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THE ROLE OF BOUNDARIES AND BORDERS IN OCEAN GOVERNANCE: REFLECTIONS ON THREE PROMISING TRANSBORDER OCEAN GOVERNANCE MODELS

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Abstract

State's border and boundary have important role to definite state jurisdiction, included maritime borders and boundaries. State jurisdiction on the ocean will impact to economic value that can be earned by the state and political activity. This article explains what governance can do to maximize maritime utilization and maintain marine ecosystem by strengthen international cooperation without spoiling national's jurisdiction among the states. This article suggests that a group of States have acknowledged that adequate ecosystem management, particularly in a changing climate, requires imaginative thinking about how to work flexibly across delineated political boundaries.

Keyword: *maritime boundary, border, sustainable development*

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I. INTRODUCTION

Global maritime boundaries are highly contested. States have understandably made the extension of maritime jurisdictions a political priority becomes the extension of maritime boundaries under the law of the sea regime secures legal rights to assert management over both living and non-living marine resources. States have long recognized the value in nationalizing or at least regionalizing maritime zones. For example, in August 1952, the leaders of Chile, Ecuador and Peru on the justification of food security and sustainable development entered a “Declaration on the Maritime Zone” stating that the maritime zones recognized under the Geneva Convention on the Territorial Sea and Contiguous Zone were “insufficient to permit the conservation, development and use of those [living and nonliving] resources, to which the coastal countries

are entitled.”¹ In response, the three States decided among themselves that “each of them possesses sole sovereignty and jurisdiction over the area of sea adjacent to the coast of its own country and extending not less than 200 nautical miles from the said coast.”

With the adoption of the United Nations Convention on the Law of the Sea, States were directed to cooperate across political boundaries. Article 63 requires States sharing stocks across exclusive economic zones to “seek, either directly or through appropriate sub regional or regional organizations, to agree upon the measures necessary to coordinate and ensure the conservation and development” of shared stocks.² The same article requires parties to “seek...to agree” through shared governance organizations measures to conserve stocks straddling across a high seas and exclusive economic zone boundary.³ On the high seas States are expected to cooperate over the conservation and management of living resources by establishing sub regional or regional fishing organizations.

States have made efforts to coordinate resource management across boundaries through Regional Fisheries Management Organizations and Regional Seas Programmes. Some of these programs have had greater success in creating cooperative frameworks than other programs. A lack of political will to achieve even basic conservation outcomes for target stocks has undermined the credibility of some organizations such as International Commission for the Conservation of Atlantic Tuna.⁴ Other organizations such as Commission for the Conservation of Antarctic

¹ U.S. Department of State Bureau of Intelligence Research, Limits in the Sea: No. 88 Maritime Boundary: Ecuador-Peru: (October 2, 1979): 4 at <https://www.state.gov/documents/organization/58821.pdf> (Providing English translation of 1952 Tripartite Declaration on the Maritime Zone)

² UNCLOS Article 63(1)

³ *Ibid.* Article 63(2)

⁴ U.S. Senator John Kerry, “Senate Resolution 180- Expressing the Sense of the Senate Regarding the Policy of the United States at the 17th Regular Meeting of the International Convention for the Conservation of Atlantic Tuna in Murcia, Spain”, Congressional Record (November 13, 2001): 22269 (Commenting that “I am sad to report that many ICCAT member nations have failed to comply with basic ICCAT quota and minimum size regulations for several important species...Furthermore, it is my understanding that some ICCAT member nations have undermined essential conservation plans from the outset for several ICCAT species, by simply setting a quota that is in flagrant disregard of the best advice of the scientific community.”)

Marine Living Species have been more successful in convincing States to require ecosystem based fishing practices in the Southern Oceans as evidenced by their regulation of the krill industry and fishing bycatch.⁵

With increasing pressures on ocean resources arising from warming oceans and acidifying seas, continued dysfunction in cooperative resource governance will only delay needed transboundary ecological management interventions. Quite recently, States have acknowledged that the existing ocean governance system is inadequate to address the immense external pressures on the system. In response, States agreed to Sustainable Development Goal 14 for States to “conserve and sustainably use the oceans, seas and marine resources for sustainable development.”⁶

States agreed to pursue ten targets:

Target 14.1: By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.

Target 14.2: By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans.

Target 14.3: Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels.

Target 14.4: By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time possible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics.”

⁵ Mary Ruckelshaus et al. “Marine Ecosystem-based Management in Practice: Scientific and Governance Challenges”, *BioScience*, 58(1) (1 January 2008): 53–63 (e.g. CCAMLR uses models of krill productivity to set sustainable harvest targets that were decreased by 25% to reflect an amount that scientists estimated predators needed for consumption. CCAMLR also sets thresholds for incidental bycatch. Once these thresholds have been met, a target fishery will be closed.)

⁶ United Nations, *Transforming Our World: The 2030 Agenda for Sustainable Development* (2015) at p. 20.

Target 14.5: By 2020, conserve at least 10 percent of coastal and marine areas, consistent with national and international law and based on the best available scientific information.

Target 14.6: By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organisation fisheries subsidies negotiation.

Target 14.7: By 2030, increase the economic benefits to small island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism.

Target 14.a: Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of development countries, in particular small island developing States and least developed countries.

Target 14.b: Provide access for small-scale artisanal fishers to marine resources and markets.

Target 14.c: Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in the United Nations Convention on the Law of the Sea, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of “The Future we Want.”⁷

While States can seek to achieve these targets through transboundary cooperation, it is not obvious from the text of the SDG 14 targets that the success of many of these targets will depend on the ability of States to integrate actions across national boundaries. There is no acknowledgment that politically delineated boundaries can create stumbling blocks for achieving SDGs unless States agree to re-imagine

⁷ *Ibid.* at pp. 20-21.

the function of boundaries in addressing ecosystem health across seascapes. The word “boundary” does not appear in the SDGs and the only allusion to spatial boundaries are the references in Target 14.2 to “marine and coastal ecosystems” and Target 14.5 to “coastal and marine areas.”

In June 2017, 178 States and the European Union met in New York at the United Nations Conference to Support the Implementation of Sustainable Development Goal 14. The States adopted a resolution entitled “our ocean, our future: call for action” recognizing “different national realities” and a variety of “national policies and priorities.”⁸ The resolution urged states to integrate Goal 14 and its targets “into national development plans and strategies, to promote national ownership” and for strengthened cooperation between and among “international organizations, regional and subregional organizations and institutions, arrangements and programmes.”⁹ States were urged to enhance engagement “with global, regional and subregional bodies and programmes, the scientific community, the private sector, the donor community, non-governmental organizations, community groups, academic institutions, and other relevant actors.”¹⁰

While it is clear that multi-level cooperation requires working across physical boundaries with government and non-government actors in multiple States, the Conference documents seem to assume that political boundaries are permeable for purposes of achieving SDG 14. Seven concept papers were drafted in preparation for the ocean conference covering a range of topics related to SDG targets from marine pollution to sustainable fisheries. Somewhat surprisingly, the often contentious issues of boundaries and the possibility of re-imagining boundaries to achieve some of the shared goals was addressed only fleetingly by two of the concept papers. The concept paper for the partnership dialogue on enhancing conservation and sustainable use of oceans through implementation of UNCLOS observed that coastal States are expected to clearly define and publicize the limits of their maritime zones because “they provide legal certainty with regard to the extent of the

⁸ Report of the United Nations Conference to Support the Implementation of Sustainable Development Goal 14 A/CONF.230/14 (June 5-9, 2017): paras. 7 and 9

⁹ *Ibid.* at para. 13(b)

¹⁰ *Ibid.* at para. 13(c)

sovereignty or sovereign rights and jurisdiction of coastal States.”¹¹ The paper goes on to observe that “overlapping maritime claims exist, which can adversely impact...effective management.”¹² The concept paper on conserving and restoring marine and coastal ecosystems recognized that Large Marine Ecosystems “generally transcend legal boundaries and encompass the maritime zones of two or more countries, thereby fostering international cooperation among countries, but also presenting a major governance challenge.”¹³

These brief key references to delineating maritime claims and large marine ecosystems should be at the centre of any efforts to achieve ocean sustainability. This paper argues that greater political investment needs to be made in securing institutional arrangements that are capable of transcending political boundaries to achieve sustainability targets by focusing on maritime boundaries as border regions rather than delineations. The following section will explore the juxtaposition of boundaries and borders. The third section will describe a number of ongoing global efforts to transcend maritime boundaries to achieve ecosystem and provide some observations about existing challenges associated with these efforts. The final section will ask whether the existing approaches offer a model that can be adapted to governance of other seascapes.

II. BOUNDARIES VS. BORDERS

One explanation for a lukewarm level of cooperation in some ocean regions is the continued political pursuit to define boundaries rather than borders. The concept of “boundary” versus “border” is more than just a semantic difference. Boundaries are understood as sites of stable territorial demarcation. They exist to define sovereign interests

¹¹ United Nations Ocean Conference, Concept Paper: Partnership dialogue 7: Enhancing the Conservation and Sustainable Use of Oceans and Their Resources by Implementing International Law as Reflected in the United Nations Convention on the Law of the Sea (2017) <https://sustainabledevelopment.un.org/content/documents/14402Partnershipdialogue7.pdf>

¹² Ibid.

¹³ United Nations Ocean Conference, Concept Paper: Partnership dialogue 2: Managing, protecting, conserving and restoring marine and coastal ecosystems (2017) <https://sustainabledevelopment.un.org/content/documents/14430Partnershipdialogue2.pdf>

within which States can assert political authority over property. Fixing of boundary points is an exercise in “the will of the sovereign.”¹⁴ In securing State jurisdictional interests, States are increasingly wary of creating an administrative record that suggests the possibility of one State acquiescing to another State’s interests.¹⁵

Among the first multilateral negotiations involving the law of the sea, States focused attention on defining and securing individual maritime boundaries and entitlements. These first negotiations were triggered by perceived threats of unilateral jurisdictional expansion. In 1945, United States President Harry S Truman announced the extension of U.S. jurisdiction over natural resources located on the U.S. continental shelf and over the high seas fisheries resources adjacent to the U.S. coast in order to secure conservation.¹⁶ In 1946, Argentina unilaterally asserted interests over its continental shelf and Panama declared in its constitution that the continental shelf was part of its national territory.¹⁷ Exhibiting both opportunism and an expansive imagination, Chile, Peru, and Ecuador in 1952 asserted interests over a 200 nautical mile zone.¹⁸

¹⁴ Case Concerning the Territorial Dispute (Libyan Arab Jamahiriya/Chad), ICJ Judgment of 3 Feb. 1994, [1994] ICJ Rep 6, at para. 4

¹⁵ See e.g. Case Concerning Sovereignty over Pedra Branca/Pulau Batu Puteh, Middle Rocks and South Ledge (Malaysia/Singapore), ICJ Judgment of 23 May 2008 (Finding that Malaysia acquiesced through a series of statements and omissions to title being secured for Singapore in the island of Pedra Blanca)

¹⁶ Harry S. Truman, Proclamation 2668, Policy of the United States with respect to Coastal Fisheries in Certain Areas of the High Seas (28 September 1945); Harry S. Truman, Proclamation 2667 Policy of the United States with respect to the Natural Resources of the Subsoil and the Sea-Bed of the Continental Shelf (28 September 1945); Harry S. Truman, Executive Order 9634, Providing for the Establishment of Fishery Conservation Zones

¹⁷ Argentina, October 9, 1946 Declaration Proclaiming Sovereignty over the Epicontinental Sea and the Continental Shelf, Decree 14708, Boletín Oficial de la República Argentina (5 December 1946) (Recognizing “the right of every nation to consider the entire extent of the epicontinental sea and the adjacent continental shelf as national territory.”); Panama Constitution (1 March 1946): Article 209-4.

¹⁸ Tripartite Agreement, *supra* note 1. (Proclaiming “as a principle of their international maritime policy, that each of them possesses sole sovereignty and jurisdiction over the area of sea adjacent to the coast of its own country and extending not less than 200 nautical miles from the said coast.”)

In response to this flurry of jurisdictional expansion, delegates to the First United Nations Conference on the Law of the Sea in 1958 drafted four multilateral conventions that are collectively known as the “Geneva Conventions”. While the Convention on the Territorial Sea and the Contiguous Zone *and* the Convention on the Continental Shelf did not conclusively define the boundaries, they emphasized the bounded nature of sovereignty. For example, if interests in a jurisdictional zone overlap as in the case of continental shelf entitlements, States are expected to negotiate boundaries.¹⁹

States were not satisfied with the ambiguity of the Geneva Conventions and in the Third United Nations Conference on the Law of the Sea, States specified the extent of the geographical boundaries for a coastal State’s territorial sea, contiguous zone, exclusive economic zone, and continental shelf. The concept of boundaries continued to “harden” as State parties to UNCLOS are expected to deposit with the Secretary-General of the U.N. all charts showing straight baselines that close the mouths of rivers and bays,²⁰ archipelagic baselines,²¹ and the outer limits of a State’s territorial sea, contiguous zone, exclusive economic zone, and continental shelf.²² While a declaration of maritime limits and boundaries may contribute to predictable relations among States, these limits and boundaries can create barriers for action when focusing on conserving and restoring ecological relationships. Political boundaries are particularly problematic for managing migrating species since migration patterns rarely conform to regional geopolitics.

A more relevant concept for cooperation to achieve SDG 14 is the concept of a border as a space that defines interests but is also open to flux and possible changes. While borders can be articulated as boundaries, they can also be understood as places across which ideas, goods, people, and other species flow. In terms of marine environmental governance,

¹⁹ Convention on the Continental Shelf (29 April 1958) (In force 10 June 1964), U.N.T.S. 7302 vol. 499, pp. 312-321: Article 6 (“Where the same continental shelf is adjacent to the territories of two or more States whose coasts are opposite each other, the boundary of the continental shelf appertaining to such States shall be determined by agreement between them.”)

²⁰ UNCLOS Article 16

²¹ *Ibid* at Article 47

²² *Ibid.* at Articles 16, 75, and 84.

the concept of permeable borders is far more relevant than that of a permanent boundary registered with the Secretary-General of the United Nations. This is because ecological relations exist across borders. An ecological map of the global oceans based on large marine ecosystems or seascape diverges from a map based on political boundaries.

Marine scientists and policy scholars have long recognized the disconnect between governance at the political boundary level and the ecological realities of complex marine ecosystems.²³ In the 1980s, Kenneth Sherman at U.S. National Oceanic and Atmospheric Administration and Lewis Alexander at the University of Rhode Island introduced the concept of a “Large Marine Ecosystem” (LME) as a framework for analyzing regional sustainability.²⁴ The researchers identified 64 LMEs composed of both coastal lands and ocean waters and proposed evaluating through an interdisciplinary approach each ecosystem on the basis of nutrient and primary productivity, fish stock populations and biomass, marine and land-based pollution, human marine activities, and governance. Key to the concept of an LME is the ability for States to cooperate across their boundaries by blurring boundaries into borders between States.

A viable LME cannot be constrained to the jurisdictional boundaries provided for under UNCLOS whenever there are species capable of traveling long distances or negative consequences for a habitat from further fragmentation of habitat (e.g. limited gene pool for future restoration efforts). To the extent that the maritime boundaries are arbitrarily derived from the formulas available under UNCLOS, there is a risk of under-management across the range of a LME.

²³ Lawrence Juda, “Consideration in Developing a Functional Approach to the Governance of Large Marine Ecosystems” 30 *Ocean Development & International Law* 2 (1999) :93 “[O]ne of the basic problems faced by those who favour ecosystem-based management approaches is the lack of congruence between what might be termed ‘politically defined space,’ that, is the geographic area encompassed by particular human governance systems, and ‘ecologically defined space’ composed of the area over which natural ecosystems extend.”

²⁴ Kenneth Sherman “Large Marine Ecosystems: Stress, Mitigation, and Sustainability” *Large Marine Ecosystems: Stress, Mitigation and Sustainability* (ed. Kenneth Sherman and Lewis Alexander) (AAAS Press, Washington DC, 1993); Kenneth Sherman “The large marine ecosystem concept: A research and management strategy for living marine resources.” *Ecological Applications* 1(4) (1991): 349-360

If Sustainable Development Goal 14 and particularly Targets 14.1, 14.2, and 14.3 are to be realized by coastal States, States must address the existing disconnect between political boundaries and ecological borders as reflected in the identification of LMEs. To do this requires reconceiving of “scale.” The next section describes a variety of multi-partner cooperative conservation efforts being undertaken at the ecosystem level. In particular, the article will cover (1) unique high-level collaboration among six Asia-Pacific States that has resulted in the creation of the Coral Triangle Initiative (CTI) (2) collaboration in the Caribbean Sargasso Sea among a number of States and organizations to protect and conserve a unique ecosystem existing largely beyond national jurisdiction and (3) the multi-state LME commissions in Asia and Africa. On the basis of reviewing academic literature and documents produced by the CTI parties, the Sargasso Sea Commission, and the LME Commissions, the article will identify some of the legal and institutional challenges of implementing the initiative in the regions. Given both the regional and global pressures particularly on living marine resources, the article concludes by questioning whether the governance models designed around socio-ecological borders rather than political boundaries can be further disseminated into other regions that share large marine ecosystems or seascapes.

III. OCEAN GOVERNANCE MODELS THAT TRANSCEND BOUNDARIES

With centuries of efforts dedicated to delineating ocean boundaries but only approximately 40 years of sustained effort in coordinating ecosystem management between States, many States have only recently begun to invest resources in designing transboundary governance arrangements to further ecosystem protection, conservation, and restoration. While this article is not intended to be a comprehensive compendium of existing and former efforts to design transboundary institutions,²⁵ this

²⁵ For example, Agulhas and Somali Current LME, Bay of Bengal LME, Canary Current LME, Guinea Current LME, Gulf of Mexico LME, Humboldt Current LME, Abrolhos Seascape (off Bahia, Brazil), Eastern Tropical Pacific Seascape (Colombia, Costa Rica, Ecuador and Panama), Glover’s Reef Seascape (Belize), Patagonian and Southwest Atlantic Seascape, Vatu-i-Ra Seascape (Fiji)

article describes three examples of State-based transboundary marine governance initiatives and the potential of these initiatives to serve as models for other regions who have made commitments to achieve the Sustainable Development Goals. Environmental regimes where principles, norms, rules, and decisionmaking are centred around a limited set of issue have been shown to improve cooperation.²⁶ All of the examples discussed below promote “ecosystem-based management” understood in this article as management practices promoting:

- 1) The protection of structures, functions and key processes within a specific place-based ecosystem and
- 2) The integration of ecological, social, economic and institutional needs.

Because the focus on this article is on States reconceiving political boundaries in the context of shared ecological borders, the examples chosen were selected because they involve multiple States who have exhibited a high-level of political will. While outside entities such as NGOs, influential individuals, or intergovernmental organizations were responsible for initiating the ecosystem based governance efforts and continue to be involved with ongoing financing and technical support, each of the examples below illustrates long-term regional political commitment. The three examples discussed are the Southeast Asian Coral Triangle Initiative, the Caribbean Sargasso Sea effort, and the Benguela Current Large Marine Ecosystem.

A. THE CORAL TRIANGLE INITIATIVE GOVERNANCE MODEL AND BORDERS

The Coral Triangle covers an ocean and coastal of 5.7 million square kilometres (approximately half the size of the United States land mass) including portions of Indonesia, portions of Malaysia, the Philippines, Timor Leste, Papua New Guinea, and the Solomon Islands region.²⁷ The region takes its name from the fact that 76% of all global coral species can be found somewhere in the Coral Triangle. The region is globally recognized as a place of great biological and cultural significance due to

²⁶ Oran Young, *International Cooperation: Building Regimes for Natural Resources and the Environment* (Cornell University Press, 1989)

²⁷ Pedro Fidelman et al. “Governing Large-Scale Marine Commons: Contextual Challenges in the Coral Triangle” 36 *Marine Policy* (2012) at p. 43.

its ecological diversity that include 37% of the world's reef fish species and important nurseries for blue whales.

With approximately 100 million of the 363 million people living in the Coral Triangle primarily dependent on coastal resources for sustenance, humans have impacted the region's unique ecosystems through overfishing and habitat degradation. The long-term prognosis of climate change impacts within the region such as warming oceans, coral bleaching, and ocean acidification does not deliver a positive narrative for regional sustainability. Recognising existing and future pressures on the regional ocean system, Indonesian President Susilo Bambang Yudhoyono proposed an intergovernmental effort among neighboring States leading to the creation of the "Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security" (CTI). His proposal was for all of the States bordering the biodiverse region to harmonize marine management objectives and coordinate mechanisms for achieving the objectives.

The Coral Triangle has not been defined as a separate LME but includes regions designated by Sherman and Alexander as parts of the Indonesian Sea and the Sulu-Celebes Sea. Applying a bioregional framework to area, Green and Mous mapped the shared sea space and identified 11 ecoregions and 32 functional seascapes within the ecoregions.²⁸ While "LME" as a term of reference has not been selected by the CTI parties, States are committed to implementing a variation of an LME governance framework that changes boundaries into borders. The term "seascape" within the CTI refers to "large, multiple-use marine areas defined scientifically and strategically, in which government authorities, private organizations and other stakeholders cooperate to conserve the diversity and abundance of marine life and to promote

²⁸ A.I. Green and P.J. Mous Delineating the Coral Triangle, its Ecoregions and Functional Seascapes v. 5. The Nature Conservancy Coral Triangle Program Report 1/08 (2008); The term "seascape" has been used by the NGOs World Wide Fund for Nature and Wildlife Conservation Society for over 15 years as a biogeographic term. Conservation International (CI) expanded the concept of a "seascape" when it began its two large projects in the Coral Triangle region before the Coral Triangle Initiative was launched as an regional initiative by the President of Indonesia. As used by CI, a functional "seascape" depends on good governance at local, national and regional level to deliver ecosystem and sustainability benefits.

human well-being.”²⁹

In 2009, the parties agreed at a Summit in Manado, Sulawesi in Indonesia to a non-binding agreement to develop “seascapes” for sustainable management by 2020, apply ecosystem based management to fisheries and other marine resources in the region, establish region-wide MPAs, cooperate to improve the status of threatened species, and introduce a “region-wide early action plan” for climate change adaptation to be implemented by 2015. ³⁰ This Regional Plan of Action is intended to influence national decision-making.

What makes the CTI initiative unique as a governance model is the effort by leaders at the highest levels of government to work with ecological experts to redesign the regional map to create a space of common concern for the participating States. In spite of some boundary issues between parties, the States agreed to focus on blurring political boundaries for purposes of achieving the objectives of the CTI and instead redefining their cooperation on the basis of bio-geographical borders. If conservation and restoration are to be effective at the ecosystem level, States in the region understand that they must cooperate across their political boundaries since the maps of the ecoregions and functional seascapes within the Coral Triangle do not conform to either existing political boundaries or desired political boundaries. To the extent that States accept the validity of the ecoregions and acknowledge ecological overlaps across the borders of the Philippines and Indonesia, Timor and Indonesia, and Malaysia and Indonesia, States participating in the Coral Triangle Initiative have shown a willingness to re-imagine resource management in spatial delimitations that are very different from UNCLOS’ conventional jurisdictional zones that reify sovereign rights of use at the expense of ecological cooperation.

For example, the States have developed a common understanding for a Coral Triangle Marine Protected Area System that connects the six States across ecological borders. The States are in the process of developing a CTI Regional Framework that establishes joint goals, objectives, and operational designs across a network of MPAs. In addition, the States have acknowledged the need for a common regional

²⁹ *Ibid.* at 2

³⁰ Coral Triangle Initiative Secretariat, Regional Plan of Action (2009)

framework based on implementing an ecosystem approach to the management of fisheries resources.³¹

The level of political will involved with building collaboration within the CTI is high with regular meetings among a Council of Ministers and Senior Officials. With the support of intergovernmental funding (Global Environmental Facility) and large NGOs such as World Wide Fund for Nature, The Nature Conservancy, and Conservation International, the CTI has maintained institutional momentum through the creation of a permanent secretariat that not only supports the efforts of the governments but facilitates private sector involvement in the government initiative. The Secretariat has its own legal personality separate from the States and operates independently. It serves as a regional coordinator hosting a number of on-line collaborative workspaces for both Senior Officials and Local Government Mayors from municipalities in the various States designed to build a virtual community.

B. SARGASSO SEA COMMISSION

The Sargasso Sea is an almost 2 million square mile sea region that includes region beyond national jurisdiction. It is a place rich in biodiversity with significant populations of tuna, billfish, eels, sharks, whales, sea turtles, and rare invertebrate species. The region is named after the presence of beds of sargassum, a type of seaweed critical for the ecosystem. The region faces a number of threats including oil pollution, overfishing, plastic pollution, and the introduction of exotic species that compete with endemic species.

In 2010 with support from States, intergovernmental organizations, and NGOs, the Sargasso Sea Project was created to raise awareness of the threats to the Sargasso Sea. In 2014, under the leadership of Bermuda, a number of States with territory bordering the region concluded The

³¹ Putrajaya Joint Ministerial Statement, 4th Meeting of the CTI-CFF Council of Ministers (26 November 2012) CTI Initiative (Supporting “an Ecosystem Approach to Fisheries Management in Coral Triangle Initiative”) (<http://www.coraltriangleinitiative.org/sites/default/files/resources/SOM%208%20and%20MM%204%20FINAL%20PUTRAJAYA%20JOINT%20MINISTERIAL%20STATEMENT%281%29.pdf>; 8th CTI_CFF Senior Officials Meeting (22-24 November 2012) (“Acknowledging the need for common regional framework to manage fisheries resources”)

Hamilton Declaration on Collaboration for the Conservation of the Sargasso Sea.³² Other States have indicated support for the Sargasso Sea project.³³ Under the Declaration the States agreed to have meetings as necessary and to rely on a permanently constituted Sargasso Sea Secretariat to work closely with the Sargasso Sea Commission to exercise a stewardship role over the Sargasso Sea. In 2015, the Sargasso Sea was the only named ecosystem in the United Nations Global Reporting and Assessment of the State of the Marine Environment report. Representatives from the Sargasso Sea Project have worked closely with existing intergovernmental organizations such as the North Atlantic Fisheries Organization to systematically address threats to the ecosystem by for-example regulating trawling activities and prohibiting fishing on seamounts. The project has also worked with numerous other bodies including *inter alia* the International Commission for Conservation of Atlantic Tunas, the Caribbean Regional Sea programs, and the International Maritime Organization.

The States agreed to develop a joint work program that includes recognizing the ecological importance of the Sargasso Sea, developing joint fisheries habitat conservation programs, identifying impacts from international shipping and other marine activities, and conserving migratory species.

C BENGUELA CURRENT BENGUELA CURRENT LARGE MARINE ECOSYSTEM PROJECT

Located in one of the most productive upwelling zones in the world, the Benguela Current LME (BCLME) is a biologically diverse shared ocean space that connects the Exclusive Economic Zones of Angola, Namibia, and South Africa. The region is facing a number of threats including lower fishing yields, deterioration in water quality, destruction of both coastal and seabed habitat, and harmful algal blooms.

The BCLME conservation, restoration, and sustainable use program has been supported at the highest political levels in the three countries

³² Bermuda, Monaco, the United Kingdom and the United States are also signatories to the declaration.

³³ Dominican Republic, Netherlands, Sweden, South Africa, and Trinidad and Tobago have indicated support for the Commission.

leading to the 2013 adoption of the binding Benguela Current Convention in which the three States recognized their “joint responsibility as custodians” of the BCLME.³⁴ In the treaty, the States agreed that the terms of the Convention will apply to “all areas within the national sovereignty and jurisdiction in accordance” with UNCLOS” bounded by the high-water mark along the coasts of the Parties.”³⁵

The BCLME and the Convention grew out of a previous engagement by the three States in a program called “Benguela Environment Fisheries Interaction and Training Program” (BENEFIT) that was financed by the Norwegian and German government through their development aid agencies.

Structurally, the BCLME depends on government commitment for its existence. On typically an annual basis,³⁶ Ministers from each of the countries attend a Ministerial Conference with a national delegation. In 2007, the ministers agreed to create the first global LME-based institution, the Benguela Current Commission, to facilitate State cooperation and cooperation with private actors around restoring commercial fish stocks in the region.³⁷ Based in Swakopmund, Namibia, the Commission works closely with the BCLME Management Board consisting of representatives from a number of ministries in each of the State.³⁸

The management board is somewhat unique in its wider participation from not just environmental ministries but also commercial industries. Presently Angola sends representatives from its Fisheries Institute, Petroleum Ministry, and the Ministry of Urbanism & Environment. Namibia sends representatives from the Ministry of Mines &

³⁴ The Benguela Current Convention (2013) at www.benguelaacc.org/index.php/en/component/docman/doc_download/695-signed-benguela-current-convention-english

³⁵ *Ibid.* at Article 3.

³⁶ *Ibid.* at Article 6 (Providing that a Conference shall be convened at least every two years)

³⁷ Interim Agreement between the Government of the Republic of Angola, Government of the Republic of Namibia, and the Government of the Republic of South Africa on the Establishment of the Benguela Current Commission (January 2007)

³⁸ The Benguela Current Commission also works with intergovernmental programmes such as the Regional Seas Programme for the West and Central Africa Region, civil society groups, private sector, and academia.

Energy, the Ministry of Fisheries & Marine Resources, the Ministry of Environment & Tourism, and the Ministry of Works & Transport. Finally, South Africa's delegation includes individuals from Department of Environmental Affairs; Department of Agriculture, Forestry & Fisheries; Petroleum Agency, and Department of Mineral Resources. The composition of the Benguela Current Commission brings together multiple department who may have conflicting agency agendas. To avoid certain types of conflicts, the Board has negotiated a Rules of Procedure guide.

In addition to the Management Board and the Secretariat, the BCLME has an Ecosystem Advisory Committee and a Permanent Compliance Committee.³⁹ Under the Ecosystem Advisory Committee, scientists and managers from each of the three countries cooperate in Joint Working groups. The Permanent Compliance Committee is expected to coordinate compliance activities across the three States.

The States have agreed to work towards developing and implementing a joint programme of work based on the "Strategic Action Plan" for developing scientific advice, implementing training and capacity building, sustainably exploiting and managing living and non-living marine resources, conserving biodiversity, and preventing acute and chronic pollution. States have agreed to work cooperatively to minimize the impacts of marine diamond mining, oil production, and gas production. They have also agreed to work to harmonize regional mariculture policies to avoid harmful algal blooms.⁴⁰

To ensure the involvement of each State in the process of nationally implementing the Strategic Action Plan, each State has an "Activity Centre" that is funded by both donors and the participating governments. The three Centres are expected to coordinate with each other and to facilitate the "Advisory Groups", consisting of 2 individuals from each country, in providing technical support within the region. Through the BCLME program, over 100 projects including a number of transboundary projects (e.g. analyzing and mitigating impact of offshore diamond mining of other marine resources) have been implemented by

³⁹ Benguela Current Convention at Article 10 and Article 12.

⁴⁰ Benguela Current Strategic Action Programme (1999) http://projects.inweh.unu.edu/inweh/inweh/content/StrategicActionProgrammes/bclme_sap_1999.html

government agencies, universities, private groups, and BENEFIT.

The BCLME program has used its resources to understand the strengths and weaknesses of each State in terms of national and local policies to facilitate both ecosystem based management and socio-economic development. In 2009, an outside consultant report suggested that far more was known in each of the States about biological management indicator than social, economic, or governance indicators. The BCLME program has strengthened its transboundary governance through the formation of the intergovernmental Commission and the tripartite treaty. Notably, the BCLME program inspired the Guinea Current LME to initiate a process for developing an inter-governmental commission to facilitate efforts across the member States.

III. CHALLENGES INHERENT IN LME GOVERNANCE EFFORTS

The value in creating and governing at the level of an LME or a seascape is the deployment of limited state resources to negotiate across socio-ecological borders for the good of all participants and not simply to reinforce boundaries.⁴¹ Each of the examples of LME governance described above are testaments to high-level political cooperation. Managing an LME over the long-term requires institutional sustainability based on continued good relations among State and other partners. The remainder of this section focuses on six challenges that are inherent in any LME governance effort and describes what the LME programs described above are trying to do to address basic governance problems.

1) Sustaining political will

The first challenge for any LME-type institution or framework is sustaining political will. After an initial wave of excitement for a new project, it is not uncommon for political will to fade as the complexities of implementation manifest in political disagreements between constituents. Political figures may find themselves at the crosshairs of

⁴¹ This article recognizes that while there are some differences between an LME, a seascape as defined by Conservation International, and an ecoregion, all of these concepts promote large scale conservation and sustainable use practices. For purposes of the remainder of this article, these concepts may be used interchangeably.

controversy when certain environmental objectives such as conserving species or habitat clash with socio-economic objectives such as increasing coastal development to build a tourist economy or reducing fishing effort.

The CTI program has continued high levels of political engagement across the region. This political will can be explained in part by frequent meetings between ministers and between senior officials that contribute good working relationships between individuals on behalf of their States. In some instances, the existence of the CTI program has encouraged more robust participation from State members. At the State responsible for founding the CTI, Indonesia has continued to invest in the initiative. Tagged as the second largest plastic polluter in the world, Indonesia made a public announcement in March 2017 that it would invest up to \$1 billion a year to reduce plastic in its waters that are contributing to water quality issues for the Coral Triangle.⁴²

The BCLME program has likewise relied on high-level meetings to create a high-level of political engagement by each of the States. At the last Benguela Current Commission Ministerial Conference in December 2016, nine ministers from each of the three States discussed opportunities to collaborate on a number of joint issues including pooling of research vessels for the potential co-management of resources, combatting illegal fishing, conducting studies on phosphate mining on the seabed floor, and cooperating to develop oil spill contingency planning for the region including a regional oil spill response center.⁴³

2) Sustaining long-term stakeholder interest

Stakeholders are parties that may not “own” a project but instead influence the success of a project by transferring skills, knowledge, information, finances, or personal connections. In all of the above projects, the “owners” of the projects are the sovereign States that are willing to temporarily relax the rigidity of territorial boundaries for purposes of achieving the common objectives of large-scale conservation and sustainable development planning. The stakeholders

⁴² J. Langenheim, ‘Indonesia Pledges \$1bn a year to Curb Ocean Waste’, *The Guardian* (2 March 2017) (Pledging to reduce its marine waste by 70% by 2025)

⁴³ Communique of the 5th Benguela Current Convention Ministerial Conference Meeting, Swakopmund, Namibia (8 December 2016)

facilitate the achievement of project objectives.

In the case of the CTI, the stakeholders include both States (United States and Australia), intergovernmental entities (Asian Development Bank and Global Environmental Facility), and NGOs (World Wide Fund for Nature, Conservation International, and The Nature Conservancy).

In each of these cases, the stakeholders are not only essential for the financial and sometime technical feasibility of the CTI but they also contribute to the perception of credibility for the various project by attaching their logos to various CTI. Taken together, the three examples seem to suggest that the success of LME governance, in regions where there are funding needs, will depend on what types of partners are willing to invest in an LME and what types of expenses they might cover that would otherwise go unfunded. For example, while a State government can politically justify using its limited funding for anti-poverty efforts, that State may depend on NGOs or third-party States to cover any additional expenses whose primary purpose is to protect marine resources.

Sustaining stakeholder interest for a given project, particularly a project that has not yet demonstrated its value, may become increasingly challenging when funders and donors have an array of global marine governance project to choose among for funding purposes. Increasing the number of regional MPAs brings conservation benefits to those regions but may also lead in the long-term to thinner coverage of budgets for projects as more States compete for limited resources. At the outset of programs such as the examples discussed above, States should negotiate with potential non-State partners for long-term financing that might include bonuses for achieving certain targets ahead of any timelines. Depending on the stakeholder, there may be reluctance to guarantee funding beyond an initial period. While funders may want to maintain flexibility, their desire may compromise the ability of programs to achieve long-term goals such as ecological restoration.

3) Technical Coordination across boundaries within the LME project

To the extent that there is a broad political support for an ecosystem based management approach across a region, there remain practical challenges of coordinating technical expertise across different groups.

States within a region may have very different capacities to achieve agreed upon work plans. Depending on whether a State follows a federalist model, certain parts of a State may also be better positioned to engage in ecosystem protection and community development than other parts of the State leading to different balances of power. Coordination problems may also arise due to the existence of different institutional cultures within agencies responsible for technical implementation of joint work plans.

These issues have arisen in the case of the projects described above. In reviewing its progress in achieving ecosystem protection goals, the Sargasso Sea Project has observed that intersectoral communication between bodies such as the IMO and regional fisheries bodies can be quite weak. The BCLME project has attempted to address some of these challenges through its introduction of Activity Centres within each of the member states designed to share information and expertise.

4) Inability to Address Problems Arising Outside of the Project Area

For any large marine ecosystem project, there will be a recurring challenge of addressing impacts on the shared ecosystems arise from drivers outside of the boundaries of the project. For all of the project, climate impacts such as ocean acidification have the potential to undermine the joint work effort of States. CTI and Sargasso Sea.

The existing governance structures cannot manage causes of degradation that are largely external to the region. States could decide that they wish to put diplomatic pressure on States that are impacting their efforts and raise issues of State responsibility.

No amount of internal political will can eliminate the externalities being created by States who are not parties to these initiatives. However, States within an initiative can still use their cooperative frameworks for further regional goals such as climate mitigation and adaptation. In each of the initiatives described above, all of the States involve contribute some amount to climate change. In some cases, the contributions are de minimis while in other cases such as the Sargasso Sea project and Coral Triangle Initiative, contributions by participants such as the United States and Indonesia are sizable. Existing cooperation under the initiatives and the good will generated by the initiative might offer

additional motivation for certain parties to invest further in reducing not just their regional footprint but also their global environmental impact.

5) Negotiating the needs of ecosystems with demands of human communities

The need to achieve short-term social and economic benefits for communities can conflict with long-term environmental considerations. For each of the projects, there are numerous coastal communities within the region that depend on the various marine resources that are being managed jointly or being proposed for joint management for subsistence. In theory, a full implementation of the work projects for any of these programs should result in better conditions for stabilizing natural resources for community use. To achieve the work plans especially plans based on restoration, however, requires a change in coastal activities over an extended time frame. For communities that are already vulnerable to food security challenges, conflicts may emerge in areas where, for example, there are proposals for protected areas that threaten available food resources.

States involved in LME projects must communicate openly with communities about what ecosystem based management projects entail and how the States intend to address fundamental needs such as food security. States cannot expect sacrifices from communities that are already socially and economically marginalized for the sake of improving the global reputation of a State as an “environmental champion.” Providing for both the needs of ecosystems and the demands of human communities without creating a situation of “winners and losers” requires extensive and ongoing negotiations. These negotiations will involve transaction costs.

6) Investment in conservation may not be enough and there will be an increasing need for investment in ecological restoration.

In each of the LME based projects described above, conservation of marine resources particularly living marine resources such as shared fisheries is a priority project objective. Conservation measures, however, may not be sufficient in places where ecosystems are at ecological tipping points. As pressures on ocean ecosystems multiply, States will need to give more attention to investing in ecological restoration of

habitats, especially habitats that generate ecosystem services for coastal communities.

For example, in the Coral Triangle, almost 70% of citizen's protein intake is from fish that exist in coral reef ecosystems. The President of the Global Coral Reef Alliance has observed that conservation and continued study of the reefs will not address the CTI's long-term needs. He has instead called for investment in new restoration techniques such as artificial reefs that are capable of surviving the double threats of global warming and pollution. As he observed at a coral reef management symposium, "Restoring the world's richest and most productive reefs on a large scale should be the very central focus for planning the sustainable development of the world's largest island nations."⁴⁴

When States embark on a LME program, it is increasingly important to consider the human resource, financial, and development implications of restoration. Global environmental politics including SDG Target 14.5 have called for increasing conservation of coastal and marine areas. This has been understood as delineating protected areas. While there is no inherent conflict in undertaking ecological restoration within an area designating as protected,⁴⁵ there have not been many sufficient international investments made at the LME level to prepare and support communities to undertake restoration projects that will provide community with long-term benefits.⁴⁶

7) Need for full regional participation by States

When political boundaries diverge from "ecological borders", States

⁴⁴ Thomas Goreau, Coral Reef and Fisheries Habitat Restoration in the Coral Triangle: The Key to Sustainable Reef Management, Proceedings of Coral Reef Management Symposium on Coral Triangle Area (2010): 251 available at <http://www.globalcoral.org/wp-content/uploads/2013/04/Coral-Reef-and-Fisheries-Habitat-Restoration-in-the-Coral-Triangle.pdf>

⁴⁵ For example IUCN understands MPAs as areas designated to "provide for the protection, restoration, wise use, understanding and enjoyment of the marine heritage of the world in perpetuity" IUCN General Assembly Resolution 19.46 (1994)

⁴⁶ There are significant initiatives that are involved closely with communities such as the Coral Reef Targeted Research & Capacity Building for Management and the Capturing Coral Reef and Related Ecosystem Services (CCRES) (<http://ccres.net/>). Yet these programs are limited in their reach. For example, the CCRES is limited due to resources and program capacity to working within the Philippines and Indonesia.

need to cooperate if resources are to be adequately and holistically managed. This requires “deep cooperation” requiring investments of financial and human resources and not just surface cooperation. Because of the transboundary nature of many of the ocean habitats split by arbitrary boundaries, States that deliver only surface cooperation might become free-riders on the investments by other States. If too many States within a region free-ride in spite of contrary political statements, then the non-participation of just a few States can undercut the efforts of the other States.

- 8) Regional participation has to be translated into national, sub-national, and local initiatives.

The success of a LME project will depend on the ability to take a large-scale concept and to identify how it can be implemented across an array of governance actors including local communities who may be politically detached from their central government or in very remote locations. Two of the programs described above have incorporated recognition of the principle of subsidiarity. The CTI has a collaboration tool for mayors to work across the Coral Triangle. The Benguela LME program works through its Activity Centres to identify local initiatives for funding that will further the objectives of the States across the LME.

- 9) Actors at a national or sub-national level need to ensure that international economic drivers do not undermine national, sub-national, or local initiatives

States have complex governance models for natural resources. Assuming that communities have the resources to invest in ecosystem restoration and make these investments, States or sub-national governments need to protect community efforts. This may prove challenging as States face a conflict of interest between potential State revenues and community needs. For at least some States, revenues from foreign fishing fleets comprise a substantial amount of a government budget. States may need to forego these revenues and identify alternative sources of government revenues in order to protect community investments. This can lead to interpersonal conflicts between government ministries and their long-term objectives for economic growth versus social development. In potentially restraining

international access to resources, State officials may find themselves under a great deal of diplomatic pressure.

IV. MODELS FOR ADOPTION FOR OTHER SEASCAPES?

A number of States are investing in transboundary LME projects. The question arises whether the models described above should be replicated in other regions of the world where States are yet not engaging in “deep cooperation” across political boundaries but would benefit from applying a harmonized ecosystem approach to the region.

In theory, regional seas organizations and regional fisheries bodies exist to cooperate across boundaries. Yet, in many cases, States have been wary about investing both financial and political capital into the long-term success of these programmes. Created in 1974, the Regional Seas Programmes were introduced to provide a common space for addressing marine pollution control and management of marine and coastal resources. The evaluation of outcomes related to regional improvements of environmental quality has been difficult to measure. While some of the programmes such as those based in the Mediterranean Sea and Antarctica have delivered more tangible cooperation among the States parties, a few programs in other regions have lacked momentum with States only providing minimal financing and inconsistent political support.⁴⁷

The models described above have received political support not just by states located within the region but also from other States. For example, in July 2007, the Leaders Declaration at the Asia-Pacific Economic Cooperation meeting expressed support for the Coral Triangle initiative. In December 2007, the Association of Southeast Asian Nations with the endorsement from China, Japan, and Korea further confirmed the value of the CTI as a governance initiative.

Is there potential for State-led, NGO-supported LME projects in other biodiverse regions including the East China Sea, the South China

⁴⁷ M.A. Jacobson, ‘The United Nations’ Regional Seas Programme: How Does it Measure Up?’, *Coastal Management*, 23(1) (1995) : 19-39; Charles N. Ehler, ‘A Global Strategic Review: Regional Seas Programme, United Nations Environment Programme’ (2006)

Sea and the Arctic. In all of these regions, States have identified ongoing conflicts over boundaries. In the East and South China Sea regions, China, Japan, Vietnam, the Philippines, Malaysia, and Brunei disagree over both territorial and maritime boundaries. These disagreements have led to military confrontations and poor decisions regarding long-term environmental protection.⁴⁸ In the Arctic, States disagree over the extent of extended continental shelves and the reach of jurisdiction.⁴⁹

Recognising that the States that are involved with each of the models described above have generally stable political relations, there is some question as to whether a similar arrangement could emerge where participating States might have fundamental political disagreements. The success of any such initiative would depend on the most political powerful States taking leadership of any joint effort. In the case of the South China Sea, Chinese leadership would be essential as a driver for any shared ecological initiative. Likewise, in the Arctic, Russian or Canadian leadership would be required for any initiative to have sufficient political to succeed. Such leadership depends on whether political leaders identify investments in ecosystem management and sustainable development as part of their historic legacy.

Likewise, even though political leaders receive most of the publicity attention associated with these initiatives, the success of initiatives will also depend, at least initially, on NGO or intergovernmental investments to demonstrate the value of the projects. For each of the models described above, early financial investments and investments in capacity building laid the foundation for the emergence of the Coral Triangle Initiative Secretariat, the Sargasso Sea Commission and the Benguela Current Commission,

V. CONCLUSION

This article suggests that a group of States have acknowledged that adequate ecosystem management, particularly in a changing

⁴⁸ In the Matter of the South China Sea Arbitration, The Republic of the Philippines and The People's Republic of China, PCA Case No. 2013-19, Award.

⁴⁹ 'Frozen Conflict', The Economist (7 December 2014) <https://www.economist.com/news/international/21636756-denmark-claims-north-pole-frozen-conflict>

climate, requires imaginative thinking about how to work flexibly across delineated political boundaries. These States are trying through the development of innovative governance institutions to do something constructive even though they face a variety of challenges in reconceiving boundaries into borders.

From a public international law perspective, the models of cooperation discussed previously are interesting since they indicate an active effort on the part of States to maintain control over activities within their boundaries and address certain types of transboundary harms. With a focus on managing large marine ecosystems for sustainability and ecosystem protection, the governance models advance a different biogeographical map than a map based exclusively on geopolitical boundaries. Importantly, States in each the three models are using their political capital to secure success by maintaining engagements in these initiatives at Ministerial levels. These are not simply projects for technocrats but are increasingly becoming part of the identity of the States within the region.

There have been numerous calls for networks of marine protected areas capable of linking across ocean ecosystems to include both national waters and the high seas.⁵⁰ The success of these endeavour will depend on the ability of States that are committed to the MPAs to create appropriate governance mechanisms that take into consideration socio-economic needs and the necessity for ecological restoration. In all of the examples above, the States have agreed to set aside certain political differences with each other in order to build a different kind of ecological “commons” where States will strive to improve national performance in order to meet joint objectives. While it is easy to imagine that an acute political crisis could dissolve the goodwill that has been built through these existing initiatives, each of the LME models described above offers hope for shaping potential future LME efforts in areas divided by conflict. Long-term success will depend on States observing desirable socio-ecological outcomes and on political engagement at all levels including local communities who interact with

⁵⁰ B.C. O’Leary et al., ‘The first network of marine protected areas (MPAs) in the high seas: The process, the challenges and where next’ *Marine Policy* 36(2) (2012): 598-605

resources.

Distinguishing between boundaries and borders is essential for governance of LMEs. Because political boundaries rarely coincide with ecologically connected habitats, new models of governance are becoming increasingly important.

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