One Ocean – a new regulatory solution to Climate Change Dr Carolyn V. Currie
An outline of Discussion Paper II in the One Ocean series.

Global heating is pushing ocean temperatures to new heights, fuelling more frequent and intense storms, rising sea levels, and the salinization of coastal lands and aquifers. Untreated sewerage and wastewater containing toxic chemicals and millions of tons of plastic waste are flooding into coastal ecosystems, killing, or injuring fish, sea turtles, seabirds, and marine mammals, and making their way into the food chain and ultimately being consumed by humans. More than 17 million metric tons of plastic entered the world's ocean in 2021, making up 85 per cent of marine litter, and projections are expected to double or triple each year by 2040, according to the latest Sustainable Development Goals (SDG) report. According to UN estimates, by 2050, there could be more plastic in the sea than fish unless action is taken. An innovative governance approach to ocean management is needed that builds ecosystem resilience to tackle the adverse effects of climate change and ocean acidification, and maintains and restores ecosystem integrity, including carbon cycling services. This has been recognised in a new agreement, the 2023 UN Treaty on the High Seas which "is critical to addressing the threats facing the ocean, and to the success of ocean-related goals and targets, including the 2030 Agenda"[3]. Some of the goals and targets include Sustainable Development Goal (SDG) 14, which aims at, among other things, preventing and significantly reducing marine pollution of all kinds by 2030, and ending overfishing through science-based management plans in order to restore fish stocks in the shortest time feasible.

Background to the development of the UN Treaty started in 2021.

- To strengthen momentum for ocean knowledge-based solutions, the UN Decade of Ocean Science for Sustainable Development 2021-2030 (‘Ocean Decade’) launched a strategic ambition setting process to identify a common measure of success for each of the Ocean Decade Challenges on the road to 2030. Structured around the 10 Ocean Decade Challenges, the Vision 2030 will take stock of current trends, gaps, and priority user needs to ensure the process helps make ‘the ocean we want’ a reality by ensuring we have a collective and practical vision of success for each Ocean Decade Challenge.”
- The Vision 2030 process will be coordinated by IOC/UNESCO in its role as coordinator of the Ocean Decade and led by 10 expert Working Groups, each dedicated to one specific Challenge.
- The Vision project was the culmination of a decade long project which resulted in the UN Treaty on the High Seas also known as the agreement on Biodiversity Beyond National Jurisdiction or 'BBNJ'. In February 2023 many countries joined a special project called the BBNJ High Ambition Summit in Brest with 52 parties committed to achieve successful negotiations.
- The EU has played a key role in reaching the agreement, by leading the 'High Ambition Coalition' on BBNJ of 52 countries, committed at the highest political level. The EU has also pledged to support the UN Treaty’s implementation by developing countries from the EU Global Ocean Programme and has invited members of the High Ambition Coalition on BBNJ to do the same within their capabilities.

The UN Treaty on the High Seas 2023

•**The High Seas Treaty was signed in New York on 20 September, during the United Nations High Level Week-**Areas beyond national jurisdiction comprise the High Seas and the seabeds. They contain marine resources and biodiversity and provide invaluable ecological, economic, social, cultural, scientific and food security benefits to humanity. However, they are under mounting pressure from pollution, overexploitation, climate change and biodiversity loss. To better address these challenges, and in view of future increasing demands for marine resources (for food, medication, energy, for example), it appeared necessary to establish a new treaty.

•**The BBNJ Agreement has been a priority for the European Union and its Member States, that have led negotiations at global level through the BBNJ High Ambition Coalition . T**his landmark agreement is a welcome addition to under the United Nations Convention on the Law of the Sea (UNCLOS), which provides the legal framework within which all activities in the oceans and seas must be carried out, which came into force three decades ago. But **UNCLOS** only regulated seas within country's territorial waters and exclusive economic zones, leaving nearly half the planet's surface and two-thirds of the ocean unregulated — particularly when it comes to protecting biodiversity.The UN Treaty on the High Seas (also known as the BBNJ Agreement) covers the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction., is key to:

- **Protection of the ocean**
- **Promotion of equity and fairness in the use of oceanic resources**
- **Tackling environmental degradation**
- **Fighting climate change and prevention of biodiversity loss.**
- **Sets up a procedure to establish large-scale marine protected areas in the high seas (MPA's). This facilitates the achievement of the target to effectively conserve and manage 30% of land and sea by 2030, which was agreed in December 2022 within the Kunming-Montreal Global Biodiversity Framework.**
- **Establishes the sharing of benefits from marine genetic resources and contains clear rules to conduct environmental impact assessments, with the right checks and balances, before human activities take place in the high seas.**
- **Foresees capacity building and the transfer of marine technology between the Parties**

This is the first-ever legally binding international treaty governing the high seas – it was approved by the 193 U.N. member states and imposes rules aimed at protecting the environment and heading off disputes over natural resources, shipping and other matters in waters beyond any country's national jurisdiction. Until now, there has never been any international law governing the high seas, so many individuals and organizations hope the U.N.'s adoption of the measure will mark a clear turning point for vast stretches of the planet where conservation efforts have long struggled in a sort of wild west of exploration, overfishing, oil exploration and deep-sea mining.

In addition to the EU as organisation, 87 countries have signed the treaty but

Ratification of the High Seas Treaty by at least 60 nations is needed to allow the establishment of marine protected areas (MPA's) in the high seas at global level, safeguarding the ocean from human pressures in a major contribution to reducing climate change, to protecting biodiversity and achieving the objective to protect at least 30% of the planet by 2030.

Reasons for the BBNJ Agreement

The negotiations on the BBNJ Agreement were centred around a package of elements agreed upon by the UN General Assembly in 2015[16], namely.

- marine genetic resources, including questions on the sharing of benefits.
- area-based management tools, including marine protected areas.
- environmental impact assessments
- capacity-building and the transfer of marine technology. The BBNJ Agreement will achieve a more holistic management of high seas activities, which should better balance the conservation and sustainable use of marine biological resources.
- Scientists estimate that 91% of ocean species are still unclassified[18]. Vast amounts have yet to be explored, with about 80% of the ocean floor still unmapped to modern standards[19]. Scientists are increasingly interested in exploring the potential genetic resources in the ocean, with possible applications from cancer to cosmetics.
- That is why nations decided to come together to prevent a "first comes, first serves" situation, because until this Treaty comes into force, that is the reality. This is because the High Seas, which cover two- thirds of the ocean, remain virtually lawless until this new Treaty comes into effect. The last major ocean treaty, the United Nations Convention on the Law of the Sea (UNCLOS) which was enacted in 1982, does not include a comprehensive legal framework for biodiversity in the high seas, nor does it cover more recent activities, such as bioprospecting. The new Treaty lays out specific provisions, including a monitoring and evaluation process, for engaging in the scientific and commercial pursuit of marine genetic resources on the high seas, among other things.
- **The Treaty is about fairness.**

This is important because wealthy nations are overrepresented in the high seas, as the area requires immense amounts of energy and resources to access—97% of industrial fishing vessels in the high seas flagged to higher-income nations[23]. This is a sore spot for lower-income nations because wealthier nations now catch the fish that would normally migrate to their waters before they can reach them

- **The Treaty is about conservation.**

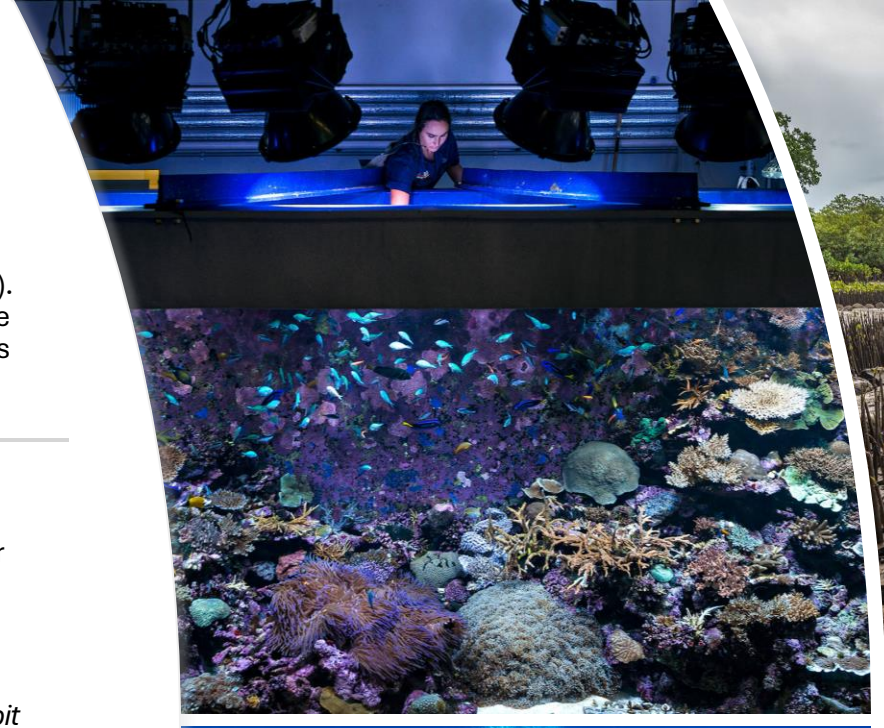
The High Seas Alliance, a coalition of conservation groups, has developed a list of biodiversity hotspots that they say deserve priority protection.

- **The Treaty is about diversity.**

The treaty contains many opportunities for research in ocean science, for building research capacity in low- and middle-income countries, and for improving the evidence available to decision makers. Researchers working with marine genetic resources will need to register their interests with a central clearing house and commit to making data and research outputs open access. Scientists will have an important role in ensuring the treaty's ultimate success.

PROBLEMS

What we are lacking are **more specifics** about how the Treaty would be implemented in practice. Such specifics are passed on to future working groups and a Conference of Parties (COP**). We also do not know if or when the Treaty will come into force as it has yet to be ratified**. Ratification can be a long process—it took 12 years for UNCLOS to be ratified. At least 60 states need to ratify, approve, accept, or access the Treaty for it to come into force, according to the draft agreement (Article 61). **We need to unravel what this means for the fishing industry** - This may be because commercial fishing is a major sticking point between nations as disparate national economic interests butt heads with environmental concerns and geopolitical tensions



While this Treaty does not address fishing issues, it establishes a protocol for sharing economic benefits tied to the discovery of marine genetic resources. Indeed, questions remain as to how MPAs would be protected from commercial fishing—the Treaty seeks to include all stakeholders in such a process, which could potentially be unwieldy.

It is illustrative to note that the Treaty does not explicitly prohibit commercial fishing in any future MPAs in the high seas and includes language that allows for their "sustainable use" consistent with agreed conservation objectives (e.g., Article 17.4 (e), Article 19.4 of the draft agreement). To achieve this goal, countries will have to annually bring roughly 10 million square kilometres of the ocean under Marine Protected Areas (MPA), according to experts. However, one way to potentially close the high seas to fishing is to establish it as one giant marine protected area (MPA).

A qualification was made to the signatory of the United Kingdom and Ireland.

Commentators do not think it is urgent but in view of the effect of untreated sewerage and wastewater in raising ocean temperatures and causing a rise in acidity, in view of increased evaporation causing dramatic rainstorms together with the lack of clean water facilities in emerging nations, in view of the dramatic effects of bottom trauling and the destruction of mangroves, coral reefs and sea grass, combined with the effect on the ocean's ability to trap carbon and produce oxygen, there has been a disastrous lack of attention on 71% of the cover of earth.

How will the Treaty be enforced?

According to a U.N. Conference on Trade and Development (UNCTAD) report, ocean-based industries were valued at a total of $2.5 trillion annually (based on 2018 data), while more than estimated 3 billion people worldwide depend on oceans for their livelihood.

Despite existing legislation, fisheries in the high seas continue to remain vulnerable to widespread illegal, unreported, and unregulated (IUU) fishing. Thirty-five percent of the fish stocks are fully exploited in the Western Indian Ocean, while IUU activities have also decimated fish stocks in the South China Sea and ravaged the Coral Triangle. While deterioration of ocean health has been traditionally attributed to fisheries, tourism, and maritime transport, other technology-enabled activities, such as marine renewable energy and biotechnology exploits, have also led to rapid depletion of marine resources. Notably, environmental NGOs have increasingly lobbied against excessive anthropogenic activities, such as deep-sea mining, that could disrupt marine life and habitats, resulting in irreversible biodiversity loss. Coupled with climate stressors such as pollution causing ocean warming, acidification, deoxygenation, and marine heatwaves, the need for collective action over ocean resilience has never been more urgent as a shared vision for the "ocean commons" gather pace. Unfortunately, only roughly 7 percent of the world's ocean today are protected

- The BBNJ Treaty addresses this gap by designating Marine Protected Areas (MPAs) in the high seas, with a global target of protecting 30 percent of the world's oceans by 2030 (30×30) – a pledge committed by countries under the U.N.'s Global Biodiversity Framework in December 2022. Signatory countries will have to abide by these MPAs, which will delineate the extent of fishing activity, as well as shipping lanes and commercial exploration activities. But the definition provided in the draft agreement is vague.
- The associated financial mechanisms for implementing the treaty, to which the European Union announced it would provide €816.5 million for protecting the ocean on March 2, 2023, will also be instrumental in keeping the 30×30 vision alive. Developed countries will make an annual contribution, but the rate will be fixed by the conference of parties formed after the treaty enters into force.
- The Global Environment Facility (GEF) — a multilateral environmental fund — has also been roped in.
  - Once the treaty enters into force, the conference of parties from participating countries will meet to oversee the functioning of the treaty. States will have to start doing EIAs and make proposals for MPAs. Private actors will have to report data on MGR access countries will be responsible for fulfilling international obligations of protecting and preserving the marine environment. Many parts of the agreement are "state-driven" and states and existing bodies must also step up, she said.
  - Initial funding could also be available through public-private partnership models providing grants and blended finance; a case in point would be the Global Environment Facility, which spun off from the Global Biodiversity Framework. Meanwhile, other existing or past international bodies such as the U.N. Food and Agriculture Organization (FAO), which actively endorsed the Port State Measures Agreement (PSMA), could catalyse blue economy transitions in specific sectors and/or regions.

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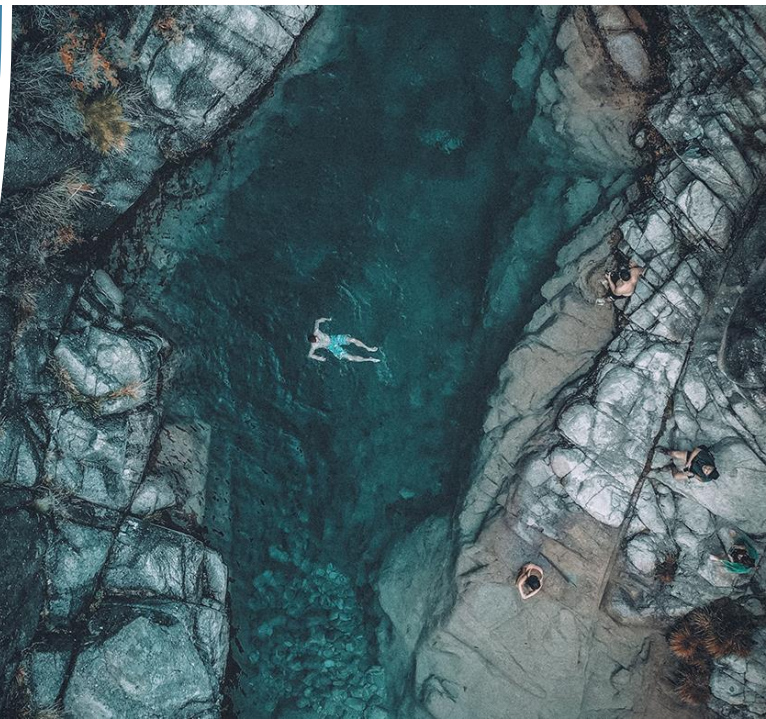
The necessity for a system of Oceanic Governance - Saving our oceans with a new Regulatory Model



The necessity for a system of Oceanic Governance - Saving our oceans with a new Regulatory Model

A taxonomy for classifying financial systems developed by the author helps understand the design principles of any regulatory model designed to ensure oceanic maintenance of its essential functions of oxygen generation, carbon capture, provision of food, transport, and leisure tourism.

This taxonomy (Currie, 2000) distinguishes between Prudential Supervisory Systems, which have different methods of Compliance Audits (strong and weak), Sanctions (strong and weak) and Enforcement Modes (seven types) and Protective Measures (institutional vs. discretionary in various weak/strong combinations). These permutations and combinations give a total of 140 models (2x2x7x5 = 140)[41].

- **Enforcement Modes** range from conciliators to strong enforcers, representing a scale from weak to strong.
- **Compliance Audits** range from Weak to Strong and can be applied at Firm or Industry or Country Level. *Firm Level compliance audits* consist of offsite examinations only using information supplied by the polluting party. A further escalation of concern would involve surprise onsite inspections of all aspects of the source of the pollution.
- There is obviously a need for an agency to be continuously developing guidelines for safe disposal of sewerage, wastewater and other discharges and taking remedial action together with assessment of aid. The type of Enforcement mode could be detached Modest enforcement.
- The COP and GEF could be augmented as funding mechanisms together with PPPs and philanthropy to help LDCs comply with the costs of ensuring only treated sewerage and wastewater reach the oceans, but the cost of this to advanced nations must be enforced as currently a few of them are the worst offenders.

In the case of noncooperation by the offending country, the official UN treaty agency could develop a range of Sanctions to be applied. These could be *industry based* whereby there is consultation re appropriate preventative measures, discussion papers with written and oral input sought from industry via the Exposure Draft process, imposition of codes of conduct, imposition of direct controls, including development of licensing rules, changes to pollution laws, enforced divestitures or acquisitions an industry basis, and finally nationalization of the polluting industry. Sanction types can also be *firm based.* The broader part of the first firm-based pyramid of sanctions consists of the more frequently used regulatory sanctions - coaxing compliance by persuasion. The next phase of enforcement escalation is a warning letter followed by imposition of civil monetary penalties, then criminal prosecution, plant shutdown or temporary suspension of a license to operate. Each stage is only followed if there is failure to secure compliance. At the top of the firm-based enforcement pyramid of sanctions, there is permanent revocation of licenses. The necessity of each escalation should be backed by scientific evidence.

Taking action to cool the ocean and return it to its natural function is probably the fastest most economical and socially beneficial way to protect the world from climate change but it requires a strong regulatory governance model to ensure the 2023 Treaty on the Seas is complied with. Funds already committed to climate change could be used to both prevent oceanic pollution and improve the standard of living in polluting countries.

Conclusion: We have forgotten the Oceans

- “Over the last 70 years since the 1950’s and the production of toxic forever chemicals and plastic, more than 50% of all marine life, including plants and animals under 1 mm in size, have been lost from the world’s oceans, and that decline continues at a rate of 1% year on year…Over the next 25 years, pH will continue to drop from pH8.04 to pH7.95, and carbonate-based life forms will simply dissolve. This will result with an estimated 80% to 90% loss of all remaining marine life when compared to the 1950’s. Becoming carbon neutral will not stop the pH from dropping to 7.95, and even in the unlikely event of the world achieving Net Zero by 2030 it will not stop the pH dropping to less than pH7.95. Coupled with the micro-plastic and toxic chemical stressors on marine life, the GOES team believe there will be a trophic cascade collapse of the entire marine ecosystem”.