



OPEN ACCESS

EDITED BY

Qi Xu,
Jinan University, China

REVIEWED BY

Ingrid Kelling,
Heriot-Watt University, United Kingdom
Liang Yu,
Tianjin University, China
Jiang Li,
First Affiliated Hospital of Sun Yat-sen
University, China

*CORRESPONDENCE

Bowen Yin
✉ yinbowen777@163.com

RECEIVED 10 August 2025

ACCEPTED 28 October 2025

PUBLISHED 18 November 2025

CITATION

Di L and Yin B (2025) Protection and preservation of the marine environment through human rights-based approach: potentials, limitations and recommendations. *Front. Mar. Sci.* 12:1683117. doi: 10.3389/fmars.2025.1683117

COPYRIGHT

© 2025 Di and Yin. This is an open-access article distributed under the terms of the [Creative Commons Attribution License \(CC BY\)](https://creativecommons.org/licenses/by/4.0/). The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.

Protection and preservation of the marine environment through human rights-based approach: potentials, limitations and recommendations

Lei Di¹ and Bowen Yin^{2*}

¹Law School, University of Chinese Academy of Social Sciences, Beijing, China, ²Law School, Chongqing University, Chongqing, China

The deterioration and degradation of the marine environment is having an increasingly obvious and serious impact on human rights. This article introduces a human rights-based approach to the issue of protecting and preserving the marine environment. The extraterritorial application of human rights treaties at sea and the open-ended nature of the United Nations Convention on the Law of the Sea enable the human rights-based approach to be effectively integrated with marine issues. Although this human rights-based approach can add a humanitarian dimension to marine environmental governance, facilitate the interpretation of relevant provisions, and enhance the legitimacy of certain environmental enforcement measures of coastal states, the direct approach relying on environmental rights lacks sufficient normative basis, and the indirect approach relying on other affected human rights cannot effectively address marine environmental issues per se. This article suggests a comprehensive human rights orientation that balances collective rights with individual rights, civil and political rights with economic, social, and cultural rights in the process of safeguarding the rights of indigenous groups and the right to public participation. Incorporating good practices from regional and national levels, this approach can advance the international lawmaking process for establishing a human right to a clean, healthy and sustainable marine environment.

KEYWORDS

marine environment, human rights-based approach, extraterritorial application of human rights treaties at sea, right to a clean, healthy and sustainable marine environment, marine environmental governance

1 Introduction

The marine environment is increasingly interrelated to the full enjoyment and realization of human rights. Marine pollution—stemming from human activities in, on, under, over and around the sea—poses significant threats not only to marine biodiversity and ecosystems but also to the welfare of billions of people worldwide. According to the 2023 Trade and Environment Review Report released by The United Nations Conference on Trade and Development, “Ocean economy sectors have great potential for sustainable growth, to extract wealth, add value and create employment”, but at the same time, “they can be an important part of the solution to humanity’s challenges, ranging from food insecurity to social and economic development, environmental degradation, and mitigation of and adaptation to the impact of climate change.” (UNCTAD, 2023) Coastal communities, particularly those dependent on fishing and marine resources, often face disproportionate impacts, including loss of livelihood, food insecurity, and health hazards. This article adopts a Human Rights-Based Approach to observe whether and to what extent can human rights help protect and preserve the marine environment.

The Human Rights-Based Approach is a “conceptual framework for the process of human development that is normatively based on international human rights standards and operationally directed to promoting and protecting human rights.”¹ According to the 2003 UN Report entitled *The Human Rights Based Approach to Development Cooperation Towards a Common Understanding Among UN Agencies*, the Human Rights-Based Approach consists of three parts: first, all programs of development co-operation, policies and technical assistance should further the realization of human rights as laid down in the Universal Declaration of Human Rights and other international human rights instruments; second, human rights standards contained in, and principles derived from, the Universal Declaration of Human Rights and other international human rights instruments guide all development cooperation and programming in all sectors and in all phases of the programming process, and third, development cooperation contributes to the development of the capacities of ‘duty-bearers’ to meet their obligations and/or of ‘rights-holders’ to claim their rights.² Among the various characteristics of a human rights-based approach, the first – and arguably most essential – aspect is the employment of the concept of rights, which implies that the beneficiary are transformed from passive recipients of alms to active rights-holders (Broberg and Sano, 2018). In short, A human rights-

based approach signifies that human rights are both the goal and the means to achieve that goal.

Traditionally, the human rights law and the law of the sea have long been regarded as independent, if not wholly segregated, branches of international law (Oxman, 1997). From a historical perspective, the 1982 United Nations Convention on the Law of the Sea (UNCLOS) was drafted before and outside the influence of International Human Rights Law (Whomersley, 2023). Substantively, as a state-centered regime, the framework of the law of the sea provides rights and obligations mainly for states, which manages the sea mainly as a resource and environmental system; while people may at most be considered as beneficiaries (Papanicolopulu, 2012). Instead, human rights law has traditionally focused on land-based activities where there is relative clarity as to which State has responsibility to uphold human rights; whereas the opposite holds true at sea, the responsibilities of a coastal State diminish across the maritime space extending away from it, and obligations at sea are possibly shared among more than one State (Klein, 2022). Now, driven by the process of “Human Rights Mainstreaming”, there has been a striking trend of convergence between the law of the sea and human rights law (Treves, 2010; Papanicolopulu, 2014; Ndiaye, 2019). This convergence is evident in two key respects: first, the growing application of human rights treaties at maritime occasions, and second, the progressive integration of humanitarian considerations within the framework of the law of the sea. In the case of *Medvedyev et al. v. France*, which involves arresting and detaining the crew for an excessive period of time and “had not been brought “promptly” before a judge or other officer authorized by law to exercise judicial power”, the European Court of Human Rights (ECtHR) noted that “the special nature of the maritime environment cannot justify an area outside the law”.³ In the case of *Juno Trader* involving similar facts, the International Tribunal for the Law of the Sea (ITLOS) stated that “the obligation of prompt release of vessels and crews includes elementary considerations of humanity and due process of law”.⁴ More recently, the Geneva Declaration on Human Rights at Sea, a legally non-binding instrument initiated by non-governmental organization, “affirms the applicability of human rights at sea and provides greater clarity as to when States are responsible for upholding human rights and remedying their violation” (Klein, 2025).

Nevertheless, this integration still left a conspicuous gap regarding the marine environment. As one of the purposes recognized in the Preamble of UNCLOS, the protection and preservation of the marine environment is specifically articulated in Part XII as a general obligation of States Parties. However, this provision is more abstract than comprehensive. As one scholar has

1 OHCHR, *Frequently Asked Questions on a Human Rights-Based Approach to Development Cooperation*. Available at <https://www.ohchr.org/en/publications/special-issue-publications/frequently-asked-questions-human-rights-based-approach>. (Accessed 23 September 2025).

2 See UN, *The Human Rights Based Approach to Development Cooperation Towards a Common Understanding Among UN Agencies*. Available at <https://unsdg.un.org/resources/human-rights-based-approach-development-cooperation-towards-common-understanding-among-un>. (Accessed 26 July 2025).

3 ECtHR, *Medvedyev et al. v. France*, Judgment of 29 March 2010, Application No. 3394/03, paras 2, 81. See also D. Guilfoyle, ECHR Rights at Sea: *Medvedyev and others v. France*, EJIL: Talk! (April 19, 2010). Available at <https://www.ejiltalk.org/echr-rights-at-sea-medvedyev-and-others-v-france/>. (Accessed 2 August 2025).

4 ITLOS, *The “Juno Trader” Case (Saint Vincent and the Grenadines v. Guinea-Bissau) Prompt Release*, Judgment of 18 December 2004, para 77.

observed, “it is difficult to see how a court or tribunal could give any substantive content to the highly ambiguous terms of Article 192 without overstepping its judicial role and straying into law-making.” (Harrison, 2017) Furthermore, the duty to protect and preserve the marine environment remains largely subject to the discretion of States rather than constituting an enforceable and justiciable legal obligation. Other international treaties concerning the marine environment, such as the International Convention for the Prevention of Pollution from Ships (MARPOL), the Convention on Biological Diversity (CBD), Agreement on Marine Biological Diversity of Areas beyond National Jurisdiction (BBNJ Agreement), while encompassing broader concerns for human health and wellbeing, and even the interests of future generations, remain significantly distant from the application of human rights law and the justification of state human rights obligations.

Against this backdrop, this article aims to adopt a human rights-based approach to promote the convergence of human rights law and the law of the sea in the field of protection and preservation of the marine environment. To explore the issue, this article is structured as follows: Part 1 provides an overview of the trend of convergence between human rights law and the law of the sea. Part 2 offers a theoretical framework for protecting and preserving the marine environment through a human rights-based approach. Part 3 examines the potential and limitations of this approach. Finally, Part 4 offers practical recommendations.

2 The theoretical framework for the human rights-based approach towards marine environment

Introducing human rights discourse, traditionally considered insulated from maritime concerns, into the marine environmental issues precisely embodies the human rights-based approach. As an approach aims to incorporate human rights into all social policies concerning human development, the human rights-based approach possesses inherent legitimacy and necessity on the ethical level. However, from a legal perspective, a series of prerequisites must be clarified to justify the applicability of human rights law to marine environmental issues: Can international human rights treaties, the primary sources of contemporary international human rights standards, be applied to the “legal space” of the ocean? Whether and to what extent can UNCLOS, as a “maritime constitution”, integrate human rights norms within its normative framework?

2.1 Applying human rights treaties extraterritorially at sea

Human rights, although claimed to be universal,⁵ depend to a large extent on the State for their implementation and fulfilment. Consequently, human rights treaties are traditionally considered to apply primarily within the territories, mainly land territories, of States parties, which poses substantial obstacles to the potential of

the human rights-based approach in addressing cross-border issues (Yu et al., 2025). The universal vision of human rights and the spatial limitations on its application are, in fact, the very reasons for the longstanding disconnect between the law of the sea and human rights. It is therefore necessary to examine whether and to what extent can contemporary international human rights law transcend its spatial boundaries in order to apply to maritime areas. Before proceeding with specific analysis, it should be noted that the extraterritorial application of human rights treaties does not imply that states bear indiscriminate human rights obligations towards every individual in every corner of the world, nor does it imply that such obligation constitute an *erga omnes* obligation owed to all members of the international community.

2.1.1 Traditional doctrines

The spatial scope of application of the human rights treaties is a highly controversial issue in international human rights law. This controversy arises because the 1969 Vienna Convention on the Law of Treaties, as *lex generalis*, merely provides that a treaty’s binding force generally extends to the entire territory of the state parties, remaining silent on its applicability beyond territorial limits (Aust, 2007). In contrast, international human rights treaties, as *lex specialis*, adopt diverse provisions concerning their spatial reach.⁶

According to the current academic consensus, the spatial scope of the State obligations under human rights treaties should be consistent with a state’s jurisdiction (Shany, 2019). States are obliged to respect and ensure the human rights of all individuals subject to their jurisdiction. It is important to note that “jurisdiction” in this context should not be confined to the *de jure* authority and competence, which reflects the “ordinary and essentially territorial notion of jurisdiction” from the standpoint of public international law.⁷ Instead, it also reflects *de facto* power, which indicates that even if a state’s control over the area or individuals in question is not legitimate under public international law, it still incurs human rights obligations (Milanovic, 2008). There are two traditional doctrines in the academic community for determining the existence of such jurisdiction. Theoretically, both doctrines have the potential to make human rights treaties applicable at the sea.

The first doctrine is “jurisdiction over area”. A state may exercise jurisdiction over individuals in an area by controlling and managing foreign territory, thereby incurring extraterritorial human rights obligations.⁸ In the case of land territory, a State

5 See Universal Declaration of Human Rights, 10 December 1948, A/RES/217(III), Article 1; Vienna Declaration and Programme of Action, 12 June 1993, A/CONF.157/23, para 1.

6 For example, Article 2 of International Covenant on Civil and Political Rights provides that state party undertake obligations to respect and ensure to “all individuals within its territory and subject to its jurisdiction”; Article 1 of the European Convention on Human Rights provides that Contracting Parties shall secure to “everyone within their jurisdiction”. In addition, the International Covenant on Economic, Social and Cultural Rights does not set any condition or limitation on the spatial scope of application.

7 See ECtHR, *Banković and Others v. Belgium and Others*, Decision as to the Admissibility of 21 December 2001, Application No. 52077/99, para 59.

exercises quasi-sovereign powers over certain areas of foreign territory, often through military occupation or on the basis of the consent, invitation or acquiescence of another State. This doctrine applies similarly to the maritime context. Coastal states exercise exclusive jurisdiction over ports, harbors, and internal waters. Within the territorial sea, coastal states maintain complete jurisdiction, although other states have the right to innocent passage. As the “sovereign extensions of land territory”, there exists a presumption that the coastal states take effective control over the individuals in these areas, thereby the state obligations under human rights treaties are virtually indistinguishable from those in land territory. As one moves seaward from the baseline, the state’s jurisdiction diminishes. In the contiguous zone, extending up to 24 NM from the coast, the coastal states have policing powers in relation to fiscal, immigration, sanitary and customs laws. Within the Exclusive Economic Zone, extending up to 200 NM from the coast, coastal States have sovereign rights over the natural resources, while reserving due regard to the rights of other States claiming similar rights within this area. Due to the unexclusive jurisdiction over these areas, the obligations of coastal states to respect and ensure human rights are mainly tied to the activities that are explicitly allocated to the coastal State (Klein, 2022).

The second doctrine is “jurisdiction over individual”. The state, without controlling a specific area, directly exercises physical control or legal influence over specific individuals located outside its territory, thereby assuming extraterritorial human rights obligations.⁹ For example, given that flag State has exclusive jurisdiction over vessels that fly its flag or registered to it on the high seas, it undoubtedly takes the responsibility to respect and ensure the human rights of the crew on these vessels. In this scenario, the scope of extraterritorial human rights obligations undertaken by the state can be “tailored and divided”¹⁰ and is limited to the rights involved in its extraterritorial actions, rather than all rights determined by human rights treaties. This legal framework is of particular relevance in cases of arrest on the high seas. In the ECtHR judgment of July 10, 2008 on the *Medvedyev et al. v. France*, A Cambodian-flagged vessel was seized by the French Navy on the high seas, authorized by the flag state, on suspicion of drug trafficking. On the basis of the physical control over the crew, and irrespective of whether France’s arrest of the crew was consistent with the criminal jurisdiction of the state under general international law, the crew members were subject to French ‘jurisdiction’ within the context of the human rights treaties, and thus, according to Article 5(3) of the ECHR, “shall be brought promptly before a judge or other officer authorized by law to exercise judicial power”.¹¹

Unfortunately, however, while the doctrines of ‘jurisdiction over area’ and ‘jurisdiction over individual’ can provide some theoretical basis for the application of human rights treaties to the seas, they

cannot provide a direct answer to the question of the human rights obligations of States in relation to the marine environment.

2.1.2 Contemporary developments

With the advent of the era of globalization, the extraterritorial human rights impact of States is no longer limited to the traditional issues of military occupation and detention abroad. Rather, activities in the areas of trade, investment, labor and the environment may all have an impact on human rights. In this regard, scholars have proposed new criteria for determining ‘jurisdiction’ in international human rights law, and thus for identifying states’ extraterritorial human rights obligations.

Among others, the model of “extraterritorial effect” provides a new standard for recognizing jurisdiction in the field of environmental protection. It draws in part on the “principle of no harm” established in the *Trail Smelter* case, which specifies that “no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein”.¹² In its Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons, the International Court of Justice reaffirmed that “the general obligation of States to safeguard the environment from damage caused by activities within their jurisdiction or control to other States or to areas beyond the limits of national jurisdiction has become part of international environmental law”.¹³ In the field of international human rights law, this model is often applied to the extraterritorial obligations of Economic, Social and Cultural rights. Article 9 of the *Maastricht Principles on Extraterritorial Obligations of States in the Area of Economic, Social and Cultural Rights*, for example, considers that States’ ‘omissions, whether within or outside the territory of the State, which have a foreseeable impact on the enjoyment of economic, social and cultural rights’ fall within the jurisdiction of the State.¹⁴

On the basis of the extraterritorial effect model, scholars have further proposed a model of ‘causal link’ to judge extraterritorial human rights obligations in the environmental sphere, whereby if there is a causal link between the State’s conduct and the adverse impact on human rights, “jurisdiction” is found to exist, and the State is therefore subject to extraterritorial human rights obligations. This model sheds important light on the human rights obligations of States concerning the marine environment. The Advisory Opinion on Environment and Human Rights issued by the Inter-American Court of Human Rights in 2017 formally includes ‘causal link’ as a condition for exercising jurisdiction in the

11 See ECtHR, *Medvedyev et al. v. France*, Judgment of 29 March 2010, Application No. 3394/03, paras 81.

12 *Trail smelter case (United States v. Canada)*, 3 U.N. Rep. Int’l Arb. Awards 1905 (1941), p. 1965.

13 *Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion*, I.C.J. Reports 1996, p. 226, para 29.

14 ETO Consortium, *Maastricht principles on extraterritorial obligations of states in the area of economic, social and cultural rights*, Available at https://www.eticonsortium.org/wp-content/uploads/2023/01/EN_MaastrichtPrinciplesETOs.pdf. (Accessed 7 August 2025).

8 See ECtHR, *Al-Skeini and Others v. The United Kingdom*, Judgment of 7 July 2011, Application No. 55721/07, para 138.

9 See ECtHR, *Al-Skeini and Others v. The United Kingdom*, Judgment of 7 July 2011, Application No. 55721/07, para 134.

10 Ibid, para 137.

context of environmental damage, “when transboundary damage occurs that effects treaty-based rights, it is understood that the persons whose rights have been violated are under the jurisdiction of the State of origin, if there is a causal link between the act that originated in its territory and the infringement of the human rights of persons outside its territory.”¹⁵ In its Advisory Opinion on Climate Change and Human Rights, issued in 2025, the Inter-American Court of Human Rights continued to emphasize this point.¹⁶ There does not appear to be any obstacle to applying these principles to the marine environment and imposing human rights obligations on States for avoiding all types of marine pollution from any source, including from vessels, sea-bed activities, dumping at sea, land-based activities, from or through the atmosphere, or resulting from the use of technologies or the introduction of alien or new species.

Recently, one of the most notable examples concerning applying human rights treaties at sea, would be the case of *A.S. et al. v. Italy*, an individual communication reviewed by Human Rights Committee. The case involved a shipwreck in the Mediterranean Sea in 2013. Based on the fact that the individuals “were directly affected by the decisions taken by the Italian authorities in a manner that was reasonably foreseeable”, the Committee determined those individuals to be under Italy’s jurisdiction and declared that Italy failed to meet its due diligence obligations of right to life under Article 6(1) of the ICCPR.¹⁷ The test of “special relationship of dependence” was regarded as new criteria to determine the relationship of jurisdiction between states and individual in the context of human rights law, which filled the “maritime legal black holes” and provided the legal basis for the “right to be rescued at sea” in the framework of right of life.¹⁸

However, these models have also been questioned to some extent recently. Critics have pointed out, for example, that the model of “extraterritorial effect” and “casual link” conflates the jurisdiction between a duty-bearing state and a right-holder, with the jurisdiction of a home state over a private person causing the human rights violation. The former relation of jurisdiction, as the condition for state obligation under international human rights law, should be justified by some form of effective control of the State over the right-holder, and not merely of a causal connection between the State and the source of harm to that person (Besson, 2020). The criteria of “special relationship of dependence” in the context of maritime rescue operations was also criticized as lowering the threshold to establish jurisdiction and “failed to distinguish situations in which states have the potential to place individuals under their effective control from situations of the actual placement of individuals under effective state control”.¹⁹ Accordingly, in determining the human rights obligations of States in relation to

the marine environment, the spatial scope of application of human rights treaties should not be overstretched.

2.1.3 The compatibility between the extraterritorial application of human rights treaties and marine environmental protection

Just as the Principle 1 of Geneva Declaration on Human Rights at Sea has put forward, “Human rights are universal; they apply at sea, as they do on land”. Based on the above analysis, there is in fact no doubt that human rights treaties are applicable extraterritorially at sea; the controversy lies in the scope and extent of such extraterritorial application. Generally, it depends on the conceptual tool of ‘jurisdiction’ to examine when states undertake extraterritorial human rights obligations; specifically, the connotation and function of jurisdiction must be defined according to marine environmental protection scenarios.

In terms of the varying degrees of jurisdiction states possess over different maritime zones, the extraterritorial applicability of human rights treaties to marine environmental protection is relatively easier to determine. Within the 12-nautical-mile territorial sea, where states exercise near-complete sovereignty, their human rights obligations are virtually indistinguishable from those on land. It may be broadly argued that states’ extraterritorial human rights obligations concerning the marine environment diminish with increasing geographical distance. Moreover, States may be subject to extraterritorial human rights obligations towards specific areas or individuals by virtue of their effective control over a particular maritime zone or their exclusive jurisdiction over vessels and personnel within that zone.

With regard to the jurisdiction in the context of marine environmental protection, as scholars have highlighted in studies such as the extraterritorial human rights obligations in regard to Fukushima nuclear contaminated water, marine pollution exhibits significant transboundary mobility through ocean currents and food chains (Yu and Xu, 2023). This poses a particular difficulty for the traditional victim-centered jurisdiction of international human rights law. As such, it is relatively safe to argue that the applicability of international human rights law should first be extended to marine pollution originating outside a state’s territory but affecting its nationals. Whether international human rights law can be applied to transboundary marine environmental issues perpetrated by individuals or enterprises located within or connected to a state, depends on whether jurisdiction under international human rights law is interpreted narrowly or broadly. Or, to put it in Besson’s terms, whether “jurisdiction” under international human rights law should be strictly confined to the State’s control over rights holders, or broadly extended to encompass the State’s connection to the source of the violator (Besson, 2020).

At this point, several rather extreme examples may serve to provisionally conclude this paper’s discussion on the extraterritorial

15 IACtHR, Advisory Opinion OC-23/17 of 15 November 2017, para 101.

16 See IACtHR, Advisory Opinion OC-32/25 of 3 July 2025.

17 See Human Rights Committee, *A.S. et al v. Italy*, 27 January 2021, Communication No. 3042/2017, para 7.8.

18 See Human Rights Committee, *A.S. et al v. Italy*, 27 January 2021, Communication No. 3042/2017, concurring opinion by Gentian Zyberi; Hélène Tigroudja.

19 See Human Rights Committee, *A.S. et al v. Italy*, 27 January 2021, Communication No. 3042/2017, dissenting opinion of Yuval Shany, Christof Heyns and Photini Pazartzis.

application of human rights treaties at sea. First, for landlocked states, unless they exercise de facto control over a particular maritime area, their human rights obligations concerning the marine environment either exceptionally extend to regulating vessels flying their flag and associated personnel, or remain largely indirect and implicit—such as those related to regimes indirectly impacting the marine environment, like climate change. Secondly, for so-called maritime powers, a broader or violator-based understanding of jurisdiction would render them accountable for any marine pollution activities committed by individuals or enterprises connected with their territory potentially jeopardizing human rights; Thirdly, for many small island states, whose citizens and the state itself are often the primary victims of the degradation of the marine environment, they would be exempt from liability on a no-fault basis, despite these tragic human rights harms invariably occurring within their areas of jurisdiction. Naturally, more common scenarios arise between neighboring coastal states, such as when one nation's dumping of wastewater into the sea or excessive development of coastal areas causes marine environmental damage that infringes upon the rights of residents in one or more neighboring coastal states.

2.2 Integrating human rights into UNCLOS

Another way to introduce a human rights-based approach to marine environment is to integrate the normative content of human rights into UNCLOS. Whilst the extraterritorial application of human rights treaties advocates a human rights-based approach at the normative and technical levels of treaty interpretation, the incorporation of human rights considerations into the law of the sea aligns more closely with the essence of this approach. This approach holds that international human rights standards should guide all development cooperation and programming across all sectors and throughout the entire programming process. This naturally encompasses marine environmental issues, which are intrinsically linked to human survival and development. Article 293 of UNCLOS provides that judicial bodies addressing UNCLOS disputes “shall apply this Convention and other rules of international law not incompatible with this Convention”, creating the conditions for this integration.

2.2.1 Feasible approach of integrating human rights into the system of UNCLOS

A more radical approach would be to refer to human rights treaties as a source of rights and obligations in maritime disputes before the relevant courts and tribunals. The most important evidence in favor of this view stems from ITLOS's direct mention of human rights law in the *M/V “Louisa” Case*, although the Tribunal found that it lacked jurisdiction, that “The Tribunal holds the view that States are required to fulfil their obligations under international law, in particular human rights law, and that considerations of due process of law must be applied in all circumstances”.²⁰ In the *Arctic Sunrise Case*, concerning the authorities of the Russian Federation boarding and detaining the

Dutch-flagged vessel “Arctic Sunrise” in Russia's Exclusive Economic Zone, human rights norms were independently referred by the Netherlands, claiming that the boarding, investigating, inspecting, arresting and detaining of the Russia Federation not only violate the relevant provisions under UNCLOS, but also breached its obligation under the 1966 International Covenant on Civil and Political Rights (ICCPR) concerning the right to liberty and security of the crew members. In oral proceedings, the Netherlands further specified that the actions of the Russia Federation violated Article 9(1) and 12(2) of the ICCPR.²¹

However, the role of the *Arctic Sunrise Case* in the order concerning the request for provisional measures should not be overestimated. The Netherlands requested the Tribunal to prescribe provisional measures directed at resupplying the vessel and releasing the crew members. Although the Tribunal ultimately upheld the Netherlands' request for provisional measures, it did not directly address the human rights allegations made by the Netherlands throughout the process.²² This is not the first time that ITLOS has avoided a human rights-based request. Judge Laing, for example, introduced the human rights norms in his individual opinion of *Camouco case*, stating that “prompt release is also reinforced by its significant humanitarian underpinnings, ranging from the economic rights or concerns of ship owners to the civil rights or concerns of detained crews”.²³ The Tribunal, however, order the release of the Master in accordance with Article 292(1) of the UNCLOS without referring and responding to human rights norms. In fact, ITLOS has pointed to the humanitarian consideration underlying the prompt release mechanism under the Article 73(2) of UNCLOS in many cases, yet human rights norms were never independently mentioned or quoted. It remains that “human rights alone cannot be the subject of litigation before ITLOS or any other UNCLOS dispute settlement body” (Petrig and Bo, 2019).

A more appropriate and effective way for human rights to play a role in maritime disputes might be to integrate human rights considerations into all aspects of the interpretations of the principles and standards of UNCLOS. Judge Treves, for example, also with regard to the ‘prompt release’ obligation mentioned above, states in his

20 ITLOS, *The M/V “Louisa” Case (Saint Vincent and the Grenadines v. Kingdom of Spain)*, Judgment of 28 May 2013, para 155.

21 See ITLOS, *The “Arctic Sunrise” Case (Kingdom of the Netherlands v. Russian Federation)*, *Provisional Measures*, Request for provisional measures submitted by the Netherlands, 21 October 2013, para 19; Verbatim Records of 6 November 2013, ITLOS/PV.13/C22/1/Rev.1, p. 24-25.

22 See ITLOS, *The “Arctic Sunrise” Case (Kingdom of the Netherlands v. Russian Federation)*, *Provisional Measures*, Order of 22 November 2013.

23 ITLOS, *The “Camouco” Case (Panama v. France)*, *Prompt Release*, Judgment of 7 February 2000, Declaration of Judge Laing.

individual opinion that “prompt release of the vessel and crew is the result that must be obtained, but the means to obtain it are not without importance. Prompt release must be obtained, and the bond or other financial security must be fixed, through a procedure that respects due process.”²⁴ Although it does not explicitly mention or invoke human rights norms, this statement is in effect an incorporation of the evolving jurisprudence of the “obligations of conduct” relating to the right to a fair trial into the obligation of prompt release under UNCLOS. Indeed, the Tribunal and the judges have long drawn on international human rights law, both implicitly and substantively, in interpreting the content of state obligations in UNCLOS. In the later *Tomimaru* case involving prompt release, the Tribunal invoked “international standards of due process of law” to assess the Russia Federation’s decision to confiscate the vessel and its crew.²⁵ Additionally, ITLOS showed other possibilities of integrating human rights into UNCLOS in the *ARA Libertad* case, where provisional measures were also requested. It is important to note that Argentina in this case only claimed that the rights of the State rather than the crew members had been violated. However, in describing the element of “urgency” required for provisional measures, Argentina argued the importance of provisional measures for preserving the right to life and well-being of the crew.²⁶ In this case, the violation of human rights justifies the criterion of ‘urgency’ as a measure of the necessity of provisional measures. Although there was no direct reference to human rights norms by either party to the proceedings nor by the Tribunal, the evolving jurisprudence on due process in international human rights law also influenced the judge’s assessment on prompt release in a substantive way.

2.2.2 The role of human rights-based approach concerning marine environment under UNCLOS

As previously stated, advocating a human rights-based approach within the UNCLOS framework effectively requires that the manner by which States exercise their rights or fulfil their obligations under UNCLOS shall be guided and even modified by universally recognized international human rights standards. Based on current case law, the human rights elements within UNCLOS have predominantly centered on traditional civil rights in scenarios such as prompt release. The human rights dimension of States Parties’ obligation to protect and preserve the marine environment remains in a situation awaiting activation and further development. It is suggested that the role of human rights interpreting the obligations of state parties to protect and preserve the marine

environment be considered from three perspectives: before, during, and after.

Firstly, Article 21(1)(f) and Article 56(1)(b)(3) of UNCLOS respectively grant jurisdiction of coastal states to enact and enforce laws regarding marine pollution in their territorial seas and exclusive economic zones. In this regard, human rights, including both the right to a clean, healthy and sustainable environment, which is directly affected, and the right to an adequate standard of living and right to health, which are indirectly affected, often serve both as the purpose and objective of lawmaking and as an important condition for initiating law-enforcement.

Secondly, given that the ambiguous nature of the Article 192 of UNCLOS, the obligation of States to protect and preserve the marine environment is in need of further elaboration and specification in different scenarios, which can draw on experiences and standards from human rights law. The Seabed Disputes Chamber of the ITLOS, for example, in its 2011 Advisory Opinion concerning the responsibilities and obligations of the states sponsoring persons and entities with respect to activities in the area, drew on the concept of “due diligence” in general international law to explain the obligation of sponsoring states under Article 145 of UNCLOS to ensure the effective protection for the marine environment.²⁷ Considering the remarkable practices of international human rights law with respect to “human rights due diligence” in the last decade, had this advisory opinion been issued at the present time, human rights would have provided a richer dimension and more precise details on the content of the obligations of States parties with regard to the environment.²⁸ Considering that in the *Enrica Lexie* case, Italy had already begun to cite the Human Rights Committee’s interpretation in two views of individual communications concerning the standard of due process under article 9(2) of the ICCPR,²⁹ when arguing that the rights of the crew had been violated by India’s arrest, a formal invocation and substantive analysis of international human rights jurisprudence by ITLOS concerning the marine environment may not be far away.

Thirdly, as discussed above, when coastal states take possible law enforcement and judicial actions against vessels for marine pollution in exclusive economic zones and territorial sea, they also need to give due consideration to the recognized rights of the punished crew members, including, of course, the human rights recognized by international human rights law.

Often, these three processes are not isolated from one another but are interconnected. For instance, human rights constitute the legitimate basis for coastal states’ regulatory jurisdiction over the

24 ITLOS, *The “Juno Trader” Case (Saint Vincent and the Grenadines v. Guinea-Bissau) Prompt Release*, Judgment of 18 December 2004, Separate Opinion of Judge Treves.

25 ITLOS, *The “Tomimaru” Case (Japan v. Russian Federation)*, *Prompt Release*, Judgment of 6 August 2007, para 76.

26 ITLOS, *The “ARA Libertad” Case (Argentina v. Ghana)*, *Provisional Measures*, Request for Provisional Measures submitted by Argentina, 14 November 2012, para 65.

27 See ITLOS Seabed Dispute Chamber, *Responsibilities and obligations of States sponsoring persons and entities with respect to activities in the Area*, Advisory Opinion of 1 February 2011, paras 117–120.

28 For example, with respect to the ITLOS’ advisory opinion on climate change, the Special Rapporteur on human rights and the environment submitted a written statement. The advisory opinion ultimately stated that climate change represents an existential threat and raises human rights concerns.

29 ITLOS, *The “Enrica Lexie” Incident (Italy v. India)*, *Provisional Measures*, Verbatim Records of 10 August 2015, ITLOS/PV.15/C24/1/Rev.1, p.31.

marine environment, while simultaneously constraining the state's executive and adjudicative activities. Integrating human rights throughout the entire process of marine environmental protection embodies precisely this human rights-based approach.

2.3 Summary of theoretical connection

Based on the above analysis, the theoretical connection between human rights and the law of the sea is twofold. On the one hand, by virtue of the interpretation of “jurisdiction” in international human rights law, the spatial scope of application of human rights treaties should be extended from the traditional land territory to the maritime areas under national jurisdiction. In maritime areas affected by their power and authority, States should undertake human rights obligations proportionate to their impact. On the other hand, driven by a human rights-based approach, humanitarian consideration has become an important discursive resource in maritime disputes, and the evolving jurisprudence of human rights is increasingly integrated into the process of interpreting the core elements of states obligations under UNCLOS. Although these connections do not directly provide answers for the relationship between human rights and marine environmental protection, the theoretical framework offered by them indeed creates a favorable foundation for subsequent analysis.

3 The potentials and limitations of a human rights-based approach to the marine environment

Introducing a human rights-based approach to the marine environmental governance essentially employs the norms, logic and language of human rights to provide human rights solutions for marine environmental issues. With a right-based thinking, its key task lies in determining which human right the interests to be protected fall under, thereby what kind of state obligations this human right generates. According to current practices, this approach can be categorized into two possibilities: direct application and indirect application. The former seeks to establish a direct link between the marine environment and human rights, relying primarily on the ‘right to a clean, healthy and sustainable environment’; the latter draws on well-established rights in existing international law system that are affected by pollution of the marine environment, such as the right to life, the right to an adequate standard of living and the right to health. Both approaches have their potential benefits and limitations.

3.1 The direct approach concerning the right to a clean, healthy and sustainable environment: potentials and limitations

To establish a direct link between the marine environment and human rights requires a systematic overview of the international human rights toolbox to identify the closest and most appropriate

one. Of all the human rights candidates, the Right to a Clean, Healthy and Sustainable Environment is the right most directly relevant to marine environmental governance. This right has been recognized and developed by a series of landmark documents in the history of international environmental law, dating back to the 1972 Stockholm Declaration.³⁰ The 1992 Rio Declaration on Environment and Development, which for the first time stated with a human rights tongue that “human beings ... are entitled to a healthy and productive life in harmony with nature,” is seen as the prototype for the right to a clean, healthy and sustainable environment.³¹ Recently in July 2022, the United Nations General Assembly adopted the resolution “The human right to a clean, healthy and sustainable environment as a universal human right”³², signifying the universal recognition of this right. The normative content of this right can be divided into two interrelated parts: substantive and procedural.

3.1.1 The substantive elements of the right to a clean, healthy and sustainable environment

As the environment is related to all aspects of human life, the content of environmental rights is far more complex than some traditional rights, centered on cleanliness, health and sustainability. According to the Special Rapporteur on human rights obligations related to the enjoyment of a safe, clean, healthy and sustainable environment, the substantive elements of this right include the clean air; a safe and stable climate; access to safe water and adequate sanitation; healthy and sustainably produced food; non-toxic living, working, studying, and playing environments, and healthy biodiversity and ecosystems.³³

The fact that the right to environment has not yet included in the core UN human rights treaties does not detract from its flourishing in regional sphere. The development of the right to environment in two regions deserves further attention: Africa and Latin America. The explicit recognition of the “right to a general satisfactory environment favorable to development” in Article 24 of the African Charter on Human and Peoples’ Rights marks the first time that the right to the environment as a human right has been recognized in binding human rights instruments. Similarly, Article 11 of the Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social and Cultural Rights (“Protocol of San Salvador”) provides in that “everyone shall have the right to live in a healthy environment”. The distinguishing feature of the Environmental Rights-Based Litigation in Latin America can be attributed to three key factors: the prevalence of a right to a healthy environment recognized in domestic constitutions, the degree of constitutional openness to international law (or of its authority’s prioritization at the domestic level), and the role of *amparos* or constitutional injunctions (Auz, 2022). In advisory opinion OC-23/17, the Inter-American

30 UN, Declaration of the United Nations Conference on the Human Environment, A/CONF.48/14/Rev.1.

31 UN, Rio Declaration on Environment and Development, A/CONF.151/26 (Vol. I).

32 UN, A/RES/76/300, 28 July 2022.

33 UN, A/HRC/43/53, 30 December 2019.

Court of Human Rights also recognized that the right to a healthy environment is a justiciable and autonomous right that protects environmental elements as a legitimate interest.³⁴

The marine environment, encompassing over 70% of the Earth's surface, constitutes an indispensable part of the global ecosystem, and is therefore an important object protected by the right to environment. It has been confirmed by scientific evidence that humans derive an indeterminable range of health benefits from the marine, which may collectively be referred to as “marine ecosystem services” (Buonocore et al., 2021). The major threats to marine environment confirmed by mounting scientific evidence, ranging from overfishing, climate change (global warming, ocean acidification) and pollution (plastics) to habitat damage (Kvamsdal et al., 2023), must be examined from a systemic perspective, especially given the damage they inflict on marine ecosystems that are otherwise well-functioning and self-consuming of risks. These threats do not operate in isolation, but cause impacts to accumulate synergistically, with the total impact greater than the sum of its parts (Foley et al., 2013). Taking Harmful algal blooms as an example. In the most ideal scenario, algae play an important role in the carbon cycle and also constitutes the base of many marine food webs. However, an overabundance of algae, mainly caused by anthropogenic activities, may present threats both to humans and other marine biodiversity through the release of harmful toxins (Berdalet et al., 2016). To make matters worse, the increased frequency and severity of the threat of algal blooms, which is likely to increase as a result of warmer water temperatures due to climate change, will trap marine ecosystems in a negative cycle.

3.1.2 The procedural elements of the right to a clean, healthy and sustainable environment

According to the Special Rapporteur, the procedural elements of the Right to a Clean, Healthy and Sustainable Environment include access to information, the right to participate in decision-making, and access to justice and effective remedies, these rights must be exercised securely and free from reprisals and retaliation.³⁵ The procedural elements are more directly normatively binding than its substantive elements. On the one hand, these procedural elements have been widely recognized and intensively developed by international human rights standards. Access to information and participation in decision-making concerning the environment, for example, has been regarded as a corollary to the right to political participation, recognized in Article 25 of the ICCPR, being fully respected and guaranteed. In the General Comment No. 25, the Human Rights Committee states that citizens can participate directly in public affairs as members of legislative bodies or by holding executive office, indirectly through freely chosen representatives, or exerting influence through public debate and dialogue with their representatives or through their capacity to organize themselves, which is also supported by ensuring freedom of expression, assembly and association.³⁶ On the other hand,

international law instruments specifically recognizing the procedural elements of the Right to Environment and regulating the relevant state obligations have emerged in the International Environmental Law system. The 1998 Aarhus Convention³⁷ and the 2018 Escazú Agreement³⁸ represent the European and Latin American consensus on procedural elements of the right to a healthy environment, respectively.

A more solid normative basis and a more consistent ideological consensus imply advantages for judicial application. In legal practice, many cases concerning the right to environment have been presented on the basis of procedural elements, and much of the interpretation by courts, tribunals and treaty bodies has also centered on these elements. The case of *Social and Economic Rights Action Centre & the Center for Economic and Social Rights v. Nigeria*, heard by the African Commission on Human and Peoples Rights in 2001, is the most directly relevant case in international human rights law to date concerning right to environment. The communication alleged that the government of Nigeria was guilty of violations of the right to a clean environment, amongst other, due to its condoning and facilitating the operations of oil corporations in Ogoniland. In determining the government's failure to prevent pollution and ecological degradation, the Commission observed one key facts: in all their dealings with the oil consortiums, the government did not involve the Ogoni communities in the decisions that affected the development of Ogoniland.³⁹ These elements can be directly applied to the governance of the marine environment, as they do not distinguish between land and sea.

3.1.3 The potentials and limitations of a direct approach

As a direct route to applying a human rights-based approach, it is necessary to reflect on the potential and limitations of Right to a Clean, Healthy and Sustainable Environment in the context of marine environmental governance.

The reason for arguing for a stand-alone right to a clean, healthy and sustainable environment, rather than a dependency on the impact of environmental damage on human life, such as the right to life, the right to food, the right to water or the right to health, is that the impact of environmental damage on human beings is often cumulative, and does not manifest itself in the moment when the act of environmental damage occurs. Instead, the assertion of an

34 See IACtHR, Advisory Opinion OC-23/17 of 15 November 2017, paras 62–63.

35 UN, A/HRC/43/53, 30 December 2019.

36 Human Rights Committee, General Comment No. 25: Article 25, in HRI/GEN/1/Rev.9(Vol.1), paras 6–8.

37 Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, Adopted 25 June 1998, Entry into Force 30 October 2001, 2161 UNTS 447.

38 Regional Agreement on Access to Information, Public Participation and Justice in Environmental Matters in Latin America and the Caribbean, Adopted 4 March 2018, Entry into Force 22 April 2021, 3388 UNTS C.N.196.2018.TREATIES-XXVII.18.

39 Social and Economic Rights Action Center (SERAC) and Center for Economic and Social Rights (CESR) v Nigeria (Communication No. 155/96) (Communication 155 of 1996) [2001] ACHPR 35 (27 October 2001), para 55.

independent right to a clean, healthy and sustainable environment and the imposition of environmental human rights obligations on States aims to tackle the sources of damage by regulating responsible activities. Article 69 of the 2010 Kenya Constitution, for instance, articulates the specific details of the state obligations concerning the right to the environment, including ensure sustainable exploitation, utilization, management and conservation of the environment and natural resources, and ensure the equitable sharing of the accruing benefits. It also sets out the manner in which the right to the environment is to be enforced, which specifically emphasizes that “an applicant does not have to demonstrate that any person has incurred loss or suffered injury”.⁴⁰ This in fact reflects the unique features of the legal interest protected by the right to a clean, healthy and sustainable environment, which cannot be replaced by any other current rights: the cleanliness, health and sustainability of the ecosystem as a public interest. In section 24 of the 1996 South African Constitution, for example, the right to environment with its corresponding state obligations concerning reasonable legislative and other measures largely reflects the benefit of both present and future generations, and a theoretical balance between anthropocentrism—valuing nature because of material or physical benefits it can provide for humans, and ecocentrism—valuing nature for its own sake.⁴¹

However, this approach also entails certain limitations. As noted above, the Right to a Clean, Healthy and Sustainable Environment is currently limited to the resolutions of the United Nations General Assembly and regional human rights instruments, and is not yet recognized by any universal international human rights treaties. Neither the Advisory Opinion of ICJ nor the ITLOS on State Obligations in relation to Climate Change directly recognizes that the Right to a Clean, Healthy and Sustainable Environment constitutes a human right, but only implicitly and indirectly highlights the link between the environment, including the marine environment, and human rights. This has led to ambiguity and controversy over the features and content of the Right to a Clean, Healthy and Sustainable Environment, as well as a lack of justiciability. For example, in the case of sea level rise caused by greenhouse gas emissions, given that many complex chains of scientific and legal arguments involved, it is difficult to rely on the Right to a Clean, Healthy and Sustainable Environment to deal with sea level rise caused by climate change, which is currently a critical issue for the marine environment, as the action of greenhouse gas emission does not constitute a breach of international obligation. Indeed, the maturation of such a right and its effective application to the marine context remains largely dependent on the further development of national and regional practices.

40 Constitution of Kenya, 2010. Available at https://www.parliament.go.ke/sites/default/files/2023-03/The_Constitution_of_Kenya_2010.pdf. (Accessed 2 August 2025).

41 Constitution of the Republic of South Africa, 1996. Available at <https://www.gov.za/documents/constitution/constitution-republic-south-africa-1996-04-feb-1997>. (Accessed 2 August 2025).

Ideally, even should the Right to a Clean, Healthy and Sustainable Environment gain recognition in international law, it would not be entirely compatible with marine environmental issues since that right is primarily grounded in general environmental problems centered on terrestrial features. Take precipitation and drought, a core environmental factor significantly impacted by climate change, as an example. Terrestrial species suffer far greater effects than aquatic species, as water constitutes a fundamental ecological factor limiting the distribution of numerous terrestrial species, particularly plants. Meanwhile, for freshwater and estuarine systems, changing rainfall patterns can influence water quality and salinity which can then influence the productivity and composition of phytoplankton and aquatic plant communities (Häder and Barnes, 2019). Given the potential impact of these ecological changes on human survival and development, the divergence between terrestrial and marine environmental features will further lead to differing policy priorities in land and marine environmental protection. This may even give rise to fundamental conflicts of interest between landlocked and coastal states. Consequently, alongside advancing a general right to a clean, healthy and sustainable environment, it is imperative to explore a more specific Human Rights-Based Approach tailored to marine environmental challenges.

3.2 An indirect approach through relevant human rights affected by marine pollution and degradation: potentials and limitations

Based on the broader linkages between the environment and human rights, the indirect approach brings the issue of the marine environment into the realm of human rights discourse through some well-established human right, such as the right to life, the right to an adequate standard of living, and the right to health, among others. In fact, just as scholars observe, “with the exception of the SERAC case before the African Commission, the obligations pertaining to environmental protection identified by international human rights bodies were all distilled from non-environmental human rights.” (Wet and Plessis, 2010).

3.2.1 Right to adequate standard of living

Article 11 of the 1966 International Covenant on Economic, Social, and Cultural Rights (ICESCR) provides that states parties shall recognize the right of everyone to an adequate standard of living, including adequate food, clothing, and housing, and undertake to ensure the right to be free from hunger and malnutrition. As the most classic ESC rights paradigm, scholars have developed two classic ESC rights analytical frameworks for this right, which have since been widely applied to almost all ESC rights. One is the threefold obligation of the state to respect, protect, and fulfill these rights, first introduced by Henry Shue (Shue, 1980), in slightly different wording, then adopted and modified by Eide in his

report concerning right to food;⁴² Another is the 4A standard concerning the full enjoyment and realization of these rights: availability, accessibility, acceptability and adequate quality, put forward by Katarina Tomasevski, Special Rapporteur on the right to education.⁴³

Of direct relevance to the marine environment are three sub-rights: the right to housing, food and water. The impact of changes in the marine environment on the right to housing is usually more visible and generally occurs in coastal areas. It has been warned by the Intergovernmental Panel on Climate Change (IPCC) that the sea-level will rise by an average of one foot by 2050, and nearly three foot by 2100, which could fundamentally transform current coastal landscapes. (IPCC) As one study has observed, Many of the world's major cities are situated on coastlines and river systems which will likely be threatened directly or indirectly by sea level rise (Neumann et al., 2015). For those living in low-elevation coastal zones who lack the infrastructure or resources to adapt to rising seas, erosion, saline intrusion, and tidal flooding, their right to housing is more severely affected by the deterioration of the marine environment. In addition, it has also been further suggested that the cost of maintenance and repair of the buildings will also increase further, if they are located in both current flood zones and areas that are likely to be under water when sea levels rise further (Fuerst and Warren-Myers, 2021). Owners and renters of affordable housing will be disproportionately more at risk than other classes of society in this crisis. Thus, while the economic crisis is often described as the main threat to the right to housing in the first two decades of the twenty-first century, thereafter it will gradually give way to climate change-induced sea-level rise.

Scientific studies have shown that the impact on the right to food and the right to water is also becoming more prominent. In his 2012 report, Olivier De Schutter, Special Rapporteur of the United Nations Human Rights Council on the right to food analyzed in detail the significant role of global fisheries for the right to food and food security, especially where alternative sources of high-quality protein are scarce or unaffordable.⁴⁴ For example, overfishing in coastal areas, and the associated overexploitation, habitat loss, and ecosystem collapse will have a direct impact on the sustainability of fisheries productivity, threatening the availability, accessibility, and adequacy of food. In addition, marine plastic pollution and heavy metal contamination pose direct risks to food safety. A study by Barboza and others found microplastics—defined as plastic particles smaller than 5 mm—are now pervasive across marine environments and have been found in a wide range of seafood consumed by humans, including fish, mollusks, and crustaceans (Barboza et al., 2018). The accumulation of hazardous substances, together with bioaccumulation through the food chain, would

compromise both food safety and food quality, core components of the right to adequate food defined by General Comment No. 12 of the Committee on Economic, Social and Cultural Rights.⁴⁵ As for the right to water, although marine water sources are not directly potable, recent studies have noted that coastal and groundwater freshwater supplies are threatened by saltwater intrusion. Primarily due to sea-level rise and groundwater over-extraction, seawater encroaches into coastal freshwater aquifers, contaminating groundwater resources (Meyer et al., 2019). This process prevents residents from accessing clean drinking water, thus makes water non-potable and unsafe for agriculture or hygiene use.

3.2.2 Right to health

The World Health Organization (WHO)'s 1946 Constitution provides an enduring but challenging conceptual foundation for the right to health, as “a state of complete physical, mental, and social well-being, not merely the absence of disease or infirmity.” However, this definition represents merely the WHO's objective and vision and is not legally binding. The Article 12 of 1966 ICESCR, adopted the formulation of “highest attainable standard of health” for the first time in an international human rights treaty and enumerated four specific measures that States were required to implement in order to guarantee this right. This also dispelled a common misconception that the right to health is not the equivalent of the right to be healthy. The Fact Sheet No.31 published by UN Office of the United Nations High Commissioner for Human Rights and WHO, further describes the four core elements of health as a human right: health as freedom; health as entitlement, the principle of non-discrimination, and the standard of 4A framework.⁴⁶ Admittedly, due to the interrelevance and interdependence of all human rights, the right to health intersects, to some extent, with the right to an adequate standard of living, as described above, and in particular the right to clean and sanitized water therein. But the right to health also has its core content. Paul Hunt, the Special Rapporteur on the right of everyone to the enjoyment of the highest attainable standard of physical and mental health, has indicated in his 2008 report that the core obligations of right to health can be divided into five parts: (a) a comprehensive, national plan for the development of the health system; (b) access to health-related services and facilities on a non-discriminatory basis; (c) equitable distribution of health-related services and facilities; (d) an effective, transparent, accessible and independent mechanisms of accountability; and (e) a minimum “basket” of health-related services and facilities, including essential medicines, immunization against the community's major infectious diseases, and sexual and reproductive health services including information, family planning, prenatal and post-natal services, and emergency obstetric care.⁴⁷ Proposals to extend the realm of this right

42 See UN, Study on the Right to Adequate Food as a Human Right, Preliminary report by Mr. Asbjørn Eide, Special Rapporteur, 25 July 1983, E/CN.4/Sub.2/1983/25, para 9.

43 See UN, Economic, Social and Cultural Rights, Preliminary report of the Special Rapporteur on the right to education, Ms. Katarina Tomasevski, 13 January 1999, E/CN.4/1999/49, para 50.

44 UN, A/HRC/25/57, 24 January 2014, para 8.

45 See Committee on Economic, Social and Cultural Rights, General Comment No.12: Article 11, in HRI/GEN/1/Rev.9(Vol.1).

46 See UN Office of the High Commissioner for Human Rights, Fact Sheet No. 31, The Right to Health, June 2008, Available at <https://www.ohchr.org/en/publications/fact-sheets/fact-sheet-no-31-right-health>. (Accessed 6 August 2025).

to mental and spiritual health have also continued to emerge in recent years (Wüthrich-Grossenbacher, 2024).

While the logical pathway through which marine environmental pollution and degradation affects the right to health may bear some resemblance to that of the right to an adequate standard of living, the right to health can still play an irreplaceable role in the governance of the marine environment.

Firstly, as a specialized area of maritime law, Seafarers' health and wellbeing have already been recognized and protected under existing maritime labor law system, including the 2006 ILO Maritime Labor Convention (MLC). To protect the health of seafarers, Title 4 of the MLC sets out the legal obligations of flag and coastal States to provide seafarers with prompt access to medical care on board ship and ashore.⁴⁸ However, this set of obligations is based more on traditional barriers to health at sea, such as limited medical facilities, scarce supplies, and long distances from professional care, and fails to take into account the health of seafarers in the context of pollution and degradation of the marine environment. In this regard, it is necessary to reflect on the dual role of seafarers in the marine environment: firstly, as the most direct and primary victims of marine environmental pollution, and secondly, on the front lines of the maritime industry to prevent marine pollution. Seafarers will be the beneficiaries of their own responsible behavior at sea. Therefore, the right to health has been introduced both to weave a more comprehensive safety net for seafarers from maritime environmental risks under the framework of international human rights law, and to justify the regulatory frameworks established by the International Convention for the Prevention of Pollution from Ships and the environmental compliance system introduced by International Maritime Organization, including the duty of seafarers to report and monitor oil spill prevention, management of ship-generated waste, and air emissions control in their daily operations and management of vessels.

Secondly, by extending the subject of the right to all persons, the current legal framework and standards on the right to health are able to address the multifaceted and multilayered health risks arising from marine pollution. In terms of the physical health, the infringement of marine pollution far exceeds the scope of traditional "health damage". When the endocrine disruptors in marine pollutants, including plasticizers and heavy metals, enter the human body through the food chain, they will directly impact the human physiological system, even life-threatening in severe cases (Vergara et al., 2024). For example, the Liberian-flagged container ship MSC Elsa 3 capsized and sank off the coast of Kerala, India. The ship was carrying 640 containers, including 12 cases of high-risk calcium carbide. It was estimated that the leakage of calcium carbide could lead to decades of chemical contamination of the sea, potentially causing a repeat of the 2021 nitric acid spill from the MV

X-Press Pearl in Sri Lanka.⁴⁹ In addition to the right to physical health, the right to health includes freedom from ongoing mental suffering, which has the same legal status as physical health.

Beyond these two rights, indirect approaches may also involve the right to life, the right to private and family life, the right to work, and the right to culture. Among others, the right to life may also be regarded as a safety-net strategy when the rights to an adequate standard of living and to health are inadequately safeguarded. As these rights primarily entail positive obligations for states in the context of marine environmental pollution and degradation, which differ from the aforementioned rights only in terms of the specific rights protected and the concrete measures required of the states, this paper will not separately analyze the indirect achievement of marine environmental protection and conservation objectives through these rights.

3.2.3 The potentials and limitations of an indirect approach

The most direct advantage of the indirect approach is the reliability of its normative basis. Whether it is the right to an adequate standard of living and the right to health, which are the focus of this article, or the right to life and the right to private and family life, triggered in other circumstances, they are all directly stipulated in widely-recognized international human rights instruments.

Within the international human rights protection mechanism, the enforceability of these rights far exceeds that of the right to a healthy environment. For example, in the individual communications procedure under the International Covenant on Economic, Social and Cultural Rights, there have been numerous complaints related to the right to housing. The principle of proper notice procedures established by the CESCR in a series of forced eviction cases has become an important component of housing rights jurisprudence.⁵⁰ Even in the European Convention on Human Rights, which does not explicitly stipulate economic, social, and cultural rights, a series of lawsuits related to the environment and climate change have been advanced through rights such as the right to life and the right to private and family life.⁵¹ This approach, which draws on clear precedents, is a pragmatic option for initiating human rights remedies for marine environmental issues.

With respect to the law of sea framework, the normative dimensions of the above-mentioned rights that intersect with the marine environment offer a feasible strategy for integrating human rights into the interpretation and implementation of state obligations under UNCLOS. On the one hand, as part of the coastal state's authority, UNCLOS acknowledges that coastal states may impose measures, including fines or even arrest, on vessels and crew members suspected of violating environmental

47 UN, Report of the Special Rapporteur on the right of everyone to the enjoyment of the highest attainable standard of physical and mental health, Paul Hunt, A/HRC/7/11, 31 January 2008, paras 51–52.

48 Maritime Labour Convention, Adopted 23 February 2006, Entry into Force 20 August 2013, 2952 UNTS 3.

49 Xinhua News Agency, May 2025. Available at: <https://baijiahao.baidu.com/s?id=1833143533403319087&wfr=spider&for=pc>. (Accessed August 7, 2025).

50 See Committee on Economic, Social and Cultural Rights, *I. D. G. v. Spain*, 17 Jun 2015, Communication No. 2 /2014, para 14.

51 See ECtHR, *Powell and Rayner v. the United Kingdom*, Judgment of 21 February 1990, Application No. 9310/81.

regulations or causing marine pollution in their exclusive economic zones. In such cases, diligently respecting human rights helps strengthen the legitimacy of such enforcement authority. On the other hand, by linking such above-mentioned human rights, the protection of the marine environment can be viewed as part of the coastal state's obligation to protect human rights from violations by non-state actors, which in turn provides legitimacy for the coastal state's environmental enforcement actions.

Of course, it cannot be denied that indirect approaches have obvious limitations. Since each right has specific elements, remedies for these rights must be based on the premise that these elements have been directly and explicitly breached. This means that remedies for rights are inherently delayed and deviate from the core issues, failing to address the source of marine environmental degradation and sea-level rise. Therefore, this indirect approach is better suited to play a supplementary role in marine environmental governance. Additionally, the limitations of this indirect approach are exacerbated by the inherent limitations of international human rights law. For example, international human rights law is inherently state-centric, ignoring the structural differences that may exist between and within states, while the extent to which different groups are affected by the marine environment varies significantly. For instance, while both are coastal states, marine ecological destruction is a catastrophic disaster for small island states, whereas for developed coastal states, it is merely a distant link in the environmental chain. Within a single state, marine environmental pollution may be just one of many invisible risks for urban residents, but for fishermen whose livelihoods depend on fishing or tribes that view the ocean as a spiritual totem, it signifies the collapse of their livelihoods and sacred beliefs. The remedies currently available under international human rights law—whether substantive or procedural—are, in truth, inadequate and insufficient.

4 The recommendations on protection and preservation of the marine environment through human rights-based approach

Based on the above analysis of the potential and limitations of the human rights-based approach in marine environmental governance, this article will provide some feasible recommendations to further integrate the human rights-based approach into the entire process of marine environmental governance.

4.1 Indigenous peoples' rights to marine environment: reconciling individual rights and collective rights

The human rights-based approach distinguishes itself from conventional legal or policy approaches by focusing not only on the formal aspects of laws and policies – their content and effectiveness – but also on the substantive dimensions: the capacity

and opportunity to exercise rights. This entails an empowerment perspective, whereby each individual and (in cases of collective rights) group acquires the ability to think and act freely, to make decisions, and to fulfil their own potential as full and equal members of society (Broberg and Sano, 2018). In the context of marine environment, marine-dependent indigenous communities are groups whose livelihoods and cultures are highly dependent on marine ecosystems and are often overlooked in the legal framework of protection and conservation of marine environment. Attention and consideration for these communities is not only concerned with the sustainability of ecological resources, but also with the comprehensive realization of cultural preservation and environmental justice.

Currently, treaty bodies, mainly Human Rights Committee, have examined a series of individual communications concerning the rights of indigenous communities in the context of marine environmental degradation and sea level rise. In the *Teitiota v. New Zealand* case, the author, a Kiribati citizen seeking asylum in New Zealand, argued that sea level rise in Kiribati caused by climate change has created a scarcity of habitable space, resulting in violent land disputes, and environmental degradation including saltwater contamination of the freshwater supply. Although this case involves whether New Zealand violates the right to life by denying asylum, the relevant background facts indicate that this is a typical case of indigenous residents of small island states losing their basic means of survival due to rising sea levels. Worse still, the deterioration of the marine environment will sever the cultural and spiritual connections between indigenous communities and their traditional lands or marine spaces.⁵² In the *Daniel Billy and others v. Australia* (*Torres Strait Islanders Petition*), the indigenous inhabitants of Boigu, Poruma, Warraber and Masig, four small, low-lying islands in Australia's Torres Strait region, claimed that changes concerning the marine environment and sea-level have direct harmful consequences on their livelihood, their culture and traditional way of life. For example, severe flooding caused by the tidal surge in recent years has destroyed family graves and left human remains scattered across their islands.⁵³ Taking into account the Islanders' close, spiritual connection with their traditional lands, and the dependence of their cultural integrity on the health of their surrounding ecosystems, the Committee found that Australia violated the indigenous inhabitants' rights to enjoy their own culture and to be free from arbitrary interferences with their private life, family and home.

However, it is important to note that while the aforementioned case systematically examines the human rights protection remedies for indigenous groups in the context of deteriorating marine environments from an individual rights perspective, the latency of such remedies makes it difficult to fundamentally alter the marginalized status of indigenous groups in marine environmental affairs. Therefore, this article suggests adopting a collective human rights perspective, recognizing the governance agency of indigenous

⁵² See Human Rights Committee, *Teitiota v. New Zealand*, 24 October 2019, Communication No. 2728/2016.

⁵³ See Human Rights Committee, *Daniel Billy and others v. Australia*, 21 July 2022, Communication No. 3624/2019.

marine communities to activate endogenous community forces in order for a multidimensional human rights-based system.

The right to development will serve as the core right within this framework. According to the 1986 Declaration on the Right to Development, the right to development can be viewed as both an individual right of all human beings and a collective right of all peoples. The individual dimension centers on the right of every individual to participate in and benefit from development, while the collective dimension centers on self-determination, referring to the right of peoples to determine their own economic, social, and cultural development agendas.⁵⁴ Through the reconciliation of collective and individual rights, the development protected and promoted by the right to development is an inclusive form of development which is conceptualized not merely in terms of economic growth but also as a means to expand individuals' options to lead fulfilling intellectual, emotional, moral and spiritual lives that respect cultural identities and the diversity of cultures.⁵⁵ As early as 1988, scholars proposed that the right to development, as a collective right, could provide a framework for addressing issues of common concern to humanity, such as the climate crisis, peacebuilding, and sustainable development (Alston, 1988). With respect to marine environmental governance, the right to development signifies a development paradigm committed to ecological-cultural integrity, which involves constructing a legal system that integrates economic empowerment, cultural self-determination, and ecological governance and embeds the indigenous philosophy of "coexistence between humans and the sea" and rely on mandatory cultural impact assessment procedures to ensure that their cultural subjectivity and spiritual connections are legally recognized during major decision-making processes of development.

4.2 Public participation in marine environmental governance: bridging the gap between civil and political rights and economic, social and cultural rights

Similarly, grounded in the consideration of strengthening the autonomous capacity of rights holders to act, the principles of participation and inclusion are viewed as central to implementing a human rights-based approach (Broberg and Sano, 2018). Insufficient public participation in marine environmental affairs not merely undermines the legitimacy and enforceability of the regulatory measures, but also deviates from the state obligations under international human rights law concerning the procedural elements of the right to a clean, healthy and sustainable environment. However, in the existing human rights-based marine environmental governance framework, there remains a regrettable gap between civil and political

rights and economic, social, and cultural rights, much like the biases these two categories of rights have historically and theoretically faced. For example, civil and political rights often come into play in the process of opposing and supervising the environmental enforcement powers of coastal states and in subsequent judicial proceedings, while economic, social and cultural rights, which require states to take affirmative measures, are considered to be subject to the resources and capabilities of states and can only be realized gradually. This article suggests that marine environmental governance must be advanced in a manner that treats both categories of human rights with equal importance through promoting public participation. This recommendation will be divided into three parts based on the three pillars of the right to environment under the 1998 Aarhus Convention.

Firstly, public participation is predetermined by access to information. Traditionally, the access to information has been viewed as part of the freedom to seek, receive and impart information and ideas confirmed in Article 19 of the ICCPR. In a broader sense, the requirement of access to information can be considered as an integral component of nearly every human right, particularly for the right to an adequate standard of living and the right to health analyzed above, the transparency of information regarding the marine environment is an important prerequisite for individuals to make decisions without infringement and to fully benefit from their rights. Currently, marine environmental data tends to be highly fragmented and technically specialized, often collected, processed, and stored by public authorities. To break down the structural barriers preventing the public from effectively accessing and addressing marine information, a human rights-based approach would suggest a data integration platform that consolidate government monitoring data, research reports, and corporate emissions data into a unified system which is publicly accessible in open formats. Furthermore, professional data must be translated into formats that the public can understand to break down knowledge barriers and establish a continuous, dynamic, and accessible information flow.

Secondly, the decision-making participation is a key component of the right to public participation. Traditional participation models mostly limit input to the end of the policymaking process, which makes it difficult for public opinion to substantially impact the direction of decision-making. With regard to marine environmental governance, the decision-making participation can be further divided into macro-level decision and micro-level decision process. The former, such as national marine spatial planning and establishing high seas protected areas, should include statutory citizen consultation bodies. These bodies should include fishermen, community representatives, and environmental organizations in the policy-drafting process according to a certain proportion and have the right to propose initiatives and request feedback on objections. The latter, taking environmental impact assessment (EIA) process as a specific example, should advance the timing of public involvement by disclosing information at the project initiation stage and using interactive hearings and scenario simulation tools to facilitate deeper discussions. Project proponents must respond to public opinions item by item and explain their reasoning. In addition, the participation should be expanded to include cross-border and intergenerational

⁵⁴ See UN, Declaration on the Right to Development, 04 December 1986, A/RES/41/128, Article 1.

⁵⁵ See UN, Individual and Collective Dimensions of the Right to Development - Thematic study by the Expert Mechanism on the Right to Development, 12 August 2024, A/HRC/57/40.

groups. Institutionalized seats should be created for cross-border communities and young generation in order to ensure their right to speak and propose initiatives at international marine conferences and regional fisheries organizations.

Thirdly, an access to justice serves not only as a safeguard for the first two pillars but also holds independent value. According to Article 9 of Aarhus Convention, state parties shall provide access to justice in three contexts: access to information appeals; decision-making participation appeals and general violations of environmental law. The third context implies that the state should provide individuals with the opportunity to challenge acts and omissions by private sectors and public authorities, whether through administrative or judicial bodies, and either based on a right to environment directly or other human rights indirectly affected. Additionally, access to judicial remedies should ensure certain quality standards, with the procedures in each of the three contexts referred to above required to be “fair, equitable, timely, and not prohibitively expensive”. The interpretation of access to justice also reflects the widely-acknowledged consensus that, whether it concerns civil and political rights or economic, social, and cultural rights, access to judicial remedy should be regarded as part of the state’s obligations inherent in each human right, and even as a minimum core obligation, regardless of the economic and institutional costs.

In summary, promoting public participation in marine environmental governance suggests shifting the traditional perception of the public as mere “information recipients” or “policy recipients” to the knowledge contributors, decision-making collaborators, and rights holders. This further demonstrates the interconnected and inseparable nature of the two categories of human rights: the state’s obligations under civil and political rights also require the state to take proactive measures, while the state’s fulfilment of economic, social, and cultural rights is not as “costly” as imagined.

4.3 Towards “the right to a clean, healthy and sustainable marine environment”: integrating regional and national experiences

Beyond fully mobilizing existing human rights resources, the human rights-based approach equally emphasizes the advocacy and advancement of emerging human rights. Following the historic recognition of the right to a clean, healthy and sustainable environment as a universal human right in 2022 by the United Nations General Assembly, one article tentatively put forward the notion of “the human right to a clean, healthy and sustainable ocean” (Bennett et al., 2024), the Human Rights Council further proposed a resolution in 2025 titled “The human right to a clean, healthy, and sustainable environment: oceans and human rights”.⁵⁶ Although the current international law-making process regarding the right to a healthy environment remains stagnant, the introduction and further development of “the right to a clean, healthy and sustainable marine environment” actually provides an alternative and more feasible approach for incorporating human rights into marine environmental governance.

Currently, the international law-making process regarding the right to a clean, healthy and sustainable marine environment already benefits from certain favorable conditions. UN Special Rapporteur on Environment and Human Rights on biodiversity, for example, has included a recommendation in his 2020 report that the proposed agreement on the conservation and sustainable use of marine biodiversity beyond areas of national jurisdiction includes appropriate consideration of human rights.⁵⁷ As the first international legal documents to adopt a human rights-based approach concerning environment issues, 2022 Kunming-Montreal Global Biodiversity Framework directly acknowledges the human right to a healthy environment and includes certain targets on marine protected areas, fisheries and marine spatial planning. The first practice of human rights treaty bodies in this regard comes from the General Comment No. 26 of Committee on the Rights of the Child on “Children’s Rights and a Healthy Environment” in 2023, which specifies that “to protect children’s right to a healthy environment, States should take immediate action to prevent marine pollution, and transform industrial fisheries”.⁵⁸ (Shields et al., 2023) These efforts, though still distant, have already constituted early attempts at international law-making process regarding the right to a clean, healthy and sustainable marine environment.

In fact, shifting the focus from the global to the regional level reveals more optimistic groundwork and useful experiences. On the one hand, the development of the right to a clean, healthy and sustainable environment reflects the typical evolving process from regional treaties to international initiatives. The Article 24 of the African Charter on Human and Peoples’ Rights and article 11 of the Protocol of San Salvador, which directly stipulate the right to a healthy environment, while the Aarhus Convention expands on the procedural elements of this right. It is precisely these regional human rights consensuses from Africa, Latin-America, and Europe that have laid a solid foundation for the international community’s recognition of the right to a clean, healthy and sustainable environment. On the other hand, there are already a series of regional agreements or protocols related to marine environmental issues in the field of maritime law. For example, the 1983 Convention for the Protection and Development of the Marine Environment in the Wider Caribbean Region (“Cartagena Convention”) stipulates that state parties shall undertake obligations to take measures, including to prevent, reduce, and control the pollution from ships, dumping, seabed activities and land-based sources and activities.⁵⁹ By delineating jointly managed areas, this regional convention has established uniform enforcement standards within the Caribbean region. As a legal framework, this convention is further supported by three technical agreements or protocols on Oil Spills, Specially Protected Areas and Wildlife and Land Based Sources of Marine Pollution. In this regard, consensus on the right to a healthy

⁵⁶ UN, A/HRC/58/L.26/Rev.1, 28 March 2025.

⁵⁷ UN, Report of the Special Rapporteur on Human Rights and the Environment, 15 July 2020, A/75/161, para 90.

⁵⁸ Committee on the Rights of the Child, General comment No. 26: children’s rights and the environment with a special focus on climate change, 22 August 2023, CRC/C/GC/26.

environment is more likely to emerge between two states that share common interests and values. For example, the 1991 Espoo Convention requires contracting parties to conduct environmental impact assessments when planning projects that may have significant transboundary environmental impacts. Article 8 (Bilateral and Multilateral Cooperation) states: “The Parties may continue existing or enter into new bilateral or multilateral agreements or other arrangements in order to implement their obligations under this Convention.”⁶⁰ Guided by this provision, for example, Germany and the Netherlands reached further consensus on transboundary EIA and SEA, issuing the Common Declaration on Transboundary EIA and SEA between the Netherlands and Germany in 2013. Although it does not directly employ human rights language and cannot be incorporated into the compliance mechanisms of human rights law, the bilateral obligations regarding EIA and SEA between two states have effectively become procedural factors that must be considered when the two states voluntarily fulfil their relevant human rights obligations domestically.

Regional and national experiences in the field of environmental rights have further expanded the substantive content of this right. Over the past three decades of regional and domestic environmental litigation, the most significant achievement has been the expansive recognition of the legal status of non-state actors. Traditionally, both under domestic and international law, the state was considered the sole responsible entity, and the practice of environmental governance either focused on the rights and duties between states or on the obligations of states owed to individuals regarding their human rights. The UN Guiding Principles on Business and Human Rights have applied the framework of threefold obligation originally applicable solely to state obligations, to corporate business activities, providing a new international legal perspective on human rights in areas such as the environment and labor. Specifically regarding marine environmental governance, firstly, this framework clarifies the legal duties of businesses operating in the ocean economy “to ensure that they are preventing, mitigating and remediating impacts on human rights related to ocean environments through clear human rights policies, human rights and environmental due diligence procedures, and grievance and remediation mechanisms” (Bennett et al., 2024); secondly, with the gradual adoption of regional and domestic legislation, such as Germany’s Supply Chain Due Diligence Act and the EU Corporate Sustainability Due Diligence Directive, the human rights responsibilities borne by businesses in the marine environmental sector will be subject to comprehensive regulation and implementation. It is anticipated that this multi-stakeholder governance framework will become a significant

breakthrough in the international law-making process for the right to a clean, healthy and sustainable marine environment.

5 Conclusion

The sea is not a lawless frontier, and the law of the sea should not be separate from human rights. As the demand for resources continues to grow and land-based sources decline, the expectation that the ocean as an engine of human development is increasing. In this process, the threats to human rights posed by deteriorating marine environments and rising sea levels are gradually increasing and becoming more evident and prevalent. However, human rights issues related to the marine environment have not received sufficient attention. Just as an author has observed that “the marine environmental issues of perhaps the greatest contemporary concern, all of which are the product of human actions” (Churchill, 2023). This article attempts to establish a theoretical connection between the marine environment and human rights and seeks to address several issues in current marine environmental governance through a widely recognized “human rights-based approach”.

As the major theoretical framework of this article, the introduction of human rights-based approach in the marine environment can be justified from two aspects. First, from the standpoint of human rights law, the extraterritorial application of human rights treaties means that the state parties’ legal obligations extend beyond national land-borders to the maritime areas under a State’s jurisdiction; second, from the perspective of the law of the sea, the normative open-endedness of UNCLOS itself and the consideration of humanitarian factors by ITLOS in a series of cases make the rules and standards in the human rights field referenceable. Therefore, marine environmental issues may be directly or indirectly related to multiple human rights, including the right to a healthy environment, the right to life, the right to an adequate standard of living, the right to health, and the right to private and family life. Human rights also serve multiple purposes in marine environmental governance, including being invoked as a condition for initiating marine environmental enforcement actions, being integrated into the requirements for fulfilling obligations to protect and preserve the marine environment, and being considered when taking possible law enforcement and judicial actions against vessels for marine pollution.

By analyzing the potential and limitations of adopting a human rights approach in the marine environment, this article proposes the following recommendations to further integrate marine environmental governance with human rights: (a) Give full attention to the rights of marine-dependent indigenous communities by adopting a dual perspective that combines collective rights and individual rights; (b) Promote public participation for each human right related to the marine environment in an empowering manner, without any distinction between citizens’ political rights and economic, social, and cultural rights; (c) Consolidate existing regional and national practices concerning the right to a clean, healthy and sustainable marine environment to advance the international law-making process.

59 Convention for the Protection and Development of the Marine Environment in the Wider Caribbean Region, Adopted 24 March 1983, Entry into Force 11 October 1986, 1988 UNTS 158.

60 Convention on Environmental Impact Assessment in a Transboundary Context, Adopted 25 February 1991, Entry into Force 10 September 1997, 1989 UNTS 309.

Author contributions

LD: Writing – original draft. BY: Writing – original draft.

Funding

The author(s) declare that no financial support was received for the research and/or publication of this article.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

References

- Alston, P. (1988). Making space for new human rights: the case of the right to development. *Harv. Hum. Rts. Yrbook.* (Cambridge, Mass: Harvard Law School) 1, 3–40.
- Aust, A. (2007). *Modern Treaty Law and Practice* (Cambridge: Cambridge University Press, United Kingdom).
- Auz, J. (2022). Human rights-based climate litigation: a Latin American cartography. *J. Hum. Rights Environ.* 13, 114–136. doi: 10.4337/jhre.2022.01.05
- Barboza, L. G. A., Vethaak, A. D., Lavorante, B. R.B.O., Lundebye, A., and Guilhermino, L. (2018). Marine microplastic debris: an emerging issue for food security, food safety and human health. *Mar. pollut. Bull.* 133, 336–348. doi: 10.1016/j.marpolbul.2018.05.047
- Bennett, N. J., Morgera, E., and Boyd, D. (2024). The human right to a clean, healthy and sustainable ocean. *NPJ Ocean Sustain* 3, 1–8. doi: 10.1038/s44183-024-00057-7
- Berdalet, E., et al. (2015). Marine harmful algal blooms, human health and wellbeing: challenges and opportunities in the 21st century. *J. Mar. Biol. Assoc. United Kingdom* 96, 61–91. doi: 10.1017/S0025315415001733
- Besson, S. (2020). Due diligence and extraterritorial human rights obligations – mind the gap! *ESIL Reflections* 9, 1–9.
- Broberg, M., and Sano, H. (2018). Strengths and weaknesses in a human rights-based approach to international development – an analysis of a rights-based approach to development assistance based on practical experiences. *Int. J. Hum. Rights* 22, 664–680. doi: 10.1080/13642987.2017.1408591
- Buonocore, E., Grande, U., Franzese, P. P., and Russo, G. F. (2021). Trends and evolution in the concept of marine ecosystem services: an overview. *Water* 13, 1–14. doi: 10.3390/w13152060
- Churchill, R. (2023). “The UN convention on the law of the sea– still relevant to protection of the marine environment?,” in *Research Handbook on International Marine Environmental Law*. Eds. R. Rayfuse, A. Jaekel and N. Klein (Edward Elgar Publishing, United Kingdom, Cheltenham).
- Foley, M. M., et al. (2013). Improving ocean management through the use of ecological principles and integrated ecosystem assessments. *BioScience* 63, 619–631. doi: 10.1525/bio.2013.63.8.5
- Fuerst, F., and Warren-Myers, G. (2021). Pricing climate risk: are flooding and sea level rise risk capitalised in Australian residential property? *Climate Risk Manage.* 34, 1–28. doi: 10.1016/j.crm.2021.100361
- Häder, D., and Barnes, P. W. (2019). Comparing the impacts of climate change on the responses and linkages between terrestrial and aquatic ecosystems. *Sci. Total Environ.* 682, 239–246. doi: 10.1016/j.scitotenv.2019.05.024
- Harrison, J. (2017). *Saving the Oceans Through Law: The International Legal Framework for the Protection of the Marine Environment* (Oxford: Oxford University Press, United Kingdom).
- Klein, N. (2022). Geneva declaration on human rights at sea: an endeavor to connect law of the sea and international human rights law. *Ocean Dev. Int. Law* 53, 232–268. doi: 10.1080/00908320.2022.2112000
- Klein, N. (2025). International law-making and the Geneva declaration on human rights at sea. *Leiden J. Int. Law.* 38, 262–278. doi: 10.1017/S0922156524000426
- Kvamsdal, S., Hopland, A. O., Li, Y., and Selle, S. (2023). Expert opinions on threats and impacts in the marine environment. *Mar. Policy* 147, 1–10. doi: 10.1016/j.marpol.2022.105382
- Meyer, R., Engesgaard, P., and Sonnenborg, T. O. (2019). Origin and dynamics of saltwater intrusion in a regional aquifer: combining 3-D saltwater modeling with geophysical and geochemical data. *Water Resour. Res.* 55, 1792–1813. doi: 10.1029/2018WR023624
- Milanovic, M. (2008). From compromise to principle: clarifying the concept of state jurisdiction in human rights treaties. *Hum. Rights Law Rev.* 8, 411–448. doi: 10.1093/hrlr/ngn021
- Ndiaye, T. M. (2019). Human rights at sea and the law of the sea. *Beijing Law Rev.* 10, 261–277. doi: 10.4236/blr.2019.102016
- Neumann, B., Vafeidis, A. T., Zimmermann, J., and Nicholls, R. J. (2015). Future coastal population growth and exposure to sea-level rise and coastal flooding – A global assessment. *PLoS One* 10, 1–34. doi: 10.1371/journal.pone.0118571
- Oxman, B. H. (1997). Human rights and the United Nations convention on the law of the sea. *Colum. J. Transnat'l L.* 36, 399–429.
- Papanicopolulu, I. (2012). The law of the sea convention: no place for persons? *Int. J. Mar. Coast. Law* 27, 867–874. doi: 10.1163/15718085-12341256
- Papanicopolulu, I. (2014). “Human rights and the law of the sea,” in *The IMLI Manual on International Maritime Law: Volume I: The Law of the Sea*. Ed. D. J. Attard (Oxford University Press, United Kingdom, Oxford).
- Petrig, A., and Bo, M. (2019). “The international tribunal for the law of the sea and human rights,” in *Human Rights Norms in ‘Other’ International Courts*. Ed. M. Scheinin (Cambridge University Press, United Kingdom, Cambridge).
- Shany, Y. (2019). The extraterritorial application of international human rights law. *Reuill Des. Cours* 409, 9–152. doi: 10.1163/1875-8096_pphrdc_A9789004445055_01
- Shields, S., Longo, A., Strand, M., and Morgera, E. (2023). Children’s human right to be heard at the ocean-climate nexus. *Int. J. Mar. Coast. Law* 38, 545–580. doi: 10.1163/15718085-bja10140
- Shue, H. (1980). *Basic Rights: Subsistence, Affluence and U.S. Foreign Policy* (Princeton: Princeton University Press, United States).
- Treves, T. (2010). Human rights and law of the sea. *Berkeley J. Int. Law* 28, 1–14.
- UNCTAD (2023). *Trade and Environment Review 2023: Building a Sustainable and Resilient Ocean Economy beyond 2030*. Available online at: https://unctad.org/system/files/official-document/ditcted2023d1_en.pdf (Accessed July 26, 2025).
- Vergara, E., Pancetti, F., Zúñiga, L., Fabres, K., and Bahamonde, P. (2024). Risk map of human intake of mercury through fish consumption in Latin America and the Caribbean. *Front. Sustain. Food Syst.* 8. doi: 10.3389/fsufs.2024.1470683
- Wet, E. D., and Plessis, A. D. (2010). The meaning of certain substantive obligations distilled from international human rights instruments for constitutional environmental rights in South Africa. *Afr. Hum. Rights Law J.* 10, 345–376. doi: 10.10520/EJC51927

Whomersley, C. (2023). UNCLOS at 40: What about Human Rights? *Mar. Policy* 148, 1–7. doi: 10.1016/j.marpol.2022.105424

Wüthrich-Grossenbacher, U. (2024). The need to widen the concept of health and to include the spiritual dimension. *Int. J. Public Health* 69, 1–4. doi: 10.3389/ijph.2024.1606648

Yu, L., Feng, R., Sun, Y., and Peng, Y. (2025). Governance of cross-border genomic data sharing through a human rights approach. *Nat. Genet.* 57, 2090–2098. doi: 10.1038/s41588-025-02252-9

Yu, L., and Xu, W. (2023). The extraterritorial human rights obligations of Japan in regard to Fukushima nuclear contaminated water. *Front. Mar. Sci.* 10. doi: 10.3389/fmars.2023.1268175