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The Impact of Regulation (EU) 2023/2631 on the Blue Economy and on the Aim of Preserving Oceans and Marine Biodiversity

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Abstract

Climate change has forced governments to take actions in order to preserve, among other things, marine biodiversity, whose survival is threatened by pollution and human activities. The so-called blue economy – which represents a peculiar form of green economy – covers a broad group of activities related to oceans and seas which must be carried out in a sustainable and healthy way. In this economy, a main role is played by blue bonds, a form of thematic bond, where the issuers commit themselves to use the capital raised to support investments in blue economies and projects that pursue United Nations Sustainable Development Goal 14. One of the main features necessary to pursue that aim is the transparency of the information the issuer discloses to the investors. The new Regulation (EU) 2023/2631 certainly provides useful tools to foster transparency in green (and blue) economies in terms of information to be disclosed in order to tackle greenwashing risks, but, at the same time, it presents features that could be better specified and improved and that could better pursue that aim if harmonized on a European level.

Keywords: greenwashing, biodiversity, blue bonds, blue economy, sustainability

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1. Sustainability as a Paradigm for Current and Future Legislation

The growing visible impacts of climate change are compelling governments and businesses worldwide to reconsider their legislative frameworks and business strategies. This shift increasingly emphasizes the importance of ESG (Environmental, Social, and Governance) factors, indicating that actions must align not only with profitability but also, as addressed in this article, with environmental sustainability. Such policy change is a direct consequence of scientific warnings about the environmental degradation caused by the massive exploitation of natural resources without a long-term perspective. In this context, it is important to recall that in 2015, the United Nations adopted the 2030 Agenda and

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Sustainable Development Goals (SDGs), with the aim of achieving these targets by 2030[1].

Under Agenda 2030, economic activities must foster investments and capital to support environmental-friendly activities[2] and to facilitate the transition toward a new way of approaching economic activities in general, which includes green goals aimed at pursuing a long-term strategy to preserve the Earth and its resources for future generations. Generally, such concerns had a huge impact that pushed policy-makers and authorities to revise company and financial law, imposing a switch from a shareholderism paradigm to one of stakeholderism[3], meaning that undertakings and, more generally, all market operators must compulsorily pursue certain objectives that do not coincide with pure profit[4].

This can also be deduced, for instance, from the proposal of a Corporate Sustainability Due Diligence Directive (CSDDD) –expected to be enacted within the year – which aims to include the sustainability factor in corporate governance because companies are not taking the negative impact on human rights and the environment sufficiently into account and, at the same time, they do not always have an appropriate governance, administration and auditing system able to contain such damages[5].

From a broader point of view, the European Union positioned itself as one of the leading organizations in the world in terms of the 'green transition', starting with the European Green Deal which embodies strategic and programmatic objectives to pursue in order to create a "modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use"[6].

The European Green Deal marks the most substantial change in perspective in the EU legal

1 UNGA, 'Transforming our world: The 2030 agenda for Sustainable development' (21 October 2015) UN Doc A/RES/70/1 (Agenda 2030). The UN Agenda for 2030 is an ambitious action program for people, planet and prosperity which provides 17 Sustainable Development Goals (SDGs) that are part of a larger program consisting of 169 targets to achieve in environmental, social and economic domains by 2030. See also Nick Feinstein, 'Learning from past mistakes: future regulation to prevent greenwashing' (2013) Boston College Environmental Affairs Law Review 229, 231.

2 Chengbo Fu., Lei Lu, Mansoor Pirabi, 'Advancing green finance: a review of climate change and decarbonization' (2024) Digital Economy and Sustainable Development 1-2.

3 Eugenio Barcellona, 'La sustainable corporate governance nelle proposte di riforma del diritto europeo: a proposito dei limiti strutturali del c.d. stakeholderism' (2022) 1 Rivista delle società 1.

4 Stefano A. Cerrato., 'Appunti per una via italiana all'ESG. L'impresa costituzionalmente solidale (anche alla luce dei nuovi artt. 9 e 41, comma 3, Cost.)' (2022) 1 Analisi giuridica dell'economia 63, 67.

5 Dionigi Scano, Gabriele Racugno, 'Il dovere di diligenza delle imprese ai fini della sostenibilità: verso un Green Deal europeo' (2022) 4 Rivista delle società 726-727.

6 Communication from the Commission to the European parliament, the European council, the council, the European economic and social committee and the committee of the regions, The European Green Deal, 11st December 2019 COM (2019) 640.

framework since the original conception of public neutrality towards economic freedom was replaced by a new programmatic and legislative plan that placed sustainability and environment protection at the centre of future legislation, in cooperation with the Member States[7].

Sustainability has emerged as a core focus for European institutions and has been designated as a central framework guiding forthcoming legislative reforms. However, despite its relevance, it is impossible to find a unique definition in the current framework. Sustainability is a generic word with a wide range of possible meanings[8] and, given its flexibility, can refer to diverse decision-making fields. This flexibility, however, hides a double set of implications. On the one hand, if used correctly, it can really contribute to create a renewed vision of the environment and its use for human purposes. Conversely, the lack of a universal definition—and consequently a uniform scope of application—leaves room for an interpretation of the principle[9] that is then shaped by the unique cultural contexts of each enforcing State[10]. However, despite those circumstances, sustainability has gained its position as a fundamental tool of legislation in many different counties, including EU Member States' internal legislative frameworks. Indeed, more than 90% of the global economy has developed net-zero commitments[11].

One of the most visible examples can be found in the reform of the Italian Constitution[12] enacted in 2022 when Article 41 was modified in order to include sustainability in the principles regarding scientific research and economic development[13]. Specifically, this article states that private economic initiative shall be free but it cannot be carried out by jeopardizing the environment, security, freedom and human dignity. Furthermore, the second paragraph of the article stresses that the legal framework must determine programs and necessary controls in order to coordinate and drive public and private activity towards social and environmental purposes. Consequently, it should be noted that environmental protection, in relation to the sustainability paradigm of economic activities, shapes and further clarifies the fundamental right of economic initiative as recognized by the Italian Consti-

7 Mario Iannella, 'L'European Green Deal e la tutela costituzionale dell'ambiente' (2022) federalismi.it, 171, 173.

8 Raffaele Lener, Paola Lucantoni, 'Sostenibilità ESG e attività bancaria' (2023) 1 Banca borsa titoli di credito 6.

9 Sustainability is identified as a principle, for instance, in the Italian legal framework after the Constitutional reform occurred in 2022. See Camilla Buzzacchi, 'Attività economiche e ambiente nel prims (o mantra?) della «sostenibilità»' (2023) 4 Rivista AIC 207. For a broader analysis and historical reconstruction of the sustainability concept see Irma S. Russell, 'The Sustainability Principle in Sustainable Energy' (2008) 44 Tulsa Law Review 121.

10 James R. May., "Sustainability constitutionalism" (2018) 86 UMKC Law Review 855, 856.

11 Accelerating global companies towards net zero by 2050, Accenture Global Report 2022.

12 Constitutional law, 11th of February 2022, n. 1.

13 See Giovanni Capo, 'Libertà di iniziativa economica, responsabilità sociale e sostenibilità dell'impresa: appunti a margine della riforma dell'art. 41 della Costituzione' (2023) 1 Giustizia Civile 81 ff; Marcello Cecchetti, 'Virtù e limiti della modifica degli articoli 9 e 41 della Costituzione' (2022) 1, 127 <www.cortisupremeesalute.it> accessed 8 March 2024.

tution. This systematic shift is observable from a long-term perspective: henceforth, businesses will need to adopt a forward-looking approach, reshaping their strategies to account for the interests of future generations. In order to protect such interest, the Constitutional Court has the power to control the legal framework and to declare as unconstitutional all those acts that are not compliant with the environmental sustainability paradigm[14].

Moreover, sustainability had already been mentioned in the Italian legislative framework in the legislative decree 152/2006 (the so-called "Environmental Code") where it was stated that the Government was in charge of updating the "national strategy for sustainable development" at least every three years through the insurance of divergence between economic growth and environmental impact[15], showing how this paradigm has gained a growing relevance in policy making. Similarly, the French Minister of Justice presented a constitutional reform project with the intent of inserting environmental and biodiversity protection into the first article of the Constitution, an initiative that is currently suspended due to the lack of political agreement between the left and right wings of the Chambers[16]. Italy and France represent two of many examples of how sustainable development has turned into a value which finds protection in the regulatory framework.

As already mentioned, on a European level, over the last decade, the strategy enacted by legislators – with a growing attention to topics such as climate change and respect of human rights – has contributed to an enhancement of the Treaty of Lisbon's dispositions which correlate the economic growth of the European continent to the achievement of a minimum set of social objectives in order to pursue what Article 13 TEU defines as "social market economy"[17]. The European Union chose to adopt an organic and progressive approach[18] aiming for a systematic reform to be enforced over the next years with a broad range of stakeholders involved, including companies and financial markets. One of the most crucial steps taken by the legislator was the attempt to give a precise definition of

14 For a broader analysis of such article and its reform see Guido Alpa, 'Note sulla riforma della costituzione per la tutela dell'ambiente e degli animali' (2022) 2 Contratto e impresa 361; Giuseppe Fauceglia, 'L'iniziativa economica privata nella cultura politica cattolica: dal corporativismo alla Costituzione' (2022) 4 Giurisprudenza commerciale 587; Pierpaolo M. Sanfilippo, 'Tutela dell'ambiente e "assetti adeguati" dell'impresa: compliance, autonomia ed enforcement' (2022) 6 Rivista di diritto civile 993.

15 Shaira Thobani, 'Pratiche commerciali scorrette e sostenibilità: alla ricerca di un significato' (2022) 3 Persona e mercato 423, 424.

16 *Projet de loi constitutionnelle complétant l'article 1er de la Constitution et relatif à la préservation de l'environnement* (6 july 2021) JUSX2036137L <www.legifrance.gouv.fr/dossierlegislatif/jorfdole000043022845/> accessed 9 March 2024; for the opinion by *Conseille Constitutionelle* on such project see *Avis sur un projet de loi constitutionnelle complétant l'article 1er de la Constitution et relatif à la préservation de l'environnement* (14 January 2021) JUSX2036137L/Verte-1.

17 Enrico Caterini, 'Sustainability and civil law' (2018) 2 The Italian Law Journal 289, 295.

18 Anna Genovese, 'La "sustainable corporate governance" delle società quotate. Note introduttive' (2022) 1 Corporate governance 97, 112.

what can, and cannot, be considered sustainable in order to guarantee the transparency of the information disclosed by companies and by financial market operators to the public of stakeholders and investors.

Presently, the main risk to be tackled when dealing with green investments and activities is related to products' labelling practices. In other words, given the global persuasion of the market as a useful tool to pursue sustainability objectives (so-called "green economy"), misleading practices could be carried out in order to persuade investors to finance projects labelled as "sustainable" where, instead, sustainability and eco-friendly characteristics are a mere façade, bound to crumble if further investigated. As for financial products and economic activities (and consequently for blue bonds too, as will be broadly analysed in the following paragraph), Regulation (EU) 2020/852 (Taxonomy Regulation) – which integrates and modifies Regulation (EU) 2019/2088 (SFDR) – defines the juridical base to provide investors and stakeholders with clear, transparent and uniform conditions to encourage capital flow into sustainable projects and, by so doing, to mitigate the risk of misleading labelling for sustainable products[19].

One of the most relevant and effective tools in this field is to be found in so-called "green bonds", or "blue bonds" when applied to projects concerning seas and oceans pursuant to Sustainable Development Goal 14 as defined by the United Nations[20]. When issuing green bonds, the issuer makes a commitment to use all the proceeds gained through the bond to finance (or refinance) projects that have a positive impact from an environmental or social point of view[21]. Introducing rules for green investments is now a widespread trend and, prospectively, such rules should be characterized by global harmonization concerning the classification rules for green investments[22] in order to make them fully effective, even when it comes to green (and blue) bond issuance and making it easier for investors to identify bonds whose proceeds are aligned or will, in the least, contribute to pursuing environmental objectives.

A further step was taken by the European Union with Regulation (EU) 2023/2631 which follows

19 Chris Van Oostrum, 'Sustainability through transparency and definitions. A few thoughts on Regulation (EU) 2019/2088 and Regulation (EU) 2020/852' (2021) 1 European Company Law Journal 15, 16.

20 Agenda 2030 (n 1) Sustainable Development Goal 14 aims to "conserve and sustainably use the oceans, seas and marine resources for sustainable development".

21 Gregor Vulturus, Aaron Maltais, Kristina Forsbacka, 'Sustainability-linked bonds – their potential to promote issuers' transition to net-zero emissions and future research directions' (2024) 1 Journal of Sustainable Finance & Investments 116, 118.

22 As it is sustained by the Network for Greening the Financial System (NGFS), whose purpose is to strengthen the global response required to pursue the aims of the Paris Agreement. See NGFS 'NGFS occasional papers, Central Banking and supervision in the biosphere: an agenda for action on biodiversity loss, financial risk and system stability' (2022) <www.ngfs.net/sites/default/files/medias/documents/central_banking_and_supervision_in_the_biosphere.pdf> accessed 11 March 2024.

the path of harmonizing classification rules for bonds aimed at financing sustainable investments (the so-called European Green Bond Standard, EGBS) and introduces an optional disclosure framework for bonds designated as environmentally sustainable and for sustainability-linked bonds. This act accelerates the transition towards a climate-neutral, sustainable, energy and resource-efficient ecosystem and, at the same time, guarantees the competitiveness of the European economy in a perspective of co-existence with citizen well-being[23]. The form of the act used by European Union – a Regulation and not a Directive – demonstrates the need for harmonization[24] in terms of quality requirements for European green bonds because it avoids diverging national requirements that could derive from the transposition of a directive and it assures that said conditions are directly applicable to bond issuers and, by so doing, it is possible to increase the European market efficiency and to avoid greenwashing (even with the help of optional sustainability disclosure templates[25]). With this background in mind, it is now possible to analyse possible issues related to blue economy and the role of blue bonds when it comes to financing or refinancing projects aimed at pursuing, exclusively or in part, United Nations Sustainable Development Goal (SDG) 14 on the conservation and the sustainable use of oceans, seas and marine resources.

2. Blue Economy and Blue Bonds to Finance Sea and Marine Biodiversity Conservation Projects

Pollution and climate change have a direct effect on landscapes but also, in an equally direct way, on every aspect of the economy, including the marine economy. It is estimated that addressing the degradation of the seas and oceans is going to cost the US $174 billion per year[26].

In 2015, the United Nations adopted the 2030 Agenda for Sustainable Development which calls urgently for action by all countries to cooperate in a global partnership to tackle climate change and preserve oceans, seas and forests by establishing seventeen sustainable development goals (SDG). More specifically, SDG 12 and 14 deal with global responsible consumption and production, as well as with the preservation of life below water. The latter includes actions to be taken in order to combat,

23 Regulation (EU) 2023/2631 of the European Parliament and of the Council of 22 November 2023 on European Green Bonds and optional disclosures for bonds marketed as environmentally sustainable and for sustainability-linked bonds (2023) OJ L, 2023/2631, recital 1.

24 Highlighted, among others, by Claudia Marasco, 'Il mercato dei green bond alla prova della disciplina europea' (2022) 4 Rivista trimestrale di diritto dell'economia 327, 340.

25 Regulation (EU) 2023/2631 (n 23) recital 8.

26 Despina F. Johansen, Rolf A. Vestvik 'The cost of saving our ocean – estimating the funding gap of sustainable development goal 14' (2020) 112 Maritime Policy 1.

among other things, ocean acidification and over-fishing, two of the main dangers for the ecosystem's health. However, the implementation of this objective turned out to be more difficult than expected especially considering that, from a general point of view, projects pursuing sustainability goals had to deal with the "green finance gap"[27] or, in other words, a systemic lack of financial resources to fund such initiatives. The lack of sufficient resources invested in the sustainable transition by Governments was also highlighted by the UN Global Sustainable Development Report which warned about the vulnerabilities to which many countries were – and will be – exposed in case of crisis.

As for the oceans and seas' sustainability and protection, the report found that the continuing threats to marine biodiversity – such as overfishing and pollution – have not been sufficiently addressed, and it stresses how preserving food security and life under the sea requires the investment of greater financial resources[28]. Marine preservation projects on such a large scale require private-public cooperation to cover implementation-related costs. Marine environment preservation tends to necessarily have a public dimension since many projects dealing with sea and oceans must receive a previous governmental authorization, based on the legal framework of each country. As a consequence, such projects are entirely financed from public sources. That is one of the main setbacks of a completely publicly funded project[29] because one must take into account both limits to public spending (especially in countries which enacted spending review policies due to financial crises) and the reliance on political sensitivity on environmental issues. At the same time, however, private initiatives aimed at advancing sustainable finance in the marine sector, while among the most effective tools for raising capital for marine projects, require adjustments to enhance investor appeal. Specifically, the primary factors limiting the effectiveness of marine conservation projects include a lack of transparency in funding allocation and insufficient coordination among various initiatives and private interventions. Finally, there was insufficient follow-up activity to verify the projects' outcomes in order to understand the long-term impact and sustainability of such projects[30].

Hence, at least in the past year, capital raised or invested in combatting sea and ocean pollution (together with its negative consequences) were absolutely insufficient and, consequently, implementing SDG 14 had become difficult and risky. Hence, academics have observed that ocean governance

27 Danilo Liberati, Giuseppe Marinelli 'Everything you always wanted to know about green bonds (but were afraid to ask)' (2021) 654 Questioni di Economia e Finanza, Occasional papers 1, 5.

28 United Nations, 'Time of Crisis, Time of Change. Science for Accelerating Transformations to Sustainable Development – Global Sustainable Development Report' (2023) 17.

29 Adrian E. Laufer, Michael D. Jones, 'Who pays for marine conservation? Processes and narratives that influence marine funding' (2021) 203 Ocean and Coastal Management 1.

30 Robert Blasiak and others, 'Towards greater transparency and coherence in funding for sustainable marine fisheries and healthy oceans' (2019) 107 Marine Policy 1, 2.

needs a pool of diversified financial mechanisms with cooperation from private capital for implementation[31], including the so-called blue bonds. This concept has existed for many years and, exactly like green bonds, refers to debt instruments aimed at raising capital to finance projects with positive outcomes in terms of environment, economy and climate. However, despite its potential, it never attracted adequate attention from institutional and private investors[32].

Over the years, however, this framework has facilitated the spread of the "blue economy" concept, which now plays a central role in advancing ocean and sea conservation and sustainable fishing objectives, as highlighted in United Nations Sustainable Development Goals 12 and 14. Nevertheless, these goals remain among the least attractive and visible for market-driven companies, thereby limiting capital flow and hindering progress toward achieving these targets by 2030[33].

According to the World Bank, defining the "blue economy" requires focusing on the economic production and it includes projects that "protect our oceans for economic growth, improved livelihoods, jobs and secure healthy ocean ecosystems for future generations"[34]. At the same time, additional potential of blue economies has been identified in their contributions to climate mitigation, renewable energy, and carbon storage within coastal ecosystems[35].

One of the most emblematic cases of blue economy development is represented by so-called 'Seychelles Blue Bonds' when, for the first time, a country whose economy revolves mainly around sea, tourism and fishing activities decided to use financial instruments in order to sustainably use ocean resources to preserve the environment without forgetting to meet the needs of the population. How essential this new vision was considered to be by the President of Seychelles can be deduced by the institution of the Blue Economy Government Department and by the establishment of the James

31 U. Rashid Sumaila and others, 'Financing a sustainable ocean economy' (2021) 12 Nature communications 1, 2. See also Melissa Bos, Robert L. Pressey, Nathalie Stoeckl, 'Marine conservation finance: the need for and scope of an emerging field' (2015) 114 Ocean & Coastal Management 116.

32 Paul Hunt, Aaron Franklin, Carlos Ardila, 'Out of the blue (July 2019) IFLR Capital Markets Blue Bonds <www.lw.com/admin/upload/SiteAttachments/Latham%20-%20IFLR%20-%20Out%20of%20the%20Blue%20-%20Reprint.pdf> accessed 12 March 2024.

33 Pieter Bosnans, Frederic de Mariz, 'The Blue Bond Market: A Catalyst for Oceans and Water Financing' (2023) 184 Journal of Risk and Financial Management 1, 2.

34 The World Bank, 'Board Approves over $20 Million for Seychelles' Sustainable Fisheries and Marine Resources Conservation, press release 2018/027/AFR <www.worldbank.org/en/news/press-release/2017/09/29/board-approves-over-20-million-for-seychelles-sustainable-fisheries-and-marine-resources-conservation> accessed 19 March 2024.

35 For a review of all the definitions of blue economy in the scientific literature see Liam Saddington, 'Geopolitical imaginaries in climate and ocean governance: Seychelles and the Blue Economy' (2023) 139 Geoforum 1, 2.

Michael Blue Economy Research Institute[36]. The case of the Seychelles islands provides a useful example of how blue economy is gaining its position as one of the main areas of intervention to tackle global warming. As a matter of fact, marine ecosystems are essential to reach the Paris Agreement goals which require, among other things, the objective of cutting greenhouse emissions by 21% in blue economy fields[37].

Given this context, and to fully leverage the potential of this financial instrument, the scientific literature has advocated for aligning blue bonds with widely recognized standards and principles[38] as prescribed, for instance, in the United Nations' Sustainable Blue Economy Finance Principles[39] and the Green Bond Principles provided by the International Capital Markets Association (ICMA)[40]. The UN and ICMA addressed different sides of the same problem. The United Nations provided general principles that aim to inspire the legal frameworks of adhering States and to constitute keystones for market operators (such as banks and investors). Among the fourteen principles listed, the "impact" principle is noteworthy, meaning that only projects actively pursuing social, environmental, and economic benefits for oceans, rather than merely avoiding harm, should be financed. Additionally, a commitment to "transparency" is required, ensuring that information about investments and their impacts is publicly accessible while respecting confidentiality.

From a different perspective, but with full alignment, ICMA provided a voluntary guideline for green bond issuers that is inspired by a transparency purpose in order to attract investors. Green (as well as blue) bond issuance documents must precisely indicate three items of information. Firstly, they should indicate the use of proceeds, describing the projects in which capital will be invested; secondly, careful attention should be given to the evaluation criteria for selecting projects eligible for financing. Finally, the report provides possible criteria to be applied to correctly manage the proceeds and highlights the relevance of correct final reporting activity to be renewed annually until full allocation and, in case of material developments, on a timely basis.

Despite these challenges, which are under examination by authorities worldwide, the issuance

36 ibid, 3.

37 Ove Hoegh-Guldberg and others, 'The Ocean as a Solution for Climate Change: Five Opportunities for Action' (2019) <www.oceanpanel.org/climate> accessed 16 March 2024.

38 Benjamin S. Thompson, 'Blue bonds for marine conservation and sustainable ocean economy: Status, trends, and insights from green bonds' (2022) 144 Marine Policy 1, 2.

39 United Nations Environment Programme, 'The sustainable Blue Economy Finance Principles' (2018) <www.unepfi.org/blue-finance/the-principles/> accessed 18 March 2024.

40 International Capital Markets Association, Green Bond Principles: voluntary process guidelines for issuing green bonds (June 2021) <www.icmagroup.org/assets/documents/Sustainable-finance/2022-updates/Green-Bond-Principles_June-2022-280622.pdf> accessed 23 March 2024.

of green and blue bonds continues to grow, driven by a shift in perspective affecting all sectors of the economy. This expansion necessitates addressing one of the primary risks associated with green initiatives: greenwashing. Addressing this problem means tackling the risk of discouraging capital flows in environmentally-oriented projects and restoring faith in the positive impact that finance in general has on tackling climate change and pollution.

3. Transparency in Data Disclosure: the Impact of Current Legislation in Blue-Financial Activities (Preventing the Risk of Greenwashing)

The current economic landscape reflects a trend of valuing the commitment to participate in global initiatives aimed at achieving net-zero targets. This involves conducting activities sustainably to combat climate change and actively improving carbon footprints. Sustainability has become a central paradigm and a fundamental component of legislation in many countries worldwide, particularly within the European Union[41]. These commitments, by companies and market operators, have gained increasing relevance for stakeholders, investors and consumers but, despite having a positive influence on the behaviour of companies, can lead to a misuse of sustainability and environmentally friendly commitments, or in other words, to a phenomenon defined as greenwashing[42].

Greenwashing is defined as "the practice of gaining an unfair competition advantage by marketing a financial product as environmentally friendly when in fact basic environmental standards have not been met"[43]. By so doing, companies aim to increase "their market share of the lucrative ethical consumer sector"[44]. After all, greenwashing-related dangers for economy and consumers were also acknowledged by the European Securities and Markets Authority (ESMA) and were directly related to the growing demand for sustainable financial products and the complexity of the legal framework developed throughout recent years by the European Union[45]. In its report, ESMA found that greenwashing can be identified across four key points: the role played by a market actor in greenwashing

41 The misuse of such term is mentioned by Keith H. Hirokawa, 'Saving Sustainability' (2015-2016) 5 Albany Law School Research Paper 261.

42 Nicola Brutti, 'Le regole dell'informazione ambientale, tra pubblico e privato' (2022) 3 Diritto dell'informazione e dell'informatica 617, 634.

43 Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088, recital 11. Some authors defined greenwashing as a specific variant of «whitewashing» where corporations try to cover up their wrongdoings through a biased presentation of data using false statements. See Elizabeth K. Coppolecchia, 'The Greenwashing Deluge: Who Will Rise Above the Waters of Deceptive Advertising?' (2010) 4 University of Miami Law Review 1353, 1354.

44 Ellis Jones, 'Socially Responsible Market' (2015) The Wiley-Blackwell Encyclopedia of Consumption and consumer studies.

45 Andrea Gasperini, 'Da ESMA priorità chiare per la finanza sostenibile' (2023) 1 Amministrazione & Finanza 49, 50.

(e.g., trigger, spreader or receiver); the types of misleading claims made; the content of the claims that make them misleading; the communication channels[46]. These circumstances necessitated a precise taxonomy[47] and a clear regulatory framework to mitigate the risk of market operators exploiting green claims purely for profit, leveraging social and institutional awareness of environmental issues. The establishment of ESG criteria (Environmental, Social, and Governance) has, in turn, made sustainability a critical element in long-term financial strategies[48]. Moreover, it seems that pursuing environmental and social objectives requires greater transparency to inspire the legal framework to ensure the trustworthiness of companies and, by so doing, fostering private or public capital flow into eco-friendly projects.

In recent years, the European Union – which acted as a pioneer on the global market – enacted a significant renewal of financial markets and the duties of companies towards stakeholders to guarantee transparency and accuracy of the information disclosed. The inevitability of such a step was also recognized by Christine Lagarde, President of the European Central Bank (ECB), in 2021 when she affirmed that the existing fragmentation between Member States' financial markets risked constraining the potential of investments. Only by promoting the implementation of sustainable finance would the European financial system be able to experience transformative effects, leading to the creation of a Green European Capital Markets Union[49]. The EU chose an organic and progressive approach[50] by establishing a global and systematic reform to be enacted with a multiple-step strategy over the next years. Notably, there are two legislative acts that specifically deal with providing a precise framework to correctly and transparently identify sustainable investment. Regulation (EU) 2019/2088 (Sustainable Finance Disclosure Regulation, SFDR) gives a uniform classification system

46 ESMA, Progress report on greenwashing – Response to the European Commission's request for input on "greenwashing risks and the supervision of sustainable finance policies (31 May 2023) ESMA30-1668416927-2498 <www.esma.europa.eu/sites/default/files/2023-06/ESMA30-1668416927-2498_Progress_Report_ESMA_response_to_COM_RfI_on_greenwashing_risks.pdf> accessed 7 March 2024, p. 17.

47 Virginia E. Harper Ho, 'Modernizing ESG disclosure' (2022) 1 University of Illinois Law Review 277, 313.

48 Alan R. Palmiter, 'Capitalism, heal thyself' (2022) 2-3 Rivista delle società, 293 where the Author states that 'Companies that infuse real ESG into their operations — not the fake stuff that the financial markets are getting better and better at ferreting out — attract money from the big investment firms engaged in ESG investing'. In the scientific literature, for an analysis of greenwashing in the fashion marketing see Astrid Sailer, Harald Wilfing, Eva Straus, 'Greenwashing and Bluewashing in Black Friday-Related Sustainable Fashion Marketing on Instagram' (2022) 14 Sustainability 1.

49 Christine Lagarde, 'Towards a green capital markets for Europe', (speech by Christine Lagarde, President of the ECB, at the European Commission high-level conference on the proposal for a Corporate Sustainability Reporting Directive, 6 May 2021) <www.ecb.europa.eu/press/key/date/2021/html/ecb.sp210506~4ec98730ee.en.html> accessed 9 March 2024.

50 Anna Genovese, 'La "sustainable corporate governance" nelle società quotate. Note introduttive' (2022) 1 Corporate Governance 97, 99.

to assess the environmental sustainability of economic activities[51]. This objective is reached by providing a definition of 'sustainable investment' in article 2[52] and, at the same time, by obliging financial markets participants to disclose sustainability-related parameters in pre-contractual disclosures[53].

In contrast, the so-called Taxonomy Regulation[54] integrated and modified the SFDR and contributed to establishing uniform and clear conditions to encourage capital flow into sustainable projects in need of financial support[55]. Four criteria to be met by economic activities in order to be considered sustainable are established and six environmental objectives to which the abovementioned activities can positively contribute are provided. Interestingly, Article 17 of this Regulation incorporates the 'do no significant harm' (DNSH) principle by defining what constitutes significant harm to the six objectives outlined. This provides a framework for evaluating the sustainability of certain financial activities[56].

Generally speaking, economic activities should not be classified as 'environmentally sustainable' if they cause more harm to the environment than the benefits, they bring[57]. More specifically, article 8 of the Taxonomy Regulation sets forth that certain financial and non-financial undertakings shall disclose, in their non-financial statement information, how their activities are associated with environmentally-friendly projects and to what extent. The structural requisites of such information

51 Chris Van Oostrum (n 19) 16.

52 Namely, article 2 par. 17 sets forth 'sustainable investment' means an investment in an economic activity that contributes to an environmental objective, as measured, for example, by key resource efficiency indicators on the use of energy, renewable energy, raw materials, water and land, on the production of waste, and greenhouse gas emissions, or on its impact on biodiversity and the circular economy, or an investment in an economic activity that contributes to a social objective, in particular an investment that contributes to tackling inequality or that fosters social cohesion, social integration and labor relations, or an investment in human capital or economically or socially disadvantaged communities, provided that such investments do not significantly harm any of those objectives and that the investee companies follow good governance practices, in particular with respect to sound management structures, employee relations, remuneration of staff and tax compliance.

53 For instance, pursuant to article 6, financial markets operators shall disclose information about the manner in which sustainability risks are integrated into their investment decisions.

54 Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088 (Taxonomy Regulation).

55 Andrea Quaranta, 'Il mio nome è Bond: Green Bond. Non è tutto green ciò che luccica' (2021) 12 Ambiente & Sviluppo 874, 875.

56 ESMA, 'Do no significant harm' definitions and criteria across the EU Sustainable Finance Framework' (22 November 2023) <www.esma.europa.eu/sites/default/files/2023-11/ESMA30-379-2281_Note_DNSH_definitions_and_criteria_across_the_EU_Sustainable_Finance_framework.pdf> accessed 10 March 2024.

57 Taxonomy Regulation (n 54) recital 40.

are explained by the Disclosure Delegated Act[58] where, for instance, it is said that non-financial undertakings shall disclose said information by presenting them in a tabular form with the templates set out in the Annex II of the Delegated Regulation. Finally, the dangerous consequences of green labelling are assessed by Directive (EU) 2022/2464 (Corporate Sustainability Report Directive, CSRD) that poses a due diligence obligation on undertakings and market operators, requesting them to disclose six specific environmental factors (among which, for instance, climate change mitigation, water and marine resources, pollution and biodiversity and ecosystems)[59] and imposing them to prevent greenwashing phenomena in three stages of the investment process: pre-contractual, post-investment stage and ongoing reporting and, finally, when it comes to handling complaints.

This brief state of the art of European legislation allows us to find a common base of the current European legislator's perspective on the strategy for tackling greenwashing and imposing a new ethical approach on the behaviour of companies in markets. Greenwashing is an issue that needed to be assessed in the blue economy field[60]. Projects aimed at advancing United Nations SDG 14 may risk becoming mere façades, lacking genuine sustainability. In the medium to long term, such projects may fail to contribute meaningfully to the adaptation and alignment of economic activities toward the restoration and recovery of seas and oceans, as well as the development of new paradigms for the sustainable use of marine resources in support of ocean-based industries. In other words, the relevance of sustainability for stakeholders and consumers[61] should not be used merely as a tool to enhance companies' reputations or improve financial performance for purely lucrative aims. This is why the European Union has strongly advocated for high standards of transparency in data disclosure for both financial and non-financial undertakings, employing a step-by-step approach that considers the time needed to adapt industrial plans and strategies, particularly for small and medium-sized enterprises. In this legal framework, the new Regulation (EU) 2023/2631, which will be broadly discussed in the following paragraph, finds its place in this ambitious fight against climate change.

58 Commission Delegated Regulation (EU) 2021/2178 of 6 July 2021 supplementing Regulation (EU) 2020/852 of the European Parliament and of the Council by specifying the content and presentation of information to be disclosed by undertakings subject to Articles 19a or 29a of Directive 2013/34/EU concerning environmentally sustainable economic activities, and specifying the methodology to comply with that disclosure obligation, OJ L 443, 10.12.2021.

59 Veerle Colaert, 'The changing nature of financial regulation: sustainable finance as a new EU policy objective' (2022) 59 Common Market Law Review 1669, 1683.

60 Sahil Narwal and others, 'Sustainable blue economy: Opportunities and challenges' (2024) 49 Journal of Biosciences 12,13; Endang Sungkawati, 'Opportunities and Challenges: Adopting "Blue-Green Economy" Terms to Achieve SDGs' (2024) 2 Revenue Journal: Management and Entrepreneurship 1.

61 It was estimated that 94% of Europeans developed a personal interest in the protection of the environment. See European Commission, 'Special Eurobarometer 468. Attitudes of European Citizens towards the Environment' (2017) <https://data.europa.eu/data/datasets/s2156_88_1_468_eng?locale=en> accessed 15th of March 2024.

4. The Impact of Regulation (EU) 2023/2631 on Data Transparency And Disclosure for Green and Blue Bond Issuers

The key elements for a sustainable ocean economy were found to be generating, investing, aligning and accounting for financial capital. However, at the same time, enhancing capital flow must not be considered the only objective in ocean finance[62]. An efficient strategy that can concretely guarantee the sustainability of investments must consider national and international financial instruments issued by governments and non-governmental organizations. Private and public undertakings must treat them on the one hand, as instruments to generate and to fund conservation and restoration policies and, on the other hand, to provide an 'attractiveness' for private and public investors with monetary returns from the investments themselves[63].

Attracting investors has proven to be the most challenging objective, as it necessitates the establishment of universal transparency standards for data disclosure to stakeholders. Labelling a product as 'green', 'eco' or 'sustainable' has consequences for the market preferences of stakeholders and it represents a way to channel capital flows. Given this, it is essential that information regarding these products and their sustainability is clear, transparent, and non-misleading. Incomplete or inaccurate data disclosure has been shown to result in significant consequences, including civil lawsuits and, more critically, reputational damage for companies[64].

As demonstrated in the previous paragraph, the primary aim of European legislation in sustainable finance is to establish uniform disclosure standards for issuers of financial products. This seeks to protect stakeholders from misleading communications, support the achievement of established sustainability objectives, and promote the transition to a climate-neutral economy. On this path, a major role is played by Regulation (EU) 2023/2631 of the European Parliament and Council on European Green Bonds and optional disclosures for bonds marketed as environmentally sustainable and for sustainability-linked bonds (hereafter, 'The Regulation'), which recently came into force

62 Melissa Walsh, 'Ocean Finance: Definitions and Actions, Pacific Ocean Finance Program' (2018) p. 2 <www.icriforum.org/wp-content/uploads/2019/12/Ocean_Finance_Definition_Paper_Walsh_June_2018_1_.pdf> accessed 10 March 2024.

63 U. Rashid Sumaila (n 31) 2.

64 See the *Volkswagen case*. The scandal (commonly known as 'Dieselgate') began in 2014 when the International Council on Clean Transportation, in its own report, showed a discrepancy between the results of lab tests carried out by the car-making company and the results of road tests. Volkswagen voluntarily disclosed the installation of a 'defeat device' on cars that allowed the cars themselves to find out when they were under test in order to emit less CO2 than normal. The effects of such scandal ended in a company's stock crash on financial market by 40%. See Alfonso Siano, Agostino Vollero, Francesca Conte, Sara Amabile, '"More than words": Expanding the taxonomy of greenwashing after the Volkswagen scandal' (2017) 71 Journal of Business Research 27.

within European legislation[65] and will apply as of 21st of December 2024, pursuant to Article 72 of the Regulation itself.

The Regulation intends to pursue the objective set forth in a previous communication by the European Commission[66], thus underlining the necessity to establish a common framework for environmentally sustainable bonds and to identify a common definition of 'environmentally sustainable activity' and, consequently, to increase investment opportunities on the European financial market. Moreover, it was stressed that diverging rules on the disclosure of information, transparency and accountability led to make an overcomplication for investors to identify, trust and compare environmentally sustainable bonds with respect to their environmental objectives and to use their potentialities for the business models of undertakings[67]. This certainly includes blue bonds as thematic bonds to finance projects related to oceans, seas and sustainable fishing.

Such Regulation also represents a further step in the enactment of the climate roadmap adopted by the European Central Bank (ECB) to incorporate climate change in its monetary policy framework[68] and it contributes to completing the set of rules provided by the Taxonomy Regulation. Indeed, the Regulation represents a necessary step in laying down a set of harmonized rules for bonds that wish to use the designation 'European Green Bond' (EuGB).

Such rules will provide clarity and a proper function for the European and international markets where bonds will be traded, avoiding the uncertainty deriving from different national legislations[69]. This represents a compelling argument in favour of adopting such a framework through a Regulation and not through a Directive. A Directive could not have ensured the necessary harmonization between Member States' legislations but, above all, would have exposed the European market to the risk of erroneous or incomplete transposition of the Directive, with all the consequences thereof, especially in terms of delaying the positive externalities of a harmonized bond market for financing sustainability-related projects. At the same time, the choice of a Regulation seems to be perfectly compliant to the subsidiarity and proportionality principles, as set forth in Article 5 of the Treaty on European Union (TEU).

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65 Regulation (EU) 2023/2631 of the European Parliament and of the Council of 22 November 2023 on European Green Bonds and optional disclosures for bonds marketed as environmentally sustainable and for sustainability-linked bonds.

66 Communication from the Commission to the European Parliament, the Council, the European Social and Economic Committee and the Committee of the Regions, 'Sustainable Europe Investment Plan. European Green Deal Investment Plan' (14 January 2020) COM/2020/21.

67 ibid, recital 5.

68 European Central Bank, 'Climate and nature plan 2024-2025 at a glance' <www.ecb.europa.eu/ecb/climate/our-climate-and-nature-plan/html/index.en.html> accessed 15 March 2024.

69 Regulation (EU) 2023/2631 (n 65) recital 56.

More specifically, according to the abovementioned Article 5 par. 3, the subsidiarity principle requires that the European Union can only act in areas that do not fall in its exclusive competence "if and in so far as the objectives of the proposed action cannot be sufficiently achieved by Member States". The provision seems to revolve around a restrictive interpretation, meaning that the European legislator limits the intervention of the Institutions by binding it to two conditions: Member States must not be able to reach the objectives of the actions proposed by the EU alone and, at the same time, a joint action could better achieve said objectives[70]. Article 5 par. 4, instead, codifies the proportionality principle, according to which "the content and form of Union action shall not exceed what is necessary to achieve the objectives of the Treaties".

From a goal-oriented perspective, if the European Union's aim is to ensure an adequate cash flow to green and sustainable initiatives through financial instruments, it is appropriate to select a legislative act that does not require transposition and avoids the risk of divergent national laws. Such divergence could create confusion among market operators and, consequently, undermine the Union's institutional objectives. An action by the Member States would not have provided the same strength as a European initiative because it would have bound the green market regulation to the discretion of single governments and, financially speaking, this would have furtherly weakened the possibilities to reach the goals provided by the European Green Deal.

Regarding the principle of proportionality, in light of the urgent environmental context, it appears that the European Union has not overstepped its scope of action, as the Regulation merely establishes standard rules for the classification of green bonds. The Regulation seems to be inspired by a broad and global approach regulating the entire life cycle of green bond with a full set of rules going from the pre-issuance to the post-issuance review phase. Namely, article 10 of the Regulation (opening the second chapter concerning "transparency and external review requirements"), sets forth rules regarding the green bonds factsheet and pre-issuance review. Issuers that intend to use the definition "Green Bonds" must complete a factsheet in compliance with rules provided by Annex I and then ensure that said factsheet has been subject to a pre-issuance review by an external expert.

Among others requirements, the information to be disclosed according to the Annex I deals with the environmental strategy and rationale and the intended allocation of bond proceeds. More specifically, there must be a description pertaining to how bonds will concretely contribute to the wider environmental strategy of the issuer, including the environmental objectives set forth in Article 9 of the Taxonomy Regulation. As for the intended allocation of bond proceeds, the issue appears to be more complex and it appears to be an attempt to balance opposite interests. On one side, issuers

70 Girolamo Strozzi, Roberto Mastroianni, 'Diritto dell'Unione Europea – Parte Istituzionale' (2016) G. Giappichelli Editore, Torino, 79.

must provide buyers with information concerning allocation to taxonomy-aligned economic activities and to those activities that, on the contrary, are not aligned with technical screening criteria. On the other side, however, confidentiality agreements, competitive considerations, or a large number of underlying qualifying projects and similar considerations, could be a reasonable cause to limit the amount of data disclosed.

Such a statement could raise doubts about the wording. The Annex is aimed to give indications about data disclosure for green and blue bond issuers and, although it is not completely uncommon to set limits to such disclosures in order to protect issuers' competitiveness on financial markets, the wording of the exception seems to be excessively generic and dangerously open to interpretation that could result in an easy way to circumvent the law itself and, consequently resulting in a failure in pursuing sustainable finance objectives. Green and blue finance represent a strategic sector for environmental protection and the creation of a circular economy. Therefore, a higher level of specification for data disclosure exceptions should have been adopted.

To complete the regulatory process and ensure transparency and comparability of bonds on the market, Article 11 mandates that issuers prepare a "European Green Bond allocation report" every 12 months until the proceeds from green (or blue) bonds are fully allocated, using the template provided by the Regulation. In that way, it will be possible to provide a uniform set of information to market operators and, finally, an external review about such report shall be obtained after the full allocation of the proceeds of the European Green Bond.

Finally, the framework is completed by the provision of the external reviews of European Green Bonds. This discipline seems to be aligned with the Green Bonds Principles issued in 2021 by the International Capital Market Association (ICMA)[71] but with broader attention dedicated to the skills required to apply as an external reviewer. This was a necessary choice to strengthen the fight against greenwashing through public control on the market.

5. De Jure Condendo Perspectives on Blue Markets

The brief description of the key provisions of the Regulation allows reflection on its impact on the future of the green (and blue) bond market. The Regulation sets a high level of transparency when it comes to data disclosure related to said bonds given the central role, they can play in tackling climate change by funding projects related to sea and oceans preservation and sustainable use.

71 ICMA, 'Green Bond Principles. Voluntary Process Guidelines for Issuing Green Bonds' 2021 <www.icmagroup.org/assets/documents/Sustainable-finance/2022-updates/Green-Bond-Principles-June-2022-060623.pdf> accessed 22 March 2024.

In other words, the Regulation acknowledges that preserving ecosystems and protecting them from degradation is an ambitious aim that cannot be pursued in absence of transparency and an adequate monitoring phase. That certainly provides a strong tool to correctly allocate funds making sure that stakeholders can be kept safe from mislabelling practices and misleading information about sustainability-related projects.

However, according to a certain part of the scientific literature[72], the Regulation could raise some issues when it comes to its enforcement since it would not perfectly contribute to giving a certain legal framework for market operators because it would not completely and correctly define its scope of application and, at the same time, it would favour well-defined and pre-existing structures while not adequately fostering the use and the spread of innovative financial products. Furthermore, a potential complication may arise from the mandatory external review for green bond issuers, which could pose a barrier to market access for small projects. A preferable approach might have been to establish a threshold above which an external review would be required. This is certainly a valid opinion but it could be too radical and it would risk weakening the Regulation's environmental rationale. Moreover, to better support small projects (defined by a quantitative threshold), the Regulation could have introduced a simplified mechanism for obtaining an impartial review, thereby ensuring transparent and accurate data disclosure.

Despite these challenges, which could be addressed in a future revision, it can be concluded that the Regulation marks a significant step forward in the ambitious pursuit of transparency within a sustainable economy, including the blue economy. It enables adequate and increasing capital flows to promote an ocean-driven economy grounded in sustainability, with the long-term goal of preserving seas and oceans. Only nurturing conditions for a transparent market, with a strong enforcement activity by the competent Authorities, will ensure protection against greenwashing practices and thus concretely contribute to reversing the negative effects of climate change.

6. Conclusion

The analysis carried out above seems to show an essential step taken by the European legislator towards the sustainable finance objectives set out in the previous years. One cannot simply take for granted the willingness of markets operators to invest their capital in projects aimed to foster ecological transition initiatives. Reaching the goal of completely using the potentialities of finance to tackle

72 Francesco M. Stocco, 'Bond e cartolarizzazioni green. Opportunità e limiti per il mercato italiano tra regolamentazione e vigilanza' (DB, 22 January 2024) <www.dirittobancario.it/art/bond-e-cartolarizzazioni-green/> accessed 22 March 2024.

climate change requires a consideration of "the existence of economic motives of investors"[73].

The abovementioned Regulation assesses and deals with the concerns of financial markets operators. More specifically, in the context of the blue economy and economic activities centered on marine resources, one of the primary causes of underfunding for projects aimed at achieving SDG 14 has been identified as a lack of transparency in capital management and allocation, coupled with the need for a comprehensive long-term ocean governance strategy[74]. The report issued by the United Nations also emphasized that initiatives aimed at achieving SDG 14 have been insufficient and lack the necessary capital to support their development. This shortfall has been (and remains) largely due to insufficient transparency, which prevents investors from making informed decisions.

The entry into force of Regulation 2023/2631 (EuGB) represented the occasion to dwell on the paradigm of transparency in the sustainable finance field. In the current context—where legislators are urgently addressing climate change to prevent irreversible impacts—the EuGB Regulation represents a natural progression from the Taxonomy Regulation. This framework aims to create a 'safe environment' for investors, providing sufficient data to make informed decisions on capital allocation while minimizing, if not entirely eliminating, the risks associated with greenwashing.

The rationale beyond the EuGB Regulation is to foster the issuing of green (and blue) bonds on the market in order to finance eco-friendly, energetically efficient and responsible uses of natural resources. At the same time, however, the Regulation balances the interest of financial market operators to operate in a context based on clear, transparent and harmonized rules, which represents the focal point and the main strength of the new Regulation. After all, the European Central Bank (ECB), in its opinion[75] on the EuGB Regulation, clearly affirmed that a harmonized and coherent background for the entire European Union positively contributes to the ecological transition by assuring data transparency and comparability in order to reinforce the credibility of such bonds among stakeholders.

Focusing specifically on the blue economy and economic activities related to marine resource utilization, it has been emphasized that this sector-while undoubtedly vital to the European economy-is also a significant source of pollution[76]. There may be some benefit from a renewed faith of investors in

73 Muhamed Ibric, Emira Kozarevic, Admir Mešković, 'The Rise of Green Bonds: Global Context and European Insights' (2024) 1 Journal of Economics, Law and Society 57.

74 U. Rashid Sumaila (n 31) 7.

75 Official Journal of the European Union, C 27 (19 of January 2022) par. 1.4, 4 <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:C:2022:027:FULL> accessed 29 August 2024.

76 Massimo Arnone, Tiziana Crovella, 'Sustainable Finance for Marine Development: A Critical Analysis of Green Bonds in the National Recovery and Resilience Plan' in Mario La Torre and Sabrina Leo (eds) *Contemporary Issues in Sustainable Finance. Banks, Instruments and the Role of Women* (Palgrave Macmillan, 2024) 181.

eco-friendly projects financed through green and blue bonds thanks to higher standards of transparency.

Regarding the content of the Regulation, the points discussed above are preliminary given that the Regulation will only take effect on December 21, 2024. Nonetheless, it is reasonable to assert that this legislative act will contribute to the expansion of the European green bonds market, notwithstanding certain aspects that, as noted previously, may benefit from further refinement based on an analysis of its practical implementation, which will require time following its applicability.

Maritime Safety and Security Law Journal

Collided Interests at Seas: How to Protect Navigational Safety while Offshore Renewable Energy Activities are Increasing

*Sevim Sena TASKAYA**

Abstract

Competition for maritime zones is growing. International regulations are crucial to finding a balance between different activities in seas and oceans. While offshore renewable energy activities are increasing, most bottom-fixed or floating renewable energy installations are located close to the shoreline and nearby shipping lanes. This paper discusses the possible conflicts between the navigation of ships and renewable energy production activities in seas and, possibly in the future, in oceans. It provides references to international law, guidelines and recommendations from the relevant organizations and examples from practice to specify the current rules and gaps regarding the safety of navigation and the protection of offshore energy production activities and structures at sea.

Keywords: offshore renewable energy; safety of navigation; maritime safety; international law of the sea

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1. Introduction

Seas and oceans provide abundant benefits to humankind, including transportation of goods and people, supply of marine resources, production of offshore energy, fishing, and socio-economic benefits to coastal communities. Almost all communities are somehow connected to, or more precisely dependent on, this web of shipping and trading. Around 90% of traded goods are carried over seas and oceans.[1] Moreover, seas and oceans offer a vast space for renewable energy activities, especially for island states or those states that have long coastal lines. Offshore wind is expected to lower energy prices, increase energy security, benefit the job market and contribute to the energy transition

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1 Spencer Feingold and Andrea Willige, 'These Are the World's Most Vital Waterways for Global Trade' (*World Economic Forum*, 15 February 2024) <www.weforum.org/agenda/2024/02/worlds-busiest-ocean-shipping-routes-trade/#:~:text=-Supply%20Chain%20and%20Transport,Follow&text=As%2090%25%20of%20traded%20goods,these%20waterways%20flowing%20is%20crucial> accessed 13 April 2024. Also see the Organization for Economic Co-operation and Development (OECD), 'Ocean Shipping and Ship Building' <www.oecd.org/ocean/topics/ocean-shipping/> accessed 13 April 2024.

needed to realize the climate change goals.[2] The first offshore wind farm was deployed in 2002 in Denmark. Since then, the technology has had a major effect on long-term decarbonization of the energy sector.[3] Global wind energy capacity is projected to nearly double between 2022 and 2027, with offshore wind projects accounting for approximately one-fifth of this growth.[4]

However, problems may arise between maritime navigation and offshore renewable energy installations. The first issue is the risk of accidents due to the density of the shipping traffic around these installations. Navigating around offshore energy installations may also increase the costs of shipping because of extended routes.[5] There has been a noticeable number of collisions between ships and traditional energy structures at sea. For instance, in 2011, a support vessel hit the Deep Panuke offshore gas platform in Canada.[6] In 2020, the Maltese-flagged tanker hit an oil and gas production platform while attempting to anchor off the coast of Louisiana.[7] Similarly, an offshore vessel collided with an offshore gas platform in Iran's South Pars gas field in 2021.[8] In 2023, an offshore supply vessel struck a Southern North Sea gas platform.[9]

Moreover, recent incidents show that collisions between vessels and offshore renewable energy installations have now become an issue. On 23 April 2020, a high-speed offshore tender collided with a wind turbine at Borkum Rifgrund wind farm in the North Sea.[10] In 2022, a rudderless cargo ship was drifting around the Hollandse Kust Zuid offshore wind farm in the Dutch North

2 International Renewable Energy Agency (IRENA), 'World Energy Transitions Outlook 2023: 1.5°C Pathway' (Abu Dhabi, 2023) 72 <www-irena-org.translate.goog/Publications/2023/Jun/World-Energy-Transitions-Outlook-2023?_x_tr_sl=en&_x_tr_tl=tr&_x_tr_hl=tr&_x_tr_pto=sc> accessed 13 April 2024.

3 International Renewable Energy Agency (IRENA), 'Fostering a Blue Economy: Offshore Renewable Energy' (Abu Dhabi, 2020) 17 <www.irena.org/Publications/2020/Dec/Fostering-a-blue-economy-Offshore-renewable-energy> accessed 13 April 2024.

4 International Energy Agency (IEA), 'Renewables 2022: Analysis and Forecast to 2027' (Paris, January 2023) 11 <www.iea.org/reports/renewables-2022> accessed 13 April 2024.

5 European Maritime Spatial Planning (MSP) Platform, 'Conflict fiche 7: Maritime Transport and Offshore Wind' <https://maritime-spatial-planning.ec.europa.eu/sites/default/files/7_transport_offshore_wind_kg_0.pdf> accessed 13 April 2024.

6 The Canadian Press, 'Support Vessel Hits Deep Panuke Offshore Gas Platform' (*CTV News*, 8 September 2011) <www.ctvnews.ca/support-vessel-hits-deep-panuke-offshore-gas-platform-1.694500?cache=pdchghmfvlrea%3FclipId%3D68597> accessed 13 April 2024.

7 Nautilus International, 'Oil Platform Collision: Tanker Master Had Not Slept For 50 Hours' (8 December 2021) <www.nautilusint.org/en/news-insight/news/oil-platform-collision-tanker-master-had-not-slept-for-50-hours/> accessed 13 April 2024.

8 Bartolomej Tomic, 'Offshore Vessel Hits Platform at South Pars Field, Off Iran' (*Offshore Engineer, 3* September 2021) <www.oedigital.com/news/490361-offshore-vessel-hits-platform-at-south-pars-field-off-iran> accessed 13 April 2024.

9 Hamish Penman, 'Supply Vessel Collides with Southern North Sea Gas Platform' (*Energy Voice*, 25 April 2023) <www.energyvoice.com/oilandgas/north-sea/rigs-vessels/498571/supply-vessel-collides-with-southern-north-sea-gas-platform/> accessed 13 April 2024.

10 IMCA, 'Windfarm Support Vessel Njord Forseti Hit Wind Turbine Tower' (23 October 2020) <www.imca-int.com/safety-events/windfarm-support-vessel-njord-forseti-hit-wind-turbine-tower-jersey-maritime-administration/> accessed 13 April 2024.

Sea, following a collision with an oil and chemicals tanker in heavy seas in the anchorage area near IJmuiden.[11] In May 2023, a cargo ship hit the Gode Wind 1 offshore wind farm in Germany. This collision was classified as a 'serious marine crash'.[12] The wind turbine was back online about 24 hours after being taken out of operation for inspection.[13]

Overall, these examples inform the purpose of, and illustrate the need for, this paper. Collisions happen without proper management of sea lanes, safety zones and the locations of offshore renewable energy structures. Therefore, preventive legal measures are needed to regulate navigation and offshore renewable energy installations. Ensuring safe maritime navigation is necessary for the protection of installations, vessels and the environment in the case of the transportation of dangerous goods.[14]

The question here is how to balance the competing rights of navigation on the one hand, and the installation of renewable energy structures at sea on the other. At this point, it should be noted that balancing competing rights is not a new issue in the law of the sea literature. Creating a balance between different states' competing rights and duties has been always a challenge. For instance, fishing activities in the high seas might affect the marine environment[15], deep sea mining can damage submarine cables[16], energy production activities can result in some interference with fishing activities[17], while

11 Adnan Durakovic, 'Rudderless Cargo Ship Drifts Around Dutch Offshore Wind Farm, Hits Platform Foundation' (*Offshore WIND*, 31 January 2022) <www.offshorewind.biz/2022/01/31/rudderless-cargo-ship-drifts-around-dutch-offshore-wind-farm-hits-platform-foundation/> accessed 13 April 2024.

12 Adrijana Buljan, 'Cargo Ship-Hit Gode Wind 1 Turbine Went Back into Service in 24 Hours; Vessel Said to Have Been Kilometres Off Course' (*Offshore WIND*, 30 May 2023) <www.offshorewind.biz/2023/05/30/cargo-ship-hit-gode-wind-turbine-went-back-into-service-in-24-hours-vessel-said-to-have-been-kilometres-off-course/> accessed 13 April 2024.

13 Michelle Lewis, 'In a First, A Cargo Ship Strikes an Offshore Wind Turbine' (*Electrek*, 4 June 2023) <https://electrek.co/2023/06/04/cargo-ship-offshore-wind-turbine/> accessed 13 April 2024.

14 Dawoon Jung, *The 1982 Law of the Sea Convention and the Regulation of Offshore Renewable Energy Activities within National Jurisdiction* (Brill/Nijhoff, 2023) 107.

15 For discussions on the MPAs and fishing activities in the high seas see Gerhard Hafner, 'Does the Freedom of the Seas Still Exist?' (2017) Brill 368-370.

16 For discussions on submarine cables and deep sea mining see Danielle Kroon, 'Due Regard in the High Seas: The Tension between Submarine Cables and Deep Seabed Mining' (2018) 24 Australian International Law Journal 35.

17 For discussions on competing interests for Nord Stream Pipelines Project see David Langlet 'Balancing Competing Interests When Building Marine Energy Infrastructures: the Case of the Nord Stream Pipelines' in Catherine Banet (ed.), *The Law of the Seabed Access, Uses, and Protection of Seabed Resources* (Brill|Nijhoff, 2020).

military activities can affect the marine environment[18]. Thus, many scholars have already discussed the varying importance of such competing rights or interests.[19] Additionally, in the Chagos Marine Protected Area Arbitration, ITLOS discussed 'a balancing act between competing rights, based upon an evaluation of the extent of the interference, the availability of alternatives, and the importance of the rights and policies at issue' and decided that the UK had failed to carry out such a balancing act with respect to Mauritian fishing activities in the territorial sea of the Chagos Archipelago.[20] After all, although balancing the competing rights in the law of the sea field is a widely discussed topic, there is still a gap in the literature regarding the balancing act between navigational rights and the right to produce offshore renewable energy. Therefore, this paper aims to analyse the role of international law in ensuring the safety of navigation alongside state production of offshore renewable energy.

This article tries to answer two main questions: *(i)* What are the regulations for the safety of navigation around offshore renewable energy installations at the level of international law? *(ii)* Do these rules and regulations provide a cohesive and comprehensive framework for the safety of navigation and the safety of offshore renewable energy installations? To answer these questions, this article will examine binding and non-binding international treaties and documents. The main set of regulations, the United Nations Convention on the Law of the Sea *(hereinafter UNCLOS),* offers some general rules for the safety of navigation and the relationship between navigational activities and offshore energy production. The guidelines and recommendations of international organizations, mostly International Maritime Organization *(hereinafter IMO)* documents, determine the schemes and more detailed technical rules.

The present analysis unfolds in five sections: (1) An introduction to renewable energy technologies and their future effects on the safety of navigation. (2) The freedoms and obligations of the states in each maritime zone under the UNCLOS framework regarding renewable energy activities and navigational rights. (3) Generally accepted international rules, standards and instruments elaborated by IMO. (4) The duty for the decommissioning of offshore renewable energy installations. (5) An example of policies from the Netherlands to illustrate how international rules and documents guide

18 For discussions on military activities and environmental law concerns in EEZ see Pascale Ricard, 'The Limitations on Military Activities by Third States in the EEZ Resulting from Environmental Law' (2019) The International Journal of Marine and Coastal Law 34, 147-150. Also see Geneviève Bastid Burdeau, 'The Respect of Other States' Rights (Freedom of Navigation and Other Rights and Freedoms Set Out in the LOSC) as a Limitation to the Military Uses of the EEZ by Third States' (2019) The International Journal of Marine and Coastal Law 34, 117–127.

19 For an analysis on the navigational rights and offshore renewable energy production specifically within national jurisdiction see Jung (n 14) 105-130.

20 ITLOS, Chagos Marine Protected Area Arbitration (*Mauritius v. United Kingdom*), 2015, 2011-03 para 539-540.

coastal states. Finally, the conclusion addresses gaps in this current system and stresses the need for a more coherent framework dealing with the effects of offshore renewable energy installations on the safety of navigation.

2. Offshore Renewable Energy Technologies

Before starting the legal discussion, it is useful to introduce the offshore renewable energy technologies and projects from real-world applications. The most developed and common offshore energy type is the bottom-fixed wind turbines. There are different types of these structures; the most common types are gravity-based foundations, monopile foundations, tripod foundations, and jacket foundations. These installations could be deployed in waters up to depths of 60 metres and at up to 80 kilometres distance from the shore.[21] These bottom-fixed structures take space on and under the water and are rooted in the seabed, which might affect marine life and other activities at sea.

Offshore floating wind turbines are a game-changing technology that will enable wind to be harnessed in deeper waters while lowering the costs of deployment. Such floating structures have an anchoring system attached to the seabed. In 2017, the world's first floating offshore wind farm, Hywind, was deployed off the coast of Scotland, with turbines anchored at depths ranging from 95 to 120 metres.[22] Following this project, an offshore wind farm named Hywind Tampen was deployed to supply electricity to oil and gas operations in the North Sea. This project is anchored at depths ranging from 260 to 300 metres and is located 10 kilometres from the shore.[23]

Similarly, solar panels on floating platforms or membranes on water without being permanently fixed anywhere are an emergent technology.[24] Offshore solar panels are similar to land-based ones. In Asia, there are several large-scale floating solar panel projects such as Huaneng Dezhou Dingzhuang

21 International Renewable Energy Agency (IRENA), 'Offshore Renewables: An Action Agenda For Deployment, International Renewable Energy Agency' (Abu Dhabi, 2021) 32 <www.irena.org/Publications/2021/Jul/Offshore-Renewables-An-Action-Agenda-for-Deployment> accessed 13 April 2024.

22 International Renewable Energy Agency (IRENA), 'Future of the Wind' (Abu Dhabi, 2019) 23 <www.irena.org/publications/2019/Oct/Future-of-wind> accessed 13 April 2024. For more information about this project also see Equinor, 'Hywind Scotland' <www.equinor.com/energy/hywind-scotland> accessed 13 April 2024.

23 Further information at Equinor, 'Hywind Tampen: The World's First Renewable Power for Offshore Oil and Gas' <www.equinor.com/energy/hywind-tampen> accessed 13 April 2024.

24 IRENA, 'Offshore Renewables' (n 21) 65.

Reservoir Solar PV Park[25], Three Gorges Huainan Floating Solar PV Park[26] and Clay Quarry Lake Solar PV Park[27] in China. This could be an efficient solution for growing electricity demand in water-scarce places given that floating solar panels can cover water reservoirs or be used for desalination plants in coastal areas.[28] There is also a European Union-funded project in Gran Canary Island for the testing and qualification of floating solar panels for powering a desalination plant.[29] Furthermore, offshore floating solar panels can be operated in conjunction with offshore wind installations. For instance, in the North Sea there are floating offshore solar panels that are being connected, installed and operated within wind farms.[30]

Recent academic work demonstrates that the global yearly demand for energy could be covered more than twice over by the theoretical potential of various ocean energy technologies.[31] Since the early 2000s, more than 20,000 patents have been filed regarding ocean energy technologies. Among all of them, tidal and wave energy have the highest technological readiness levels while other technologies, such as ocean thermal energy conversion *(hereinafter OTEC)* and salinity gradient power are making progress rapidly.[32] Wave energy converters work by harnessing the energy that exists in ocean waves to generate electricity.[33] Tides are the water movements in seas, sometimes up to more than 12 metres in height, occurring due to the interaction of the gravity of the earth, moon and sun. This flow creates kinetic energy and can be harnessed by renewable energy technologies.[34] OTEC is a

25 Power Technology, 'Power Plant Profile: Huaneng Dezhou Dingzhuang Reservoir Solar PV Park, China' <www.power-technology.com/marketdata/power-plant-profile-huaneng-dezhou-dingzhuang-reservoir-solar-pv-park-china/?cf-view> accessed 13 April 2024.

26 Power Technology, 'Power Plant Profile: Three Gorges Huainan Floating Solar PV Park, China' <www.power-technology.com/marketdata/power-plant-profile-three-gorges-huainan-floating-solar-pv-park-china/?cf-view> accessed 13 April 2024.

27 Power Technology, 'Power Plant Profile: Clay Quarry Lake Solar PV Park, China' <www.power-technology.com/marketdata/power-plant-profile-clay-quarry-lake-solar-pv-park-china/> accessed 13 April 2024.

28 Vladimir Vidović and others, 'Review of the Potentials for Implementation of Floating Solar Panels on Lakes and Water Reservoirs' (2023) 178 Renewable and Sustainable Energy Reviews, 2.

29 For further information see PLOCAN, 'PLOCAN Presents BOOST in La Palma, The Largest Floating Offshore Solar Energy System in Europe' (14 December 2023) <https://plocan.eu/en/plocan-presents-boost-in-la-palma-the-largest-floating-offshore-solar-energy-system-in-europe> accessed 13 April 2024.

30 As an example of a combined project see Ocean of Energy, 'Crosswind and Oceans of Energy Add Offshore Solar to the Hollandse Kust Noord Offshore Wind Park' <https://oceansofenergy.blue/2023/04/24/crosswind-and-oceans-of-energy-add-offshore-solar-to-the-hkn-offshore-wind-park/> accessed 13 April 2024.

31 IRENA, 'Fostering a Blue Economy' (n 3) 11.

32 ibid 16.

33 International Renewable Energy Agency (IRENA), 'Wave Energy: Technology Brief' (Abu Dhabi, 2014) 5 <www.irena.org/publications/2014/Jun/Wave-energy> accessed 13 April 2024.

34 International Renewable Energy Agency (IRENA), 'Tidal energy: Technology Brief' (Abu Dhabi, 2014) 6 <www.irena.org/Publications/2014/Jun/Tidal-Energy> accessed 13 April 2024.

renewable technology that produces electricity based on the natural temperature difference between the surface and the deeper levels of the ocean.[35] The technology has been successfully tested in Hawaii[36] and Japan[37], however, it is still in the research and development *(Hereinafter R&D)* phase.[38]

In summary, the construction and operation of offshore renewable energy technologies can affect navigational activities by covering the same maritime areas used by the ships. As mentioned above, offshore energy projects can cover large sea areas, including the water surface, the underwater and the seabed. Offshore wind farms are already taking large spaces in the seas and influencing shipping routes in certain areas. When other types of renewable energy technologies become more financially feasible in the future, these installations will interfere with busy routes and maritime traffic.

3. UNCLOS Framework Regarding the Safety of Navigation and Offshore Renewable Energy Activities

UNCLOS sets the general rules for navigation in different maritime zones and regulates any activities at sea of coastal states. Answering the questions of which activities are allowed in which maritime zones by whom under international law is crucial to explaining the balance between shipping and the energy industry. In this part, the rules under UNCLOS for the safety of navigation and freedom of constructing renewable energy installations will be examined for each maritime zone.

3.1 Territorial Sea

In the territorial sea, the coastal state enjoys its sovereignty, including the air space over the sea, the seabed and subsoil.[39] Thus, as the sovereign state, the coastal state has the right to establish an offshore renewable energy installation in these waters. Alongside the coastal state's sovereignty, ships

35 TU Delft, 'Thermal Gradient (OTEC)' <www.tudelft.nl/oceanenergy/research/thermal-gradient-otec> accessed 13 April 2024.

36 Power Technology, 'Makai's Ocean Thermal Energy Conversion (OTEC) Power Plant, Hawaii' <www.power-technology.com/projects/makais-ocean-thermal-energy-conversion-otec-power-plant-hawaii/> accessed 13 April 2024.

37 OTEC Okinawa, 'Ocean Thermal Energy Conversion Demonstration Test Facility' <http://otecokinawa.com/en/> accessed 13 April 2024.

38 IRENA, 'Fostering a Blue Economy' (n 3) 15.

39 United Nations Convention on the Law of the Sea (adopted 10 December 1982, entered into force 16 November 1994) 1833 UNTS 3 Art 2 (UNCLOS).

of all states may enjoy the right of innocent passage in the territorial sea of other states.[40] To call this passage 'innocent', it should not be prejudicial to the peace, good order or security of the coastal state.[41] In this context, activities aiming at interfering with any facilities or installations of the coastal state are considered to be prejudicial.[42] Therefore, this innocent passage is lawful only if it does not interfere with the renewable energy installations of the coastal state. It could be said that UNCLOS establishes a balance between the coastal states' rights and ships' passage in the territorial sea by creating this responsibility for foreign ships passing through the territorial seas of other states.

The coastal state may adopt laws and regulations relating to innocent passage through the territorial sea in respect of the safety of navigation and the regulation of maritime traffic, protection of navigational aids and facilities, and other facilities or installations.[43] This means that the coastal state can make rules to protect its installations from innocent passage in the territorial sea. To achieve this, the coastal state may require foreign ships to use sea lanes and traffic separation schemes while they are passing its territorial sea.[44]

In the designation of sea lanes and the prescription of traffic separation schemes under this article, the coastal state will 'take into account' the recommendations of the competent international organization, which could be understood as IMO.[45] Since the responsibility of the coastal state is formulated using the term 'take into account', it could be said that IMO recommendations are not binding for the coastal state. However, while regulating the sea lanes and traffic separation schemes, the coastal state cannot hamper the innocent passage of foreign ships unless it's in accordance with UNCLOS.[46] Moreover, the coastal state must take into account any channels customarily used for international navigation, the special characteristics of particular ships and channels, and the density of traffic in the area.[47]

In the territorial sea, UNCLOS does not specifically regulate the breadth of safety zones around installations. The overuse of this freedom by a coastal state might limit other states' right to innocent passage. However, the coastal state is obliged not to hamper the innocent passage of foreign ships through the territorial sea except in accordance with UNCLOS.[48] Therefore, coastal states must act proportion-

40 ibid, art 17.
41 ibid, art 19(1).
42 ibid, art 19(2)(k).
43 ibid, art 21.
44 ibid, art 22.
45 ibid, art 22(3).
46 ibid, art 24.
47 ibid, art 22(3).
48 ibid, art 24.

ally and reasonably while establishing these safety zones and consider other states' passage rights.

3.2 Exclusive Economic Zone

In the exclusive economic zone *(hereinafter EEZ)*, the coastal state does not have the same sovereignty as in the territorial sea. Nevertheless, it has the exclusive right to construct, to authorize and regulate the construction, operation and use of artificial islands, installations and structures in the EEZ.[49] States must maintain warnings regarding the construction of such artificial islands, installations or structures, and other permanent infrastructure. Any abandoned or disused installations or structures must be removed to ensure the safety of navigation, which will be discussed further below. The coastal state is under the obligation of publicizing appropriately the depth, position and dimensions of any installations or structures that have not been entirely removed.[50]

UNCLOS creates 'due regard' obligation for both coastal and other states to avoid conflicts in the EEZ.[51] In exercising its rights and performing its duties in the EEZ, the coastal state must have 'due regard' to the rights and duties of other states.[52] Similarly, other states are required to have 'due regard' to the rights and duties of the coastal state.[53] There is no clear definition or limitation of the obligation to consider other states' rights and duties in EEZ. It is difficult to understand to what extent a state is obliged to balance its rights with other states' rights in the same maritime area. However, as stated recently by the Tribunal in the Advisory Opinion on Climate Change and International Law, all states must act in good faith and must comply with their obligations arising from internationally agreed rules and standards.[54] Therefore, states must consider other states' rights and duties while installing renewable energy installations in EEZ.

If necessary, the coastal state may establish reasonable safety zones around such artificial islands, installations and structures and take 'appropriate measures' to ensure the safety both of navigation and of the artificial islands, installations and structures.[55] In relation to the Arctic Sunrise case, 'ap-

49 ibid, art 60(1).

50 ibid, art 60(3).

51 Robin Churchill, 'Revealing a Mosaic: International Jurisprudence Concerning the Non-Fisheries Elements of the Exclusive Economic Zone Regime' in Øystein Jensen (ed) *The Development of the Law of the Sea Convention: The Role of International Courts and Tribunals* (Edward Elgar Publishing 2020) 64. For the meaning of 'due regard' obligation see also Chagos Marine Protected Area Arbitration (*Mauritius v. United Kingdom*) [2015] PCA Case 2011-03 para 518-519.

52 UNCLOS (n 39) art 56(2).

53 UNCLOS (n 39) art 58(3).

54 ITLOS, *Advisory Opinion on Request for an Advisory Opinion Submitted by the Commission of Small Island States on Climate Change and International Law*, 2024, ITLOS Case n 31 para 270-271.

55 UNCLOS (n 39) art 60(4).

propriate measures' in the safety zone include the enactment and enforcement of laws or regulations *'provided that such measures are aimed at ensuring the safety of both navigation and the artificial islands, installations, or structures.'* The Tribunal states that these rights of the coastal state go beyond its rights in the EEZ at large.[56]

The breadth of these safety zones is determined by the coastal state, taking into account the international standards. UNCLOS states that these zones must be designed to ensure that they are reasonably related to the nature and function of these structures and they cannot exceed a distance of 500 metres around them, unless it is authorized by international standards or recommended by the international organizations.[57] Thus, states may establish safety zones around offshore renewable energy installations, not exceeding a breadth of 500 metres. The international organization mentioned here can be understood as the IMO and its sub-committees in practice.

In the current international recommendations and standards, there are no other exceptions for extending the 500-meter zone which is for the protection of the structure. However, here, it should be noted that the 500-meter zone described in this paragraph might not mean a safe distance for all structures for safe manoeuvring under other international regulations or standards, such as the Convention on the International Regulations or Preventing Collisions at Sea.[58] Therefore, depending on the situation and the area, IMO can recommend larger safety zones.

There has been a request to the IMO for there to be safety zones larger than 500 metres around artificial islands, installations and structures in the EEZ, submitted by the United States and Brazil.[59] This proposal suggested that the development and guidelines for extending this safety zone would be beneficial for the IMO and the coastal states. IMO Sub-Committee on Safety of Navigation considered document MSC 84/22/4 (Brazil and the United States), proposing to develop comprehensive guidelines for the consideration of requests for safety zones around artificial islands, installations and structures larger than 500 metres in EEZ. Especially, it would be beneficial for the safety of navigation in the zone around offshore artificial islands, installations and structures, and reducing the risk of

56 ITLOS, *Arctic Sunrise Case (The Kingdom of the Netherlands v. The Russian Federation)* 2015, ITLOS PCA Case 2014-02 para 211.

57 UNCLOS (n 39) art 60(5).

58 IMO Sub-Committee on Navigation, Communications and Search and Rescue, 'Report from the World Association for Waterborne Transport Infrastructure (PIANC) on Interaction Between Offshore Wind Farms and Maritime Navigation Submitted by France and the Netherlands (Shortly MarCom WG Report No 161 – 2018)' (12 November 2019) NCSR 7/INF.15 para 3.2.1 < https://docs.imo.org/> accessed 13 April 2024.

59 IMO Sub-Committee on Safety of Navigation, 'Development of Guidelines for Consideration of Requests for Safety Zones Larger than 500 metres Around Artificial Islands, Installations and Structures in the Exclusive Economic Zone Submitted by the United States and Brazil' (4 February 2008) MSC 84/22/4 <https://docs.imo.org/> accessed 13 April 2024.

collision between ships and installations.[60]

After this request, there have been stimulating discussions on IMO's role.[61] The correspondence group regarding the consideration reviewed the existing documents[62] and provided guidelines in its report.[63] Some delegations were in favour of amending the General Provisions on Ships' Routeing *(hereinafter GPSR)* whilst the majority supported the proposition that safety zones were not routeing measures and should therefore not be addressed under GPSR. It was recognized that the need for extension of safety zones beyond 500 metres might be necessary in the future due to the unique nature of offshore installations, wind farms, aqua culture sites and energy exploitation activities.[64]

Later, the legal office of IMO spoke on this matter. They stressed that: *'Article 60(5) of UNCLOS offered two options by providing that such safety zones shall not exceed a distance of 500 metres, except (a) "as authorized by generally accepted international standards", or (b) "as recommended by the competent international organization" Neither of these options referred to an "adoption" procedure.'* It discussed that regarding the legal basis for an adoption procedure, reference could be made to other international instruments such as SOLAS regulation V/10 on ships' routeing. However, safety zones are not routeing measures. Thus, IMO should avoid an 'adoption' process language such as 'shall' except where an adoption was required by UNCLOS or another convention. Following this argument, the Sub-Committee referred documents to the Ships' Routeing Working Group for consideration and advice. In the end, the IMO Sub-Committee decided that there was no demonstrated need, at present, to establish safety zones larger than 500 metres around artificial islands, installations and structures in EEZ or to develop guidelines to do so. Therefore, it was decided that a correspondence group on safety zones was no longer necessary.[65]

The last point to be underlined is that ships must respect these safety zones and follow the generally accepted standards regarding navigation in the vicinity of these structures. However, installations and structures and the safety zones around them may not be established where interference

60 ibid, para 3.

61 IMO Sub-Committee on Safety of Navigation, 'Report to the Maritime Safety Committee' (31 August 2010) NAV 56/20 <https://safety4sea.com/wp-content/uploads/2014/09/pdf/nav56-20-final-report.pdf> accessed 13 April 2024.

62 IMO Sub-Committee on Safety of Navigation, 'Guidelines for Consideration of Requests for Safety Zones Larger than 500 Metres Around Artificial Islands, Installations and Structures in the EEZ Report of the Correspondence Group Submitted by the United Kingdom' (23 April 2010) NAV 56/4 para.3-8 <https://docs.imo.org/> accessed 13 April 2024.

63 ibid.

64 ibid, para 9.

65 ibid, para 15.

may be caused to the recognized sea lanes essential to international navigation.[66] This rule restricts the freedom of the coastal state to construct renewable energy installations in EEZ if there are any essential recognized sea lanes in the area. The question may arise on how to decide whether a sea lane is 'essential' or 'recognized'. As an example, the most attractive areas for offshore wind around Western Europe are on the busy sea lanes such as the North Sea, the English Channel or the Danish Straits.[67] The existing projects have not interfered yet with the current sea lanes considering the size of these projects. However, vast renewable energy installations in these seas may interfere with or disrupt the essential sea lanes in the future. In such cases, as the recognized authority, IMO and its Sub-Committee on Safety of Navigation might provide recommendations or suggestions to the states.

3.3 Straits

UNCLOS has transit and innocent passage regimes for the navigation through straits based on the maritime zone the strait is in. Transit passage rules apply to the straits which are used for international navigation between one part of the high seas or an EEZ and another part of the high seas or an EEZ.[68] In those straits, ships have the right of transit passage, which means the exercise of the freedom of navigation only for the purposes of continuous and expeditious transit of the strait.[69] Ships in transit passage must comply with generally accepted international regulations, procedures and practices for safety at sea and for the prevention, reduction and control of pollution from ships.[70]

In the straits, bordering states have the right to designate sea lanes and prescribe traffic separation schemes for navigation in straits where necessary to promote the safe passage of ships.[71] These sea lanes and traffic separation schemes must conform to generally accepted international regulations.[72] Ships in transit passage are under obligation to respect these sea lanes and traffic separation schemes.[73]

The bordering state refers proposals to the competent international organization, which is IMO

66 UNCLOS (n 39) art 60(6)(7).

67 To search offshore wind projects around this area, see European Offshore Wind Farms Map Public <https://windeurope.org/intelligence-platform/product/european-offshore-wind-farms-map-public/> accessed 13 April 2024.

68 UNCLOS (n 39) art 37.

69 ibid, art 38.

70 ibid, art 39(2).

71 ibid, art 41.

72 ibid, art 41(3).

73 ibid, art 41(7).

in practice, with a view to their adoption before designating or substituting sea lanes or prescribing or substituting traffic separation schemes.[74] IMO can adopt only such sea lanes and traffic separation schemes as may be agreed with the states bordering the straits, after which the states may designate, prescribe or substitute them.[75] From this provision, it could be said that IMO has no right to adopt such lanes and schemes by itself without the agreement of bordering states.

The regime of innocent passage applies to straits that are excluded from the regime of transit passage, or to straits that connect a part of the high seas or an EEZ with the territorial sea of a foreign state.[76]

UNCLOS does not provide any specific rules on installations and structures in the straits. Thus, the state bordering the strait can exercise their sovereignty or jurisdiction under UNCLOS over these waters considering passage rights, sea lanes and traffic separation schemes, as well as other international obligations.

As a final point on straits, UNCLOS states that the regime of passage through straits used for international navigation does not affect the legal status of these waters, nor the exercise by the states bordering the straits of their sovereignty or jurisdiction over such waters and their air space, bed and subsoil. This provision also allows the states bordering a strait to exercise their jurisdiction to install renewable energy installations or structures. For instance, Singapore has built a big offshore floating solar PV farm in the Straits of Johor between Singapore and Malaysia.[77]

3.4 Archipelagic Waters

An archipelagic state is a state constituted wholly by one or more archipelagos and other islands. UNCLOS defines the term 'archipelagos' as a group of islands, including parts of islands, interconnecting waters and other natural features that are so closely interrelated that such islands, waters and other natural features form an intrinsic geographical, economic and political entity, or which historically have been regarded as such.[78] UNCLOS creates a special baseline measurement method under

74 ibid, art 41(4).

75 ibid, art 41(4).

76 ibid, art 45.

77 Clara Chong, 'Singapore Now Home to One of the World's Largest Floating Solar Farms' (*The Strait Times*, 24 March 2021) <www.straitstimes.com/singapore/singapore-now-home-to-one-of-the-worlds-largest-floating-solar-farms> accessed 13 April 2024. Veselina Petrova, 'Sunseap Installs 5-Mwp Floating Offshore PV Plant in Johor Straits, Renewables Now' (*Renewables Now*, 23 March 2021) <https://renewablesnow.com/news/sunseap-installs-5-mwp-floating-offshore-pv-plant-in-johor-straits-735359/> accessed 13 April 2024.

78 UNCLOS (n 39) art 46.

Article 47 for archipelagic states. Accordingly, the breadth of the territorial sea, the contiguous zone, the exclusive economic zone and the continental shelf will be measured from archipelagic baselines.[79]

An archipelagic state has the sovereignty over the waters enclosed by the archipelagic baselines drawn in accordance with Article 47. This sovereignty extends to the air space over the archipelagic waters, to their bed and subsoil, and the resources contained therein.[80] Since the state has sovereignty over these waters, it might establish offshore renewable energy installations within archipelagic waters. On the other hand, ships of all states have the right of innocent passage through archipelagic waters.[81] Also, an archipelagic state can designate sea lanes suitable for the continuous and expeditious passage of foreign ships for the right of archipelagic sea lanes passage. This implies that navigation is permitted only in the normal mode and solely for the purpose of continuous, expeditious, and unobstructed transit between one part of the high seas or an EEZ and another.[82]

3.5 The High Seas

The high seas are open to all states and their activities. This freedom includes freedom of navigation, laying submarine cables, constructing artificial islands and other installations.[83] Also, every state, whether coastal or land-locked, has the right to navigate on the high seas.[84] Therefore, states may freely sail their ships and, theoretically, any state can install an offshore renewable energy installation on the high seas. Also, all states are entitled to lay submarine cables and pipelines on the bed of the high seas beyond the continental shelf.[85] Therefore, when ocean energy technologies are being used in practice in the future, states may freely lay cables from these structures to the coast.

Although offshore technologies have not been used on the high seas yet, considering the rapid rate of technological development, it will soon be possible to harness ocean energy from the vast high sea waters. Floating solar panels or huge wind farms on the high seas are not impossible, especially if the costs of these activities reduce in the near future. This raises certain questions about how offshore installations would affect navigation in these waters.

79 ibid, art 48.
80 ibid, art 49.
81 ibid, art 52.
82 ibid, art 53(3).
83 ibid, art 87(1).
84 ibid, art 90.
85 ibid, art 112.

Unlike other maritime zones, structures and installations on the high seas are minimally regulated under the framework of international law. UNCLOS lays out that states may conduct their activities on the high seas freely while considering the interests of other states.[86] This obligation can be basically explained as considering other states' activities before starting an activity in the high seas to create a balance between competing interests.[87]

Moreover, Article 90 of UNCLOS creates an obligation for the flag state of the ship to ensure the safety of seas regarding the use of signals, maintaining the communication methods, and the prevention of collisions.[88] Thus, it could be said that this obligation includes ensuring the safety of navigation around future offshore renewable energy installations and the safety of energy installation on the high seas.

Besides the obligations mentioned, the newly adopted United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction *(hereinafter BBNJ Treaty)* creates obligations for marine biological diversity on the high seas.[89] Although this Treaty does not have any specific obligations regarding the safety of navigation or renewable energy activities in seas, it is still relevant to the issue because any collision between vessels and installations might affect marine biological diversity on the high seas.

Moreover, considering the knowledge and scientific development at the time UNCLOS was written, there is no clear solution for the conflict between navigational rights and installing offshore renewable installations on the high seas. It should be noted that when a conflict arises on the high seas, the general obligation to protect and preserve the marine environment under Part XII of UNCLOS and the due diligence obligation of the states[90] are applicable. Additionally, the duty to solve disputes through compulsory binding dispute settlement might be helpful in solving conflicts on the high seas. This would give international courts and tribunals a role in further developing the relevant rules.

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86 ibid, art 87(2).

87 Danielle Kroon, 'Due Regard in the High Seas: The Tension between Submarine Cables and Deep Seabed Mining' (2018) 24 Australian International Law Journal 48.

88 UNCLOS (n 39) art 94(3)-c.

89 Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction (BBNJ Treaty) (adopted on 19 June 2023).

90 *South China Sea Arbitration (The Republic of Philippines v. The People's Republic of China)* [2016] PCA Case 2013-19 para. 944. Also see *Case Concerning Pulp Mills on the River Uruguay (Argentina v Uruguay)* [2010] ICJ Rep 14, para 177: 'It is an obligation which entails not only the adoption of appropriate rules and measures, but also a certain level of vigilance in their enforcement and the exercise of administrative control applicable to public and private operators, such as the monitoring of activities undertaken by such operators, to safeguard the rights of the other party'.

A summary of the rules and regime under UNCLOS regarding maritime safety and offshore renewable energy activities is provided in Table 1.

Table 1. Maritime safety and offshore renewable energy (ORE) rules under international law

	Actor/regime for ORE activities	Actor/regime for maritime safety
Territorial Sea	• Coastal state sovereignty	• Innocent passage • Coastal state may designate sea lanes and traffic separation schemes
EEZ	• Exclusive rights to construct, authorise, regulate installations and structures • Safety zones around installations • Decommissioning duty	• Ships must respect safety zones and generally accepted standards around installations • Safety zones cannot be established on recognised sea lanes essential to international navigation
Straits	• No specific reference to installations or structures.	• Transit passage (between high seas/EEZ and high seas/EEZ) • Innocent passage (between high seas/EEZ and territorial sea) • Bordering state may designate sea lanes/traffic separation schemes
Archipelagic Waters	• Archipelagic state sovereignty • No specific reference to installations or structures	• Innocent passage • Archipelagic state may designate sea lanes and prescribe traffic separation schemes for the safe passage of ships through narrow channels.
The High Seas	• Freedom of constructing installations for all states	• Freedom of navigation for all states • Flag state responsibility to ensure the safety of sea

4. Other International Regulations and Guidelines Related to Safety of Navigation and Offshore Renewable Energy Installations

So far, this paper has outlined the UNCLOS framework for the safety of navigation, routeing and offshore installations. There are several references to generally accepted international rules and standards regarding shipping. IMO elaborates these rules in detail in its guidelines and recommendations. IMO, as the competent international organization, approves the vessel routeing and safety zones around offshore installations.[91] In this section, the main IMO documents on ships' routeing, avoidance of collisions, safety of navigation and the manoeuvrability of the vessels will be examined by emphasizing their connection to offshore renewable energy installations.

4.1 General Provisions on Ships' Routeing (IMO Resolution A.572(14))

IMO is the United Nations specialized agency with responsibility for safe and secure shipping, and the protection of the marine environment from shipping. The main purpose of this organization is to universally regulate the shipping industry and implement these policies.[92] IMO is the only international body responsible for establishing and recommending measures on an international level concerning ships' routeing according to Resolution A.572(14).[93] The resolution defined the *'routeing system'* as any system or measures aimed at reducing the risk of casualties. The routeing systems include various measures such as traffic separation schemes, two-way routes, recommended tracks, areas to be avoided, inshore traffic zones, roundabouts, precautionary areas, and deep-water routes.[94] Resolution A.572(14) guides states and IMO for the process of establishing routeing systems, even though it is a non-binding document.

Ships' routeing is crucial for improving the safety of navigation in converging areas, areas where density of traffic is great or where freedom of movement of shipping is inhibited.[95] The routeing system will depend upon the hazardous circumstances which it is intended to alleviate. The resolution lists some hazardous circumstances as examples. The organization of safe traffic flow in areas of concentrat-

91 Catherine Redgwell, 'The Role of GAIRS in UNCLOS Implementation' in Jill Barrett and Richard Barnes (eds), *Law of the Sea: UNCLOS as a Living Treaty* (BIICL, 2016) 180.

92 MarCom WG Report No 161 – 2018 (n 58) para 3.1.3.

93 IMO Assembly, 'General Provisions on Ships' Routeing' (adopted on 20 November 1985) Res.572(14) para 3.1

94 ibid, para 2.1.1.

95 ibid, para 1.1.

ed offshore exploration or exploitation is one of them.[96] Considering that the resolution was adopted in 1986, it mainly concerned traditional energy installations such as oil platforms or rigs at sea. However, harnessing offshore renewable energy sources by different installations and structures might increase the risks against the safety of navigation too. Therefore, it might be said that *'concentrated offshore exploration or exploitation areas'* include offshore renewable energy activity areas. Therefore, the routeing systems adopted by IMO will depend on offshore renewable energy installations in a maritime area for the safety of shipping.

IMO cannot adopt or amend routeing systems without an agreement with the coastal states where this system might affect their rights and practices in respect of the exploitation of living and mineral resources.[97] The expression *'exploitation of living and mineral resources'* in paragraph 3.4.1 of the resolution covers activities such as fishing or seabed mining. However, it does not refer to offshore wind or other non-mineral ocean energy systems. Given the era in which this resolution was adopted, it is understandable that the only sources mentioned were living or mineral sources in the seas. However, the resolution covers broader activities including new offshore structures, especially with the new Resolution MSC.419(97) amendment mentioned below. Thus, for the safety of navigation and installations, it is better to interpret this obligation as including exploitation of renewable energy sources. Consequently, IMO would be under the obligation of agreeing with the coastal states if the new routeing system affects the offshore renewable energy activities of the coastal state. Also, it is important to mention that, according to the resolution, the selection and development of routeing systems is primarily the responsibility of the states concerned.[98] This provision shows that IMO does not have the authority to adopt routeing systems without the states concerned.

If a state proposes a new routeing system or an amendment to an adopted routeing system beyond their territorial sea, it should consult IMO.[99] The purpose of this consultation is to adopt or modify the system established by the IMO for international navigation. Therefore, it is crucial to consult IMO for any changes beyond the territorial sea of the coastal state in order to protect the safety of international navigation. When this routeing system is adopted, it cannot be amended or suspended before consultation with, and agreement by, IMO. It means that the coastal state is under an obligation to consult IMO when creating a new routeing system beyond their territorial sea. Within their territorial sea, states may establish traffic separation schemes by designing them in accordance with

96 ibid, para 1.2.4.

97 ibid, para 3.4.1.

98 ibid, para 3.7.

99 ibid, para 3.8.

IMO criteria and submit them to IMO for adoption.[100]

Resolution A.572(14) recommends states to ensure that oil rigs, platforms and other similar structures are not established within routeing systems adopted by IMO or near their terminations.[101] Here, *'similar structures'* may refer to offshore renewable energy installations. Thus, states must consider the adopted routeing systems when they establish new installations.

Resolution A.572(14) was amended by Resolution MSC.419(97) with the new paragraph 3.14 which regulates the offshore structures. With regard to safety of navigation, states are under a responsibility to take into account the impact of structures at sea, including, but not limited to, wind turbines. When a state plans to establish multiple structures in the sea, it should consider traffic density and prognoses, the presence or establishment of routeing measures in the area, and the manoeuvrability of ships and their obligations under the 1972 Collision Regulations. Also, sufficient space extending beyond the side borders of traffic separation schemes should be provided for emergencies in the vicinity of multiple structure areas.[102]

In summary, routeing systems are needed for the safety of navigation, especially around installations and structures at sea. IMO can establish and recommend measures on an international level concerning ships' routeing. In territorial seas, states can establish traffic separation schemes according to IMO criteria and submit them to IMO for adoption. Beyond their territorial seas, the state should consult IMO. Although IMO is the competent international body for routeing systems, there is a limitation to this power. IMO should agree with the coastal state when the routeing system affects states' rights and practices regarding the exploitation of living and mineral resources. Although there is no clear mention of offshore renewable energy sources here, considering the technological changes since the adoption of the resolution, IMO should make an agreement with the coastal state when the system might affect the exploitation of renewable energy sources. The amendment to the resolution regarding offshore structures was necessary and creates a special responsibility for states to consider routeing systems and shipping traffic before establishing offshore renewable energy structures. It could be argued that IMO's role in establishing routeing measures around offshore renewable installations could be designed more clearly with this amendment.

100 ibid, para 3.12.

101 ibid, para 3.10.

102 IMO, 'Resolution MSC.419(97): Amendments to the General Provisions on Ships' Routeing (Res.572(14), as amended)' (adopted on 25 November 2016) para 3.14.

4.2 Convention on the International Regulations for Preventing Collisions at Sea (Colregs)

The Convention on the International Regulations for Preventing Collisions at Sea *(hereinafter COLREGs)* governs the navigation of all vessels on the high seas, as well as in all connected waters navigable by seagoing vessels.[103] Rule 10 of COLREGs applies to traffic separation schemes adopted by IMO.[104] This provision guidesvessels at sea in determining safe speed, the risk of collision and the conduct of vessels operating in or near traffic separation schemes.

4.3 International Convention for the Safety of Life at Sea (SOLAS)

The International Convention for the Safety of Life at Sea *(hereinafter SOLAS)* sets rules for the safety of life in seas and oceans by regulating various topics, such as the construction of ships, safety of navigation, radiotelegraphy, carriage of goods, and lifesaving or safety measures for various types of vessels. The main focus of this convention is the safety of human life in all maritime-related activities. Measures set in SOLAS indicate that this convention is forward-thinking in terms of incorporating technological advances with various amendments over time.[105]

Chapter V of SOLAS regulates the safety of navigation for all ships on voyages.[106] Regulation 10 of Chapter V indicates that ships' routeing systems contribute to the safety of life at sea, the safety and efficiency of navigation and the protection of the marine environment.[107]

SOLAS, here, recognized IMO as the only international body for establishing and adopting measures on an international level concerning routeing and areas to be avoided by ships.[108] IMO may develop guidelines, criteria and regulations on an international level for ships' routeing systems. Con-

103 Convention on the International Regulations for Preventing Collisions at Sea (COLREGs) (adopted on 20 October 1972, entry into force on 15 July 1977) rule 1.

104 ibid, rule 10.

105 Anish Joseph and Dimitrios Dalaklis, 'The International Convention for the Safety of Life at Sea: Highlighting Interrelations of Measures Towards Effective Risk Mitigation' (2021) 5(1) Journal of International Maritime Safety, Environmental Affairs, and Shipping 9.

106 International Convention for the Safety of Life at Sea (SOLAS) (adopted on 1 November 1974, entry into force on 25 May 1980) ch V reg 1.

107 ibid, ch V reg10.

108 ibid.

tracting states should refer proposals for the adoption of ships' routeing systems to IMO.[109] When two or more states have a common interest in a particular area in the sea, according to SOLAS, they should formulate joint proposals for the delineation and use of a routeing system therein to IMO.[110]

All adopted ships' routeing systems and actions taken to enforce compliance with those systems must be consistent with international law and the provisions of UNCLOS.[111] In other words, provisions of SOLAS or its associated guidelines and criteria should not prejudice the responsibilities of states under international law.[112]

4.4 Standards for Ship Manoeuvrability (MSC.137(76))

The Maritime Safety Committee, at its seventy-sixth session, adopted Resolution MSC.137(76) on Standards for Ship Manoeuvrability. IMO Res. MSC.137(76) creates the standards for ship manoeuvrability which should be used to evaluate the manoeuvring performance of ships and to assist those responsible for the design, construction, repair and operation of ships.[113] These standards and methods can be periodically reviewed and updated by IMO.[114] Additionally, Maritime Safety Committee's Circular 1053 has explanatory notes for the application of the standards.[115] These standards and tests for the vessels are used for designing the safety distances between offshore wind farms and surrounding traffic lanes.

5. Decommissioning of Offshore Renewable Energy Structures for The Safety of Navigation

The lifetime of an offshore wind farm, as the most common offshore renewable energy type, is approximately 20-25 years.[116] For the other renewable energy technology types, such as ocean energy technologies, it is not even clear yet how long they will be used in practice since most of them are still in the R&D stage. After an installation ceases its operations, the question arises as to what will happen to this installation. Clearly, at the international law level the offshore wind energy industry

109 ibid, ch V reg 10(2).

110 ibid, ch V reg 10(5).

111 ibid, ch V reg 10(9).

112 ibid, ch V reg 10(10).

113 IMO, 'Resolution on Standards for Ship Manoeuvrability' (adopted on 4 December 2002) MSC.137(76) para.1.1.

114 ibid, para 1.2.

115 IMO Maritime Safety Committee, 'Explanatory Notes to the Standards for Ship Manoeuvrability' (2002) MSC/Circ.1053.

116 Eva Topham and others, 'Recycling Offshore Wind Farms at Decommissioning Stage' (2019) 129(4) Energy Policy 698.

and the coastal states must follow the rules under UNCLOS.

Article 60 of UNCLOS regulates installations and structures in EEZ. Particularly, paragraph 3 of the article focuses on the decommissioning of abandoned or disused installations or structures:

> *'Due notice must be given of the construction of such artificial islands, installations or structures, and permanent means for giving warning of their presence must be maintained. Any installations or structures which are* ***abandoned or disused*** *shall be* ***removed to ensure safety of navigation****, taking into account any generally accepted international standards established in this regard by the competent international organization. Such removal shall also have due regard to fishing, the protection of the marine environment and the rights and duties of other States. Appropriate publicity shall be given to the depth, position and dimensions of any installations or structures not entirely removed.'*

UNCLOS specifies that any installations or structures which are abandoned or disused must be removed for the safety of navigation considering the international standards established in this regard by the competent international organization.[117] This means that the unused offshore energy installations must be removed following the IMO standards and guidelines and, if there are any, other international rules and standards in practice. UNCLOS uses a language referring to the safety of navigation as the main reason for decommissioning. It could be said that the treaty makers' main concern about the decommissioning of abandoned or disused installations is maritime safety in that area.

There is no clear obligation regarding unused installations in territorial seas under UNCLOS framework. Article 60 only applies to EEZ and continental shelf. Thus, this obligation would not be applicable to territorial seas. However, the coastal state is still under the obligation to protect the marine environment under Part XII UNCLOS and not interfere with the right of innocent passage in territorial seas under Article 19 of UNCLOS.[118]

Similarly, for the high seas, there is no obligation of removal or decommissioning of abandoned or disused installations under UNCLOS. Article 87 provides the rule for freedom to construct artificial islands and other installations on the high seas. However, there is no rule about the aftermaths of these

117 UNCLOS (n 39) art 60(3).

118 Seline Trevisanut, 'Decommissioning of Offshore Installations: a Fragmented and Ineffective International Regulatory Framework' in Catherine Banet (ed), *The Law of the Seabed: Access, Uses, and Protection of Seabed Resources* (Brill | Nijhoff 2020) 436-437.

installations when they are not used anymore.

IMO Resolution A.672, namely '*Guidelines and Standards for The Removal of Offshore Installations and Structures on The Continental Shelf and in the Exclusive Economic Zone*', regulates the rules for removal of abandoned or disused installations following Article 60 of UNCLOS.[119] According to these guidelines, abandoned or disused offshore installations on any continental shelf or in any EEZ are required to be removed with certain exceptions. Also, removal must be performed without causing any significant adverse effects upon navigation or the marine environment.[120]

Besides IMO guidelines and standards, there are several conventions regarding decommissioning of abandoned or unused installations or structures in seas, mostly concerning the marine environment. The 1976 Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean has the Protocol for the Protection of the Mediterranean Sea against Pollution Resulting from Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil.[121] This protocol regulates a detailed system for offshore operations including the removal of the installations in seas under Article 20.

Another example is the Convention for the Protection of the Marine Environment of the North-East Atlantic[122] *(hereinafter OSPAR)*, which was signed for the protection of the marine environment of the North-East Atlantic, including the North Sea. For offshore installations, the OSPAR Decision 98/3[123] bans the disposal of offshore installations in seas, except when the competent authority permits leaving specific installations or parts of the installations.

The other significant conventions related to decommissioning is the London Convention on

119 IMO Assembly, 'Guidelines and Standards for the Removal of Offshore Installations and Structures on the Continental Shelf and in the Exclusive Economic Zone' (adopted on 19 October 1989) Res. A.672 (16).

120 Simon Moore, 'Decommissioning' in Stuart Beadnall, Simon Moore and Max Lemanski (eds), *Offshore Floating Production: Legal and Commercial Risk Management* (Routledge 2023) 192.

121 Protocol for the Protection of the Mediterranean Sea against Pollution Resulting from Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil (adopted on 14 October 1994).

122 The Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention), (1992).

123 Ministerial Meeting of the OSPAR Commission, Decision 98/3 on the Disposal of Disused Offshore Installations <www.ospar.org/documents?v=6875> accessed 13 April 2024.

the Prevention of Marine Pollution by Dumping of Wastes and Other Matter[124] and its protocol[125]. 'Dumping' under the London Protocol covers any deliberate disposal of wastes or other matter from offshore platforms or other man-made structures into the sea, in the seabed or the subsoil. According to the Protocol, parties may prohibit the dumping of any wastes or other matter with the exception of those listed in Annex 1, which includes 'vessels and platforms or other man-made structures at sea'. This means that the prohibition for dumping is not absolute. Since offshore renewable energy platforms could be considered as 'platforms' or 'man-made structures', they could be considered for a dumping permit under certain circumstances.

6. An Example from the Practice: the North Sea Policies of the Neth erlands

Having addressed the key international agreements and standards relevant to the topic, in this section the Dutch North Sea policies will be examined as an example of the planning of the shipping routes, and swift and safe navigation around offshore wind farms.

The Netherlands is one of the leading countries for offshore wind farms and plans to increase the number of offshore wind energy structures in the future. The planned wind energy areas in the Netherlands are Borssele, IJmuiden Ver, Coast of Holland and North of the Wadden Islands which cover the area around 2,900 km^2.[126] North Sea Policy Document (2016-2021) for the Dutch exclusive economic zone offers a system for the usage of the North Sea related to the wind energy activities and shipping.[127]

For the safety distances between the ships and the offshore renewable energy installations, it is crucial to make a description of the ships that navigate around the installation. There might be a commercial ship that carries goods or passengers, fishing vessels, pleasure boats or supply vessels, tugboats or maintenance boats. Factors such as the type of goods being carried, their hazardous nature, the size of the vessel, its manoeuvring characteristics, and auxiliary systems are considered

124 London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (the London Convention) (1972).

125 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (entered into force on 24 March 2006).

126 Government of the Netherlands, 'Policy Document on the North Sea 2016-2021, Including the Netherlands' Maritime Spatial Plan appendix 2 to the National Water Plan 2016-2021' 88.

127 ibid.

important for accurate description.[128]

The distance between the wind farms and shipping routes depends on the calculation of the reference ship size. In the North Sea Policy Document, the reference ship is 300-400 metres long. According to this reference size, the sufficient space for the largest manoeuvre of a ship is a minimum of 6 ship lengths. Additionally, an extra 0.3 NM is necessary for a ship to execute a round turn. Therefore, the overall space required for a round turn is 0.3 NM + 6 ship lengths. Also, the North Sea Policy Document refers to the safety zone of 500 metres in force around the wind turbines. Within this zone, passage is not possible presently.[129]

Lastly, the Dutch government body (Rijkswaterstaat) planned a risk assessment package prepared with relevant stakeholders, including wind farm owners and the shipping sector. The Dutch government opened some wind farms for transit passage or co-usage as a pilot project for ships up to 24 metres in length and under specific conditions.[130] Nonetheless, it could be an example of future co-usage of renewable energy installations with shipping activities.

7. Concluding Remarks

This article seeks to investigate the international law framework on offshore renewable energy projects and its effects on the safety of navigation in seas. To this end, the article assesses these aspects: (i) gaps in the international law of the sea framework, (ii) the complexity and technicality of the international guidelines and standards on maritime safety, (iii) current and possible impacts of offshore renewable energy installations on the safety of navigation.

There is no general international treaty on installing and operating offshore renewable energy structures, so it is under the general provisions of UNCLOS. UNCLOS aims to strike a balance between the coastal state's right to install renewable energy structures and maritime safety around these installations and the freedom of navigation. The Convention provides mechanisms such as safety zones, routeing measures or traffic schemes. In territorial seas, rules and regulations regarding

128 MarCom WG Report No 161 – 2018 (n 58) para 4.1.1.

129 Government of the Netherlands, Policy Document on the North Sea (n 126) 84.

130 (MSP) Platform, Conflict Fiche 7: Maritime Transport and Offshore Wind (n 5) 8-9. Also see Noordzeeloket, Offshore Windpark Egmond aan Zee (OWEZ) <www.noordzeeloket.nl/functies-gebruik/windenergie/doorvaart-medegebruik/offshore-windpark-egmond-zee-owez/> accessed on 13 April 2024: 'The Offshore Windpark Egmond aan Zee wind farm is only accessible to ships up to 24 metres in length under strict conditions. The gedragscode for safe sailing through wind farms contains the rules and safety tips for sailing through this park correctly.'

passage, sea lanes and maritime traffic depend on the coastal state as the sovereign state. A potential criticism could be that, as distinct from the EEZ, there is no specific rule on safety zones and decommissioning in territorial seas. On the other hand, in the EEZ, safety zones and decommissioning rules limit the coastal state's freedom. There is also a limitation on the coastal state installing a renewable energy installation on an essential sea lane. However, under the current UNCLOS framework, future renewable energy projects on the high seas, including the possibility of collisions between a vessel and an energy installation, are not foreseen. IMO documents mentioned above, such as COLREGs, SOLAS, or IMO Res. MSC.137(76), elaborate the provisions of UNCLOS in technical matters.

There are no international organizations specifically for offshore renewable energy activities. There are a few international agencies on renewable energy; IRENA, one such example, aims to promote sustainable use of energy. However, unlike IMO, IRENA does not provide any regulations or guidelines.[131] It is also apparent that no international convention currently regulates offshore renewable energy installations specifically, yet there are a number of relevant international treaties and non-binding rules. IMO offers comprehensive guidelines and standards on technical matters on installations and shipping. However, IMO mainly represents the shipping industry perspective. Establishing a sub-committee for offshore renewable energy installations could prove beneficial in the long term, as it would enhance the representation of all interests and stakeholders. Furthermore, the current complex framework and international regulations could be harmonized in the future. Co-design of shipping routes with better collaboration between maritime and energy sectors could also be beneficial. Consulting all relevant sectors and international bodies appears necessary to develop efficient solutions for future marine planning. As an example, the Netherlands and Belgium had a project for a wind farm on the Scheldt estuary which already had sand banks that affected navigation. There were concerns regarding both safety and the navigational route. A joint consultation group consisting of public authorities, ports, former vessel operators, consultants, shipping companies and associations, and offshore wind farm developers was formed to define the best route and propose safety measures and rerouteing to the IMO.[132] This type of collaboration between industries is necessary to govern seas and oceans for future activities.

This paper demonstrates the challenges and complexity of creating a balance between the shipping industry and rising offshore renewable energy activities. UNCLOS and IMO regulations provide a framework for navigation and safety to a certain level, however, it is clear that there is a need for more comprehensive international regulation of navigation and maritime safety around renewable energy installations in areas under the control of the coastal state as well as, in the near future, on the high seas.

131 Jung (n 14) 77.

132 (MSP) Platform, Conflict Fiche 7: Maritime Transport and Offshore Wind (n 5) 13.

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The Extension of the Continental Shelf Beyond 200 Nautical Miles by UNCLOS Non-Party States

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Abstract

Many uncertainties can be found in the delineation of the external limit of the continental shelf under Art. 76 of the United Nations Convention on the Law of the Sea (UNCLOS), insofar as it refers to the geological notion of the continental margin (so-called extended continental shelf). In any case, today this definition is reflected in customary international law and is confirmed by, inter alia, decisions of the International Court of Justice. It thus also applies to UNCLOS non-party States. However, what has become customary international law is a global regime of ocean spaces that has a coherent logic and includes both the seabed within national jurisdiction, subject to the sovereign rights of the coastal State, and the seabed beyond national jurisdiction (so-called Area), subject to the different regime of common heritage of mankind. Also, UNCLOS non-party States that are willing to avail themselves of the right to benefit from an extended continental shelf are bound to have its outer limit determined according to a procedure involving the Commission on the Limits of the Continental Shelf (CLCS) and to make payments and contributions through the International Seabed Authority. By announcing in 2023 the outer limits of its extended continental shelf and by declaring itself prepared to present a submission to the CLCS, the United States – a non-party to the UNCLOS – implicitly agreed on the comprehensive regime for the seabed established by the UNCLOS.

Keywords: UNCLOS, Commission on the Limits of the Continental Shelf (CLCS), continental shelf, International Seabed Authority; UNCLOS non-party States

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1. Geoscientific and Legal Intricacies

One of the main innovations of the United Nations Convention on the Law of the Sea (Montego Bay, 1982)[1] is the external limit of the continental shelf. In this regard, departing from the previous regime established by the Convention on the Continental Shelf (Geneva, 1958), UNCLOS Article 76, para 1[2], provides for the alternative between the distance of 200 nautical miles from the baselines of the territorial sea (geometrical criterion) or the outer limit of the continental margin (geological

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1 Hereinafter: UNCLOS.

2 See Lindsay Parson, 'Article 76' in Proelss (eds) *United Nations Convention on the Law of the Sea – A Commentary* (München, 2017) 587. For the discussion during the negotiations for the UNCLOS see Piers R. R. Gardiner, 'Reasons and Methods for Fixing the Outer Limit of the Legal Continental Shelf beyond 200 Nautical Miles' (1978) Revue Iranienne des Relations Internationales, nos. 11-12, 145.

criterion), if the margin goes beyond the 200-mile limit (so-called extended continental shelf)[3].

In choosing such a geological criterion, the UNCLOS drafters entered into the field of scientific uncertainty. It is sufficient to read paragraphs 3 to 7 of Art. 76 to realize how complex the notion of continental margin can be. It includes the shelf, the slope and the rise, but excludes oceanic ridges. It requires the determination of the foot of the continental slope, that is, the point of maximum change in the gradient at its base, or the determination of the outermost fixed points at each of which the thickness of sedimentary rocks is at least 1 per cent of the shortest distance from such point to the foot of the continental slope. However, exceptions and even exceptions to these exceptions exist, complicating the process. One can only wonder how much bathymetric and seismic investigation is needed and how much money is spent in calculating the thickness of sedimentary rocks and in other technical intricacies before a final delineation of the outer limit of the continental margin can be made.

Almost 250 years ago, the Neapolitan scholar Ferdinando Galiani (1728-1787) recommended measuring the external limit of the territorial sea by means of a given distance from the coast (three nautical miles) rather than under the criterion of the cannon shot. Drawing lines on maps was much easier than to ascertain whether and where artilleries were in place along the coast and engage in calculations about their varying ranges[4]. Gradually, geometry played the role of simplifying international law of the sea. Even today most of the external limits of coastal zones (territorial sea, contiguous zone, exclusive economic zone) are measured by means of a distance from the coast.

However, in the case of the outer limit of the continental shelf, Art. 76 disregards Galiani's inclination for "easy law". This UNCLOS choice seems questionable, to say the least. While legal norms are typically drafted in general and abstract terms, geosciences are inevitably attracted by the numerous variations that can be found in the seabed and its subsoil[5]. Can the two approaches be usefully combined in a legal text?

In any case, lawyers should appreciate that the geoscientific intricacies concerning the new notion of continental shelf have today come up against a typically legal conundrum, namely, whether non-party States to the UNCLOS are entitled to an "extended" delineation of their continental shelves. An attempt to answer this difficult question will be made below.

2. Treaty Law and Customary Law

The notion of the extended continental shelf and coastal State's rights over it are governed

3 It has been assessed that the extended continental shelf corresponds to roughly 9% of the world seafloor.

4 Ferdinando Galiani, *De' doveri dei principi neutrali verso i principi guerreggianti, e di questi verso i neutrali, libri due* (first published 1782) book I, chap X, para 2.

5 See Luigi Santosuosso, 'The Last Frontier: Trends and Challenges Related to the Delineation of the Outer Limits of the Continental Shelf beyond 200 Nautical Miles', in Maurizio Arcari, Irini Papanicolopulu and Laura Pineschi (eds.) *Trends and Challenges in International Law* (Springer International Publishing 2022) 309.

by UNCLOS Art. 76, which, being a treaty provision, does not create rights for a third State without its consent (Art. 34 of the 1969 Vienna Convention on Law of Treaties[6]). However, the extended continental shelf is today reflected in customary international law, as confirmed by the domestic legislation of many States, their official statements and a number of maritime boundary treaties. Furthermore, on 19 November 2012 the International Court of Justice, in deciding the Territorial and maritime dispute between Nicaragua and Colombia (the latter being a State non-party to the UNCLOS), remarked that

> "(…) the definition of the continental shelf set out in Article 76, paragraph 1, of UNCLOS forms part of customary international law"[7].

The extended continental shelf represents a typical case where

> "a rule set forth in a treaty may reflect a rule of customary international law if it is established that the treaty rule: (…)
>
> (c) has given rise to a general practice that is accepted as law (*opinio juris*), thus generating a new rule of customary international law"[8].

Accordingly, all coastal States, including those that are not a party to the UNCLOS, are entitled to exercise rights over an extended continental shelf.

However, the question is not so simple. There is a need to clarify what has become customary international law. Under the UNCLOS, the extended continental shelf is a part of a global regime of ocean spaces that includes both the seabed within national jurisdiction, subject to the sovereign rights of the coastal State, and the seabed beyond national jurisdiction (so-called Area), subject to the different regime of common heritage of mankind. The latter is the most evolutionary (the most revolutionary, one could also say) aspect of present international law of the sea, being based on the principle that activities in the Area are to be carried out for the benefit of mankind as a whole, and taking into particular consideration the interests and needs of developing States (Art 140, para 1). A specific international organization, the International Seabed Authority (ISA), is mandated to provide for the equitable sharing of financial and other economic benefits derived from activities in the Area through appropriate mechanisms (Art 140, para 2).

The UNCLOS includes two mechanisms to ensure the coordination between the two above-men-

6 Hereinafter: Vienna Convention.

7 Para 118. The Court repeated a similar statement in the judgment of 13 July 2023 on the Question of the delimitation of the continental shelf beyond 200 nautical miles from the Nicaraguan coast (*Nicaragua v. Colombia*) para 52.

8 Conclusion 11, para 1, of the draft conclusions on identification of customary international law, adopted in 2018 by the International Law Commission.

tioned and radically different regimes (exclusive benefits versus shared benefits).

The first coordination mechanism is represented by the Commission on the Limits of the Continental Shelf (CLCS), a technical body composed of 21 experts in the field of geology, geophysics or hydrography. As excessive claims could encroach upon areas falling under the common heritage of mankind, coastal States cannot unilaterally delineate the outer limits of their extended continental shelf. They must undergo a procedure that implies the submission of proposed limits to the CLCS, along with supporting scientific and technical data. If the CLCS recommends the submission, such limits are final and binding (Art 76, para 8). If the CLCS does not, the coastal State is bound, within a reasonable time, to make a revised or new submission to it (Annex II, Art 8). While neither the coastal State, nor the CLCS are called to say a decisive word on the matter, it is evident that the final limits are intended as the outcome of an international procedure[9].

The second coordination mechanism is given by Art. 82, which binds the coastal State to equitably share with UNCLOS States parties the profits of the exploitation of its extended continental shelf:

> "1. The coastal State shall make payments or contributions in kind in respect of the exploitation of the non-living resources of the continental shelf beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured. (…)
>
> 4. The payments or contributions shall be made through the Authority, which shall distribute them to States Parties to this Convention, on the basis of equitable sharing criteria, taking into account the interests and needs of developing States, particularly the least developed and the land-locked among them".

Art. 82 implies that, first, the coastal State successfully concludes the procedure for delineating the outer limit of its extended continental shelf and, subsequently, can engage in activities for the relevant commercial exploitation.

Evidently, in the UNCLOS spirit, the extended continental shelf and the common heritage of mankind are both components of a comprehensive regime of seabed spaces that has its own coherent logic. One of the two components cannot be isolated from the other and both are balanced against each other.

In the case of the extended continental shelf, UNCLOS Articles 82, 76, para 8, and Annex II refer to "the coastal State" (and not to the State Party), thus attributing the relevant rights to any such State, irrespective of its participation in the UNCLOS. Article 36, para 2, of the Vienna Convention stipulates that a third State exercising a right accorded by a treaty is also bound to comply with the conditions for its exercise provided for in the treaty or established in conformity with the treaty. In

9 95 submissions, some of them relating to parts of the extended continental shelf of a given State, and 11 revised submissions have been presented to the CLCS that has adopted, respectively, 34 and 6 recommendations, so far. The backlog confirms the complexity of the delineation of the outer limit of the continental shelf (cf para 1).

other words, States that are willing to avail themselves of the right to benefit from an extended continental shelf are bound to have its outer limit determined according to the CLCS procedure and to make payments and contributions through the ISA.

The question remains unchanged even if it is noted that the concept of the extended continental shelf has been incorporated into customary international law. What today appears as customary is a comprehensive regime for the seabed as a whole, which is composed of both the extended continental shelf and the common heritage of mankind, together with the coordination mechanisms between them. This regime – and not only the notion of the extended continental shelf – has entered from the UNCLOS into customary international law.

Under both the UNCLOS and customary international law, the rights of the coastal State over the continental shelf are inherent insofar as they are vested in the coastal State and do not depend on occupation, effective or notional, or on any express proclamation (UNCLOS Article 77, para 3). The previous 1958 Convention on the Continental Shelf included an identical provision (Article 2, para 3). However, the outer limits of the continental shelf were different from those of the UNCLOS, being represented in the 1958 Convention by the alternative between the depth of 200 metres or the possibility to exploit the natural resources of the seabed and its subsoil. The change can be understood in the sense that inherence is legally referred only to the entitlement to a continental shelf and not to the delineation of its outer limit. The latter can vary in time and today it depends on the completion of a submission by a coastal State and the recommendation by the CLCS.

It was precisely to avoid the dangers of the exploitability criterion – "the strong would get stronger, the rich richer", as in 1967 the representative of Malta, Mr. Arvid Pardo, said in a memorable speech before the United Nations General Assembly[10] – that the regime of common heritage of mankind was conceived. This marked a radical evolution in international law, which is presently embodied in the UNCLOS and reflected in customary international law.

3. A Notable Instance

On 19 December 2023, the United States Department of State announced the outer limits of its extended continental shelf in accordance with customary international law, as reflected in the rele-

10 Arvid Pardo, *The Common Heritage – Selected Papers on Oceans and World Order* (first Published 1975, Malta University Press, Valletta) 31.

vant provisions of the UNCLOS and the Scientific and Technical Guidelines of the CLCS[11]. The limits are expressed in coordinates of latitude and longitude, relating to seven regions, namely the Arctic, the Atlantic, the Bering Sea, the Eastern Gulf of Mexico, the Western Gulf of Mexico, the Mariana Islands and the Pacific[12]. The extended continental shelf area covers approximately 1,000,000 square km. The limits are supported by a package of data and documents[13], resulting from "two decades of extensive collection of marine geophysical data, including high-resolution multibeam data and multichannel seismic data"[14].

Notably, the United States is prepared to present the submission to the CLCS, irrespective of whether it will become a party to the UNCLOS or will remain in the present situation of a non-party:

> "The United States will file its submission package with the Commission upon accession to the Convention. The United States is also open to filing its submission package with the Commission as a non-Party to the Convention. This would be consistent with the Commission's mandate to provide recommendations and advice to coastal States concerning the outer limits of the continental shelf and would support the rules-based system under the Convention for delineating the continental shelf and the seabed area beyond national jurisdiction"[15].

By this statement the United States acknowledges that the announced outer limits are not yet final and binding as they still need to be endorsed by a recommendation of the CLCS. The statement also presupposes that the United States implicitly agrees on the comprehensive regime for the seabed established by the UNCLOS, as revised under the 1994 Agreement relating to the Implementation of Part XI (New, York, 1994).

In order to fully clarify the present situation, it would be helpful if the United States explicitly declared its willingness to undertake the burdens provided for in UNCLOS Art. 82. Such a declaration would remove the criticism addressed by the Russian Federation[16]. If this were the case, the

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11 United States Department of State, The Outer Limits of the Extended Continental Shelf of the United States of America - Executive Summary (2023, Washington). The attached maps provide an overview of the seven areas of extended continental shelf. See also Kevin A. Baumert, 'The Continental Shelf beyond 200 Nautical Miles: Announcement of the U. S. Outer Limits' (2024) American Journal of International Law, 275; Ekaterina Antsygina, 'Extended Continental Shelf of the United States: A Landmark Announcement and Its Implications' (2024) EJIL:Talk! <www.ejiltalk.org/extended-continental-shelf-of-the-united-states-a-landmark-announcement-and-its-implications/> accessed 20 November 2024.

12 United States Department of State, The Outer Limits (n 11) 7: 'The United States may delineate its extended continental shelf limits in additional areas in the future or revise the outer limits described herein'. The present short paper will not address the question of the delimitation of the extended continental shelf between the United States and its neighbouring States.

13 The package is not yet publicly available.

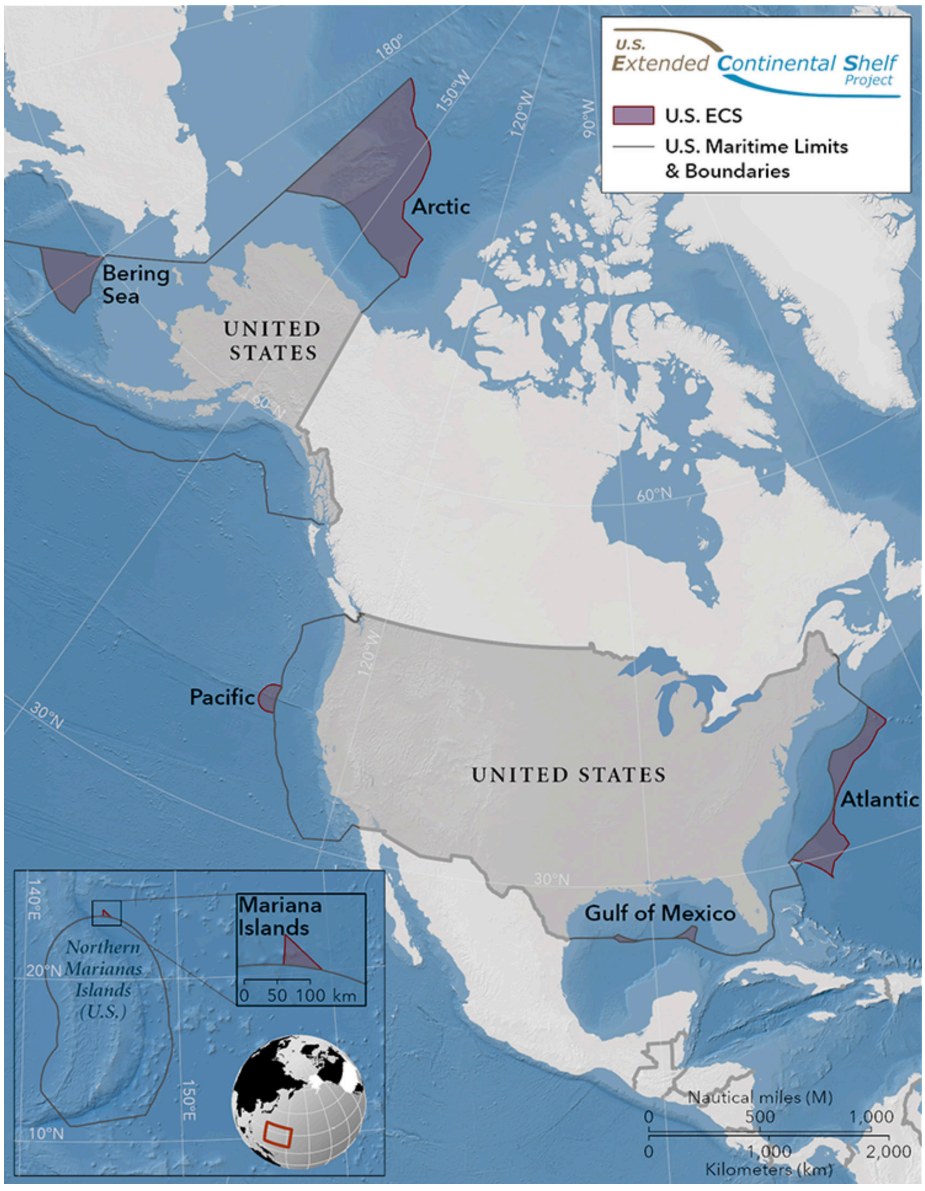
14 United States Department of State, The Outer Limits (n 11) 7.

15 ibid 6.

16 "Actions in which some States select from the Convention those provisions that are convenient for them to implement and reject others that impose obligations on them are unacceptable and harm the delicate balance achieved in the 'constitution for the oceans'" (statement made on 18 March 2024 by the representative of the Russian Federation, Mr. Sergey Petrovich, before the Council of the ISA, available on the website of the ISA). On the reactions to the United States announcement see, in general, Baumert (n 11) 290.

UNCLOS parties could concur on the right for a non-party to submit a proposal to the CLCS[17]. Not only it would be justified under legal considerations, but it should be welcomed as a further sign by the United States government[18] to acknowledge the present comprehensive regime for the ocean seabed, including, as already remarked[19], both the extended continental shelf and the common heritage of mankind, together with the coordination mechanisms between them.

U.S. Extended Continental Shelf Regions *(Source: https://www.state.gov/the-us-ecs/)*



17 Two States having a maritime border with the United States, namely the Bahamas and Canada, would not object to the consideration of a United States submission by the CLCS. See United States Department of State, The Outer Limits (n 11) 19 and 25.

18 Already in 1994, the President of the United States transmitted to the Senate the text of the UNCLOS with a message recommending consent for accession (103d Congress, 2d Session, Treaty Doc. 103-39). No action has been taken by the Senate so far.

19 See para 2.

Maritime Safety and Security Law Journal

The Challenges of the Delimitation of Extended Continental Shelves by UNCLOS Part XV Tribunals: the 'Significant Uncertainty' Criterion

Kiara NERI[*]

Abstract

This article explores the relationship between the Commission on the Limits of the Continental Shelf (CLCS) and dispute settlement tribunals under Part XV of the United Nations Convention on the Law of the Sea (UNCLOS). While the CLCS is tasked with examining scientific claims for continental shelf extensions beyond 200 nautical miles, only Part XV tribunals can settle disputes between States over maritime boundaries.

In several cases, tribunals have been asked to rule on boundary delimitation before the CLCS has issued its recommendations. This raises an important legal challenge. To address this, tribunals like ITLOS and the ICJ have applied the 'significant uncertainty' test — they will proceed only if there's no major doubt about the existence of a continental margin.

Jurisprudence has evolved from early refusals to assert jurisdiction to more recent decisions where tribunals have delimited extended shelves. These decisions show a growing acceptance that delimitation can occur if scientific evidence is strong enough. Still, concerns remain: acting without CLCS recommendations may weaken its authority or create conflicts. Therefore, tribunals generally treat their assessments as provisional, pending the CLCS's final evaluation.

Keywords

maritime delimitation; continental shelf beyond 200 mn; Commission on the Limits of the Continental Shelf; dispute settlement; competence of Part XV tribunals

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1. Introduction

The Commission on the Limits of the Continental Shelf (CLCS), a body created by the United Nations Convention on the Law of the Sea (UNCLOS),[1] is responsible for examining submissions by coastal States for the extension of their continental shelf beyond 200 nautical miles (nm). It is composed of 21 experts in geology, geophysics or hydrography, who are elected by the States Parties to the Convention with due regard to ensure equitable geographical representation.[2] The Commission's decisions concerning the establishment of the outer limits of the continental shelf are described in the Convention as 'recommendations', but are conferred with a 'definitive' and 'binding' character once accepted by the coastal State.[3] If a State disagrees with the commission's recommendations, Article 8 of Annex II allows it to submit a revised or new application within a reasonable period of time.[4] To date, 93 submissions have been made to the CLCS, of which only 35 have been the subject of recommendations; there have been a total of 11 revised submissions procedures.[5]

In the case of disputes between States on the delimitation of their maritime spaces, the CLCS is not a tribunal and cannot settle between the parties. The issue of dispute settlement, including delimitation disputes, is addressed in UNCLOS Part XV. Under Article 286, "any dispute concerning the interpretation or application of this Convention shall […] be submitted at the request of any

1 United Nations Convention on the Law of the Sea (adopted 10 December 1982, entered into force 16 November 1994) 1833 UNTS 396 (UNCLOS), annex II, art 1.

2 ibid annex II, art 2; Joanna Mossop, *The continental shelf beyond 200 nautical miles: rights and responsibilities* (Oxford University Press 2016); Peter J. Cook, *Continental shelf limits: the scientific and legal interface* (Oxford University Press 2000); Signe Veierud Busch, *Establishing continental shelf limits beyond 200 nautical miles by the coastal state: a right of involvement for other states?* (Brill 2016); Bjarni Már Magnússon, *The continental shelf beyond 200 nautical miles: delineation, delimitation and dispute settlement* (Brill 2015); United Nations, Division for Ocean Affairs and the Law of the Sea, *The law of the sea: training manual for delineation of the outer limits of the continental shelf beyond 200 nautical miles and for preparation of submissions to the Commission on the Limits of the Continental Shelf* (United Nations 2006); Xuexia Liao, *The continental shelf delimitation beyond 200 nautical miles : towards a common approach to maritime boundary-making* (Cambridge University Press 2022); Tomas Heidar, John Norton Moore and Myron H. Nordquist (ed.), *Legal and Scientific Aspects of Continental Shelf Limits* (Brill 2004); Suzette V. Suarez, *The outer limits of the continental shelf: legal aspects of their establishment,* Max-Planck-Institut für Ausländisches Öffentliches Recht und Völkerrecht (Springer 2008); Sandrine W. De Herdt, 'A referral process to the Commission on the Limits of the Continental Shelf in the delimitation of the continental shelf beyond 200 M process: An appraisal' (2020), 53 The International Journal of Marine and Coastal Law 4, 682-703.

3 UNCLOS, article 76.8.

4 See Hilde Woker, 'Disagreements between the Commission on the Limits of the Continental Shelf (CLCS) and Submitting Coastal States' (2024) 39 The International Journal of Marine and Coastal Law 2, 252-278.

5 On the functioning of the Commission, see Øystein Jensen, *The Commission on the Limits of the Continental Shelf: Law and Legitimacy* (Brill 2014); Elie Jarmache, 'A propos de la Commission des limites du plateau continental' (2006), Annuaire du droit de la mer, 51-67 ; Matthieu Aldjima Namountougou, 'La Commission des limites du plateau continental : Problèmes de statut juridique et attributions' (2008) 41 Revue Belge de Droit International 1, 292-330.

party to the dispute to the court or tribunal having jurisdiction under this section", namely the International Tribunal for the Law of the Sea (ITLOS), the International Court of Justice (ICJ), or an arbitral tribunal constituted in accordance with Annex VII, or a special arbitral tribunal constituted in accordance with Annex VIII in special matters (fisheries, protection and preservation of the marine environment, marine scientific research, or navigation, including pollution from vessels and by dumping).[6] States are free to choose, by issuing a declaration, one of these options for dispute settlement. If a State that is a party to a dispute has not issued a declaration or if the parties to the dispute do not accept the same procedure for its settlement, it will be submitted to arbitration in accordance with Annex VII.[7] These tribunals, hereafter referred to by the expression (Part XV tribunals) have jurisdiction over any dispute concerning the interpretation or application of UNCLOS, including the establishment of a maritime boundary between States that are party to the Convention.[8]

Thus, in theory, the division of jurisdictional competence is clear: the CLCS decides on the validity of the claims and on the outer limit of an extended continental shelf, whereas Part XV tribunals settle disputes between States on the delimitation of their respective maritime spaces, including their (extended) continental shelves. However, in practice, the claims for extended continental shelves can create, revive, aggravate or extend maritime delimitation disputes: for example, in the *Canada–France Maritime Boundary* case around Saint Pierre and Miquelon.[9]

Or, in contrast, cases may be brought before a tribunal in an attempt to prevent future disputes from occurring, by settling the maritime boundary once and for all, even if the CLCS has not yet ruled on the claim. The recent cases relating to the Bay of Bengal, the maritime disputes between Somalia and Kenya, and between the Maldives and Mauritius illustrate this situation. In these three cases, a Part XV tribunal was sought before the CLCS had the opportunity to statute on whether the claims to an extended continental shelf were well founded.

This article will focus on such cases, which challenge the separation competence designed by UNCLOS between the CLCS (delineation of the outer limit of the continental shelf) and Part XV

6 UNCLOS (n 1) annex VIII, art 1.

7 UNCLOS (n 1) art 287.

8 UNCLOS (n 1) art 288.

9 On these issues, see Huu Duy Minh Tran, 'The approach of the Commission on the Limits of the Continental Shelf to submissions involving unresolved disputes: Should it be modified?' (2023) 13 Asian Journal of International Law, 124-145; Sandrine W. De Herdt, 'The Relationship Between the Delimitation of the Continental Shelf Beyond 200 nm and the Delineation of Its Outer Limits' (2020) 51 Ocean Development & International Law, 263-282; Stuart Kaye, 'The Impact of Advisory Opinions from the International Tribunal of the Law of the Sea on the Work of the Commission on the Limits of the Continental Shelf: An Essay in Honor of Ted L. McDorman' (2024) 55 Ocean Development & International Law, 545-554.

tribunals (dispute settlement). Can or should a Part XV tribunal rule on the delimitation of an extended continental shelf before the Commission has made its recommendations? This debate about the competence of the Commission versus the dispute settlement mechanism first appeared in the arbitral between France and Canada concerning Saint Pierre and Miquelon. At the time (the case was decided in 1992), the arbitral tribunal considered that it did not have the jurisdiction to proceed with a delimitation of the extended continental shelf.[10] In a later case between Barbados and Trinidad and Tobago (in 2006),[11] the arbitral tribunal also refused to proceed with such a delimitation; as did the International Court of Justice in the case of the maritime dispute between Nicaragua and Honduras in the Caribbean Sea (in 2007).[12]

However, in the 2012 Bay of Bengal case, ITLOS opened the door to making such a delimitation, albeit in very specific circumstances.[13] Almost a decade later, the ICJ went further, agreeing to delimit the hypothetical extended continental shelves of Somalia and Kenya in 2021,[14] although not without criticism.[15] To decide whether it could make such a delimitation, ITLOS relied on the fact that there was no 'significant uncertainty' as to the existence of a continental margin in the area in question. It would use

10 Arbitral Award, *Delimitation of maritime Areas between Canada and France (Saint-Pierre-et-Miquelon)* (10 June 1982) RIAA, vol. XXXI, 79, in line with the jurisprudence of ICJ, *Monetary Gold taken in Rome in 1943 (Italy v. France, United Kingdom of Great Britain and Northern Ireland and United States of America)*. For a commentary, see Merritt R. Blakeslee, 'The Distant Island Problem: The Arbitration on the Delimitation of the Maritime Zones Around the French Collectivite Territoriale of Saint-Pierre-and-Miquelon' (1991) 21 Ga. J. Int'l & Compar. L., 359-385 ; Elisabhet Zoller, 'La sentence franco-canadienne concernant St Pierre et Miquelon' (1992) 38 AFDI, 480-500.

11 While the arbitral tribunal held that its jurisdiction included the delimitation of the maritime boundary of the continental shelf beyond 200 nautical miles (217), it did not exercise this jurisdiction in this case, noting that 'the single maritime boundary which the Tribunal has fixed is such that, between Barbados and Trinidad and Tobago, there is no single maritime boundary beyond 200 nautical miles' (368), PCA, *Barbados v. Trinidad and Tobago* (11 April 2006) Award, case 2004-02. For a commentary, see Julien Cazala, 'Retour sur les méthodes de délimitation juridictionnelle d'espaces maritimes mises en œuvre dans quelques affaires récentes' (2008) 54 AFDI, 411-427.

12 The court had held that 'the line can in no case be interpreted as extending more than 200 nautical miles from the baselines from which the breadth of the territorial sea is measured; any claim to rights over the continental shelf beyond 200 miles [must] be in accordance with Article 76 of UNCLOS and considered by the Commission on the Limits of the Continental Shelf established under that treaty', ICJ, *Territorial and maritime dispute between Nicaragua and Honduras in the Caribbean Sea (Nicaragua/Honduras)* (Judgment of the 8 October 2007) 319. For a commentary, see Yoshifumi Tanaka, 'Reflections on Maritime Delimitation in the Nicaragua/Honduras Case' (2008) 68, *Zeitschrift fur Auslandisches Offentliches Recht und Volkerrecht*, 903-937.

13 ITLOS, *Dispute relating to the delimitation of the maritime boundary between Bangladesh and Myanmar in the Bay of Bengal (Bangladesh/Myanmar)* (Judgment of the 14 March 2012) n 16, 363. For a commentary, see Abdullah Al Faruque, 'Judgment in Maritime Boundary Dispute between Bangladesh and Myanmar: Significance and Implications under International Law' (2012) 18 Asian Yearbook of International Law, 65-87; Marcin Kaldunski, 'A Commentary on Maritime Boundary Arbitration between Bangladesh and India Concerning the Bay of Bengal' (2015) 28 Leiden Journal of International Law 4, 799-848.

14 ICJ, *Maritime delimitation in the Indian Ocean (Somalia/Kenya)* (Judgment of the 12 October 2021, Merits) 197.

15 See, for example, the separate opinions of Judges Donoghue and Robinson.

this criterion again in its judgment of 28 April 2023 in the dispute relating to the maritime boundary between Mauritius and the Maldives in the Indian Ocean, but this time refusing to accept Mauritius's request for the delimitation of the extended continental shelf because of 'significant uncertainty'[16] as to whether the portion claimed by Mauritius constitutes 'the basis of the natural prolongation of Mauritius to the critical point of the foot of the slope'.[17]

These cases indicate how 'significant uncertainty' has been used with the purpose of assessing if a Part XV tribunal is able to rule on the delimitation of an extended continental shelf before the Commission has made an assessment of the parties' claims (1). This raises challenges concerning the allocation of competence between tribunals and the CLCS (2).

2. The purpose of the "significant uncertainty" criterion

The jurisdictional competence of Part XV tribunals to delimit continental shelves beyond 200 nautical miles was established gradually over time, relying on the wording of UNCLOS. Later, the criterion of 'certainty' of a claim would be used by these tribunals to make final settlements in certain disputes.

2.1 Gradual recognition of the jurisdiction of Part XV tribunals to delimit the continental shelf

In the first cases to raise the issue of the delimitation of a continental shelf beyond 200 nm, tribunals did not consider they had jurisdictional competence. The major case was the 1992 Canada–France Maritime Boundary case concerning Saint Pierre and Miquelon.[18] The arbitral tribunal considered it could not proceed on the delimitation of the continental shelves of the parties beyond 200 nm on the basis that such a decision would affect the rights of a third party not present in the proceedings: 'The Tribunal is not competent to delimit the rights of a party who is not present before it'.[19] Here, the third party was the international community, represented by the institutions responsible for administering and protecting the Area, which had been declared a common heritage of

16 ITLOS, *Delimitation of the maritime boundary between Mauritius and the Maldives in the Indian Ocean (Mauritius/Maldives)* (Judgment of the 28 April 2023) n 28, 449.

17 ibid.

18 Arbitral Award, *Delimitation of maritime Areas between Canada and France* (n 10) 82.

19 ibid 79. Unofficial translation from the French *'Le Tribunal n'est pas compétent pour procéder à une délimitation touchant aux droits d'une partie qui n'est pas présente devant lui'*.

mankind.[20] This position was in line with the jurisprudence of the 1954 ICJ case that held that it had no jurisdiction to rule on the return of gold seized by the Nazis.[21]

In the 2012 dispute concerning the maritime boundary of Bangladesh and Myanmar in the Bay of Bengal, this issue of the Area and the rights of third parties was raised again before ITLOS in reference to the right of States such as India.[22] Bangladesh argued that the potential overlap with the claims or rights of third parties did not deprive the Tribunal of its jurisdiction to delimit the maritime boundary since third parties would not be bound by the Tribunal's judgment and their rights would be unaffected by it as provided in Article 33§2 of the Statute.[23]

In an earlier maritime dispute between Nicaragua and Honduras in the Caribbean Sea in 2007, the ICJ refused to extend the delimitation line beyond 200 nm,[24] referring to the CLCS as being the competent organ on the matter.[25] Yet in the same period (in 2006), an arbitral tribunal took a diametrically opposed position in a dispute between Barbados and Trinidad and Tobago, considering that it held the jurisdiction to delimit the maritime boundary of the continental shelf beyond 200 nm.[26] However, in the end the Tribunal refused to proceed to this delimitation for the simple factual reason that 'there is no single maritime boundary beyond 200 nautical miles'.[27]

The 2006 *Barbados v. Trinidad and Tobago* case thus set a precedent of establishing a tribunal's jurisdiction, although its refusal to proceed meant it stayed under the radar in international case law.

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20 Arbitral Award, *Delimitation of maritime Areas between Canada and France* (n 10) 78: 'Any decision by which the Tribunal recognizes the Parties' rights over the Continental Shelf beyond 200 nautical miles or rejects such rights would constitute a decision involving delimitation not 'between the parties' but between each of them and the international community, represented by the organs responsible for the administration and protection of the international seabed area which has been declared the common heritage of mankind'.

21 ICJ, *Monetary Gold taken in Rome in 1943* (n 10).

22 ITLOS, *Bay of Bengal* (n 13) 344: 'At the same time Myanmar submits that '[e]ven if the Tribunal were to decide that there could be a single maritime boundary beyond 200 [nm] (quod non), the Tribunal would still not have jurisdiction to determine this line because any judicial pronouncement on these issues might prejudice the rights of third parties and also those relating to the international seabed area'.

23 ITLOS, *Bay of Bengal* (n 13) 352 and ITLOS Statute, article 33.2: 'The decision shall have no binding force except between the parties in respect of that particular dispute'.

24 The court had held that 'in no case may the line be interpreted as extending more than 200 nautical miles from the baselines from which the breadth of the territorial sea is measured; any claim of continental shelf rights beyond 200 miles must be in accordance with Article 76 of UNCLOS and reviewed by the Commission on the Limits of the Continental Shelf established thereunder'. ICJ, *Territorial and maritime dispute between Nicaragua and Honduras in the Caribbean Sea* (n 12) 319.

25 ibid.

26 PCA, *Barbados v. Trinidad and Tobago* (n 11) 217.

27 ibid 368.

The 2012 *Bay of Bengal* case would prove to be the turning point. Following Bangladesh's argument,[28] ITLOS established its jurisdiction to delimit the continental shelf beyond 200 nm,[29] relying on the unicity of the legal regime of the continental shelf. The formulation of UNCLOS Articles 76, 77 and 83 makes no distinction between the continental shelf within or beyond 200 nm: the coastal State exercises the exclusive sovereign rights over the entirety of the continental shelf. Nor do the rules governing delimitation make any such distinction, hence: 'there is in law only a single 'continental shelf' rather than an inner continental shelf and a separate extended or outer continental shelf'.[30]

This position was confirmed by the arbitral tribunal in the 2014 *Bay of Bengal* case,[31] and by the ITLOS special chamber in the 2017 *Ghana v. Côte d'Ivoire* case[32] and the 2023 *Mauritius v. Maldives* case, which considered that the jurisdiction 'necessarily covers the continental shelf in its entirety, whether that be within or beyond 200 nm'.[33] In 2021, the ICJ also accepted to proceed to the delimitation of the continental shelves of Somalia and Kenya beyond 200 nm; however, the judgment did

28 ITLOS, *Bay of Bengal* (n 13) 350: 'Bangladesh is of the view that the Tribunal is expressly empowered by the Convention to adjudicate disputes between States arising under articles 76 and 83, in regard to the delimitation of the continental shelf. As the Convention draws no distinction in this regard between jurisdiction over the inner part of the continental shelf, i.e., that part within 200 nm, and the part beyond that distance, according to Bangladesh, delimitation of the entire continental shelf is covered by article 83, and the Tribunal plainly has jurisdiction to carry out delimitation beyond 200 nm'.

29 ibid 363.

30 PCA, *Barbados v. Trinidad and Tobago* (n 11) 213.

31 PCA, *Bay of Bengal* (n 13) 77: 'The Tribunal emphasizes that article 76 of the Convention embodies the concept of a single continental shelf. This is confirmed by article 77, paragraphs 1 and 2 of the Convention, according to which a coastal State exercises exclusive sovereign rights over the continental shelf in its entirety. No distinction is made in these provisions between the continental shelf within 200 nm and the shelf beyond that limit. Article 83 of the Convention, concerning the delimitation of the continental shelf between States with opposite or adjacent coasts, likewise makes no such distinction'.

32 ITLOS, *Dispute concerning delimitation of the maritime boundary between Ghana and Côte d'Ivoire in the Atlantic Ocean (Ghana/Côte d'Ivoire)* (Judgment of the 23 September 2017) case n 23, 491; Millicent McCreath and Zoe Scanlon, 'For a commentary, see The Dispute Concerning the Delimitation of the Maritime Boundary Between Ghana and Côte d'Ivoire: Implications for the Law of the Sea' (2019) 50 Ocean Development & International Law, 1-22; Andrés Sarmiento Lamus and Rodrigo González Quintero, 'International Tribunal for the Law of the Sea. Request for Provisional Measures in the Dispute concerning Delimitation of the Maritime Boundary between Ghana and Côte d'Ivoire in the Atlantic Ocean (Ghana/Côte d'Ivoire)' (2016) 31 International journal of marine and coastal law, 160-167; Yoshifumi Tanaka 'Unilateral Exploration and Exploitation of Natural Resources in Disputed Areas: A Note on the Ghana/Côte d'Ivoire Order of 25 April 2015 before the Special Chamber of ITLOS' (2015) 46 OceanDev&IntlL, 315–330; Andrés Sarmiento Lamus and Rodrigo González Quintero 'Request for Provisional Measures in the Dispute concerning Delimitation of the Maritime Boundary between Ghana and Côte d'Ivoire in the Atlantic Ocean (Ghana/Côte d'Ivoire)' (2016) 31 The International Journal of Marine and Coastal Law, 160–167; Maria Gavouneli, 'Delimiting Delimitation: Lessons Learned from the ITLOS Chamber Judgment on the Dispute concerning Delimitation of the Maritime Boundary between Ghana and Côte d'Ivoire in the Atlantic Ocean' (2017) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3054575> accessed 6 May 2025; Nicholas A. Ioannides, 'A Commentary on the Dispute Concerning Delimitation of the Maritime Boundary between Ghana and Côte d'Ivoire in the Atlantic Ocean (Ghana/Côte d'Ivoire)' (2017) Maritime Safety and Security Law Journal, 48–61.

33 ITLOS, *Mauritius/Maldives* (n 16) 338.

not go back over the issue of jurisdiction.[34]

These cases show the progressive construction of a consensus between ITLOS, arbitral tribunals and the ICJ to assert their jurisdiction to delimit extended continental shelves, if so asked by the parties to the dispute. The first step was for the tribunals to establish their jurisdiction; only after this was determined could they consider whether it was appropriate to exercise said jurisdiction.[35]

2.2 Jurisdiction based on the wording of UNCLOS

In UNCLOS, the main role of the CLCS is defined as follows:

> To consider the data and other material submitted by coastal States concerning the outer limits of the continental shelf in areas where those limits extend beyond 200 nautical miles, and to make recommendations in accordance with article 76 and the Statement of Understanding adopted on 29 August 1980 by the Third United Nations Conference on the Law of the Sea.[36]

Therefore, in theory, the lines of authority are clear: the delineation process is conducted by the Commission, and (if there is a dispute) the delimitation process by Part XV tribunals. While the latter enables the delimitation of the maritime space between States, the former is limited to setting the outer limit of a State's shelf (delineation). In other words, delineation is the exclusive competence of the Commission. However, both processes (delineation and delimitation of continental shelves beyond 200 nm) share the same prerequisite: is the coastal State entitled to an extension under the criteria set forth in Article 76 of UNCLOS?

To establish this, it is necessary to interpret and apply this article, especially paragraphs 4 to 6:

> 4 (a) For the purposes of this Convention, the coastal State shall establish the outer edge of the continental margin wherever the margin extends beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is

34 ICJ, *Maritime delimitation in the Indian Ocean (Somalia/Kenya)* (n 14) 178. For a commentary, see D. Müller, 'Délimitation maritime dans l'océan Indien (Somalie/Kenya). L'arrêt sur le fond rendu le 12 octobre 2021' (2021) 67 Annuaire français de droit international, 305-329 ; Jean-Grégoire Mahinga, 'La délimitation de la frontière maritime entre la Somalie et le Kenya devant la Cour internationale de Justice (Arrêt du 12 octobre 2021)' (2022) 149, Journal du droit international, 860-888.

35 ITLOS, *Bay of Bengal* (n 13) 363: 'For the foregoing reasons, the Tribunal finds that it has jurisdiction to delimit the continental shelf in its entirety. The Tribunal will now consider whether, in the circumstances of this case, it is appropriate to exercise that jurisdiction'.

36 UNCLOS annex II, art 3.1a.

measured, by either:

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

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

(b) In the absence of evidence to the contrary, the foot of the continental slope shall be determined as the point of maximum change in the gradient at its base.

5. The fixed points comprising the line of the outer limits of the continental shelf on the seabed, drawn in accordance with paragraph 4 (a)(i) and (ii), either shall not exceed 350 nautical miles from the baselines from which the breadth of the territorial sea is measured or shall not exceed 100 nautical miles from the 2,500 metre isobath, which is a line connecting the depth of 2,500 metres.

6. Notwithstanding the provisions of paragraph 5, on submarine ridges, the outer limit of the continental shelf shall not exceed 350 nautical miles from the baselines from which the breadth of the territorial sea is measured. This paragraph does not apply to submarine elevations that are natural.

UNCLOS creates a specific institution (the CLCS) and a specific procedure to be followed by coastal States that wish to extend their continental shelf beyond 200 nm. The procedure is binding; States that are parties to the Convention do not have the liberty to delineate the outer limits of their continental shelf beyond 200 nm without submitting their claim to the Commission for an assessment. When a coastal State intends to establish, in accordance with Article 76, the outer limits of its continental shelf beyond 200 nm, it must submit the details of such limits to the Commission along with supporting scientific and technical data within 10 years of the entry into force of the Convention for that State.[37]

However, this does not mean that the convention grants the Commission the exclusive jurisdiction to interpret Article 76. In particular, Part XV on the settlement of disputes does not limit the

37 UNCLOS (n 1) annex II, art 4.

competence of the judicial or arbitral bodies. Indeed, Article 288§1 states that a Part XV tribunal 'shall have jurisdiction over any dispute concerning the interpretation or application of this Convention which is submitted to it in accordance with this Part', including the disputes over the interpretation of Article 76. Moreover, UNCLOS Art. 9 of Annex II states that the actions of the Commission shall not prejudice matters relating to the delimitation of boundaries between States.

Thus, both Part XV tribunals and the Commission are competent to interpret Article 76, and a connection between the two is crucial. As pointed out by L. N. Nguyen, ITLOS makes a distinction between the notions of *entitlement* to the continental shelf beyond 200 nm and the outer limits of the continental shelf.[38] Whereas a coastal State has to follow the procedures set forth in Article 76(8) in order to extend its continental shelf beyond 200 nm, entitlement to the continental shelf does not depend on any procedural requirements.[39]

2.3 The notion of "certainty" to determine if a tribunal should exercise its competence

If we can agree on the potential jurisdiction of Part XV tribunals to consider the delimitation of the extended continental shelf before the recommendations by the Commission, the next question is if a tribunal *should* proceed. In the *Bay of Bengal* case, ITLOS devoted only four paragraphs to determine that it had jurisdiction, and thirty to discuss whether it should exercise this jurisdiction and proceed to delimit the continental shelf beyond 200 nm.[40]

Looking at the relevant cases, the jurisprudence makes references to two main elements considered decisive by the courts: the level of certainty of the existence of a continental margin in the disputed area, and the fact that this existence is not contested between the parties.

ITLOS relied mainly on the first criteria in the *Bay of Bengal* case, the *Mauritius v. Maldives* case, and the *Ghana v. Côte d'Ivoire* case. In the *Bay of Bengal* case, ITLOS referred to the fact that the parties agreed on the fact that the continental shelves would extend beyond 200 nm,[41] but disagreed on what constitutes a continental margin.[42] Indeed, Bangladesh did not deny that there is a continental

38 Lan Ngoc Nguyen, 'UNCLOS Tribunals and the Development of the Outer Continental Shelf Regime' (2018) 67 International and Comparative Law Quarterly, 433; see also Myron H Nordquist, *The regulation of continental shelf development: rethinking international standards (Martinus Nijhoff Publishers 2013).*

39 ibid.

40 Oystein Jensen, 'Maritime Boundary Delimitation beyond 200 Nautical Miles: The International Judiciary and the Commission on the Limits of the Continental Shelf' (2015) 84 Nordic Journal of International Law 4, 586.

41 ITLOS, *Bay of Bengal* (n 13) 400.

42 ibid 441–442.

margin off Myanmar's coast, but argued that this margin has no natural prolongation beyond 50 nm off that coast.[43] In the *Mauritius v. Maldives* case, the parties strongly disagreed on Mauritius's entitlement to a continental shelf beyond 200 nm in the northern Chagos Archipelago region.[44] In both cases, ITLOS considered the notion of the level of certainty: 'The Tribunal would have been hesitant to proceed with the delimitation of the area beyond 200 nm had it concluded that there was significant uncertainty as to the existence of a continental margin in the area in question'.[45] In other words, since 'not every coast generates entitlements to a continental shelf extending beyond 200 nm',[46] ITLOS decided to exercise its competence to proceed to a delimitation only when it is convinced that 'such a continental shelf exists',[47] and to refrain from doing so when there is 'significant uncertainty'.

In the *Bay of Bengal* case, ITLOS noted that the area presents a unique situation acknowledged during the third UNCLOS conference negotiations:[48] practically the entire sea floor of the bay is covered by a thick layer of sediment (14–22-km deep) that originated in the Himalayas and the Tibetan Plateau.[49] Therefore, the Tribunal was confident that both Bangladesh and Myanmar had entitlements to a continental shelf extending beyond 200 nm,[50] reducing the uncertainty to a minimum. In the same way, in the *Ghana v. Côte d'Ivoire* case, the ITLOS special chamber also relied on certainty criteria, explaining that it 'has no doubt that a continental shelf beyond 200 nm exists for Côte d'Ivoire since its geological situation is identical to that of Ghana, for which affirmative recommendations of the CLCS exist'.[51]

In contrast, in the *Mauritius v. Maldives* case, Mauritius asked the special chamber to proceed to the delimitation of the parties' continental shelves beyond 200 nm in the northern Chagos Archipelago region and ITLOS refused to do so, based on the 'significant uncertainty' criterion. In this case, the entitlement of Mauritius to a continental shelf beyond 200 nm was disputed by the Maldives. To

43 ibid.

44 ITLOS, *Mauritius/Maldives* (n 16) 384. The entitlement of the Maldives to the continental shelf beyond 200 nm was, however, uncontested between the parties.

45 ITLOS, *Bay of Bengal* (n 13) 443.

46 ITLOS, *Bay of Bengal* (n 13) 439.

47 ITLOS, *Ghana/Côte d'Ivoire* (n 32) 491.

48 The Bay of Bengal is cited in the Final Act of the Third United Nations Conference on the Law of the Sea, Annex II, Statement of Understanding Concerning a Specific Method to be Used in Establishing the Outer Edge of the Continental Margin.

49 ITLOS, *Bay of Bengal* (n 13) 444. The tribunal refers to Joseph R. Curray, 'The Bengal Depositional System: The Bengal Basin and the Bay of Bengal', 23 June 2010; Joseph R. Curray, 'Comments on the Myanmar Counter-Memorial, 1 December 2010', of 8 March 2011; and Hermann Kudrass, 'Elements of Geological Continuity and Discontinuity in the Bay of Bengal: From the Coast to the Deep Sea', 8 March 2011.

50 ITLOS, *Bay of Bengal* (n 13) 449.

51 ITLOS, *Ghana/Côte d'Ivoire* (n 32) 491.

be entitled to an extension, a coastal State must demonstrate a natural prolongation of its submerged land territory to the outer edge of its continental margin beyond 200 nm.[52] Mauritius put forward three different proposals to prove this natural prolongation, however, the first was dismissed by the Tribunal: 'As the first route presented by Mauritius passes within the continental shelf of the Maldives within 200 nm that is uncontested by Mauritius, it cannot form a basis for Mauritius's natural prolongation to the critical foot of slope point and thus for its entitlement to the continental shelf beyond 200 nm.'[53]

The second and third routes were not documented enough to prove without "significant uncertainty" that they could form a basis for a natural prolongation to the critical foot of slope point and thus for its entitlement to the continental shelf beyond 200 nm.[54] Therefore, '[g]iven the significant uncertainty, the Special Chamber is not in a position to determine the entitlement of Mauritius to the continental shelf beyond 200 nm in the Northern Chagos Archipelago Region.'[55]

The ICJ has never used nor referred to ITLOS's 'significant uncertainty' criterion, so it cannot be argued that it has become a generally accepted notion to determine when a Part XV tribunal can settle the delimitation of continental shelves beyond 200 nm. However, in a more indirect way, the ICJ has also required a minimum level of proof to support a claim in order to proceed to a requested delimitation. In the 2012 ICJ case concerning a maritime dispute between Nicaragua and Colombia, the Court refused to delimit the continental shelf beyond 200 nm because Nicaragua 'ha[d] not established that it has a continental margin that extends far enough to overlap with Colombia's 200-nautical-mile entitlement to the continental shelf, measured from Colombia's mainland coast'.[56] Without using the same vocabulary,[57] in practice the Court required a minimum level of evidence of the existence of this entitlement to accept proceeding to a delimitation.

In contrast, in the 2017 case *Somalia v. Kenya*, the ICJ saw no objection to extending the maritime

52 ITLOS, *Mauritius/Maldives* (n 16) 444.

53 ibid.

54 ibid 449.

55 ibid 450.

56 ICJ, *Territorial and maritime dispute (Nicaragua v. Colombia)* (Judgment of the 19 November 2012), ICJ Reports 2012 (II), p. 669, 129. For a commentary or a contextualisation, see Holly Leung, 'The Extended Continental Shelf in Nicaragua v Colombia: Identifying a Customary Rule Based on CLCS Submissions?' (2024) 55, Ocean Development & International Law 1-2, 206-233; Ekaterina Antsygina and Bernardo Perez-Salazar, 'Sovereign rights on the extended continental shelf: The case of the Nicaraguan rise in the Western Caribbean' (2020) The International Journal of Marine and Coastal Law, 772-800.

57 The ICJ could have referred to the *Bay of Bengal* case and the 'significant uncertainty' criterion since the judgment in the *Bay of Bengal* case was issued in March 2012 and that of Nicaragua v. Colombia in November 2012.

boundary beyond 200 nm 'until it reaches the outer limits of the continental shelves of the Parties, which are to be delimited by Somalia and Kenya on the basis of the recommendations made by the Commission',[58] without the parties having to scientifically prove to the Court without "significant uncertainty" the existence of sufficient grounds for the extension of each State's shelf. Here, the Court expressly relied on the second criteria: the lack of contestation of the other party's entitlement to a continental shelf beyond 200 nm and the fact that both parties asked the Court to delimit the maritime boundary between them in the Indian Ocean up to the outer limit of the continental shelf.[59] The ICJ did not assess the scientific arguments used by the parties to justify their claims.

These two cases could be seen as inconsistent in the jurisprudence of the ICJ, or at least as showing hesitation around a new issue that had not yet stabilized. However, the divergence in the two decisions could also be explained by the fact that in *Somalia v. Kenya* both parties had filed a submission to the CLCS, whereas in *Nicaragua v. Colombia*, prior to the judgment of the Court, Nicaragua had submitted "preliminary information" to the CLCS, but had not filed a submission. Had Nicaragua filed a submission to CLCS, it would have documented its claim. This leads to the persuasive hypothesis that by filing a submission to the CLCS prior to the Court decision, a State fulfils its obligation to establish the reality of its claim. Once the submission is filed, the ICJ does not require additional scientific data. In fact, in neither case did the court go into depth in the scientific data supporting the claims. This marks a difference between the ICJ and ITLOS, with the latter demanding a higher standard of proof.

Even going back to the 1992 Saint Pierre and Miquelon case between France and Canada, the arbitral tribunal put forward the need to proceed with caution when there is uncertainty: 'a tribunal cannot reach a decision on the pure assumption that such rights will in fact exist'.[60]

2.4 The ultimate objective of the 'certainty' criterion: achieve the full settlement of the dispute

By accepting to decide on delimitation in cases in which no 'significant uncertainty' exists, Part XV tribunals could settle a dispute once and for all. The tribunals' jurisdiction on this would also come into play in the case of the existence of a dispute between States, as the CLCS is prevented from examining a submission without the express consent of all parties to the dispute: '[I]n cases where a land or maritime dispute exists, the Commission shall not consider and qualify a submission made

58 ICJ, *Somalia/Kenya* (n 14) 196.

59 ibid 194.

60 Arbitral Award, *Delimitation of maritime spaces between Canada and the French Republic* (n 10) 81.

by any of the States concerned in the dispute'.[61]

In the *Mauritius v. Maldives* and *Bay of Bengal* cases, for example, the CLCS was not able to proceed to the examination of the submissions due to the existence of a maritime delimitation dispute between States. As pointed out by ITLOS, this would mean that if the Tribunal declined to delimit the continental shelf beyond 200 nm, the question concerning the outer limit of the continental shelf of each party would remain unresolved.[62] In the *Bay of Bengal* case, ITLOS explained that this would be problematic:

> It would be contrary to the object and purpose of the Convention not to resolve the existing impasse. Inaction in the present case, by the Commission and the Tribunal, two organs created by the Convention to ensure the effective implementation of its provisions, would leave the Parties in a position where they may be unable to benefit fully from their rights over the continental shelf.[63]

In the *Mauritius v. Maldives* case, while the ITLOS special chamber refused to proceed to the delimitation of the continental shelf beyond 200 nm, it noted that it was aware that the CLCS was currently not able to make recommendations to the parties and that this constituted an 'impasse' that may prevent the parties from receiving recommendations from the Commission and establish definitive and binding outer limits of the continental shelf.[64] This led ITLOS to suggest that the parties give their consent to the CLCS to allow it to consider each other's submissions,[65] as the CLCS rules of procedure indicate that the Commission may consider one or more submissions concerning a disputed area 'with prior consent given by all States that are parties to such a dispute'.[66] Such consent was ultimately granted in the *Somalia v. Kenya* case, in which each party initially filed an objection to consideration by the Commission of the other's submission, but subsequently withdrew these objections.[67]

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61 CLCS, Rules of Procedure of the Commission on the Limits of the Continental Shelf, 17 April 2008, CLCS/40/Rev.1, annex 1, 5a.

62 ITLOS, *Bay of Bengal* (n 13) 390.

63 ibid., 392. See also *Bay of Bengal maritime boundary arbitral (Bangladesh/ India)* (Award of the 7 July 2014) no. 2010-16, 82: '[I]n the view of the Tribunal, the consequence of these decisions by the CLCS is such that, if the Tribunal were to decline to delimit the continental shelf beyond 200 nm, the outer limits of the continental shelf of each of the Parties would remain unresolved, unless the Parties were able to reach an agreement. In light of the many previous rounds of unsuccessful negotiations between them, the Tribunal does not see that such an agreement is likely. Accordingly, far from enabling action by the CLCS, inaction by this Tribunal would in practice leave the Parties in a position in which they would likely be unable to benefit fully from their rights over the continental shelf. The Tribunal does not consider that such an outcome would be consistent with the object and purpose of the Convention'.

64 ITLOS, *Mauritius/ Maldives* (n 16) 455.

65 ibid 456.

66 CLCS, Rules of Procedure (n 61) 5a.

67 ICJ, *Somalia/Kenya* (n 14) 34 and 188.

3. The challenges raised by the use of the "significant uncertainty" criterion

To assess the level of certainty of a claim to a continental shelf beyond 200 nm, the parties are required to provide scientific evidence – or an executive summary – on which their claims are based. Then the competent Part XV tribunal must assess this evidence, *prima facie*. Two main problems potentially arise from this: the risk of weakening the Commission, and the challenge for judges or arbitrators to deal with very technical data.

3.1 The risk of weakening the CLCS

ITLOS argues that the use of the 'significant uncertainty' criterion prevents diverging interpretations of Art. 76 by Part XV tribunals and the Commission and ensures that the rights exist before delimiting boundaries. This criterion requires that the States parties to the dispute bring sufficient evidence before the Tribunal to support the existence of their claim to a continental shelf beyond 200 nm. However, as in the *Bay of Bengal* case, even if there is no 'significant uncertainty', the possibility of the CLCS later adopting a divergent position on the claim cannot be ruled out.[68] As a result, some States (such as Myanmar), as well as some scholars, have argued that ITLOS and other UNCLOS tribunals have to wait for the Commission to issue its recommendations before delimitation, relying on two main arguments:[69,70] that delimiting the continental shelf 'presupposes the existence of a shelf to delimit';[71] and that protecting the competence of the CLCS safeguards the entire structure of the Convention.

As for the first argument, as pointed out by O. Jensen, the Convention does not specify which procedure has to be done first: delineation or delimitation.[72] Whereas UNCLOS Annex II requires a coastal State to make a submission to the Commission 'as soon as possible but in any case within 10 years' of the entry into force of the convention for the State,[73] the Convention does not give any specific time frame for the delimitation of a continental shelf.[74] These provisions cannot be interpreted

68 ITLOS, *Mauritius/Maldives* (n 16) 433.

69 Scholars who have supported this position include: Bjørn Kunoy, 'The Admissibility of a Plea to an International Adjudicative Forum to Delimit the Outer Continental Shelf Prior to the Adoption of Final Recommendations by the Commission on the Limits of the Continental Shelf' (2010), *International Journal of Marine and Coastal Law*, 237; Lan Ngoc Nguyen (n 38) 441.

70 ITLOS, *Bay of Bengal* case (n 13) 345.

71 Oystein Jensen (n 40).

72 ibid.

73 UNCLOS (n 1) annex II, art 4.

74 Art 83.2 simply states that if they fail to reach agreement within a 'reasonable period of time', the states concerned shall have recourse to the procedures set out in pt XV.

as imposing delineation before States can delimit the continental shelf.

In the *Bay of Bengal* case, Myanmar argued that as long as the outer limit of the continental shelf has not been established on the basis of the recommendations of the Commission, 'the Tribunal, as a court of law, cannot determine the line of delimitation on a hypothetical basis without knowing what the outer limits are".[75] It considered that the recommendations of the CLCS are a "necessary precondition'[76] to any determination by a Part XV tribunal of a maritime border beyond 200 nm.

In its argument, Myanmar relied on the 2007 ICJ judgment in the case concerning the maritime dispute between Nicaragua and Honduras in the Caribbean Sea (*Nicaragua v. Honduras*). In this judgment, the ICJ explained that 'in no case' may the delimitation line be interpreted as extending more than 200 nm from the baseline because 'any claim of continental shelf rights beyond 200 miles must be in accordance with Article 76 of UNCLOS and reviewed by the Commission on the Limits of the Continental Shelf established thereunder'.[77]

This very short paragraph (the judgment includes no other mention of the Commission or the extension of a continental shelf beyond 200 nm) was interpreted by Myanmar as proof that the ICJ declined to delimit the continental shelf beyond 200 nm because the CLCS had not yet made recommendations.[78] While this interpretation may be broad, this short paragraph undoubtably shows that for the Court at that time, the delimitation of a continental shelf beyond 200 nm was out of the question. Myanmar thus suggested to defer the judgment on this point until the recommendations of the Commission were issued and the parties had taken a position on them.[79]

Today, this argument is no longer seriously considered, either by the ICJ or by ITLOS or any arbitral tribunal. These bodies now consider that the lack of delineation of the outer limit of the continental shelf is not in and of itself an impediment to its delimitation between two states with adjacent coasts.[80] Nevertheless, it should be pointed out that in *Somalia v. Kenya*, the ICJ noted that both

75 ITLOS, *Bay of Bengal* (n 13) 345.

76 ibid.

77 ICJ, *Nicaragua/ Honduras* (n 12) 319.

78 ibid.

79 ITLOS, *Bay of Bengal*, 349 (n 13). See also Oystein Jensen, 'Maritime Boundary Delimitation beyond 200 Nautical Miles' (n 40).

80 ICJ, *Somalia/Kenya* (n 14) 189 and ITLOS, *Bay of Bengal* (n 13) 379; ICJ, *Nicaragua/Colombia* (n 56) 128 argument of Nicaragua.

parties had filed submissions to the Commission,[81] and that they therefore fulfilled their obligations under Article 76§8 of the Convention.[82] One can thus wonder what the Court would have decided if one or both States had failed to file a submission to the CLCS.

The question was raised explicitly before ITLOS in the *Bay of Bengal* case and in the *Mauritius v. Maldives* case, because neither Bangladesh and Myanmar in the former, nor Mauritius in the latter, had filed submissions with the CLCS before the proceedings (they did so during the proceedings). This led the Maldives to argue that Mauritius's claim was inadmissible. The special chamber responded that the filing of a submission with the CLCS prior to the proceedings was not a procedural requirement.[83] Nonetheless, in practice, such a submission contains the scientific data supporting the State's claim to a continental shelf beyond 200 nm. The 2012 maritime dispute between Nicaragua and Colombia shows that without the support of the data contained in the submission, it is difficult – if not impossible – to convince a tribunal of the certainty of the claim.[84]

So while in theory, neither the prior recommendations by the Commission nor the filing of a submission are procedural requirements for a Part XV tribunal to delimit a continental shelf, in practice, tribunals require the State to establish that it has a continental margin that extends beyond 200 nm. If the State has not compiled and provided the data as evidence of this, its entitlement to a continental shelf beyond 200 nm would not be supported.

The other argument put forward that tribunals should wait for the Commission to issue its recommendations before delimitation is based on the idea that this safeguards the convention itself. In the *Bay of Bengal* case, Myanmar argued that: 'to adjudicate with respect to rights the extent of which is unknown, would not only put this Tribunal at odds with other treaty bodies, but with the entire structure of the Convention and the system of international ocean governance'.[85]

By delimiting continental shelves beyond 200 nm, does the Tribunal step on the Commission's toes? In the *Bay of Bengal* case, ITLOS argued it did not, and that the exercise of its jurisdiction cannot be seen as an 'encroachment on the functions of the Commission'.[86] To the Tribunal, the

81 Kenya made its submission to the CLCS on 6 May 2009, while Somalia made its submission on 21 July 2014 and provided an amended Executive Summary on 16 July 2015. While they previously objected to the consideration by the Commission of each other's submissions, these objections were subsequently withdrawn.

82 ICJ, *Somalia/Kenya* (n 14) 179.

83 ITLOS, *Mauritius/Maldives* (n 16) 377.

84 ICJ, *Nicaragua/Colombia* (n 56) 129.

85 ibid.

86 ITLOS, *Bay of Bengal* (n 13) 393.

two processes are independent from one another, thus the settlement of disputes between States regarding such delimitation cannot be seen as precluding the examination by the Commission of the submissions made to it.[87] The ICJ adopted a similar position in the *Somalia v. Kenya* case. These Part XV tribunals found they could determine a 'provisional' continental shelf boundary, which may then be adjusted according to the recommendations adopted by the Commission.

In theory, there should be no conflict or inconsistency between the decisions taken by Part XV tribunals on the one hand and the Commission on the other: the delimitation line decided by a Part XV tribunal will end, in any case, at the outer limit of the continental shelf. Therefore, if the Commission issues recommendations denying the State a claim beyond 200 nm, the delimitation line will end at 200 nm: end of story. However, this argument can only stand if the Part XV tribunal delimits 'potential' continental shelves beyond 200 nm, without taking a position on the claim to such a continental shelf. If a tribunal had previously considered that there was no significant uncertainty that a claim was well founded, and if the Commission later refused to recognize this claim, legal issues could arise. For example, in the *Bay of Bengal* case, ITLOS expressly concluded that both Bangladesh and Myanmar had entitlement to a continental shelf beyond 200 nm before the Commission issued its recommendations.[88] The consequences of such a divergence were raised in *Mauritius v. Maldives*: according to Mauritius, in the 'unlikely event the CLCS were to differ in its recommendations',[89] the parties may, under Article 8 of Annex II to the Convention, make revised or new submissions to the Commission to include the judgment and the parties' obligations under Article 296 of the Convention to comply with it.[90] In Mauritius's view, since ITLOS's judgments are binding, this would 'preclude the Parties from accepting recommendations from the CLCS that conflicted with it'.[91] The present authors do not subscribe to this reading of ITLOS's judgments since they would merely be a first assessment without prejudice of to the Commission's formal decision based on a full assessment of the situation. However, such a conflict could certainly weaken the authority of the Commission and the acceptability of the recommendations it issues.

3.2 The challenge of assessing complex scientific data

Determining 'significant uncertainty' requires a certain level of assessment of scientific data by

87 ibid.

88 ibid 449: 'The Tribunal accordingly concludes that both Bangladesh and Myanmar have entitlements to a continental shelf extending beyond 200 nm'.

89 ITLOS, *Mauritius/Maldives* (n 16) 401.

90 ibid.

91 ibid.

Part XV tribunals, which is, in principle, the responsibility of the CLCS. While the latter is better equipped to assess complex scientific evidence, the lack of specialized expertise in comparison to the Commission has not been interpreted as a barrier to the settlement of disputes by the ICJ, ITLOS or arbitral tri*bunals.*[92]

In the *Somalia v. Kenya* case, the ICJ simply referred to scientific data, noting that the entitlement of a State to a continental shelf beyond 200 nm depends on geological and geomorphological criteria;[93] that both Somalia and Kenya supported their claims with scientific evidence in their submissions to the CLCS; and that their claims overlap.[94] In the *Bay of Bengal* case, ITLOS gave more importance to the scientific data in proceeding to a basic assessment. It noted that there is uncontested scientific evidence regarding the unique nature of the Bay of Be*ngal,*[95] *declaring it was 'satisfied' that there is a 'continuous and substantial layer of sedimentary rocks extending from Myanmar's coast to the area beyond 200 nm'.*[96] *It conclud*ed that both Bangladesh and Myanmar have entitlements to a continental shelf beyond 200 nm.[97]

The *Mauritius v. Maldives* case is by far the most interesting concerning the use by ITLOS of scientific data. The Tribunal devoted eight pages to whether the parties have a claim to a continental shelf beyond 200 nm in the area. In doing so, it made an assessment of the scientific data presented by Mauritius and concluded that it was not convincing.[98] To proceed to this assessment, ITLOS even applied the Commission's guidelines. ITLOS also questioned whether it should appoint an expert in the *Mauritius v. Maldives* case, in application of Article 82 of the rules of the Tribunal, but eventually ruled against it.[99]

4. Conclusion: a prima facie assessment

In conclusion, ITLOS (and, in to a lesser extent, the ICJ) conducted *prima facie* assessments of the party's claims, not precluding the final assessment, to be made by the Commission. The process is to be compared with the evaluation of its competence made by an international tribunal when it has to decide whether to adopt provisional measures. This evaluation requires a low level of appreciation of

92 See, for instance, the position of Mauritius in ITLOS, *Mauritius/Maldives* (n 16) 402.

93 ICJ, *Somalia/Kenya* (n 14) 193.

94 ibid 194.

95 ITLOS, *Bay of Bengal* (n 13) 446.

96 ibid.

97 ibid 449.

98 ITLOS, *Mauritius/Maldives* (n 16) 138-145.

99 ITLOS, *Mauritius/Maldives* (n 16) 454.

the tribunal's own competence. There is a long established jurisprudence which clearly emphasizes that the question is not whether there is conclusive proof of jurisdiction but rather whether, on the evidence available, 'jurisdiction is not so *obviously excluded* as to make it extremely unlikely that the merits of the dispute will actually be considered'.[100] In fact, in the *Bluefin Tuna*[101] case, ITLOS found that *prima facie* the Annex VII arbitral tribunal would have jurisdiction to deal with the merits of the cases brought by the applicants, however, the arbitral tribunal concluded that it did not have jurisdiction.[102] This difference cannot be interpreted as a conflict, nor either as confirming or overruling the finding of ITLOS at the provisional measures stage.[103]

In the same way, the *prima facie* assessment arising from the use of the 'significant uncertainty' criterion implies no more than that the applicant has made an arguable case. As in the provisional measures procedures, '[i]t is a low threshold, nothing more than a hypothesis, and is fundamentally different from a definitive holding that it has or does not have jurisdiction over the merits'.[104] Therefore, the first assessment made by the Tribunal of the absence of 'significant uncertainty' is without prejudice of to the Commission's formal decision reached after full argument.

100 Thomas A. Mensah, 'Provisional Measures in the International Tribunal for the Law of the Sea (ITLOS)' (2002) 62 Zeitschrift für ausländisches öffentliches Recht und Völkerrecht, Heidelberg Journal of International Law, 50.

101 ITLOS, *Southern Bluefin Tuna* (New Zealand/Japan; Australia/Japan) (Order of the 27 August 1999, Provisional Measures) 62.

102 ITLOS, *Southern Bluefin Tuna* (Award on Jurisdiction and Admissibility of the 4 August 2000).

103 Mensah (n 100).

104 Shabtai Rosenne, 'Provisional Measures and prima Facie Revisited' (2002) Festschrift in Honour of judge Oda, 515.

Maritime Safety and Security Law Journal

Current Development

Recent Attacks on Maritime Security in the Red Sea - An Indian Perspective

1. Introduction

The Red Sea, steeped in history and culture, is a crucial maritime artery linking the Indian Ocean with the Mediterranean Sea, facilitating a significant portion of global trade. Approximately 12% of the world's commercial traffic goes through it, making it one of the busiest cargo and oil transit routes in the world,[1] particularly for countries like India that rely heavily on its uninterrupted functioning for energy and commodity imports.

However, escalating security concerns in the area in recent years have put ships, crews, and international trade at risk. A noticeable uptick in piracy, armed robberies, and other types of maritime attacks has led to considerable disturbances and financial losses.

Since mid-October 2023, Ansar Allah, a Yemeni militia organization often referred to as the Houthis, has intensified their assaults on commercial voyagers in the southern Red Sea region. In retaliation to Israel's airstrikes on Gaza, the Iranian-backed militia has targeted ships allegedly en route to Israeli ports launching drones and missiles launched from Yemen, in a move that is sabotaging global trade. These series of assaults on major container vessels have led to the United States and Britain launching retaliatory airstrikes on targets in Yemen.[2]

The ramifications of these attacks extend far beyond the region's coastline, given how much of a lifeline the Red Sea is to international trade. The recent rise in attacks reopens old wounds relating to the area's vulnerability to assaults from piracy attacks, explosives, and attacks on the lucrative oil and gas supply chain. Safeguarding this maritime corridor is not merely a regional necessity but an international imperative.

This short focus critically analyses India's role in response to the attacks on the Red Sea. It aims to identify the basic causes of these attacks and suggest how India can enhance the security of the sea in the region.

2. Identifying the causes of maritime attacks

2.1 Why the Red Sea?

The ongoing crisis in the Red Sea is not a 1-time affair; over the preceding years, the Red Sea has been a witness to several marine security incidents. First, commercial vessels and fishing boats in the area have been the targets of such crimes over the years, and more so recently.

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1 NEXT IAS, 'Red Sea Crisis: Importance of IMEC' (26 February 2024) <www.nextias.com/ca/editorial-analysis/26-02-2024/red-sea-crisis-importance-of-imec> accessed 12 March 2024.

2 Ingrid Fuary-Wagner, Jenny Wiggins, and Les Hewitt, 'Five maps that show why the Red Sea is so important' (31 Jan, 2024) <www.afr.com/world/middle-east/five-maps-that-show-why-the-red-sea-is-so-important-20240115-p5ex9j> accessed 12 March 2024.

Secondly, the presence of carefully planted mines and improvised explosive devices (IEDs) has made certain places along the Red Sea maritime channels far riskier for commercial shipping and trade. The Bab-el-Mandeb Strait is an important chokepoint at the southern end of the Red Sea; in December 2020, an explosion there wrecked a container ship. The incident, which the Houthi rebels claimed as their own, prompted worries about the protection of maritime routes and the possibility of additional interruptions to multinational trade.[3] The Houthis maintain control over the areas surrounding Bab-el-Mandeb Strait in the continuing civil war in Yemen and it has been the site of massive attacks even in the current attacks on ships in 2023 and 2024.[4]

Finally, the Red Sea has been a conduit for several illicit operations, including the smuggling of various kinds, which has exacerbated the security situation in the area. Between 2015 and 2024, more than twelve shipments of weaponry, purportedly bound for Yemen (likely for Houthis) from Iran, were intercepted by the US and its allies.[5]

2.2 Houthi attacks in the Red Sea

On January 1, 2023, the shipping industry revoked the designation of the Indian Ocean High-Risk Area (HRA).[6] This decision marked a significant milestone, as it came after five years of no reported pirate attacks in Somalia's coastal waters, signalling the end of a long-standing maritime threat in the region.[7] But the Houthis in Yemen quickly overturned the decision, nonetheless, with their relentless attacks since November 2023. Between November of last year and March of this year, there were over ninety maritime incidents. These include 57 drone or missile attacks or sightings, as well as 39 incidents involving piracy, hijacking, or suspicious approaches as of March 31, 2024.[8]

The Houthis started attacking Red Sea-faring vessels on November 19, 2023, in retaliation to action

3 Alexander Lott, 'Iran-Israel 'Shadow War' in Waters around the Arabian Peninsula and Incidents near the Bab el-Mandeb,' in Alexander Lott (eds), *Hybrid Threats and the Law of the Sea* (2024) 117–141.

4 Laurence Butt, 'Strait to the point: Houthi rebels control international shipping' (*Cedars*, 15 February 2024) <https://cedars.cedarville.edu/2024/02/strait-to-the-point-houthi-rebels-control-international-shipping/> accessed 12 April 2024.

5 Andrew Hanna, 'Timeline: U.S. Seizures of Iranian Weapons at Sea' (*The Iran Primer*, 15 February 2024) <https://iranprimer.usip.org/blog/2021/may/12/seizures-iranian-weapons> accessed 12 April 2024.

6 International Chamber of Shipping. 'Shipping Industry to Remove the Indian Ocean High-Risk Area' (*ICS Press Release*, 22 August 2022) <www.ics-shipping.org/press-release/shipping-industry-to-remove-the-indian-ocean-high-risk-area/> accessed 29 January 2025; Raul (Pete) Pedrozo, 'Protecting the Free Flow of Commerce from Houthi Attacks off the Arabian Peninsula' (2024) 103 International Law Studies 49 <https://digital-commons.usnwc.edu/ils/vol103/iss1/2/> accessed 10 July 2024; Hanna Duggal and Mohammed Haddad, 'Mapping Red Sea Shipping Attacks' (2022) Al Jazeera <https://interactive.aljazeera.com/aje/2024/mapping-red-sea-shipping-attacks/> accessed 10 July 2024.

7 'Maintaining maritime security in the Western Indian Ocean' (*International Maritime Organization (IMO)*, 3 February 2023) <www.imo.org/en/MediaCentre/Pages/WhatsNew-1821.aspx#:~:text=Since%201%20January%202023%2C%20the,piracy%20situation%20in%20the%20region> accessed 12 April 2024.

8 Sumana Nandy, 'Navy vs Pirates of the Arabian: Inside Indian Navy's Daring Red Sea Missions,' (*NDTV*, 31 March, 2024) <www.ndtv.com/india-news/navy-vs-pirates-of-the-arabian-inside-indian-navy-daring-red-sea-missions-5343645> accessed 12 April 2024; Elijah Joyce History, 'Timeline of the Red Sea Crisis: October-December 2023' (*Medium*, 22 February 2024) <https://medium.com/@elijahjoyceweather21/timeline-of-the-red-sea-crisis-october-december-2023-2bc840ded659> accessed 12 April 2024.

taken by Israel in Gaza. These assaults have interrupted the world's shortest shipping connection between Europe and Asia significantly.

The United States and the United Kingdom have retaliated with targeted airstrikes under Operation Prosperity Guardian, focusing on the Houthi missile launching apparatus.[9] The European Union also started its naval operation on February 19, with French, German, Italian and Belgian contingents as part of it.[10]

To this date, Houthi attacks continue to pose a severe threat to maritime trade and regional security. Drones and missile attacks have become a routine blizzard, impacting international shipping with impacts on the vessels belonging to Israel, the US, and the UK, among other nations. The actions have been described by human rights organisations as potential war crimes, something that has amplified global worries.[11] This situation continues to highlight the need for prolonged international cooperation, enhanced maritime policies and solutions for the stability of one of the world's most vital trade arteries.

3. Why India Matters?

The Red Sea route is a vital conduit for India's trade with European, North African, and North American nations.[12] As per CRISIL Ratings,[13] for the fiscal year ending in March 2023, the Red Sea contributed to approximately 30% of India's imports of 17 trillion rupees ($205bn) and 50% of its exports of 18 trillion rupees ($217bn).[14]

India, the largest exporter of basmati rice in the world, annually exports approximately 35 per cent of the country's production, or 7.5 million tonnes, via the Red Sea to Europe, North America, North Africa, and the Middle East.[15] The Red Sea also serves as the primary route for Russian oil shipments to India and with 1.7 million barrels per day, Russian deliveries constituted more than 35% of India's

9 Dan Sabbagh and Julian Borger, 'US and UK Air Strikes Target Houthi Rebels Amid Red Sea Crisis' (12 January 2024) The Guardian <www.theguardian.com/world/2024/jan/12/us-uk-air-strikes-yemen-houthi-rebels-red-sea-crisis> accessed 12 November 2024.

10 ibid

11 United Nation, 'Houthis Undermining Regional, International Peace Efforts in Yemen, Says Delegate, Calling on Security Council to Pave Way towards Political Solution' (9835th Meeting (AM), 15 January 2025) <https://press.un.org/en/2025/sc15964.doc.htm> accessed 16 January 2025.

12 Afaq Hussain and Akhtar Malik, 'Can the IMEC address the Red Sea crisis: Explained' (26 February, 2024) The Hindu <www.thehindu.com/news/international/can-the-imec-address-the-red-sea-crisis-explained/article67885961.ece> accessed 18 April 2024.

13 'Red Sea Crisis to Have Differential Impact Across Sectors' (*CRISIL Ratings*, 25 January 2024) <www.crisilratings.com/en/home/newsroom/press-releases/2024/01/red-sea-crisis-to-have-differential-impact-across-sectors.html> accessed 18 April 2024.

14 Bibhudatta Pradhan, 'How escalating Red Sea crisis poses billions of dollars of risk for India' (31 January, 2024) Al Jazeera <www.aljazeera.com/economy/2024/1/31/how-escalating-red-sea-crisis-poses-billions-of-dollars-of-risk-for-india> accessed 18 April 2024.
15 ibid 16.

overall crude imports in 2023.[16]

Exporters are incurring losses due to the disruption of cargoes of produce from India, including grapes, buffalo meats, tea, and spices, similar to the situation for Basmati. Similarly, the postponement of imports of machinery components, electronic products, fertilizers, sunflower oil, and machinery is exposing consumers to increased expenses. The disturbance may result in disruptions to supply chains and trade, impeding the progress of food inflation reductions.[17]

3.1 India's maritime laws

India is a signatory to several international maritime conventions that form the backbone of its maritime safety practices, including the United Nations Convention on the Law of the Sea (UNCLOS)[18] and Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation (SUA Convention).[19] India's domestic maritime affairs are governed by laws[20] including the Merchant Shipping Act, 1958,[21] Maritime Zones of India (Regulation of Fishing by Foreign Vessels) Act, 1981,[22] Coastal Security Scheme,[23] and Indian Coast Guard Act, 1978.[24]

Until recently, Indian domestic law lacked a clear definition of piracy, leading to delays in trials and, in some cases, the failure to successfully prosecute apprehended pirates. However, with the addition of the Maritime Anti-Piracy Act, enacted in 2022 to give effect to the UNCLOS, this problem has been sorted.[25] With the Act, piracy has been defined under Section 2(h) as *(i)any illegal act of violence or detention or any act of depredation committed for private ends by any person or by the crew or any passenger of a private ship and directed on the high seas against another ship or any person or property on board such ship; (ii) any act of voluntary participation in the operation of a ship with knowledge of facts, making it a pirate ship; (iii) any act of inciting or of intentionally facilitating an act described in sub-clause (i) or sub-clause (ii); or (iv) any act which is deemed piratical under the international law*

16 Krishn Kaushik, 'India Deploys Unprecedented Naval Might Near Red Sea to Rein in Piracy' (*Reuters*, 31 January, 20) <www.reuters.com/world/india-deploys-unprecedented-naval-might-near-red-sea-rein-piracy-2024-01-31/> accessed 19 April 2024.

17 ibid para 81.

18 United Nations Convention on the Law of the Sea (adopted 10 December 1982, entered into force 16 November 1994) 1833 UNTS 396 (UNCLOS).

19 IMO Convention for the Suppression of Unlawful Acts Against the Safety of Maritime Navigation (adopted 10 March 1988, entry into force 1 March 1992) 1678 UNTS 221.

20 Mazyar Ahmad, 'Maritime piracy operations: Some legal issues' (2020) Journal of International Maritime Safety, Environmental Affairs, and Shipping, 4(3), 62–69.

21 The Merchant Shipping Act (1958) Act 44 of 1958.

22 The Maritime Zones of India (Regulation of Fishing by Foreign Vessels) Act (1981) Act 42 of 1981.

23 Ministry of Home Affairs, 'Coastal Security Measures' (Government of India, 18 June 2019) <www.mha.gov.in/sites/default/files/2022-08/BM_II_CostalSecurity_18062019%5B1%5D.pdf> accessed 19 April 2024.

24 The Coast Guard Act, 1978, Act No. 30 of 1978.

25 Dinakar Peri, 'Anti-Piracy Act has been a great enabler: Navy Chief' (New Delhi, 24 March 2024) The Hindu <www.thehindu.com/news/national/anti-piracy-act-has-been-a-great-enabler-navy-chief/article67987273.ece> accessed 10 July 2024.

including customary international law.[26]

India is engaging its regional and international counterparts through initiatives like Security and Growth for All in the Region (SAGAR),[27] which promotes maritime safety, environmental conservation, and regional security, alongside active bilateral and multilateral partnerships with countries like Indonesia, Sri Lanka, and the Maldives to enhance maritime domain awareness and address illegal activities at sea.

3.2 India in the Red Sea Attacks

These global efforts of India have been truly reflected in the response it has taken against the Houthi attacks on shipments through the Red Sea, a majority of which has India as its destination, or source. India has applied the right to self-defence as outlined in Article 51 of the UN Charter, and its obligations as a flag state under the Safety of Life at Sea ("SOLAS") Convention and the International Ship and Port Facility Security ("ISPS") Code, which require nations to ensure the safety of vessels flying their flag. This invocation of self-defence is justified by the imminent threat posed by non-state actors, as emphasized in India's position at the Arria Formula meeting on 24 February 2021,[28] where it argued that pre-emptive strikes are permissible when faced with imminent armed attacks.[29] The repeated assaults from Houthi militants combined with local authorities' failure to eliminate the threat has prompted India to protect its commercial and strategic interests in accordance with its stated position on self-defence. But India has not just limited its effort to protecting ships to and from India or flying the Indian flag.

By gradually building up its navy in the Arabian Sea and the Red Sea area, India has intensified its presence in these waters, in front of the escalating piracy threats and safety. According to Indian authorities, a number of no less than ten warships of the navy were sent to guard ships against the danger of piracy specifically the threat of Houthis in Yemen.[30] Although India has not joined the U.S.-led forces to patrol the Red Sea, it has deployed two of its advanced warships to the Gulf of Aden and more than 10 warships to the northern and western areas of the Arabian Sea along with the surveillance aircraft. This mission is the biggest so far in the history of the Indian military campaign in the Indo-Pacific region.[31]

The Indian Navy has been involved in extensive patrols and surveillance actions such as boarding

26 The Maritime Anti-Piracy Act (2022) Act 3 of 2023.

27 'India believes in 'Security and Growth for all in the Region' to focus on cooperative measures for sustainable use of oceans: President Kovind' (*Press Information Bureau*, 21 Febrary, 2021) <https://pib.gov.in/PressReleasePage.aspx?PRID=1800028> accessed 16 January 2025.

28 K. Nagaraj Naidu, 'Statement by Ambassador K. Nagaraj Naidu, Deputy Permanent Representative at Arria Formula Meeting Organized by Mexico' (Permanent Mission of India to the United Nations, 24 February 2021).

29 Burra Srinivas, 'India's Decisive Turn on the Right of Self-Defence' (22 March 2021) Opinio Juris <https://opiniojuris.org/2021/03/22/indias-decisive-turn-on-the-right-of-self-defence/> accessed 29 January 2025.

30 Rajat Pandit, 'Over 10 warships sent to deter pirates of the Arabian Sea' (9 January 2024) The Times of India <https://timesofindia.indiatimes.com/india/over-10-warships-sent-to-deter-pirates-of-the-arabian-sea/articleshow/106646794.cms> accessed 15 January 2024.

31 Kaushik (n 19).

and investigating vessels, with such operations aimed at the prevention of the occurrence of piracy cases. Since December, there have been at least 17 recorded incidents of hijacking, attempted hijacking, and suspicious approaches in this region.[32] Indian naval personnel, including special commando units, have boarded and carried out more than 250 inspections involving almost 40 ships.[33]

A highly important Indian naval operation took place on January 26, 2024, during the Red Sea crisis, when the oil tanker *Marlin Luanda* was hit by a Houthi missile approximately 110 kilometres southeast of Aden. The missile attack resulted in a conflagration within one of the cargo tanks of the tanker. Contrary to the first rumours of the crew deserting the ship, they chose to stay on board and combat the fire using firefighting equipment. In light of the attacks, *USS Carney* neared the *Marlin Luanda* but was subjected to another Houthi missile, which was successfully intercepted.[34] The crew remained unscathed, and with aid from Indian, American, and French warships, the fire was successfully put out, enabling the tanker to proceed towards a secure harbour. The *USS Carney*, French frigate *Alsace*, and the Indian destroyer *INS Visakhapatnam* were instrumental in the firefighting operations. Additionally, ten Indian Navy soldiers collaborated with the crew of the Marlin Luanda for six hours to extinguish the fire.

The Indian Navy's strong actions demonstrate its dedication to upholding peace at sea, safeguarding important trade routes, and acting as a security provider in the area amidst changing threats in the maritime sphere.

4. Strengthening India's Role in Maritime Security

Khaled Khiari, Assistant Secretary-General for the Middle East, Asia and the Pacific in the Departments of Political and Peacebuilding Affairs and Peace Operations, condemning retaliation by Western nations said "*We are witnessing a cycle of violence that risks grave political, security, economic and humanitarian repercussions in Yemen and the region*".[35]

This stand aligns with India's evolving maritime doctrine, encapsulated in the Indian Navy's policy document 'Ensuring Secure Seas: The Indian Maritime Security Strategy' of 2015[36] which replaced

32 Mohamed Olad Hassan, 'Indian Navy Frees Cargo Ship from Somali Pirates After Shootout' (16 March 2024) *Voice of America* <www.voanews.com/a/indian-navy-frees-cargo-ship-from-somali-pirates-after-shootout/7530557.html> accessed 15 January 2025.

33 Reuters, 'India Deploys Unprecedented Naval Might Near Red Sea' (1 February, 2024) *Voice of America VOA* <www.voanews.com/a/india-deploys-unprecedented-naval-might-near-red-sea/7466220.html> accessed 19 April 2024.

34 Sayantani Biswas, 'Red Sea: Houthi attack UK oil tanker MV Merlin Luanda catches fire with 22 Indians onboard, Indian Navy responds,' (*Livemint*, 27 January 2024) <www.livemint.com/news/world/red-sea-houthi-attack-uk-oil-tanker-mv-merlin-luanda-catches-fire-with-22-indians-onboard-indian-navy-responds-11706354811855.html> accessed 19 April 2024.

35 United Nations, 'Pointing to "Cycle of Violence", Senior UN Official Urges Restraint Following Air Strikes in Yemen' (9532nd Meeting (PM) SC/15565, 12 January 2024) <https://press.un.org/en/2024/sc15565.doc.htm> accessed 20 April 2024.

36 Darshana M. Baruah, 'India's Evolving Maritime Strategy' (3 December 2015) The Diplomat <https://thediplomat.com/2015/12/indias-evolving-maritime-strategy/> accessed 20 April 2024.

a reactive approach to the strategic projection of India's maritime power. Leveraging these opportunities in consonance with the strategies under the 'Act East' policy[37] and the India Middle East Europe Economic Corridor (IMEC) enunciates India's capabilities to protect the regional and global maritime domain.[38]

As a leading contributor to United Nations peacekeeping missions, with over 2,53,000 personnel deployed in 49 missions since 1948 and 6700 troops currently active,[39] India has demonstrated its commitment to international peace. Building on this, India could be the driving force behind a UN-backed maritime peacekeeping endeavour to solve the problems of regional immediacy and foster longer-term stability.[40] The idea of a UN-backed maritime peacekeeping endeavour aligns with India's consistent advocacy at the UN Security Council, as seen in its 2021 statement highlighting the threats to commercial shipping in the Red Sea and Gulf of Aden.[41] India has also actively contributed to the Yemen peace process,[42] and broader UN initiatives on stability and security.[43] Additionally, India has expressed deep concern over the misuse of Hudaydah's Red Sea ports for staging maritime attacks and has called for greater monitoring and security measures to ensure safe navigation and humanitarian access.[44]

Maritime security is highly interlinked with economic stability. India can extend developmental aid to troubled nations like Yemen and Somalia to help them resolve structural problems of instability by addressing systemic inequities to reduce conflict. This is structured on structural-functionalism, whereby conflicts can be resolved by trying to alter structural imbalances. Such initiatives would build up the soft power of India and strengthen its perception as a responsible global actor.[45]

India's diplomatic efforts must further evolve to engage Red Sea littoral states and other stakeholders.

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37 Amb (Retd) Anil Wadhwa, 'India's Act East Policy,' (*Ministry of External Affairs (MEA) of India*, 9 August, 2019) <www.mea.gov.in/distinguished-lectures-detail.htm?840> accessed 20 April 2024.

38 Navdeep Suri et al, *India-Middle East-Europe Economic Corridor: Towards a New Discourse in Global Connectivity* (Observer Research Foundation (ORF), Special Reports, 9 April, 2024).

39 Permanent Mission of India to the United Nations, *India and United Nations: Peacekeeping and Peacebuilding* <https://pminewyork.gov.in/pdf/menu/submenu__1260383365.pdf> accessed 16 January 2025.

40 Mandar Apte, 'Leveraging India's Wisdom for Transforming UN Peacekeeping' (*Observer Research Foundation*, 29 May 2024) <www.orfonline.org/expert-speak/leveraging-india-s-wisdom-for-transforming-un-peacekeeping> accessed 15 July 2024.

41 Statement by Ambassador T.S. Tirumurti, Permanent Representative, Security Council Meeting on Yemen (Briefing / Consultations) (Permanent Mission of India to the United Nations, 14 January 2021).

42 Nagaraj Naidu (n 31).

43 Mandar Apte (n 44).

44 Statement by Mr. A. Amarnath, Counsellor, UNSC Open Meeting on Yemen (Permanent Mission of India to the United Nations, 15 March 2022).

45 Denis Venter, 'India and Africa: Maritime Security and India's Strategic Interests in the Western Indian Ocean' in Iain Walker, Manuel João Ramos and Preben Kaarsholm (eds), *Fluid Networks and Hegemonic Powers in the Western Indian Ocean* (*Centro de Estudos Internacionais* 2017).

Strengthened ties through the Gulf Cooperation Council (GCC),[46] African Union (AU), and as an observer since 2020[47] in Djibouti Code of Conduct[48] would enhance mutual trust and foster regional security initiatives.

Through its evolution in maritime policies, strong armed forces, and commitment to global peacekeeping, India has turned into a maritime power which protects not only its interests but also contributes to global stability. If India can incorporate the realist model, structural-functionalist model, and liberal institutionalist model into its strategy, it can further reinforce its role as a key player in addressing the Red Sea crisis and safeguarding international trade. This comprehensive approach underlines the ability of India to become a leader in achieving peace, security and prosperity in one of the world's strategic maritime zones.

5. Conclusion

The maritime security obstacles in the Red Sea need to be dealt with through a multi-layered strategy addressing both legal frameworks and regional collaboration activities. The international community and regional stakeholders, including India, need to work together to strengthen the existing legal instruments, enhance regional collaborations and information security means and properly address the political, social and economic factors that account for the unstableness in the region, as a means of safeguarding the safety and tranquillity of as the important Red Sea passage. This approach is not only of importance to the regional powers but also to the economy of the world as a whole and a large part of the international community that relies on the uninterrupted flow of maritime trade through this strategic waterway. The stakes are high, and the need for action is urgent. Such a scenario is only possible through a cooperative effort, led by a better framework of laws and improvement of regional coordination, aimed to adequately deal with the security challenges of the Red Sea Region, which remains a major maritime trade gateway.

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46 Viraj Solanki, 'The Gulf Region's Growing Importance for India' (International Institute for Strategic Studies, 21 February 2024) <www.iiss.org/online-analysis/online-analysis/2024/02/the-gulf-regions-growing-importance-for-india/> accessed 20 November 2024.

47 'India Joins the Djibouti Code of Conduct as Observer' (*Ministry of External Affairs, Government of India*, 16 September 2020) <www.mea.gov.in/press-releases.htm?dtl/32977/India_joins_the_Djibouti_Code_of_Conduct_as_Observer> accessed 15 January 2025.

48 Code of Conduct concerning the Repression of Piracy and Armed Robbery against Ships in the Western Indian Ocean and the Gulf of Aden (adopted on 29 January 2009).

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Aspects Related to the Presence of Asbestos in Ships

Through consultation the AMINAVI[1] database, created by the Institute of Marine Engineering of the CNR, the main stages of legislation related to the presence of asbestos in ships have been identified and reviewed.

The use of asbestos[2] on board ships arises from the need to adapt to the provisions of the International Convention for the Safety of Human Life at Sea (SOLAS, (Safety Of Life At Sea, 1914). This was the first version of a fundamental International Treaty for the Safety of Merchant Ships. This Convention was adopted in response to the Titanic disaster in 1912. Among the main provisions of the 1914 Convention were '*Minimum Standards*', for the design and construction of ships to ensure better safety. In particular, rules about the characteristics of insulation, incombustibility, resistance to fire and heat of all the structures of a ship to prevent the spread of fires between the various parts of the hulls (fireproof bulkheads, decks, etc.). Asbestos was by far the most effective and versatile material available on the market at the time, thanks to its numerous properties: fire resistance, chemical and physical stability, excellent electrical, thermal and acoustic insulation, and low density — a key advantage in naval design, where minimising weight is crucial. Additionally, its low cost made it particularly attractive for such applications.

Due to its exceptional characteristics, the shipbuilding industry was one of the largest users of asbestos in the construction of cargo, passenger and military ships.

By the late 1980s, following decades of evidence about the long-term health effects of asbestos — particularly its carcinogenic nature — the use of this mineral, including in shipbuilding, was progressively phased out. In particular: Italy, Legge 257 (1992); Germany, Gefahrstoffverordnung (GefStoffV) (1993); France, Décret n° 96-1133 (1996); Spain, Real Decreto 396/2006; United Kingdom, Control of Asbestos Regulations (2012).

Worldwide, asbestos is regulated in only 67 countries (34%), out of 195. Some of the main users include: Russia, the largest producer and exporter of asbestos, particularly Chrysotile; China, the second-largest producer and user of asbestos; India, although mining is banned, asbestos is still widely used; Brazil, despite a partial ban, some production continues; and Indonesia, and Kazakhstan,

1 The AMINAVI database was created as a web application, which can always be updated and interrogated. It consists of a list, starting from 1900 of Italian naval vessels and their related information in case of presence of asbestos. The collection and cataloguing of the cognitive information of each naval unit (Launching, Radiation, Reclamation Activity Reports, etc.), makes it possible to trace the mapping actions of each unit and the subsequent reclamation activities.
AMINAVI, 'Database of the National Research Council' <www.cnr.it/it/banche-dati-istituti/banca-dati/1069/aminavi> accessed 10 April 2025.

2 The name "amianti or asbestos" refers to six specific natural minerals, belonging to the mineralogic-compositional class of silicates (Tremolite, Actinolite, Amosite, Antofillite, Crocidolite, Crysotile). The morphological and dimensional characteristics make these particular mineral fibres capable of reaching the deep respiratory tract and can cause degenerative diseases (asbestosis, mesothelioma, lung cancer, etc.). Ann G. Wylie, 'Mineralogical Characteristics and Risk Assessment of Elongate Mineral Particles (EMPs)' in Andrey Korchevskiy, James Rasmuson, Eric Rasmuson (eds), *Health Risk Assessment for Asbestos and Other Fibrous Minerals* (2024).

among the top 'consumers of asbestos'[3].

However, in countries where the cessation of asbestos (extraction, production, marketing, consumption), has been decreed, but indirect use has not been prohibited, such as, for example, the presence of asbestos in ships built before the regulation entered into force. Therefore, asbestos may still be present today in older vessels if they have not been completely decontaminated. Or in the case of component replacement interventions in countries where asbestos is not yet prohibited (for example, in Russia or China). Marine Traffic data (2023), indicate that the average age of ships in circulation in the world is 22.2 years. Over half of them are over 15 years old[4]. In Italy, 40.6% are over 30 years old; these are very old vessels such as fishing boats or passenger and Ro-Pax (hybrid ships designed to carry both vehicles and passengers), which operate on local routes and between islands. In this regard, from the consultation of the AMINAVI database, there are currently 119 units of the Navy, and 110 units of the Merchant Navy built before Law 257/92 in circulation (which could have asbestos components).

The ship environment has always been a particularly complex and risky work environment, being a single work and living environment for seafarers. During navigation, the vibrations of the ship and the erosion of the saltiness may make maintenance interventions necessary, carried out by the same maritime personnel present on the ship. Such interventions, if carried out without adequate safety measures, can lead to environmental contamination throughout the ship when asbestos is present — sometimes unknowingly — as forced ventilation systems recirculate air between different compartments, spreading hazardous fibres beyond the immediate work area.

The International Maritime Organisation (IMO) plays a key role in regulating maritime safety globally, indirectly influencing the handling of asbestos on ships[5]. While the IMO does not specifically address asbestos, its conventions, such as the SOLAS (Safety Of Life At Sea), promote safer practices and materials on vessels. The SOLAS Convention, established by the IMO, addresses maritime safety and includes provisions related to asbestos.

Here are some key points from the updated guidelines:

> 'since 1 July 2002, the installation of materials containing asbestos has been prohibited under SOLAS regulation II-1/3-5, with some exceptions for specific components;
> from 1 January 2011, the installation of Asbestos Containing Materials (ACMs) has been completely prohibited for all ships without exception'.

The updated guidance emphasises the responsibilities of shipyards, maritime equipment suppliers, and shipowners to ensure that no ACMs are used. It also highlights the importance of proper training for surveyors and inspectors to detect asbestos on board.

These updates aim to enhance awareness and ensure stricter compliance with the prohibition of as-

3 USGS, 'Asbestos Statistics and Information' (*National Minerals Information Center*) <www.usgs.gov/centers/national-minerals-information-center/asbestos-statistics-and-information> accessed 09 April 2025.

4 UNCTAD, 'Review of Maritime Transport 2023' <unctad.org/publication/review-maritime-transport-2023> accessed 08 April 2025.

5 See generally IMO, 'About IMO' <www.imo.org/en/About/Pages/Default.aspx> accessed 10 April 2025.

bestos on ships[6]. Despite the prohibition, asbestos is still found on various ships, often in places like fire blankets, joints, insulation materials, and brake friction materials. This can occur due to repairs at shipyards or the purchase of spare parts in countries where it is not regulated, such as Russia or China.

The overall vision obtained from the consultation of AMINAVI also allows us to understand aspects related to radiation and dismantling, which can represent an environmental and worker health risk. Among the documents that can also be consulted in AMINAVI relating to the Aliseo Frigate are the sales contracts. It was sold in 2021 to Turkish demolition specialists for € 550,550.00, with the obligation for the buyer to carry out demolition and safe, environmentally sound recycling in accordance with Regulation (EU) No 1257/2013[7]. In 2024, again in Türkiye, two former submarines 'Da Vinci' and 'Marconi', and the frigates 'Scirocco' and 'Maestrale', were dismantled.

This regulation was introduced to ensure that ships are recycled in a safe and environmentally sound manner, minimising risks to human health and the environment. In addition to protecting workers from exposure to hazardous substances such as asbestos, mercury, lead, polychlorinated biphenyls, and residual fuels, the regulation also aims to prevent damage to the fragile ecosystems of coastal areas affected by these materials. The regulation arose from the need to address a health and environmental issue linked to globalisation: the scrapping of old ships. This refers to the practice of demolishing ships on the beaches of Asia — particularly in India, Bangladesh, and nearby Turkey — where their parts or constituent materials are extracted and sold, often using low-cost, unskilled labour and with inadequate safety measures for both workers and the environment. This Regulation is bearing fruit. Recently, several shipyards in the world have been authorised by Europe for the demolition and recycling of ships, including those in Aliaga in Türkiye, among the largest in the world.

India has the world's largest ship recycling operation – the Alang-Sosiya ship recycling yards, situated on the west coast of the State of Gujarat. These yards are responsible for 47% of all the ships recycled in the world and employ nearly 60,000 people.

While regulations have improved, significant gaps remain. Ship owners can bypass recycling obligations by registering their vessels under non-EU flags before dismantling. In 2022, one in seven ships worldwide flew an EU flag, but this figure dropped by 50% for end-of-life ships.

These statistics highlight the urgent need to enhance regulations and oversight to ensure safe and environmentally friendly ship dismantling.

Another major gap hampering the Ship Recycling Regulation (SRR) is the frequent absence or poor quality of inventories of hazardous materials during the operational life of a ship, according to the EU Commission assessment.

These inventories, which are crucial to ensuring safe dismantling, are often unreliable at the time of recycling. Indeed, the Belgian Shipbreaking Platform (2024) found that 45% of EU-inspected ships failed to comply with SRR inventory requirements, with many not having an inventory of hazardous

6 IMO, 'Asbestos' <www.imo.org/en/OurWork/Safety/Pages/Asbestos.aspx> accessed 10 April 2025.

7 Regulation (EU) No 1257/2013 of the European Parliament and of the Council on ship recycling includes specific provisions for managing hazardous materials, including asbestos. Key elements include the Inventory of Hazardous Materials, Certification, and Removal and Disposal requirements.

materials during operation.

To address the issue of "lag hopping" and, by extension, other prevalent SRR concerns, the European Commission has shared that it is exploring various mechanisms of action, such as the creation of a ship recycling licence. Hopefully, this will bridge the price gap between EU-listed yards and cheaper, less regulated facilities[8].

Furthermore, another step forward could be the transfer of compliance responsibility from the registered owner to the actual owner, making it more difficult for companies to circumvent EU regulations by reflagging a vessel before demolition.

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8 European Commission, 'A Strategy for Better Ship Dismantling Practices' <https://eur-lex.europa.eu/EN/legal-content/summary/a-strategy-for-better-ship-dismantling-practices.html#:~:text=The%20Commission%20has%20adopted%20a%20Community%20strategy%20aimed,ships%20safer%20for%20workers%20and%20for%20the%20environment> accessed 23 April 2025.

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