Routledge
Taylor & Francis Group

Maritime Affairs: Journal of the National Maritime Foundation of India

ISSN: 0973-3159 (Print) 1946-6609 (Online) Journal homepage: http://www.tandfonline.com/loi/rnmf20

Ensuring Sustainable Oceans

Kapil Narula

To cite this article: Kapil Narula (2015) Ensuring Sustainable Oceans, Maritime Affairs: Journal of the National Maritime Foundation of India, 11:1, 66-83, DOI: 10.1080/09733159.2015.1029722

To link to this article: http://dx.doi.org/10.1080/09733159.2015.1029722

MARITIME AFFAIRS Copyright © National Maritime Foundation
Vol. 11 No. 1 Summer 2015, pp. 66–83
Print ISSN: 0973-3159, Online ISSN: 1946-6609, http://dx.doi.org/10.1080/09733159.2015.1029722

Ensuring Sustainable Oceans*

Kapil Narula†

Ensuring sustainable oceans and seas is vital for the well-being of the planet. However, oceans – which are the largest ecosystems – are degrading rapidly, which is a cause of anxiety. The paper presents some of the growing concerns about the health of the oceans and analyses three main drivers of ocean degradation, viz. overexploitation for resources, unintended impacts of anthropogenic activities and weak governance structures. Some of the ongoing work on adopting Sustainable Development Goals (SDGs) for the oceans, and by the Biodiversity Beyond National Jurisdiction (BBNJ) working group for governance of the "high seas", are then discussed. The paper suggests a way ahead and proposes that India should play a larger role in the ongoing discussions. The paper concludes that there is a need for international cooperation and global support, and ensuring sustainable oceans is the key to sustainable development.

*This paper draws from two issue briefs authored by Kapil Narula and published on the National Maritime Foundation website, and expands on the arguments presented therein. These are titled "Quantifying India's performance in maintaining ocean health on World's Ocean Day" and "Supporting a Standalone Goal for Sustainable Use of the Oceans".

†Commander Kapil Narula is a Research Fellow at the National Maritime Foundation, New Delhi. The views contained in this article are those of the author and bear no relation to the official policy and the views of the Indian Navy and the Foundation.

Introduction

Oceans occupy an area of 362 million square kilometres, which is approximately 71% of the earth's surface. Oceans provide 99% of the Earth's living space[1] and they are therefore the largest ecosystem on this planet. This justifies the sobriquet for Earth as the "blue planet". Oceans are a major source of economic activity such as shipping, shipbuilding, ports, offshore oil and gas production, thereby contributing significantly to the world's gross domestic product (GDP). Eight of the 10 largest cities in the world are located along the coast and around 44% of the world's population lives within 150 km of the coastline.[2] Over three billion people depend on marine and coastal resources for their livelihoods, and more than 90% of the world's trade is transported via the sea route. The social dimension is equally important, as oceans contribute extensively to food security and fisheries are an important source of livelihood. Oceans also drive marine and coastal tourism, recreational and cultural activities and are essential to society. The environmental facet of the oceans is extremely relevant as they are the primary regulator of the global climate and act as a natural heat buffer. Further, oceans are a large absorber of carbon dioxide, and phytoplankton in the seas contribute around 50% of the world's oxygen. Oceans are also critical for the protection and continuation of biodiversity, and have a large intrinsic value. Therefore, development of the oceans in economic, social and environmental dimensions is essential for the well-being of the planet.

The paper presents some of the growing concerns about the health of the oceans and analyses the drivers of ocean degradation. It also highlights some of the recent developments and efforts to protect the oceans, and proposes a way ahead. The paper suggests that India should play a larger role in ensuring sustainable oceans as these are integral to human well-being and sustainable development.

Growing Concerns About the State of the Oceans

While oceans provide mankind with their bounties, they have undergone serious degradation over the last century. Although each threat differs in intensity and geographic distribution, together, they have lowered the ocean's overall health. Major threats include climate change leading to increase in the heat content of oceans, acidification and de-oxygenation.[3] These physical and chemical changes are leading to loss of biodiversity and destruction of corals. Destruction of marine life habitat

accompanied by the spread of invasive alien species and overfishing has also contributed to the lowering of ocean productivity. The danger of sea level rise has also resulted in increased levels of risks to coastal regions. Experts caution that permanent damage might already have been done as many of these changes may be irreversible.[4]

Traditionally, countries have placed great importance on the right to exploit the resources in the Exclusive Economic Zone (EEZ).[5] However, little attention is paid to the responsibility which a nation has in protecting the oceans. Hence, while overlapping EEZ claims amongst nations are regularly in the news, issues related to protection of the EEZ are seldom discussed in public debates.

Monitoring the health of the oceans and seas is a complex task. One of the initiatives in this direction is the development of the Global Ocean Health Index (OHI),[6] a tool used to measure the state of the world's oceans. It scientifically compares and combines various dimensions of ocean health – biological, physical, economic and social – to provide a snapshot of the health of the ocean.[7] The OHI is a collaborative effort, of more than 65 experts on marine science, economics and sociology from leading universities, laboratories and government agencies.[8] The OHI uses more than 100 global databases[9] to develop the index.

The OHI evaluates the condition of marine ecosystems under 10 defined goals, which represent the key benefits that an ocean can deliver in the present as well as in the future. In order to undertake a relative comparison, the OHI calculates the scores (from 0 to 100) in attaining the 10 goals, and ranks the countries according to the average of these scores. A score of 100 for a region does not imply a perfect ocean, but defines the targets for delivering the benefit to the people. A high score is given to a region when the ocean is used so that it is able to provide benefits like oxygen and food in the present, and does not compromise the ocean's ability to deliver that benefit in the future. In 2012 and 2013, the OHI evaluated scores for 220 countries by monitoring areas under the EEZ; however, realising that more than 60% of the oceans are not covered in this assessment, the scores for 2014 also included 15 regions[10] of the high seas[11] (also known as the Areas Beyond National Jurisdiction [ABNJ]) and one region[12] of Antartica and the Southern Ocean, along with 220 EEZ regions. A global OHI is also calculated as a weighted mean[13] of all these 236 regions. A close look at the complete list[14] shows that the scores obtained by 236 regions lie within a range of 44–95, and the global average OHI for the year 2014 is approximately 67.

The specific goals along with a detailed explanation, relevance of the goals, average global scores and India's scores for 2014 are listed in Table 1. The low scores are a

Table 1. Ocean Health Index: Goals, Explanation, Relevance, Global Average and India's Score for 2014.

S. No.	Areas	Goals	Explanation	Relevance	Average global score	India's score
1	Food provision	Harvesting seafood sustainably	This goal measures the amount of seafood captured or raised in a sustainable way.	Seafood helps more than half the world's population meet their need for protein.	58	44
2	Artisanal fishing opportunities	Ensuring access to fishing for local communities	This goal measures whether people who need to fish on a small, local scale have the opportunity to do so.	Half the world's fish harvest is captured by artisanal fishing families.	68	45
3	Natural products	Harvesting non-food ocean resources sustainably	This goal measures how sustainably people harvest non-food products from the sea.	From seashells and sponges to aquarium fish, natural products contribute to local economies and international trade.	46	76
4	Carbon storage	Preserving habitats that absorb carbon	This goal measures the carbon stored in natural coastal ecosystems.	When preserved, carbon is stored in these ecosystems. When destroyed, carbon is emitted into the atmosphere.	74	73
5	Coastal protection	Preserving habitats that safeguard shores	This goal measures the condition and extent of habitats that protect the coasts against storm waves and flooding.	Storm protection by coastal habitats is worth billions of dollars each year.	70	53
6	Coastal livelihoods and economies	Sustaining jobs and thriving coastal economies	This goal measures how well the identity and livelihoods provided by marine-related sectors are sustained.	People rely on the ocean to provide livelihoods and stable economies for coastal communities worldwide.	82	69

Table 1 (*Continued*)

S. No.	Areas	Goals	Explanation	Relevance	Average global score	India's score
7	Tourism and recreation	Maintaining the attraction of coastal destinations	This goal measures the proportion of the total labour force engaged in the coastal tourism and travel sector, factoring in sustainability.	Coastal and marine tourism is a vital part of a country's economy.	42	43
8	Sense of place	Protecting iconic species and special places	This goal measures the condition of iconic species and percentage of coastline protected to indicate some of the ocean's intangible benefits.	Iconic species and protected places symbolise the cultural, spiritual and aesthetic benefits that people value for a region.	61	46
9	Clean waters	Minimising pollution	This goal measures contamination by trash, nutrients, pathogens and chemicals.	Water pollution harms human health as well as the health of marine life and habitats.	73	41
10	Biodiversity	Supporting healthy marine ecosystems	This goal estimates how successfully the richness and variety of marine life is being maintained around the world.	People value the intrinsic value of a diverse array of species as well as their contributions to resilient ecosystem structure and function.	86	86
	Average				67	58

cause of concern and it is desirable that the scores obtained are significantly improved for attaining the end goal of sustainable oceans.

Drivers of Ocean Degradation

While there are many drivers of ocean degradation, they can be placed into three groups, listed below.

1. Overexploitation of Oceans for Resources

Increasing demand for resources and their dwindling stocks on land is leading to enhanced exploration of the oceans. Advances in technology have enabled deep-sea fishing, offshore gas and oil production and seabed mining for biological and mineral resources. Indiscriminate fishing practices have resulted in overfishing and increase in species caught incidentally, leading to loss of biodiversity. The Food and Agriculture Organization of the United Nations (FAO) estimates that about one third of fish stocks in the oceans are over-exploited, while other estimates predict that the proportion is more than half.[15] While the actual numbers may be different in different areas, it is clear that overfishing to meet the increased consumption[16] (17 kg per capita per year in 2012, which is more than five times 1950 levels) of fish has led to decrease in fish stocks.

2. Unintended Impacts of Anthropogenic Activities

Unintended impacts of anthropogenic activities include pollution at sea from merchant vessels, floating garbage and plastic waste (e.g. the Great Pacific Garbage Patch[17]), and impacts of bottom trawling and seabed drilling on deep-sea corals and on the sea floor. Along with these direct impacts, there are indirect impacts such as ocean deoxygenation, eutrophication and acidification which are changing the chemical and biological composition of the oceans, thereby making it progressively unfit for aquatic life. It is also important to note that up to 80% of all pollution in seas and oceans comes from land-based activities,[18] and hence direct and indirect anthropogenic activities need to be monitored and controlled.

3. Weak Governance Structures and Inadequate Regimes

Weak governance structures and inadequate regimes for governing the high seas are a major factor driving the degradation of oceans. Coupled with this, there is insufficient capacity for monitoring and for enforcement of regulations, both within and outside the EEZ, by many countries.

Part 12 of the UN Convention on the Law of the Seas III (hereinafter referred to as UNCLOS) spells out the obligations and rights for protection and preservation of the marine environment.[19] According to UNCLOS, countries have exclusive sovereignty over water, seabed and airspace in their territorial waters, and therefore have the right to set environmental protection laws, and regulate and enforce legislation in their territorial waters. Beyond this lies the contagious zone, which extends a further 12 nautical miles into the sea, where the state can enforce laws in pollution control. Under Article 61,[20] states have the jurisdiction to protect and preserve the marine environment, to determine the allowable catch of living resources, to ensure conservation and management and to maintain/restore population for maximising sustainable yield in the EEZ. Under Article 62,[21] which deals with the utilisation of living resources, countries have prescriptive and enforcement rights in the EEZ and need to promote the optimal utilisation of living resources in the EEZ.

Beyond the 200-nautical-mile limit lie the "high seas",[22] which are considered a part of the global commons. The extent of the "high seas" is shown in Figure 1. Under the current international law, fishing on the high seas is open to all countries and the minerals in the seabed are agreed to be "the common heritage of mankind". Seabed resources are regulated and controlled by the International Seabed Authority (ISA), and shipping activity in the high seas is regulated by the International Maritime Organization (IMO). Under the rules framed by the IMO, the authority to punish environmentally irresponsible conduct by ships on the high seas falls on the flag state of each vessel. This has led to the practice of "flag of convenience" for merchant shipping and is one of the major weaknesses in the environmental regulations.

It is a matter of concern that the high seas, which cover almost 50% of the Earth's surface, are one of the least protected areas on this planet, as they lie in the ABNJ and there is no legally binding treaty for the high seas. Further, less than half a percent of marine habitats are protected, as compared to 11.5% of the global land area.[23] Currently, the high seas are governed by a "patchwork of international regional and sectoral agreements and treaties which overlap and create complicated jurisdictional

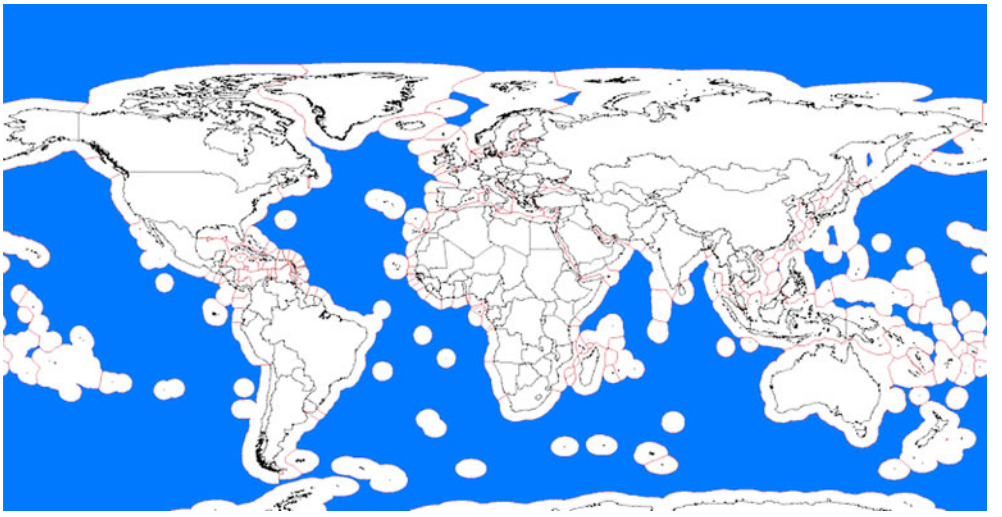

Fig. 1. The Extent of the 'High Seas'.[24]

issues in some of these areas".[25] Some of the agreements on the "high seas" include treaties on the protection of species such as whales (International Whaling Commission), regional fisheries agreements such as the International Commission for the Conservation of Atlantic Tunas (ICCAT) and a UN fish stock agreement coordinated by regional fishery bodies and FAO, controlling pollution from shipping (by IMO), regulating seabed resources (by ISA) and regional seas convention for convention of biological diversity by United Nations Environment Programme (UNEP). As is evident, there are a large number of organisations currently responsible for monitoring and enforcement of agreements, resulting in overlapping jurisdictions, and this is described as a "co-ordinated catastrophe"[26] by the Global Ocean Commission.

Although a few Marine Protected Areas (MPAs) and Particularly Sensitive Sea Areas (PSSAs) have been established, these are not completely out of limits for activities such as transit of ships, fishing or seabed mining. In essence, there is no comprehensive agreement, and no specific organisation has the complete authority to act on the high seas. It is to be noted that with the exception of the international commission that governs the Southern Ocean surrounding the Antarctic region, there is currently no mechanism to establish fully protected marine reserves in the high seas. The high seas are therefore a good example of the "tragedy of the commons",[27] where

all countries can freely use the resources but the region is unprotected and subject to abuse due to common ownership.

Recent Developments

As oceans play a pivotal role, the call for protection of the oceans has gained considerable momentum, and various efforts have been made in recent years to ensure sustainable oceans. Some of the recent developments are highlighted in this section.

1. Sustainable Development Goals (SDG) for Oceans

The Millennium Development Goals (MDGs) are a set of eight international development goals adopted in 2000, by all member countries of the United Nations (UN), to achieve well-defined targets for human development by 2015.[28] As the MDG targets have not yet been met, a new framework, the "Post 2015 Development Agenda", led by the UN Secretary General, has emerged to evolve a new set of development goals.

In parallel, the Rio+20 Conference, 2012, under the aegis of the United Nations Conference on Sustainable Development (UNCSD), recommended a process[29] to develop a set of Sustainable Development Goals (SDGs) which would extend until 2030. The SDGs and the Post 2015 Development Agenda are expected to be merged, and a Universal Sustainable Development Agenda[30] may be adopted during a high-level summit in September 2015. The background document[31] toward this agenda was presented to the UN General Assembly (UNGA) for deliberation in December 2014.

The SDGs build on the shortcomings of the MDGs and are formulated so as to fully integrate various dimensions of sustainable development. SDGs are intended to be "action-oriented, concise and easy to communicate, limited in number, aspirational, global in nature and universally applicable to all countries while taking into account different national realities, capacities and levels of development and respecting national policies and priorities".[32] An intergovernmental Open Working Group (OWG), consisting of 30 seats shared by 70 members, was established for developing the SDGs through a transparent and inclusive process. The 13th OWG completed the process of drafting the goals and submitted a report, *Proposal of the Open Working Group for Sustainable Development Goals*,[33] to the 69th session of the UNGA. A total of 17 goals and 169 targets (including 62 targets on means of implementation) are

proposed, which include goals related to poverty reduction, health, education, equality, energy, climate change, etc.

Goal 14, "Conserve and sustainably use the oceans, seas and marine resources for sustainable development", has been proposed for the oceans; it has seven targets and specifies three means of implementation. The sub-goals aim to significantly reduce marine pollution, sustainably manage and protect marine and coastal ecosystems, minimise and address the impacts of ocean acidification, effectively end overfishing and illegal, unreported and unregulated (IUU) fishing, implement management plans to restore fish stocks, prohibit certain forms of fishery subsidies, etc. Various means of implementation have also been specified including increasing scientific knowledge, and developing research capacities and transfer of marine technology; providing access of small-scale artisanal fishers to marine resources and markets; and ensuring the full implementation of international law for the conservation and sustainable use of oceans and their resources.[34]

The Sustainable Development Solutions Network (SDSN)[35] is tasked to design "Indicators and a Monitoring Framework" for SDGs. Some of these indicators include the percentage of fish stocks within safe biological limits, measures of nitrogen concentrations in water, nutrients in coastal seawater, area affected by coral bleaching, etc. Development of these indicators will help to quantify the targets while making the reporting of parameters uniform. A standalone goal on oceans is important to bring focus to the damage caused by unrestricted human activity at sea. The creation of an SDG goal for oceans would also help in assessing, measuring, monitoring and diagnosing the shortcomings and hurdles, and will therefore go a long way in establishing the sustainability of the oceans.

2. Biodiversity Beyond National Jurisdiction (BBNJ)

Considering that over 60% of the Earth's surface is inadequately protected, a UN ad hoc open-ended informal working group on "Biodiversity Beyond National Jurisdiction" (BBNJ) was formed in 2006. It was mobilised to develop a comprehensive possible legal instrument for providing protection to marine life on the high seas. This gained momentum in 2011, after the G77 and the EU agreed to an "implementing agreement" under UNCLOS. The working group[36] addressed five main issues[37] in the proposal:

1. Marine genetic resources,[38] including the sharing of benefits;
2. Area-based management tools, including marine protected areas;[39]
3. Environmental Impact Assessments (EIA);[40]
4. Building capacity to enable sustainable and equitable development;
5. The transfer of marine technology.

The importance and the urgency for framing an agreement got a further boost in 2012, in the Rio+20 conference, and September of 2015 was fixed as a deadline for taking a decision on the possibility of the development of a new agreement. During the last 2 years, the UN Informal Working Group has deliberated the scope, parameters and feasibility of a new international instrument under UNCLOS.[41] This process culminated in the submission of recommendations of the Working Group on the conservation and sustainable use of marine biological diversity in ABNJ in January 2015. This development presents a major breakthrough, as after 8 years of protracted negotiations, the importance of the protection of the high seas has been formally recognised and the agenda of ocean governance has graduated from "managing the exploitation" of the oceans' resources to "protection". This offers a unique opportunity for the global community to integrate the activities of various organisations which govern and regulate fishing, mining and shipping.

These recommendations are likely to be adopted by the UNGA by September 2015[42] to move forward with negotiations for a legally binding agreement under UNCLOS. It is expected that a preparatory committee[43] would start work in 2016 and submit a report to the General Assembly before the end of the 72nd session, to be held in September 2017. An intergovernmental conference under the auspices of the UN will thereafter consider the recommendations of the committee and will evolve the final text of the legally binding instrument within the existing frameworks.[44]

Way Ahead

A number of initiatives are being taken globally to ensure sustainable oceans. The Global Ocean Commission has put forward eight proposals[45] to advance high seas recovery. These include the development of a healthy living ocean, governing the high seas, ending overfishing by eliminating harmful high seas subsidies, closing seas, ports and markets to IUU fishing, keeping plastics out of the oceans, establishing binding international safety standards and liability for offshore oil and gas, forming a Global

Ocean Accountability Board for monitoring progress toward a healthy ocean and creating a high seas regeneration zone. Such efforts will go a long way towards meeting the goal of sustainable oceans.

There is a need for a comprehensive regime to address issues in the ABNJ, and the scope,[46] nature and specific regulations would have to be evolved over time. While international negotiations continue and diplomatic efforts begin to yield tangible results, a clear interpretation of sustainability will help to reach a feasible solution.

Although there are many definitions of sustainability, the Natural Step Framework[47] derives four system conditions from the Framework for Strategic Sustainable Development (FSSD). These conditions are "necessary" and "sufficient" to maintain the essential environmental services that sustain human society. In this approach, a sustainable society is defined as a system where nature is not subject to systematically increasing:

1. Concentrations of substances extracted from the earth's crust;
2. Concentrations of substances produced by society;
3. Degradation by physical means; and,
4. In that society, people are not subject to conditions that *systemically* undermine the capacity to meet their needs.

When these conditions are applied to the maritime domain, it implies that rules should be framed such that the rates of harvesting fish (and other biological species) < regeneration rate (in a defined area); the amount of waste disposed < assimilative capacity of the oceans; marine habitat loss in an area should be compensated by an increase in MPAs having similar biodiversity, and the needs of coastal people should not be compromised. It is opined that if these conditions are met, it may lead to reversing the process of degradation of the oceans.

India's Role in Ensuring Sustainable Oceans

India's performance in conserving oceans and seas is relatively poor. India's OHI for 2014 was 58 (see Table 1) and it ranked 181st (ranked 158th of 221 countries for OHI 2013) in maintaining ocean health. Further, it scored below the global average on most goals except on goal 3 – harvesting non-food ocean resources sustainably. This is not unexpected as natural resources are overexploited in developing countries

due to a lack of environmental regulations. Weak institutions and poor enforcement capability further add to the dismal performance.

There are strong reasons for India to play an important role in ensuring the sustainability of high seas and in protecting its EEZ. Apart from direct benefits, upholding the goal on sustainable oceans will strengthen the global resolve on taking action for protecting the oceans. Further, it will encourage the development of a blue economy, which has many advantages. India's emphasis on providing a suitable international financing mechanism such as the Global Fund, the Green Climate Fund, the Climate Investment Fund and the Bio-diversity Fund, and efforts for enhancing global partnerships, has been noted and these funds can then be used for institutional capacity building.

Oceans should also be a part of public debate. Civil society organisations such as the National Maritime Foundation can support organisations such as the Global Ocean Forum,[48] World Ocean Network,[49] Pew Charitable Trust, The Global Ocean Commission, The High Seas Alliance,[50] The Deep Sea Conservation Coalition[51], and The Coastal and Marine Union,[52] and can garner public support for sustainable oceans in India. Another approach could be to form a "South Asian Society for Sustainable Development of the Oceans"[53] which would work towards attaining the goal of sustainable development of the oceans and seas in South Asia in the coming years.

Conclusion

Oceans form an integrated component of the Earth's ecosystem, and the importance of healthy oceans cannot be over emphasised. Quantification of ocean health over the past few years has highlighted that oceans are witnessing degradation, and there are anthropogenic factors which drive the downward trend. Existing governance regimes to ensure sustainable development of the oceans especially on the high seas are piecemeal and inadequate for this century. Recent developments such as a standalone SDG for the oceans and a possible agreement on BBNJ are progressive steps towards sustainable oceans, but impetus and support are required for quicker implementation of these proposals. India can play a pivotal role in South Asia in ensuring safe, healthy and productive oceans. As oceans are essential for the well-being of the entire planet, international cooperation on ocean governance is critical for ensuring sustainable oceans.

Notes

1. Save the Sea. "Interesting Ocean Facts." http://savethesea.org/STS%20ocean_facts.htm (accessed November 10, 2014).
2. UN Atlas of the Oceans. "Human Settlements on the Coast." http://www.oceansatlas.org/servlet/CDSServlet?status=ND0xODc3JjY9ZW4mMzM9KiYzNz1rb3M~ (accessed November 20, 2014).
3. Kapil Narula, "Climate Change and Oceans – Growing Threats and Implications for India," *Maritime Affairs*, 10, no. 2 (2014): 98–106.
4. Science Daily. "Experts call for urgent defence of Deep Ocean." May 15, 2014, http://www.sciencedaily.com/releases/2014/05/140515153947.htm (accessed March 3, 2015).
5. An Exclusive Economic Zone (EEZ) was adopted at the Third United Nations Conference on the Law of the Sea (1982) which gives the right of resource exploration and jurisdiction in the area to a specific country. The EEZ comprises an area which extends from the seaward boundaries of the constituent states (12 nautical miles, in most cases) to 200 nautical miles off the coast.
6. The Ocean Health Index was first calculated in 2012, and now reports new scores annually.
7. Kapil Narula, "Quantifying India's Performance in Maintaining Ocean Health on World's Ocean Day", in *Maritime Perspectives 2014*, ed. Vijay Sakhuja and GS Khurana (New Delhi: National Maritime Foundation, 2015), p. 299.
8. Principal organisers of the Index include The National Center for Ecological Analysis and the Synthesis (NCEAS) at the University of California, the University of British Columbia's Sea Around Us project, Conservation International, the National Geographic Society and the New England Aquarium.
9. The Index draws on data from a number of existing indices, including the Consumer Price Index, Global Competitive Index, Human Development Index, Mariculture Sustainability Index, Tourism and Travel Competitive Index and World Governance Indicators as well as information from treaties and international projects such as the Convention on Biological Diversity, the Convention on International Trade in Endangered Species and the International Union for Conservation of Nature (IUCN) Red List.
10. These regions are defined by the Food and Agriculture Organization of the United Nations (FAO).
11. Only three goals were scored for the high seas as the other seven were not applicable, or data was not available.

12. Only eight goals were scored for Antarctica as artisanal fishing opportunities and carbon storage were not applicable there.
13. Ocean Health Index. "Methods – A Framework for Understanding." http://www.oceanhealthindex.org/About/Methods (accessed January 3, 2015).
14. Ocean Health Index. "Index by Region." www.oceanhealthindex.org (accessed June 3, 2014).
15. The Economist, "Governing the High Seas – In Deep Waters." http://www.economist.com/news/international/21596990-humans-are-damaging-high-seas-now-oceans-are-doing-harm-back-deep-water (accessed February 22, 2015).
16. BBC, Gaia Vince, "How the World's Oceans Could Be Running Out of Fish." September 21, 2012, http://www.bbc.com/future/story/20120920-are-we-running-out-of-fish (accessed March 3, 2015).
17. The Great Pacific Garbage Patch is a collection of marine debris in the North Pacific Ocean. It spans from the West Coast of North America to Japan. National Geographic. "Great Pacific Garbage Patch." http://education.nationalgeographic.com/education/encyclopedia/great-pacific-garbage-patch/?ar_a=1 (accessed February 1, 2015).
18. Save the Sea. "Interesting Ocean Facts." http://savethesea.org/STS%20ocean_facts.htm (accessed November 10, 2014).
19. United Nations. "United Nations Convention on the Law of the Sea – Part XII – Protection and Preservation Of The Marine Environment." http://www.un.org/depts/los/convention_agreements/texts/unclos/part12.htm (accessed February 10, 2015).
20. United Nations. "United Nations Convention on the Law of the Sea of 10 December 1982, Overview and full text – Part V, Exclusive Economic Zone." http://www.un.org/depts/los/convention_agreements/texts/unclos/part5.htm (accessed February 10, 2015).
21. Ibid.
22. The "high seas" belong to all countries of the world, including landlocked states, and are not subject to national appropriation.
23. Areas outside of the Exclusive Economic Zone (EEZ) are shown in a darker shade. Borders are based on The Flanders Marine Institute, Belgium (VLIZ) Maritime boundaries and Internationalwaters.png. This file is licensed under the Creative Commons Attribution-Share Alike 3.0 Chile license.
24. Save the Sea. "Interesting Ocean Facts." http://savethesea.org/STS%20ocean_facts.htm (accessed November 10, 2014).
25. The Pew Charitable Trust. "Protecting Ocean Life on the High Seas-Fact Sheet." November 24, 2014, http://www.pewtrusts.org/en/research-and-analysis/fact-sheets/2014/11/protecting-ocean-life-on-the-high-seas (accessed February 10, 2015).

26. The Economist, "Governing the High Seas – In Deep Waters." http://www.economist.com/news/international/21596990-humans-are-damaging-high-seas-now-oceans-are-doing-harm-back-deep-water (accessed February 22, 2015).
27. Garrett Hardin, "The Tragedy of the Commons", *Science*, 162, no. 3859 (1968): 1243–1248.
28. Kapil Narula, "Supporting a Standalone Goal for Sustainable Use of the Oceans."National Maritime Foundation. http://www.maritimeindia.org/CommentryView.aspx?NMFCID=77 (accessed January 10, 2015).
29. Outcome document of the United Nations Conference on Sustainable Development (Rio+20) "The future we want". United Nations General Assembly, Resolution A/RES/66/288* adopted on July 27, 2012. http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/66/288&Lang=E (accessed November 14, 2014).
30. United Nations, Sustainable Development Knowledge Platform, Macharia Kamau and David Donoghue, "Food-for-thought paper – Modalities for the intergovernmental negotiations on the post-2015 development agenda", November 17, 2014, https://sustainabledevelopment.un.org/content/documents/5512141114_post-2015-agenda.pdf (accessed February 10, 2015).
31. Synthesis report of the Secretary General on the post-2015 sustainable development agenda Agenda items 13(a) and 115. UN General Assembly, Resolution – A/69/700 dated December 4, 2014. "The road to dignity by 2030: Ending poverty, transforming all lives and protecting the planet." http://www.un.org/disabilities/documents/reports/SG_Synthesis_Report_Road_to_Dignity_by_2030.pdf (accessed January 14, 2015).
32. Sustainable Development Knowledge Platform. "Outcome Document – Open Working Group on Sustainable Development Goals." http://sustainabledevelopment.un.org/focussdgs.html (accessed September 14, 2014).
33. United Nations. "Open Working Group Proposal for Sustainable Development Goals." https://sustainabledevelopment.un.org/content/documents/1579SDGs%20Proposal.pdf (accessed September 14, 2014).
34. United Nations. "Open Working Group Proposal for Sustainable Development Goals". https://sustainabledevelopment.un.org/content/documents/1579SDGs%20Proposal.pdf (accessed September 14, 2014).
35. Sustainable Development Solutions Network. "Indicators and a Monitoring Framework for Sustainable Development Goals." http://unsdsn.org/wp-content/uploads/2014/07/140724-Indicator-working-draft.pdf (accessed September 20, 2014).

36. United Nations General Assembly. "Recommendations of the Ad Hoc Open-Ended Informal Working Group to Study Issues Relating to Conservation and Sustainable Use of Marine Biological Diversity Beyond Areas of National Jurisdiction and Co-chairs Summary of Sessions." June 2011, http://www.iilj.org/courses/documents/ailunit3adhocopenendedwgrecs.pdf. (accessed November 20, 2014).
37. Ibid.
38. The status of marine genetic resources is beyond national jurisdiction, particularly aspects related to access and distribution of benefits from these resources. These resources are already being exploited with no regulatory constraints.
39. There are limited examples of high seas marine protected areas in the Antarctic Ocean and the northeast Atlantic, but these are only binding on member states of the relevant treaty regimes.
40. This is a system for prior EIA and cumulative impact assessment over time of activities that pose a threat to marine biodiversity. While there are some provisions for prior environmental impact assessment deep seabed mineral exploration, the majority of activities on the high seas are not subject to such assessments.
41. IUCN. "Progress Towards a Legally-Binding Treaty to Safeguard the Ocean Beyond National Boundaries – Background Information." http://cmsdata.iucn.org/downloads/towards_a_high_seas_treaty__background_information.pdf (accessed February 21, 2015).
42. As per resolution A/69/L.43, adopted on December 29, 2014, the UN Summit on the Post-2015 Development Agenda will take place from September 25 to 27, 2015, in New York, USA. The process of intergovernmental negotiations on the post-2015 development agenda, which will prepare for the UN Summit, began with a stocktaking session on January 19–21. As adopted in decision A/69/L.44, the subsequent sessions will take place as follows: February 17–20 (Declaration); March 23–27 (SDGs and targets); April 20–24 (MOI and Global Partnership for Sustainable Development); May 18–22 (Follow up and review); and June 22–25, July 20–24 and July 27–31 (intergovernmental negotiations on the outcome document).
43. The committee will include member states, specialised agencies and invited observers to deliberate and to make substantiative recommendations.
44. "Outcome of the Ad Hoc Open-ended Informal Working Group to Study Issues Relating to the Conservation and Sustainable Use of Marine Biological Diversity Beyond National Jurisdiction." Statement, January 23, http://www.un.org/depts/los/biodiversityworkinggroup/documents/ahwg-9_report.pdf (accessed February 23, 2015).
45. Global Ocean Commission. "From Decline to Recovery: A Rescue Package for the Global Ocean."http://missionocean.me/decline/ (accessed February 21, 2015).

46. Callum Roberts, Leanne C Mason, Julie P Hawkins and Elizabeth Masden, *Roadmap to recovery: A global network of marine reserves* (Amsterdam: Greenpeace International, 2006), pp. 20–39.
47. The Natural Step. "The Four System Conditions of a Sustainable Society." http://www.naturalstep.org/the-system-conditions (accessed September 21, 2014).
48. Leaders and experts from over 110 countries.
49. Network of over 400 museums and aquaria.
50. Alliance of 27 non-governmental organisations, and IUCN.
51. Coalition of over 70 non-governmental organisations, fisher organisations, and law and policy institutes.
52. Association with 2700 members and member organisations in 40 countries.
53. This initiative could be under the aegis of South Asian Association for Regional Cooperation (SAARC).