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NIGERIA'S EXTENDED CONTINENTAL SHELF: PROSPECTS AND CHALLENGES FOR THE BLUE ECONOMY PROJECT

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Abstract

Under the United Nations Convention on the Laws of the Sea, 1982, a coastal State may make submissions to the Commission on the Limits of the Continental Shelf for extension of its continental shelf beyond 200 nautical miles where the natural prolongation of its shelf exceeds the 200-mile limit. In 2009, Nigeria made submissions to the Commission for an extended continental shelf. Finding Nigeria's submissions meritorious, in December 2023, the Commission made recommendations for the extension of Nigeria's continental shelf from 200 nautical miles to 220 nautical miles. The 20-mile extension is remarkable because the extended shelf area lies in the part of the Gulf of Guinea referred to as the 'Golden Triangle', golden because of its richness in petroleum and other mineral resources. Using the doctrinal research methodology, this paper explores the development of the extended continental shelf regime in the law of the sea and examines the resource potentials of the submarine area extended for Nigeria. It also examines the rights of Nigeria in the extended area, as well as the challenges likely to be encountered in the development of this shelf area located in deep waters. The paper concludes that the extended continental shelf area has the potential to immensely impact positively on the re-invigorated Nigerian blue economy. It also makes recommendations for the development and optimal utilisation of the resources of the extended shelf.

Key Words: Nigeria, Extended Continental Shelf, resource prospects, challenges, blue economy

1.1 Introduction

The importance of the oceans to the economy of nations and, by extension, the global economy, cannot be overemphasised. Constituting two-thirds of the surface of the earth,[435] the oceans contribute significantly to the wealth of nations, support the food need of the world, and provide the cheapest means of transporting cargo from one point on the globe to another. With advancements in marine technology, the wealth of the oceans continues to be progressively discovered. It is this discovery that has, starting from the 19th Century, caused nations to begin to make claims of exclusivity over varying breadths of sea adjacent to their coasts and the resources thereof.

It is estimated that 40 percent of global fish production is traded internationally,[436] providing employment for over 150 million people along the value chain, globally.[437] Fish is also said to provide the main source of animal protein for 20 percent of the world's population,[438] and contributes more than 5 percent of the GDP of African countries.[439] For developing countries, earnings from fisheries resources have increased over time, incentivizing those countries to pay greater attention to marine fishing. According to the Organisation for Economic Co-operation and Development (OECD), 95 percent of the world's fishermen live in the developing countries.[440] Studies conducted by the Organisation indicate that the net export revenues from fish among these countries reached US$17.7 billion in 2001, and constituted the most important product among their agricultural exports.[441] It is in recognition of the economic importance of marine fisheries that coastal States had in the past claimed exclusive fishing rights in designated swathes of sea, something that came to be

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[435] E Holmina, 'Common Heritage of Mankind in the Law of the Sea' (2005) 1 *Acta Societatis Martensis*, 187; E Essien. *Essays in International Law of the Sea* (Golden Educational Publishers, Uyo 1994) 108.

[436] H Eggert and M Graeker, 'Effects of Global Fisheries on Developing Countries: Possibilities for Income and Threat of Depletion' (2009) *Environment for Development*, 1.

[437] OECD, *Natural Resources and Pro-Poor Growth: The Economics and Politics*, DAC Guidelines and Reference Series, 2008, at 84.

[438] *Ibid*.

[439] OECD (n 3) 84.

[440] *Ibid*

[441] *Ibid*.

variously referred to as 'parcellation', 'propertisation', 'territorialisation', 'creeping jurisdiction', and 'ocean enclosure movement'.[442]

Aside from fishery resources, the oceans have been found to also hold huge reserves of petroleum resources.[443] In fact, it was envisioned in 1974 that offshore hydrocarbons would become the most valuable ocean resource in future.[444] According to the United Nations, offshore oil production now stands at about 85 million barrels of oil per day (about 30 percent of world oil production per day).[445] Similarly, offshore gas production accounts for approximately half of the total world gas production.[446] There are, today, over 7000 offshore oil platforms across the world, and the number will continue to rise as more and more coastal States make claims for Extended Continental Shelf (ECS).[447] Currently, offshore oil and gas production is the world's largest marine industry where oil production alone has an estimated value of over US$ 300 billion per annum.[448] Developments in offshore oil and gas production has seen exploration taken to waters as deep as 10,000 feet.[449] The hydrocarbon wealth of the seas is so enormous that the Arctic Sea alone is said to hold super-giant oil and gas deposits that could last America for 200 years![450]

Beyond fishery and hydrocarbon resources, the deep seabed is home to such solid minerals as polymetallic nodules, seafloor massive sulphides, ferromanganese nodules and crusts, cobalt-rich crusts and phosphates.[451] These mineral resources contain rare-earth elements used in diverse industrial production. Due to declining

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[442] VA Ventura, *Environmental Jurisdiction in the Law of the Sea: The Brazilian Blue Amazon* (Springer 2019) 148.

[443] See, generally, LG Weeks, Offshore Petroleum Developments and Resources (1969) *Journal of Petroleum Technology*, 377-385.

[444] PW Wijkman, 'UNCLOS and the Redistribution of Ocean Wealth' (1980) 16(1) *Journal of World Trade Law*, 34.

[445] United Nations, Oceans, the Source of Life, The United Nations Convention on the Law of the Sea: 20th Anniversary (1982-2002) <http://www.un.org/Depts/los/convention_agreement/convention_historical-peerspective.htm> accessed 12 February 2024.

[446] *Ibid*.

[447] MY Nordquist, J Iorton, A Chircop and R Long (eds), *The Regulation of Continental Shelf Development: Rethinking International Standards* (Martinus Nijhoff Publishers, The Netherlands 2013) 7.

[448] PL Kelly, 'Evaluating the Impact of the Law of the Sea Treaty on Future Offshore Drilling', Global Offshore Oil Conference, Houston, Texas, 19 April 2005.

[449] Nordquist and Others (n 13) 4.

[450] American Survival Inc., 'Seasick: The Law of the Sea Treaty' <http://www.usasurvival.org/ck09.24.07.shtml> accessed 12 February 2024.

[451] C Schofield, 'Securing the Resources of the Deep: Dividing and Governing the Resources of the Deep' paper presented at the Law of the Sea Institute, UC Berkeley – Korea Institute of Science and Technology Conference, held in Seoul, Korea, May 21-24, 2012, 14.

terrestrial supply of these rare-earth elements, interest is shifting to mining them in deep offshore locations.[452] So much is the quantum of these minerals that a square kilometre area around the site with the highest concentration of them holds a cache equivalent to one-fifth of the current annual global demand for them.[453]
In December 2023, following submissions made by Nigeria in 2009, the United Nations extended Nigeria's continental shelf from the 200 nautical miles allowed coastal States under the United Nations Convention on the Law of the Sea, 1982 (UNCLOS) to 220 nautical miles.[454] This means that Nigeria is now entitled to explore, exploit and manage marine resources of the submarine areas of its coast to a 220 nautical miles limit. This development has been welcomed as possessing the potential to, in no little way, fillip the Nigerian blue economy project.[455] Like Nigeria's standard 200-mile continental shelf, the additional 20-mile shelf is believed to be very rich in hydrocarbons, fishery resources and seabed minerals.[456] This paper examines the resource benefits accruable to Nigeria from the recently extended continental shelf and explore the challenges that confront the country in the bid to explore, exploit and manage the resources of this deeper underwater land area of the Gulf of Guinea.

1.2 The Continental Shelf Regime

The continental shelf is considered an extension of the land territory of a coastal State submerged under water.[457] It varies in breadth from coastal State to coastal State depending on geological and geographical factors.[458] Continental shelves are rich in oil and gas resources and are usually hosts to large fishing grounds.[459] In *Petroleum Development Limited v. Sheik of Abu Dahbi*,[460] Lord Asquith of Bishopstone, Arbitrator, traced the earliest conception of the idea of continental shelf to 1896 when the expression 'continental shelf' was first used by a geographer. The

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[452] N Jones, 'Sea Holds Treasure Trove of Rare Earth Elements' <http://www.nature.com/new/2011/110703/full/news.2011.399.html> accessed 17 March 2024.
[453] Jones ibid; SJ Shackelford, 'The Tragedy of the Common Heritage of Mankind' (2008) 27 *Stanford Environmental Law Journal*, 106.
[454] A Anagor-Ewuzie, 'Nigeria's Continental Shelf Expansion by UN grants Access to Underwater Wealth' <http://www.businessday.ng/nigerias-continental-shelf-expansion-by-un-grants-access-to-underwater-wealth> accessed 11 February 2024.
[455] J Dimka, 'Potential Benefits of the Extension of Nigeria's Maritime Borders' <http://www.financialnigeria.com/potential-benefits-of-the-extensio-of-nigerias-maritime-borders-blog.846.html> accessed 14 March 2024.
[456] *Ibid*.
[457] MN Shaw, *International Law* (5th edn, Cambridge University Press 2003) 521
[458] *Ibid*.
[459] *Ibid*.
[460] (1951) 18 I.L.R. 144; Essien (n 1) 49.

concept is said to have made a 'fleeting appearance' on the legal stage in 1916 but passed with 'printless fleet'.[461] The concept of continental shelf was, perhaps, first asserted in its clearest form as a legal concept in a Proclamation by the Argentine Republic in 1944.[462] It was, however, in 1945 that the concept was enunciated in the form it is understood today by former United States President, Harry Truman.

By his Proclamation of 28 September 1945, President Truman proclaimed United States' claim of exclusive jurisdiction and control over the natural resources of the subsoil and seabed of the continental shelf beneath the high seas but contiguous to the coasts of the United States.[463] The Proclamation effectively put all natural resources existing on the seabed and subsoil of the continental shelf adjacent to the territorial sea of the United States under United States exclusive jurisdiction and control. The Truman Proclamation was necessitated by the economic need of the United States to be able to install oil drilling platforms in the Gulf of Mexico beyond the limits of the territorial sea.[464] It was a unilateral act that instantly (as it turned out to be) established a rule of customary international law without the usual need of a process of crystalization.[465]

It must be noted that though the Truman Proclamation became the first and clearest formulation of the concept of continental shelf in a legal sense, it failed to state the exact seaward limits of the submarine area over which the United States was to exercise exclusive jurisdiction and control. It was, perhaps, for this inexactitude of the evolving concept that Lord Asquith, in the 1951 *Abu Dahbi Arbitration* posited that the concept of continental shelf still had 'ragged ends and unfilled blanks.'[466]

As would be expected, the Truman Proclamation had a copy-cat effect among coastal States around the world.[467] A few other coastal States, especially South American States, made various claims of exclusive jurisdiction and control over variegated breadths of continental shelves. On 29 October 1945, Mexico claimed territorial control over waters contiguous to the Mexican coast but outside the customary 3-

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[461] Essien *ibid*.

[462] *Ibid*.

[463] See Proclamation 2667 of September 28 1945 (Policy of the United States with Respect to the Natural Resources of the Subsoil and Seabed of the Continental Shelf) codified as Executive Order 9633 of September 28, 1945.

[464] *Ibid*.

[465] Essien (n 1) 50.

[466] *Abu Dahbi Arbitration* (n 27).

[467] TM Kennedy and C V Trinko, An Equitable Regime for Seabed and Ocean Subsoil Resources' (1974) 4 *Denver J. Int'l L. and Policy*, 162; M Hope-Thompson, 'The Third World and the Law of the Sea: The Attitude of the Group of 77 toward the Continental Shelf' (1980) 1(1) *Boston College Third World Law Journal*, 50.

mile territorial sea as well as the continental shelf.[468] Argentina claimed, not just the shelf contiguous to their territorial sea (which it called 'epicontinental sea'), but also the super-adjacent water and the air space above it.[469] By the Santiago Declaration of 18 August 1953, Chile and Peru (two nations with no continental shelf), and Ecuador proclaimed sovereignty over the deep seabed, the subsoil and waters around their coasts up to a 200-mile limit.[470]

With the unilateral, varied declarations of sovereignty over their continental shelves by coastal States, international law, with respect to the extent and limits of coastal State jurisdiction over the continental shelf, was left in a state of kaleidoscopic flux. It became a matter of expediency, therefore, to infuse some order into the issue of jurisdiction and rights of coastal States over the continental shelf. The United Nations (UN) made efforts to address this challenge at the First United Nations Conference on the Law of the Sea (UNCLOS I) held in Geneva in 1958. One of the four Conventions that emerged from that Conference is the 1958 Convention on the Continental Shelf.[471]

While the Convention in one breadth made for certainty as regards coastal State rights over the continental shelf, it another breadth left the seaward limit of the shelf to a degree of uncertainty. Article 1 of the Convention defined the continental shelf as the seabed and subsoil of the submarine areas adjacent to the coast but beyond the territorial sea to a depth of 200 metres, or, 'beyond that limit to where the depth of the superjacent waters admits of the exploitation of the natural resources of the said areas.' A 200-mile continental shelf was, therefore, clearly established for coastal States under the article. However, the introduction of an exploitability criterion beyond the 200-mile limit posed challenges of uncertainty of the outer limits of a coastal State's continental shelf. Except for the exploitability doctrine, the Convention on the Continental Shelf established coastal States' rights over the continental shelf and clarified its status as a maritime zone. Regarding its status, the International Court of Justice (ICJ), in the *North Sea Continental Shelf* case stated that the continental shelf was part of the territory over which the coastal State had dominion although submerged under water.

It was, perhaps, thought in 1958 that the exploitation of continental shelf resources beyond 200 miles would be quite daunting and, therefore, not appeal to coastal States. But the 'exploitability' provision posed serious problems as technology for

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[468] EK Martens, 'Evolution of Coastal State Jurisdiction: A Conflict between Developed and Developing Nations' (1976) 5 *Ecology Law Quarterly*, 533.

[469] Shaw (n 23) 522.

[470] *Ibid*.

[471] Adopted at Geneva on 26 April 1958. Others are the Convention on the Territorial Sea and Contiguous Zone, the Convention on the High Seas, and the Convention on Fishing and Conservation of the Living Resources of the High Seas.

mining the deep seabed rapidly developed thereafter, making mining beyond 200 miles of sea less daunting than anticipated. The consequence was that States with the requisite technologies could exploit as deeper as they wanted into the continental shelf without limit, while those without such advanced technologies, especially developing countries, would have to watch from the sidelines. The exploitability doctrine, therefore, proved unsatisfactory and there was need to ensure certainty as to the seaward limit of the continental shelf beyond 200 miles.

With fair knowledge of the wealth of the continental shelf, it became one of the major matters that States considered at the Third United Nations Conference on the Law of the Sea (UNCLOS III).[472] While the developed States needed these resources of the oceans to fuel their economies, their developing counterparts needed them at the time to pay off their debts and get their economies on the move.[473] Acting under the auspices of the Group of 77 (G-77),[474] the developing countries that participated in the Conference assailed the exploitability doctrine of the 1958 Continental Shelf Convention and sought a continental shelf regime that would provide a definite outward limit for the continental shelf.[475] They expressed fear that the exploitability doctrine would put them in a disadvantageous position vis-à-vis the technologically advanced States. Patrick Robinson, a member of the Jamaican delegation to UNCLOS III expressed this fear thus:

> …[the Continental Shelf Convention] defines the shelf in terms of a 200-mile depth or beyond that depth to where the superjacent waters admit of exploitability. Now the 200-metre test is a firm and definite test, but the exploitability test is open-ended and operates to the advantage principally of the developed countries because the exploitability test means that if you have the potential, the know-how to exploit, then you have the potential to claim vast expanses of the seabed.[476]

The Convention adopted at the end of UNCLOS III, the United Nations Convention on the Law of the Sea, 1982,[477] did away with the exploitability doctrine, and in its

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[472] The Conference held from 1973 to 1982, resulting in the adoption of UNCLOS.

[473] M Hope-Thompson, 'The Third World and the Law of the Sea: The Attitude of the Group of 77 toward the Continental Shelf' (1980) 1(1) *Boston College Third World Law Journal*, 50.

[474] The Group was established on 15 June 1964 by 77 countries which were signatories to the 'Joint Declaration of the 77 Developing Countries' issued at the end of the First Session of the United Nations Conference on Trade and Development (UNCTAD) in Geneva. It is a loose coalition of developing States designed to promote its members' collective economic interests and create an enhanced joint negotiating capacity in the United Nations.

[475] *Ibid*.

[476] Hope-Thompson (n 39) 52.

[477] The Convention opened for signature on 10 December 1982, and entered into force on 16 November 1994.

place provided for a definite outward limit of the continental shelf. Article 76(1) of the Convention provides that the continental shelf of a coastal State 'comprises the submarine area that extends beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend up to that distance.' This means that a coastal State could establish a continental shelf for as long as its shelf naturally goes up to the outer edge of its continental margin. Where such natural prolongation of the shelf is less than 200 nautical miles, then it can establish a 200-mile continental shelf measured from baselines. This also means that every coastal State with a continental shelf prolonging to that distance is entitled, as of right, to a 200-mile continental shelf.

Where the continental margin extends beyond 200 nautical miles, the coastal State is required under UNCLOS to establish the edge of the margin beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured.[478] Such coastal State may then submit information on the limits of the continental shelf beyond 200 nautical miles to the Commission on the Limits of the Continental Shelf (CLCS) established under Annex II to UNCLOS applying to establish an Extended Continental Shelf (ECS).[479] The CLCS will consider the submission and thereafter make recommendations to the coastal State on matters relating to the limits of its continental shelf beyond 200 nautical miles.[480] The limits of the shelf established by the coastal State in accordance with those recommendations of the CLCS shall be final and binding.[481]

Under UNCLOS, an ECS shall not exceed 350 nautical miles measured from the baselines from which the breadth of the territorial sea is measured, or shall not exceed 100 nautical miles measured from the 2,500 metres isobath.[482] This means that the outer limit of an ECS must not exceed 150 nautical miles beyond the original 200 nautical miles, or must not exceed 100 nautical measured from the point where the depth of the sea is 2,500 metres. Once a coastal State establishes its ECS as prescribed under UNCLOS, it is required to deposit with the Secretary-General of the United Nations charts and other information, including geodetic data, permanently describing the outer limits of its continental shelf.[483] Such information shall then be given due publicity by the Secretary-General of the UN.[484]

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[478] Art. 76 (4) UNCLOS.
[479] *Ibid* art. 76 (8).
[480] *Ibid*.
[481] *Ibid*.
[482] *Ibid* art. 76 (5).
[483] *Ibid* art. 76 (9).
[484] *Ibid*

In the ECS area, coastal States are vested with the same rights as in the 200-mile continental shelf.[485] They are to have sovereign rights for the purpose of exploring it and exploiting its natural resources.[486] The right vested in a coastal State to explore the continental shelf and to exploit its natural resources is exclusive. To this extent, if a coastal State does not explore and exploit the resources of its continental shelf, no other State could do so without its express consent.[487] The rights to explore the resources of the continental shelf and to exploit it do not depend on occupation, effective or notional, or on any express proclamation.[488] They accrue to the coastal State by reason of its geographical contiguity to the shelf.

The only difference between a coastal State's right in the continental shelf and its rights in the ECS is with respect to the superjacent waters of the continental shelf and those of the ECS. A coastal State exercises sovereign rights over the water column above the continental shelf (which is its exclusive economic zone). This gives it exclusive rights over the exploration, exploitation and management of the living resources of those waters.[489] In the ECS, a coastal State has no such rights over the superjacent waters. The water column above the ECS is high sea and, accordingly, is subject to high seas freedom. All States may, therefore, exploit the living resources of those waters except sedentary ones which, under UNCLOS, form part of the ECS over which the coastal State has exclusive rights.[490]

1.3 Economic Significance of the Continental Shelf

The continental shelf is considered to be a trove of mineral resources, accounting for the reason coastal States seek its seaward extension. Though located in deep water, advancement in deep sea mining technology has made the exploitation of the resources of the continental shelf a reality. Home to diverse living and non-living resources (some of which are not yet known) the continental shelf holds large quantities of energy resources such as oil, gas, gas hydrates as well as seabed minerals and marine genetic resources.[491]

1.3.1 Oil and Gas Resources

The 19th century witnessed the exploitation of oil and gas resources into offshore areas across the world with exploration being currently carried on in very deep

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[485] Nikki Krisadtyo, 'Extended Continental Shelf Regime in International Law: Its Application in Indonesia' (2015) 12(3) *Journal Hukum International*, 312.
[486] Art. 77 (1) UNCLOS.
[487] *Ibid* art. 77 (2).
[488] *Ibid* art. 77 (3).
[489] *Ibid* art. 56 (1)(a).
[490] See *ibid*. art. 77 (4).
[491] Schofield (n 17) 12.

waters.[492] Advances in marine mining technology and rising efficiency subsequently took oil and gas exploration to greater water depths, rekindling exploration interest in water depths that were once considered either unreachable or uneconomic.[493] Available information indicates that as terrestrial and shallow water oil and gas reserves decline, the deep and ultra-deep areas of the continental shelf have become the next main sources of oil and gas resources of the world.[494] The discovery of huge hydrocarbon deposits in the continental shelf of coastal States led to sea grabbing by those States as they tried to appropriate the submarine areas beyond their territorial seas.[495]

As oil and gas exploration continues to extend to deeper and deeper waters, it is envisaged that exploration and production will go beyond the 200-mile continental shelf and extend into the ECS.[496] In fact, 13 countries around the world are reported to have issued licences to oil companies for exploration beyond their 200-mile continental shelf.[497] Recent advances in geophysical exploration technologies have also greatly enhanced the chances of mining oil and gas resources in the ECS.[498]

The Gulf of Guinea (where Nigeria's continental shelf is located) is considered one of the most important oil and gas producing regions of the world.[499] With a replacement rate of 200 percent, the Gulf of Guinea is regarded as the world's leading region in terms of oil reserve renewal.[500] At present, Nigeria's deepwater oil reserve is estimated at 13 billion barrels, with a daily production of 850,000

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[492] R McLaughlin, "Hydrocarbon Development in the Ultra-Deepwater Boundary Region of the Gulf of Mexico: Time to Reexamine a Comprehensive U.S.-Mexico Cooperation Agreement," (2008) 39 *Ocean Development and International Law*, 1.

[493] PL Kelly, 'Evaluating the Impact of the Law of the Sea Treaty on Future Global Offshore Drilling' being paper presented at the Global Offshore Oil Conference, Houston, Texas, 19 April, 2005.

[494] RV Poll and CH Schofield, "Exploring to the Outer Limits: Securing the Resources of the Extended Continental Shelf in the Asia-Pacific," paper presented at the 7th Biennial Advisory Board on the Law of the Sea (ABLOS) Conference on *UNCLOS in a Changing World*, International Hydrographic Bureau Monaco, 3-5 October 2012.

[495] The United States, through the Truman Proclamation of 1945 led the way to the sea grab, and other States, especially South American States, followed.

[496] Schofield (n 17) 13.

[497] Van de Poll and Schofield (n 59).

[498] PL. Kelly, 'Deepwater Oil Resources: The Expanding Frontier' in MH Nordquist, JH Moore, and TH Heidar (eds), *Legal and Scientific Aspects of Continental Shelf Limits*, (Martinus Nijhoff Publishers, 2004) 414-416.

[499] See J Germaine and C Armengol, Gulf of Guinea: Deep Offshore Opportunity (2000) 25(1) *The Journal of Energy and Development*, 1.

[500] UNEP, Onshore Impact of Offshore Oil and Natural Gas Development in the West and Central African Region, UNEP Regional Seas and Studies, No. 3, at 1.

barrels.[501] According to Kenneth Sample, former Director of Chevron's deepwater project in Nigeria, over US$ 30 billion had been invested in oil and gas exploration in Nigeria's continental shelf, with a further US$ 40 billion needed to fully harness petroleum resources of the country's 200-mile continental shelf. The enormity of Nigeria's offshore oil and gas reserves has resulted in the International Oil Companies (IOCs) progressively carrying exploration deeper and deeper into the country's continental shelf.[502]

1.3.2 Gas Hydrates

Gas hydrates are an unconventional, non-traditional types of hydrocarbons. They are ice-like crystalline solids formed from a mixture of water and natural gas.[503] They are stable under a particular pressure, at a particular temperature, in an envelope.[504] Gas hydrates are found either onshore in or below thick permafrost or, offshore, in the marine sediments of the outer continental margin located in the ECS area.[505] By conservative estimates, gas hydrates are twice the carbon contained in known coal, oil and gas reserves.[506] They are, therefore, the most abundant unconventional natural gas and are estimated to exist in larger quantities than all other grades of natural gas put together.[507]

Though a veritable energy source, mining gas hydrates is a daunting task due to the technical obstacles involved. It is for this reason that they are considered to be the most difficult and most expensive unconventional gases to recover.[508] While exploiting gas hydrates is a herculean task in view of the technical obstacles involved, it is not a task that cannot be accomplished. Effort is being made to overcome the technical challenges so that gas hydrates could be commercially

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[501] Nigerian Upstream Petroleum Regulatory Commission, '12 billion Barrels Reserve of Oil in Nigeria's Deepwater-DPR' <http://www.nuprc.gov.ng/13-billion-barrels-reserve-of-oil-in-nigerias-deepwater-dpr> accessed 19 March 2024.

[502] In February 2024, Shell announced its plan to invest over US$ 1 billion in Nigeria's deepwater over the next decade. Similarly, TotalEnergies and Chevron have also doubled down on deepwater exploration in Nigeria. See World Oil, Nigeria Calls for Investment in Deepwater Assets, Infrastructure to Develop Natural Gas Resources <http://www.worldoil.com/2024/2/20/nigeria-calls-for-investment-in-deepwater-assets-infrastructure-to-develop-natural-gas-resources> accessed 19 March 2024.

[503] Schofield (n 17) 14.

[504] *Ibid*.

[505] *Ibid*.

[506] W Dillon, 'Gas (Methane Hydrates – A New Frontier,' U.S. Geological Survey, September 1992, <http://marine.usgs.gov/fact-sheets/gas-hydrates/title.html> accessed 25 February 2024.

[507] NA Owen and CH Schofield, 'Disputed South China Sea Hydrocarbons in Perspective' (2012) 36 *Marine Policy*, 809-822, 813.

[508] Schofield (n 17) 13.

recovered.[509] In fact, in May 2012 methane hydrates were reported to have been successfully recovered from a methane hydrate structure in the North Slope of Alaska in the United States, showing that the exploitation of this energy resource could be nearer than earlier anticipated.[510]

1.3.3 Seabed Minerals

Aside from oil and gas resources, the seabed and the subsoil also habour huge amounts of other mineral resources. Since land represents only 30 percent of the surface of the earth, and 70 percent is submerged under water, it follows that 100 percent of current mining for minerals is done terrestrially on only 30 percent of the surface of the earth.[511] It is safe to say that 70 percent of the earths mineable minerals are, therefore, on the seabed and the subsoil in deep water locations. Near-shore seabed has proved to hold diamonds as well as precious and base metals such as gold and tin, respectively.[512] In the Namibian continental shelf, for example, diamonds are currently being mined in water depths of 90 – 150 metres.[513]

Deeper offshore, the shelf in different parts of the world hold enormous quantities of metallic and other minerals that could be put to diverse industrial applications. These include polymetallic nodules, Seafloor Massive Sulphide (SMS), ferromanganese nodules and crusts, cobalt-rich crusts and phosphates.[514] These mineral deposits have been found to contain high concentrations of rare-earth elements which make their mining very attractive.[515] These rare-earth elements have been identified to be useful in the industrial manufacturing of such things as disk drives, fluorescent lamps, magnets, lasers, x-ray tubes, fiber optics, switches, liquid crystal display of televisions and computer monitors, roofs and pipes.[516]

These rare-earth elements become the more important when it is considered that their terrestrial supply can no longer keep pace with demand.[517] China produces about 97

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[509] *Ibid*.

[510] *Ibid*.

[511] W Tarare, 'Deep-Sea Mining to Drive Green Growth and Economy' <http:/www.earthjournalism.net/stories/6713> accessed 2 March 2024.

[512] *Ibid*.

[513] De Beers, 'Marine Mining' <http://www.debeers.com/Operations/mining/mining-methods/marine-mining> accessed 12 January 2024.

[514] Schofield (n 17).

[515] J Hein, 'Prospects for Rare Earth Elements from Marine Minerals' ISA Briefing Paper 02/12, May 2012 <http://www.isa.org.jm/files/documens/EN/pubs/BP2.pdf> access 12 February 2024.

[516] WJ Broad, 'Mining the Seafloor for Rare-Earth Minerals' <http://www.nytimes.com/2010/11/09seafloor.html?_r=0> accessed 2 March 2024.

[517] See L Deprairter and S Goutte, 'The Role and Challenge of Rare Earths in the Energy Transition' (2023) 86 Resources Policy, 1-41.

percent of available rare-earths but has put a ceiling on exportable quantities, causing their prices to soar.[518] Though in short supply, demand for rare-earth elements has continued to rise, exceeding global annual production.[519] Their increasing importance has also been attributed to the dwindling supply of copper – a key metal used in the industrial production of so many things such as wires, switches, pipes and roofs.[520]

1.3.4 Living Resources

In the ECS, coastal States are vested with the right to exploit living organisms of the seabed and the subsoil.[521] These are sedentary organisms that live on the sea floor or under it as opposed to those that live and move in the superjacent waters of the extended shelf. They include living resources that are either immobile on the seabed or only move while on the seabed or under it.[522] These living resources include certain species of fisheries such as oysters, clams, crabs, scallops and lobsters,[523] as well as marine genetic resources.[524]

Aside from having an estimated 95 percent of the earth's biosphere, the living resources of the deep seabed are said to be about 95 percent unexplored,[525] suggesting lots of possibilities as these resources of the deep waters are progressively discovered. This, perhaps, explains the discovery by marine scientists of not less than 1,000 new natural marine products every year.[526] It is, in fact, reported that a reasonable number of the over 30,000 marine natural products discovered since the 1960s was discovered in deep areas of the continental shelf.[527]

It could, therefore, be surmised that marine biota could be the source of limitless quantities of raw materials that could be used in diverse biotechnological applications. Apart from being a source of raw materials for such applications,

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[518] N Jones, 'Sea Holds Treasure Trove of Rare Earth Elements' <http://www.nature.com/news/2011/110703/full/news/2011.399.html> accessed 2 March 2024.

[519] Ibid.

[520] WJ Broad, 'Mining the Seafloor for Rare Earth Minerals' <http://www.nytimes.com/2010/11/09seafloor.html?_r=0> accessed 10 February 2024.

[521] Art. 77 (4) UNCLOS.

[522] *Ibid*.

[523] J Mossop, 'The Relationship between the Continental Shelf Regime and a New International Instrument for Protecting Marine Biodiversity in Areas beyond National Jurisdiction' (2017) *ICES Journal of Marine Science*, 2.

[524] See MI Gameiro, 'Law and Marine Genetic Resources' in MDG Garcia and A Cortes (eds), *Blue Planet Law: Sustainable Development Goals Series* (Pringer, Cham 2023) 227-236.

[525] *Ibid*.

[526] D Skropeta, 'Exploring Marine Resources for New Pharmaceutical Applications' in W Gullet, CH Schofield and J Vince (eds), *Marine Resources Management* (LexisNexis, Butterworths 2011) 211-224.

[527] *Ibid*.

knowledge could be advanced from the study of these deep seabed organisms. The abilities of these organisms to survive in the deep seabed in absolute darkness, under extreme pressure, and very low or very high temperature could, in no little way, contribute to the advancement of scientific knowledge.

1.4 Nigeria's ECS Submission

A coastal State wishing to extend its continental shelf beyond 200 nautical miles must make a submission to the CLCS.[528] Making a submission to the CLCS by a coastal State for ECS entails huge expense and expertise. It requires the assemblage of a variety of experts, including geologists, hydrologists, geodesists, geophysicists and law of the sea experts. It also involves the training of people and the conduct of offshore surveys for a period of time.[529] This is necessary because to define the limits of its continental shelf, a coastal State must carry out scientific research and present its findings in its submission to the CLCS.[530] Post submission, the coastal State would also have to engage the CLCS through its representatives until the Commission makes its recommendations on the outer limits of the coastal State's continental shelf.[531]

Nigeria's submission to the CLCS for extension of the country's continental shelf was made on 9 May 2009. In accordance with the procedure of the CLCS, a sub-commission was set up and assigned Nigeria's submission for consideration. After studying the submission, the sub-commission raised several queries over the submission, including questions regarding the qualifier test of appurtenance.[532] Nigeria was subsequently required to provide more data and information in support of its ECS claim. The submission was, unfortunately, not followed up after it was queried and the further data requested by the CLCS to be submitted was not

[528] See art. 76 UNCLOS. See also V Jares, 'The Continental Shelf beyond 200 Miles: The Work of the Commission on the Limits of the Continental Shelf and the Arctic' (2009) 42 *Vand. J. Transnat'l L.*, 1267.

[529] M Al Hinai, 'Establishing the Outer Limits of the Continental Shelf under the LOSC: Oman as a Case Study' (Institute of Maritime Law, University of Southampton 2014) xi.

[530] A Bossier, 'The Second Cold War: Peaceful Delimitation may not Survive the Chill of the Arctic' (2023) 22 *Loyola Maritime Law Journal*, 66; E Riddel-Dixon, 'Canada and Arctic Politics: The Continental Shelf Extension' (2008) 39 *Ocean Dev. & Int'l L.*, 345.

[531] *Ibid*.

[532] This is a test carried out by the CLCS to determine the legal entitlement of the submitting State to delineate the outer limits of its continental shelf throughout the natural prolongation of its land territory beyond 200 nautical miles. It is, therefore, a test as to ascertain whether the submitting coastal State has a basis, under UNCLOS, to make a submission for an extended shelf.

submitted due to lack of funds needed to conduct further data collection surveys in the Atlantic Ocean.[533]

The quest to extend Nigeria's continental shelf was revived by the Senate on 14 February 2013 when the legislative body made resolutions in respect of the pursuit.[534] In the resolutions, the Senate urged the Federal Government to provide adequate funding for the project, constitute an appropriate technical committee to handle the project and cut bureaucracy that had contributed to its slow pace.[535] An apparent lack of interest in the project by the Federal Government ensured that action was not taken on the resolutions of the Senate due to which the ECS project remained at a standstill.

Upon assumption of office in 2015, President Buhari was on 4 November 2015 briefed on the project by the National Boundary Commission. The President wasted no time in constituting the High-Powered Presidential Committee (HPPC) on Nigeria's Extended Continental Shelf Project. The Committee comprised the then Attorney-General of the Federation, Abubakar Malami (Chair) and Aliyu Omar (Secretary). Others are Professor Lawrence Awosika (Chairman of the CLCS at the time), Lufadeju Aderinola of the Department of Petroleum Resources, Dr. Regina Folorunsho of the Nigerian Institute of Oceanography, Rear Admiral Chukwuemeka Okafor, (hydrographer of the Nigerian Navy), Victor John of the Federal Ministry of Environment, Zachari Ifu of the Federal Ministry of Foreign Affairs, and M. B. Ahmad (Director-General of the National Boundary Commission).[536]

Following the Committee's inauguration, it proceeded to carry out fresh survey of the deepwater area involved in order to provide the data requested by the CLCS.[537] Upon completion of survey and collection of relevant data, the Committee amended Nigeria's earlier submission in tandem with the new data and submitted the amended submission to the sub-commission on 26 November 2016. In the preparation of the amended submission, Nigeria received advice from Lawrence Awosika and Galo Carrera both of whom were members of the CLCS at the time. Advice was also received from late Karl Hinz, Herald Brekke and Philip Symmonds, former members of the CLCS.[538]

A major obstacle a coastal State could encounter when making a submission to the CLCS is the existence of a dispute with other States or an overlapping claim by other

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[533] G Shehu, 'How Nigeria added Territory without War, Litigation, and the Unsung Heroes' <http://www.thecable.ng/how-nigeria-added-territory-without-war-litigation-and-the-unsung-heroes >

[534] *Ibid*.

[535] *Ibid*.

[536] *Ibid*.

[537] *Ibid*

[538] See Federal Republic of Nigeria, Submission of Extended Continental Shelf Pursuant to Article 76 of UNCLOS 1982 – Amended Executive Summary (hereinafter 'Amended Executive Summary').

States in the area in respect of which submission is made for ECS. In the case of Nigeria, it was disclosed in section 4 of the amended submission that the western part of the Gulf of Guinea was a maritime region over which there could be overlapping claims by other States. This was a factor that could adversely affect Nigeria's submission. Fortunately, other West African States with overlapping claims in that region of the Gulf of Guinea such as Benin, Cote D' Ivore, Ghana and Togo had in February 2019 reached agreement among themselves to enter a 'no objection' note to the submission of their neighbours.[539] These States and Nigeria had agreed that the making of a submission by any of them would not prejudice the subsequent delimitation of their maritime boundaries.[540] Based on this, Nigeria represented in its amended submission that there was no dispute or overlapping claims in the area to which the submission related.

In accordance with the rules of the CLCS for making submissions for ECS, section 5 of the amended submission listed the Nigerian institutions responsible for the preparation of the submission. These are the National Boundary Commission, the Nigerian institute of Oceanography and Marine Research, the Nigerian Navy (Office of the Hydrographer), Department of Petroleum Resources, Ministry of Foreign Affairs, Federal Ministry of Justice and Federal Ministry of Environment.

Following the submission, the Nigerian team presented Nigeria's case before the sub-commission and met with the CLCS over twenty times at the United Nations in New York to clarify issues and provide needed information as the need arose.[541] It is noteworthy that the area covered by the amended submission increased to three times the area covered in the 2009 submission. At a plenary session of the CLCS in March 2023, Nigeria's submission was approved.[542] The CLCS made final recommendations extending Nigeria's continental shelf by an additional 20 nautical miles, bringing the country's continental shelf to 120 nautical miles. Beyond the conventional 200-mile continental shelf, therefore, Nigeria is now entitled to establish a continental shelf extending to 220 nautical miles.

While this is so, it must be pointed out that the superjacent waters of the additional 20 miles remains high sea over which Nigeria has no right of exclusivity. This is because a coastal State's sovereign rights over the water column above the continental shelf terminates at the outward limits of the 200-mile Exclusive Economic Zone (EEZ).[543] In accordance with the doctrine of high seas freedom, the

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[539] *Ibid*.

[540] *Ibid*.

[541] Shehu (n 99).

[542] *Ibid*.

[543] The EEZ constitutes of the water column above the submarine land areas up to a distance of 200 nautical miles measured from the baselines from which the breadth of the territorial sea is measured. See art. 57, UNCLOS.

additional 20 miles of water above the extended shelf is open to all States, whether coastal or landlocked.[544] Other States may, accordingly, exploit fishery resources in those waters (except sedentary species which are considered part of the continental shelf)[545] and carry on marine scientific research without requiring the consent of Nigeria.

1.5 Prospects of the ECS for the Blue Economy

The extension of Nigeria's continental shelf by the CLCS came at a time when the Federal Government has manifested intentionality in the development of the country's blue economy. Considering Nigeria's location in the Gulf of Guinea, there is no gainsaying the fact that the country stands to benefit immensely if its blue economy is developed and its resource potentials optimally realised. Only recently, the President created the Ministry of Marine and Blue Economy which is expected to generate more than $1.5 trillion dollars annually, provide over 30 million jobs and ensure a vital source of protein to over 3 billion people globally.[546] Though the actual resource potential of Nigeria's extended shelf cannot be known with some degree of certainty until exploratory activities are carried out in the area, there is no doubt that Nigeria has, by adding territory, enhanced her marine resource potentials.

A major area the country is bound to reap the economic benefits of extended continental shelf is in regards to petroleum resources. Available data indicates that the Nigerian economy has for several decades depended on petroleum resources as its mainstay.[547] As already stated above, the country has rich reserves of hydrocarbon in deepwater areas of its continental shelf as a result of which the IOCs are carrying exploration into deeper and deeper waters. The 20-mile extended shelf is located in deep offshore and forms part of the area called the 'Golden Triangle' of the Gulf of Guinea.[548] The area is called 'golden' because of its huge hydrocarbon reserves and

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[544] High Seas freedom includes such freedoms as the freedom of navigation, freedom of overflight, freedom to lay submarine cables and pipelines, freedom to construct artificial islands and installations, freedom of fishing and freedom of scientific research. See art. 87(1) UNCLOS.

[545] See art. 77(4) UNCLOS.

[546] PUNCH, 'What you Need to Know About the Ministry of Marine and Blue Economy' <http://www.punchng.com/what-you-need-to-know-about-ministry-of-marine-and-blue-economy> accessed 11 March 2024.

[547] See N Ekeghe, 'Replacing Oil as Mainstay of Nigerian Economy' <http://www.thisdaylive.com/index.php/2022/08/31/replacong-oil-as-mainstay-of-nigerian-economy> accessed 19 March 2024; IA Paul, 'Petroleum and Nigerian Economy: A Paradox of Global Reality Since 1956' (2014) 4(16) 94-101.

[548] JA Ganoza, 'Op-ed: Golden Opportunities await Mining in West Africa' <http://www.miningmagazine.com/environment/news/1463000/op-ed-golden-opportunities-await-mining-in-west-africa> accessed 20 March 2024.

deposits of precious metals.[549] Faced with a faltering economy, Nigeria needs all the foreign exchange earnings it can and the more its oil and gas reserves, the better for its economy.

Aside from petroleum resources, the extended submarine area could hold large caches of mineral resources. These include polymetallic nodules, Seafloor Massive Sulphide (SMS), ferromanganese nodules and crusts, cobalt-rich crusts and phosphates which contain rare-earth elements that have variegated industrial uses. Though these minerals exist in humongous quantities in the abyssal plains of the oceans beyond the limits of State jurisdiction,[550] they have also been found to exist in commercial quantities on the continental shelf, within the limits of State jurisdiction.[551] As earlier adverted to,[552] China is the world's highest supplier of rare-earths but has placed a production cap which has caused prices to soar. Coupled to this is the fact land-based sources of rare-earths have continued to decline.[553] It is believed that there are gold deposits in the deeper continental shelf of the Gulf of Guinea where Nigeria's continental shelf now extends to.[554] The possible discovery of precious metals and rare-earths in commercial quantities in Nigeria's ECS would lead to higher resource earnings for the country at a time when foreign exchange earnings are nowhere near adequate.

Mining these minerals in the water depths where they exist was for decades not attempted because of lack of extreme technologies required to do so and the paucity of scientific knowledge regarding the possible consequences of mining at those depths to the deep-sea ecosystem.[555] The daunting nature of deep seabed mining was aptly captured by Wenzel when he analogised the process to 'standing on top of the Empire Building [in New York] trying to pick up small stones on the pavement using a long straw at night'.[556] With recent advancements in deep-sea mining technology, however, exploration and mining activities have begun in the continental shelf. In 2005, Nautilus Minerals, a Canadian mining company, commenced the first ever

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[549] *Ibid*.

[550] See K Patrick, 'Manganese Nodules and the Age of the Ocean Floor' (2010) 24(3) *Journal of Creation*, 82-86.

[551] The Solwara 1 project off the coast of Papua New Guinea is aimed at mining marine minerals within the limits of state jurisdiction.

[552] See footnote 84 above.

[553] Global Ocean Commission, 'Strengthening Deep Seabed Mining Regulation' Policy Option Paper presented at the Third Meeting of the Global Ocean Commission, 23 November 2013, 1.

[554]TELEDYNE MARINE, 'Subsea Mining Moves to Continental Shelf' <https://www.hydro-international.com/content/news/subsea-mining-moves-to-continental-shelf> accessed 13 March 2024.

[556] JG Wenzel, former President of the U.S. Ocean Mining Company quoted in J Stansell, No Rush for the Seabed's Riches' (1982) *New Scientists*, 649.

exploration activities on the continental shelf off the coast of Papua New Guinea in the Bismarck Sea for seafloor massive sulfides.[557] In 2016 the company began actual mining. The project, called Solwara 1, covers an area of 59 km^2 at a water depth of 1,600 metres. The project is hoped to extract such important metals as copper, gold, silver and zinc.[558]

Nigeria is also in a good position to benefit from the fisheries resources of the extended continental shelf if the fisheries of the area are properly managed and optimally utilised. The deep continental shelf is home to several species of fish, crabs, oysters, clams, scallops and lobsters.[559] These are sedentary living resources that exist in large quantities on the continental shelf. Optimally exploited, the fishery resources of the extended shelf would not only contribute to local food security, but could also enhance export earnings. In addition to the exploitation of sedentary fishery resources of the extended area, there also exists potentials for bio-prospecting from which knowledge relevant to the pharmaceutical industry could be acquired.

Importantly, whether for hydrocarbons, rare-earth elements, or fishery resources, production activities in the ECS will create numerous job opportunities in a country confronted by high unemployment figures.[560] Operations connected to mining and fishing activities in the extended area, coupled with the resultant increase in shipping activities due to more export activities, are bound to create a value chain that will create jobs in both the formal and informal sectors. This will reduce unemployment and enhance Gross Domestic Product (GDP).

All these potential resource benefits from the extended continental shelf area are made even the more alluring by the fact that Nigeria will not have to make any payments for mineral resources produced from the extended shelf area for which it is a net importer. Under article 82(3) of UNCLOS, a coastal State is under obligation to make annual payments or contributions in kind to the International Seabed Authority (ISA)[561] in respect of non-living resources exploited from an extended continental shelf area. Such payments or contributions are to be distributed to State Parties on the

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[557] Mining Technology, 'Solwara Project' <https://www.mining-technology.com/projects/solwara-project/?cf-view> accessed 11 March 2024.

[558] Source, 'The First Deep Sea Mining (DSM) Project in Papua New Guinea' <http://www.source-international.org/news/the-first-deep-sea-mining-dsm-project-in-papua-new-guinea> accessed 11 March 2024.

[559] Mossop (n 89) 2.

[560] See D Aina and D Olufemi, 'Nigeria's Unemployment Rate Rises to 5% - NBS' <http://www.punchng.com/nigeria-unemployment-rate-hits-0-8-in-2023-q3-nbs-report/> accessed 19 March 2024.

[561] The ISA is an autonomous supranational body established under UNCLOS to organise and control all mineral resources in the international seabed area for the benefit mankind.

basis of 'equitable sharing criteria'.[562] But a developing country which is a net importer of the particular mineral resource exploited in its ECS is exempted under art. 82(2) from making any payments or contributions in respect of that resource to the ISA. This means that, for any rare-earth minerals exploited by Nigeria in the ECS, no payments or contributions will be made to the ISA. But contributions will have to be made, in accordance with UNCLOS, for oil and gas resources exploited by Nigeria from the ECS since Nigeria is not a net importer of oil and gas.

1.6 The Challenges

While the recent extension of Nigeria's continental shelf by 20 nautical miles holds lots of prospects for its blue economy project, there are challenges that must be surmounted before the benefits of the extended shelf could be realised. Failing to develop the ECS and optimally exploit the resources thereof would render the effort and cost of securing the extension useless. Government must, therefore, appreciate the challenges that will inexorably confront the country in the quest to develop the area and put in place appropriate legal and policy frameworks that will enable the country navigate through these challenges.

Firstly, the extended continental shelf area is in deep ocean the geology of the seabed of which is not yet known. Sophisticated geological and geodesist surveys will have to be carried out in the area to determine the actual resource potential of the area and to locate mineable sites. There will also be need for marine scientific research for the purpose of understanding the deep-sea ecosystem and the environmental impact of mining at those depths. This requires a lot of scientific work and would be done at great financial expense. Government must therefore have the political will to sustain the enthusiasm that saw through Nigeria's application for ECS and provide the needed resources to carry out these scientific studies and surveys.

Secondly, attracting Foreign Direct Investment (FDI), which is a *sine qua non* for the development of the petroleum resources of the ECS, would be a possible area of challenge in the development of the resources of the ECS. While there are prospects of exploiting other living and non-living resources in the ECS, petroleum resources are low hanging fruits that could be exploited in no distant time given their relative cost efficiency compared to seabed mineral exploration and production. Local oil companies lack the resources, technology and know-how to explore and mine petroleum at the water depths of the extended shelf, making FDI necessary. FDI in the oil and gas sector does not look good for Nigeria at the moment with the IOCs

[562] Art. Art. 82(4) UNCLOS.

divesting to the tune of US$ 21 billion, which has seen expenditure in the upstream sector of the petroleum industry slump by over 74 per cent.[563]

For the purpose of attracting the requisite type of FDI for mining petroleum in the ECS, Governments at all levels must prioritise above other things, the dislodging of the present spate of insecurity in Nigeria. Investors would want to be assured and see for themselves that their investments, both capital and manpower, would be safe. Government must also make generous use of incentives to attract investment into such a risky venture as exploring and exploiting petroleum in the deep waters of the ECS. At present, the Deep Offshore and Inland Basin Production Sharing Act,[564] is the only law that incentivizes deep-sea oil and gas exploration and production.

The Act seeks, among other things, to give effect to incentives given to oil and gas companies operating in the Deep Offshore and Inland Basin areas.[565] Under the Act, production companies in production sharing contracts with the former Nigerian National Petroleum Corporation (NNPC) are given investment tax credit or investment tax allowance at a flat rate of 50 percent on their qualifying expenditure.[566] Aside from this tax incentive, payment of royalties to the Federal Government by oil companies in production sharing contracts in the deep offshore area is graduated so that the deeper the mining site, the lower the royalty payable, up to zero royalty for production in water depth of 1,000 metres.[567] Government may have to consider lower tax and royalty rates as further incentives for production in the much deeper ECS area for oil and gas companies willing to take the risks involved.

Thirdly, there is the challenge of maritime insecurity in the Gulf of Guinea which has the potential to scupper all expectations of exploiting humungous wealth from the ECS. The Gulf of Guinea has over the years been caught in the throes of violent crimes, including maritime piracy, sea armed robbery, and kidnapping for ransom.[568] The atmosphere of insecurity in the Gulf of Guinea is not only an investor's nightmare, but also poses serious challenges to West African countries. Nigeria has been grappling with the worst forms of the economic crime of oil theft and sabotage

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[563] See S Salau, '$21 billion Divestment Hits Nigerian Oil, Gas Sector Hard' <http://www.guardian.ng/business-services/21-billion-divestment-hits-nigeria-oil-gas-sector> accessed 20 March 2024; O Nnodim, 'OCSs Divestment, Threat to Nigeria's Oil Sector' <http://www.punchng.com/iocs-divestments-threat-tonigerias-oil-sector-fg> accessed 20 March 2024.

[564] Cap D3, Laws of the Federation, 2004 (revised in 2010).

[565] See the Long Title to the Act. Under the Act, 'Deep Offshore' refers to water depth of over 200 metres. See section 17 of the Act.

[566] Section 4 of the Deep Offshore and Inland Basin Production Sharing Act, 1993.

[567] *Ibid,* section 5.

[568] OP Adesanya, 'Maritime Crimes and the Gulf of Guinea' (2023) 9(2) *Cogent Social Sciences*, 1-21.

of oil installations in recent years.[569] These crimes are likely to fester in the event of commencement of oil and gas production in the deeper offshore area where the security agencies can less easily and efficiently deploy. Nigeria and other West African countries in the Gulf of Guinea must therefore synergize in ensuring that the spate of insecurity in that maritime space is curtailed. Until this is done, exploiting the anticipated wealth of Nigeria's ECS may become more daunting that it ordinarily should be.

Fourthly, poor sea fisheries management is a challenge confronting almost all developing countries, including Nigeria.[570] However rich the fisheries resources of the continental shelf of Nigeria may be, without good fisheries management, the fisheries potential of the added submarine land cannot be realised. Fisheries in Nigerian waters, just like those of other developing countries, is more or less open access whereby fishers from all over the world come in and land as much fish as they can without permission due to poor fisheries management and weak maritime law enforcement.[571] Without an intentional marine fisheries management policy, it will be difficult to manage and profitably exploit whatever fisheries that may exist in the ECS. To improve on fisheries management, a clear marine fisheries policy must be articulated for Nigeria, and maritime law enforcement must incorporate technology in order to effectively confront the maritime crimes of the 21st century.

Finally, there is yet no local legislation for governing Nigeria's continental shelf. Despite being a State Party to UNCLOS, Nigeria has not domesticated the continental shelf provisions of the Convention. This does not detract from Nigeria's rights over its continental shelf because a coastal State's rights over its continental shelf exists *ipso facto* without proclamation.[572] But a Nigerian legislation is necessary for other purposes. With the determination of the seaward limits of Nigeria's shelf with finality by the United Nations, it has become imperative to legislate on the continental shelf. Such continental shelf legislation would provide for the delimitation of the outer limits of the ECS, access to the area, preservation of the

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[569] See T Soromi, 'The Implications of Oil Theft on Social and Economic Development in the Niger Delta' (2020) 19 *Global Journal of Social Sciences*, 1-11; VE Assi, OI Amah and SO Edeke, 'Oil Theft and Corruption: Pathways to Underdevelopment in the Niger Delta' (2016) 6(3) *Research on Humanities and Social Sciences*, 70-75; G Wilson, 'The Nigerian State and Oil Theft in the Niger Delta Region of Nigeria' (2014) 16(1) *Journal of Sustainable Development in Africa*, 69-81.

[570] See Vincent Iwunze, 'Enhanced Fishing Rights under the United Nations Convention on the Law of the Sea, 1982: The Challenges Confronting Developing Countries' (2020) 7(2) *Groningen Journal of International Law*, 145-163; Vincent Iwunze and Kene-Unwana Ibia, 'An Examination of Illegal, Unreported and Unregulated Fishing in West Africa: A Fishing-Rights-of-State Approach (2023) 7 *Uniport Law Review*, 152-173.

[571] Iwunze *ibid* at 157.

[572] Art. 77(3) of UNCLOS provides that '[t]he rights of the coastal state over the continental shelf do not depend on occupation, effective or notional, or any express proclamation.'

marine environment, and conduct of marine scientific research. It will also create offences and provide for enforcement mechanisms and processes.

1.7 Conclusion

Nigeria's successful extension of its ECS beyond 200 nautical miles is highly commendable. This is especially so when the technical and scientific work as well as the huge capital outlay required for completing and making a submission acceptable to the CLCS is taken into consideration. Though the resource benefits of the extended shelf area may not be fully ascertained until exploration begins in the area, the 'golden triangle' in the Gulf of Guinea is believed to be rich in mineral resources, especially hydrocarbons. There is no doubt that, if properly developed and managed, the extended shelf area has the potential to have positive impact on the Nigerian economy in diverse ways. To realise and optimise the resource potential of the ECS, however, Nigeria must be prepared to surmount the many challenges concomitant with exploring and exploiting resources at such water depths as in the ECS.