Chapter 20
Ocean Governance

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Introduction

The ocean is the blue heart of our planet, providing many indispensable goods and services in addition to boundless inspiration. Consequently, humanity depends on the well-being of the ocean.

Through many years, the international community has developed rules, mechanisms, and institutional frameworks to conserve, manage, monitor, and govern marine areas. However, most of these governing instruments were developed for national or regional areas. The following chapter aims to highlight some of these tools and regulations, embedded in international instruments and institutions that build up the architecture for our ocean's governance. One of the key challenges we will see is how to advance toward integrated, ecosystem-based management at the national, regional, and global scales in an interconnected ocean and interdependent planet. The need for ecosystem-based management is vital if we are to conserve the abundance and diversity of marine life and habitats in light of the far-ranging effects of human activities and climate change.

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UNCLOS: The Constitution of the Ocean

70% of Earth's surface is ocean: wherever you are, whatever you're doing, you are strongly connected to it.

The 1982 **United Nations Convention on the Law of the Sea (UNCLOS)** is considered the Constitution of the ocean. The Convention was negotiated over almost 10 years and is now the principal multilateral instrument regulating ocean-related activities based on a delicate balance of rights and responsibilities.

For example, UNCLOS established different maritime zones, where States have diverse degrees of rights and duties to enjoy the richness of ocean biodiversity and other resources of relevance for their economies, as well as commitments to protect the marine environment. These zones within national boundaries include internal waters, the territorial sea, exclusive economic zones (EEZ), and the extended continental shelf. Beyond national boundaries are the High Seas and international seabed area (Fig. 20.1).

The Convention is supplemented by two implementing agreements, which have been adopted to regulate in a more detailed manner two specific activities. The first activity is fishing for straddling (those fish that move between national waters and the High Seas) and highly migratory fish stocks, known as the **1995 Agreement for the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks**. The second activity is mineral extraction from the international seabed area (referred to as 'the Area'), known as the **1994 Agreement relating to the**

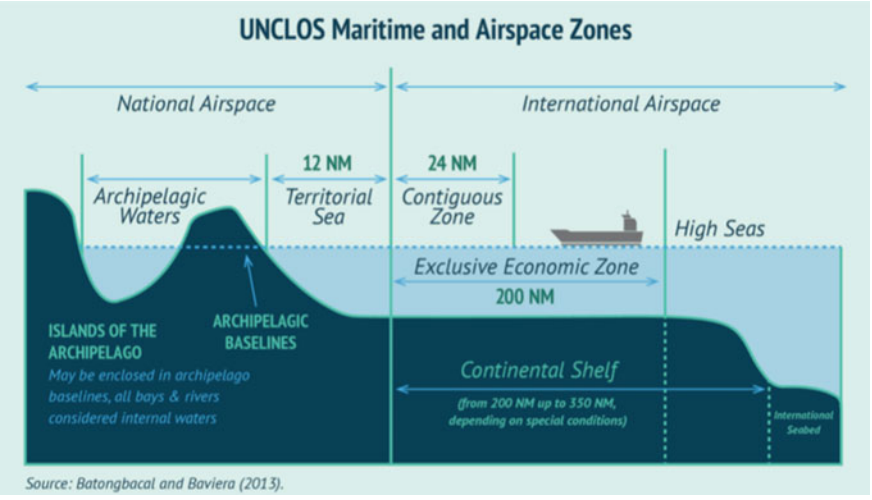

Fig. 20.1 Maritime and airspace zones established by UNCLOS

implementation of Part XI of UNCLOS. The Convention also establishes three institutions. One is the *International Seabed Authority* (ISA) to regulate and control all mineral-related activities in the international seabed area on behalf of humankind as a whole. Another is the *Commission on the Limits of the Continental Shelf (CLCS)* with a mandate to make recommendations to coastal States on matters related to the establishment of the limits of their extended continental shelf. The third is the *International Tribunal for the Law of the Sea (ITLOS),* an independent judicial body for the settlement of disputes arising from the interpretation and application of the Convention.

Relevant to bear in mind is that UNCLOS sets as primary principles the peaceful use of the ocean, the equitable use of resources, and the conservation of living marine resources, as well as the protection and preservation of the marine environment. Those of us working in the conservation field often say that far more attention has been focused on the rights to exploit and not enough on the duties to conserve, protect, and preserve. While States are able to adopt their own laws guided by UNCLOS in areas within national jurisdiction, the legal regime to protect and preserve ocean life of the High Seas and international seabed area is more complex as international cooperation is essential. Yet, the urgency for action is accelerating.

United Nations building, New York. *Credit* Tracy Williams/Greenpeace

Safeguarding Our Blue Biodiversity

It is our responsibility to adequately protect the ocean's immense and unique biodiversity.

The Law of the Sea framework is complemented by other legal instruments addressing biodiversity such as: the 1992 **Convention on Biological Diversity** (CBD), the 1979 **Convention on Migratory Species** (CMS), the 1946 **International Convention for the Regulation of Whaling** (IWC), the 1973 **Convention on International Trade in Endangered Species of Wild Flora and Fauna** (CITES), the 1972 **World Heritage Convention** (WHC), among others. Each of these biodiversity-related Conventions has governance structures, mainly comprising a decision-making body, a scientific body and a Secretariat, and other subsidiary bodies in some cases.

These instruments have developed different tools and provisions to protect and manage biodiversity. For example, marine protected areas and environmental impact assessments are key pillars for the conservation of biodiversity and ecosystems and have legal support in the **CBD** and in national legislation worldwide. The CBD has other environmental cornerstones, such as the precautionary principle; conservation tools and measures; capacity building and financial mechanisms; access to and benefit sharing of genetic resources, among many others. In 2008, scientific criteria for identifying areas that would benefit from enhanced conservation and management were created under the CBD framework: the *ecologically or biologically significant marine area* (EBSA). These criteria include uniqueness or rarity; importance for threatened, endangered or declining species and/or habitats; vulnerability, fragility, or slow recovery; among others, with the goal of promoting the adoption of appropriate measures for their conservation and sustainable use such as area-based management tools within and beyond national jurisdiction.

Rules governing the trade of vulnerable and endangered species are framed in **CITES**, which sets forth requirements to control the import and export of species and related products of wild fauna and flora, including marine species. It also sets different obligations for States on the basis of an Appendix approach, where the level of protection for the species depends upon their specific listing in such Appendices. For example, the endangered whale shark is listed in Appendix I, and therefore, its international commerce is prohibited. Other regulations apply to hammerhead sharks, which are included in Appendix II, and its international export or import is subject to specific requirements such as an export certificate.

Our interconnected ocean is also the playground of highly migratory species, such as whales, fish, sharks, seabirds, turtles, among many others, and **CMS** provides important mechanisms for their protection. Similar to CITES, CMS addresses management and conservation measures through Appendices. For example, it requires immediate protection for migratory species included in Appendix I (such as

the Blue Whale and the Oceanic White Tip shark), and encourages the establishment of Agreements to advance cooperation on conservation and management of migratory species included in Appendix II. CMS emphasizes the critical role of transboundary conservation measures, including, for example, ecological networks of protected areas to improve the connectivity among areas within and beyond national jurisdiction.

Whales, highly migratory and charismatic species, have found legal protection also through the **IWC**, an instrument adopted in 1946 initially to regulate whaling and only later to protect them. In 1982, after years of campaigning by conservation groups, the IWC finally adopted a complete ban on commercial whaling. Still, whaling activities under the scientific whaling exemption have been undertaken by a handful of countries.

The **WHC** sets forth the criteria for the protection of areas of natural and cultural heritage both on land and at sea. The World Heritage List under this Convention includes habitats of outstanding universal value for conservation purposes. Once a site is designated and included into this list, all countries have the obligation to ensure its protection. Examples of such sites include Australia's Great Barrier Reef, the Galapagos Islands, and New Zealand's Sub-Antarctic Islands.

Despite this regulatory architecture, the loss of biodiversity continues.

To date, most governing and conservation tools have focused on national and regional waters. In contrast, little attention has been given to the High Seas, the two-thirds of the ocean beyond the maritime boundaries of States. Biodiversity in this vast area of the ocean is also threatened and subject to increasing pressures. For the past 15 years, States at the United Nations have been discussing—and since 2018 formally negotiating—a new **Treaty for the conservation and sustainable use of biodiversity in areas beyond national jurisdiction** (BBNJ Treaty). When UNCLOS was negotiated in the 1970s, humanity did not have the knowledge, and foresight that we have nowadays concerning this vast ocean realm. The Convention therefore fails to address the emerging challenges faced by biodiversity due to expanding human uses and climate-related changes.

Therefore, the backbone of this new Treaty encompasses four key elements: (1) access to marine genetic resources and benefit sharing; (2) area-based management tools, including marine protected areas; (3) environmental impact assessments, and (4) capacity building and transfer of marine technology. The BBNJ Treaty is on its finish line to be agreed. Many hope to conclude the treaty in early 2023, ideally with robust and ambitious provisions to protect the marine environment and its diversity in the High Seas and seabed area. Once finalized, this treaty will be considered the third Implementing Agreement supplementing UNCLOS.

How Do We Manage Fisheries Within and Beyond State Waters?

Fish are a core component of biodiversity.

Fisheries are largely managed following a species-specific approach although the goal has long been to apply a comprehensive ecosystem-based management approach. Governance arrangements and management measures have been developed through international conventions and subsequent provisions from the UN Food and Agriculture Organization (FAO) and Regional Fisheries Management Organizations (RFMOs). Yet, as discussed in Chap. 6, marine fishery resources worldwide have been in a continuous decline with at least one third of fish stocks fished at unsustainable levels. This overfishing and under-regulated fishing has serious implications for the health of the targeted fish stocks as well as other species and can undermine the integrity and resilience of marine ecosystems as well as food security for coastal nations.

The 1995 **Agreement for the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks** (Fish Stocks Agreement) supplements the fisheries provisions in UNCLOS by elaborating the duty of States to cooperate to ensure the long-term conservation and sustainable use of straddling and highly migratory fish stocks. This agreement operationalizes the precautionary approach and supports the compatibility of management and conservation measures both within and beyond national jurisdiction. Likewise, the Fish Stocks Agreement sets out obligations for States to cooperate either directly or through RFMOs by elaborating the specific functions of RFMOs and limiting access to fishery resources to those States who agree to join the RFMO or abide by its rules. This means in theory that fisheries management arrangements are generally agreed by a group of States on a regional basis but in practice are guided by States with an economic interest in the fishery.

In the 1993 **FAO Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas** (FAO Compliance Agreement) flag States are the principal actors, and they must ensure that vessels flying their flag 1) do not engage in activities that undermine international conservation and management measures, and 2) provide information on operations, catches, and landings. In combatting unauthorized activities, cooperation and exchange of information are key tools included in this agreement.

Illegal, unreported, and unregulated (IUU) fishing is one of primary threats to biodiversity, having a major bearing on the health of marine ecosystems and species. The 2016 **FAO Agreement on Port State Measures to Prevent, Deter, and Eliminate IUU Fishing** (FAO Port State Measures Agreement) sets out key requirements and processes regarding the entry, use, and denial of ports. Consequently, Port States must request specific information from a fishing vessel before granting entry to port

and proceed with follow-up actions if it is established that a vessel is engaged in IUU fishing or prohibited fishing. See Chap. 7 for more on fish crimes.

In relation to deep-sea fisheries caught with heavy bottom trawls and other bottom contact gear, the 2008 **International guidelines for the management of deep-sea fisheries in the high seas** provide non-binding rules to guide RFMOs and States in regulating these high seas fish stocks. These fisheries are particularly challenging as many deep-sea fish mature late and have extremely low productivity and dwell in or close to rare and fragile deep seabed habitats like corals. The guidelines, agreed to by the United Nations General Assembly, seek to prevent significant adverse impacts on vulnerable marine ecosystems (VMEs), defined as those that are unique or rare, fragile or structurally complex. Once a VME has been identified, specific management measures are to be taken to ensure that the ecosystem's integrity is not compromised, such as fishing closures, changes in gear design, monitoring of fishing efforts, among others, or the fishery is not to be approved.

Finally, other instruments such as the 1995 **FAO Code of Conduct for Responsible Fisheries** and the legal framework governing activities of RFMOs could also inform countries' legislations on fishing activities.

Sperm whales. *Credit* Amanda Cotton

All on Board! Navigating the Wide Ocean

Over 80% of world trade by volume is carried by sea. Thus, our ocean is getting busier and busier with vessels, its associated pollution, ocean noise and potential collisions with marine mammals.

The **International Maritime Organization** (IMO) was established in 1948 as an Intergovernmental Organization to regulate international shipping and navigation for safety, vessel source pollution, and maritime security. IMO's challenge is to balance the rights, duties, and interests of coastal States with the rights and interests of flag states who enjoy the freedom of navigation subject to the universal duty to protect the marine environment.

One of the most important pollution instruments is the 1973 **Convention for the Prevention of Pollution from Ships as revised in 1978** (MARPOL 1973/1978), which promotes the prevention of pollution by ships from both operational and accidental causes. These provisions are further developed in six technical Annexes, addressing different types of pollution. Some of these Annexes include rules for the designation of *special areas*, where the adoption of special methods to prevent pollution is required (for example, the prohibition of oily tank washings, disposal of plastics, toxic, or heavy metal residues).

Additionally, the 1972 **Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter,** (the **London Convention**), aims to control and prevent marine pollution by prohibiting the dumping at sea of land-based waste likely to create hazards to human health or harm marine ecosystems and biodiversity. Through the years, amendments to this Convention gradually broadened into dumping prohibitions, and in 1996, the London Protocol prohibited all dumping, with some listed exceptions. Moreover, the protocol has sought to respond to new and emerging threats to the marine environment, such as ocean geo-engineering and more specifically iron fertilization of the ocean, which are touted a means to reduce atmospheric carbon dioxide levels through a new Annex 4 of the London Protocol, but is not yet in force.

Another important instrument is the 1969 **International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties**, facilitating regulations to mitigate or eliminate grave and imminent danger from pollution by oil, following a maritime casualty. A 1973 Protocol to the Intervention Convention relates to spills of other hazardous substances.

Finally, in relation to area-based management tools (ABMTs) that could be established under the IMO's auspices are the **Particularly Sensitive Sea Area (PSSA),** a concept elaborated in the 2006 guidelines for the identification and designation of PSSAs. This sectoral ABMT can be applied to protect an area that meets recognized ecological, socioeconomic, or scientific criteria, with the subsequent adoption of protective measures from international shipping. Important to highlight is that to date, no PSSA has been designated for High Seas areas.

Mining the Last Frontier?

In the deep-ocean floor cold-water corals, sponge fields, seamounts, hydrothermal vents and other ecosystems are home to mysterious creatures found nowhere else on Earth.

The deep seabed is home to a wide variety of biodiverse—and yet to be discovered – ecosystems as well as minerals of increasing commercial interest. The deep seabed area (beyond national boundaries) is deemed by UNCLOS to be the "common heritage of humankind." The International Seabed Authority (ISA) was established to regulate and control all mineral-related activities for the benefit of humankind as a whole. The legal framework on seabed mining includes Part XI of UNCLOS, the 1994 Agreement relating to the implementation of Part XI—and more recently—regulations on prospecting and exploration for polymetallic nodules, cobalt-rich crusts, and polymetallic sulfides. Regulations that would govern mineral exploitation in the area are currently under development. National laws and regulations are to be "no less effective than" these developing international rules.

There is widespread concern about deep seabed mining and its impacts on the ecosystems and species of the deep ocean, as the possibility of significant adverse impacts could entail damage to the seafloor, sediment plumes, noise and vibration, among others. Therefore, is it more critical than ever to recall and enforce UNCLOS' key obligation to protect and preserve the marine environment and to exploit natural resources in accordance with sound environmental policies.

One type of area-based management tool has been created in this sectoral regime, areas of particular environmental interest (APEIs), in which closures to mining are established to protect regional biodiversity and representativity of ecosystem structures and functions. A network of APEIs is the main component of the Regional Environmental Management Plan for the Clarion-Clipperton Zone in the Pacific Ocean. However, APEIs will need to also be accompanied by stringent environmental regulations based on solid science to prevent harmful impacts to marine life, water quality, and food safety in the wider environment.

Discovering Our Ocean's Wonders: Marine Scientific Research

We will conserve only what we love, we will love only what we understand.

Marine scientific research (MSR) is governed by Part XIII of UNCLOS based on key principles that it must be conducted for peaceful purposes, with appropriate scientific methods, and complying with marine environmental regulations.

Following UNCLOS's zonal approach, Part XIII regulates MSR in accordance with the different maritime zones. Consequently, different rules apply depending on whether the scientific activities are to take place within the territorial sea, the EEZ, or extended continental shelf. In the High Seas and the Area, MSR is recognized as one of the key High Seas freedoms.

In addition, access to relevant marine technology is vital for many developing countries to conduct MSR, and Part XV of UNCLOS reinforces the importance of cooperation for the development and transfer of marine technology. In this context, the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific, and Cultural Organization (IOC-UNESCO) is responsible for marine science in the United Nations system. This Commission has advanced a framework to help operationalize UNCLOS provisions on MSR, capacity building, and the transfer of marine technology through instruments such as the 2003 Criteria and Guidelines for the Transfer of Marine Technology.

However, there is much more that could be done to advance the capacity of developing countries to engage in MSR to understand, manage, and conserve ocean life and sustainably use marine genetic resources including in ABNJ. It is hoped that the new BBNJ Treaty can accelerate progress on multiple fronts.

In Summary

During the past decades, humankind has established governance structures—encompassing legal instruments and institutional frameworks—applicable to activities benefiting from marine resources and biodiversity within and beyond national boundaries such as navigation, fisheries, seabed mining, and marine scientific research, among others.

Other multilateral frameworks in place seek to ensure the conservation, sustainability, and resilience of our ocean and its fragile and rich ecosystems and biodiversity. However, to date, these conservation-related agreements have focused largely on ocean areas within national jurisdiction. Hence, the emerging treaty for Biodiversity Beyond National Jurisdiction (BBNJ) will be an important tool for safeguarding ocean species, habitats, and ecosystems spending all or even part of their time in Areas Beyond National Jurisdiction (ABNJ).

Today, we know that our ocean and its biodiversity are not limitless, and the more we understand the marine environment and its inhabitants, the greater our responsibility is to protect it for our own survival.

Meeting room at the United Nations, New York. *Credit* Mariamalia Rodríguez Chaves

Ways to Get Involved

The development of national and multilateral legal frameworks and policies that govern and protect the ocean is in the hands of national governments representatives, such as law- and policy-makers. However, the agreements that are finally reached are often influenced by interest groups. In addition to industry, environmental campaigning organizations, conservationists, scientists, and other concerned groups can actively participate as observers in multilateral negotiations. These same groups can often campaign in-country and encourage national governments to make stronger commitments to ocean protection. Similarly, representatives from industry groups will be lobbying their interests for access to marine resources or perhaps fewer pollution controls.

As a citizen, there are a number of ways you can have your voice heard. You can support and join those groups that are engaged in matters of ocean policy, either at the national, regional, or global level. You can also organize within your own community to let your government know that the ocean is important to you. Finally, and perhaps most powerfully, if you have the privilege to exercise your vote in election cycles, then use it and seek out those representatives that have the health of the ocean high on their agendas.

Some organizations currently actively working on international policy setting for the ocean include:

- High Seas Alliance (marine biodiversity beyond national jurisdiction Treaty) http://www.highseasalliance.org
- Deep Sea Conservation Coalition (deep-sea bottom fishing and deep seabed mining) http://www.savethehighseas.org
- Deep Ocean Stewardship Initiative (deep ocean science to policy volunteer network) https://www.dosi-project.org/.

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Dr. Mariamalia Rodríguez Chaves I am a Costa Rican environmental lawyer and I have worked in Non-Governmental Organizations on a variety of topics, including renewable energy, marine conservation, and management schemes, and most recently, I completely fell in love with the High Seas, its biodiversity, and governance regimes. My Ph.D. research—at the National University of Ireland—focused on high seas governance in a very special ocean area called the Costa Rica Dome. This part of my academic life greatly complemented my work in the High Seas Alliance, as I follow closely the negotiations of a new Treaty for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction.

I am also part of a Gender Empowerment Program for the United Nations Decade of Ocean Science at the WMU-Sasakawa Global Ocean Institute, where my post-doctoral research explores gender equality and the role of women in governance bodies that mediate the delivery of ocean science into policy action. From both spheres of my work, I can see that real-transformative change is urgently needed, and that is why we need more people involved, engaged, and aware to ensure this happens.

Kristina M. Gjerde I am currently Senior High Seas Policy Advisor for the International Union for Conservation for Nature (IUCN) as well as an adjunct professor at the Middlebury Institute of International Studies, where I teach international ocean law. I trained as a traditional lawyer but was always drawn to international law, the ocean and the power of international collaboration. From early on, I saw international law as a tool to advance ocean conservation and improve ocean management. At first, I assumed it would be enough to work through existing institutions such as many of those described in this chapter. But, after spending time seeking to advance conservation issues related to shipping and fishing at the International Maritime Organization and the UN Food and Agriculture Organization, I realized that these disparate efforts were not enough to secure comprehensive protection for priority areas in the High Seas and deep seas, or to secure ecosystem-based and ecologically-sustainable management. Many others have shared this journey with me and are eager to move beyond the status quo; to create a robust global agreement enabling the establishment of systems of Marine Protected Areas in Areas Beyond National Jurisdiction, as well as mainstream biodiversity protection and ecosystem-based management into the mandates and actions of all. I hope you will join us in this effort! (see the full interview here: https://www.dosi-project.org/interview-kristina-gjerde/).