This is a pre-print of Constantinos Yiallourides & Natalia Ermolina,"States' Environmental Obligations in Disputed Maritime Areas and the Limits of International Law" forthcoming in the Comparative Law Yearbook of International Business (Kluwer Law 2021).

States' Environmental Obligations in Disputed Maritime Areas and the Limits of International Law

Constantinos Yiallourides *
British Institute of International and Comparative Law (BIICL), University of Aberdeen, United Kingdom
Natalia Ermolina **
University of Tromsø – The Arctic University of Norway, Norway

Abstract

There are many cases worldwide where two or more States' maritime claims over ocean space and marine resources overlap, leading to disputed maritime areas. Many of these disputed maritime areas include rare or fragile marine ecosystems and constitute the habitat of vulnerable species. General environmental provisions under international law are binding upon States in disputed maritime areas. Yet, environmental degradation of disputed maritime areas is a live, ongoing, and potentially increasing problem. This chapter explores the specific contours of these environmental obligations and how these may be applied in dispute settlement under UNCLOS. It addresses three important environmental legal issues in international jurisprudence and State practice and which are relevant to the obligations of States acting in disputed maritime areas: (1) the duty to cooperate over environmental matters; (2) the duty to apply a precautionary approach; and (3) the duty to conduct an environmental impact assessment and monitor environmental impacts.

* Parts of this chapter are drawn from the author's earlier published work: Constantinos Yiallourides, 'Protecting and Preserving the Marine Environment in Disputed Areas: Seismic Noise and Provisional Measures of Protection' (2017) 36(2) Journal of Energy & Natural Resources Law 141-161 and a subsequent presentation at the 'Global Ocean Regime Conference: Promoting Cooperation in Overlapping Maritime Areas' organized by the Korea Maritime Institute (Jeju-do, 16-18 May 2018).

** Parts of this chapter are drawn from a thesis by Natalia Ermolina, 'The Law of Shared Hydrocarbon Resources and the Question of Shared State Responsibility for Environmental Harm Arising from Their Cooperative Management' (UiT, May 2019).

The Issue: Fragile Ecosystems Caught in Overlapping Maritime Claims

Crawford writes that 'there is no coastal state in the world that does not have an overlapping potential entitlement with at least one other state'.[1] Maritime boundary delimitation is crucial in determining which State is entitled to exercise sovereign rights and jurisdiction over economic activities in disputed maritime areas.[2] To date, less than half of the world's maritime boundaries have been agreed upon, whether by agreement or recourse to judicial means.[3] As a result, a large number of maritime areas are disputed by two or more coastal States.[4] Public international law has become more precise on the issue of maritime delimitation over time. Yet, resolving maritime delimitation disputes typically takes several years.[5]

1 James Crawford, *Brownlie's Principles of Public International Law* (Oxford University Press 2019) Chapter 12.

2 Douglas M. Johnston and Philip M. Saunders, *Ocean Boundary Making: Regional Issues and Developments* (Croom Helm 1988) 17; Yoshifumi Tanaka, *Predictability and Flexibility in the Law of Maritime Delimitation* (Hart Publishing 2006) 125, 129-130.

3 Anna Khalfaoui and Constantinos Yiallourides, 'Maritime Disputes and Disputed Seabed Resources in the African Continent' in Tina S. Hunter et al. (eds) *Routledge Handbook of Energy Law* (Routledge 2020) Chapter 31. For information regarding disputes over international land and maritime boundaries, *see* CIA World Factbook, http://teacherlink.ed.usu.edu/tlresources/reference/factbook/fields/2070.html?countryName=Haiti&countryCode=ha&regionCode=ca&#ha.

4 The BIICL Report 2016 considered the obligations of States in respect of maritime areas subject to 'overlapping entitlements'. The report drew a distinction between 'undelimited areas' (i.e., areas of overlapping maritime entitlements where no final delimitation agreement is in place) and 'disputed areas' (i.e., maritime areas that are disputed by the coastal States concerned), BIICL, 'Report on the Obligations of States under Articles 74(3) and 83(3) of UNCLOS in respect of Undelimited Maritime Areas' (30 June 2016) (hereafter, BIICL Report 2016). For present purposes, the term 'disputed area' is preferred rather than 'undelimited area' which may, depending on the context, refer to a much wider area and is not always subject to an active dispute (e.g., States may simply decide not to pursue maritime delimitation).

5 For a discussion, Constantinos Yiallourides, *Maritime Disputes and International Law: Disputed Waters and Seabed Resources in Asia and Europe* (Routledge 2019) 29-42, 144-148. *See also* Constantinos Yiallourides, 'Some Observations on the Agreement between Greece and Egypt on the Delimitation of the Exclusive Economic Zone' EJIL-Talk Blog of the European Journal of International Law (25 August 2020): 'UNCLOS, to which the vast majority of States are parties, does not provide a single delimitation method. Yet, multiple maritime boundary litigations and arbitrations have taken place since UNCLOS' adoption. Courts, tribunals and State practice have come to articulate specific delimitation methods and approaches. Going back to square one in every delimitation situation is thus no longer necessary … The three-stage delimitation approach, which involves a provisional equidistance line drawn from the nearest

While the exact location of the maritime boundary remains uncertain, the coastal States may need to conduct economic activities in the disputed areas.[6]

The legal regime governing State activities in maritime areas subject to boundary delimitation disputes has long been a source of discussion and extensive research. International law experts, such as Lagoni, Miyoshi, Fox, Churchill and Beckman, among others, have sought to clarify the existence and content of the rights and obligations of States pending the final settlement of their boundaries and explored possible interim arrangements like joint development agreements (JDAs).[7] The literature has often focused on Article 74(3), Article 83(3) and related provisions of the 1982

---

base points of two adjacent or opposite States, adjusted for equity in light of the relevant circumstances and proportionality requirements, has now become the standard approach.'

6 Clive Schofield et al., 'From Disputed Waters to Seas of Opportunity: Overcoming Barriers to Maritime Cooperation in East and Southeast Asia' (National Bureau of Asian Research Special Report No. 30, July 2011).

7 Rainer Lagoni, 'Interim Measures Pending Maritime Delimitation Agreements' (1984) 78(2) American Journal of International Law 345; Masahiro Miyoshi, 'The Basic Concept of Joint Development of Hydrocarbon Resources on the Continental Shelf' (1988) 3(1) International Journal of Estuarine and Coastal Law 1, 10–11; Hazel Fox et al. (eds) *Joint Development of Offshore Oil and Gas* (1st edn, BIICL 1989) 35; Robin R Churchill and Geir Ulfstein, *Marine Management in Disputed Areas: The Case of the Barents Sea* (Routledge 1992); Enrico Milano and Irini Papanicolopulu, 'State Responsibility in Disputed Areas on Land and at Sea' (2011) 71(3) Zeitschrift für Ausländisches Öffentliches Recht und Völkerrecht 611, 613, 615–16; Tara Davenport, 'The Exploration and Exploitation of Hydrocarbon Resources in Areas of Overlapping Claims' in Robert Beckman et al. (eds) *Beyond Territorial Disputes in the South China Sea: Legal Frameworks for the Joint Development of Hydrocarbon Resources* (Edward Elgar 2013) 102-110; David Anderson and Youri van Logchem, 'Rights and Obligations in Areas of Overlapping Maritime Claims' in Shunmugam Jayakumar, Tommy Koh and Robert Beckman (eds) *The South China Sea Disputes and the Law of the Sea* (Edward Elgar 2014) 192-228; Youri van Logchem, 'The Scope for Unilateralism in Disputed Maritime Areas' in Clive H Schofield, Seokwoo Lee and Moon-Sang Kwon (eds) *The Limits of Maritime Jurisdiction* (Martinus Nijhoff 2014) 175-197; BIICL Report 2016 paragraphs 100-107; Constantinos Yiallourides, *Maritime Disputes and International Law: Disputed Waters and Seabed Resources in Asia and Europe* (Routledge 2019) pp. 144-169; Constantinos Yiallourides, 'Oil and Gas Development in Disputed Waters' (2016) 5(1) UCL Journal of Law and Jurisprudence 59-86; Natalia Ermolina, 'Unilateral Hydrocarbon Activities in Undelimited Maritime Areas' (2018) 15(2) Indonesian Journal of International Law 156-189; Nicholas A Ioannides, 'The Legal Framework Governing Hydrocarbon Activities in Undelimited Maritime Areas' (2019) 68 International and Comparative Law Quarterly 345-368; Sean D. Murphy, 'Obligations of States in Disputed Areas of the Continental Shelf' in Tomas Heidar (ed.) N*ew Knowledge and Changing Circumstances in the Law of the Sea* (BRILL 2020).

United Nations Convention on the Law of the Sea (UNCLOS), and on activities prohibited and permitted within disputed maritime areas.[8]

Significantly less attention has been paid to the environmental legal obligations of States acting in disputed maritime areas.[9] Scientific evidence indicates that many large disputed maritime areas include particularly vulnerable marine ecosystems and constitute the habitat of endangered species.[10] Examples of such areas include the East China Sea, the South China Sea, and the Gulf of Thailand in the Asia-Pacific region,[11] the Mediterranean Sea,[12] and the Indian Ocean.[13]

---

8 For a comprehensive analysis, *see* BIICL Report 2016.

9 The BIICL Report 2016 (p. 38) notes, for instance, that States should exercise caution when conducting activities in a disputed area, 'on the basis that such activities may cause harm to the environment in the maritime zones of a neighbouring State, which may prove to extend further than anticipated'. It adds that activities that cause permanent damage to the marine environment in the disputed areas would be in breach of the obligation not to 'jeopardize or hamper' in Articles 74(3) and 83(3) of UNCLOS; Becker-Weinberg notes that 'States authorizing seabed activities in maritime areas before the delimitation of maritime areas must also comply with their obligations regarding the protection and preservation of the marine environment and must ensure that these activities are developed consistently with international environmental laws and regulations', Vasco Becker-Weinberg, 'Seabed Activities and the Protection and Preservation of the Marine Environment in Disputed Maritime Areas of the Asia-Pacific Region' (Proceedings from the 2012 LOSI-KIOST Conference on Securing the Ocean for the Next Generation) 12; Vasco Becker-Weinberg, *Joint Development of Hydrocarbon Deposits in the Law of the Sea* (Springer 2014) pp. 111-120.

10 Yoshifumi Tanaka, 'The South China Sea Arbitration: Environmental Obligations under the Law of the Sea Convention' (2018) 27(1) Review of European, Comparative and International Environmental Law 90-96.

11 According to Schofield et al., 'The South and East China Seas host marine environments startlingly rich in biodiversity. In particular, the South China Sea has been recognized as an area of globally significant biodiversity, while the East China Sea and Gulf of Thailand are similarly productive. These environments also support fisheries of significance in global, and certainly regional, terms'; Weinberg, likewise: 'the Asia-Pacific region includes valuable and interrelated marine ecosystems that together have some of the richest marine biological diversity in the world and are also an important source of ecological and economic support of a large part of the world's population'; for an analysis on the conservation of endangered species and the conservation of fragile ecosystems in the South China Sea, *see* Alfredo Robles, *Endangered Species and Fragile Ecosystems in the South China Sea: The Philippines v. China Arbitration* (Springer 2020) pp. 39-86; Yoshifumi Tanaka, 'The South China Sea Arbitration: Environmental Obligations under the Law of the Sea Convention' Review of European, Comparative and International Environmental Law 27 (2018): 90–96.

12 Scovazzi writes: 'The protection of the Mediterranean environment is vital because of the very slow exchange of its waters through the strait of Gibraltar. Pollution from any source might have serious and lasting consequences', Tullio Scovazzi, 'International Law of the Sea as Applied to the Mediterranean' (1994) 24 Ocean & Coastal Management 71.

Article 194(5) of UNCLOS establishes an affirmative legal obligation for the protection of 'rare or fragile' ecosystems. However, it does not provide a definition or criteria to qualify a marine environment as a 'rare or fragile' ecosystem.[14] According to the International Union for Conservation of Nature (IUCN), 'fragile' marine ecosystems are marine areas that are highly susceptible to degradation due to natural or human-induced events.[15]

The 'rare or fragile' nature of marine ecosystems has not prevented some coastal States from exploiting their natural resources. States have designated such disputed maritime areas for seabed exploration and/or exploitation through seismic exploration surveys, petroleum drilling,

13 Including the Arafura and Timor Seas, *see* Vasco Becker-Weinberg, 'Maritime Boundary-Making and Improving Ocean Governance in Timor-Leste' (2020) Ocean Yearbook Online 113-135.

14 For a discussion, *see* Alfredo Robles, *Endangered Species and Fragile Ecosystems in the South China Sea: The Philippines v. China Arbitration* (Springer 2020) 97-99; If there is scientific evidence before a court or tribunal that the maritime environment of a disputed area falls under the scope of Article 194(5) of UNCLOS, it triggers enhanced environmental protection measures in the said area, according to the *South China Sea* Arbitration Tribunal, at paragraph 945. In the *Chagos Marine Protected Area Arbitration,* the Annex VII Tribunal found that Article 194(5) is 'not limited to measures aimed strictly at controlling pollution and extends to measures focused primarily on conservation and the preservation of ecosystems.' The Tribunal concluded that 'in establishing the MPA [marine protected area], the United Kingdom was under an obligation to "endeavour to harmonize" its policies with Mauritius', *Chagos Marine Protected Area Arbitration (Mauritius v. United Kingdom)* (Final Award) (PCA 2015).

15 Note that ascertaining ecosystem 'fragility' is a complex scientific exercise, strongly dependent on a number of criteria and variables, including, but not limited to, the: (a) presence of threatened, endangered or declining species and/or habitats of such species; (b) presence of nursery or juvenile areas; (c) presence of feeding, breeding or rest areas; (d) presence of species with increased sensitivity to oil spills and related disturbances; and (e) criteria relating to the social, economic and scientific value of the area in question; *see*, for instance, Hein Rune Skjoldal and Caitlyn Toropova 'Criteria for identifying ecologically important and vulnerable marine areas in the Arctic' (IUCN 2007), https://www.iucn.org/sites/dev/files/import/downloads/criteria__arctic_final.pdf. According to Nilsson and Grelsson, 'ecosystem fragility' in environmental conservation and management 'has never been satisfactorily defined … it prerequires knowledge about the effects of all impacts and activities on any ecosystem, which is virtually impossible to obtain. Radical simplifications are therefore inevitable', *see* Christer Nilsson and Gunnell Grelsson, 'The Fragility of Ecosystems: A Review' (1997) 32(4) Journal of Applied Ecology 677-692; Carolyn J. Lundquist et al., 'Ecological Criteria to Identify Areas for Biodiversity Conservation' (2017) 213 Biological Conservation 309-316.

laying of submarine pipelines and other activities; for fishing; and construction of artificial installations.[16] In a comprehensive study on East and South Asia maritime disputes, Schofield and others observed:

> Over 80% of reefs in the South China Sea and Gulf of Thailand are at risk and will collapse within 20 years unless sustainable practices are adopted; 70% of mangrove cover has been lost in the last 70 years, and at current rates of habitat loss the remainder will be lost by 2030; and 20%–60% of seagrass beds have disappeared over the last 50 years, while those still in existence are also threatened with destruction. The East China Sea is also host to fragile ecosystems, and the marine living resources that it supports are likewise extremely vulnerable to, among other threats, land-based pollution that has compromised or destroyed the spawning, breeding, feeding, and wintering grounds of important fish stocks, thus undermining the sustainability of fisheries. Competitive exploitation of shared fish stocks on the part of the rival fishing fleets of the littoral states has likewise led to significant overfishing of shared stocks. This situation is likely to further deteriorate as ocean-going traffic and oil and gas activities rise.[17]

According to Churchill and Ulfstein, the implementation of good environmental practices in disputed maritime areas largely depends on the degree of cooperation and political goodwill of the States concerned. Some States pursue activities on a unilateral basis; others collaborate. Norway and Russia have established a moratorium on hydrocarbon exploration and exploitation activities in the formerly disputed area of the Barents Sea and a regime for cooperation with respect to fishing activities to 'achieve

16 '[T]he potential economic and human costs of the continued deterioration of the marine environment [in the East and South China Sea] are extremely high', *see* Clive Schofield et al., 'From Disputed Waters to Seas of Opportunity: Overcoming Barriers to Maritime Cooperation in East and Southeast Asia' (National Bureau of Asian Research Special Report No. 30, July 2011); Constantinos Yiallourides, *Maritime Disputes and International Law: Disputed Waters and Seabed Resources in Asia and Europe* (Routledge 2019) pp. 144-169.

17 Clive Schofield et al., 'From Disputed Waters to Seas of Opportunity: Overcoming Barriers to Maritime Cooperation in East and Southeast Asia' (National Bureau of Asian Research Special Report No. 30, July 2011) pp. 9-10; *see also* GEF Secretariat, 'From Ridge to Reef; Water, Environment and Community Security' (Global Environment Facility 2019), https://www.thegef.org/sites/default/files/publications/GEF_RidgetoReef2015_r2_Final.pdf.

environmental protection to a better extent than those that authorize these activities unilaterally'.[18]

Environmental degradation of disputed maritime areas remains a live, ongoing, and potentially increasing problem. The general environmental provisions of the law of the sea together with international environmental law are binding upon States acting in disputed maritime areas. Yet, the specific contours of these obligations and how they may be used in maritime boundary adjudication under UNCLOS merit further examination. Therefore, this chapter focuses on the protection and preservation of marine environment in the specific context of disputed maritime areas. It addresses three important environmental legal obligations in international jurisprudence and State practice which are relevant to the conduct of States in disputed maritime areas: (1) the duty to cooperate over environmental matters; (2) the duty to apply a precautionary approach; and (3) the duty to conduct an environmental impact assessment and monitor environmental impacts. The analysis follows a case-study design and examines the existing body of environmental jurisprudence together with selected examples from State practice to clarify the substance of the environmental legal obligations of States in disputed maritime areas. This chapter does not claim to provide a comprehensive list of all potentially relevant jurisprudence and State practice.

Environmental Obligations under UNCLOS

UNCLOS establishes the overarching international legal framework for the protection of the marine environment.[19] When pursuing marine natural resource potentials, States must comply with their obligations on the protection and preservation of the marine environment and must ensure that their activities are conducted in conformity with international environmental laws and regulations.[20] Article 192 of UNCLOS places States

18 Treaty Concerning Maritime Delimitation and Cooperation in the Barents Sea and the Arctic Ocean (Russian Federation/Kingdom of Norway) (15 September 2010) 2791 United Nations Treaty Series 36; for a discussion, *see* Robin R. Churchill and Geir Ulfstein, *Marine Management in Disputed Areas: The Case of the Barents Sea* (Routledge 1992) pp. 63-65.

19 Part XII, UNCLOS; Robin Warner, *The Oceans Beyond National Jurisdiction Strengthening the International Law Framework* (Martinus Nijhoff 2009) 67.

20 Rüdiger Wolfrum, 'Means of ensuring compliance with and enforcement of international environmental law' in 272 Recueil de cours (1998) 9-154; Catherine Redgwell, 'International Environmental Law' in Malcolm D Evans, *International Law* (5th edn,

under a general legal obligation 'to protect and preserve the marine environment'.[21] Article 193 of UNCLOS adds that States have the 'sovereign right to exploit their natural resources pursuant to their environmental policies and in accordance with their duty to protect and preserve the marine environment'.[22] Giving substance to the general obligation in Article 192, UNCLOS requires States to take all measures necessary to: (a) 'prevent, reduce and control pollution of the marine environment from any source' and (b) 'ensure that activities under their jurisdiction or control' are carried out so as not to 'cause damage by pollution to other States and their environment, and that pollution … does not spread beyond the areas where they exercise sovereign rights'.[23]

Other UNCLOS provisions stress the importance of preventive measures and proactive control of sources of pollution, rather than focus on the consequences and responsibility for recovering damages or remediating harm to the marine environment.[24] For example, Article 208(1) concerns pollution from seabed activities in areas under national jurisdiction. It provides that coastal States 'shall adopt laws and regulations to prevent, reduce and control pollution of the marine environment arising from or in connection with seabed activities subject to their jurisdiction and from

---

Oxford University Press 2018) 675; Malgosia Fitzmaurice, 'International Protection of the Environment' in 293 Recueil de cours (2001) 22-47; Yoshifumi Tanaka, 'Protection of Community Interests in International Law: The Case of the Law of the Sea' in Armin von Bogdandy and Rüdiger Wolfrum (eds), *Max Planck Yearbook of United Nations Law* Volume 15 (BRILL 2011) pp. 329-375; Thomas A Mensah, 'The International Tribunal for the Law of the Sea and the Protection and Preservation of the Marine Environment' (1999) 8(1) Review of European Community and International Environmental Law 1; Alexander Proelss, 'The Contribution of the ITLOS to Strengthening the Regime for the Protection of the Marine Environment' in Angela Del Vecchio and Roberto Virzo (eds) *Interpretations of the United Nations Convention on the Law of the Sea by International Courts and Tribunals* (Springer 2019) 93-105; Tim Stephens, *International Courts and Environmental Protection* (Cambridge University Press 2009) 45.

21 Article 192, UNCLOS.

22 Article 193, UNCLOS.

23 Articles 194(1)-(3), 207-212, UNCLOS; *see also* Article 1, UNCLOS which defines 'pollution of the marine environment': as 'the introduction … of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities'.

24 For a comprehensive analysis, *see* Yoshifumi Tanaka, 'Protection of Community Interests in International Law: The Case of the Law of the Sea' in Armin von Bogdandy and Rüdiger Wolfrum (eds), *Max Planck Yearbook of United Nations Law* Volume 15 (BRILL 2011), 275-328.

artificial islands, installations, and structures under their jurisdiction'.[25] Such laws and regulations 'shall be no less effective than international rules, standards and recommended practices and procedures'.[26]

Chapter 17 of Agenda 21, adopted at the UN Conference on Environment and Development (UNCED) held in Rio de Janeiro in 1992, sets out guidelines and recommendations concerning the protection of the marine environment from various land (such as ports) and sea-based (such as oil and gas platforms) sources of pollution. On pollution from seabed activities, Chapter 17 provides that States, when 'acting individually, bilaterally, regionally or multilaterally', should assess existing regulatory measures to address discharges, emissions, and safety and assess the need for additional measures.[27] States are called to prepare coastal profiles identifying critical areas, including user conflicts and specific priorities for management; conduct prior environmental impact assessments, systematic observation, and follow-up of major projects; devise contingency plans for human-induced and natural disasters; and draft contingency plans for degradation and pollution of anthropogenic origin, including spills of oil and other materials.[28]

Environmental legal obligations under UNCLOS are absolute. They contain no qualifications and cover the ocean as a whole without distinguishing between areas under national jurisdiction (EEZ and continental shelf) and areas beyond national jurisdiction (high seas and the 'Area'), or between disputed maritime areas and areas not subject to a dispute. Whether neighbouring States have agreed to govern a disputed area under a cooperative regime, such as a JDA, is not relevant. UNCLOS makes no exception to the obligations to protect and preserve the marine environment in relation to disputes concerning maritime boundary delimitation.[29] For example, the *South China Sea Arbitration* focused on the disputed legal status of certain territorial features and the conduct of environmentally hazardous island construction activities in the disputed areas of the South China Sea. The Arbitral Tribunal considered that China had breached Article 192 and Article 194(1) and (5) of UNCLOS on environmental protection: substantively, by undertaking coral bleaching, island building,

25 Article 208(1), UNCLOS.
26 Article 208(3), UNCLOS.
27 Chapter 17(30), Agenda 21, United Nations Conference on Environment and Development (Rio de Janeiro, Brazil, 3-14 June 1992).
28 Agenda 21, United Nations Conference on Environment and Development (Rio de Janeiro, Brazil, 3-14 June 1992), Chapter 17(6).
29 *South China Sea Arbitration (Philippines v. China)* (Award of 12 July 2016) (hereafter, *South China Sea Arbitration*), paragraph 940.

and numerous other harmful activities, and, procedurally, by failing to communicate an adequate environmental impact assessment to the Government of the Philippines.[30] The Arbitral Tribunal noted that the general obligation to protect the marine environment encompasses both a positive obligation to 'take active measures to protect and preserve the marine environment' and a negative obligation not to degrade the marine environment.[31] The Arbitral Tribunal added that the content of the general obligation to protect and preserve the marine environment under Article 192 of UNCLOS is informed by subsequent provisions in Part XII, which runs from Articles 192-196, including Article 194, and other applicable rules of international environmental law.[32]

The International Tribunal for the Law of the Sea (ITLOS) and other adjudicative bodies operating under the dispute settlement framework of UNCLOS have developed a large body of environmental jurisprudence in the context of interlocutory proceedings relating to provisional measures on the protection of the marine environment under Article 290 of UNCLOS.[33] Article 290(1) of UNCLOS reads:

> If a dispute has been duly submitted to a court or tribunal which considers that prima facie it has jurisdiction under this Part or Part XI, section 5, the court or tribunal may prescribe any provisional measures which it considers appropriate under the circumstances to preserve the respective rights of the parties to the dispute *or* to *prevent serious harm to the marine environment*, pending the final decision (emphasis added).

The use of 'or' in Article 290(1) suggests that provisional measures may be prescribed independent of measures protecting the respective sovereign

30 *South China Sea Arbitration,* paragraphs 941, 992-993.

31 The Arbitral Tribunal also stated: 'This "general obligation" extends both to "protection" of the marine environment from future damage and "preservation" in the sense of maintaining or improving its present condition', *South China Sea Arbitration,* paragraph 941.

32 *See* discussion in the above section this chapter; *South China Sea Arbitration*, paragraphs 941-942.

33 Examples of such cases are the following: *Southern Bluefin Tuna (New Zealand v. Japan; Australia v. Japan)* (Provisional Measures) (1999) ITLOS Cases Nos 3 and 4; *MOX Plant (Ireland v. United Kingdom)* (Provisional Measures) (2001) ITLOS Case No. 10; *Land Reclamation by Singapore in and around the Straits of Johor (Malaysia v. Singapore)* (Provisional Measures) (2003) ITLOS Case No. 12; *The M/V 'Louisa' Case (Saint Vincent and the Grenadines v. Kingdom of Spain)* (Provisional Measures) (2010) ITLOS Case No. 18; *Maritime Boundary Delimitation in the Atlantic Ocean (Ghana/Côte d'Ivoire)* (Provisional Measures) (2015) ITLOS Case No. 23.

rights of the parties to a dispute.[34] According to Wolfrum, the reference to environmental justifications in the prescription of provisional measures 'adds a new element to their objective one, which is not directly linked to the interests of the parties to the dispute and thus makes the tribunal or court a mechanism working not only in the interest of the parties involved but in the one of the community of States'.[35] A healthy marine environment provides the foundation for all life; the protection of the marine environment can thus be considered a community interest.[36] It is a common interest of the international community of States which goes ostensibly beyond the interests of individual States.[37] Fietta and others explain:

> [A]ny State party to UNCLOS has standing to bring an environmental complaint against any other State party with respect to the conduct of its nationals or flagged vessels in any maritime area. This might be especially important where the conduct concerned threatens severe damage to the marine environment or conservation, including with respect to endangered species or fragile ecosystems.[38]

States involved in disputes concerning the application and interpretation of UNCLOS, including maritime boundary disputes, have not argued that UNCLOS does not require them to prevent, mitigate, or control pollution; to carry out environmental impact assessments; or to cooperate in the management of environmental risks, including in respect of activities in a

34 *See* discussion below 'The Scope of Environmental Protection: Meaning of the Marine Environment'.

35 Rüdiger Wolfrum, 'Provisional Measures of the International Tribunal for the Law of the Sea' (1997) 37(3) Indian Journal of International Law 420, 423.

36 Yoshifumi Tanaka, 'Protection of Community Interests in International Law: The Case of the Law of the Sea' in Armin von Bogdandy and Rüdiger Wolfrum (eds), *Max Planck Yearbook of United Nations Law* Volume 15 (BRILL 2011) pp. 329-375.

37 For an analysis of Article 290(1) of UNCLOS and its application to unilateral seabed activities in disputed maritime areas, focusing on environmental legal issues, *see* Constantinos Yiallourides, 'Protecting and Preserving the Marine Environment in Disputed Areas: Seismic Noise and Provisional Measures of Protection' (2018) 36(2) Journal of Energy & Natural Resources Law 141-161.

38 Stephen Fietta, Jiries Saadeh and Laura Rees-Evans, 'The South China Sea Award: A Milestone for International Environmental Law, the Duty of Due Diligence and the Litigation of Maritime Environmental Disputes?' (2017) 27(3) Georgetown Environmental Law Review 1; *see also*, David Ong, 'A Bridge too far? Assessing the Prospects for International Environmental Law to Resolve the South China Sea Disputes' (2015) 22(4) International Journal on Minority and Group Rights 578-597.

disputed maritime area. Nor have States questioned the customary character of the environmental protection regime established by UNCLOS.[39] Rather, disputing parties have contested the adequacy of measures that States have taken, or failed to take, to prevent serious harm to the environment in relation to certain maritime activities.[40] The argument has not been on whether such measures are necessary at all. For example, in *Ghana/Côte d'Ivoire* (Provisional Measures), Côte d'Ivoire argued before ITLOS that the oil exploration and exploitation activities conducted by Ghana in the disputed maritime area resulted in marine pollution incidents.[41] Ghana countered that Ghana's environmental protection legislation 'is among the most robust in the region' and that 'constant monitoring of environmental impacts' is required by Ghanaian law.[42] Côte d'Ivoire challenged the efficacy of Ghana's environmental protection legislation; ITLOS, however, avoided to rule on this directly as discussed further below.[43]

The Scope of Environmental Protection: Meaning of the Marine Environment

Understanding the environmental legal obligations of States acting in disputed maritime areas, first, requires clarifying the meaning of the 'marine environment', i.e., the subject of protection that is independent of the alleged sovereign rights of the disputing coastal States.[44] The totality of Part XII of UNCLOS on the 'protection and preservation of the marine

39 For a discussion, *see* Yoshifumi Tanaka, 'The South China Sea Arbitration: Environmental Obligations under the Law of the Sea Convention' (2018) 27(1) Review of European, Comparative and International Environmental Law 90-96.

40 For a discussion, *see* Yoshifumi Tanaka, 'The South China Sea Arbitration: Environmental Obligations under the Law of the Sea Convention' (2018) 27(1) Review of European, Comparative and International Environmental Law 90-96.

41 *Ghana/Côte d'Ivoire* (Provisional Measures) (Public sitting held on Sunday, 29 March 2015, at 10 am) 40.

42 *Maritime Boundary Delimitation in the Atlantic Ocean (Ghana/Côte d'Ivoire)* (Provisional Measures) (2015) ITLOS Case No. 23 paragraphs 66-67.

43 *Ghana/Côte d'Ivoire* (Provisional Measures) (Request Submitted by Côte d'Ivoire) paragraph 51; for a commentary, *see* Yoshifumi Tanaka, 'Unilateral Exploration and Exploitation of Natural Resources in Disputed Areas: A Note on the Ghana/Côte d'Ivoire Order of 25 April 2015 before the Special Chamber of ITLOS' 46(4) Ocean Development and International Law (2015) 315; Nicholas A Ioannides, 'A Commentary on the Dispute Concerning Delimitation of the Maritime Boundary between Ghana and Côte d'Ivoire in the Atlantic Ocean (Ghana/Côte d'Ivoire)' (2017) 3 Maritime Safety and Security Law Journal 48; Constantinos Yiallourides, 'Calming the Waters in the West African Region: The Case of Ghana and Côte d'Ivoire' (2018) 26(3) African Journal of International and Comparative Law 1-29.

44 Article 290, UNCLOS.

environment' indicates that the marine environment should be construed broadly. Environmental protection under UNCLOS covers land-based and marine-based sources of marine pollution; the protection and preservation of marine ecosystems; and the conservation of living resources.[45] Agenda 21 of the Rio Conference, the Convention on Biological Diversity,[46] and the United Nations Fish Stocks Agreement[47] all give a broad reading to the responsibilities of States with regard to the protection of the marine environment. Conservation, preservation, and sustainable use of marine living and non-living resources, including endangered or depleted species, oceanic ecosystems, and biological diversity, are important elements of this legal framework.

Environmental risks posed by State activities on the conservation and sustainable use of marine living resources and ecosystems in disputed maritime areas are also covered by the general UNCLOS obligations on the protection and preservation of the marine environment. For example, *MOX Plant*,[48] *Land Reclamation*,[49] *Ghana/Côte d'Ivoire*[50] and, to some extent, *M/V 'Louisa'*[51] concerned the interpretation and application of Part XII of UNCLOS. This included provisions on prevention, reduction, and control of pollution, and the closely intertwined provisions on prior environmental impact assessment, information, and consultation. Conversely, *Southern Bluefin Tuna* is related to Part VII of UNCLOS (particularly high seas fisheries conservation) rather than Part XII. Nonetheless, ITLOS expressly considered that 'the conservation of the living resources of the sea is an element in the protection and preservation of the marine environment'.[52]

---

45 In the *South China Sea Arbitration*, the Tribunal noted that 'the obligations in Part XII apply to all States with respect to the marine environment in all maritime areas, both inside the national jurisdiction of States and beyond it', *The South China Sea Arbitration (Philippines v. China)* (Merits) (Award of 12 July 2016) paragraph 940.

46 Convention on Biological Diversity (adopted 5 June 1992, entered into force 29 December 1993) 760 United Nations Treaty Series 79.

47 Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (adopted 4 August 1995, entered into force 11 December 2001) 2167 United Nations Treaty Series 3.

48 *MOX Plant (Ireland v. United Kingdom)* (Provisional Measures) (2001) ITLOS Rep 95.

49 *Land Reclamation in and around the Straits of Johor (Malaysia v. Singapore)* (Provisional Measures) (2003) ITLOS Rep 10.

50 *Maritime Boundary Delimitation in the Atlantic Ocean (Ghana/Côte d'Ivoire)* (Provisional Measures) (2015) ITLOS Case No. 23.

51 *M/V 'Louisa'* (*Saint Vincent and the Grenadines v. Kingdom of Spain*) (Provisional Measures) (2010) ITLOS Rep 58 (hereafter, *M/V 'Louisa'*).

52 *Southern Bluefin Tuna (New Zealand v. Japan; Australia v. Japan)* (Provisional Measures) (1999) ITLOS Rep 280 paragraph 70.

Therefore, State activities which may adversely affect or pose risks and hazards to the marine environment in a disputed maritime area fall within the scope of UNCLOS environmental obligations.

The Duty to Cooperate on Environmental Matters

The duty to cooperate to prevent and minimize pollution of the marine environment is a fundamental principle in UNCLOS and customary international law. It is highly relevant to the protection of the marine environment from State activities in disputed maritime areas.[53] As Boyle writes, 'it is undoubtedly true that co-operation in the control of environmental risks is one of the central elements of general international law on environmental protection'.[54] Under Article 194(1) of UNCLOS, States must take action to prevent pollution of the marine environment, individually or jointly as appropriate and in accordance with their capabilities. Article 197 of UNCLOS requires States to cooperate regionally or globally to develop 'international rules, standards, recommended practices and procedures' to protect and preserve the marine environment while considering characteristic regional features.[55] Besides Part XII, other Parts of UNCLOS include provisions on environmental cooperation. Article 123, for example, provides a reinforced obligation for cooperation over environmental matters in relation to States bordering 'enclosed or semi-enclosed seas'.[56]

---

53 UNCLOS, Article 194(1) and section 2 of Part XII; *MOX Plant (Ireland v. United Kingdom)* (Provisional Measures), Order of 3 December 2001, ITLOS Reports 2001, paragraph 82; *see also Request for an Advisory Opinion submitted by the Sub-regional Fisheries Commission*, Advisory Opinion of 2 April 2015, paragraph 140; *South China Sea Arbitration,* paragraph 946; Vasco Becker-Weinberg, 'Seabed Activities and the Protection and Preservation of the Marine Environment in Disputed Maritime Areas of the Asia-Pacific Region' (Proceedings from the 2012 LOSI-KIOST Conference on Securing the Ocean for the Next Generation).

54 Alan Boyle, 'The Environmental Jurisprudence of the International Tribunal for the Law of the Sea' (2007) 22(3) International Journal of Marine and Coastal Law 369, 379.

55 *MOX Plant (Ireland v. United Kingdom)* (Provisional Measures), Order of 3 December 2001, ITLOS Reports 2001, paragraph 82; *see also Request for an Advisory Opinion submitted by the Sub-Regional Fisheries Commission*, Advisory Opinion of 2 April 2015, paragraph 140; *South China Sea Arbitration,* paragraph 946.

56 Article 123, UNCLOS. According to Article 122 UNCLOS, an 'enclosed or semi-enclosed sea means a gulf, basin or sea surrounded by two or more States and connected to another sea or the ocean by a narrow outlet or consisting entirely or primarily of the territorial seas and exclusive economic zones of two or more coastal States'; Budislav Vukas, 'Enclosed or Semi-Enclosed Seas' in Max Planck Encyclopedia of Public International Law (online version, updated 2013); the South China Sea, for example, can be classified as a semi-enclosed sea, *see South China Sea Arbitration* paragraph

In the disputed maritime areas, Articles 74(3) and 83(3) of UNCLOS establish two substantive legal obligations on States operating in such areas. Pending delimitation, coastal States are obliged to 'make every effort to enter into provisional arrangements of a practical nature'. Simultaneously, concerned States shall abstain from acts that might 'jeopardize or hamper the reaching of the final agreement'. The content of the obligations in Articles 74(3) and 83(3) of UNCLOS has been addressed in *Guyana v. Suriname,*[57] *Ghana/Côte d'Ivoire*,[58] and extensively in the literature.[59] The Articles impose a restrictive obligation: parties must exercise restraint and refrain from undertaking activities that may endanger reaching a final agreement or impede negotiations to that end.[60] They also impose a positive obligation: States must pursue provisional arrangements of a practical nature to promote cooperation between States for the economic utilization and management of the disputed maritime area.[61]

Provisional arrangements, which permit the exploration and exploitation of marine through a joint development zone pending final delimitation, are the most common type of inter-State cooperation.[62] Several JDAs

946 and Robert Beckman, 'The UN Convention on the Law of the Sea and the Maritime Disputes in the South China Sea' (2013) 107(1) American Journal of International Law 142, 143.

57 *Arbitration Between Guyana and Suriname* (Annex VII Arbitral Tribunal) (2007) 139 International Legal Materials 566.

58 *Dispute Concerning Delimitation of the Maritime Boundary between Ghana and Côte d'Ivoire in the Atlantic Ocean (Ghana/Côte d'Ivoire)* ITLOS Case No. 23.

59 For a comprehensive analysis of both doctrine and practice in this area, *see* BIICL Report 2016.

60 *Delimitation of the Maritime Boundary in the Atlantic Ocean* (*Ghana/Côte d'Ivoire*) (Judgment of 23 September 2017) (Separate Opinion of Judge Paik); *Arbitration Between Guyana and Suriname* (Annex VII Arbitral Tribunal) (2007) 139 International Legal Materials 566.

61 *Guyana v. Suriname*, (2007) 139 International Legal Materials 566 at paragraph 460.

62 For a detailed study, *see* Vasco Becker-Weinberg, *Joint Development of Hydrocarbon Deposits in the Law of the Sea* (Springer 2014); Mochtar Kusuma-Atmadja, 'Joint Development of Oil and Gas by Neighbouring Countries' in Thomas A. Mensah and Bernard H. Oxman (eds) *Sustainable Development and the Preservation of the Oceans: The Challenges of UNCLOS and Agenda 21* (Law of the Sea Institute 1997) 592; Hazel Fox et al. (eds) *Joint Development of Offshore Oil and Gas* (1st edn, BIICL 1989) 45; Constantinos Yiallourides, 'Joint Development of Seabed Resources in Areas of Overlapping Maritime Claims: An Analysis of Precedents in State Practice' (2019) 31(2) University of San Francisco Maritime Law Journal 129-174. Note here that Bernard identifies four other types of provisional arrangements pending delimitation: (1) a mutually agreed moratorium on all economic activities in overlapping areas; (2) joint development or cooperation over fishing activities; (3) environmental cooperation; and (4) allocation of criminal and civil jurisdiction, *see* Leonardo Bernard, 'Prospect for Joint Development in the South China Sea' (Centre of Strategic and International Studies, 5-6 June, 2013) 4. Anderson and van Logchem suggest that a

explicitly regulate environmental issues.[63] For example, the 1974 Japan-South Korea JDA enshrines the parties' general undertaking to prevent and remove sea pollution resulting from petroleum activities in the zone. It also stipulates special arrangements for the prevention of collisions and pollution in the joint development zone. Section 1 of the Japanese note annexed to the JDA provides that the authorizing government must ensure that necessary technical measures have been taken to prevent blowouts of wells and discharge of oil and waste from ships or marine facilities and must promptly provide the other government with all available information when a major oil spill, collision at sea, or similar emergency occurs.[64] Another example is the 'International Agency' established under the Senegal and Guinea-Bissau JDA tasked with taking 'all the necessary measures for pollution prevention and control'.[65] To that end, the agency can 'lay down regulations to protect the marine environment in the Area' and 'establish an emergency plan or management plan to combat pollution and any degradation arising from resource prospecting, exploration and exploitation activities in the Area'.[66] The Parties also commit to 'cooperate with

---

wide of variety of provisional arrangements is possible, including:(a) a joint exploration and exploitation regime; (b) total moratorium on certain types of activity such as drilling; and (c) a simple arrangement of prior notification of a proposed activity in the overlapping area followed by consultations, David Anderson and Youri van Logchem, 'Rights and Obligations in Areas of Overlapping Maritime Claims' in Shunmugam Jayakumar, Tommy Koh and Robert Beckman (eds) *The South China Sea Disputes and the Law of the Sea* (Edward Elgar 2014) 192-228.

63 For a discussion, *see* Constantinos Yiallourides, *Maritime Disputes and International Law: Disputed Waters and Seabed Resources in Asia and Europe* (Routledge 2019) 242-243; David M. Ong, 'A Bridge Too Far: Assessing the Prospects for International Environmental Law to Resolve the South China Sea Disputes' (2015) 22 International Journal on Minority & Group Rights 578; Cecilia A. Low, 'Marine Environmental Protection in Joint Development Agreements' (2012) 30(1) Journal of Energy & Natural Resources Law 45-74; Vasco Becker-Weinberg, *Joint Development of Hydrocarbon Deposits in the Law of the Sea* (Springer 2014) 111-120, 133-137; Vasco Becker-Weinberg, 'Seabed Activities and the Protection and Preservation of the Marine Environment in Disputed Maritime Areas of the Asia-Pacific Region' (Proceedings from the 2012 LOSI-KIOST Conference on Securing the Ocean for the Next Generation); David M. Ong, 'The International Legal Obligations of States in Disputed Maritime Jurisdiction Zones and Prospects for Co-operative Arrangements in the East China Sea Region' (2016) 22 Asian Yearbook of International Law 109-130.

64 Masahiro Miyoshi, 'The Japan-South Korea Agreement on Joint Development of the Continental Shelf' (1985) 10(3) Energy 545, 549.

65 Article 5, Management and Cooperation Agreement between the Government of the Republic of Senegal and the Government of the Republic of Guinea-Bissau (adopted 14 October 1993, entered into force 21 December 1995) 1903 United Nations Treaty Series (1996) 34-63.

66 Senegal/Guinea-Bissau 1993 Agreement, 1903 United Nations Treaty Series (1996), Article 23; *see also* Protocol of Agreement Relating to the Organization and Operation

the Agency to prevent or minimize pollution or any other type of degradation in the marine environment resulting from resource prospecting, exploration and exploitation activities in the Area'.[67]

Ong analysed the progressive inclusion of environmental provisions within JDAs in the period from 1950 to 2001.[68] Ong observed that 'the provision for environmental protection was conspicuous in its brevity of even total absence' in earlier JDAs, while later JDAs have 'more readily' included environmental protection obligations.[69] This would reflect the increased level of environmental consciousness in joint petroleum development practice. More recently concluded JDAs have tended to address marine environmental protection more rigorously. For example, they have defined the meaning of marine pollution and empowered joint authorities to lay down health, safety, and environmental regulations and even to carry out inspections of petroleum installations situated in the zone.[70]

For instance, the Nigeria-Sao Tome joint authority has a general duty to take all steps necessary to prevent and remedy pollution and any other harm to the environment. Specifically, it can conduct, itself or through a third party, inspections of oil installations and may order the immediate cessation of any or all petroleum operations in the zone where expedient, for instance, to protect the marine area from pollution.[71] Likewise, the

---

of the Agency for Management and Cooperation between the Republic of Guinea-Bissau and the Republic of Senegal instituted by the Agreement of 14 October 1993 reproduced in Jonathan I. Charney and Lewis M. Alexander (eds) *International Maritime Boundaries* (Martinus Nijhoff Publishers 2004) pp. 2258–2278.

67 Article 23(1), Senegal/Guinea-Bissau 1993 Agreement, 1903 United Nations Treaty Series (1996).

68 David Ong, 'The Progressive Integration of Environmental Protection within Offshore Joint Development Agreements' in Malgosia Fitzmaurice and Milena Szuniewicz (eds) *Exploitation of Natural Resources in the 21st Century* (Kluwer Law International 2003).

69 David Ong, 'The Progressive Integration of Environmental Protection within Offshore Joint Development Agreements' in Malgosia Fitzmaurice and Milena Szuniewicz (eds) *Exploitation of Natural Resources in the 21st Century* (Kluwer Law International 2003), p. 120-123.

70 *See*, for instance, Article 1(21), Treaty between the Federal Republic of Nigeria and the Democratic Republic of Sao Tome and Principe on the Joint Development of Petroleum and other Resources, in respect of Areas of the Exclusive Economic Zone of the Two States (adopted 21 February 2001, entered into force 16 January 2003), https://www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/STP-NGA2001.PDF.

71 Article 30, Treaty between the Federal Republic of Nigeria and the Democratic Republic of Sao Tome and Principe on the Joint Development of Petroleum and other Resources, in respect of Areas of the Exclusive Economic Zone of the Two States (adopted 21 February 2001, entered into force 16 January 2003).

designated authority in the Timor Sea Treaty is instructed to 'issue regulations to protect the marine environment in the joint development area; establish a contingency plan for combating pollution from petroleum activities in the joint development area and establish safety zones to ensure the safety of navigation and petroleum operations'.[72] The Agreement further provides that companies operating in the joint development zone will be liable for damage or expenses incurred due to pollution of the marine environment inside the zone, in accordance with their contract or licence and the law of the jurisdiction, whether Australia or East Timor, in which the claim is brought.[73]

Provisions on environmental protection have been incorporated in many recent JDAs covering disputed maritime areas, such as the 2012 Seychelles/Mauritius Agreement,[74] and in framework and cross-border unitization treaties, such as the 2013 Cyprus/Egypt Agreement,[75] the 2007 Trinidad and Tobago/Venezuela Treaty,[76] and the 2012 United States (US)/Mexico Agreement[77] and the 2018 Australia/Timor-Leste Agreement.[78] This confirms the general tendency in State practice towards embracing a cooperative approach to the protection of the marine environ-

72 Article 10(c); Annex C under Article 6(b)(v), Timor Sea Treaty (Australia-Timor Leste) (adopted 20 May 2002, entered into force 2 April 2003), www.austlii.edu.au/au/other/dfat/treaties/2003/13.html, 2258 United Nations Treaty Series 3.

73 Article 10(d) Timor Sea Treaty; almost identical provisions were included in Articles 8, 18 and 19 of the Timor Gap Treaty, *see* Treaty on the Zone of Cooperation in an Area Between the Indonesian Province of East Timor and Northern Australia (Australia/Indonesia) (adopted 11 December 1989, entered into force 9 February 1991) (1990) 29 International Legal Materials 469 (no longer in force).

74 Article 12, Treaty Concerning the Joint Management of the Continental Shelf in the Mascarene Plateau Region (Mauritius/Seychelles) (adopted 13 March 2012, entered into force 18 June 2012) (Mauritius/Seychelles Joint Management Treaty), http://www.mfa.gov.sc/uploads/files/filepath_45.pdf.

75 Framework Agreement Concerning the Development of Cross-Median Line Hydrocarbons Resources (Republic of Cyprus/Arab Republic of Egypt) (signed 12 December 2013, entered into force 11 September 2014), www.mof.gov.cy/mof/gpo/gpo.nsf/All/A88D02909DC27F10C2257D20002C1DB5/$file/4196%2025%207%202014%20PARARTIMA%201o%20MEROS%20III%20.pdf.

76 Framework Treaty Relating to the Unitization of Hydrocarbon Reservoirs that Extend Across the Delimitation Line Between the Republic of Trinidad and Tobago and the Bolivian Republic of Venezuela (adopted 20 March 2007, entered into force 16 August 2010), 2876 United Nations Treaty Series 3.

77 Article 19, Agreement Between the United States of America and the United Mexican States Concerning Transboundary Hydrocarbon Reservoirs in the Gulf of Mexico (adopted 20 February 2012, entered into force 16 July 2013) (US/Mexico 2012 Agreement).

78 Treaty Between Australia and the Democratic Republic of Timor-Leste establishing their Maritime Boundaries in the Timor Sea (adopted 6 March 2018), https://www.dfat.gov.au/sites/default/files/treaty-maritime-arrangements-australia-timor-leste.pdf.

ment when negotiating, adopting and implementing these instruments. Conversely, practice shows that environmental cooperation is relatively easier in delimited maritime areas compared to disputed areas since there is clarity as to which State can exercise sovereign rights and jurisdiction over activities.

The Duty to Apply a Precautionary Approach

Action to protect the environment in a disputed area is not required only when a serious environmental harm has already occurred but also to prevent the risk of such harm from occurring before the settlement of the delimitation dispute.[79] Where one State requests provisional measures to halt another State's environmentally hazardous activities in a disputed maritime area pending a decision on delimitation, the court or tribunal is often asked to make predictions: what is the likely future environmental impact of these activities? It must determine whether interim action is required in view of the factual and scientific evidence. What about cases marked by disagreement on the scientific evidence? Here, making predictions as to the nature and effect of potential environmental harm is much less certain. In several legal proceedings relating to environmental issues, parties have claimed that a precautionary approach should be adopted as a matter of customary international law, particularly in the context of sustainable use of natural resources.[80] Indeed, in *Gabčíkovo-Nagymaros*

For a discussion, *see* Nigel Bankes, 'Recent Framework Agreements for the Recognition and Development of Transboundary Hydrocarbon Resources' (2014) 29 International Journal of Marine and Coastal Law 666-689.

79 Thomas A Mensah, 'Provisional Measures in the International Tribunal for the Law of the Sea (ITLOS)' (Max Planck Institute for Comparative Public Law and International Law, 2002) 43-54; Peter Tomka and Gleider Hernandez, 'Provisional Measures in the International Tribunal for the Law of the Sea' in Holger P. Hestermeyer et al. (eds) *Coexistence, Cooperation and Solidarity: Liber Amicorum Rüdiger Wolfrum* (Brill 2011) 1763-1787; Natalie Klein, 'Provisional Measures and Provisional Arrangements' in Alex G. Elferink, Tore Henriksen and Signe Veierud Busch (eds), *Maritime Boundary Delimitation: The Case Law* (Cambridge University Press 2018) pp. 117-144.

80 'The precautionary approach entails the avoidance of activities that may threaten the environment even in the face of scientific uncertainty about the direct or indirect effects of such activities', *see Whaling in the Antarctic* (Separate Opinion of Charlesworth) p. 455; for a discussion, *see* James Cameron and Juli Abouchar, 'The Precautionary Principle: A Fundamental Principle of Law and Policy for the Protection of the Global Environment' (1991) 14(1) International and Comparative Law Review 53; the Seabed

Project, precaution was seen 'as a constituent part of the wider legal principle of sustainable development'.[81]

Moreover, in *Southern Bluefin Tuna* ITLOS considered 'scientific uncertainty' in this case in light of the precautionary approach when interpreting and applying UNCLOS.[82] Judges Laing and Treves in their separate opinions stressed that environmental legal instruments should be interpreted and applied taking account of the precautionary principle.[83] Accordingly, ITLOS' order to cease Japan's unilateral experimental fishing programme de facto prescribed precautionary measures: the lack of complete scientific certainty was not a reason for refusing to take action.

Southern Bluefin Tuna remains the only ruling to date that came close to applying a precautionary approach in provisional measures proceedings. In subsequent cases, ITLOS refrained from considering the precautionary approach when ascertaining the evidentiary standard of serious harm to the marine environment. In *MOX Plant*, for example, the potential environmental impact of a plant on the marine environment was unclear, and ITLOS declined to consider the precautionary approach when assessing the probability of a serious harm to the marine environment.[84] Judge Wolfrum considered in a separate opinion that if ITLOS accepted a lower standard of proof based on scientific uncertainty, the granting of provisional measures would become 'automatic' when arguing with some plausibility that there is a risk of serious harm to the marine environment.[85]

Disputes Chamber stated that the precautionary approach was crystallized in customary international law, *Responsibilities and obligations of States with respect to activities in the Area, Advisory Opinion,* 1 February 2011, ITLOS Reports 2011, paragraph 135; *Southern Bluefin Tuna (New Zealand v. Japan; Australia v. Japan)* (Provisional Measures) (1999) ITLOS Cases Nos 3 and 4; paragraphs 31(3), 32(2), 34(3); *MOX Plant (Ireland v. United Kingdom)* (Provisional Measures) (2001) ITLOS Case No. 10 paragraph 71; *Land Reclamation by Singapore in and around the Straits of Johor (Malaysia v. Singapore)* (Provisional Measures) (2003) ITLOS Case No. 12 paragraph 74.

81 *Gabčíkovo-Nagymaros Project* (*Hungary v. Slovakia*), (Judgment of 25 September 1997) (Separate Opinion of Judge Weeramantry) repr. in (1998) 37 ILM 162 at 215.

82 *Southern Bluefin Tuna (New Zealand v. Japan; Australia v. Japan)* (Provisional Measures) (1999) ITLOS Rep 280 paragraph 74.

83 *Southern Bluefin Tuna* (Separate Opinion of Judge Laing) paragraphs 16-19 and (Separate Opinion of Judge Treves) at paragraph 9.

84 *MOX Plant (Ireland v. United Kingdom)* (Provisional Measures) (2001) ITLOS Rep 95 paragraphs 78-84.

85 *MOX Plant* (Separate Opinion of Judge Wolfrum) 3.

Another example is in *Ghana/Côte d'Ivoire* where ITLOS was not swayed by Côte d'Ivoire's reports indicating that Ghana's petroleum exploration and exploitation activities could result in environmental harm.[86] ITLOS found that '[T]he exploration and exploitation activities, as planned by Ghana, may cause irreparable prejudice to the sovereign and exclusive rights invoked by Côte d'Ivoire in the continental shelf and superjacent waters of the disputed area, before a decision on the merits is given by ITLOS, and that the risk of such prejudice is imminent'.[87] Yet, ITLOS did not order Ghana to suspend its activities (including seismic surveys, production of oil, and drilling operations that were already underway) as requested by Côte d'Ivoire. However, the Ivoirian delegation had made no serious attempt, apart from citing the above reports, to highlight in specific scientific terms the causal relationship between ongoing oil-related activities and the potential adverse effects on marine organisms including fish and marine mammals.[88] Whether due to lack of solid scientific evidence or simply by oversight, Côte d'Ivoire did not detail, for instance, the types of permanent or temporary injuries and disturbance to fish and other aquatic species known to live in or near the area in question by Ghana's operations. This could have swayed the Tribunal the other way.

Thus, a problem in the context of hazardous, or potentially hazardous, activities in disputed maritime areas may be the lack of accurate and clear scientific evidence to prove actual irreparable harm to the marine environment. Nevertheless, ITLOS constantly urges disputing parties to 'act with prudence and caution to prevent serious harm to the marine environment' (*see*, e.g., *M/V 'Louisa'*, *Ghana/Côte d'Ivoire*, *MOX Plant* and *Southern Bluefin Tuna*).[89] This highlights the influence of the precautionary approach. Preventive action to deter or mitigate an activity's adverse impact on the marine environment should be taken before it is too late – even in the

86 Such evidence included, among other matters, satellite images showing traces of pollution in the disputed area and reports indicating an increase in the number of whales washing up on the eastern shores of Ghana since the beginning of oil-related activities in the area, *Ghana/Côte d'Ivoire* (Provisional Measures) (Public sitting held on Sunday, 29 March 2015, at 10 am) 40.

87 *Ghana/Côte d'Ivoire* (Provisional Measures), paragraph 108(b).

88 Constantinos Yiallourides, 'Protecting and Preserving the Marine Environment in Disputed Areas: Seismic Noise and Provisional Measures of Protection' (2018) 36(2) Journal of Energy & Natural Resources Law 147, 156.

89 *M/V 'Louisa'* (2010) ITLOS Rep 58 paragraph 77; *Responsibilities and Obligations of States with respect to Activities in the Area (Advisory Opinion)* (2011) ITLOS Rep paragraphs 131-132; *Ghana/Côte d'Ivoire*, paragraph 72; S*outhern Bluefin Tuna*, paragraph 77; *MOX Plant*, paragraph 84.

absence of conclusive scientific certainty as to the scope and likelihood of such adverse impact.

The Duty to Conduct an Environmental Impact Assessment and Monitor Impacts

Another environmental legal obligation applicable in disputed maritime areas relates to the requirement to undertake an environmental impact assessment (EIA). An EIA is defined by the United Nations Environmental Programme (UNEP) as 'the process of identifying, predicting, interpreting and communicating the potential impacts that a proposed project or plan may have on the environment'.[90] Per Principle 17 of the Rio Declaration, an EIA, 'as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority'.[91] Article 206 of UNCLOS enshrines the requirement to carry out an EIA of planned activities where States have 'reasonable grounds for believing' that significant harm to the marine environment may result.[92] The requirement to undertake an EIA has been incorporated into many international, regional, and national legal instruments and is now 'a general obligation under customary international law'.[93] In the *South China Sea Arbitration*, the Tribunal found that the obligation to communicate the results of the EIA is 'absolute', even while States maintain discretion as to the content and process of the EIA.[94]

States in disputed maritime areas have not contested the existence of a duty to undertake an EIA. However, Article 206 of UNCLOS does not stipulate what is required in an EIA. Unlike other UNCLOS environmental provisions (such as Articles 207–211), Article 206 does not refer to international rules and standards. Therefore, in practice, the adequacy of an

90 Goals and Principles of Environmental Impact Assessment of the United Nations Environmental Programme, December 1987, UN Doc. UNEP/WG.152/4 Annex.
91 Principle 17, Rio Declaration.
92 Article 206 in conjunction with Article 205, UNCLOS.
93 Convention on Environmental Impact Assessment in a Transboundary Context, Espoo (signed 25 February 1991, entered into force 10 September 1997) 1989 United Nations Treaty Series 309; Draft Article 7, Draft Articles on Prevention of Transboundary Harm from Hazardous Activities, Report of the ILC on the Work of its Fifty-Third Session, UNGAOR, UN Doc. A/56/10; *Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area* (Request for Advisory Opinion submitted to the Seabed Disputes Chamber) [2011] ITLOS Rep 10 paragraph 145.
94 *South China Sea Arbitration,* paragraph 948.

EIA and other risk-mitigating or pollution control measures taken in the undelimited area can be disputed. *Ghana/Côte d'Ivoire* illustrates that point. Côte d'Ivoire requested provisional measures under Article 290(1) of UNCLOS for Ghana to suspend immediately all oil activities in the disputed maritime area.[95] Ghana countered that EIAs had been carried out, argued that its petroleum licensing regulations were of the highest standards, and cited scientific reports to rebut any allegations that the marine environment was at risk.[96] The dispute in *MOX Plant* did not relate to boundary delimitation but to the operation of the Sellafield nuclear facility in north-east England and its possible adverse impacts on the marine environment to the Irish Sea. There, the United Kingdom argued that 'very extensive security precautions in terms of the protection of the Sellafield site' were in place.[97] In *Land Reclamation*, Malaysia argued that Singapore's actions in and around the Straits of Johor breached Malaysia's sovereignty and damaged the marine environment, including by reducing the catch of Malaysian fishermen. Singapore stated that 'the necessary steps were taken to examine possible adverse impacts on the surrounding waters'.[98] In *Ghana/Côte d'Ivoire, MOX Plant* and *Land Reclamation*, ITLOS noted the assurances given by Ghana, the United Kingdom, and Singapore that their activities were undertaken in a transparent manner and followed best industry practice and the highest international standards.[99] ITLOS did not comment on their adequacy.

Are international courts and tribunals therefore willing to review the effectiveness of preventive and risk-mitigating mechanisms or does such assessment fall squarely within the initiating State's discretion? This question was answered partly in *Pulp Mills*, which concerned a dispute between Argentina and Uruguay on the construction of pulp mills on the Uruguay River and its potential transboundary impacts on the shared waters of the

95 *Ghana/Côte d'Ivoire* (Provisional Measures), paragraph 56.
96 *Ghana/Côte d'Ivoire* (Provisional Measures), paragraph 66.
97 *MOX Plant,* paragraph 76.
98 *Land Reclamation*, paragraph 94.
99 *Ghana/Côte d'Ivoire* (Provisional Measures), paragraphs 56 and 66; for a discussion, Yoshifumi Tanaka, 'Unilateral Exploration and Exploitation of Natural Resources in Disputed Areas: A Note on the Ghana/Côte d'Ivoire Order of 25 April 2015 before the Special Chamber of ITLOS' 46(4) Ocean Development and International Law (2015) 315, 325; Constantinos Yiallourides, 'Protecting and Preserving the Marine Environment in Disputed Areas: Seismic Noise and Provisional Measures of Protection' (2018) 36(2) Journal of Energy & Natural Resources Law 141, 158.

river.[100] The parties disagreed on the scope and content of the EIA that Uruguay ought to have carried out. The International Court of Justice (ICJ) held that an EIA must take place *prior* to any operation and that continuous monitoring of environmental impact is required for long-term operations. Nevertheless, the ICJ suggested that the scope and content of the EIA could only be determined by the State carrying out the activities and in light of the specific circumstances at hand. According to the ICJ:

> [I]t is for each State to determine in its domestic legislation or in the authorisation process for the project, the specific content of the environmental impact assessment required in each case, having regard to the nature and magnitude of the proposed development and its likely adverse impact on the environment as well as to the need to exercise due diligence in conducting such an assessment.[101]

These elements do not indicate the precise consent the EIA must contain, how it should be conducted, and by whom (independent body, State agency, private entity, etc.). As the ICJ noted 'general international law [does not] specify the scope and content of an environmental impact assessment'.[102]

In *Costa Rica v. Nicaragua*, Judge ad hoc Dugard clarified that an environmental assessment should include: (a) an assessment of the risk involved in an activity and the harm to which the risk could lead; (b) an evaluation of the activity's potential transboundary harmful impact; and (c) an assessment of the activity's effects only on persons and property and on the environment of other States.[103] The Arbitral Tribunal in the *South China Sea* reviewed China's legislative standards and ruled that the statements and reports published by the Chinese authorities were 'far less comprehensive' than EIAs reviewed by other international courts and tribunals.[104] Yet, the Tribunal did not specify the meaning of 'comprehensiveness'.

---

100 *Pulp Mills on the River Uruguay (Argentina v. Uruguay)* [2010] ICJ Rep 14; for a commentary, *see* Cymie R. Payne, 'Pulp Mills on the River Uruguay (Argentina v. Uruguay)' (2011) 105(1) American Journal of International Law 94.

101 *Pulp Mills on the River Uruguay (Argentina v. Uruguay)* (Judgment) [2010] ICJ Rep 14 paragraph 205.

102 *Pulp Mills on the River Uruguay (Argentina v. Uruguay)* (Judgment) [2010] ICJ Rep 14 paragraph 205.

103 *Certain Activities Carried out by Nicaragua in the Border Area (Costa Rica v. Nicaragua) Construction of a Road in Costa Rica along the San Juan River (Nicaragua v. Costa Rica) (Judgment)* (Separate Opinion of Judge ad hoc Dugard) [2015] ICJ Rep paragraph 18.

104 *South China Sea Arbitration*, paragraphs 989-990.

An integral part of the duty to conduct an EIA is the obligation to monitor environmental impacts. This is particularly important for long-term projects, such as extraction and site restoration.[105] The Deepwater Horizon incident in the Gulf of Mexico, which caused harm to persons and the environment, illustrates the importance of the monitoring requirement. The National Commission which investigated the incident found that the US had failed to regulate and monitor hydrocarbon activities.[106]

As with EIAs in general, the relevant UNCLOS provisions do not clarify the monitoring required. Article 204 of UNCLOS obliges States to 'endeavour as far as practicable … to observe, measure, evaluate and analyse … the risks or effects of pollution on the marine environment' and to 'keep under surveillance the effects of any activities which they permit or in which they engage in order to determine whether they are likely to pollute the marine environment'.[107] Judge Weeramantry stated in a separate opinion to *Gabčíkovo-Nagymaros* that there must be 'a continuing assessment and evaluation as long as the project is in operation … whether the treaty expressly so provides or not'.[108] The ICJ in *Pulp Mills* endorsed this view, holding that 'once operations have started and, where necessary, throughout the life of the project continuous monitoring of its effects on the environment shall be undertaken'.[109] Several JDAs require monitoring and follow-up.[110]

In sum, the existence of the duty to undertake an EIA and monitor environmental impacts in disputed maritime areas is uncontested. Yet, the existence of a boundary dispute may complicate the application of this

105 For a discussion, Rachael Lorna Johnstone, *Offshore Oil and Gas Development in the Arctic under International Law* (2014 BRILL) pp. 179-181.

106 Report of the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling to the President, Deep Water: The Gulf Oil Disaster and the Future of Offshore Drilling (January 2011), https://www.nrt.org/sites/2/files/GPO-OILCOMMISSION.pdf, 82-85; A. Boyle, 'Transboundary Air Pollution: A Tale of Two Paradigms' in Shunmugam Jayakumar et al. (eds) *Transboundary Pollution: Evolving Issues of International Law and Policy* (Edward Elgar Publishing 2015) pp. 239-240.

107 Article 205 of UNCLOS obligates States to publish reports of the results from such monitoring.

108 *Case Concerning the Gabčíkovo-Nagymaros Project (Hungary v. Slovakia)* (Separate Opinion of Weeramantry) [1997] ICJ 88, 112 (citing *Trail Smelter Arbitration (United States v. Canada)* (1941) 3 RIAA 1905).

109 *Pulp Mills*, paragraphs 205-266.

110 For example, Nigeria-Sao Tome and Principe Joint Development Authority, https://resourcegovernance.org/sites/default/files/Petroleum%20Regulations%20for%20Joint%20Development%20Authority.pdf; Malaysia/Thailand MoU (1979); Senegal/Guinea-Bissau Agreement (1993).

duty. Disputing States often carry out EIAs before conducting potentially hazardous activities in, or in respect of, the disputed area. However, they maintain a wide level of discretion as to the environmental standards and impact assessment procedures used in that regard. Let us take a hypothetical situation: State A unilaterally decides to build a heavy-lift crane structure to carry out a ship-to-ship transfer of crude oil in a maritime area also claimed by State B. State B argues that such activities pose significant risks to the marine environment. State A will be able to rebut State B's claim by showing that it has undertaken and communicated an EIA, and that this EIA is adequate to deter or mitigate any potential adverse effects on the marine environment.

Concluding Remarks

States planning economic activities in disputed maritime areas must comply with their obligations regarding the protection and preservation of the marine environment. These activities must be conducted in conformity with international environmental laws and regulations. First, States should assess the environmental effects of all planned activities. Second, States must consult with and inform neighbouring States of the risks, as well as measures taken to control or mitigate possible adverse impacts on the marine environment.

Potentially affected States may bring claims against other States for any breach of environmental law obligations. Pending consideration of the merits, they may request provisional measures to preserve and protect the marine environment in the disputed area under Article 290 of UNCLOS. Such claims and associated provisional measure requests may be brought independent of the claims relating to the preservation of the parties' sovereign rights in the disputed areas or to maritime boundary delimitation. Where the complaining party adequately presents the adverse effects of a given activity on the marine environment in the disputed area, provisional measures of protection may be granted under Article 290 of UNCLOS. Provisional measures may thus provide a remedy to the complaining party. However, certain commercial activities are particularly widespread among the industry and States, for example, seismic exploration surveys and fishing activities. Obtaining a provisional measures order in such cases requires something more specific than general considerations of environmental harm. An injunction seeking to prohibit all economic activities pending the final determination of the boundary is unlikely to succeed,

even where risks to the marine environment are known or plausible. A more specific submission, pending resolution of the maritime boundary, would be to seek strict monitoring, an independent expert assessment, and exchange of information and cooperation over environmental matters. Such cooperative arrangements have been made as provisional practical arrangements in maritime boundary negotiations under Articles 74(3) and 83(3) of UNCLOS; analogous measures could be ordered under Article 290 of UNCLOS.[111]

Courts and tribunals often struggle with complex issues posed by environmental disputes with scientific and technical components. Experts may play an important role.[112] In the *South China Sea Arbitration*, the opinions of independent experts were considered in assessing the environmental impact of China's island construction activities. Indeed, technically complex cases depend on experts properly trained to evaluate these issues.[113] For example, ITLOS in *Land Reclamation* prescribed that Malaysia and Singapore promptly establish a group of independent experts with the mandate to: (i) conduct a study on the effects of Singapore's land reclamation and (ii) propose, as appropriate, measures to deal with any adverse effects of such land reclamation.[114] Therefore, using independent experts to ascertain environmental impacts or foreseeable risks and subsequently monitor such risks is an option worth considering by States to protect the environment in a disputed maritime area.

---

111 Natalie Klein, 'Provisional Measures and Provisional Arrangements in Maritime Boundary Disputes' (2006) 21(4) International Journal of Marine and Coastal Law 423-460.

112 Speech by ITLOS President Judge Jin-Hyun Paik, 'Disputes Involving Scientific and Technical Matters and ITLOS' (New Knowledge and Changing Circumstances in the Law of the Sea Conference, Reykjavik 28-30 June 2018), https://www.itlos.org/fileadmin/itlos/documents/statements_of_president/paik/Iceland_Conference_President_Keynote_Speech_Final_22August2018.pdf; Lucas Carlos Lima, 'The Use of Experts by the International Tribunal for the Law of the Sea and Annex VII Arbitral Tribunals' in Angela Del Vecchio and Roberto Virzo (eds) *Interpretations of the United Nations Convention on the Law of the Sea by International Courts and Tribunals* (Springer 2019) 407.

113 Speech by ITLOS President Judge Jin-Hyun Paik, 'Disputes Involving Scientific and Technical Matters and ITLOS' (New Knowledge and Changing Circumstances in the Law of the Sea Conference, Reykjavik 28-30 June 2018).

114 *Land Reclamation by Singapore in and Around the Straits of Johor (Malaysia v. Singapore)* (Provisional Measures) (2003) ITLOS Case No. 12 paragraph 106.