals and ultimately for the country by attracting foreign exchange that contributes to the economic transformation of the country.²⁹

²² Federal Ministry of Information and Communications, 'Nigeria Handbook 14th Edition' (2009).

²³ Jessica A Gephart and Michael L Pace, 'Structure and Evolution of the Global Seafood Trade Network' (2015) 10 *Environmental Research Letters*.

²⁴ Andrew Pershing and others, 'Chapter 9: Oceans and Marine Resources. Impacts, Risks, And Adaptation in the United States: The Fourth National Climate Assessment, Volume II' <<https://nca2018.globalchange.gov/chapter/9/>> accessed 20 April 2021.

²⁵ AA Kigbu, TD Imgbian and MM Yakubu, 'Unconventional Cultivable Freshwater Fish Species: A Potential Tool for Increased Aquaculture Production in Nigeria' (2014) 2 *Global Science Research Journals* <<https://www.globalscienceresearchjournals.org/articles/unconventional-cultivable-freshwater-fish-species-a-potential-tool-for-increased-aquaculture-production-in-nigeria.pdf>> accessed 20 April 2021.

²⁶ P.A Ekunwe and C.O Emokaro, 'Technical Efficiency of Catfish Farmers in Kaduna, Nigeria' (2009) 5 *Journal of Applied Sciences Research*.

²⁷ P.D. Rabo and others, 'The Role of Fisheries Resources in National Development: A Review' (2014) 18 *International Letters of Natural Sciences*.

²⁸ W.O Ashaye and others, 'Overcoming Food Importation: A Panacea to Food Insecurity, Poverty Reduction and Job Creation Among Rural Farming Populations in Nigeria' (2019) 7 *GSJ*.

²⁹ Otekenari David Elisha, 'the Nigeria Blue Economy: Prospects for Economic Growth and Challenges' (2019) 12 *International Journal of Scientific Research in Education*.

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3.2 Shipping and Maritime Transport

Shipping is generally considered as the most cost effective mode of transporting goods and commodities across global channels.³⁰ About half of the world's population, most of its largest cities and industries along with critical value chains tend to be concentrated in coastal areas to ensure access to transport routes and continuous flows of resources and products.³¹ Apart from providing transportation, the shipping industry creates employment opportunities as well as generating revenue through its export and trading facilities.³² Although Nigeria occupies a meagre 853 km of the 47,000 km of Africa's coastline, her strategic location makes maritime transport very important in terms of its socio-economic prospects and the ability to connect to the rest of the world and access international markets.³³ As a major ocean-based activity and an important component of the blue economy the potentials for unlimited opportunities abound if the needed attention is paid to maritime transportation by the Nigerian government.³⁴ Job creation, development of cottage and allied industries, export promotion, increased foreign exchange earnings, economy diversification, expansion of opportunities to trade and compete favorably in overseas markets are just some of the few benefits of a well-developed shipping industry.³⁵

3.3 Renewable Marine Energy

Global demand for renewable energy is expected to increase two and a half times by 2035.³⁶ The generation of renewable energy from tides and waves, wind turbines located in offshore areas, submarine geothermal resources and marine biomass is set to become a viable alternative for contributing to energy needs and climate change mitigation objectives. For Nigeria, such renewable energy sources would help diversify her energy portfolios and secure higher levels of energy security given the country's huge reliance on fossil fuels as its main energy source. Although many of these technologies are still at the early development stages, global investment in them is already on the rise and it is believed that renewable

³⁰ Simone Caschili and Francescs Romana Meda, 'A Review of the Maritime Container Shipping Industry as a Complex Adaptive System' (2012) 10 *Interdisciplinary Description of Complex Systems*.

³¹ B Damachi and Yang Zhaosheng, 'The Nigerian Shipping Industry and Indigenous Shipping Companies' (2005) 32 *Maritime Policy & Management*.

³² Marie-Noëlle Albert, Nadia Lazzari Dodeler and Emmanuel Guy, 'From A Seafarer's Career Management to the Management of Interwoven Sea- And Shore-Based Careers' (2016) 6 *SAGE Open*.

³³ Victor Olowe, 'Africa 2100: How to Feed Nigeria in 2100 With 800 Million Inhabitants' [2020] *Organic Agriculture*.

³⁴ Imoh Ekpo, 'Impact of Shipping on Nigerian Economy: Implications for Sustainable Development' (2012) 2 *Journal of Educational and Social Research*.

³⁵ O.B Ndikom, 'The Concept of Shipping Routing' (2013) 5 *American Journal of Industrial and Business Management*.

³⁶ Jeffrey R. Bartels, Michael B. Pate and Norman K. Olson, 'An Economic Survey of Hydrogen Production from Conventional and Alternative Energy Sources' (2010) 35 *International Journal of Hydrogen Energy*.

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ocean energy is set to become the world's major source of clean energy. As one of the industrial giants of Africa, taking the central position in the development of this cutting-edge technology given Nigeria's vast water resources would help meet her increasing energy demands while reducing long term carbon emissions.

3.4 Marine Biotechnology

Oceans and seas are the source of a huge variety of life forms including macro and micro-organisms. Living marine resources have huge potential for developing new food, biochemical, pharmaceutical, cosmetics and bio-energy applications.³⁷ According to Suttle, the growing commercial interest in marine bio-prospecting to discover new plants and animal species from which medicinal drugs and other commercially valuable compounds can be derived is expected to increase with developments in science, technology and innovation since the first drugs from marine organisms were commercialized over a decade ago.³⁸ The Nigerian marine environment is rich in biodiversity with a wide range of novel species of microorganisms.³⁹ This rich biodiversity if harnessed and commercialized through the application of scientific and engineering principles has the potential to become a potent revenue source.⁴⁰ Devoting resources to the development of technology to aid bio-prospecting in Nigeria has the potentials for poverty eradication and national development through marine sustainable aquaculture and fisheries, providing sustainable alternative sources of energy, pharmaceutical discoveries that would improve human health amongst others.⁴¹

3.5 Ecotourism

Apart from growing to become one of the largest global business ventures, tourism is also a great employer of labor as it is said to employ 1

³⁷ About 18,000 natural products have been developed to date from about 4,800 marine organisms, and the number of natural products from marine species is growing at a rate of 4 per cent per year. See further Narsinh L. Thakur and Werner E.G. Müller, 'Biotechnological Potential of Marine Sponges' (2004) 86 *Current Science*; Narsinh L. Thakur and Archana N. Thakur, 'Marine Biotechnology: An Overview' (2006) 5 *Indian Journal of Biotechnology*.

³⁸ Curtis A. Suttle, 'Viruses: Unlocking the Greatest Biodiversity on Earth' (2013) 56 *Genome*.

³⁹ Olumide Adedokun Odeyemi, 'Exploring Potentials of Marine Microbiology and Biotechnology in Developing Countries' (2017) 3 *International Journal of Scientific and Research Publications*.

⁴⁰ Helen Ngozi Ebeh, 'Exploring the Potentials of Marine Biotechnology for Poverty Eradication and National Development' (2017) 37 *Knowledge Review* <<https://www.globalacademicgroup.com/journals/knowledge%20review/Helen%20Ebeh17.pdf>> accessed 20 April 2021.

⁴¹ Ward Appeltans and others, 'The Magnitude of Global Marine Species Diversity' (2012) 22 *Current Biology*.

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out of every 11 persons globally.⁴² Globally, there is a growing popularity for shore-based coastal tourism. The recreational uses of the marine environment as a whole include fishing, shell collection, bird watching, sunbathing, wind surfing, scuba diving and boating among others.⁴³ The rich cultural and ecological resources which are in abundance have the potential of making Nigeria a major tourist destination spot in Africa.⁴⁴ Identifying, developing and ensuring the sustainable use of coastal and marine resources for tourism therefore has the potential of providing a number of socio-economic benefits to Nigeria.⁴⁵ Apart from the job creation, development of coastal and marine tourism can potentially be a game changer in the quest to diversify the economy from a predominantly crude oil-based economy to a multi-product economy. Other benefits include foreign exchange earnings, infrastructure development, stimulation of recreational and educational values, display and exchange of sociocultural values, preservation of cultural heritage, and natural resource conservation.

3.6 Seabed Exploration

With dwindling reserves in land-based mines coupled with the extensive environmental and social consequences of mining on land, significant investments are already being made in some countries in terms of exploration for deep seabed resources.⁴⁶ Physical, chemical and biological interactions over the years have seen the deep seabed become a repertoire of a vast number of mineral resources.⁴⁷ Although oil and gas are widely regarded as the most valuable, sea-floor massive sulphides, cobalt-rich ferro manganese crusts, and polymetallic (manganese) nodules, which are all rich in sulphur, nickel, cobalt, iron and manganese are just some of the minerals

⁴² Ademuyiwa Hafiz Oladele and Oghenetjiri Digun-Aweto, 'Strengths Weakness Opportunities and Threats Analysis of Aquatic Tourism in Nigeria' (2017) 8 *Journal of Environmental Management and Tourism*
<<https://journals.aserspublishing.eu/jemt/article/view/1655>> accessed 20 April 2021.

⁴³ Nnezi Uduma-Olugu and Henry N. Onukwube, 'Exploring the Coastal Tourism Potentials Of Lagos' (2012) 5 *Journal of Sustainable Development*
<http://www.ccsenet.org/journal/index.php/jsd/article/view/14777> accessed 18 April 2021.

⁴⁴ Ademuyiwa H. Oladele, Oghenetjiri Digun-Aweto and Petrus Van Der Merwe, 'Potentials of Coastal and Marine Tourism in Nigeria' (2018) 13 *Tourism in Marine Environments*.

⁴⁵ Mohammed Manzuma-Ndaaba Ndanusa, Yoshifumi Harada and Md. Aminul Islam, 'Challenges to Growth in Tourism Industry of A Developing Country: The Case Of Nigeria' (2014) 10 (19) *Asian Social Science* 282
<<http://www.ccsenet.org/journal/index.php/ass/article/view/40850>> accessed 18 April 2021.

⁴⁶ A. Marvasti, 'Resource Characteristics, Extraction Costs, And Optimal Exploitation of Mineral Resources' (2000) 17 *Environmental and Resource Economics*.

⁴⁷ Kathryn Miller, Kirsten Thompson, Paul Johnston, David Santillo, 'An Overview of Seabed Mining Including the Current State of Development, Environmental Impacts and Knowledge Gaps', (2018) 4 *Frontiers in Marine Science* 418.
<[doi://10.3389/fmars.2017.00418](https://doi.org/10.3389/fmars.2017.00418)> Accessed 1 July 2020.

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that have been extracted from the sea bed over the last 20 years.⁴⁸ Although the extent of the resources available within the seabed of the Nigerian maritime jurisdiction still remains unknown till date, efforts are already in place to explore the possibilities of discovering in commercial quantities other mineral resources apart from oil and gas. Former Director General of the Nigerian Maritime Administration and Safety Agency (NIMASA) while speaking at the opening ceremony of the 23rd assembly of the International Seabed Authority (ISBA) held in Kingston Jamaica⁴⁹ reiterated that the Nigerian Navy Hydro-graphic Office has begun undertaking a hydro-graphic survey and charting of the country's maritime area to establish a data base of seabed minerals available for the benefit of the country. When successfully completed, it may present the country with a unique opportunity for an alternative source of revenue.

It can be deduced from the above discussion that as a beneficiary of nature's largesse, expanding the current scope in the utilization of ocean resources in Nigeria is indeed viable and economically beneficial. There is, therefore, no doubt that a 'blue economy' is one of the ways to augment the current economic development initiatives of the Nigerian government if the requisite investments in the science, technology and innovation needed to boost the sector are made. This would go a long way in addressing many of the key challenges currently facing the country ranging from food insecurity, poverty, and economic backwardness.

4. LEGAL FRAMEWORK FOR ACHIEVING BLUE ECONOMY IN NIGERIA

As stated earlier, a blue economy offers many financial, development and socio-cultural benefits but the environmental risks associated with these benefits cannot be overlooked. A 'blue economy' plan for Nigeria therefore needs not only to identify and develop those sectors that have a high potential for sustainable yield and growth but must also include an environmental protection plan suitable for coping with present and future challenges associated with increased ocean activities.⁵⁰ Having highlighted the potentials and opportunities in the previous section, an analysis of the existing legal framework on marine protection would be undertaken in this section. The aim is to appraise its adequacy in ensuring the sustainable conservation and preservation of the health of the ocean ecosystem whilst the economic goals of the blue economy are being pursued in Nigeria.

⁴⁸ UNEP, 'From wealth in the oceans: Deep sea mining, on the horizon?' (2014) <www.unep.org/geas> Accessed 25 August 2020.

⁴⁹ Guardian, 'Nigeria to Benefit from Deep Sea Mining - Peterside. (NAN).' (2017). Punch 11, August 2017. <<https://guardian.ng/business-services/nigeria-to-benefit-from-deep-sea-mining-peterside>> Accessed 26 August 2020.

⁵⁰ Abubakar Hassan Hamisu, 'A Study of Nigeria's Blue Economy Potential with Particular Reference to the Oil and Gas Sector', [2019] World Maritime University Dissertations 1234. <https://commons.wmu.se/all_dissertations/1234> Accessed 1 September 2020.

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At the fountainhead of all laws relating to the protection of the marine environment in Nigeria is Section 20 of the Constitution of the Federal Republic of Nigeria 1999. The section provides that 'the State shall protect and improve the environment and safeguard the *water*, air and land, forest and wildlife of Nigeria'.⁵¹ This provision from which all other environmental protection laws in Nigeria derive validity makes it the core responsibility of the federal government to protect and improve the environment. More specifically on the marine environment, the section states that the State shall 'safeguard' the waters of Nigeria. The use of the word 'safeguard' according to the Learned Justices of the Supreme Court in *Attorney General Lagos State vs Attorney General of the Federation and 35 others*,⁵² indicates the intention of the government to channel resources towards protecting of the waters of Nigeria from any form of harm. Although the provision fails to spell out in clear terms how this function is to be performed, it serves as a rallying point for all governmental policies and regulations on environmental protection. The provision ensures that any policy initiative on the blue economy in Nigeria must necessarily include action points on the protection and improvement of the waters of Nigeria to ensure its sustainability.

Similarly, by vesting in the Federal Government the right to use and control all surface and ground water in Nigeria,⁵³ the provisions of the Water Resources Act allow the government to make holistic plans to develop and manage sustainably the usage of the country's blue economy resources. The Act in section 5(a) (ii) empowers the minister to make proper provisions for the adequate supplies of suitable water for the generation of hydro-electric energy for navigation, fisheries and recreation. Section 6 of the Act imposes a duty on the Minister charged with the responsibility for matters relating to water resources to draw up from time to time, an up-to-date comprehensive master plan for the development, use, control, protection, management and administration of all water resources and to periodically review in the light of prevailing economic, financial or technological conditions, activities, plans and proposals of public authorities exercising powers relating to water resources. The flexible nature of this provision allows the government to regularly update its strategy for the protection and management of water resources in Nigeria to cope with the environmental impacts of intensified ocean activities owing to the expansion of the ocean-based economy in Nigeria. The minister is also expected to make provisions to ensure that the possible consequences of particular developmental proposals on the marine environment are properly investigated and considered before each proposal is approved.⁵⁴ This is to have a detailed and well-coordinated plan for the investigation, use, control, protection, management and administration of water resources in Nigeria.⁵⁵ Comparably, the Environmental Impact

⁵¹ Emphasis by the author

⁵² (2003) 12 NWLR (pt. 833) SC

⁵³ The National Water Resources Act Cap N83 LFN 2004, S1

⁵⁴ The National Water Resources Act S 5(f).

⁵⁵ The National Water Resources Act S 5 (g) (i).

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Assessment Act⁵⁶ also requires a mandatory environmental impact assessment be done for all new projects and activities having an impact on the environment.⁵⁷ Section 2 restricts the commencement of any public or private project without considerations for its environmental impact. As such an expansion of the existing use to which ocean resources are put to will require an impact assessment to make certain that such planned investment or developmental activities conforms to the sustainability goal of the blue economy.

One key environmental risk that can undermine the achievement of the goals of the blue economy is the pollution generated by maritime transport especially ship-source oil pollution. This challenge is magnified by the strong interdependence between the key economic sectors that make up the blue economy as such any negative environmental impact in any of the sectors could ultimately lead to the collapse of the other. It therefore goes without saying that achieving sustainability and resilience in the maritime transport sector is of paramount importance to the survival of the blue economy as a whole. In order to militate against this challenge, protect the living components of the ocean ecosystem and preserve the health of the ocean, The Oil in Navigable Waters Act prohibits the discharge of oils into the navigable waters of Nigeria.⁵⁸ Sections 1, 3 and 5 of the Act make the discharge of any oil or mixture containing oil into the navigable waters of Nigeria a crime punishable by payment of a fine.⁵⁹ It provides further in section 5 that for the purpose of preventing or reducing discharges of oil and mixtures containing oil into the sea, all Nigerian ships are required to be fitted with such equipment necessary to prevent oil pollution. The Act also restricts the transfer of oil at night without requisite notice⁶⁰ and imposes a duty to report any discharge of oil into waters of harbors on the owner or master of the vessel in Section 10. Failure to make such reports in the prescribed format would make such person guilty of an offence under the Act and shall be liable on summary conviction to a fine.⁶¹ The Oil Pipelines Act⁶² equally prevents the pollution of the marine environment by regulating the grant of licenses for the establishment and maintenance of oil pipelines. In standardizing the processes, the Act seeks to prevent the pollution of lands and *waters* by oil pipelines.⁶³ Section 14 of the Act imposes a duty of care on the holder of such license or permit for the purpose of laying an oil pipeline either on land or water to take all reasonable steps to avoid any unnecessary damage to the environment in pursuance of the permit. This is to prevent the exploration activities for oil and gas and the subsequent laying

⁵⁶ Environmental Impact Assessment Act CAP E12 LFN 2004

⁵⁷ Environmental Impact Assessment Act S 1

⁵⁸ Oil in Navigable Waters Act Cap 06 LFN 2004

⁵⁹ Oil in Navigable Waters Act S6

⁶⁰ Oil in Navigable Waters Act S9

⁶¹ Oil in Navigable Waters Act S10(2)

⁶² Oil Pipeline Act Cap 07 LFN 2004

⁶³ See Preamble to the Act

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of pipelines for transportation from interfering with other aspects of the blue economy, such as fishing, thus preserving sustainably the ocean ecosystem as a whole.⁶⁴ In the same manner, The Petroleum Act⁶⁵ regulates the activities in the Nigerian petroleum industry to prevent the pollution of water courses and the atmosphere. This is to see to it that all exploitative activities carried out upon the grant of a license or lease under the Act are carried out in such a manner as to prevent the pollution of water ways in the Nigeria thereby preserving the ocean ecosystem.⁶⁶ Furthermore, The Oil Terminal Dues Act⁶⁷ also prohibits the discharge of oil into any part of the sea from a pipeline, vessel or as a result of any operation for the evacuation of oil.⁶⁸ Notwithstanding these provisions of the law, where the discharge or spill of oil or mixtures containing oil inadvertently occur, the National Oil Spill Detection and Response Agency (NOSDRA) established by The National Oil Spill Detection and Response Agency (Establishment) Act⁶⁹ is empowered to provide timely and effective response to such incidents through the implementation of the National Oil Spill Contingency Plan.⁷⁰

In order to reduce overfishing and restore marine ecosystems through sustainable fishing and aquaculture, the Sea Fisheries Act⁷¹ regulates fishing practices within the territorial waters of Nigeria. The Act prohibits fishing methods such as use of explosive substances or poisonous or noxious matter capable of introducing toxic substances into the marine environment.⁷² It provides that anyone caught fishing with such prohibited substances shall be liable upon conviction to a term of two years imprisonment or to a fine of N50, 000.⁷³ It further provides that such fishing boats or apparatus used in the perpetration of such unlawful act as well as the fish derived from the process shall be forfeited.⁷⁴

For the purpose of ensuring compliance with environmental laws and regulations in Nigeria particularly as it relates to safeguarding the health of the ocean ecosystem, The National Environmental Standards and Regulations and Enforcement Agency (NESREA) Act⁷⁵ provides for the establishment of The National Environmental Standards and Regulations

⁶⁴ A G Eze, T C Eze, 'A Survey of the Legal Framework for the Control of Oil and Gas Pollution from Some Selected Countries', (2014) 31 Journal of Law, Policy and Globalization 1.

⁶⁵ Petroleum Act CAP P10 LFN 2004

⁶⁶ Petroleum Act CAP P10 LFN 2004 S 9(1)(a)(iii)

⁶⁷ Oil Terminal Dues Act CAP 08 LFN 2004

⁶⁸ Oil Terminal Dues Act S 6

⁶⁹ National Oil Spill Detection and Response Agency (Establishment) Act (NOSDRA) 2006

⁷⁰ National Oil Spill Detection and Response Agency (Establishment) Act See Ss 1 and 5

⁷¹ Sea Fisheries Act CAP S4 LFN 2004

⁷² Sea Fisheries Act S 10(1)

⁷³ Sea Fisheries Act S 10(2)

⁷⁴ Sea Fisheries Act S 13

⁷⁵ National Environmental Standards and Regulations and Enforcement Agency (NESREA) Act 2007

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and Enforcement Agency (NESREA).⁷⁶ Section 7(h) specifically provides that the agency is saddled with the responsibility of enforcing through compliance all environmental regulations and standards on noise, air, land, seas, ocean and other water bodies in Nigeria. As the highest and most potent institution for environment enforcement in Nigeria,⁷⁷ the Agency through the powers granted by the Act ensures the enforcement of all laws relating to the discharge of hazardous substances into the air or upon the land and water of Nigeria or at the adjoining shorelines except where such discharge is permitted or authorized under any law in force in Nigeria.⁷⁸ Additionally, the Act also empowers the agency to make regulations on water quality standards for the purpose of protecting public health and welfare in Nigeria.⁷⁹

Having examined the extant legal framework on water management and protection in Nigeria, this paper submits that the existing laws are adequate and sufficient for the successful take off and sustainability of the blue economy project in Nigeria. Whilst this article does not suggest that there will not be challenges, it has shown from the analysis of the existing legal framework that there is a sufficient basis to believe that with proper enforcement of these laws, the sustainability of the blue economy is guaranteed.

5. CONCLUSION AND RECOMMENDATIONS

From the sectorial analysis of the potential and opportunities of the blue economy and on the strength of the existing legal framework to support its sustainability, it is prudent to conclude that a blue economy is achievable in Nigeria. Although Nigeria may not qualify as one of the Small Island Developing States (SIDS), the abundance of coastal areas in the country particularly in the Niger Delta and areas in the southern part of the country suggest that pursuing the blue economy through the sustainable use of these water resources can contribute to the economic development of Nigeria and herald the much talked about economic diversification.

As a means of achieving the specified end of the goals of the blue economy, the following are recommended. Firstly, given the multiplicity of alternatives there is a need to weigh the relative importance of each sector of the blue economy to determine the value of its contribution to the economy. This will enable the right policy decisions to be made with regards to developing the most productive in terms of economic returns. Secondly, the

⁷⁶ National Environmental Standards and Regulations and Enforcement Agency (NESREA) Act S 1

⁷⁷ National Environmental Standards and Regulations and Enforcement Agency (NESREA) Act S31

⁷⁸ National Environmental Standards and Regulations and Enforcement Agency (NESREA) Act S27

⁷⁹ National Environmental Standards and Regulations and Enforcement Agency (NESREA) Act S7(c),7(d),20, 23(2) and 24 (3)

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interrelated nature of all the segments of the blue economy calls for a system of checks and balances which can best be facilitated through the proper enforcement of the letters of the law. The Nigerian environmental governance landscape is characterized by an array of legislation but fraught with the challenge of enforcement of the laws. The laws and procedures guiding ocean protection and conservation have been found to be comprehensive and robust, thus, making the problem not to be with the written legislation but with its enforcement. The punitive sanctions that would encourage better environmental behavior in these laws have been found to be ineffective with individuals and corporate bodies finding the economic rewards of violation more compelling than the likelihood of sanctions for infractions. For instance, failure to comply with sections 1, 3 and 5 of the Oil in Navigable Waters Act which prohibits the discharge of oil into Nigerian waters is punishable by a mere fine of two thousand naira (equivalent to USD 4.89). This meagre amount to be paid as fine is deemed inconsequential compared to the environmental impact of the intentional or accidental discharge of oil into the ocean ecosystem. Thirdly, realizing the full potential of the blue economy requires the efforts of all and sundry. Although the government may be required to provide the enabling environment to facilitate the diversification of resources into the development of the blue economy, the private sector also has a pivotal role to play in its success. There is the need for strategic local and private lump-sum investments in the development of the sectors of the blue economy particularly in the maritime and fishing sub-sectors in order to improve their contributions to the economy.

There is also the need to raise awareness to better educate stakeholders on what the blue economy is and why it matters. To achieve this, there is the need to remove all informational barriers that are often created by educating public, private, and civil society, and youth in sectors that forecasts suggest will provide the next generation of new jobs. It is further recommended that for the blue economy to be sustainable, the country needs to develop and/or strengthen national policies to better integrate blue economy considerations into national and sub-national policy and governance frameworks. These policies should be informed by the measures suggested earlier, with clear targets set for the blue economy in Nigeria.

In a nutshell, a coordinated policy planning process for sustainable development of the country's ocean economy will require active participation and decisions by a wide range of public agencies, linked by common objectives and actively sharing information. Nigeria can borrow a leaf from Bangladesh⁸⁰ where, at least five different ministries namely the ministries of Environment and Forestry, Fisheries and Livestock, Power, Energy and Mineral Resources, Shipping and the Ministry of Civil Aviation and Tourism are currently reviewing or designing policies that would affect

⁸⁰ Mohammed Kaisarul Islam, M Rahaman, Zobayer Ahmed, 'Blue Economy of Bangladesh: Opportunities and Challenges or Sustainable Development', (2018) 5(8) *Advances in Social Sciences Research Journal* 168.

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one or more of the sectors of the ocean economy in Bangladesh.⁸¹ Each of these ministries, as well as other public agencies, has a mandate to deliver on various actions and programs in the current five year plan to move the country's ocean economy toward a blue economy. At the end, these collaborative efforts are a blueprint that would maintain existing maritime industries and develop new ones, develop a strong human resource base for domestic utilization and export to foreign job markets; give special priority to anticipated climate change impacts in all relevant matters.

REFERENCES

- Albert M, N Lazzari, Dodeler N, and E Guy E, 'From A Seafarer's Career Management to the Management of Interwoven Sea- and Shore-Based Careers' (2016) 6 SAGE Open
- Appeltans W and others, 'The Magnitude of Global Marine Species Diversity' (2012) 22 Current Biology
- Ashaye W and others, 'Overcoming Food Importation: A Panacea to Food Insecurity, Poverty Reduction and Job Creation among Rural Farming Populations in Nigeria' (2019) 7 GSJ
- Ayoade J, 'Water Resources and Their Development in Nigeria / Les Ressources En Eau Et Leur Exploitation En Nigérie' (1975) 20 Hydrological Sciences Bulletin
- Bari A, 'Our Oceans and the Blue Economy: Opportunities and Challenges' (2017) 194 Procedia Engineering
- Bartels J, M Pate M, and N Olson N, 'An Economic Survey of Hydrogen Production from Conventional and Alternative Energy Sources' (2010) 35 International Journal of Hydrogen Energy
- Caschili S, and Meda F, 'A Review of the Maritime Container Shipping Industry as A Complex Adaptive System' (2012) 10 Interdisciplinary Description of Complex Systems
- Damachi B, and Zhao sheng Y, 'The Nigerian Shipping Industry and Indigenous Shipping Companies' (2005) 32 Maritime Policy & Management
- Ebeh H, 'Exploring the Potentials of Marine Biotechnology for Poverty Eradication and National Development' (2017) 37 Knowledge Review <<https://www.globalacademicgroup.com/journals/knowledge%20review/Helen%20Ebeh17.pdf>> accessed 20 April 2021
- Ekpo I, 'Impact of Shipping on Nigerian Economy: Implications for Sustainable Development' (2012) 2 Journal of Educational and Social Research
- Ekunwe P, and C Emokaro C, 'Technical Efficiency of Catfish Farmers in Kaduna, Nigeria' (2009) 5 Journal of Applied Sciences Research

⁸¹ Pandurang Ganapatil Patil, John Virdin, Charles S Colgan, Gulan Hussain, Pierre Failler, Tibor Vegh, *Toward a Blue Economy: A Pathway for Sustainable Growth in Bangladesh* (Washington, DC: The World Bank Group 2018)

Charting the Course for a Blue Economy in Nigeria: A Legal Agenda

- Elisha O, 'The Nigeria Blue Economy: Prospects for Economic Growth and Challenges' (2019) 12 international Journal of Scientific Research in Education
- Emmanuel O and others, 'Review of Aquaculture Production and Management in Nigeria' (2014) 4 American Journal of Experimental Agriculture <<http://www.sciencedomain.org/abstract/4508>> accessed 19 April 2021
- European Commission, 'The EU Blue Economy Report 2020' (Publications Office of the European Union 2020) <https://blueindicators.ec.europa.eu/sites/default/files/2020_06_BlueEconomy-2020-LD_FINAL-corrected-web-acrobat-pro.pdf> accessed 19 April 2021
- Eze AG, and TC Eze, 'A Survey of the Legal Framework for the Control of Oil and Gas Pollution from Some Selected Countries', (2014) 31 Journal of Law, Policy and Globalisation
- Federal Ministry of Information and Communications, 'Nigeria Handbook 14Th Edition' (2009)
- Georgeson L, M Maslin M, and M Poessinouw M, 'The Global Green Economy: A Review of Concepts, Definitions, Measurement Methodologies and Their Interactions' (2017) 4 Geo: Geography and Environment
- Gephart J, and M Pace M, 'Structure and Evolution of the Global Seafood Trade Network' (2015) 10 Environmental Research Letters
- Golden J and others, 'Making Sure the Blue Economy Is Green' (2017) 1 Nature Ecology & Evolution <<https://doi.10.1038/s41559-016-0017>> accessed 19 April 2021
- Hamisu AH, 'A Study of Nigeria's Blue Economy Potential with Particular Reference to the Oil and Gas Sector', [2019] World Maritime University Dissertations
- Islam MK, M Rahaman, Z Ahmed, 'Blue Economy of Bangladesh: Opportunities and Challenges or Sustainable Development', (2018) 5(8) Advances in Social Sciences Research Journal 168
- Kakonge A, 'Kenya and the Blue Economy: The Way Ahead' (2019) 8 International Journal of Innovative Research and Development
- Kigbu A, T Imgbian T, and M Yakubu M, 'Unconventional Cultivable Freshwater Fish Species: A Potential Tool for Increased Aquaculture Production in Nigeria' (2014) 2 Global Science Research Journals <<https://www.globalscienceresearchjournals.org/articles/unconventional-cultivable-freshwater-fish-species-a-potential-tool-for-increased-aquaculture-production-in-nigeria.pdf>> accessed 20 April 2021
- Lee K, J Noh J, and J Kham J, 'The Blue Economy and the United Nations' Sustainable Development Goals: Challenges and Opportunities' (2020) 137 Environment International <<https://doi.org/10.1016/j.envint.2020.105528>> accessed 20 April 2021

Charting the Course for a Blue Economy in Nigeria: A Legal Agenda

- Marvasti A, 'Resource Characteristics, Extraction Costs, and Optimal Exploitation of Mineral Resources' (2000) 17 *Environmental and Resource Economics*
- Miller K, K Thompson, P Johnston, and D Santillo, 'An Overview of Seabed Mining Including the Current State of Development, Environmental Impacts and Knowledge Gaps', (2018) 4 *Frontiers in Marine Science*
- Ndanusa M, Y Harada Y, and M Islam M, 'Challenges to Growth in Tourism Industry of a Developing Country: The Case of Nigeria' (2014) 10 *Asian Social Science*
<<http://www.ccsenet.org/journal/index.php/ass/article/view/40850>> accessed 18 April 2021
- Ndikom O, 'The Concept of Shipping Routing' (2013) 5 *American Journal of Industrial and Business Management*
- Odeyemi O, 'Exploring Potentials of Marine Microbiology and Biotechnology in Developing Countries' (2017) 3 *International Journal of Scientific and Research Publications*
- OECD, 'The Ocean Economy In 2030' (OECD Publishing 2021)
<<https://doi.org/10.1787/9789264251724-en>> accessed 20 April 2021
- Oladele A, and O Digun-Aweto O, 'Strengths Weakness Opportunities and Threats Analysis of Aquatic Tourism in Nigeria' (2017) 8 *Journal of Environmental Management and Tourism*
<<https://journals.aserspublishing.eu/jemt/article/view/1655>> accessed 20 April 2021
- Oladele A, O Digun-Aweto O, and P Van Der Merwe P, 'Potentials of Coastal and Marine Tourism in Nigeria' (2018) 13 *Tourism in Marine Environments*
- Olowe V, 'Africa 2100: How to Feed Nigeria in 2100 with 800 Million Inhabitants' [2020] *Organic Agriculture*
- Patil PG, J Virdin, C S Colgan, M G Hussain, P Failler, T Vegh, *Toward a Blue Economy: A Pathway for Sustainable Growth in Bangladesh*, (Washington, DC: The World Bank Group 2018)
- Pauli G, *The Blue Economy: 10 Years, 100 Innovations, 100 Million Jobs* (Paradigm Publications 2010)
- Pershing A and others, 'Chapter 9: Oceans and Marine Resources. Impacts, Risks, And Adaptation in the United States: The Fourth National Climate Assessment, Volume II'
<<https://nca2018.globalchange.gov/chapter/9/>> accessed 20 April 2021
- Rabo P and others, 'The Role of Fisheries Resources in National Development: A Review' (2014) 18 *International Letters of Natural Sciences*
- Rasowo J and others, 'Harnessing Kenya's Blue Economy: Prospects and Challenges' (2020) 16 *Journal of the Indian Ocean Region*
- Rayner R, C Jolly C, and C Gouldman C, 'Ocean Observing and the Blue Economy' (2019) 6 *Frontiers in Marine Science*
<<https://www.frontiersin.org/articles/10.3389/fmars.2019.00330/full>> accessed 16 April 2021

Charting the Course for a Blue Economy in Nigeria: A Legal Agenda

- Recuero Virto L, 'A Preliminary Assessment of the Indicators for Sustainable Development Goal (SDG) 14 "Conserve and Sustainably Use the Oceans, Seas and Marine Resources for Sustainable Development"' (2018) 98 *Marine Policy*
- Roberts J, and A Ali A, *The Blue Economy and Small States* (1st edn, Commonwealth Secretariat 2016)
<https://bluecharter.thecommonwealth.org/wp-content/uploads/2018/09/BlueeconomyandSmallStates_UPDF.pdf> accessed 20 April 2021
- Silver J and others, 'Blue Economy and Competing Discourses in International Oceans Governance' (2015) 24 *The Journal of Environment & Development*
- Smith-Godfrey S, 'Defining the Blue Economy' (2016) 12 *Maritime Affairs: Journal of the National Maritime Foundation of India*
<<https://www.tandfonline.com/doi/full/10.1080/09733159.2016.1175131>> accessed 16 April 2021
- Suttle C, 'Viruses: Unlocking the Greatest Biodiversity on Earth' (2013) 56 *Genome*
- Techera E, 'Achieving Blue Economy Goals: The Need for Improved Legal Frameworks across the Indian Ocean' (2019) 1 *Seychelles Research Journal*
<<https://seychellesresearchjournalcom.files.wordpress.com/2019/08/achieving-blue-economy-goals-erika-techera.pdf>> accessed 20 April 2021
- Thakur N, and A Thakur A, 'Marine Biotechnology: An Overview' (2006) 5 *Indian Journal of Biotechnology*
- Thakur N, and W Müller W, 'Biotechnological Potential of Marine Sponges' (2004) 86 *Current Science*
- Uduma-Olugu N, and N. Onukwube H, 'Exploring the Coastal Tourism Potentials of Lagos' (2012) 5 *Journal of Sustainable Development*
<http://www.ccsenet.org/journal/index.php/jsd/article/view/14777> accessed 18 April 2021
- United Nations Economic Commission for Africa, 'Unlocking the Full Potential of the Blue Economy: Are African Small Island Developing States Ready to Embrace the Opportunities?' (Economic Commission for Africa 2014)
<https://www.researchgate.net/publication/305502123_Unlocking_the_full_potential_of_the_blue_economy_Are_African_Small_Island_Developing_States_ready_to_embrace_the_opportunities> accessed 20 April 2021
- Visbeck M, 'Ocean Science Research Is Key for A Sustainable Future' (2018) 9 *Nature Communications*
- Voyer M and others, 'Shades of Blue: What Do Competing Interpretations of the Blue Economy Mean for Oceans Governance?' (2018) 20 *Journal of Environmental Policy & Planning*

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