

MARINE ENVIRONMENTAL PROTECTION AND COOPERATION IN THE SOUTH CHINA SEA^{*}

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I. Introduction

The South China Sea (SCS) holds great importance for all states of the world for many reasons, aside from the ecological and economic reasons discussed in this paper. But this paper mainly focuses on the environmental challenges faced by the SCS and the cooperation required from states to resolve these issues. Unfortunately, cooperation is hampered by territorial claims. However, this paper argues that these claims and the conflicts that arise from them do not erase states' international legal obligations to the marine environment of the SCS.

This paper seeks to establish the existing legal grounds for individual action and state cooperation for the marine environmental protection of the SCS. It argues that states have specific legal obligations to protect the SCS marine environment independent of states' individual sovereignty claims.

Part II of the paper introduces the SCS by highlighting its geographical location and briefly summarizing the territorial claims of states surrounding it.

Part III tackles the marine environment of the SCS, particularly its significance to biodiversity and ecology, and its economic value.

Part IV discusses the environmental challenges to the SCS, including pollution, overfishing, coral reef damage, biodiversity, and habitat loss.

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Part V explains the necessity of cooperation because of the nature of the marine environment and the causes of the environmental problems.

Part VI outlines the international legal framework, beginning with the obligations in multilateral treaties such as the UN Convention on the Law of the Sea, the Convention on Biological Diversity, and others. It also briefly mentions the applicability of environmental principles.

Part VII summarizes the obligations of states and a few recommendations based on the preceding discussion on the legal framework.

Thus, this paper proposes a way forward to protect the SCS marine environment without waiting to resolve territorial disputes.

II. The SCS

A. *Geographical location, islands, and features*

The SCS is “a semi-enclosed sea in the western Pacific Ocean, spanning an area of almost 3.5 million square kilometers.”⁵ According to the International Hydrographic Organization, the southern boundary of the SCS is from:

The Eastern and Southern limits of the Malacca straits as far west as Tanjong Kedabu down the East coast of Sumatra to Lucipara Point, thence to Tanjong Nanka, the Southwest extremity of Banka Island, through this island to Tanjong Berikat, the Eastern point on to Tanjong Djemang in Biliton along the North Coast of this island to Tanjong Booreong Mandi and thence a line to Tanjong Sambat, the Southwest extreme of Borneo.⁶

On the other hand, its eastern boundary is from:

Tanjong Sambar through the West coast of Borneo to Tanjong Sampanmangio, the North point thence a line to West points of

⁵ The South China Sea Arbitration Award of 12 July 2016 (Phil. vs China), 33 R.I.A.A 153 (Perm. Ct. Arb. 2016) [hereinafter *The South China Sea Arbitration*].

⁶ Int'l Hydrographic Org., Limits of Oceans and Seas 30-31 (3rd ed. 1953).

Balabac and Secam Reefs on to the West point of Bancalan Island to Cape Buliluyan, the Southwest point of Palawan, through the island to Cabuli point, the Northern point thereof thence to the Northwest point of Busuanga and to Cape Calavite in the island of Mindoro to the Northwest point of Lubang Island and to Point Fuego in Luzon Island, through this island to Cape Engano to the Northeast point of Luzon, along a line joining this cape with the East point of Balintang Island, and to the East point of Y' Ami Island thence to Garan Bi, the Southern point of Taiwan (Formosa) through the island to Santyo its North Eastern Point.⁷

In addition, its northern boundary is from:

Fuki Kaku, the North point of Formosa to Kushan Tao (Turnabout Island) on to the South point of Haitan Tao and thence Westward on the parallel of North to the coast of Fukien.⁸

Finally, its western boundary is determined by the Asian “mainland, the Southern limit of the Gulf of Thailand and the East coast of the Malay Peninsula.”⁹

The Arbitral Tribunal in the South China Sea Arbitration (SCSA) describes the SCS in this way:

The South China Sea lies to the south of China; to the west of the Philippines; to the east of Viet Nam; and to the north of Malaysia, Brunei, Singapore, and Indonesia. The South China Sea is a crucial shipping lane, a rich fishing ground, home to a highly biodiverse coral reef ecosystem, and believed to hold substantial oil and gas resources.¹⁰

⁷ *Id.*

⁸ *Id.*

⁹ *Id.*

¹⁰ The South China Sea Arbitration, *supra* note 3.

The SCS is a part of the Large Marine Ecosystem (LME) within the Asian Seas.¹¹ LMEs are defined as:

Relatively large areas of ocean space of about 200,000 km² or more, adjacent to the continents and extending out to the break in a continental shelf or the seaward extent of a current system. They are characterized by their unique undersea topography, current, marine productivity and food chain interactions and many are transboundary in nature by virtue of interconnected currents and movement and migration of marine resources.¹²

The United Nations Convention on the Law of the Sea defines an "enclosed or semi-enclosed sea" as 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."¹³ Being surrounded by at least seven states, the SCS is considered a semi-enclosed sea. Semi-enclosed seas may be characterized by "adversarial competition for resources and boundaries."¹⁴ This competition is expected, considering the "... natural geographical difficulty of bordering States to claim a full 200-nautical-mile exclusive economic zone and continental shelf, or even a full 12-nautical-mile territorial sea ..."¹⁵ in a semi-enclosed sea.

¹¹ Ussif Rashid Sumaila, *Comparative Valuation of Fisheries in Asian Large Marine Ecosystems with emphasis on the East China Sea and South China Sea LMEs*, 163 DEEP-SEA RSCH. PART II 96, 97, (2019), <https://doi.org/10.1016/j.dsr2.2018.12.008>.

¹² U.N. Educ., Sci., and Cultural Org., *The Large Marine Ecosystem Approach, An Engine for Achieving SDG 14 1* (2017), *Retrieved from:* https://www.undp.org/sites/g/files/zskgke326/files/publications/Large_Marine_Ecosystem_Approach_22062017.pdf.

¹³ United Nations Convention on the Law of the Sea, art. 122, Dec. 10, 1982, 1833 U.N.T.S. 3. [hereinafter *UNCLOS*].

¹⁴ Lee & Bautista, *Semi-enclosed Seas Cooperation under UNCLOS*, Routledge Handbook of the South China Sea, 323, citing Alfred Hu Nien-Tsu, "Semi-enclosed Troubled Waters: A New Thinking on the Application of the 1982 UNCLOS Article 123 to the South China Sea," (2010) 41 OCEAN DEV. & INT'L L., 323.

¹⁵ *Id.*

There are two main island groups in the SCS: the Paracel Islands “in the northwest corner of the Sea, and the Spratly Islands in the southeast corner.”¹⁶ Liu explains that there are “four island groups and submerged features in the SCS, namely the Pratas Islands, the Paracel Islands, the Macclesfield Bank and certain adjacent shoals, sandbanks and reefs, and the Spratly Islands. These four island groups and submerged features consist of more than 200 islands, islets, shoals, rocks and reefs.”¹⁷

B. Sovereignty issues and territorial disputes

Several coastal States have claimed sovereignty over various islands and submerged features in the SCS.¹⁸

Brunei, China, Malaysia, the Philippines, and Vietnam claim the Spratly Islands, which are the largest island group, in whole or in part. All the claimants, except Brunei, occupy or have garrisons on the disputed maritime features.¹⁹

On the other hand, Vietnam and China currently claim the Paracel Islands. In addition, “[m]ost of the Macclesfield Bank and some adjacent shoals, sandbanks, and reefs are submerged and are claimed by China and the Philippines,”²⁰ whereas “[t]he Pratas Islands are not contested by non-Chinese coastal States and are under the control of the Republic of China.”²¹

These claimant states often have divergent and sometimes overlapping territorial claims based on various historical and geographical data.²² Spanning decades, it does not seem that the territorial disputes will be resolved anytime soon.

¹⁶ Sean Mirski, *The South China Sea Dispute: A Brief History*, LAWFARE (2015), <https://www.lawfaremedia.org/article/south-china-sea-dispute-brief-history>.

¹⁷ Yulu Liu, *Regional Cooperation on Marine Environmental Protection in the South China Sea* 42 (2021) (University of Wollongong) (University of Wollongong Thesis Collections).

¹⁸ *Id.*

¹⁹ *Id.*

²⁰ *Id.* at 43.

²¹ *Id.*

²² Yunus Erbas, *The Conflict in the South China Sea: A Focus on a Possible Solution*, BEYOND THE HORIZON (April 11, 2022), <https://behorizon.org/the-conflict-in-the-south-china-sea-a-focus-on-a-possible-solution/>.

III. The Marine Environment of the SCS

A. Significance of SCS

1. Biodiversity and ecological importance

The SCS is home to a rich marine biodiversity comprising thousands of species of mammals, sharks, coral reefs, giant clams, crustaceans, and mangroves, all living together in an ecosystem within the SCS. Furthermore, according to McNamara, the SCS “is a global hotspot for biodiversity, home to important marine ecosystems, mangrove forests, and thousands of fish and sponge species.”²³ In fact, “scientists believe the region holds some of the highest marine biodiversity on earth, with 571 known species of coral reef alone.”²⁴

According to Ives, “[s]cientists describe the Spratlys as biological ‘stepping stones’ for successive generations of corals and fish, meaning that larvae float hundreds of miles toward the Spratlys on ocean currents and stop in eddies near their corals to breed.”²⁵ Furthermore, according to Wilkinson, “[i]n addition to producing larvae, the Spratly reefs also function as biological ‘roadside cafes’ for migratory fish, including tuna, that travel through the South China Sea on their way to the Indian Ocean and stop at the Spratlys to feed.”²⁶

While the SCS is known to be “biologically diverse,” knowledge of its marine fauna is still relatively incomplete.²⁷ But “the most comprehensive list of marine fishes in the SCS lists 3365 species in 263 families ..., although pelagic and

²³ Ryan McNamara, *The Environmental Collateral Damage of the South China Sea Conflict*, NEW SECURITY BEAT (October 13, 2020), <https://www.newsecuritybeat.org/2020/10/environmental-collateral-damage-south-china-sea-conflict/>, citing Houdre, *Environmental Ramifications of the South China Sea Conflict: Vying for Regional Dominance at the Environment's Expense*, GEORGETOWN ENV'T L. REV. (2018).

²⁴*Id.* citing Ives, *The Rising Environmental Toll of China's Offshore Island Grab*, YALE ENV'T 360 (2016).

²⁵ Mike Ives, *The Rising Environmental Toll of China's Offshore Island Grab*, YALE ENV'T 360 (October 10, 2016), https://e360.yale.edu/features/rising_environmental_toll_china_artificial_islands_south_china_sea.

²⁶ *Id.*

²⁷ Sumaila, *supra* note 9.

abyssal fishes are poorly represented.”²⁸ Liu points out that “[t]he SCS hosts a vast number of marine resources which comprise part of the 34% of the world’s coral reefs that belong to Southeast Asia. In particular, there are 571 coral reef species and 3,365 marine fish species.”²⁹

This rich biodiversity supports food security, livelihoods, and blue economy initiatives, particularly through fisheries.³⁰

Sato et al. report that “[c]oral reefs support nearly 25% of global marine life [and] [o]f the world’s 1,683 reef-forming coral species, 571 are found in the South China Sea.”³¹ In fact, “[c]oral reefs are considered one of the most vital ecosystems in the South China Sea, providing food and shelter to thousands of species in their surrounding environment.”³²

These figures do not even include the SCS’ contribution as a sink in the context of climate change. The International Tribunal for the Law of the Sea (ITLOS) has also pointed “to the role of the ocean in storing heat trapped in the atmosphere caused by increasing concentrations of greenhouse gases (GHGs) and storage of excess carbon dioxide. The ocean is the world’s largest sink.”³³

Clearly, the SCS holds great significance for the world for ecological reasons.

2. *Economic value*

The SCS is considered a strategic body of water with one of “the busiest trade routes in the world and home to a wealth of marine and mineral resources;

²⁸ *Id.*

²⁹ Liu, *supra* note 15, at 15.

³⁰ *Id.*

³¹ Monica Sato, Harrison Prétat, Tabitha Mallory, Hao Chen & Gregory Poling, *Deep Blue Scars: Environmental Threats to the South China Sea*, Center for Strategic & International Studies (December 18, 2023), <https://features.csis.org/environmental-threats-to-the-south-china-sea/>.

³² *Id.*

³³ Request for an Advisory Opinion Submitted by the Commission of Small Island States on Climate Change and International Law, Case No. 31, Advisory Opinion (May 21, 2024), ¶ 390 [*hereinafter* ITLOS Case No. 31].

the South China Sea holds great economic and geostrategic importance.”³⁴ Erbas says the SCS is “estimated to contain 11 billion barrels of oil, 190 trillion cubic feet of natural gas ... and 10% of the world’s fishery resources.”³⁵

a) Fisheries

Anh and Pomeroy note that “[t]he SCS is one of the world’s top five most productive fishing zones, accounting for about 12% of global fish catch in 2019.”³⁶ They add that “[m]ore than half of the fishing vessels in the world operate in these waters, officially employing around 3.7 million people and likely many more when illegal, unreported, and unregulated fishing is included.”³⁷

Sumaila reports that SCS is “one of the top five fishing grounds in the world.”³⁸ From 1950 to 2014, it “contributed to around 20% of the 2.5 billion tons of fish taken out of Asia’s [large marine ecosystems].”³⁹ During the same period, SCS contributed 584.90 billion dollars of the 2.8 trillion dollars of catch value generated by the large marine ecosystems of Asia.⁴⁰

Juinio-Meñez reports that “[t]he commercial fisheries from the Kalayaan Island Group in the Spratly Islands, for example, are estimated to be worth about US\$ 47 to 105 million km⁻² annually, in addition to US\$ 39 to 60 million from commercial reef fisheries.”⁴¹ She adds that “[o]n a broader scale, the SCS fisheries play a major role in food security and export earnings of Southeast Asian

³⁴ The ASEAN Secretariat, *Situation in South China Sea: Overview*, Association of Southeast Asian Nations (2026), <https://asean.org/our-communities/asean-political-security-community/peaceful-secure-and-stable-region/situation-in-the-south-china-sea/>.

³⁵ Erbas, *supra* note 20, citing “Territorial Disputes in the South China Sea”, COUNCIL ON FOREIGN RELATIONS, 2021, <https://www.cfr.org/global-conflict-tracker/conflict/territorial-disputes-south-china-sea>.

³⁶ Soojung Ahn & Robert Pomeroy, *Evaluating the Economic Impact of Distant Water Fleet Activities on Small-scale Fishers in the South China Sea*, 168 MARINE POL’Y 1, 2 (2024), <https://doi.org/10.1016/j.marpol.2024.106324>.

³⁷ *Id.*

³⁸ Sumaila, *supra* note 25, at 99.

³⁹ *Id.* at 98-99.

⁴⁰ *Id.* at 99.

⁴¹ Marie Antonette Juinio-Meñez, *Biophysical and Genetic Connectivity Considerations in Marine Biodiversity Conservation and Management in the South China Sea*, 18 J. INT’L WILDLIFE L. POL’Y 110, 112 (2015), <https://doi.org/10.1080/13880292.2015.1044803>.

countries. These capture fisheries contribute about 5×10^6 tons year⁻¹ which is 10% of the world's landed catch."⁴²

b) *Oil and gas*

Because of territorial disputes, the SCS is "underexplored," and "[m]ost discovered oil and natural gas fields are in uncontested areas, close to the shorelines."⁴³ According to the US Energy Information Agency, "[a]pproximately 3.6 billion barrels (b) of petroleum and other liquids and 40.3 trillion cubic feet (Tcf) of natural gas in proved and probable reserves are in the South China Sea."⁴⁴

c) *Global trade*

Erbas says, "roughly 30% of the global maritime trade passes through the South China Sea on its way to the highly trafficked ports in Southeast Asia."⁴⁵ In 2023, around 28 million barrels per day (b/d) were shipped through the SCS.⁴⁶ This volume was 37% of the 76 million b/d of petroleum and petroleum products shipped globally via maritime transport.⁴⁷ On the other hand, the United Nations Conference on Trade and Development (UNCTAD) estimates that the SCS carries around "one-third of the global shipping." Considering that "roughly 80% of global trade by volume and 70% by value is transported by sea,"⁴⁸ that is significant.

Thus, the SCS is a critical world trade route, with 21% of global trade (\$3.4 trillion dollars) in 2016.⁴⁹

d) *Tourism*

Despite the territorial disputes, there is a tourist industry in the SCS. For example, "[s]ince 2023, the Philippines has been organizing tours to the Kalayaan

⁴² *Id.*

⁴³ US Energy Info. Admin., Regional Analysis Brief: South China Sea 2 (2024).

⁴⁴ *Id.* at 2-3.

⁴⁵ Erbas, *supra* note 20 citing Khoury, E. (2017). "Recent Trends in the South China Sea Disputes", Asia Focus#16 – Asia Programme, Insitutut de relations internationales et stratégiques.

⁴⁶ US Energy Information Administration, *supra* note 41, at 20.

⁴⁷ *Id.*

⁴⁸ China Power Team, *How Much Trade Transits the South China Sea?*, CHINA POWER (August 2, 2017), <https://chinapower.csis.org/much-trade-transits-south-china-sea/>.

⁴⁹ *Id.*

Island Group.”⁵⁰ Tan reports that “the seven-day tour aboard a dive yacht, the Great Kalayaan or Freedom Expedition, costs about US\$2,000 per person.”⁵¹ On the other hand, “China’s tourism in the SCS was launched in the Xisha Islands (Paracel Islands in English) in 2013 in the form of cruise tourism.”⁵² Since “December 2016, a Chinese airline began daily flights to Woody Island, the largest in the Paracel group.”⁵³

Thus, the SCS is of significant economic value to the majority, if not all, of the states of the world.

IV. Environmental Challenges in the SCS

The SCS is not exempt from the environmental problems that plague the rest of the planet. Its economic and political value and its nature as a semi-enclosed marine system make it more vulnerable to anthropogenic disturbances.⁵⁴

Trajano et al. point out that “[t]he marine environment in the SCS is deteriorating at an alarming rate, threatening national and human securities of littoral states and their people.”⁵⁵

A. Pollution

Pollution in the SCS is caused by “population growth and urbanization in coastal cities, economic growth and increased material consumption, and highly

⁵⁰ Angeline Tan, *Philippines Uses Tourism to Assert Sovereignty at Disputed South China Sea*, MARITIME FAIR TRADE (July 1, 2024), <https://maritimefairtrade.org/philippines-uses-tourism-to-assert-sovereignty-at-disputed-south-china-sea/>.

⁵¹ *Id.*

⁵² Yan Huang & Yungang Liu, *Encountering and Experiencing the Geopolitics of Tourism (in) mobilities: A Case of China’s Tourism in the South China Sea*, 54 AUSTL. GEOGRAPHER 545, 549 (2023), <https://doi.org/10.1080/00049182.2023.2261097>.

⁵³ Andrew Chubb, *Patriotic Tourism in the South China Sea*, E. ASIA F. (June 7, 2017).

⁵⁴ Michael MacCracken et al., *Vulnerability of Semi-Enclosed Marine Systems to Environmental Disturbances*, in WATERSHEDS, BAYS, AND BOUNDED SEAS: THE SCIENCE AND MANAGEMENT OF SEMI-ENCLOSED MARINE SYSTEMS 8, 8 (2009).

⁵⁵ Julius Cesar Trajano et al., *Marine Environmental Protection in the South China Sea: Challenges and Prospects Part 2*, NTS INSIGHT, Jan. 1, 2018.

polluting technologies for energy production and primary resource extraction.”⁵⁶ Rosenberg notes that “industrial output and energy consumption have grown faster in the countries around the South China Sea than anywhere else in the world, driven by the region's rapid economic growth and increasing population.”⁵⁷ Because the SCS has become a busy “interstate highway,” it has also “become a sink for regional environmental pollution from the industrial effluents of the littoral countries, as well as the spills and dumpings of vessels in transit.”⁵⁸

1. *Marine-based pollution*

While “[m]aritime transport is only responsible for 10% of the total marine pollution and that the extent of vessel-source pollution in the SCS area [is] moderate. Nevertheless, prevention of vessel-source pollution, especially the operational pollution from vessels, is of particular importance for the SCS.”⁵⁹ Liu explains that “[t]he SCS contains some of the world's busiest international sea-lanes, as well as two of the world's busiest ports (Singapore and Hong Kong). As a result, shipping and harbor-related activities contribute significantly to the marine pollution of the area.”⁶⁰

Morton and Blackmore note that “[o]ne third of the 1.6 million tons annually discharged into the sea by shipping is released accidentally and the incidence of tar balls in the South China Sea ... and that tar balls were the most common form of surface pollution” in the SCS.⁶¹ But aside from this, “oil enters the sea from the regular discharge by ships of contaminated ballast water and water used for flushing out tanks.”⁶²

Gomez states that “[s]warms of Chinese vessels have dumped human waste and wastewater for years in a disputed area of the South China Sea, causing

⁵⁶ David Rosenberg, *Environmental Pollution around the South China Sea: Developing a Regional Response*, 21 CONTEMPORARY SOUTHEAST ASIA 119, 121 (1999), <https://doi.org/10.1355/CS21-1F>.

⁵⁷ *Id.*

⁵⁸ *Id.*

⁵⁹ Nengye Liu, *Prevention of Vessel-Source Pollution in the South China Sea: What Role Can China Play*, 15 ASIA PAC. J. OF ENV'T'L. L. 147, 149 (2013).

⁶⁰ *Id.*

⁶¹ Brian Morton & Graham Blackmore, *South China Sea*, 42 MARINE POLLUTION BULL. 1236, 1250 (2001).

⁶² *Id.*

algae blooms that have damaged coral reefs and threatened fish in an unfolding catastrophe.”⁶³ To support this, he notes that “[s]atellite images over the last five years show how human waste, sewage and wastewater have accumulated and caused algae in a cluster of reefs in the Spratly region where hundreds of Chinese fishing ships have anchored in batches.”⁶⁴

In the South China Sea Arbitration (SCSA) case, the Tribunal accepted the observation in the Ferse Report on cyanide and blast fishing.⁶⁵ The Tribunal also considered “the use of both dynamite and cyanide to be ‘pollution’ of the marine environment within the meaning of the Convention—they are substances introduced by man that ‘result in such deleterious effects as to harm living resources and marine life.’”⁶⁶

2. *Land-based pollution*

The source of most of the pollution in the SCS “originates from the land, e.g., waste from large cities (sewage, industrial waste and hydrocarbons) and agricultural runoff (nutrients, pesticides and sediment).”⁶⁷ Morton and Blackmore explain that “[t]he populations of the countries that fringe the South China Sea generate about six million tons of organic matter each year.”⁶⁸ Furthermore, agricultural production adds to the pollution as herbicides, insecticides, and animal wastes make their way to the SCS.⁶⁹

⁶³ Jim Gomez, *Images Show Chinese Ships Dumping Human Waste, Endangering Reefs, U.S. experts say*, L.A. TIMES (July 12, 2021), <https://www.latimes.com/world-nation/story/2021-07-12/images-show-chinese-ship-human-waste-endangering-reefs>.

⁶⁴ *Id.*

⁶⁵ The South China Sea Arbitration, *supra* note 3, at ¶ 970.

⁶⁶ *Id.*

⁶⁷ Morton and Blackmore, *supra* note 57.

⁶⁸ *Id.*

⁶⁹ *Id.*

Jiang notes that “serious marine microplastic pollution” plagues the SCS.⁷⁰ Microplastics from China flow from its rivers and into the SCS.⁷¹ Specifically, Sembiring notes that the Xi, Dong, and Zhujiang rivers in China discharge “approximately 0.106 million tons of plastic waste per year into the SCS via the Pearl River Delta.”⁷² She adds that in 2015 alone, “around 2.56 to 7.08 million tons of plastic marine debris from six SCS-bordering countries accounted for approximately 65% of the world’s top twenty contributors to plastic waste.”⁷³ According to Harris et al., the “amount of plastic pollution that has entered the SCS ... is likely to be of the order of many millions of tons.”⁷⁴ They further add that “countries bordering the SCS may contribute as much as 2.56–7.08 million tons of plastic pollution to the ocean every year.”⁷⁵ Thus, it is no surprise that “marine plastic waste is widely distributed in the deep sea of the SCS region.”⁷⁶

Jiang further notes that “[t]he rapid spread of marine microplastic pollution in the SCS region poses a serious threat to the health of ecosystems and biodiversity, as these pollutants can be transferred across the surface, middle layer, and seabed of seawater, easily ingested by marine organisms.”⁷⁷ The presence of plastic pollution creates “risks of entanglement of animals in plastic

⁷⁰ Tingye Jiang, *Institutional Dilemmas and Solutions to Marine Microplastic Pollution Governance in the South China Sea*, 19 CHINA OCEANS L. REV. 104, 105 (2023), <https://doi.org/10.3389/fmars.2025.1687898>.

⁷¹ *Id.* Jiang observes that “In 2021, Hainan Province monitored its marine microplastics for the first time, identifying 11 types of marine microplastics including fibers, fragments, particles, foam, and films. According to the 2022 Hainan Ecological and Environmental Bulletin, over 10 types of microplastics were identified in the monitoring of floating microplastics in the Nandu River, Wanquan River, Changhua River Estuary, and the northwest waters of Yongxing Island in the Xisha Islands, with polyethylene, polypropylene, and polyester as major components.”

⁷² Margareth Sembiring, *Marine Environmental Protection in the South China Sea: Advancing Stronger People-To-People Cooperation on Plastic Waste Management*, S. Rajaratnam School of International Studies (2024), https://www.rsis.edu.sg/wp-content/uploads/2024/04/PR240408_Marine-Environmental-Protection-in-the-South-China-Sea-Advancing-Stronger-People-to-People-Cooperation-on-Plastic.pdf.

⁷³ *Id.*

⁷⁴ P.T. Harris, J. Tamelander, Y. Lyons, M.L. Neo & T. Maes, *Taking a Mass-Balance Approach to Assess Marine Plastics in the South China Sea*, 171 MARINE POLLUTION BULL. 1, 1 (2021), <https://doi.org/10.1016/j.marpolbul.2021.112708>.

⁷⁵ *Id.*

⁷⁶ Jiang, *supra* note 66.

⁷⁷ *Id.*

debris and the consequences of ingestion.”⁷⁸ If fish ingest plastic, “it may result in starvation of the affected organism as well as possible contamination by toxic chemicals transferred from the plastic particles, with potential risks for human health.”⁷⁹

3. *Air pollution*

Suharman et al. note that “[r]apid economic development in the food and energy sector stimulates more activities taking place in and utilizing maritime environments, such as offshore oil drilling, construction of artificial islands, and fishing vessel industries in SCS waters.”⁸⁰ Because of this, “[n]itrogen oxide (NO_x), hydrocarbon (HC), sulfur oxide (SO_x), and carbon monoxide (CO) are several pollutants in exhaust gas emitted by ships sailing through these waters, affecting air quality and climate change.”⁸¹

Rosenberg reports that “[d]ense clouds of smoke haze were widely evident in satellite photo-images of the South China Sea during the last half of 1997.”⁸² While he admits that “[m]ost of this air pollution came from forest fires in Sumatra, Kalimantan and East Malaysia [he notes that] [a]dditional large quantities of carbon and sulphur emissions came from smoke-stacks of coal-fired power stations, aluminium smelters, and cement and steel factories in southern China.”⁸³ Furthermore, “[m]otor vehicles also generate additional particulate and aerosol pollution, especially in highly urbanized areas along the coastline of the South China Sea.”⁸⁴

⁷⁸ Harris et al., *supra* note 70, at 5.

⁷⁹ *Id.*

⁸⁰ Yoga Suharman, Sadewa Purba Sejati & Iman Amirullah, *Understanding the Carbon Monoxide Threat in the South China Sea*, 13 REGIONS & COHESION 29, 30 (2023), <https://doi.org/10.3167/reco.2023.130303>.

⁸¹ *Id.*

⁸² Rosenberg, *supra* note 52, at 124.

⁸³ *Id.*

⁸⁴ *Id.*

B. Overfishing

Liu notes that “[t]he increasing populations over the past decades have led to a significant rise in subsistence demand for fisheries, which has resulted in the commercialization of fisheries and overfishing.”⁸⁵

Sail points out that “to support their territorial claims, China and Vietnam have intensified commercial fishing. Fish supplies have been declining as a result of overfishing in the South China Sea.”⁸⁶ Thus, the territorial disputes may be aggravating the environmental problems.

Bateman and Emmers state that overexploitation of fisheries in the shared waters of the South China Sea can be seen in the declining yields for specific species, increasing efforts per fish catch, smaller fish sizes, and market movements down the food chain.⁸⁷ They also note that “the incidence of illegal, unreported, and unregulated fishing has increased.”⁸⁸

Furthermore, “fishing stocks have plunged by a third over the past 30 years and will fall further by 59% by 2045. This threatens food security in the densely populated region.”⁸⁹

Yen cites the Food and Agriculture Organization of the United Nations as stating that “most stocks in the West Central Pacific fishing area are either fully fished or overfished, particularly in the western part of the South China Sea.”⁹⁰ Yen also cites a report by Sumaila and Cheung in 2015, which determined that because

⁸⁵ Liu, *supra* note 13, at 56, citing UNEP, GEO-6 Regional Assessment for Asia and the Pacific, 70 & Serge M Garcia and Andrew A Rosenberg, 'Food Security and Marine Capture Fisheries: Characteristics, Trends, Drivers and Future Perspectives' (2010) 365(1554) *Philosophical Transactions of the Royal Society B: Biological Sciences* 2873 and 2974.

⁸⁶ Anushka Sail, *Maritime Disputes in the South China Sea*, 5 *INT'L J. OF L. MGMT. & HUMANITIES* 1991, 1994 (2022), <https://ijlmh.com/paper/maritime-disputes-in-the-south-china-sea/>.

⁸⁷ David Rosenberg, *Fisheries Management in the South China Sea*, in *SECURITY AND INTERNATIONAL POLITICS IN THE SOUTH CHINA SEA* 61 (1st ed. 2008).

⁸⁸ *Id.* at 66.

⁸⁹ Pratnashree Basu, *Troubled Waters: Marine Ecology Threats in the South China Sea*, OBSERVER RESEARCH FOUNDATION (June 18, 2021), <https://www.orfonline.org/research/troubled-waters-marine-ecology-threats-in-the-south-china-sea>.

⁹⁰ Yen Hoang Tran, *The South China Sea Arbitral Award: Legal Implications for Fisheries Management and Cooperation in the South China Sea*, 6 *CAMBRIDGE INT'L L. J.* 87, 88 (2017), <https://doi.org/10.4337/cilj.2017.01.06>.

the fish stocks in the SCS “have declined by 70-95% since the 1950s, [it] is imperative that immediate regional cooperative efforts should be made in order to manage and conserve the fisheries resources.”⁹¹

According to Liu, destructive fishing activities are the main threat to bottom-dwelling living resources.⁹² Greer says that because of shrinking fisheries, “[d]estructive practices, including the use of coral-damaging bottom trawlers, muro-ami nets, or even dynamite and cyanide, are often employed to squeeze more from dwindling fisheries.”⁹³

C. Coral Reef Damage

Liu reports that “[o]verfishing is considered to be a pervasive threat to healthy coral reefs, which puts 64% of reefs at risk.”⁹⁴ Citing a 2010 report from the ASEAN Centre for Biodiversity, Liu further notes that “88% of the ASEAN region’s coral reefs were at risk due to destructive fishing practices and coral bleaching.”⁹⁵

According to Sato et al., “claimants have engaged in dredging and landfills across the region [in order] [t]o build outposts that support their competing claims in the South China Sea.”⁹⁶ This dredging and landfill is very destructive. In fact, “[d]redging ... is primarily responsible for the destruction of corals and reef flats, which sustain the entire marine ecosystem.”⁹⁷ She further notes that “[c]ommercial satellite imagery analysis ... has revealed the approximate total area of coral reefs destroyed by China, Vietnam, and other claimants in the region. The results show that China has caused the most reef destruction through dredging and landfill, burying roughly 4,648 acres of reefs.”⁹⁸ In fact, “27% of the shallow reef area of the seven reefs in the South China Sea has been permanently lost.”⁹⁹

⁹¹ *Id.*

⁹² Liu, *supra* note 13, at 53.

⁹³ Adam Greer, *The South China Sea Is Really a Fishery Dispute*, THE DIPLOMAT, <https://thediplomat.com/2016/07/the-south-china-sea-is-really-a-fishery-dispute/>.

⁹⁴ Liu, *supra* note 13, at 45.

⁹⁵ *Id.* at 16.

⁹⁶ Sato et al., *supra* note 27.

⁹⁷ Basu, *supra* note 85.

⁹⁸ Sato et al., *supra* note 27.

⁹⁹ Basu, *supra* note 85.

Aside from this, the harvesting of giant clams has led to the destruction of coral reefs. According to Sato et al., “many reefs show arc-shaped scars, which are created when fishers dig up reef surfaces by dragging specially made brass propellers in a semicircle around the anchor chain on the front of their boats. This allows them to more easily harvest both live and dead clams attached to the reef.”¹⁰⁰ They note that “[a]lthough fishers from the Philippines and Vietnam have a history of giant clam harvesting, only Chinese fishers are known to use this method.”¹⁰¹

According to estimates, “approximately 16,535 acres of reef have been damaged by Chinese giant clam harvesting.”¹⁰² Ives, citing McManus, states, “China has already caused 55 square miles of ‘decadal-scale’ damage through giant-clam harvesting and seafloor dredging near its new islands.”¹⁰³ He notes that this “is worrying because seafloor dredging can kill corals by blocking their access to sunlight, as has happened near Australia’s Great Barrier Reef, where sediment plumes extended for up to 28 miles from a seafloor dredging site.”¹⁰⁴

Liu also reports that a “2012 meta-analysis of maritime studies found that in just the last 10 to 15 years, SCS coral coverage rates in disputed regions have declined from over 60% to just 20%. Reefs along China’s coastline are in even worse shape and have declined by over 80% in the last several decades.”¹⁰⁵

D. Biodiversity and Habitat Loss

The pollution, overfishing, and destruction of coral reefs inevitably result in biodiversity loss in the SCS.

Juinio-Meñez reports that “the SCS Large Marine Ecosystem Assessment, which is based on expert opinion, showed that the majority of the areas in the SCS were graded as ‘poor’ in relation to biodiversity conditions (e.g., nearshore

¹⁰⁰ Sato et al., *supra* note 27.

¹⁰¹ *Id.*

¹⁰² *Id.*

¹⁰³ Ives, *supra* note 21.

¹⁰⁴ *Id.*

¹⁰⁵ Greer, *supra* note 89.

ecosystems and species).¹⁰⁶ She further notes that “experts judged that the majority of the parameters evaluated were declining or stabilizing, and very few indicated that biodiversity or ecosystem health was improving. Three habitats (coral reefs, seagrass, and mangroves) and species groups were in the poorest condition because of overexploitation and coastal development.”¹⁰⁷

Basu reports that “China has lost half its coastal wetlands, 57% of mangroves and 80% of coral reefs in its exclusive economic zone (EEZ).”¹⁰⁸

According to Sato et al., “[a]lthough local Hainan authorities attempted to crack down on the sale of giant clams in 2017, satellite imagery from 2019 shows that harvesting in the South China Sea persisted ... Giant clam products continue to be sold in China on the black market.”¹⁰⁹ These giant clams have been classified as vulnerable, but “the method by which Chinese fishers have harvested these creatures is even more damaging, laying waste to large swathes of coral reef.”¹¹⁰

Other methods of giant clam harvesting have been observed to have similar destructive effects.

In 2019, near Scarborough Shoal, a method seemingly adapted from salvagers was captured on film. A high-pressure water pump is used to quickly suck sediment from the seabed. This extracts giant clams while also destroying the seabed and sending abrasive sediment drifting through nearby areas. This method of clam harvesting has likely been employed beyond Scarborough Shoal.¹¹¹

Sato et al. further report that “[o]ver 20% of maritime features in the South China Sea have sustained damage from giant clam harvesting. Since clam harvesting on deeper reef structures cannot be monitored by satellite, there is no telling how many other lagoons have been damaged in the same way.”¹¹²

¹⁰⁶ Juinio-Meñez, *supra* note 37, at 113.

¹⁰⁷ *Id.*

¹⁰⁸ Basu, *supra* note 85.

¹⁰⁹ Sato et al., *supra* note 27.

¹¹⁰ *Id.*

¹¹¹ *Id.*

¹¹² *Id.*

In the past, Vietnam “primarily used clamshell dredgers and construction equipment to scoop up sections of shallow reef and deposit the sediment on the area targeted for landfill. This method is slower and causes less collateral damage to surrounding areas.”¹¹³ But Sato et al. point out that this “still destroys the coral reef where the sediment is extracted and deposited.”¹¹⁴ But “Vietnam has turned to cutter suction dredgers like China’s. This large-scale expansion of Vietnam’s South China Sea outposts remains ongoing and will have major consequences for the surrounding marine environment.”¹¹⁵

V. Necessity of Cooperation

The necessity for cooperation to address the environmental problems discussed in the preceding section is obvious given the nature of the SCS marine environment and the causes of the problems.

Liu argues that “[e]nsuring the oceans' sustainable development requires effective coordination and cooperation, including at global and regional levels, between relevant bodies, and actions.”¹¹⁶

Trajano et al. argue that “[t]he alarming state of the marine environment in the SCS highlights the urgency for enhancing cooperation among countries concerned as effective governance is beyond the capacity of any individual nation.”¹¹⁷ In fact, Ma and Liu note that “[i]n order to prevent the impact of human activities on the overall environment of semi-closed seas, the major semi-closed sea areas have established a cooperation framework with regional agreements as the foundation for ... environmental protection.”¹¹⁸

¹¹³ *Id.*

¹¹⁴ *Id.*

¹¹⁵ *Id.*

¹¹⁶ Liu, *supra* note 13, at 77.

¹¹⁷ Trajano et al., *supra* note 51.

¹¹⁸ Mingfei Ma & Xinyang Liu, *The Control of Microplastic Pollution in Semi-Closed Seas: Good-Faith Cooperation and Regional Practice*, 15 SUSTAINABILITY 12412.

6 (2023), <https://doi.org/10.3390/sui51612412>. [These include 1995 Barcelona Convention for the Protection of the Marine Environment Coastal Region in the Mediterranean, the 1992 Helsinki Convention for the Protection of the Marine Environment of the Baltic Sea Area, 1982 Jeddah Convention for the Conservation of the Red Sea and the Gulf of Aden Environment; 1978 Kuwait Convention for Cooperation on the Protection of the Marine Environment from Pollution]

A. *Nature of the SCS Marine Environment*

The borderless nature of the marine environment, where waters freely flow from one area to another, requires cooperation among the various states involved. More importantly, the SCS is a semi-enclosed area. As Hu points out, in a semi-enclosed area:

From a marine space perspective, the bordering States may encounter difficulty of claiming a full 200-nautical-mile exclusive economic zone (EEZ) and continental shelf, or even a full 12-nautical-mile territorial sea, without the occurrence of overlapping claims with neighboring opposite or adjacent States. From a resources perspective, the bordering States share the same water body for land-based effluent discharge and the same marine resource base, both living and nonliving, for their livelihood and economic development. Thus, States bordering enclosed or semi-enclosed seas can be said to be "geographically disadvantaged States."

The geographical reality or limitation of enclosed or semi-enclosed seas requires the bordering States to develop "intraregional" mechanisms to reduce, mitigate, or eliminate competition and conflicts.¹¹⁹

Furthermore, the SCS is the habitat of straddling and highly migratory species. Thus, the States concerned are obligated to cooperate to protect such species.¹²⁰ As these species migrate from one area to another, States must cooperate to protect them.

The ITLOS has also pointed out that because of the global and transboundary nature of anthropogenic GHG emissions, "joint actions should be actively pursued [because] it is only through joint action that global levels of GHG

¹¹⁹ Nien-Tsu Alfred Hu, *Semi-Enclosed Troubled Waters: A New Thinking on the Application of the 1982 UNCLOS Article 123 to the South China Sea*, 41 OCEAN DEV. & INT'L L. 281, 282 (July-September 2010), <https://doi.org/10.1080/00908320.2010.499306>.

¹²⁰ Hoang Tran, *supra* note 86, at 91.

emissions in the atmosphere and the consequent pollution of the marine environment can be prevented, reduced and controlled.”¹²¹

B. Causes of Environmental Problems

To deal with the causes of the destruction of the marine environment which come from different places, the SCS states must coordinate efforts to enforce environmental protection measures. For instance, those guilty of illegal fishing and other activities can only be apprehended and prosecuted through cooperative efforts.

To avoid leakage (i.e., perpetrators of environmental damage moving from an area of strict regulation to an area of lax regulation), states must coordinate and harmonize regulations.

This is also perhaps why international law obligations to solve marine environmental problems recognize cooperation. For example, Article 194 of the United Nations Convention on the Law of the Sea refers to measures undertaken “jointly.” The ITLOS points out that this “indicates the importance of cooperation in addressing pollution of the marine environment. This point is also underscored by requiring States to ‘endeavor to harmonize their policies’” in taking necessary measures indicated in Article 194 (1) of UNCLOS.¹²² Furthermore, the International Law Commission has stated, “[t]he principle of cooperation between States is essential in designing and implementing effective policies to prevent significant transboundary harm or at any event to minimize the risk thereof.”¹²³

VI. International Legal Framework

A. Multilateral Treaties

1. *UN Convention on the Law of the Sea (UNCLOS)*

¹²¹ ITLOS Case No. 31, *supra* note 29, at ¶ 201-202.

¹²² *Id.*

¹²³ Draft articles on Prevention of Transboundary Harm from Hazardous Activities, with commentaries art. 4 ¶ 1, [2001] 2 Y.B. Int'l L. Comm'n 148, 155, U.N. Doc. A/56/10.

Virtually all the claimants to areas in the SCS are parties to the UNCLOS.¹²⁴ Thus, they are all bound to comply with their treaty obligations under the principle of *pacta sunt servanda*

a) *Duty to Protect and Preserve the Marine Environment*

Part XII of UNCLOS deals with the Protection and Preservation of the Marine Environment. The first article of Part XII is Article 192, which provides for the general obligation of states “to protect and preserve the marine environment.”

i. *Obligation under Article 192*

In general

In the SCSA, the Tribunal considered it well established that Article 192 imposes a duty on States Parties, although it is phrased in general terms. The Tribunal further explained that “[t]his ‘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.” The Tribunal added:

Article 192 thus entails the positive obligation to take active measures to protect and preserve the marine environment, and by logical implication, entails the negative obligation not to degrade the marine environment.¹²⁵

In the *Request for an Advisory Opinion Submitted by the Commission of Small Island States on Climate Change and International Law* (“ITLOS Ad Op”), the

¹²⁴ Although Taiwan is not a party, “Taiwan has demonstrated its willingness to comply with international law when it comes to maritime claims. After UNCLOS (1982) was opened for signature, the Republic of China (ROC) published an official statement in the Central Newspaper in January 1983 stating that Taiwan would adhere to the Convention. Taiwan has demonstrated its willingness to comply with international law when it comes to maritime claims. After UNCLOS (1982) was opened for signature, the Republic of China (ROC) published an official statement in the Central Newspaper in January 1983 stating that Taiwan would adhere to the Convention.” Huynh Tam Sang, *UNCLOS’s Relevance to Taiwan Amid a Raging Storm*, Fulcrum Analysis on Southeast Asia (Oct. 4, 2022), <https://fulcrum.sg/uncloss-relevance-to-taiwan-amid-a-raging-storm/>.

¹²⁵ The South China Sea Arbitration, *supra* note 1, at ¶ 941.

ITLOS explained that Article 192 “has a broad scope, encompassing any type of harm or threat to the marine environment.”¹²⁶ It added that:

The obligation under this provision has two distinct elements. The first element is the obligation to protect the marine environment. It is linked to the duty to prevent, or at least mitigate, environmental harm ... The second element is the obligation to preserve the marine environment, which entails maintaining ecosystem health and the natural balance of the marine environment.¹²⁷

ITLOS further explained that “[w]here the marine environment has been degraded, ... the term “preservation” may include restoring marine habitats and ecosystems.”¹²⁸ Also, while the term “restoration” cannot be found in Article 192, it “flows from the obligation to preserve the marine environment where the process of reversing degraded ecosystems is necessary in order to regain ecological balance.”¹²⁹

It should be noted that Article 192 “does not specify the relevant harms and threats to which it applies [which means that] it can be invoked to combat any form of degradation of the marine environment, including climate change impacts, such as ocean warming and sea level rise, and ocean acidification.”¹³⁰

ITLOS has concluded that “Article 192 of the Convention also requires States to implement measures to protect and preserve the marine environment in relation to climate change impacts and ocean acidification that include resilience and adaptation actions as described in the climate change treaties.”¹³¹

In the *SCSA* case, the Tribunal clarified that Article 192 “set forth obligations not only in relation to activities directly taken by States and their organs, but also in relation to ensuring activities within their jurisdiction and

¹²⁶ ITLOS Case No. 31, *supra* note 29, at ¶ 385.

¹²⁷ *Id.*

¹²⁸ *Id.* at ¶ 386.

¹²⁹ *Id.*

¹³⁰ *Id.* at ¶ 388.

¹³¹ *Id.* at ¶ 391.

control do not harm the marine environment.”¹³² Moreover, in the ITLOS Ad Op, the ITLOS said that it “considers that the obligation to take measures necessary to protect and preserve the marine environment requires States to ensure that non-State actors under their jurisdiction or control comply with such measures. The obligation of the State, in this instance, is one of due diligence.”¹³³ Thus, States must ensure that the activities of private individuals and corporations do not harm the marine environment.

The ITLOS further explained that under Article 192, States “are required to take measures as far-reaching and efficacious as possible to prevent or reduce the deleterious effects of climate change and ocean acidification on the marine environment.”¹³⁴

The ITLOS concluded that Article 192:

[I]mposes a general obligation on States Parties to protect and preserve the marine environment. It applies to all maritime areas and can be invoked to combat any form of degradation of the marine environment, including climate change impacts, such as ocean warming and sea level rise, and ocean acidification. Where the marine environment has been degraded, this may require restoring marine habitats and ecosystems. This obligation is one of due diligence. The standard of due diligence is stringent, given the high risks of serious and irreversible harm to the marine environment from climate change impacts and ocean acidification.¹³⁵

Under other articles

The Tribunal also stated that the other provisions of Part XII inform the content of the obligation under Article 192.¹³⁶ It subsequently reiterated that “[t]he content of the general obligation in Article 192 is further detailed in the

¹³² The South China Sea Arbitration, *supra* note 1, at ¶ 944.

¹³³ ITLOS Case No. 31, *supra* note 29, at ¶ 396.

¹³⁴ *Id.* at ¶ 399.

¹³⁵ *Id.* at ¶ 400.

¹³⁶ The South China Sea Arbitration, *supra* note 1, at ¶ 941.

subsequent provisions of Part XII, including Article 194, as well as by reference to specific obligations set out in other international agreements, as envisaged in Article 237 of the Convention.¹³⁷

Under international environmental law

The Tribunal also stated that the “corpus of international law relating to the environment ... informs the content of the general obligation in Article 192.”¹³⁸ It also noted that “the content of the obligation is informed by ... other applicable rules of international law.”¹³⁹ It reiterated that “[t]he content of the general obligation in Article 192 is further detailed ... by reference to specific obligations set out in other international agreements, as envisaged in Article 237 of the Convention.”¹⁴⁰ Thus, it seems that Article 192 is the portal through which the entire body of international environmental law becomes applicable to the marine environment.

Duty not to cause transboundary harm

The Tribunal further stated that international environmental law “requires that States ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control.”¹⁴¹ It concluded that “States have a positive ‘duty to prevent or at least mitigate’ significant harm to the environment when pursuing large-scale construction activities.”¹⁴² The Tribunal seems to refer to the customary principle of *sic utere tuo*. This rule is codified in Article 3 of the Draft Articles on the Prevention of Transboundary Harm (“APTH”), which states that: “The State of origin shall take all appropriate measures to prevent significant transboundary harm or at any event to minimize the risk thereof.”¹⁴³ Moreover, Article 4 of the APTH also emphasizes cooperation, stating that “States concerned shall cooperate in good faith and, as necessary, seek the assistance of one or more competent international

¹³⁷ *Id.* at ¶ 942.

¹³⁸ The South China Sea Arbitration, *supra* note 1, at ¶ 941.

¹³⁹ *Id.*

¹⁴⁰ *Id.* at ¶ 942.

¹⁴¹ *Id.* at ¶ 941.

¹⁴² *Id.* at ¶ 941.

¹⁴³ Draft articles on Prevention of Transboundary Harm from Hazardous Activities, *supra* note 119, at 153.

organizations in preventing significant transboundary harm or at any event in minimizing the risk thereof.¹⁴⁴

Convention on International Trade of Endangered Species (CITES)

In the SCSA, the Tribunal noted that “CITES is the subject of nearly universal adherence, including by the Philippines and China, and in the Tribunal’s view forms part of the general corpus of international law that informs the content of Articles 192 and 194(5) of the Convention.”¹⁴⁵ The Tribunal further noted that “[a]ll of the sea turtles (*Cheloniidae*) found on board Chinese fishing vessels are listed under Appendix I to the CITES Convention as species threatened with extinction and subject to the strictest level of international controls on trade.”¹⁴⁶

The Tribunal quoted from the *Southern Bluefin Tuna*¹⁴⁷ case: “[T]he conservation of the living resources of the sea is an element in the protection and preservation of the marine environment.” It said that it “considers that the general obligation to ‘protect and preserve the marine environment’ in Article 192 includes a due diligence obligation to prevent the harvesting of species that are recognized internationally as being at risk of extinction and requiring international protection.”¹⁴⁸

The Tribunal noted that “the duty to prevent the harvest of endangered species follows from Article 192.”¹⁴⁹ It said that Article 192 imposes a *due diligence* obligation to take those measures “necessary to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life.” (emphasis supplied)¹⁵⁰ It ruled that “in addition to preventing the *direct harvesting* of species recognized internationally as being threatened with extinction, Article 192 *extends to the prevention of harms that*

¹⁴⁴ *Id.* at 155.

¹⁴⁵ The South China Sea Arbitration, *supra* note 1, at ¶ 956.

¹⁴⁶ *Id.*

¹⁴⁷ *Southern Bluefin Tuna* (New Zealand v. Japan; Australia v. Japan), Provisional Measures, Order of 27 August 1999, ITLOS Rep. 1999, 280; 295, 70.

¹⁴⁸ The South China Sea Arbitration, *supra* note 1, at ¶ 956.

¹⁴⁹ *Id.* at ¶ 959

¹⁵⁰ *Id.*

would affect depleted, threatened, or endangered species indirectly through the destruction of their habitat.” (emphasis supplied)¹⁵¹

Consequently, “the harvesting of ... species threatened with extinction [constitutes] a harm to the marine environment as such.”¹⁵² Thus, the “failure to take measures to prevent” practices that have “a harmful impact on the fragile marine environment would constitute a breach” of Article 192.¹⁵³

ii. *Limitation on the sovereign right*

Article 193 of UNCLOS clarifies that while “states have the sovereign right to exploit their natural resources,” it must be “pursuant to their environmental policies and in accordance with their duty to protect and preserve the marine environment.”¹⁵⁴ This article suggests an inherent limitation on the sovereign right of states to exploit their own resources. It is arguable, therefore, that the exploitation of shared resources should also be limited by the duty to preserve and protect the marine environment.

iii. *Measures to prevent, reduce, and control pollution*

Article 194 of UNCLOS deals with “Measures to prevent, reduce and control pollution of the marine environment” and “is drafted in terms whose generality excludes any restriction on the duty to prevent marine pollution.”¹⁵⁵

Article 194 requires all states “to take ... all measures ... that are necessary to prevent, reduce and control pollution of the marine environment from any source.”¹⁵⁶

¹⁵¹ *Id.*

¹⁵² *Id.* at ¶ 960.

¹⁵³ *Id.*

¹⁵⁴ UNCLOS art. 193.

¹⁵⁵ Philippe Weckel & Raphaëlle Didillon, *The Obligation of States to Protect and Preserve the Marine Environment, Summary of the General Report*, Institut du Droit Économique de la Mer, 5 (2023). <https://www.indemer.mc/wp-content/uploads/2023/03/Obligation-de-protéger-et-préserver-le-milieu-marin-Résumé-du-rapport-général-english.pdf>.

¹⁵⁶ UNCLOS art. 194, ¶ 1.

For this purpose, states must use “the best practicable means at their disposal and in accordance with their capabilities.”¹⁵⁷ The ITLOS has explained that “[t]he reference to “the best practicable means at their disposal” and “in accordance with their capabilities” injects a certain degree of flexibility in implementing the obligation.”¹⁵⁸ It adds:

In particular, it seeks to accommodate the needs and interests of States with limited means and capabilities, and to lessen the excessive burden that the implementation of this obligation may entail for those States. However, the reference to available means and capabilities should not be used as an excuse to unduly postpone, or even be exempt from, the implementation of the obligation to take all necessary measures.¹⁵⁹

This obligation applies to any source and any kind of pollution.¹⁶⁰ ITLOS clarified that this includes anthropogenic GHG emissions into the atmosphere.¹⁶¹

The ITLOS Adv Op stated, “[w]hile the obligation to protect and preserve the marine environment is much broader in scope than the obligation to prevent, reduce and control marine pollution, the latter obligation constitutes the main component of the former obligation under the Convention.”¹⁶²

Article 194 provides that necessary measures shall be taken “individually or jointly as appropriate.” The ITLOS has explained that the phrase “as appropriate” in Article 194 “implies that there is no priority between an individual action and a joint action. Either action can be taken if it is appropriate. The appropriateness of an individual or joint action depends on the particular circumstances in which measures are taken.”¹⁶³ But despite the importance of cooperative measures, “[s]tates are required to take all necessary measures,

¹⁵⁷ *Id.*

¹⁵⁸ ITLOS Case No. 31, *supra* note 29, at ¶ 226.

¹⁵⁹ *Id.*

¹⁶⁰ *Id.* at ¶ 197.

¹⁶¹ *Id.*

¹⁶² *Id.* at ¶ 188.

¹⁶³ *Id.* at ¶¶ 201-202.

including individual actions as appropriate.”¹⁶⁴ Some argue that Article 194 “imposes general responsibility on all States—theoretically-, not merely on the coastal or directly affected States.”¹⁶⁵

Article 194, paragraph 1, requires States to take “all measures ... that are necessary.” The ITLOS has explained that the term “necessary” “should be understood broadly.”¹⁶⁶ Thus, “necessary measures include not only measures which are indispensable to prevent, reduce and control marine pollution but also other measures which make it possible to achieve that objective.”¹⁶⁷

The ITLOS has clarified that “what is required of States under this provision is not to guarantee the prevention, reduction and control of marine pollution at all times but to make their best efforts to achieve such result.”¹⁶⁸ Thus, “[i]t is thus the conduct of a State, not the result which would be entailed by the conduct, that will determine whether the State has complied with its obligation” under this article.”¹⁶⁹

Similar to Article 192, the standard for Article 194 is “due diligence,” which “requires a State to put in place a national system, including legislation, administrative procedures and an enforcement mechanism necessary to regulate the activities in question, and to exercise adequate vigilance to make such a system function efficiently, with a view to achieving the intended objective.”¹⁷⁰

¹⁶⁴ *Id.*

¹⁶⁵ Detlef Czybulka, *Article 194: Measures to prevent, reduce and control pollution of the marine environment*, in UNITED NATIONS CONVENTION ON THE LAW OF THE SEA: A COMMENTARY 1295, 1303 (Alexander Proelss ed., Nomos Verlagsgesellschaft 2017).

¹⁶⁶ ITLOS Case No. 31, *supra* note 29, at ¶ 203.

¹⁶⁷ *Id.*

¹⁶⁸ *Id.* at ¶ 233.

¹⁶⁹ *Id.*

¹⁷⁰ *Id.* at ¶¶ 234-236.

Because Article 194 (1) is an obligation *erga omnes partes*, “it may be invoked by a State which has suffered no damage to its marine environment.”¹⁷¹ Furthermore, Article 194 (1) includes “measures to prevent future pollution.”¹⁷²

Article 194 (2) also provides for two obligations of states. First, states must “take all measures necessary to ensure that activities under their jurisdiction or control are so conducted as not to cause damage by pollution to other States and their environment.”¹⁷³ Second, states must “take all measures necessary to ensure that pollution arising from incidents or activities under their jurisdiction or control does not spread beyond the areas where they exercise sovereign rights in accordance with [UNCLOS].”¹⁷⁴ These obligations resemble or are versions of the duty not to cause transboundary harm.

The ITLOS has noted that the term “damage” is referred to in the first obligation but not in the second.¹⁷⁵ Thus, this means that the first obligation “should be understood as requiring the prevention of actual damage by pollution, whereas the obligation in the latter situation extends not only to damage that actually occurred but also to damage that is likely to occur.”¹⁷⁶ This means “that the obligation to impede the spread of pollution arising from incidents or activities (under the jurisdiction or control of the State) is triggered by the fact itself and no other reasons such as threat or hazard to neighboring areas are needed.”¹⁷⁷ This means that the second obligation “imposes a more stringent obligation by requiring States to prevent the “spread” of pollution than the principle laid down in the Stockholm Declaration and the Rio Declaration which refers to “damage” to the environment of other States and of areas beyond the limits of national jurisdiction.”¹⁷⁸ In other words, damage does not have to be proven, but only the existence of pollution.

¹⁷¹ Philippe Weckel & Raphaëlle Didillon, *The Obligation Of States to Protect and Preserve the Marine Environment, Summary of the General Report*, Institut du Droit Économique de la Mer, 5 (2023). <https://www.indemer.mc/wp-content/uploads/2023/03/Obligation-de-proteger-et-preserver-le-milieu-marin-Resume-du-rapport-general-english.pdf>.

¹⁷² Czybulka, *supra* note 161, at 1302.

¹⁷³ UNCLOS art. 194, ¶ 2.

¹⁷⁴ *Id.*

¹⁷⁵ ITLOS Case No. 31, *supra* note 29, at ¶ 248.

¹⁷⁶ *Id.*

¹⁷⁷ Czybulka, *supra* note 161, at 1306.

¹⁷⁸ ITLOS Case No. 31, *supra* note 29, at ¶ 248.

The ITLOS has explained that “[t]he phrase ‘activities under their jurisdiction or control’ refers to activities carried out by both public and private actors.”¹⁷⁹ Thus, the state is responsible not only for the acts of its agents but also for failing to regulate the acts of private actors, provided there is a “link of jurisdiction or control between such activities and a State.”¹⁸⁰ Furthermore, obligations “to ensure” in UNCLOS establish a responsibility to exercise their power over entities under their jurisdiction and control, such as ships flying their flag or companies subject to their national jurisdiction.¹⁸¹

The phrase “jurisdiction or control” of a State includes its territory and “areas in which the State can, in accordance with international law, exercise its competence or authority ... Activities carried out on board ships or aircraft which are registered in a State may also be considered activities under the jurisdiction of that State.”¹⁸² Furthermore, “activities ‘under control’ may be fisheries, seabed-mining, or scientific research regardless of where they are exercised.”¹⁸³

Article 194 (5) also clarifies that “[t]he measures taken in accordance with [Part XII] shall include those necessary to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life.”¹⁸⁴

The term “necessary” “should be understood broadly’ to include ‘those [measures] which make it possible to achieve’ the permissible objective.”¹⁸⁵

¹⁷⁹ *Id.* at ¶ 247.

¹⁸⁰ *Id.*

¹⁸¹ Robert Beckman, *State Responsibility and Transboundary Marine Pollution*, National University of Singapore Centre for International Law. <https://cil.nus.edu.sg/wp-content/uploads/2014/02/Session-4-Beckman-State-Responsibility-and-Transboundary-Marine-Pollution-27-Feb-PowerPoint.pdf>.

¹⁸² ITLOS Case No. 31, *supra* note 29, at ¶ 247.

¹⁸³ Czybulka, *supra* note 161, at 1306.

¹⁸⁴ UNCLOS, art. 194, ¶ 5.

¹⁸⁵ Joshua Paine, *The ITLOS Advisory Opinion on Climate Change: Selected Issues of Treaty Interpretation*, EJIL: TALK BLOG OF THE EUROPEAN JOURNAL OF INTERNATIONAL LAW (Jun. 3, 2024), <https://www.ejiltalk.org/the-itlos-advisory-opinion-on-climate-change-selected-issues-of-treaty-interpretation/>.

An example of a necessary measure under Article 194 (5) is “[t]he establishment and management of a marine protected area (MPA).”¹⁸⁶

Czybulka notes that “by reason of the measures it contains,” Art. 194 (5), “is a provision that aims to protect ecosystems and biodiversity as a whole. It has to be understood in an all-encompassing sense that includes all issues of protection of the marine environment and not only the prevention, reduction and control of pollution.”¹⁸⁷

Article 194 (5) also refers to the preservation and protection of “the habitat of depleted, threatened or endangered species and other forms of marine life.” Czybulka notes that “[i]t is not necessary that these habitats are also ‘rare’ or scarce; they may be common or widespread, and they also can be pre-damaged. Their specific ecological value lies in the fact that endangered etc. marine species live there permanently or seasonally.”¹⁸⁸ It must be noted that endangered species of sea turtles (Cheloniidae) or cetaceans listed under Appendix I to the CITES Convention and marine species like giant clams (Tridacnidae spp.) listed under Appendix II to CITES are found in the SCS.¹⁸⁹

Article 195 deals with the “Duty not to transfer damage or hazards or transform one type of pollution into another.” It requires that “[i]n taking measures to prevent, reduce and control pollution of the marine environment, States shall act so as not to transfer, directly or indirectly, damage or hazards from one area to another or transform one type of pollution into another.”

Czybulka explains that “[t]his duty is not limited to cases where the pollution risks spilling over into areas where the inducing State does not exercise sovereign rights ... Consequently, it does not matter for the application of this provision if the area concerned by the pollution-related action lies within the scope of the state’s authority or not.”¹⁹⁰ Thus, “the acting State shall contain the pollution within the affected area, as far as possible, and combat it as soon as

¹⁸⁶ Czybulka, *supra* note 161, at 1280.

¹⁸⁷ *Id.* at 1309-1310.

¹⁸⁸ *Id.* at 1312.

¹⁸⁹ *Id.*

¹⁹⁰ *Id.* at 1315.

possible where it occurred.”¹⁹¹ The prohibition against transformation “means that the pollution is to be combatted at the source (or/and in its original condition).”¹⁹²

It must be noted that Article 195 is “applicable in all coastal and maritime zones including the internal waters, the exclusive economic zone and the high seas. It is also applicable to measures on the continental shelf and the Area.”¹⁹³

iii. *General and regional cooperation*

Article 197 of UNCLOS requires states to “cooperate on a global basis and, as appropriate, on a regional basis, directly or through competent international organizations, in formulating and elaborating international rules, standards and recommended practices and procedures consistent with [UNCLOS], for the protection and preservation of the marine environment, taking into account characteristic regional features.”¹⁹⁴ Thus, Article 197 requires states to cooperate in creating rules to protect and preserve the marine environment. This duty does not depend on an existing environmental problem or dispute.

The Tribunal in the *SCSA* case cited *MOX Plant*, where the ITLOS “emphasized that ‘the duty to cooperate is a fundamental principle in the prevention of pollution of the marine environment under Part XII of the Convention and general international law.’”¹⁹⁵

In Article 197, “cooperation is expressly aimed at developing a common regulatory framework.”¹⁹⁶ Taken together with Article 194(1), “[i]t follows that cooperation in the formulation and elaboration of international rules, standards and recommended practices and procedures under Article 197 is among the joint measures contemplated in [Article 194 (1)].”¹⁹⁷

¹⁹¹ *Id.*

¹⁹² *Id.*

¹⁹³ *Id.* at 1319.

¹⁹⁴ UNCLOS art. 197.

¹⁹⁵ The South China Sea Arbitration at ¶ 946.

¹⁹⁶ ITLOS Case No. 31, *supra* note 29, at ¶ 301.

¹⁹⁷ *Id.*

The obligation to cooperate under Article 197 “is characterized by a large degree of flexibility”¹⁹⁸ such that the “rules, standards, practices and procedures may be binding or non-binding.”¹⁹⁹

ITLOS clarified that Article 197 “does not oblige States to achieve a normative outcome but to participate meaningfully in the formulation and elaboration of rules, standards and recommended practices and procedures for the protection and preservation of the marine environment.”²⁰⁰ Furthermore, it “is an obligation of conduct which requires States to act with ‘due diligence.’ States are required to fulfill this obligation in good faith.”²⁰¹ Moreover, the obligation has “a continuing nature. It requires States to make an ongoing effort to formulate and elaborate rules, standards and recommended practices and procedures.”²⁰²

Article 198 of UNCLOS deals with “Notification of imminent or actual damage.” It requires a state that “becomes aware of cases in which the marine environment is in imminent danger of being damaged or has been damaged by pollution ... to immediately notify other States it deems likely to be affected by such damage, as well as the competent international organizations.”

In addition, Article 199 deals with “Contingency plans against pollution” and covers cases referred to in Article 198. It requires states in the area affected and the competent international organizations to “cooperate, to the extent possible, in eliminating the effects of pollution and preventing or minimizing the damage.”²⁰³ It adds that “[t]o this end, States shall jointly develop and promote contingency plans for responding to pollution incidents in the marine environment.”²⁰⁴

¹⁹⁸ *Id.* at ¶ 302.

¹⁹⁹ *Id.*

²⁰⁰ *Id.* at ¶ 307.

²⁰¹ *Id.* at ¶ 309.

²⁰² *Id.* at ¶ 311.

²⁰³ UNCLOS art. 199.

²⁰⁴ *Id.*

The obligation to notify of danger or damage and to develop contingency plans is prescribed “so that States can best coordinate their efforts.”²⁰⁵ Lee and Bautista explain that “Marine pollution contingency plans respond to marine pollution disasters and emergencies in order to protect marine resources. In light of existing State practices of marine contingency planning and *opinio juris*, these UNCLOS provisions also appear to codify an established customary international rule.”²⁰⁶

Lee and Bautista note further that Article 198 “does not provide for a specific standard as to the degree of damage incurred that requires notification. Once notification under Article 198 is given, States are expected, however, to proceed under the contingency plans developed under Article 199 with assistance from competent international organizations.”²⁰⁷

Article 200 of UNCLOS is titled “Studies, research programs and exchange of information or data.” It requires states to “cooperate, directly or through competent international organizations, for the purpose of promoting studies, undertaking programs of scientific research and encouraging the exchange of information and data acquired about pollution of the marine environment.”²⁰⁸ Thus, the cooperation is for three purposes: (1) promotion of studies, (2) undertaking scientific research programs, and (3) exchange of information and pollution data.

ITLOS notes that Article 200 “is important for the development of an adequate common regulatory framework to protect and preserve the marine environment.”²⁰⁹

b) *Monitoring and environmental assessment*

Article 204 of UNCLOS deals with “Monitoring the risks or effects of pollution.” Article 204 (1) provides that states “shall, consistent with the rights of

²⁰⁵ Seokwoo Lee & Lowell Bautista, *Part XII of the United Nations Convention on the Law of the Sea and the duty to mitigate against climate change: making out a claim, causation, and related issues*, 45 *ECOLOGY L.Q.* 129, 141 (2018), <https://doi.org/10.15779/Z38M32N965>.

²⁰⁶ *Id.*

²⁰⁷ *Id.* at 142.

²⁰⁸ UNCLOS art. 200.

²⁰⁹ ITLOS Case No. 31, *supra* note 29, at ¶ 315.

other States, endeavor, as far as practicable, directly or through the competent international organizations, to observe, measure, evaluate and analyze, by recognized scientific methods, the risks or effects of pollution of the marine environment.”²¹⁰ The ITLOS has explained that Article 204 (1) “aims to enhance knowledge of the harmful consequences of marine pollution as a whole” and “provides for two phases of monitoring.”²¹¹ The first is the observation and measurement of the risks and effects of pollution, and the second is the evaluation and analysis of the data.²¹² While the language suggests that the obligation is not mandatory, Article 204 (2) states that “[i]n particular, States shall keep under surveillance the effects of any activities which they permit or in which they engage in order to determine whether these activities are likely to pollute the marine environment.”²¹³ The language of paragraph 2 is clearly mandatory. Thus, “[i]t shifts the object of monitoring from the marine environment as a whole to activities conducted under the control of a State party.”²¹⁴ The obligation applies irrespective of the place where the activities are conducted or the nationality of the individuals or entities carrying out the activities.²¹⁵

The Tribunal in the SCSA case explained that “[t]he duty to monitor the marine environment is ... not limited to either coastal or flag States, but applicable to all States Parties” to UNCLOS.²¹⁶

Article 205 of UNCLOS deals with “Publication of reports.” It requires states to “publish reports of the results obtained pursuant to article 204 or provide such reports at appropriate intervals to the competent international organizations, which should make them available to all States.”²¹⁷

²¹⁰ UNCLOS, art. 204, ¶ 1.

²¹¹ ITLOS Case No. 31, *supra* note 29, at ¶¶ 347-349.

²¹² *Id.*

²¹³ Article 204, ¶ 2.

²¹⁴ Eike Blitza, *Article 204: Monitoring of the risks or effects of pollution*, in UNITED NATIONS CONVENTION ON THE LAW OF THE SEA: A COMMENTARY 1356, 1363 (Alexander Proelss ed., Nomos Verlagsgesellschaft 2017).

²¹⁵ ITLOS Case No. 31, *supra* note 29, at ¶¶ 347-349.

²¹⁶ Blitza, *supra* note 210 at 1360.

²¹⁷ UNCLOS art. 205.

Blitza explains that “to fulfill this duty, States may either publish pertinent reports themselves or provide them to competent international organizations, which make them available to all States.”²¹⁸

Article 206 of UNCLOS deals with “Assessment of potential effects of activities.” It requires states that “have reasonable grounds for believing that planned activities under their jurisdiction or control may cause substantial pollution of or significant and harmful changes to the marine environment” to, “as far as practicable, assess the potential effects of such activities on the marine environment and shall communicate reports of the results of such assessments in the manner provided in article 205.”²¹⁹ Thus, Article 206 provides for the undertaking and communication of environmental impact assessments.

ITLOS has argued that “the obligation to conduct environmental impact assessments is crucial to ensure that activities do not harm the marine environment and is an essential part of a comprehensive environmental management system.”²²⁰ It noted that this obligation also forms part of customary international law.²²¹

ITLOS has pointed out that “although article 206 of the Convention does not specify the scope and content of an environmental impact assessment, it indicates some of the components that are relevant.”²²² For instance, it noted that “the obligation to conduct an environmental impact assessment concerns ‘planned activities,’²²³ which implies that such assessment is to be conducted prior to the implementation of a project.” It further noted that “[t]he activities under assessment comprise both those planned by private entities and those planned by States.”²²⁴

Thus, Article 206 requires an environmental impact assessment if the activity is under the “jurisdiction or control” of the State and if there are

²¹⁸ Eike Blitza, *Article 205: Publication of Report*, in UNITED NATIONS CONVENTION ON THE LAW OF THE SEA: A COMMENTARY 1364, 1364-65 (Alexander Proelss ed., Nomos Verlagsgesellschaft 2017).

²¹⁹ UNCLOS art. 206.

²²⁰ ITLOS Case No. 31, *supra* note 29, at ¶ 354.

²²¹ *Id.* at ¶ 355.

²²² *Id.* at ¶¶ 357-358.

²²³ *Id.*

²²⁴ *Id.*

“reasonable grounds for believing” that this activity “may cause substantial pollution of or significant and harmful changes to the marine environment.”²²⁵

In the SCSA case, the Tribunal noted that “[t]o fulfill the obligations of Article 206, a State must not only prepare an EIA but also must communicate it.”²²⁶

ITLOS has explained that the obligation under Article 206 “does not ... require a transboundary context to be triggered.”²²⁷ Thus, “it covers activities which are likely to only pollute ... the coastal State’s territorial sea, as well as those affecting the high seas ... or maritime zones under the exclusive jurisdiction ... or sovereignty ... of other States.”²²⁸ This “broad scope of application is further complemented by the fact that the provision contains virtually no spatial limitation. It is not confined to planned activities within a State’s territory or zones of jurisdiction but applies everywhere – even in the territory of another State.”²²⁹

c) *Cooperation in semi-enclosed areas*

Article 122 of UNCLOS defines an enclosed or semi-enclosed area as “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.” Hu notes, “[a]n enclosed or semi-enclosed sea inevitably entails a situation in which the bordering States are competing for marine space and resources.”²³⁰

Article 123 of UNCLOS requires States bordering an enclosed or semi-enclosed sea to “cooperate with each other in the exercise of their rights and in the performance of their duties under [the UNCLOS]. To this end, they shall endeavor, directly or through an appropriate regional organization” the following:²³¹

²²⁵ *Id.* at ¶ 359.

²²⁶ The South China Sea Arbitration, *supra* note 1 at ¶ 991.

²²⁷ Eike Blitza, *Article 206: Assessment of potential effects of activities*, in UNITED NATIONS CONVENTION ON THE LAW OF THE SEA: A COMMENTARY 1369, 1371 (Alexander Proelss ed., Nomos Verlagsgesellschaft 2017).

²²⁸ *Id.*

²²⁹ *Id.*

²³⁰ Hu, *supra* note 115.

²³¹ UNCLOS art. 123.

- to coordinate the management, conservation, exploration and exploitation of the living resources of the sea;
- to coordinate the implementation of their rights and duties with respect to the protection and preservation of the marine environment;
- to coordinate their scientific research policies and undertake where appropriate joint programs of scientific research in the area;
- to invite, as appropriate, other interested States or international organizations to cooperate with them in furtherance of the provisions of this article.

Lee and Bautista argue that “Article 123 reflects the reality that States bordering a semi-enclosed sea are under an enhanced duty to cooperate.”²³²

In the SCSA case, the Tribunal noted that “[w]ith respect to China’s island-building program, the Tribunal has before it no convincing evidence of China attempting to cooperate or coordinate with the other States bordering the South China Sea.”²³³

2. *Convention on Biological Diversity (CBD)*

Virtually all states with a territorial claim within the SCS are parties to the CBD. Taiwan, referred to as a province of China in the official documents of discussions in relation to the CBD,²³⁴ has also expressed its participation. The CBD’s objectives are the “conservation of biological diversity, the sustainable use

²³² Lee & Bautista, *supra* note 10 at 323 citing Satya N. Nandan, and Shabtai Rosenne (eds.), UNITED NATIONS CONVENTION ON THE LAW OF THE SEA 1982: A COMMENTARY, Vol. 3, (Martinus Nijhoff 1995), p. 343, 356, 365.

²³³ The South China Sea Arbitration, *supra* note 1 at ¶ 986.

²³⁴ As an example, in the Preliminary Report of First Global Taxonomy Initiative Workshop in Asia, UNEP/CBD/SBSTTA/9/INF/17, 12 September 2003, on p. 16, fn 10.
<https://www.cbd.int/doc/meetings/sbstta/sbstta-09/information/sbstta-09-inf-17-en.pdf>

of its components, and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.”²³⁵

The CBD has been referred to by the Tribunal in the SCSA case across multiple portions of the decision.

For instance, the Tribunal referred to Article 2 of the CBD in defining the term “ecosystem”:

An ‘ecosystem’ is not defined in the [United Nations] Convention [on the Law of the Sea], but internationally accepted definitions include that in Article 2 of the CBD, which defines ecosystem to mean “a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit. The Tribunal has no doubt from the scientific evidence before it that the marine environments where the allegedly harmful activities took place in the present dispute constitute “rare or fragile ecosystems.” They are also the habitats of “depleted, threatened or endangered species,” including the giant clam, the hawksbill turtle and certain species of coral and fish.”²³⁶

This implies that the provisions of the CBD apply to the marine environment in general and the SCS in particular.

Furthermore, Article 4 of the CBD provides that its provisions apply:

- (a) In the case of components of biological diversity, in areas within the limits of its national jurisdiction; and
- (b) In the case of processes and activities, regardless of where their effects occur, carried out under its jurisdiction or control, within the area of its national jurisdiction or beyond the limits of national jurisdiction.

²³⁵ Convention on Biological Diversity art. 1, Jun. 5, 1992, 1760 U.N.T.S. 79 [*hereinafter* CBD].

²³⁶ The South China Sea Arbitration, *supra* note 1 at para. 945 (citations omitted).

Thus, if what is involved are “components of biological diversity,” the provisions of the CBD apply “in areas within the limits of its national jurisdiction.”²³⁷ However, “in the case of processes and activities,” the provisions of the CBD apply to a party if carried out under that state’s jurisdiction or control, within the area of its national jurisdiction, or beyond the limits of national jurisdiction.

In discussing the relationship between the CBD and UNCLOS, Nishimura states:

In relation to the law of the sea, Article 22 of the CBD is of significance, providing in paragraph 2 that “Contracting Parties shall implement this Convention with respect to the marine environment consistently with the rights and obligations of States under the law of the sea.” International jurisprudence also clarifies that “Article 22 (2) of the CBD recognizes the substantive overlap between the two parallel conventions and therefore requires that they be implemented consistently.’

In practice the COP repeatedly adopted the resolutions that the law of the sea, including the UNCLOS provides a legal framework for regulating activities in marine area beyond national jurisdiction.²³⁸

Thus, there is a sufficient legal basis for applying CBD provisions to the SCS marine environment.

a) *Duty to cooperate*

Article 5 of the CBD requires parties to “cooperate with other Contracting Parties, directly or, where appropriate, through competent international organizations, in respect of areas beyond national jurisdiction and on other matters of mutual interest, for the conservation and sustainable use of biological diversity.”

²³⁷ CBD, art. 4(a).

²³⁸ Tomoaki Nishimura, *The Legal Framework for Marine Genetic Resources: The Relationship between the UNCLOS and the Convention on Biological Diversity Regime*, 21 *ASIAN. BUS. L.* 63, 68 (2018), <https://doi.org/10.12662/2447-66410j.v20i34.p164-179.2022>.

Liu explains that Article 5 “obligates a contracting party to cooperate with other contracting parties in areas beyond national jurisdiction and on other matters of mutual interest, for the conservation and sustainable use of biological diversity.”²³⁹

The Conference of the Parties (COP) to the CBD “has addressed this Article substantively only in relation to marine protected areas (MPAs) beyond national jurisdiction.”²⁴⁰ Specifically, “COP 7 mandated the Ad Hoc Working Group on Protected Areas to explore options for cooperation for the establishment of MPAs in marine areas beyond the limits of national jurisdiction, consistent with international law, including UNCLOS, and based on scientific information.”²⁴¹

Zaman notes that the Preamble of the CBD states “the importance of and the need to promote, international, regional and global cooperation among States and intergovernmental organizations and the non-governmental sector for the conservation of biological diversity.”²⁴²

b) *Protection of Ecosystems*

Article 8(d) of the CBD requires contracting states to “[p]romote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings.”

Article 8(f) of the CBD requires contracting states to “[r]ehabilitate and restore degraded ecosystems and promote the recovery of threatened species, inter alia, through the development and implementation of plans or other management strategies.”

²³⁹ Liu, *supra* note 13 at 96.

²⁴⁰ Secretariat of the Convention on Biological Diversity, *Handbook of the Convention on Biological Diversity* 94 (3rd ed. 2005), <https://www.cbd.int/doc/handbook/cbd-hb-06-en.pdf>.

²⁴¹ *Id.*

²⁴² Sharaban Tahura Zaman, *Recognising Biodiversity Conservation as a “Common Concern of Mankind”: A Legal Appraisal*, 50 ENVTL. POL’Y. & L. 3, 175-176 (2020), <https://doi.org/10.3233/EPL-200212>.

According to the Conference of the Parties to the CBD, the terms rehabilitate (i.e., to return to productive use) and restore (i.e., to return to the original condition) “are not very distinct.”²⁴³ It adds:

As natural ecosystems constantly change, the concept of “original condition” is somewhat arbitrary. Rehabilitating and restoring ecosystems (sometimes collectively called “restoration ecology”) is a fairly new discipline which may rely on natural vegetation succession or on active human intervention such as tree-planting, removal of invasive species, controlled burning or re-introduction of extirpated species. Restoration has typically been accomplished on a small scale such as on abandoned mines or small wetlands.²⁴⁴

3. *Other Treaties*

In addition to UNCLOS and CBD, other treaties may be applied for marine environmental protection of the SCS

a) *London Convention and London Protocol*

The “London Convention” is the short name for the “Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972.” The London Convention “is one of the first global conventions to protect the marine environment from human activities and has been in force since 1975”²⁴⁵ and “[i]ts objective is to promote the effective control of all sources of marine pollution and to take all practicable steps to prevent pollution of the sea by dumping of wastes and other matter.”²⁴⁶

²⁴³ Convention on Biological Diversity (14 September 1995), *Conference of the Parties to the Convention on Biological Diversity*, UNEP/CBD/COP/2/12, available at <https://enb.iisd.org/biodiv/sbstta/2-12e.html>.

²⁴⁴ *Id.*

²⁴⁵ International Maritime Organization, *Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter*.

<https://www.imo.org/en/OurWork/Environment/Pages/London-Convention-Protocol.aspx>.

²⁴⁶ *Id.*

The "London Protocol" is the short title of the "1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972." The London Protocol was intended "to further modernize the [London] Convention and, eventually, replace it."²⁴⁷ Article 2 of the London Protocol provides for its objective:

Contracting Parties shall individually and collectively protect and preserve the marine environment from all sources of pollution and take effective measures, according to their scientific, technical and economic capabilities, to prevent, reduce and where practicable eliminate pollution caused by dumping or incineration at sea of wastes or other matter. Where appropriate, they shall harmonize their policies in this regard.

The London Protocol prohibits all dumping except for possibly acceptable wastes on the so-called "reverse list."²⁴⁸

Article 12 of the London Protocol also provides for regional cooperation. It provides that:

Contracting Parties with common interests to protect the marine environment in a given geographical area shall endeavor, taking into account characteristic regional features, to enhance regional cooperation including the conclusion of regional agreements consistent with this Protocol for the prevention, reduction and where practicable elimination of pollution caused by dumping or incineration at sea of wastes or other matter.

While the People's Republic of China and the Philippines are the only SCS State parties to the London Convention and London Protocol, it may be argued that membership in the UNCLOS might bind the other states to observe rules set by the London Convention and Protocol by rule of reference.²⁴⁹

²⁴⁷ *Id.*

²⁴⁸ *Id.*

²⁴⁹ Lan Ngoc Nguyen, *Expanding the Environmental Regulatory Scope of UNCLOS Through the Rule of Reference: Potentials and Limits*, OCEAN DEV. & INT'L L. 52, 419–444, 420. (2021), <https://doi.org/10.1080/00908320.2021.2011509>.

b) *Stockholm Convention*

Fiedler et al. explain that “[t]he Stockholm Convention on POPs is a legally binding instrument for environmental protection ... which strives to eliminate persistent organic chemicals worldwide by either prohibiting their production and use or gradually reducing them.”²⁵⁰ Jiang briefly cites the Stockholm Convention as one of the many legal documents governing marine microplastic pollution in the SCS, contributing to a diversified legal foundation for this issue.²⁵¹

Five claimant states (i.e., Philippines, Vietnam, China, Brunei, and Malaysia) have ratified and entered into force the Stockholm Convention since the early 2000s.

B. *Principles*

In addition to multilateral treaties, international environmental law principles can also provide a basis for marine environmental cooperation in the SCS. Admittedly, the status of these principles as custom is doubtful. However, these principles are arguably general principles of law.²⁵² Furthermore, versions of these principles can be found in multilateral treaties like the UNCLOS, CBD, and the London Protocol. The most prominent environmental principles are discussed below as examples.

1. *Sustainable Development*

In the 1987 Brundtland Report, sustainable development was defined as “development that meets the needs of the present without compromising future generations' ability to meet their own needs.”²⁵³ Barral and Dupuy point out that

²⁵⁰ Heidelor Fiedler, Roland Kallenborn, Jacob de Boer, Leive K. Sydnæs, *The Stockholm Convention: A Tool for the Global Regulation of Persistent Organic Pollutants*, 41 CHEM. INT. 2, 4-11 (2019), <https://doi.org/10.1515/ci-2019-0202>.

²⁵¹ Jiang, *supra* note 66 at 109-110 (citations omitted).

²⁵² See Draft Conclusion on the Identification of General Principles of Law with commentaries (A/78/10)

²⁵³ Liu, *supra* note 13 at 74, *citing* Brundtland Report.

“Principle 4 of the Rio Declaration is a key principle in the operation of sustainable development.”²⁵⁴

Principle 4 states, “In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.”²⁵⁵

Thus, sustainable development would require states to consider environmental protection in planning and pursuing economic development plans.

2. *Precautionary Principle*

Principle 15 of the Rio Declaration provides:²⁵⁶

In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

Gullett explains, “[t]he principle of precautionary action is a new legal response to scientific uncertainties to avoid the paralysis of decision-makers when confronted with uncertainty, and we should not wait for conclusive proof of environmental harm before adopting appropriate avoidance measures.”²⁵⁷ Ma & Liu argue that “[b]ased on this principle, coastal countries of semi-enclosed seas shall take measures to control the spread of [microplastic] pollution in the region. The [microplastic] pollution to be governed is a matter of common interest in

²⁵⁴ Virginie Barral & Pierre-Marie Dupuy, *Principle 4: Sustainable Development through Integration*, in *THE RIO DECLARATION ON ENVIRONMENT AND DEVELOPMENT: A COMMENTARY* 157, 158 (Jorge E. Viñuales ed., 1st ed. 2015), <https://doi.org/10.1093/law/9780199686773.003.0008>.

²⁵⁵ Rio Declaration on Environment and Development, annex I, prin. 4, June 14, 1992, U.N. Doc. A/CONF.151/26/Rev.1 (Vol. I).

²⁵⁶ U.N. Conference on Environment and Development, *Rio Declaration on Environment and Development*, principle 15, U.N. Doc. A/CONF.151/26/Rev.1 (Vol. I), annex I (Aug. 12, 1992).

²⁵⁷ Warwick Gullett, *Environmental Protection and the Precautionary Principle: A Response to Scientific Uncertainty in Environmental Management*, 14 ENV'T. PLAN. L.J. 1, 52–69 (1997).

semi-enclosed seas, which represents global marine governance practice at the regional level.”²⁵⁸

Liu also notes that “Chapter 17 of Agenda 21, which is on the protection of the oceans, all kinds of seas, including enclosed and semi-enclosed seas, and coastal areas and the protection, rational use and development of their living resources, also takes the precautionary approach into account.”²⁵⁹ She further argues that:

A precautionary and anticipatory rather than a reactive approach is necessary to prevent the degradation of the marine environment. This requires, *inter alia*, the adoption of precautionary measures, environmental impact assessments. Any management framework must include the improvement of coastal human settlements and the integrated management and development of coastal areas.²⁶⁰

Other environmental principles such as inter-generational equity, common but differentiated responsibilities and polluter pays principle may also apply. However, time and space constraints prevent a more in-depth discussion of environmental principles in this paper.

VII. Summary of Obligations and Recommendations

Spanning an area of 3.5 square kilometers and surrounded by at least seven states, the SCS occupies a significant portion of the globe. This semi-enclosed area is a “global hotspot” for biodiversity, including endangered species. But the area is also rich with natural resources, including billions of barrels of oil, trillions of cubic feet of natural gas, and billions of tons of fish caught yearly. The SCS also serves as a critical highway for international trade, accounting for nearly a third of the total global trade. In times of armed conflict, control over the area is strategically important. But because of this status, value, and configuration, it is no surprise that territorial disputes have arisen. There seems to be no end in sight to these conflicts.

²⁵⁸ Ma and Liu, *supra* note 114.

²⁵⁹ Liu, *supra* note 13 at 85.

²⁶⁰ *Id.*

However, while states remain at odds with each other, the SCS marine environment deteriorates. The economic and population growth of the states in the area has resulted in massive amounts of pollution from multiple sources. The greed for resources has led to overfishing and the destruction of habitats of endangered species, with a state or two abetting illegal practices to further territorial claims. Cooperation is necessary because of the nature of the marine environment and the causes of the environmental problems. However, waiting for conflicts to be resolved before taking action to protect and rehabilitate the environment is out of the question. Time is of the essence. States surrounding the SCS must act quickly. But usually, states will not act unless they are required to. The question is whether states have legal obligations to preserve the SCS marine environment and to act cooperatively, which do not depend on whether their territorial disputes are resolved. This paper has answered that question in the affirmative.

A. Compliance with the legal framework

Part IV of this paper discussed the various legal obligations of the states surrounding the SCS. These obligations, for the most part, do not require that the issue of sovereignty be resolved. States occupying disputed territories are primarily responsible for complying with the legal framework and cannot excuse themselves from compliance because the area is disputed. For those areas not under the control of any state, all states surrounding the SCS become jointly responsible for complying with the applicable legal framework.

1. Effective control and environmental responsibility

Perhaps the most important task in any territorial dispute is identifying which state has the better title. One key element in proving title is effective control over the area claimed. If claimant states have effective control as they allege, they should comply with the responsibilities emanating from control. While jurisdiction as an aspect of sovereignty may be disputed, control is a factual matter. One of the best ways to demonstrate control is compliance with treaty obligations on protecting the environment.

2. Sovereignty limited by environmental obligations

Claimant states don't just claim control but sovereignty. But even states claiming absolute sovereignty over areas of the SCS must recognize the limits of sovereignty under Article 193 of UNCLOS. While states have the sovereign right to exploit natural resources, it must be limited by their environmental policies in accordance with their duty to protect and preserve the marine environment. Sovereignty is limited by a state's obligations outlined under Part XII of UNCLOS.

3. *Individual state obligations*

For obvious reasons, UNCLOS provides the most substantial legal framework for marine environmental protection in the SCS. Individually, states have obligations to protect the marine environment.

a) *Protect and preserve the marine environment*

First and foremost, among the obligations is the duty to protect and preserve the marine environment. All claimant states must observe their duty to protect the SCS marine environment from future damage and to maintain or improve its condition.²⁶¹ This requires taking active measures and prohibiting activities that degrade the marine environment. This includes regulating activities undertaken by private entities. Thus, states must effectively regulate the activities of non-state actors in the SCS and ensure compliance with environmental obligations. For example, states should prevent overfishing or the employment of fishing methods that destroy habitats.

b) *Prevent pollution from all sources*

The broad scope of Article 192 of UNCLOS encompasses any type of harm or threat. Because of this, states must ensure that pollution of all kinds and sources does not flow from their territory and into the SCS. This obligation is further bolstered by Article 194 (1) of UNCLOS, which requires States to take all necessary measures to prevent, reduce, and control pollution from any source. This covers present and future pollution.²⁶² As previously explained, a measure is necessary not only when it is indispensable but also when it makes the objectives possible.

²⁶¹ UNCLOS art. 192 See Part IV A (a) (a) (i) *infra*.

²⁶² Czybulka, *supra* note 161, at 1302.

Article 195 also requires states to act so as not to transform one type of pollution into another. As previously discussed, for this duty, it does not matter if the area concerned lies within the scope of the state's authority.²⁶³ The duty against transformation requires that pollution be dealt with at its source.²⁶⁴

The London Convention, London Protocol,²⁶⁵ and the Stockholm Convention further enhance the obligations of some of the SCS states to protect the environment from pollution.

Thus, states surrounding the SCS must prevent pollution from reaching the area from their territory or areas and activities under their control.

c) *Protect and preserve biodiversity and endangered species*

States also have the specific obligation to protect and preserve biodiversity and endangered species. The obligations under the CITES inform the content of Articles 192 and 194(5) of UNCLOS. As species listed under Appendix I of CITES are found in the SCS, states in the area are obligated to protect them. Furthermore, Article 192 “includes a due diligence obligation to prevent the harvesting of species that are recognized internationally as being at risk of extinction and requiring international protection.”²⁶⁶

This obligation is further supported by the CBD, which obligates states to promote the maintenance of viable populations of species in natural surroundings.²⁶⁷ It also requires states to promote the recovery of threatened species.²⁶⁸

Thus, states in the SCS should not tolerate overfishing or the hunting or harvesting of endangered species.

²⁶³ See Part IV (A) (1) (a) (iii) *infra*.

²⁶⁴ *Id.*

²⁶⁵ The People's Republic of China and the Philippines are parties to the London Convention and London Protocol.

²⁶⁶ The South China Sea Arbitration, *supra* note 1 at ¶ 956.

²⁶⁷ CBD art. 8 (d).

²⁶⁸ CBD art. 8 (f).

d) *Protect and preserve ecosystems and habitats*

Claimant states also have the obligation to protect and preserve ecosystems and habitats. Thus, they should also restore marine habitats and ecosystems. This is based on Article 192, which the CBD supports. In particular, under Article 192, states have the “due diligence obligation to take those measures to protect and preserve rare or fragile ecosystems.”²⁶⁹ As pointed out, Article 194 (5) includes actions to protect rare or fragile ecosystems and habitats of depleted, threatened, or endangered species as necessary measures for states.

This obligation is further bolstered by the CBD, which requires parties to promote the protection of ecosystems and natural habitats.²⁷⁰ It also requires states to rehabilitate and restore degraded ecosystems.²⁷¹

Thus, all states in the SCS should not tolerate activities that damage ecosystems and habitats. In this regard, states should consider establishing more marine protected areas in the SCS.

e) *Not cause transboundary harm*

States must ensure that activities within their jurisdiction or control respect the environment of other states or areas beyond national control. This duty is one of the principles of international environmental law, which informs the content of Article 192.²⁷²

Furthermore, under Article 194 (2) UNCLOS, states must take all necessary measures to ensure that activities in the areas they control or activities conducted by agents or actors they control or regulate do not cause damage by pollution to other states. These states are also responsible for taking all necessary measures to ensure that pollution arising from incidents or activities they control does not spread beyond the areas where they exercise sovereign rights. As discussed

²⁶⁹ The South China Sea Arbitration, *supra* note 1 at ¶ 959.

²⁷⁰ CBD art. 8 (d).

²⁷¹ CBD art. 8 (f).

²⁷² See The South China Sea Arbitration, *supra* note 1 at ¶ 941.

previously, this obligation applies as long as there is pollution and regardless of whether there has been damage. It must be reiterated that the state is responsible not only for its agents or official acts but also for the acts of private actors. Article 195 also obligates states not to directly or indirectly transfer damage or hazards from one area to another.

Thus, the claim of control on the part of claimant states gives rise to these obligations not to cause transboundary harm.

f) *Monitor and assess*

Under UNCLOS, states should endeavor to observe, measure, evaluate, and analyze the risks and effects of pollution.²⁷³ Furthermore, states must keep the effects of activities they permit or engage in under surveillance to determine whether they are likely to pollute the environment.²⁷⁴ As previously explained, this “obligation applies irrespective of the place where the activities are conducted or the nationality of the individuals or entities carrying out the activities.”²⁷⁵ Furthermore, states must assess the potential effects of their activities.²⁷⁶ This is also in accordance with states’ customary duty to conduct environmental impact assessments.²⁷⁷

In situations where claimant states prevent other state agents and scientists from other states from approaching certain areas, the controlling state becomes even more responsible for monitoring the situation.

States are also obligated to either publish reports obtained from monitoring or to provide them to competent international tribunals.²⁷⁸ Thus, states should not keep to themselves the results of their monitoring and environmental impact assessment.

B. *Obligation to cooperate*

²⁷³ UNCLOS art. 204, ¶ 1.

²⁷⁴ UNCLOS art. 204, ¶ 2.

²⁷⁵ ITLOS Case No. 31, *supra* note 29, at ¶¶ 347-349.

²⁷⁶ UNCLOS art. 206.

²⁷⁷ ITLOS Case No. 31, *supra* note 29, at ¶ 355.

²⁷⁸ UNCLOS art. 205.

Admittedly, the general obligation to protect and preserve the environment implies the necessity for cooperation, given the nature of the marine environment and the causes of its degradation. Indeed, the earnest efforts of one state can be sabotaged by a lack of cooperation from neighboring states.

In addition, several obligations under UNCLOS explicitly provide for a duty to cooperate. For instance, the necessary measures to prevent, reduce, and control pollution shall be taken jointly as appropriate.²⁷⁹

States must cooperate to promote studies, undertake scientific research programs, and exchange information and pollution data.²⁸⁰

Moreover, states are also obligated to cooperate in eliminating the effects of pollution and preventing or minimizing damage and, to this end, jointly develop and promote contingency plans for responding to pollution.²⁸¹

Furthermore, the SCS states are tasked by UNCLOS to formulate and elaborate on international rules, standards, recommended practices, and procedures for the protection and preservation of the marine environment.²⁸²

Finally, because the SCS is a semi-enclosed area, the bordering states are obligated to cooperate with each other in the exercise of their rights and the performance of their duties.²⁸³

This duty to cooperate is also embodied in the CBD, which requires states to cooperate with other parties for the conservation and sustainable use of biological diversity.²⁸⁴

Initially, cooperation among the states bordering the SCS may seem impossible, considering the territorial disputes. However, this may be possible if the participating states agree that any cooperative undertaking does not

²⁷⁹ UNCLOS art. 194 ¶ 1.

²⁸⁰ UNCLOS art. 200.

²⁸¹ UNCLOS art. 199.

²⁸² UNCLOS art. 197.

²⁸³ UNCLOS art. 123.

²⁸⁴ CBD art. 5.

constitute a waiver or furtherance of territorial claims. It would also help if these cooperative efforts included non-claimant states that are proximate to or make use of the SCS.

Interaction among the claimant states, and other states for the common purpose of protecting and preserving the SCS marine environment may also help ease tensions. If the parties focus more on their shared interests (e.g., a healthy marine environment) rather than opposing views (e.g., territorial claims), conflict may be avoided. At the very least, cooperative efforts may make it possible to protect and preserve the SCS marine environment without waiting to resolve territorial claims.

Moreover, cooperation may also be considered part of due diligence, as discussed in the next section.

C. Exercise due diligence

As found in multiple legal obligations, claimant states in the SCS should exercise due diligence in complying with their legal obligations. In fact, due diligence is the standard of compliance for all the obligations listed above.

Due diligence should be considered as proof of title, and the absence of diligence should be taken against claimants. The logic is clear. The actual owners of a property will be careful when using it and exercise due diligence in its use. Usurpers or trespassers would not care about the property and would only seek to abuse it.

Thus, activities undertaken by states in the disputed areas that degrade the marine environment should be taken as evidence of a lack of title. Failure to enforce environmental standards and obligations against agents and citizens should be considered as proof of a lack of ownership.

D. Encourage treaty ratification and compliance

The legal obligations governing the SCS marine environment are primarily treaty-based. Thus, all the states surrounding the SCS and those making use of the SCS should be encouraged to become parties to the applicable treaties.

Claimant states to disputed territories should strongly consider becoming state parties to treaties that can apply to the SCS to bolster their claim

Even before becoming parties to the relevant treaties, states should comply with the obligations under these treaties to support their claim of better title. Compliance with treaty obligations, whether as a party or a non-party, can be considered an act of administration that can serve as proof of ownership.

Conclusion

Clearly, SCS states have obligations to protect the marine environment. The treaties they are parties to establish this legal framework. The fact that the status of some portions of the SCS is disputed or that there are conflicting territorial claims does not diminish these obligations.

The SCS marine environment is important to the world and not just to the SCS states. Thus, the spirit of cooperation and compliance with legal obligations to protect the environment must prevail over territorial claims.