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An Ecosystem Approach to Management of Seamounts in the Southern Indian Ocean. Volume 3 - Legal and Institutional Gap Analysis

Robin M. Warner

University of Wollongong, rwarn@uow.edu.au

Philomene Verlaan

Gail Lugten

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Abstract

The International Union for Conservation of Nature (IUCN) is committed to achieving effective protection, restoration and sustainable use of biological diversity and ecosystem processes on the high seas. IUCN Resolution 4.031 (2008), “Achieving conservation of marine biodiversity in areas beyond national jurisdiction”, called, inter alia, for the promotion of arrangements, processes and agreements that ensure the consistent, coordinated and coherent application of the best conservation and governance principles and approaches, including integrated ecosystem-based management and the precautionary approach.

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Robin Warner, Philomène Verlaan and Gail Lugten



IUCN GLOBAL MARINE AND POLAR PROGRAMME





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This paper is to be read in conjunction with two others: one on seamount biodiversity (Volume 1) and one on threats to seamount ecosystems (Volume 2).

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Publications Services
Rue Mauverney 28
1196 Gland
Switzerland
Tel +41 22 999 0000
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I. EXECUTIVE SUMMARY

The International Union for Conservation of Nature (IUCN) is committed to achieving effective protection, restoration and sustainable use of biological diversity and ecosystem processes on the high seas. IUCN Resolution 4.031 (2008), “Achieving conservation of marine biodiversity in areas beyond national jurisdiction”, called, *inter alia*, for the promotion of arrangements, processes and agreements that ensure the consistent, coordinated and coherent application of the best conservation and governance principles and approaches, including integrated ecosystem-based management and the precautionary approach.

To implement this mandate, IUCN and the United Nations Development Program (UNDP) developed a project entitled “Applying an ecosystem-based approach to fisheries management: focus on

seamounts in the southern Indian Ocean”, which was approved by the Global Environment Facility (GEF) in December 2008. The overarching project objective is to help improve marine resources conservation and management in the high seas. A biodiversity-rich area beyond national jurisdiction (ABNJ) centred on seamounts of the southern Indian Ocean (SIO) will serve as a test case.

Trending NE across approximately 10 degrees of latitude (~41-31 degrees S; see Figure 1, henceforth referred to as the project area) in the SIO, the project area covers five seamount regions, two of which are inside proposed Benthic Protected Areas (BPAs), Atlantis Bank and Coral Seamount, and three outside BPAs. The following states are nearest to the project area: France (via Crozet Island, La Réunion), Madagascar, Mauritius, Mozambique and South Africa.

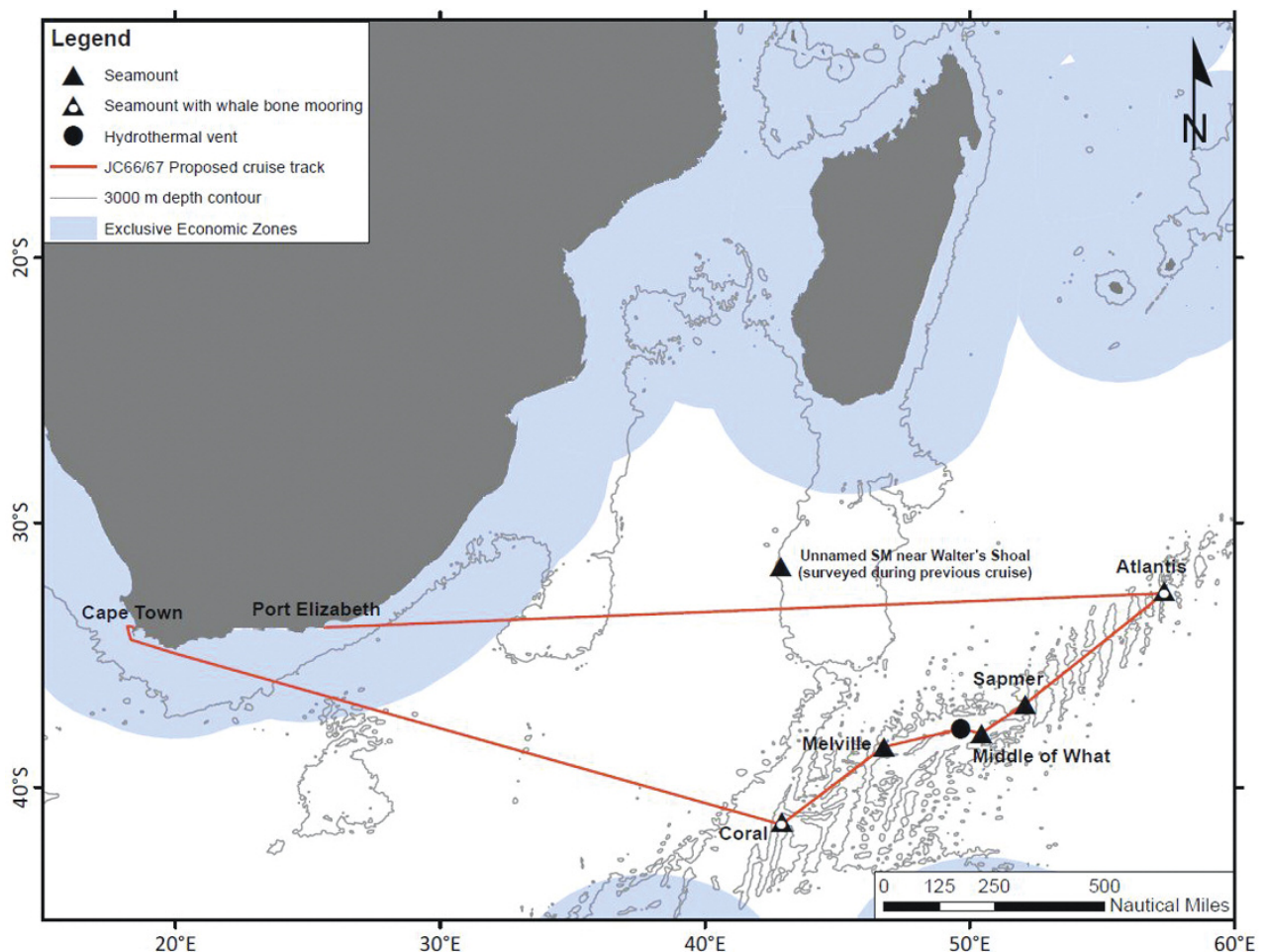


Figure 1: Map of the project area. Route and stations of 2nd research expedition indicated. Light blue shows Exclusive Economic Zones.

The four main components of the project are:

1. Improve scientific understanding of seamounts in the SIO (2 research expeditions, one each in 2009 and 2011);
2. Improve the governance framework for the project area;
3. Develop a model ecosystem-based management framework for the project area;
4. Communications and outreach.

The present paper commences the implementation of the second component. It presents a so-called legal and institutional gap analysis of the project area and proposes improvements to the legal and institutional framework. This type of analysis identifies global and regional legal instruments and institutional arrangements which apply to the project area and assesses any legal and governance gaps related to the conservation of biodiversity in the project area.

This paper is to be read in conjunction with two others commissioned for this project: an overview of seamount ecosystems and biodiversity with a review of knowledge to date, and a study of threats to seamount ecosystems and biodiversity (covering threats caused by fisheries and anthropogenic non-fisheries threats) with a particular focus on the SIO where information is available. These complementary papers are not reprised in the present paper, which addresses only legal and institutional gaps for the governance of the project area.

A number of legally binding and not legally binding global instruments address the protection and preservation of the marine environment and its living resources. This study focuses on the legally binding instruments applicable to the project area. Annex 2 briefly reviews the principal related instruments that are not legally binding. They provide guidance for the implementation of the existing legally binding obligations and form the basis for their further development.

The 1982 Law of the Sea Convention (LOSC) is the overarching primary legally binding global instrument of international law governing the oceans. Analyzed in Part III, it sets out detailed obligations on states for marine environmental and

living resource protection, conservation and management throughout the ocean, including ABNJ, and hence also to the project area. States must cooperate on a global and, as appropriate, regional basis for marine environmental and living resource protection, conservation and management and to formulate and elaborate international rules and standards and recommended practices and procedures for the protection and preservation of the marine environment and conservation of living resources.

Even on the high seas, i.e., in ABNJ and thus in the project area, states are circumscribed in what they may do. The exercise of so-called high seas freedoms is subject to the conditions laid down by the LOSC, which include the provisions on marine environmental and living resource protection, conservation and management LOSC Part XII on the marine environment, and by other rules of international law. These freedoms must be exercised by all states with due regard for the interests of other states in their exercise of the freedom of the high seas. The 'due regard' obligation was interpreted by the International Court of Justice to require cooperation between states for conservation of living resources even on the high seas, when "the needs of conservation for the benefit of all" are involved. The parties were also required "to take full account...of any fishery conservation measures the necessity of which is shown to exist in those waters." Hence these obligations are applicable to the project area.

The LOSC does not depend on its implementation through development of annexes and protocols. It is wholly applicable to its [162 as of 12/2011] States Parties. Those parts of the LOSC that reflect or have become customary international law are generally considered to apply to non-parties. Signatories that have not yet ratified the LOSC are obliged under international law not to take any actions that would defeat the object and purpose of the LOSC.

Recognizing the need for ecosystem-based management of the oceans, the LOSC requires States to take measures to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life. This obligation applies

throughout the oceans and thus also to the project area. In this regard the global Convention on Biological Diversity (CBD), with its addition of the concept of biological diversity to the lexicon of international law, complements the LOSC. In relation to the marine environment, the CBD requires that it be implemented consistently with the rights and obligations of States under the LOSC. This provision reinforces the CBD, as parties to both instruments must comply with the far stronger obligations imposed by the LOSC on States to protect and preserve the marine environment under Part XII, including in ABNJ, and hence in the project area. As further described in Part III, the CBD also assists in the implementation of the LOSC's marine environmental protection requirements through its provision of details on the definition of biological diversity and its conservation.

The LOSC sets out specific obligations governing environmental effects of maritime traffic, including dumping at sea of wastes and other matter. These obligations are further defined in a suite of global conventions dealing with pollution by oil, noxious liquid substances in bulk, harmful substances carried by sea in packaged form, sewage, garbage, air pollution, ballast water, dumping, and emergency responses to spills, usually promulgated under the auspices of the International Maritime Organization, and addressed in Part III.

With regard to fisheries, the LOSC, the UN Fish Stocks Agreement and the Food and Agriculture Organization (FAO) High Seas Compliance Agreement are the principal global legally binding instruments applicable to ABNJ and hence also to the project area. The so-called high seas freedom of fishing, already limited by the marine environmental provisions of the LOSC, and arguably by the biodiversity provisions of the CBD, is further circumscribed by these instruments.

Additional protection to the project area is afforded by specific species-focused global legally binding instruments, in particular those related to cetaceans and migratory species, and to trade in endangered species generally, all also addressed in Part III, as is the underwater cultural heritage of the project area, which is also protected by a dedicated convention.

The seabed of the project area is part of the so-called Area and is under the jurisdiction of the International Seabed Authority (ISA), an intergovernmental body set up and governed by the LOSC and its Part XI Implementing Agreement. The ISA is responsible for adopting appropriate rules, regulations and procedures for the prevention of pollution and other hazards to the marine environment caused by activities in the Area and for the protection and conservation of the natural resources of the Area. States have a complementary obligation under the LOSC to adopt laws and regulations, no less effective than those adopted by the ISA, to prevent, reduce and control pollution of the marine environment from activities in the Area undertaken by their flag vessels, installations, structures and other devices. In the Indian Ocean, as of 12/2011, the ISA has issued one exploration license for polymetallic nodules in the Central Indian Ocean Basin (Figure 2) to the Government of India. The ISA has issued 2 sets of regulations, for polymetallic nodules and for sulphides, respectively, that impose stringent and comprehensive environmental protection obligations on the States and State-sponsored entities involved in the prospecting and exploration phases for these deposits. The Regulations and ISA's Environmental Guidelines for Polymetallic Nodules provide useful examples of Environmental Impact Assessment (EIA) for activities that could affect benthic habitats.

Although a number of unresolved sovereignty disputes exist in the western Indian Ocean, none affect the project area. The five states nearest the project area have each proclaimed a 200-nautical-mile Exclusive Economic Zone (EEZ) and each benefits from a 200-nautical-mile 'legal' continental shelf. Future challenges for the Indian Ocean will include the settling of extended continental shelf claims. States can claim a continental shelf beyond 200 nautical miles, up to a total of 350 nautical miles, where certain physical criteria are met. Claims must be lodged with the Commission on the Limits of the Continental Shelf; the deadline for doing so having passed for the five States nearest the project area on 30 May 2009.

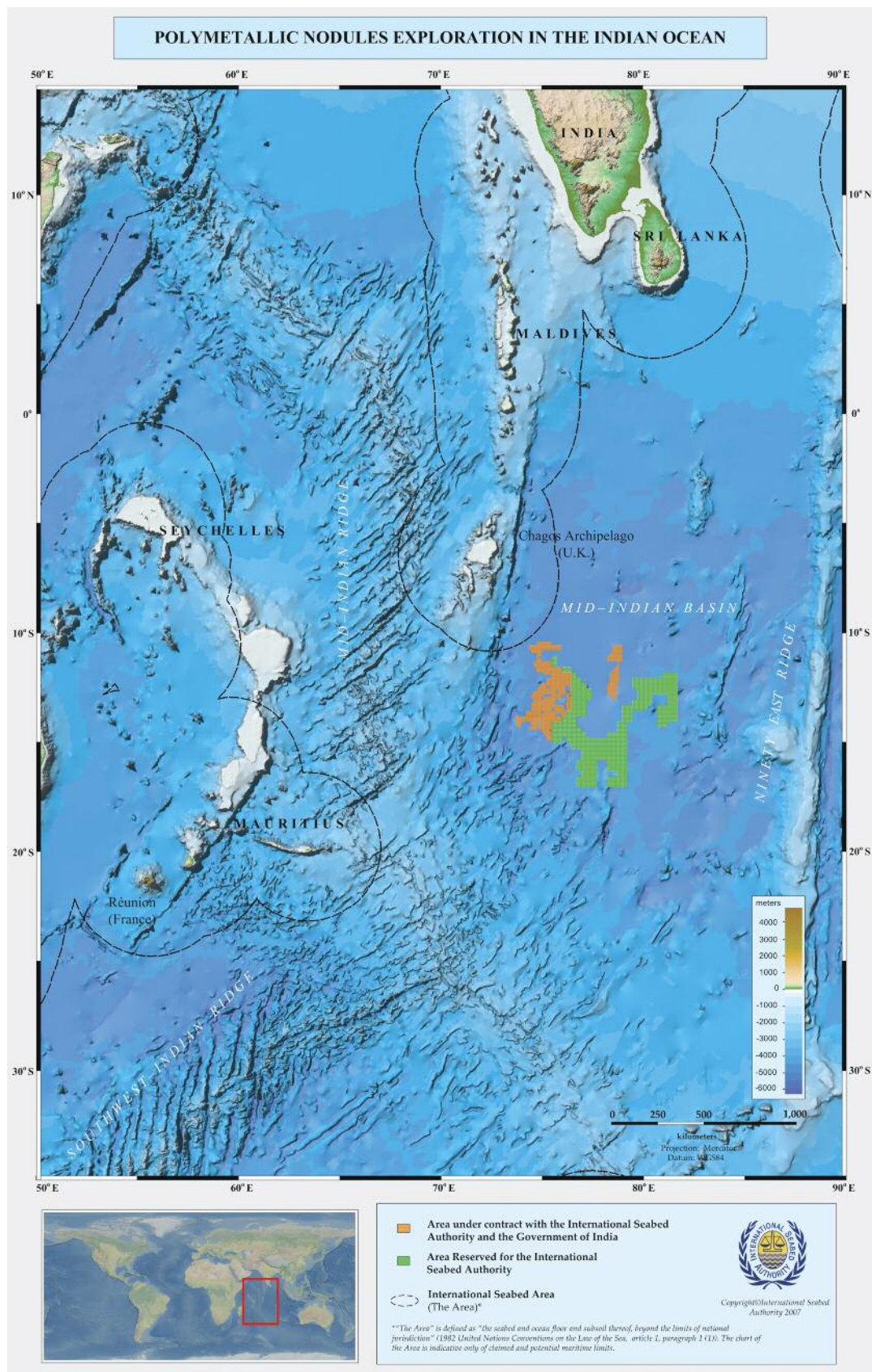


Figure 2: Polymetallic Nodule Exploration Area licensed by the International Seabed Authority in the Central Indian Ocean

Particularly since the adoption of the LOSC, international law has recognised the importance of regional cooperation as an important tool in the conservation and management of marine biodiversity. With regard to the project area, no ready-made regional institutional mechanism for the management of the project area currently exists in the region. However, four potentially relevant regional mechanisms are present, two with a marine environmental focus and two with a fisheries focus. These are briefly summarized below.

The *Eastern African Regional Sea Programme*, whose members include the five states nearest the project area. Developed under the auspices of UNEP and headquartered in the Seychelles, it is governed by the legally binding Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region (Nairobi Convention) and two Protocols (on Protected Areas and Wild Fauna and Flora, and on Co-operation in Combating Marine Pollution in Cases of Emergency), which provide a mechanism for regional cooperation to address marine and coastal environmental issues.

The *Agulhas and Somali Current Large Marine Ecosystem Project* (ASCLME), a regional mechanism developed under the auspices of the GEF, whose objectives are to gather information on all aspects of the LME, to document environmental threats facing the LME, to develop an action plan for dealing with transboundary threats, and to introduce an ecosystem approach to managing the marine resources of the western Indian Ocean. The five States nearest the project area are participants.

The *Indian Ocean Tuna Commission* (IOTC), set up by an Agreement under FAO auspices for the purpose of conserving and managing tuna and tuna-like species that migrate into or out of the Indian Ocean, including the project area, and encouraging sustainable development of fisheries based on such stocks. The lack of an ecosystem approach to fisheries management, the absence of the precautionary approach, and no application of area-based management tools were deficiencies noted in a 2008 performance review. Of the five states immediately adjacent to the

project area, only Mozambique is not a member of the IOTC.

The *Southern Indian Ocean Fisheries Agreement* (SIOFA), signed but not ratified by four of the states (South Africa is not a signatory) nearest the project area, and not yet in force. The EU is a party in its own right, but France is not. Its objective is to ensure the long-term conservation and sustainable use of the fishery resources in the SIOFA area through cooperation among the Contracting Parties. It covers the project area and excludes all waters under national jurisdiction. Although the waters of SIOFA and the IOTC overlap, the two agreements are responsible for different species of fish. Whereas the IOTC has a mandate for tuna and tuna-like highly migratory fish, the SIOFA is concerned with other fish species, especially demersals (such as orange roughy) which have attracted substantial fishing effort. The SIOFA incorporates more modern principles of environmental and fisheries management, including the duty of states to cooperate, implementation of an ecosystem approach to fisheries management, application of the precautionary approach, protection of biodiversity in the marine environment and a requirement that fishing practices shall take due account of the need to minimize the harmful impact that fishing activities may have on the marine environment.

Two other bodies with a fisheries focus were examined but not found to be relevant, at least not currently, as potential appropriate institutional mechanisms for the management of the project area. These are the South West Indian Ocean Fisheries Commission (SWIOFC) and the Asia-Pacific Fishery Commission (APFIC).

A potentially valuable partner could be found in a private industrial fisheries grouping, the Southern Indian Ocean Deepsea Fishers' Association (SIODFA), which unites the fishing companies that conduct most of the deepwater fishing in the southern Indian Ocean. Its primary goals are to set self-imposed restrictions to maintain unsubsidised, profitable and environmentally sustainable fisheries and to set international best practice for responsible deep-sea fishery management. SIODFA voluntarily closed more

than 300,000 square kilometres to trawling, by creating 11 BPAs, which include part of the project area.

There is ample international and, to a certain extent, regional law available to provide a solid legal basis to justify setting aside the project area for marine environmental, biodiversity and living resources protection purposes. Lacking is a specific regulatory and implementation mechanism for the project area and a body to administer and enforce it. The regulatory mechanism will need to address the fisheries and non-fisheries threats to the project area – essentially implementing the international and regional laws and regulations already in place to address these threats – and identify species of common concern and priorities for protection in the project area, including the creation of a representative network of marine protected areas (MPAs) in the project area. The Nairobi Convention and its Protocols and the GEF ASCLME project each provide a platform for regional cooperation and possibly a home for the administrative body, although this ideally should be located in one of the five states nearest to the project area. There certainly are common species of concern here. The valuable industry contribution by SIODFA to the preservation and management of ABNJ in the SIO in general and the project area in particular should be recognized, encouraged and if possible reinforced with supportive legislation. Thus the absence of an immediately appropriate regional mechanism is not an insuperable obstacle.

The principal problem – or gap – with regard to protection and preservation of the marine environment and its living resources and biodiversity lies in obtaining effective compliance with and enforcement of the law. The primary responsibility for this lies with flag states, especially in ABNJ, including the project area. Because some flag states' execution of this responsibility is inadequate, port and coastal states are increasingly assuming compliance and enforcement functions. Although they increasingly apply LOSC and IMO standards to all non-compliant ships in their ports, regardless of what the flag state may – or may not – require or be party to, port and coastal states have few legal

options and even fewer resources for dealing with violations occurring at sea in ABNJ. This is especially the case in the project area, where the nearest coastal states are all, with one exception (France), still developing countries. Recommendations for improvement in legal and regulatory governance of the project area are summarized below.

1. Change the focus of the IUCN GEF-UNDP Seamounts project from the existing sectoral orientation to a broader ecosystem management approach for the region, noting that fisheries is an important component.
2. A primary aim of this project should be to enhance cooperation between existing bodies and organisations rather than creating a new body.
3. Use the ASCLME project and its existing and evolving partnerships to explore the development of an alliance as a working arrangement to demonstrate effective management and governance mechanisms for ABNJ in the Indian Ocean.
4. This alliance concept should include the initiation of joint programs, plans of action, and MOUs to promote cooperation amongst the coastal states of the South West Indian Ocean, the signatories and parties to SIOFA, and the secretariats or administrative units of all relevant public and private bodies (such as the IOTC, SWIOFC, the Nairobi Convention, the ASCLME and SWIOF projects, Indian Ocean Commission, ISA, FAO, the Port State Control Memorandum of Understanding and SIODFA).
5. The initial composition of the alliance should not exclude consideration being given to including additional States and parties who are stakeholders in the sustainable development, management and use of the resources of the ABNJ in the Indian Ocean.
6. Within the region, it is in particular recommended to:
 - Encourage implementation of existing relevant instruments, including applicable UN Resolutions

- Encourage flag States with vessels engaged in deep-sea bottom fishing in the region to adopt measures consistent with UNGA Resolutions 61/105 and 64/72 and the 2009 FAO International Guidelines for Deep Sea Fishing
 - Encourage Parties and signatories of SIOFA to bring the agreement into force and to update the 2006 interim measures bringing them into line with the 2009 FAO International Guidelines for Deep Sea Fishing
 - Collaborate with the CBD Secretariat and FAO to convene a sub-regional workshop or workshops with relevant States, authorities, experts and stakeholders to identify ecologically and biologically significant areas (EBSAs) and vulnerable marine ecosystems (VMEs) in the Indian Ocean ABNJ
 - Remove market inefficiencies such as subsidies from industrial-level fishing operations in ABNJ
 - Encourage relevant regional bodies such as the Nairobi Convention and the IOTC to explore the feasibility and appropriateness of expanding their existing mandates so as to address ecosystem management in the ABNJ more effectively
 - Encourage effective management of all other activities that represent risks to biodiversity and ecosystem functions in ABNJ in the Indian Ocean
7. Support negotiations in the UN to draft a multilateral agreement under the LOSC on conservation of biodiversity in marine ABNJ that would create a framework for all currently unregulated activities, ensure that best conservation principles are incorporated and applied in all activities and sectors in marine ABNJ, improve communications among State and non-State actors in marine ABNJ, and improve compliance and enforcement mechanisms.

II. INTRODUCTION

A. Background

The International Union for Conservation of Nature (IUCN) is committed to achieving effective protection, restoration and sustainable use of biological diversity and ecosystem processes on the high seas. IUCN Resolution 4.031 (2008), “Achieving conservation of marine biodiversity in areas beyond national jurisdiction”, called, *inter alia*, for the promotion of arrangements, processes and agreements that ensure the consistent, coordinated and coherent application of the best conservation and governance principles and approaches, including integrated ecosystem-based management and the precautionary approach.

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Trending NE across approximately 10 degrees of latitude (~38-28 degrees S; see Figure 1 (on page 1), henceforth referred to as the project area) in the SIO, the project area covers five seamount regions, three of which are inside proposed Benthic Protected Areas (BPAs), Bridle Knolls and Coral Seamount, and two outside BPAs. The following states are nearest to the project area: France (via Crozet Island and La Réunion), Madagascar, Mauritius, Mozambique and South Africa.

The four main components of the project are:

1. Improve scientific understanding of seamounts in the SIO (two research expeditions, one each in 2009 and 2011);
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4. Communications and outreach.

B. Purpose and Approach of the Paper

The present paper commences the implementation of the second component. It presents a so-called legal and institutional gap analysis of the project area and proposes improvements to the legal and institutional framework. This type of analysis identifies global and regional legal instruments and institutional arrangements which apply to the project area and assesses any legal and governance gaps related to the conservation of biodiversity in the project area.

This paper is to be read in conjunction with three others commissioned for this project: a review of knowledge to date on seamount ecosystems and biodiversity, with specific data on the SIO where these are available; a study of threats to seamount ecosystems and biodiversity caused by fisheries; and a study of anthropogenic non-fisheries threats to seamount ecosystems and biodiversity. These complementary papers will not be reprised in the present legal and institutional gap analysis.

C. Acknowledgments

The original authors are indebted to all the sources listed in the references. They have not, because of the particular requirements and constraints of the present paper, credited these sources individually at the point(s) where their work has been referred to or their ideas invoked. Any errors in interpretation of the excellent and extensive work listed in the references are entirely those of the original authors. The revisor joins in this appreciation of the sources and of the work of the original authors, and also in the disclaimer, both for any errors of her own, and insofar as her revision may have added, contributed to or compounded any errors in the original.

III. GLOBAL LEGAL INSTRUMENTS APPLICABLE TO THE INDIAN OCEAN

A. General Marine and Conservation Framework

A substantial body of so-called hard law (legally binding) and soft law (voluntary, not legally binding) instruments has been developed to address the protection and preservation of the marine environment. This study focuses on the legally binding ("hard law") instruments for marine environmental conservation and management applicable to the project area. Annex 1 sets out the regionally relevant parties, signatories and status of these legally binding instruments. A brief overview of the principal related "soft law" instruments is given in Annex 2. These instruments are useful to illustrate the practicalities required and to provide guidance for the implementation of the existing legally binding obligations and to form the basis for the further development of these obligations.

1. 1982 United Nations Convention on the Law of the Sea

(a) Overview

The 1982 Law of the Sea Convention (LOSC) is the overarching and primary legally binding instrument of international law governing the oceans. It provides for marine environmental and living resource conservation and management throughout the ocean, including ABNJ, and hence also to the project area. The LOSC is wholly applicable to its 162 (as of 12/2011) States Parties. Those parts of the LOSC that reflect or have become customary international law may apply to non-parties. Signatories that have not yet ratified the LOSC are obliged under international law not to take any actions that would defeat the object and purpose of the LOSC.¹ Non-signatory non-parties may join the LOSC by accession at any time.

The Preamble to the LOSC states that the Parties intend to establish "a legal order for the seas and oceans which will facilitate international communication, and will promote the peaceful uses of the seas and oceans, the equitable and efficient utilization of their resources, the

conservation of their living resources, and the study, protection and preservation of the marine environment," bearing in mind "that the problems of ocean space are closely interrelated and need to be considered as a whole." Consequently, the LOSC is not a traditional 'framework treaty'; it does not depend on its implementation through development of annexes and protocols and "its provisions form an integral whole."

Detailed obligations on states with regard to the marine environment and living resources are found throughout the LOSC. All of its Part XII is devoted to setting out rules for the preservation and protection of the marine environment. Part XII begins by stating the clear and wholly unqualified obligation of states "to protect and preserve the marine environment" (Article 192). States do not yet sufficiently recognize the implications of the uncompromising and undiluted nature of this fundamental environmental requirement. Even less recognized is the increasing consensus among commentators that Article 192 is now customary international law; this may now also be so for much the rest of Part XII. The significance of this status as customary international law is that a number of commentators consider that LOSC non-parties are thereby bound to comply with the relevant provisions.

Article 194 elaborates on Article 192, requiring states to: "take, individually or jointly as appropriate, all measures consistent with this Convention that are necessary to prevent, reduce and control pollution of the marine environment from any source, using for this purpose the best practicable means at their disposal and in accordance with their capabilities..." (Article 194 (1).) Note that the obligation on states to take such measures is unqualified; the *nature* of the measures taken is subject to the two qualifications set out after the overarching obligation. States must also "refrain from unjustifiable interference with activities carried out by other States in the exercise of their rights and in pursuance of their duties in conformity with [the LOSC]." (Article 194 (4).)

¹ A signatory state "is obliged to refrain from acts which would defeat the object and purpose of a treaty..." (Article 18, Vienna Convention on the Law of Treaties, 1969).

Article 194 also requires states to:

- "ensure that activities under their jurisdiction and control are so conducted as not to cause damage by pollution to other states and their environment (Article 194 (2));
- (ensure) that pollution arising from incidents or activities under their jurisdiction or control does not spread beyond the areas where they exercise sovereign rights in accordance with this Convention.... (Article 194 (2));
- deal with all sources of pollution of the marine environment.... (Article 194 (3));
- protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life." ((Article 194 (5).)

Note that the obligations on states to "ensure," "deal," and "protect and preserve" set out in Article 194 (2), (3) and (5) are unqualified. These obligations are not limited to marine and are therefore applicable to the project area.

Article 195 obliges states "not to transfer, directly or indirectly, damage or hazards from one area to another or transform one type of pollution into another." States must "prevent, reduce and control pollution of the marine environment resulting from the...intentional or accidental introduction of species, alien or new, to a particular part of the marine environment, which may cause significant and harmful changes thereto" (Article 196), and they must "jointly develop and promote contingency plans for responding to pollution incidents in the marine environment" (Article 199). These obligations are not limited to marine areas within national jurisdiction and are therefore applicable to the project area.

States are "responsible for the fulfilment of their international obligations concerning the protection and preservation of the marine environment. They shall be liable in accordance with international law" (Article 235(1)). Furthermore, "states must ensure that recourse is available in accordance with their

legal systems for prompt and adequate compensation or other relief in respect of damage caused by pollution of the marine environment by natural or juridical persons under their jurisdiction" (Article 235(2)). Finally, the LOSC does not affect recourse to "civil proceedings in respect of any claim for loss or damage resulting from pollution of the marine environment" (Article 229).

Even on the high seas, i.e., in ABNJ and thus in the project area, states are circumscribed in what they may do. The exercise of so-called high seas freedoms is subject to the "conditions laid down by this Convention" which includes LOSC Part XII on the marine environment, "and by other rules of international law" (Article 87). These freedoms must be "exercised by all states with due regard for the interests of other states in their exercise of the freedom of the high seas" (Article 87(2)). Hence these obligations are applicable to the project area.

In the Exclusive Economic Zone (EEZ), coastal states must have due regard to the rights and duties of other states in exercising their own rights and performing their own duties under the LOSC (Article 56(2)). The concomitant obligations for the other states in terms of their rights and duties *vis-à-vis* those of coastal states are established and those other states must "comply with the laws and regulations adopted by the coastal state in accordance with ... [the LOSC]... and other rules of international law..." (Article 58(3).)

The 'due regard' obligation was interpreted by the International Court of Justice (ICJ) to require cooperation between states for conservation of living resources even on the high seas, when "the needs of conservation for the benefit of all" are involved, replacing the former "laissez-faire treatment of the living resources of the sea in the high seas."² The parties were also required "to take full account...of any fishery conservation measures the necessity of which is shown to exist in those waters."³ Hence this obligation is applicable to the project area.

² *Fisheries Jurisdiction Case (United Kingdom v. Iceland)*, Decision of 25 July 1974, ICJ, para. 72.

³ *Ibid.*

A ship engaging in 'innocent passage' through the territorial sea of another state must do so "in conformity with [the LOSC] and with other rules of international law" (Article 19(1)); with regard specifically to the marine environment, passage is not innocent if the ship "engages in ... any act of wilful and serious pollution contrary to [the LOSC]" (Article 19(2)(h)).

The LOSC Articles relating to compliance with and enforcement of its rules are addressed in Part VII below.

(b) Definition of Pollution and Dumping

The pollution definition in the LOSC is precautionary and comprehensive: "the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities" (Article 1(4)). Dumping is "any deliberate disposal at sea of wastes or other matter from vessels, aircraft, platforms or other man-made structures" and of "vessels, aircraft, platforms or other man-made structures" themselves (Article 1(5)).

(c) Environmental Obligations for Maritime Traffic

With regard to environmental effects of maritime traffic (hereinafter referred to as vessel-source pollution (VSP) and including dumping at sea unless specifically distinguished), Articles 210 and 211 place the unqualified obligation on states to adopt laws and regulations to prevent, reduce and control pollution of the marine environment by dumping and from vessels, respectively. For dumping, "states, acting especially through competent international organizations or diplomatic conference, shall endeavour to establish global and regional rules, standards and recommended practices and procedures to prevent, reduce and control such pollution." (Article 210.) For pollution from vessels, the obligations are even stronger: "states, acting

especially through competent international organizations or diplomatic conference, shall establish international rules and standards" to prevent, reduce and control such pollution. In both cases, these international rules, once adopted, are *minimum* standards. (Article 211.)

National rules, *regardless of individual national capacities or other national considerations*, must be established and they must be at least as effective as the global rules. Although not referred to as such in the LOSC,⁴ for VSP, the competent international organization is the International Maritime Organization (IMO). The LOSC recognizes the role of competent international organizations and diplomatic conferences in supplementing the LOSC framework for the protection and preservation of the marine environment and the prevention, reduction and control of marine pollution control through specific regulatory instruments.

The LOSC recognizes the need for ecosystem-based management of the oceans in Article 194(5), which imposes a positive and unqualified duty on States to take measures to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life. This obligation is not limited to marine areas within national jurisdiction and is therefore applicable to the project area. The obligations imposed on States in Articles 195 and 196(1) of Part XII not to transfer, directly or indirectly, damage or hazards from one area to another and to prevent, reduce, and control pollution of the marine environment from the intentional or accidental introduction of alien or new species that may cause significant and harmful changes to a particular part of the marine environment could also be interpreted as a prohibition on using any marine areas, including the project area, as dumping grounds for waste, pollutants or other matter, or for discharge of ballast water.

The duty of States to cooperate on a global and, as appropriate, regional basis in the protection of the marine environment and to formulate and

⁴ IMO is specifically listed in LOSC Annex VIII, Article 2, in the context of special arbitration and lists of experts.

elaborate international rules and standards and recommended practices and procedures for the protection and preservation of the marine environment is highlighted in Article 197 of the LOSC. The precise content of this obligation is not specified but some guidance as to the nature of such cooperation can be gleaned from the surrounding Articles in Section 2 and subsequent sections of Part XII. States are required to notify the competent international organizations when they become aware of cases in which the marine environment is in imminent danger of being damaged or has been damaged by marine pollution and to develop contingency plans for responding to pollution incidents in the marine environment. They must also cooperate directly or through competent international organizations for the purpose of promoting studies, undertaking programmes of scientific research and encouraging the exchange of information and data acquired about the pollution of the marine environment, participate actively in programmes to assess the nature and extent of marine pollution, exposure to it and its pathways, risks and remedies. On the basis of this information States must establish scientific criteria for the formulation and elaboration of rules and standards and recommended practices and procedures for the prevention, reduction and control of marine pollution. All these obligations extend to ABNJ. The extensive regulatory activities undertaken by IMO on VSP and by the parties to the London Convention and Protocol on dumping at sea are examples of such cooperation. The burden of implementing and enforcing these rules, practices and procedures in ABNJ has largely fallen on flag States, as discussed further below.

Under Articles 204 and 206 of Part XII, States with reasonable grounds for believing that planned activities under their jurisdiction or control, including those in marine ABNJ, which may cause substantial pollution or significant and harmful changes to the marine environment, must assess the potential effects of such activities. They must also monitor the effects of ongoing activities on the marine environment. This obligation extends to communicating the results of such assessments and observations to competent international organizations, such as the Regional Seas Programmes.

Although LOSC Article 237 specifies that the provisions of Part XII are without prejudice to the specific obligations assumed by states under other conventions on the protection and preservation of the marine environment, it also provides that such obligations should be carried out in a manner consistent with the general principles and objectives of the LOSC. A degree of flexibility is accorded to sovereign-owned or -operated vessels in complying with the marine environmental protection provisions of the LOSC in Article 236. This Article exempts any warship, naval auxiliary or other vessels or aircraft owned, operated, or used, for the time being, only on government non-commercial service, from the application of the LOSC's provisions on protection and preservation of the marine environment, but it qualifies this exemption by providing that each State shall ensure by the adoption of measures, without impairing the operations or operational capabilities of its vessels or aircraft, that they act in a manner consistent, so far as is reasonable and practicable, with the LOSC.

Article 221 of the LOSC provides for a right of intervention on the part of States to take and enforce measures proportionate to actual or threatened damage to protect their coastlines or related interests, including fishing, from pollution or threats of pollution following upon a maritime casualty or acts relating to such a casualty, which may reasonably be expected to result in major harmful consequences, beyond their territorial sea, and hence also in ABNJ.

(d) Conservation of Living Resources Including Fisheries

The freedom of fishing on the high seas is qualified by several Articles in Part VII Section 2 of the LOSC. Under Articles 117 and 118 of the LOSC States must take unilateral and cooperative measures to conserve the living resources of the high seas, including establishing regional and sub-regional fisheries organizations. Article 119 of the LOSC adopts the maximum sustainable yield for determining the allowable catch, but qualifies that objective with broader environmental considerations. States must take conservation and management measures for high seas living resources based on the best scientific evidence available and taking into account relevant

environmental factors, such as the interdependence of stocks and the effects on species associated with or dependent on harvested species, with a view to maintaining or restoring populations of such associated or dependent species above levels at which their reproduction may become seriously threatened.

(e) Relationship of the LOSC with Other Legally Binding Global and Regional Instruments

The LOSC is not intended to be static or to operate in isolation: it envisages its own evolution and development in a dynamic international context, as long as its fundamental objectives and purposes are not thereby undermined. This is evident from its stated relationship with general international law (which, pursuant to the Preamble, continues to govern "matters not regulated by (the LOSC)" and is also invoked elsewhere in the LOSC), with other global and regional treaties (which the LOSC also refers to), and through the incorporation by reference in the LOSC of other generally accepted international agreements, rules and standards (these are referred to in, for example, LOSC Articles 207-214 and 217-220).

The obligations set out in Part XII "are without prejudice to the specific obligations assumed by states under special conventions and agreements concluded previously which relate to protection and preservation of the marine environment and to agreements which may be included in furtherance of the general principles set forth in this Convention" (Article 237). It continues: "specific obligations assumed by states under special conventions with respect to protection and preservation of the marine environment, should be carried out in a manner consistent with the general principles and objectives of this Convention."

Article 311 provides, *inter alia*, that the LOSC "shall not alter the rights and obligations of states parties which arise from other agreements compatible with this Convention and which do not affect the enjoyment by other states parties of their rights or the performance of their obligations under this Convention" and this Article "does not

affect international agreements expressly permitted or preserved by other articles of this Convention." In general, the LOSC prevails over other conventions related to the marine environment where the latter, even if concluded afterwards (see, e.g., Article 311(3)), are inconsistent or incompatible with the LOSC.

Furthermore, at least as regards VSP and dumping, the LOSC is considered as operating to strengthen global, legally binding environmental instruments that are not inconsistent or incompatible with it. This result arises from a combination of the following elements in the LOSC:⁵

- i) the clear and wholly unqualified obligation of LOSC parties under Article 192 to protect and preserve the marine environment;
- ii) the unqualified obligation under Article 194(1) to take "all measures consistent with ... [the LOSC] ... that are necessary to prevent, reduce and control pollution of the marine environment from any source, using for this purpose the best practicable means at their disposal and in accordance with their capabilities...." and under Article 194(3) to ensure that the measures taken "deal with all sources of pollution of the marine environment;"
- iii) the incorporation by reference into the obligations of the LOSC of more detailed global (dumping) or international (VSP) rules and standards (hereinafter referred to as GAIRS for generally accepted international rules and standards) established by a (dumping) or *the* (VSP) "competent international organization" or "diplomatic conference" (Articles 210 and 211, respectively);
- iv) the requirement that national laws and regulations "shall be no less effective than" (Article 210, dumping) or "shall at least have the same effect as that of" (Article 211, VSP) such GAIRS.

The LOSC further strengthens the operation of the VSP Conventions by making the GAIRS they

⁵ For a detailed discussion, see ILA, 2000 and Oxman, 1991.

establish applicable to states that are not party to them, but are party to the LOSC, by virtue of the elements listed above. As discussed in Part V below, the LOSC's enforcement and compliance provisions also contribute to reinforcing the VSP Conventions.

2. 1992 Convention on Biological Diversity

The LOSC and the Convention on Biological Diversity (CBD) are complementary and operate to strengthen and reinforce each other. The CBD requires "contracting parties [to] implement [it] with respect to the marine environment consistently with the rights and obligations of states under the law of the sea" and its provisions "shall not affect the rights and obligations of any contracting party deriving from any existing international agreement, except where the exercise of those rights and obligations would cause a serious damage or threat to biological diversity" (Article 22).

The CBD is a so-called framework convention, negotiated under the auspices of UNEP to assist States in arresting the alarming rate of extinction of species and the destruction of their habitats. The addition of the concept of biological diversity (often now abbreviated to 'biodiversity') to the lexicon of international law strengthens and expands the legal arsenal available for the protection and preservation of the marine environment. Article 2 of the CBD defines biological diversity as "the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part" and including "diversity within species, between species and of ecosystems."

Article 1 of the CBD sets out its three objectives: conservation of biodiversity; the sustainable use of biodiversity components; and fair and equitable sharing of benefits arising from the utilisation of genetic resources. However, for the purposes of allocating substantive rights and obligations, the components of biological diversity were divided between those within and those beyond the limits of national jurisdiction. Article 4 limits the application of the CBD to components of biodiversity in areas within the limits of national jurisdiction and to processes and activities related

to biodiversity carried out under the jurisdiction or control of the Contracting Parties both within and beyond national jurisdiction. For the conservation and sustainable use of components of biological diversity in ABNJ, Article 5 limits the obligations of the Contracting Parties to a duty to cooperate directly or through competent international organisations. This provision is consistent with the LOSC, but parties to both instruments remain required to comply with the mandatory and far stronger obligations imposed by the LOSC on States to protect and preserve the marine environment under Part XII in particular, including in ABNJ, and hence in the project area.

The majority of the CBD's provisions relate to the conservation, sustainable use and benefit-sharing of the components of biodiversity within national jurisdiction. They provide guiding principles for States establishing national programs for biodiversity conservation rather than a set of binding obligations. These provisions contain potentially useful elements for the design of a program for the conservation and sustainable use of the components of biodiversity in ABNJ, including the project area. Under Article 7, Contracting Parties must identify components of biodiversity important for its conservation and sustainable use; an indicative list of categories is set down in Annex I to the CBD. Contracting Parties must monitor, through sampling and other techniques, identified components of biodiversity, paying particular attention to the need for urgent conservation measures and to those components which offer the greatest potential for sustainable use. As part of this information-gathering activity, Contracting Parties must identify processes and categories of activities which have or are likely to have significant adverse impacts on the conservation and sustainable use of biodiversity and to monitor their effects. Article 7 requires Contracting Parties to maintain and organise data obtained from these identification and monitoring processes.

Articles 8 and 9 specify two key biodiversity protection measures that could be applied to components of marine biodiversity in ABNJ. Article 8 contains a comprehensive description of the principles and measures associated with *in*

situ conservation of biodiversity, defined in Article 2 as “the conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings.” Contracting Parties must promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings, rehabilitate and restore degraded ecosystems, and promote the recovery of threatened species. A principal means of achieving *in situ* conservation is the establishment of protected areas or areas where special measures need to be taken to conserve biodiversity. Under Article 8 (b), Contracting Parties must develop guidelines for the selection, establishment and management of such areas. Article 8(h) requires Contracting Parties to prevent the introduction into the marine environment of alien species which threaten ecosystems, habitats or species.

Article 14 of the CBD provides that Contracting Parties must introduce environmental impact assessment (EIA) procedures for proposed projects that are likely to have significant adverse effects on biodiversity in order to avoid or minimise such effects. The CBD has developed Voluntary Guidelines on Biodiversity-Inclusive Impact Assessment (Annex I to Decision VII/28, 9 January 2008; see Annex 2 of the present paper), and is currently working on supplementing those Guidelines to provide advice to States on EIA processes for activities with the potential to significantly affect marine ABNJ.

In relation to the marine environment, Article 22(2) of the CBD specifies that Contracting Parties must implement the CBD consistently with the rights and obligations of States under the LOSC. This provision reinforces the CBD, as parties to both instruments must comply with the far stronger obligations imposed by the LOSC on States to protect and preserve the marine environment under Part XII, including in ABNJ, and hence in the project area. The CBD also assists in the implementation of the LOSC’s marine environmental protection requirements through its provision of detail on the definition of biological diversity and its conservation.

B. Fisheries-Related Instruments

1. 1995 Agreement for the Implementation of the Provisions of the 1982 UN Convention on the Law of the Sea Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (UN Fish Stocks Agreement)

The UN Fish Stocks Agreement addresses the over-exploitation of highly migratory and straddling fish stocks that transit marine areas within and beyond national jurisdiction and attempts to resolve the growing tension between coastal and distant-water fishing States over this situation. Coastal States have strong economic incentives to establish a regime for conservation and management of these stocks which is compatible with the conservation and management regimes they were implementing in their EEZs. Following the extension of coastal State jurisdiction over marine living resources to a maximum breadth of 200 nautical miles under the LOSC, distant-water fishing fleets began to concentrate much of their effort in areas immediately adjacent to the EEZs of coastal States. This led to over-exploitation of straddling and highly migratory fish stocks which spend part of their life cycles in these areas. Coastal State efforts to conserve and manage these stocks in their EEZs were destined to fail without compatible measures being taken in adjacent high seas areas. The UN Fish Stocks Agreement provides the first comprehensive blueprint for sustainable fisheries management in marine ABNJ and model provisions for cooperation between coastal States and flag States with high seas fishing fleets. In addition to codifying principles of international environmental law for conservation and management of marine living resources, it provides practical guidance for regional fisheries management organisations (RFMOs) on establishing cooperative compliance and enforcement measures, rather than relying solely on the individual efforts of flag States to enforce compliance.

Subsequent to the UN Fish Stocks Agreement, a complex pattern of high seas fisheries regulation emerged as existing RFMOs adapted their agreements and institutions to incorporate the new provisions and new RFMOs were

established. In some cases the jurisdiction of existing single- and multi-species RFM agreements was extended to high seas areas, while in others completely new regional agreements were negotiated to regulate multi-species exploitation in marine ABNJ. The extent to which modern conservation norms based on international environmental principles have been incorporated into these agreements and implemented into the practice of States Parties in high seas areas is variable. This section examines the environmental protection provisions of the UN Fish Stocks Agreement and related instruments at the global level which address the development, conservation and management of fisheries stocks in marine ABNJ, including the project area. Part V of this study examines the RFMOs and RFMAs in the Indian Ocean and their applicability to the project area.

The principal objective of the UN Fish Stocks Agreement is to ensure the long-term conservation and sustainable use of straddling and highly migratory fish stocks through the effective implementation of the relevant provisions of the LOSC. It implements States' obligations under the LOSC to conserve and to cooperate in the conservation of straddling and highly migratory fish stocks on the high seas and in EEZs, as well as their obligations under the LOSC's marine environmental and the CBD's environmental protection provisions by:

- establishing a framework for regional cooperation to manage highly migratory and straddling fish stocks;
- requiring fisheries management for highly migratory and straddling stocks to be based on precautionary and ecosystem-based approaches;
- specifying in detail the duties of flag States; and
- enhancing means for monitoring, control and enforcement of conservation and management measures for highly migratory and straddling stocks.

The UN Fish Stocks Agreement has arguably extended the potential scope of RFMAs, because it may be interpreted as obliging States Parties and their flag vessels to comply with the

management regulations of all RFMOs regardless of whether they are parties to these agreements. Article 8(4) of the UN Fish Stocks Agreement provides that only those States which agree to implement conservation and management measures established by RFMOs in regard to highly migratory and straddling stocks shall have access to the fishery resources to which those measures apply.

Several principles of current and emerging international environmental law as well as specifications of best practice contained in, e.g., the Oceans Chapter 17 of Agenda 21 (see Annex 2 of the present paper) were incorporated into Article 5 of the UN Fish Stocks Agreement, illustrating, as indicated above, the usefulness of such "soft law" instruments in laying the groundwork for future legally binding agreements. Thus Article 5 requires measures to ensure the long-term sustainability of straddling and highly migratory fish stocks, ensuring that such measures are based on the best scientific evidence available, applying the precautionary approach, assessing the impacts of fishing, other human activities and environmental factors on target stocks and species belonging to the same ecosystem, minimising pollution and catch of non-target species, protecting biodiversity in the marine environment, and implementing and enforcing conservation and management measures through effective monitoring, control and surveillance.

A key benefit of the UN Fish Stocks Agreement is its translation of these general conservation principles into practical recommendations for cooperative action by States either directly or through sub-regional or regional FMOs. Article 6 contains a comprehensive description of how the precautionary approach can be interpreted and applied in the conservation of these fish stocks. The measures prescribed, while consistent with a precautionary approach, can also be related to other conservation norms including sustainable development, use of best scientific evidence, EIA and ecosystem-based management. The Article 6(2) formulation of the precautionary approach sets the threshold for the application of the approach a little lower than that specified in the Rio Declaration. States are urged to "be more

cautious when information is uncertain, unreliable or inadequate” and Article 6 further provides that “the absence of adequate scientific information is not to be used as a reason for postponing or failing to take conservation and management measures.” The remaining provisions in Article 6 specify a range of measures to implement the precautionary approach. States are required to improve decision-making for fishery resource conservation and management by obtaining and sharing the best scientific information available and implementing improved techniques for dealing with risk and uncertainty. On the basis of the best scientific evidence available, States must determine stock-specific reference points that constrain harvesting of fish stocks within safe biological limits within which the stocks can produce maximum sustainable yield. These precautionary reference points are also to be used to develop management strategies to prevent stocks falling below sustainable levels.

The links between straddling and highly migratory stocks and other parts of marine ecosystems are recognised in Article 6(3)(c) and (d) of the UN Fish Stocks Agreement, which provides that States must take into account the impact of fishing activities on non-target and associated or dependent species and their environment, develop data collection and research programs to assess these impacts, and adopt plans to ensure the conservation of such species and to protect habitats of special concern. Cautious conservation and management measures, including catch and effort limits, are recommended for new or exploratory fisheries until sufficient data to allow assessment of the impact of the fisheries on the long-term sustainability of the stocks are available.

2. 1993 FAO High Seas Compliance Agreement

The negotiation of the Food and Agriculture Organization (FAO) High Seas Compliance Agreement (FAO Compliance Agreement) in 1993 was prompted by calls for action in the Declaration of Cancun and the Oceans Chapter of Agenda 21 to reinforce the responsibilities of flag States for fishing vessels entitled to fly their flag and operating on the high seas and to deter

the practice of flagging or re-flagging fishing vessels to States with less stringent compliance regimes for fisheries conservation and management on the high seas. It relies on individual flag States implementing a range of measures for fishing vessels flying their flag and operating on the high seas to ensure that such vessels do not undermine the effectiveness of international conservation and management measures. These include authorising the operation of such vessels through appropriate flag State authorities, complying with international standards for marking and identification of such vessels, maintaining a record of fishing vessels entitled to fly the State's flag and authorised to fish on the high seas, providing relevant identification details for flag vessels to the FAO and exchanging information, including evidentiary material, relating to the activities of fishing vessels with other parties to the FAO Compliance Agreement. Parties must also be satisfied that they are able to exercise their flag State responsibilities effectively, taking into account the links that exist between them and the fishing vessels concerned. The FAO Compliance Agreement relies primarily on flag State jurisdiction, but also promotes international cooperation and provides for port States to promptly notify the flag State when a fishing vessel is voluntarily in its port and there are reasonable grounds for believing that it has engaged in an activity undermining the effectiveness of international conservation and management measures. The port State also has the right to investigate such fishing vessels in its port where the flag State fails to respond.

With its strong emphasis on States' responsibilities for sustainable fishing rather than on States' rights to freedom of fishing, and as it is applicable to all fish stocks on the high seas, and hence also to the project area, the FAO Compliance Agreement marks a further milestone in the move away from the notion of a right to unqualified freedom of fishing on the high seas, a right that is already limited in the LOSC and in the UN Fish Stocks Agreement. The Preamble to the FAO Compliance Agreement recognises that while all States have the right to fish on the high seas, this right is subject to relevant rules of international law and the duty to exercise effective flag State control over nationals and flag vessels

by taking “such measures as may be necessary for the conservation of living resources of the high seas.” The FAO Compliance Agreement did not introduce many innovative measures or incentives for States to improve their levels of monitoring and compliance or of enforcing sanctions against fishing vessels violating fisheries conservation and management measures on the high seas.

C. Shipping-Related Instruments

1. International Convention for the Prevention of Pollution from Ships (MARPOL 73/78)

MARPOL 73/78 is an amalgam of two treaties adopted in 1973 and 1978 that has been continuously amended to incorporate a wide range of vessel-source pollutants and technical developments to control vessel-source discharges. Its objective is to achieve the complete elimination of intentional pollution of the marine environment by oil and other harmful substances and the minimisation of their accidental discharge. It extends to all parts of the sea, including the high seas, and to all ships entitled to fly the flag of a Party to the Convention and to ships not entitled to fly the flag of a Party but which operate under the authority of a Party.

MARPOL 73/78 operates through a series of technical annexes that prescribe methods of minimising and eliminating VSP in all parts of the sea, including ABNJ. The six annexes currently in force apply to, respectively, pollution by oil, noxious liquid substances in bulk, harmful substances carried by sea in packaged form, sewage, garbage, and air pollution. Various methods of pollution control have been introduced as regulations through the annexes. Some of these methods may adversely affect ABNJ, including the project area. One concern is that basing discharge restrictions on increasing distances away from land may lead to greater concentrations of oil and other vessel-source pollutants in high seas areas, thereby adding to the environmental stresses placed on these inadequately protected parts of the oceans. The ‘distance from land’ criterion is replicated in the majority of MARPOL 73/78 Annexes as the determinant for ‘acceptable’ levels and concentrations of vessel-source discharges.

Annex 3 provides an overview of these six annexes.

The preamble to MARPOL 73/78 recognises the vulnerability of the marine environment to oil and other pollutants and the need to eliminate intentional pollution and minimise accidental pollution of the sea. The Annexes to MARPOL 73/78 provide the shipping community with practical options to achieve these objectives by, *inter alia*, allowing flag States to phase in the restrictions, depending on the age of their merchant fleets. The principal difficulty with the discharge restrictions in the annexes to MARPOL 73/78 is that discharge is permitted at a higher rate for some substances the farther the ship is from land. The concepts of Special Areas under MARPOL 73/78, and Particularly Sensitive Sea Areas (PSSAs) under IMO auspices generally, in which factors such as ecological and oceanographic conditions and the nature of shipping traffic are taken into account in determining pollution control measures, are avenues to be explored for the protection of the project area from discharges that would otherwise be permitted under MARPOL.

2. 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter (London Convention) and the 1996 Protocol (London Protocol)

The London Convention (LC) prohibits the dumping at sea of certain blacklisted wastes and mandates a national permit system for the dumping of other wastes and matter. The London Protocol (LP) adopts a precautionary approach and prohibits all dumping at sea with the exception of certain listed materials, the dumping of which is subject to EIA, permitting and strict control measures.

The LC and LP’s fundamental premise is that the dumping at sea of waste and other matter which is liable to create hazards to human health, harm living resources and marine life, damage amenities or interfere with other legitimate uses of the sea, should not occur. The LC implements this objective through a tiered system of prohibition and control over the dumping of specified material, enforced by the Contracting Parties at national level. The dumping of wastes and other

matter listed in LC Annex I is prohibited, the dumping of wastes and other matter listed in LC Annex II requires a special permit from the relevant Contracting Party's authorities, and the dumping of any other wastes or matter requires a prior general permit from the relevant Contracting Party's authorities. LC Annex III specifies the criteria to be considered prior to issuing a permit for dumping, and includes consideration of the characteristics and composition of the material to be dumped, its likely effect on the marine environment and human health, the characteristics of the dumping site, the method of deposit and its likely effect on other uses of the sea. LC Contracting Parties must also take into account the practical availability of alternative land-based methods of treatment, disposal or elimination, and treatment to render the matter less harmful for dumping at sea. The LC's geographic scope encompasses all marine areas, including ABNJ, except internal waters. Its implementation is largely devolved to Contracting Parties; a self-reporting system obliges LC Contracting Parties to monitor and record the nature and quantity of matter permitted to be dumped, the timing, location and method of dumping, and the condition of the sea where dumping takes place. Since the LC's entry into force in 1975, the Contracting Parties have adopted a progressively more restrictive dumping regime, including for radioactive waste, industrial wastes, and incineration at sea, and establishing a set of guidelines for the issue of permits to dump dredged spoils at sea.

The LP is a complete revision of the LC. With its entry into force in 2006, it replaces the LC for Contracting Parties that are Parties to both instruments. The LP's preamble endorses a precautionary approach to the prevention and elimination of marine pollution by dumping and recognises the imperative of managing human impacts on the marine ecosystem to meet the needs of present and future generations. LP Contracting Parties must apply a precautionary approach to their decisions on dumping of waste, applying preventive measures where there is reason to believe that wastes introduced into the marine environment are likely to cause harm, even without conclusive evidence of the link between inputs and their effects. The 'polluter-pays'

principle is incorporated into LP Article 3(2), requiring Contracting Parties to 'endeavour' to promote practices which impose the costs of dumping and incineration at sea on those who engage in these activities. LP Article 4 adopts a reverse-listing approach, requiring Contracting Parties to prohibit the dumping of any wastes or other matter at sea with the exception of those wastes listed in Annex I. Contracting Parties must issue a permit for dumping wastes listed in Annex I, but before doing so, they must carry out an extremely detailed assessment of alternatives to at-sea dumping of the material, including consideration of methods of waste prevention at source, land-based waste management options, characterisations of the chemical, physical and biological properties of the material, and an assessment of its potential effects on the land and marine environments where it is proposed to be dumped. The physical, chemical and biological properties of the proposed marine dump site must also be assessed. Incineration of wastes or other matter at sea and the export of wastes or other matter to other countries for dumping or incineration at sea is prohibited. LP Article 13 recognizes the technical burden imposed on developing States; it provides for a system of bilateral and multilateral support for Contracting Parties, in coordination with the IMO, on issues such as training of scientific and technical personnel, information and technical cooperation on waste minimisation, clean production processes, waste management and environmentally sound technologies.

Note that, strictly speaking, the LC is not an IMO Convention in that it was not originally promulgated under IMO auspices. LC Art. 24(2) refers to "a competent organization" and in the 1970s the LC parties asked and IMO agreed to take on that role. The LP identifies IMO as the organization to provide the Secretariat for the LP.

3. International Convention on Oil Pollution Preparedness, Response and Cooperation, 1990

This Convention (OPRC) provides a global framework for international cooperation and mutual assistance in preparing for and responding to a major oil pollution incident or threat and encourages states to develop and maintain an

adequate capability to deal with oil pollution emergencies. Ships must carry a shipboard oil pollution emergency plan developed by IMO. Operators of offshore units under the jurisdiction of parties must also have oil pollution emergency plans or similar arrangements. These must be coordinated with national systems for responding promptly and effectively to oil pollution incidents. Ships must report incidents of pollution to coastal authorities and OPRC sets out the actions to be taken. It calls for the establishment of stockpiles of oil spill combating equipment, holding oil spill combating exercises and development of detailed plans to handle pollution incidents. Parties must provide assistance to others in a pollution emergency and expenses incurred will be reimbursed. The OPRC's Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances, 2000 (HNS Protocol) follows the principles of OPRC for hazardous and noxious substances other than oil, and has been in force since 2007.

4. International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004

The Ballast Water Management Convention (BWMC) is designed to prevent the potentially devastating effects of the spread of harmful aquatic organisms carried by ships' ballast water. The BWMC aims to ban all discharge of untreated ballast water into the marine environment. All ships must implement a Ballast Water and Sediments Management Plan, carry a Ballast Water Record Book and carry out ballast water management (i.e., treatment) procedures to a given standard. Parties may take additional measures which are subject to criteria set out in the Convention and to IMO guidelines. Although the BWMC is not yet in force, guidelines for its implementation have already been adopted and more are being developed. Its entry into force is currently expected to occur by the end of 2012.

D. Species-Related Instruments

1. 1946 International Convention for the Regulation of Whaling (ICRW)

The predominant theme of the Preamble to the ICRW is the human interest in maintaining whale

stocks at optimal levels to satisfy the demands of current and future generations. This is evident in the first clause of the Preamble which recognizes "the interest of the nations of the world in safeguarding for future generations the great natural resources represented by the whale stocks" and other clauses refer to increasing the size of whale stocks to permit increases in whale captures and the common interest in achieving the optimal level of whale stocks. The other primary purpose of the ICRW was to establish an international body, the International Whaling Commission (IWC), to conserve, develop and utilize whale stocks on the basis of scientific findings. The ICRW is global in scope and applies to factory ships, land stations and whale catchers under the jurisdiction of Contracting Governments and to all waters in which whaling is prosecuted by such factory ships, land stations and whale catchers. The IWC has one of the most extensive regulatory ambits of any international marine living resource organization; it applies to whaling activities in marine areas within and beyond national jurisdiction, at least for States Parties to the ICRW. The range of whale species regulated under the ICRW is governed by a Schedule which may be amended from time to time by the Contracting Parties. This is the mechanism for introducing conservation and management measures.

Article V(1) of the ICRW prescribes a comprehensive range of conservation and management powers which are adopted as regulations amending the Schedule and include: the allocation of unprotected and protected species status; declaring open and closed seasons and open and closed waters, including sanctuary areas; fixing size limits for each species; the time, methods and intensity of whaling effort; specifying the gear, apparatus and appliances which may be used; methods of measurement and inspection. Decisions taken by the IWC become effective for Contracting Parties 90 days after notification of the decision by the Commission, unless a Contracting Party has objected, in which case a further 90-day period or a period of 30 days from the date of the last objection received in the further 90-day period, whichever is the later, must expire before a decision becomes effective for only those

Contracting Parties which have not objected. This complex and lengthy objection clause has caused confusion and on numerous occasions diminished the power of the IWC to take binding and effective decisions. The IWC may also make non-binding recommendations to Contracting Parties on any matters which relate to whales or whaling and to the objectives and purposes of the Convention.

The ICRW predates the development in international law of concepts such as sustainable development, the precautionary principle and ecosystem-based management of the marine environment; however, it does reflect a commitment to conservation for the purposes of ongoing optimum utilization of whales as a resource base for sustained human use. Phrases which presage concepts such as intergenerational equity are intermingled with requirements that the IWC take into consideration the interests of consumers of whale products and the whaling industry. Article V(2) recognizes the requirement to base conservation and management decisions on scientific findings. The ICRW's functions include the organization of studies and investigations relating to whales and whaling, the collection and analysis of statistical information on the current condition and trend of the whale stocks, and the effects of whaling activities on these stocks. The controversial Article VIII allows any Contracting Party to grant to any of its nationals a special permit authorizing that national to kill, take and treat whales for the purpose of scientific research with the sole proviso that the Contracting Party must transmit scientific information available to that Party on whales and whaling annually to a body designated by the IWC.

2. 1979 Convention on Conservation of Migratory Species of Wild Animals (CCMS)

The CCMS is a framework convention that aims to conserve terrestrial, marine and avian migratory species throughout their range. CCMS parties strive to strictly protect migratory species threatened with extinction listed in Appendix I of the CCMS, conserving or restoring the places where they live, mitigating obstacles to their migration and controlling other potentially

endangering factors. "Range" is defined in Article I(f) of the CCMS as "all the areas of land or water that a migratory species inhabits, stays in temporarily, crosses or overflies at any time on its normal migration route." A "Range State" in relation to a particular species is defined in Article I(h) of the CCMS as "any State that exercises jurisdiction over any part of the range of that migratory species, or a State, flag vessels of which are engaged outside national jurisdictional limits in taking that migratory species." CCMS parties that are range States of a migratory species must prohibit the taking of animals belonging to that species, with limited exceptions related to scientific purposes, enhancing the propagation or survival of the species, accommodating the needs of traditional subsistence users or other extraordinary circumstances (Article III(5)).

In addition to establishing obligations for each Party, the CCMS promotes cooperative action among the range states of many of these species and encourages range states to conclude global or regional agreements or memoranda of understanding (MOUs). Migratory species that need or would significantly benefit from international cooperation are listed in CCMS Appendix II. Agreements and MOUs to conserve particular species have been concluded under the CCMS. Of these the ones most relevant to the marine and avian species which migrate in the project area include:

- Agreement on the Conservation of African Eurasian Migratory Waterbirds (AEWA)
- Agreement on the Conservation of Albatrosses and Petrels (ACAP)
- MOU on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South East Asia (Marine Turtles IOSEA).

3. 1973 Convention on International Trade in Endangered Species (CITES)

The objective of CITES is to ensure that international trade in specimens of wild animals and plants does not threaten their survival. Parties to CITES must not allow trade in specimens of species included in Appendices I, II and III to CITES except in accordance with its provisions.

Appendix I includes all species threatened with extinction which are or may be affected by trade. Appendix II includes all species which, although not necessarily now threatened with extinction, may become so unless trade in specimens of such species is subject to strict regulation in order to avoid utilization incompatible with their survival. Appendix III includes all species which any party identifies as being subject to regulation within its jurisdiction for the purpose of preventing or restricting exploitation and as needing the cooperation of other parties in the control of trade.

Trade in specimens of species in all three Appendices is subject to varying degrees of regulation, including the prior grant and presentation of export and import permits, re-export certificates, and certificates for introduction from the sea, which certify that the particular form of trade in the species will not be detrimental to the survival of the species. Parties to CITES are required to take appropriate measures to prohibit trade in or possession of specimens covered in the Appendices and to provide for the confiscation of the specimens or their return to the State of export.

E. Heritage-Related Instruments

1. 2001 UNESCO Convention on Underwater Cultural Heritage

The 2001 UNESCO Convention on the Protection of Underwater Cultural Heritage (UCH Convention; in force since January 2009) aims to ensure and strengthen the protection of underwater cultural heritage for the benefit of humanity. Underwater cultural heritage is defined in Article 1(a) of the UCH Convention as: "...all traces of human existence having a cultural, historical and archaeological character which have been partially or totally under water, periodically or continuously, for at least 100 years, such as:

- (i) sites, structures, buildings, artefacts and human remains, together with their archaeological and natural context;
- (ii) vessels, aircraft, other vehicles or any part thereof, their cargo or other contents, together with their archaeological and natural context; and

(iii) objects of prehistoric character."

The UCH Convention applies to underwater cultural heritage in the Area. Under Article 11, States Parties have a responsibility to protect underwater cultural heritage in the Area in conformity with the UCH Convention and Article 149 of the LOSC. When a national or a vessel flying the flag of a State Party discovers or intends to engage in activities directed at underwater cultural heritage located in the Area, the State Party must require the national or the master of the vessel to report the discovery to it and the State Party must notify the Secretary-General of UNESCO and the Secretary-General of the ISA. The Secretary-General of UNESCO must then notify all States Parties to the Convention of this information and any State Party can declare its interest in being consulted on how to ensure the effective protection of the underwater cultural heritage based on a verifiable link to that heritage.

Under Article 12 of the UCH Convention, the Secretary-General must then invite all States Parties which have declared an interest, and the ISA, to consult on how best to protect the underwater cultural heritage, and appoint a Coordinating State for the consultations. The Coordinating State is then required to implement agreed protection measures and issue all necessary authorizations for such agreed measures, acting for the benefit of humanity as a whole and paying particular regard to the preferential rights of States of cultural, historical or archaeological origin.

The UCH Convention must be interpreted and applied in the context of and in a manner consistent with international law, including the LOSC (Article 3). No State Party is to undertake or authorize activities directed at State vessels and aircraft in the Area without the consent of the flag State (Article 12(7)). States Parties must take all practicable measures to ensure that their nationals and vessels flying their flag do not engage in any activity directed at underwater cultural heritage in a manner not in conformity with the UCH Convention (Article 16).

F. Seabed Mining-Related Instruments

1. LOSC Part XI and Part XI Implementing Agreement

Prior to the negotiation of the LOSC, the United Nations General Assembly (UNGA) established the Sea-Bed Committee, which developed a Declaration of Principles Governing the Seabed and the Ocean Floor, and the Subsoil Thereof, beyond the Limits of National Jurisdiction (the Seabed Declaration), adopted by the UNGA on 17 December 1970. These principles declared the seabed and the ocean floor beyond the limits of national jurisdiction, or 'The Area', to be the common heritage of mankind and further declared that no State or person, natural or juridical, was able to claim, exercise or acquire rights with respect to the Area or its resources which were incompatible with the international regime to be established for the Area. Under the Seabed Declaration, the exploration of the Area and the exploitation of its resources were to be carried out "for the benefit of mankind as a whole, taking into particular consideration the interests and needs of developing countries." The Seabed Declaration was the basis for the development of the deep seabed mining regime in Part XI of the LOSC.

Part XI endorses the common heritage of mankind principles for the non-living resources of the deep seabed and establishes a supranational system to regulate the exploration for and exploitation of deep seabed minerals and the distribution of the profits derived among States on the basis of equity and need. The primary institution created by Part XI is the International Seabed Authority (ISA), which consists of all States Parties to the LOSC and is responsible for controlling and organising activities in the Area. Part XI contains provisions which require States Parties to initiate and promote programmes for the transfer of technology to the Enterprise (a mining entity to be operated under the auspices of the ISA) and to developing States under fair and reasonable terms and conditions and for equitable sharing by the ISA of the financial and other economic benefits derived from the activities in the Area among States Parties.

The negotiation of Part XI produced such deep divisions among the industrialised States and the

so-called G77 group of developing States on the basis for allocating exploration and exploitation rights to the mineral resources of the Area that the entry into force of the LOSC was jeopardized. Extensive informal consultations, sponsored by the UN Secretary-General in the early 1990s, produced the Part XI Implementing Agreement. The LOSC entered into force on 16 November 1994 and the ISA was formally established. While reaffirming the common heritage of mankind principle, the provisions of the Part XI Implementing Agreement prevail in the event of inconsistency with the LOSC for those States Parties to both instruments. Since its inception, the ISA has presided over limited exploration activities.

Environmental protection is an integral and relatively uncontentious element in the deep seabed mining regime. Research into the effects of deep seabed mining has occurred simultaneously with the development of deep sea mining technology and the long gestation of the deep seabed mining industry. The Seabed Declaration stated that States were to take appropriate measures and adopt and implement international rules and standards for prevention of pollution and other hazards to the marine environment beyond national jurisdiction. States were also to take steps to prevent interference with ecological balances and to promote the protection and conservation of the natural resources of the Area. The provisions of the Seabed Declaration were reflected in Part XI of the LOSC, which charged the ISA with responsibility for adopting appropriate rules, regulations and procedures for the prevention of pollution and other hazards to the marine environment caused by resource exploitation activities in the Area and for the protection and conservation of the natural resources of the Area.

Part XI of the LOSC, together with the provisions of Part XII on the protection and preservation of the marine environment, provide the overarching framework for the protection of the marine environment from the harmful effects of activities in the Area. The obligation in Article 194 of the LOSC to take all measures necessary to prevent, reduce and control pollution of the marine environment from any source, including pollution

from installations and devices used in exploration or exploitation of the natural resources of the seabed and subsoil, can be interpreted as applying to deep seabed mining operations in the Area, as can the duty to take all measures to prevent, reduce and control pollution resulting from the use of technologies under the jurisdiction and control of States Parties. The obligation imposed on States to monitor and assess the effects of activities under their control in order to determine whether they are likely to pollute or harm the marine environment in Articles 204 and 206 of the LOSC has particular relevance to the activities of State-sponsored consortia in the Area.

The ISA bears the primary responsibility for formulating the relevant international standards to protect the marine environment from the harmful effects of activities undertaken in the Area. Under Article 145 of the LOSC, the ISA must adopt appropriate rules, regulations and procedures for:

- “(a) the prevention, reduction and control of pollution and other hazards to the marine environment, including the coastline, and of interference with the ecological balance of the marine environment, particular attention being paid to the need for protection from harmful effects of such activities as drilling, excavation, disposal of waste, construction and operation or maintenance of installations, pipelines and other devices related to such activities;
- (b) the protection and conservation of the natural resources of the Area and the prevention of damage to the flora and fauna of the marine environment.”

The ISA's responsibilities are defined in more detail and linked to operational aspects of deep seabed mining in Annex III of the LOSC. Article 17(1)(b)(xii) of Annex III specifies that the ISA is to adopt and apply mining standards and practices, including those relating to operational safety, conservation of resources and the protection of the marine environment. In formulating its rules, regulations and procedures on the protection of the marine environment, the ISA must apply the objective criteria set out in Article 17(2)(f) of Annex III. In the

case of mining operations, the ISA's standards must secure effective protection from the harmful effects of drilling, dredging, coring, excavation and shipboard processing immediately above a mine site as well as dumping and discharge into the marine environment of sediments, wastes and other effluents. The Legal and Technical Commission of the ISA has functional responsibility for formulating rules, regulations and procedures on protection of the marine environment and submitting those to the ISA Council for adoption and eventual approval by the ISA Assembly. States have a complementary obligation under Article 209 of the LOSC to adopt laws and regulations that are no less effective than those adopted by the ISA to prevent, reduce and control pollution of the marine environment from activities in the Area undertaken by their flag vessels, installations, structures and other devices.

Further environmental protection requirements for prospecting, exploration and exploitation activities in the Area are set out in Annex III. Prospectors must provide the ISA with an undertaking that they will comply with the relevant rules, regulations and procedures of the ISA on the protection of the marine environment before prospecting can commence. States or entities sponsored by States and under their effective control must also submit plans of work to the ISA for approval before exploration and exploitation activities can commence. These must conform to the ISA's rules, regulations and procedures, including those relating to the protection of the marine environment. The principal component added to the environmental protection provisions of LOSC Part XI by the Part XI Implementing Agreement is a requirement that a plan of work for exploration or exploitation activities in the Area must be accompanied by an assessment of the potential environmental impacts of the proposed activities and a description of a programme for oceanographic and baseline environmental studies in accordance with rules to be adopted by the ISA. Activities in the Area must also be carried out with reasonable regard for other activities in the marine environment and installations used for activities in the Area may not be established where interference may be

caused to the use of recognised sea lanes essential to international navigation or in areas of intense fishing activity.

So far, the ISA has issued twelve exploration licences for polymetallic nodules and polymetallic sulphides to so-called pioneer investors. Seven of the exploration areas are in the central Pacific Ocean, and the eighth is in the Central Indian Ocean Basin, east of the Seychelles and Mauritius and southeast of the Chagos Archipelago (UK) between ~10-18 degrees South and ~75-85 degrees East (Figure 2 – see page 4). The Government of India is the pioneer investor at

this site; its license is for 15 years from 25 March 2002.

The ISA has issued 2 sets of regulations, for polymetallic nodules and for sulphides, respectively, that impose stringent and comprehensive environmental protection obligations on the States and State-sponsored entities involved in the prospecting and exploration phases for these deposits. Both sets of Regulations and the Guidelines provide useful examples of EIA for activities that could affect benthic habitats. The deep seabed of the project area is part of the Area.

IV. MARITIME CLAIMS IN THE VICINITY OF THE PROJECT AREA

Although a number of unresolved sovereignty disputes exist in the western Indian Ocean, none affect the project area. The five states nearest the project area have each proclaimed a 200-nautical-mile EEZ and each benefits from a 200-nautical-mile 'legal' continental shelf. Future challenges for the Indian Ocean will include the settling of extended

continental shelf claims. States can claim a continental shelf beyond 200 nautical miles, up to a total of 350 nautical miles, where certain physical criteria are met. Claims must be lodged with the Commission on the Limits of the Continental Shelf, with the deadline for doing so having passed for the five nearest States on 30 May 2009.

V. REGIONAL INSTRUMENTS, PROJECTS AND ORGANISATIONS APPLICABLE TO THE SOUTHERN INDIAN OCEAN

Particularly since the adoption of the LOSC, international law has recognised the importance of regional cooperation as an important tool in the conservation and management of marine biodiversity. With regard to the project area, only a few relevant regional instruments, projects and organisations (both intergovernmental and private sector) exist. These are examined below.

A. General Marine Conservation and Management Framework

1. The UNEP Regional Seas Programme

The UNEP Regional Seas Programme was launched in 1974 and today more than 140 States participate in the sustainable management of 13 Regional Seas. The Programme aims to address the problems of accelerating degradation of the world's oceans and coastal areas by engaging neighbouring countries in the sustainable management and use of their shared marine and coastal environment. The Regional Seas Programme is focused primarily on marine areas out to 200 nm from shore. However, several Regional Seas Conventions also apply to ABNJ, including agreements for the Mediterranean, Northeast Atlantic, the Pacific and the Southern Ocean. The Programme operates by applying "action plans" which are intended to implement the vision of a core legal framework (such as a regional Convention [and associated protocols]) within the waters of member States.

Of the Regional Seas Programmes, only the Eastern African Regional Sea Programme is potentially relevant to the project area, as its members include the five States nearest the project area. Headquartered in the Seychelles, it is governed by the legally binding Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region, also known as the Nairobi Convention, which provides a mechanism for regional cooperation to address marine and coastal environmental issues. The Nairobi Convention and its two Protocols⁶ were adopted in 1985 and entered into force in 1996.

Article 2(a) of the Nairobi Convention provides that the geographic area of application of the Convention is the environment "falling within the jurisdiction of the contracting parties to the Convention." Article 14(2) provides the only mention of activity beyond the Nairobi Convention's area of application, namely that "the Contracting Parties shall endeavour to participate in international arrangements for research and monitoring outside the Convention area." The Nairobi Convention's Protocol Concerning Protected Areas and Wild Fauna and Flora in the Eastern African Region applies to the same geographic region as defined in the Convention. The Protocol has numerous provisions that could be used to protect seamounts within the Nairobi Convention's area of application (including the Preamble, and Articles 2,4,8,10 and 11) but there is no clear scope to apply the provisions of the Protocol to ABNJ. Article 13 of the Protocol deals with "Frontier Protected Areas": these frontiers include only the EEZ boundaries between Contracting Parties, and the EEZ boundaries between Contracting Parties and non-Contracting Parties. There is no express consideration given to seamounts which "straddle" the high seas and the Nairobi Convention's area of application.

2. Regional Committees of the Indian Ocean Commission (COI)

The Commission de l'Océan Indien is an intergovernmental organization set up between Comoros, Madagascar, Mauritius, France (on behalf of La Réunion) and the Seychelles to encourage diplomatic, economic and commercial cooperation between member States. French is the COI's official language. Mozambique and South Africa are not members. The COI's current apparently wholly Francophone orientation is likely to hamper the latter two States' inclusion. The objectives of the COI include (*inter alia*) cooperation in the field of marine fishing, and the conservation of resources and ecosystems. The official website has no clearly defined geographic area of competence or application.

⁶ Protocol Concerning Protected Areas and Wild Fauna and Flora in the Eastern African Region and Protocol Concerning Co-operation in Combating Marine Pollution in Cases of Emergency in the Eastern African Region.

3. Agulhas and Somali Current Large Marine Ecosystem Project (ASCLME)

The Agulhas and Somali Current Large Marine Ecosystem combines the Agulhas Current Large Marine Ecosystem (ACLME) which stretches from the northern end of the Mozambique Channel to Cape Agulhas, and the Somali Current Large Marine Ecosystem (SCLME) which extends from the Comoros Islands and the northern tip of Madagascar to the Horn of Africa. Within this region, the Mascarene Plateau may constitute a third regional LME in its own right. The Mascarene Plateau extends south for 2,000 kms from the Seychelles to La Réunion and west through the Amirantes Arc and the Amirantes Trough between the Somali and Mascarene Basins.

The five States immediately adjacent to the project

area also participate in this regional mechanism, which is developed under the auspices of the GEF. The objectives of the ASCLME are to gather information on all aspects of the LME, to document environmental threats facing the LME, to develop an action plan for dealing with transboundary threats, and to introduce an ecosystem approach to managing the marine resources of the western Indian Ocean. Figure 3 depicts the ASCLME. The project area appears to fall within it.

The GEF Project Document on the ASCLME does not include a legal agreement or a prescribed area of competence or application. It does reflect on regional bodies that lack competency to exercise jurisdiction on the high seas, as follows:

“[A] number of regional initiatives are in place, nested in a regional policy

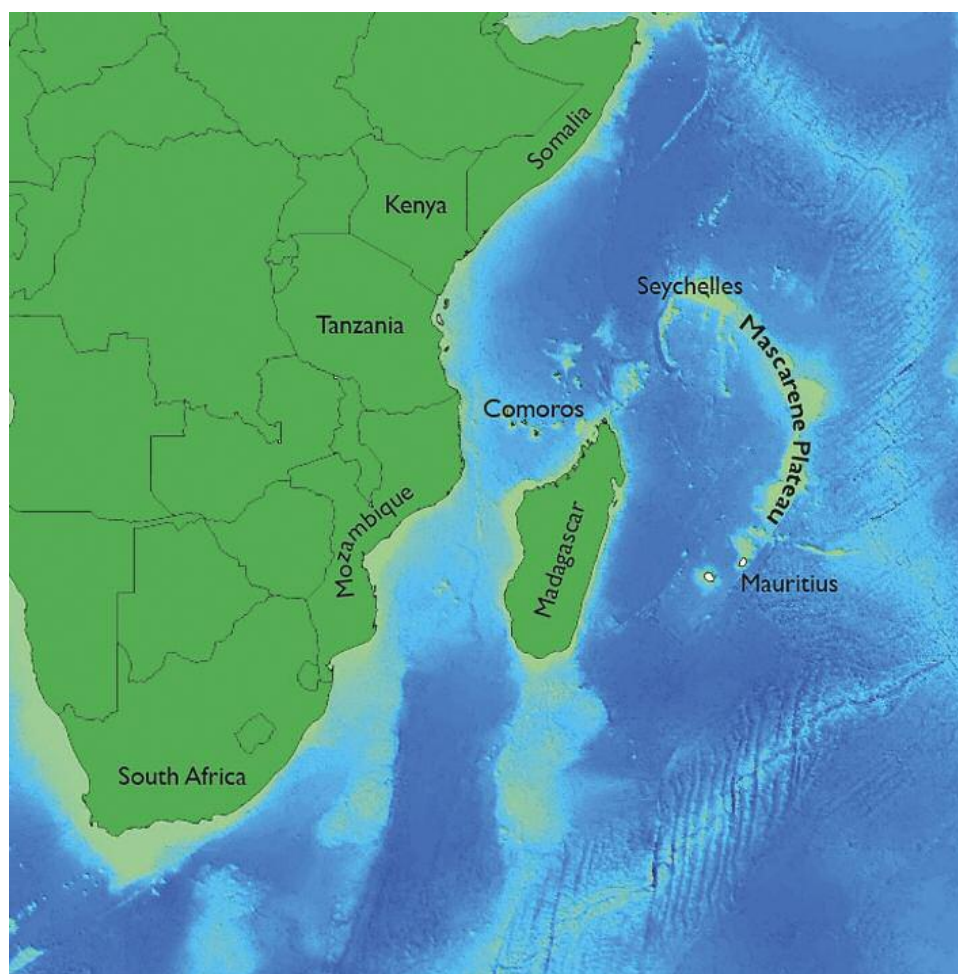


Figure 3: The Agulhas and Somali Current Large Marine Ecosystem (ASCLME) Project Area. The map illustrates the 8 countries participating in the ASCLME project.

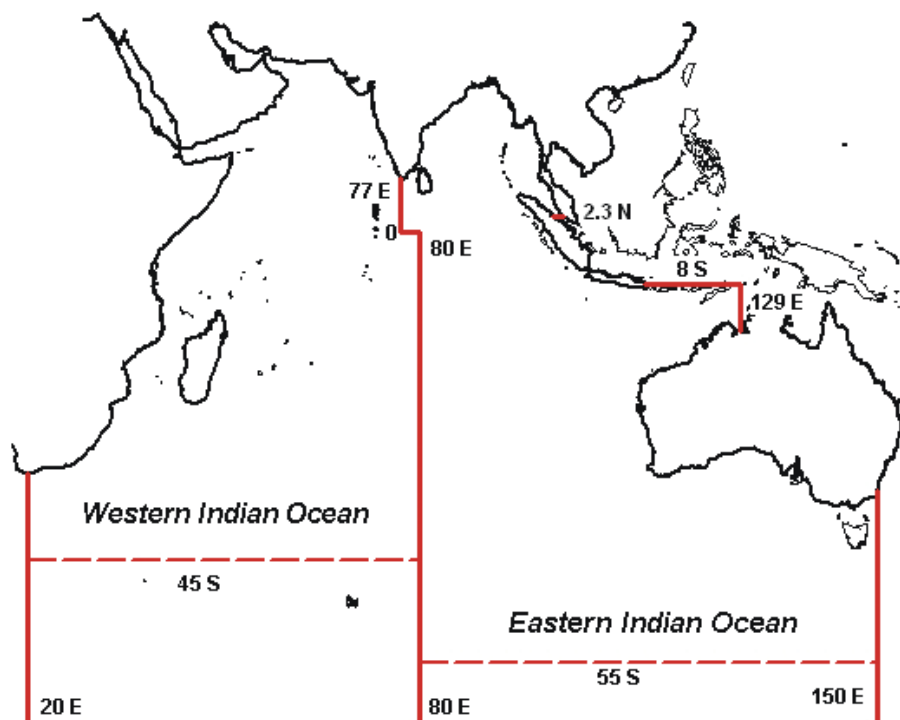


Figure 4: The Indian Ocean Tuna Commission (IOTC) Area. The area of competence of the Commission is the Indian Ocean (defined for the purpose of this Agreement as being FAO statistical areas 51 and 57) and adjacent seas, north of the Antarctic Convergence. Indian Ocean Tuna Commission.

framework and growing consensus on the need to work collaboratively to address the suite of threats facing marine ecosystems and their constituent resources. However, these focus heavily on the coastal zones of the participating countries. Accordingly, current and planned initiatives will not by themselves be sufficient to institute an ecosystem approach to LME management. Given the transboundary nature of many threats, their root causes and effects, the threats to the environment cannot effectively be contained through national and sectoral initiatives alone, and a holistic multi-sectoral regional ecosystem management approach is needed.” (Paragraph 35.)

The Project Document observes in paragraph 42 that:

“[No] organization is currently responsible for regional-level capacity-building on behalf of the participating countries, as the current array of regional organizations

either lack full regional membership or have an insufficient mandate to address regional issues in an ecosystem context.”

B. Fisheries-Related Instruments

1. The Indian Ocean Tuna Commission

The Indian Ocean Tuna Commission (IOTC) is an Article XIV body set up in 1993. The Agreement entered into force on 27 March 1996. The area of competence or application of the IOTC is defined as the Indian Ocean and adjacent seas, north of the Antarctic Convergence, insofar as it is necessary to cover such areas for the purpose of conserving and managing tuna and tuna-like species that migrate into or out of the Indian Ocean. This area coincides exactly with the FAO Statistical Areas 51 and 57 (Figure 4). The IOTC area includes high seas and national zones of jurisdiction, and covers the project area. Of the five States immediately adjacent to the project area, only Mozambique is not a member of the IOTC.

The objective of the Indian Ocean Tuna

Commission (IOTC) is to promote cooperation among its Members with a view to ensuring, through appropriate management, the conservation and optimum utilisation of stocks covered by the Agreement (i.e., tuna and tuna-like species) and encouraging sustainable development of fisheries based on such stocks. The IOTC Agreement does not provide for application of either a precautionary approach or an ecosystem approach to fisheries management. The IOTC does not use area-based management tools. An IOTC Working Party on Ecosystems and Bycatch meets regularly to examine implementation of an ecosystem approach to fisheries. So far their focus has been primarily on bycatch (of other fish, sharks, sea turtles and seabirds), rather than ecosystems.

In 2008 the IOTC underwent a comprehensive Performance Review. The lack of an ecosystem approach to fisheries management, the absence of the precautionary approach, and no application of area-based management tools were all “deficiencies” identified by the review panel. The final review report noted, “[T]he Panel recommends that the IOTC Agreement either be amended or replaced by a new instrument. The decision on whether to amend the Agreement or replace it should be made taking into account the full suite of deficiencies identified in the Review.”

2. The Southern Indian Ocean Fisheries Agreement (SIOFA)

Concluded in 2006, the SIOFA has been signed by 10 States, including those five States adjacent to the project area. It has been ratified by two States (Mauritius and Seychelles) and approved by the EU. The Cook Islands has acceded to SIOFA, but its accession does not count towards the entry into force of SIOFA. The SIOFA is not yet in force.

The objective of the SIOFA is to ensure the long-term conservation and sustainable use of the fishery resources in the SIOFA area through cooperation among the Contracting Parties, taking into account the needs of developing States bordering the SIOFA area. The geographic area of application of SIOFA is extensively detailed in Article 3. It contains a large portion of

the high seas of the Indian Ocean, and excludes all waters under national jurisdiction (Figure 5). Although the waters of SIOFA and the IOTC overlap, the two agreements are responsible for different species of fish. Whereas the IOTC has a mandate for tuna and tuna-like highly migratory fish, the SIOFA is concerned with other fish species, with particular focus on demersal species (such as orange roughy) which have attracted substantial fishing effort. It excludes from its scope highly migratory species as well as sedentary species that fall under the jurisdiction of coastal States pursuant to Article 77(4) of the LOSC. The UN General Assembly and the FAO have noted the detrimental impact that deep sea fishing can have on the seabed environment, including seamounts, and deep sea fisheries are now under review by the UNGA and the FAO Committee on Fisheries (COFI); Flag State and RFMO regulations are to be guided by the UNGA Resolutions and the FAO International Guidelines on the Management of Deep Sea Fisheries in the High Seas.

The SIOFA incorporates more modern principles of environmental and fisheries management. For example, Article 4 acknowledges the duty of states to cooperate, the implementation of an ecosystem approach to fisheries management, the application of the precautionary approach, the protection of biodiversity in the marine environment, and a requirement that fishing practices shall take due account of the need to minimize the harmful impact that fishing activities may have on the marine environment. Article 6 elaborates on how these principles are to be achieved.

3. South West Indian Ocean Fisheries Commission (SWIOFC)

The SWIOFC was established in 2004 as an Article VI FAO Regional Fishery Body. Its area of competence or application applies to the waters of the South West Indian Ocean within the national jurisdiction of coastal States (Figure 6); i.e., not to ABNJ and hence not to the project area. The five States nearest the project area are among the current members of the SWIOFC. The SWIOFC's management mandate is to promote the sustainable utilization of the living marine

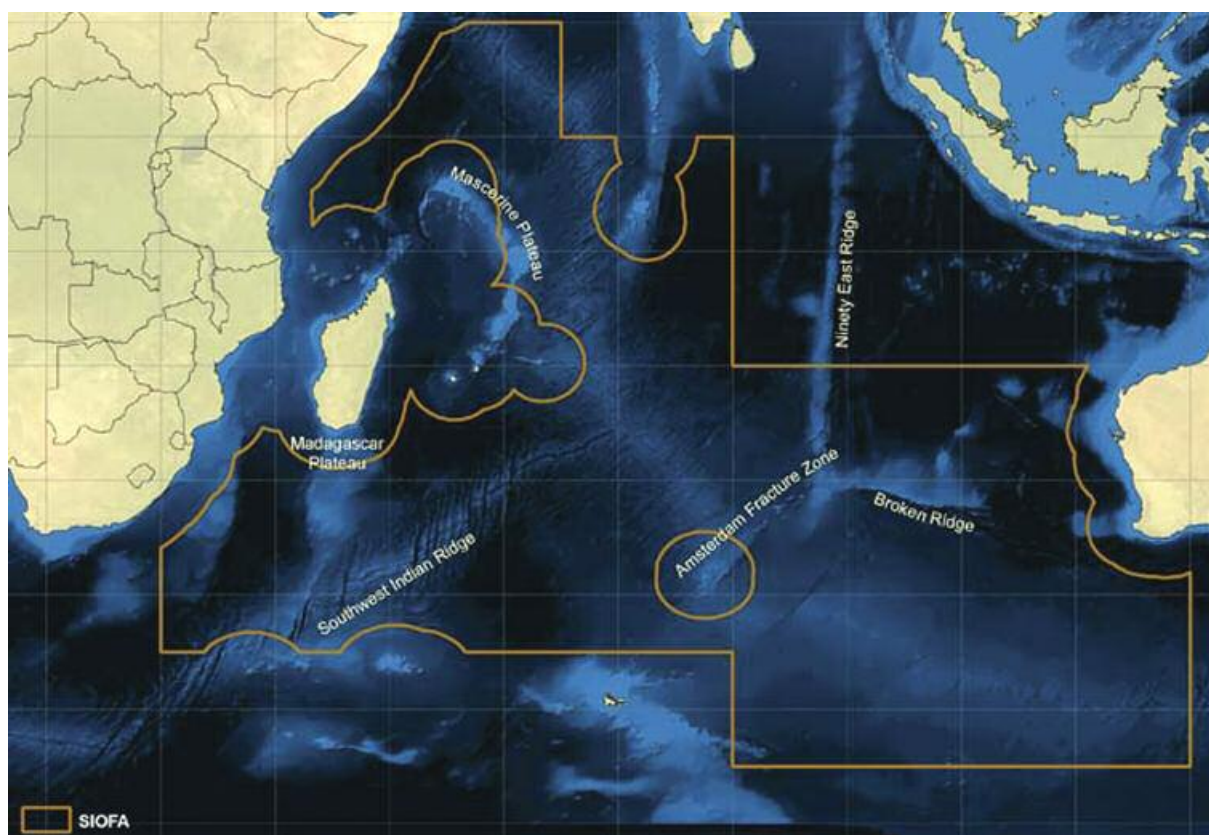


Figure 5: The Southern Indian Ocean Fisheries Agreement (SIOFA) Area.

resources by complying with, and promotion of, the FAO Code of Conduct on Responsible Fisheries, including the precautionary approach and the ecosystem approach to fisheries management.

4. Asia-Pacific Fishery Commission (APFIC)

The Asia-Pacific Fishery Commission was established as the Indo-Pacific Fisheries Council as an Article XIV Agreement in 1948. The Agreement entered into force on 9 November 1948; it received its current name in 1993. Its geographic scope covers the Asia Pacific, including ABNJ, and its broad fisheries mandate applies to both marine and inland aquatic resources there. As an Article XIV body, APFIC has the ability to consider fisheries management matters, and to make management decisions. It can encourage its members to agree to abide by general environmental and fisheries management norms and international agreements. APFIC is currently working on several initiatives rooted in instruments of international fisheries law. Together

with IUCN, it is encouraging the development of national shark plans and reviewing their implementation. It is developing a regional plan of action for Responsible Fishing and assisting with the Bay of Bengal Large Marine Ecosystem Programme, a northern Indian Ocean GEF project with objectives similar to those of the ASCLME GEF project. It is collaborating with SEAFDEC on an ASEAN-SEAFDEC Regional Management Mechanism, including a Roadmap for Integration of the Fisheries Sector. Despite its broad geographic and subject-matter scope, and although APFIC has many members, few have a direct interest in the region, and of the five States adjacent to the project area, only France is an APFIC member.

C. Southern Indian Ocean Deepsea Fishers' Association (SIODFA)

The Southern Indian Ocean Deepsea Fishers' Association (SIODFA) was established in 2006 as an association of the fishing companies that conduct most of the deepwater fishing in the

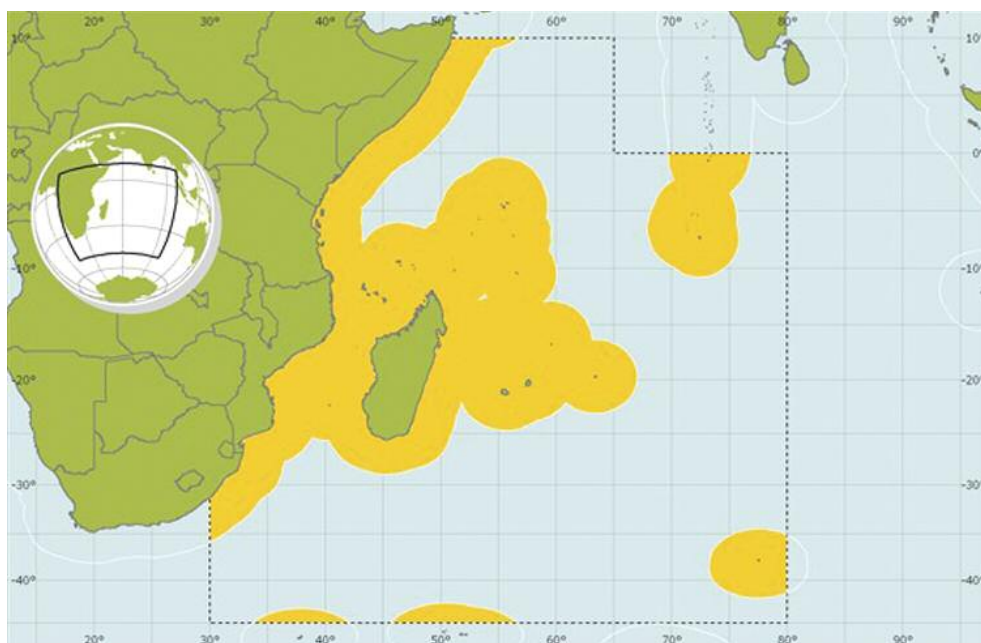


Figure 6: The South West Indian Ocean Fisheries Commission (SWIOFC) Area. Source: FAO.

southern Indian Ocean. Its primary goals are to set self-imposed restrictions on their fishing activities in order to maintain unsubsidised, profitable and environmentally sustainable fisheries and to set international best practice for responsible deep-sea fishery management. In 2006 SIODFA voluntarily closed more than 300,000 square kilometres to trawling, by creating 11 BPAs (Figures 7 and 8).

The four companies that established SIODFA were Austral Fisheries Pty Ltd (Australia with shareholdings from Pescanova S.A.), Bel Ocean II Ltd (Mauritius, but owned mainly by an Icelandic company), Sealord (New Zealand), and TransNamibia Fishing Pty Ltd (Namibia, with shareholdings from Taiyo A&F). Bel Ocean, Sealord Group and Trans Namibia recently all moved flags to the Cook Islands. None of the four original companies have left SIODFA.

Other fishing companies have attempted to join SIODFA. For example, NovaNam (a Namibian company with Spanish shareholdings), requested to join SIODFA and participated in one meeting. It received all SIODFA materials regarding membership (the need for research plans, compliance with closed BPAs, the shared costs of running the SIODFA secretariat, the need to document their fishing operations, etc.). NovaNam

left the region after a brief and unsuccessful attempt at deepwater fishing, and did not join SIODFA.

SIODFA faces the same core problem as many current regional fishery bodies: it is walking a difficult line between the need to be an “open group” which accepts and deals with new members (thus reducing or removing the need for interested vessels to operate outside the regulatory regime), but also to be a “closed group”, in that it does not want to increase fishing effort by encouraging too many other fishing companies to join. SIODFA views its demands for compliance with its strict environmental management policies as the key to addressing the membership issue.

When SIODFA members were asked to identify their strengths and weaknesses, they replied that their biggest positive attribute was directing world attention to the problems surrounding high seas fishing in the Indian Ocean, where States have been unable to implement formal international arrangements. They also described the process of working with IUCN to identify and voluntarily close the 11 BPAs in order to put pressure on States to start “doing something” as a rewarding process. The biggest weakness of SIODFA is said to be its inability to control the operations of others who might choose to fish in the same area without any controls.

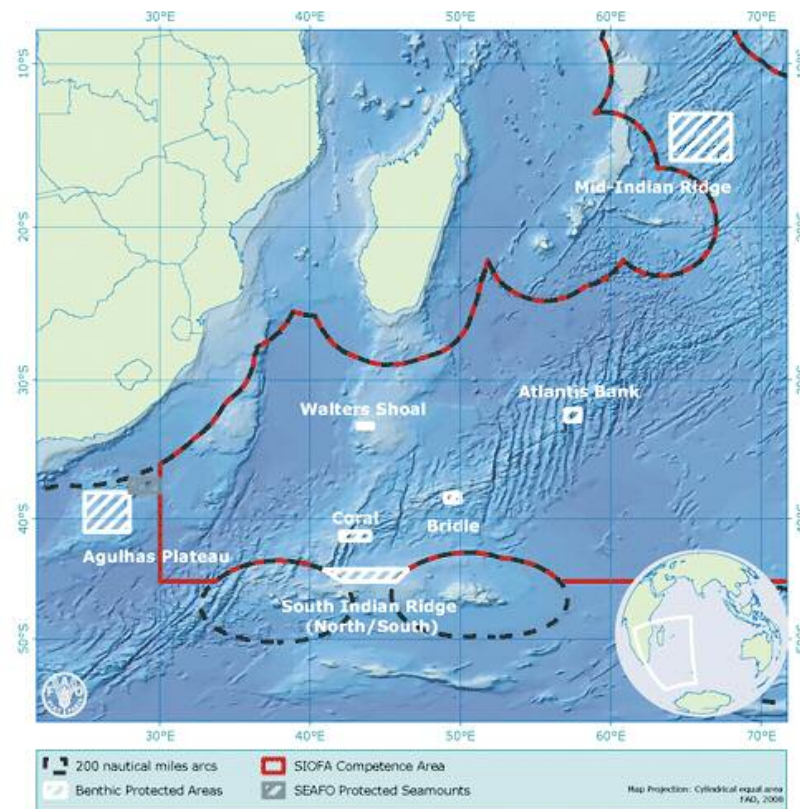


Figure 7: The Southern Indian Ocean Deepsea Fishers' Association (SIODFA) Benthic Protected Areas in the South West Indian Ocean.

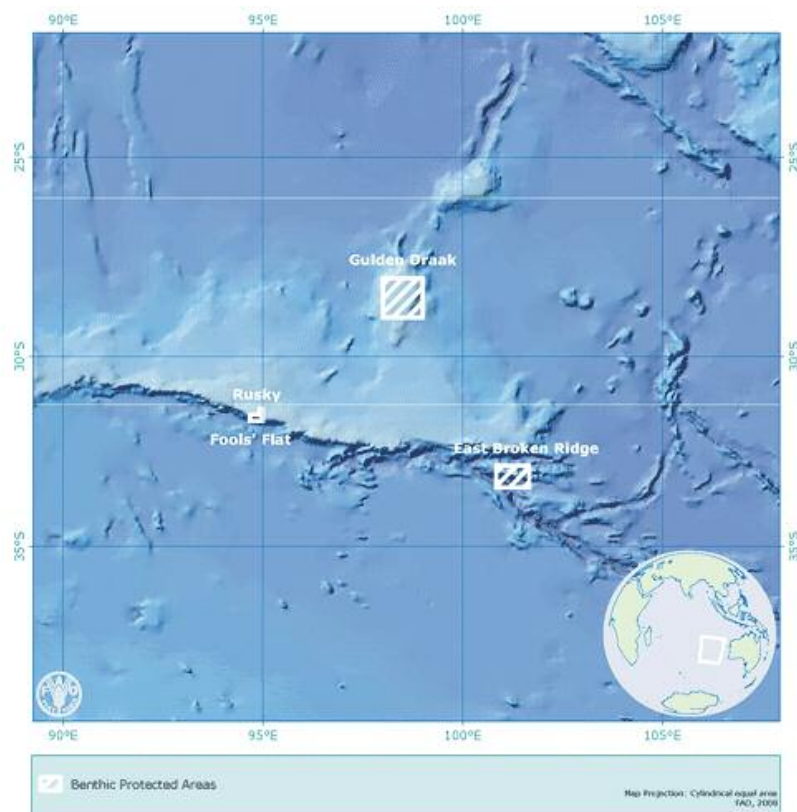


Figure 8: The SIODFA Benthic Protected Areas in the South East Indian Ocean.

VI. NATIONAL REGULATIONS APPLYING TO ABNJ IN THE SOUTHERN INDIAN OCEAN

The five states immediately adjacent to the project area are: France, Madagascar, Mauritius, Mozambique and South Africa. These States are assessed below for their ability to enforce laws in ABNJ.

A. France

The maritime zones concerned by the project area are those of Réunion Island and the sub-Antarctic archipelagoes. The maritime zone around la Réunion is defined by the Law of 16 July 1976, the Decree n° 80-554 of 15 July 1980 concerning the agreement between Mauritius Republic and the French Republic, and the Decree n° 2007-1254 of 21 August 2007 concerning the agreement between the Malagasy Republic and the French Republic signed in 2005. The legislation does not make any maritime claims beyond the 200-mile limit. The maritime limits around the French sub-Antarctic archipelago of the Crozet Islands are defined in the Law of 16 July 1976 and the Decree n° 78-112 of 11 January 1978. The Crozet Archipelago constitutes a district of the French Sub-Antarctic Territory.

B. Madagascar

The Malagasy maritime zones are defined in 1985 *Ordonnance n° 85-013 fixant les limites des zones maritimes (mer territoriale, plateau continental et zone économique exclusive) de la République Démocratique de Madagascar*. The legislation does not make any maritime claims beyond the 200-mile limit. The Malagasy fisheries management laws are contained in two primary laws: Decree No. 94-112 Establishing the General Organisation of Maritime Fishing and the *Ordonnance n° 93-022 portant réglementation de la pêche et de l'aquaculture*. Both laws contain basic legislation on (*inter alia*): marine fisheries; fishery management and conservation; institutions; policy/planning; processing/handling; fishing authorization; offences/penalties; concession; alien species; enforcement/compliance; and foreign fishing. Decree 94-112 does not have provisions that apply in ABNJ. The Malagasy environmental legal regime has a long list of acts on topics ranging from community management to establishment of EIA procedures. None of the acts overtly provides for application of environmental standards in ABNJ.

C. Mauritius

Mauritian maritime zones are defined in the Maritime Zones Act 2005 and the law does not exercise jurisdiction beyond the 200-mile EEZ. Mauritian fisheries laws are contained in the Fisheries and Marine Resources Act 2007 which includes measures to address marine parks (which can include the seabed), conservation zones, and IUU fishing. Important provisions include:

- S.57 Implementation of international fishery conservation and management measures;
- S.58 Powers of search and seizure (i) in Mauritian Maritime Zones and (ii) on the high seas; and
- S.62 Pursuit beyond the maritime zones in accordance with the doctrine of hot pursuit.

Mauritian environmental laws are contained in the Environment Protection Act 2002 and subsequent amendments. S.12A of the 2008 Amendments makes special provision for implementing multilateral environmental agreements, but no provisions empower the State to act in ABNJ.

D. Mozambique

Mozambican maritime laws are contained in Law 1996-04 Law of the Sea dealing with Maritime Zones and the law does not claim any jurisdiction beyond the EEZ. Mozambican fishery laws are contained in Decree 2003-43 General Rules of Marine Fisheries. Mozambican environmental laws are contained in the following legislation: Decree 2004-18 Regulation on Environmental Quality Standards and Emission of Effluents; Decree 2004-45 Rules on the Process of Environmental Impact Assessment; Decree 2006-11 Regulations on Environmental Inspection; Decree 2006-13 Regulations on Waste Management; and Law 1997-20 Environmental Act.

E. South Africa

South African maritime zones are contained in the Maritime Zones Act 1994 and the law does not claim any jurisdiction beyond the 200-nautical-mile EEZ. South African fisheries laws are contained in the Marine Living Resources Act 1998. The objectives of the Act (from section 2) include:

- the need to apply precautionary approaches in respect of the management and development of marine living resources;
- the need to protect the ecosystem as a whole, including species that are not targeted for exploitation;
- the need to preserve marine biodiversity; and
- the need to minimize marine pollution.

The Act has extra-territorial application to bind South African flagged vessels, including those in ABNJ. Furthermore, sections 40-42 deal with the issuance of high seas fishing licences and the implementation of international conservation and management measures. S.42(3) provides:

“If the Director-General has reason to suspect that a foreign fishing vessel was involved in a contravention of an international conservation or management measure, he or she may—

(a) provide to the appropriate authorities of the flag state of the foreign fishing vessel concerned, such information, including evidentiary material, relating to that contravention; and

(b) when such foreign fishing vessel is voluntarily in a port of the Republic, promptly notify the appropriate authorities of the flag state of the vessel accordingly.”

S.52 provides for the powers of fishery control officers beyond South African waters.

South Africa has sophisticated provisions relating to the issuance of flag state jurisdiction to fishing vessels. Both the South African Maritime Safety Authority (SAMSA) and the South African Department of Environmental Affairs and Tourism (DEA&T) must approve of a fishing vessel before registration. Most importantly, no fishing vessel will be registered without a fishing right and a permit to engage in fishing activities. Vessels wishing to fish on the high seas must obtain a specific high seas fishing permit and this requirement has helped to control IUU domestic fishing effort. South African environmental laws are contained in the *National Environmental Management Act* (1998) and subsequent amendments. The *Biodiversity Act* (2004) aims to manage, conserve and sustain South Africa’s biodiversity – including marine biodiversity, but neither legal regime expressly provides for powers in ABNJ.

VII. COMPLIANCE WITH AND ENFORCEMENT OF (CUSTOMARY) INTERNATIONAL LAW, GLOBAL AND REGIONAL INSTRUMENTS IN THE SOUTHERN INDIAN OCEAN

A. Conventional and Customary International Law

Under customary international law (the complex distinctions between customary and conventional international law are beyond the scope and needs of the present paper) two additional sources of authority to act in ABNJ may be invoked.

1. The defence of necessity

This doctrine provides that an act that would otherwise be a breach of an obligation is not wrongful if taken in a state of necessity. The defence of necessity applies when an essential interest of the State is threatened by a grave and imminent peril and there is no other means of averting it. For example, customary international law has on occasion justified interference with foreign ships on the high seas on these grounds. The classic case in this regard is the *Virginius* dispute from 1873, when Spain seized an American ship carrying weapons to be used in the Cuban insurrection against Spain.

This customary international law doctrine was codified in relation to taking action against threats of pollution emanating from the high seas in the 1969 International Convention relating to Intervention on the High Seas. This provides that the Parties to the Convention may take such measures on the high seas as may be necessary to prevent, mitigate or eliminate grave and imminent danger to their coastline or related interests from pollution or a threat of pollution of the sea by oil, following upon a maritime casualty or acts related to such a casualty, which may reasonably be expected to result in major harmful consequences.

2. The duty to cooperate

Where a flag State fails to assist a coastal State, the flag State may be in breach of the duty to cooperate under (customary) international law, in addition to the duty to cooperate under treaty law, addressed below.

B. The 1982 Convention on the Law of the Sea

Article 300 of the LOSC embodies a central underlying, unifying concept of the LOSC that

enjoying rights and benefits involves the concomitant undertaking of duties and obligations: duties must be fulfilled in good faith and rights exercised non-abusively. Article 235 holds States "responsible for the fulfilment of their international obligations concerning the protection and preservation of the marine environment," and States will "be liable in accordance with international law." Article 229 states that "Nothing in this Convention affects the institution of civil proceedings in respect of any claim for loss or damage resulting from pollution of the marine environment." This recourse is available for pollution incidents in ABNJ.

With regard to VSP and other rules on marine environmental protection (MEP) and fisheries, the LOSC requires States to implement, comply with, and enforce the rules established by it and by other Conventions, including IMO Conventions and, as will be seen below, in many instances for ABNJ. Three types of States are involved: flag States, coastal States and port States. These types of States, their duties and obligations, the measures taken to implement, comply with, and enforce international VSP, MEP and fisheries rules, and their effectiveness, are discussed below.

1. Flag States

a. Definition of Flag States

Ships have a "nationality" which is that "of the state whose flag they are entitled to fly." Flag States are those States that have granted to ships their nationality and the right to fly their flag. States must fix the conditions for this grant of nationality, for the right to fly their flag, and for registration of ships in their territory. Documents supporting the right to fly its flag must be issued to the ship by the State granting this right. These requirements are set out in LOSC Article 91. "Every state has the right to sail ships flying its flag on the high seas" (Article 90). It is a principle of international law that every State "has the right to confer its nationality on a ship,"⁷ and that "determination of the criteria and establishment of the procedures for granting and withdrawing nationality to ships are matters within the exclusive jurisdiction of the flag State."⁸

This right is limited in two respects. First, ships may only sail under one flag at a time and may not change their flag during a voyage or while in a port, except in the case of a real transfer of ownership or change of registry (Article 92). Second, a "genuine link," undefined by the LOSC and international law, must exist between the State and the ship.⁹ In the continuing absence of a legally binding definition, the genuine link has so far usually been described in socio-economic terms.¹⁰ The problems with enforcing these rules created by the "genuine link" lacuna are addressed below.

b. Duties and Obligations of Flag States

In general, a flag State must "effectively exercise its jurisdiction and control in administrative, technical and social matters over ships flying its flag," including "[assuming] jurisdiction under its internal law over each ship flying its flag and its master, officers and crew in respect of [the above] matters concerning the ship" (Article 94(1) & (2)(b)).

With regard to VSP specifically, flag States must "take such measures as are necessary to ensure [for ships flying their flag], that the master, officers [and crew] are fully conversant with and required to observe the applicable international regulations concerning ... the prevention, reduction and control of marine pollution (Article 94(3) and (4)(c)). The obligation to take these necessary measures is otherwise unqualified. In taking these measures, each State must "conform to generally accepted international regulations, procedures and practices and to take any steps which may be necessary to secure their observance" (Article 94(5)). This is another one of the LOSC Articles by which the generally applicable international rules and standards (GAIRS) set out in the IMO Conventions are made applicable to flag States. The same obligation applies to measures "as are necessary to ensure safety at sea" (LOSC Article

94(3)). The ultimate responsibility to implement, comply with and enforce GAIRS on VSP rests clearly with the flag State and must be applied by it to all its ships sailing under its flag in all waters everywhere in the world.

Flag States must ensure that the provisions of LOSC Part XII on the marine environment are also complied with by ships flying their flag. Article 216(b) requires flag States to enforce on ships "flying their flag or of their registry" GAIRS for VSP and laws and regulations adopted in accordance with the LOSC on dumping. The lengthy Article 217 found in Part XII is entitled "enforcement by flag states." Article 217 (1) sets out the obligations on flag States to:

- "ensure compliance" by ships "flying their flag or of their registry" with GAIRS and with their own laws and regulations adopted in accordance with the LOSC,
- adopt their own laws and regulations,
- "take other measures necessary for their implementation," and
- "provide for effective enforcement of such rules, standards, laws and regulations, *irrespective of where a violation occurs*" [emphasis added].

Thus Article 217 of Part XII adds enforcement responsibilities for VSP to the general duties of the flag State set out in LOSC Articles 92 and 94, and states the uniform and unqualified responsibility of flag States to enforce international rules and standards on VSP throughout the ocean, including marine ABNJ, and thus also the project area.

The remaining provisions of Article 217 define the flag State's enforcement obligations in more detail. Flag States must ensure that their flag vessels are prohibited from sailing until they can proceed to

⁷ Quotation from Sohn and Gustafson, 1984; reaffirmed by *M/V "SAIGA"* (No. 2), *St. Vincent & the Grenadines v. Guinea*, ITLOS Judgment of 1 July 1999, para. 63.

⁸ See, e.g., *M/V "SAIGA"* (No. 2).

⁹ "The [LOS Convention's purpose] on the need for a genuine link between the ship and the flag State is to secure more effective implementation of the duties of the flag State..." *Ibid.*, para. 83; see also discussion by Churchill, 2000, and Anderson, 2005.

¹⁰ The United Nations Convention on the Conditions for Registration of Ships, 1986 (Registration Convention) attempts to define the genuine link, in particular by adding socio-economic requirements (e.g., connecting the beneficial owner, crew, fleet revenues, etc., to the country of registry). It is unlikely that this Convention will enter into force. For an extensive description and discussion, see Churchill, 2000 and Behnam & Faust, 2003.

sea in compliance with applicable international rules and standards on pollution control, including requirements related to construction, design and manning. Where violations of international rules and standards occur, flag States are required to conduct immediate investigations and institute proceedings irrespective of where the violation occurred or where the pollution caused by the violation has appeared. Cooperation between States in investigating violations is encouraged in Article 217(5). Under Article 217(6) and (7), flag States must investigate any violations by their flag vessels at the written request of another State, institute proceedings where sufficient evidence of the violation is available and inform the requesting State of the outcome of the investigation. Under Article 217(8), States must provide penalties which are adequate in severity to discourage violations wherever they occur. Thus flag State jurisdiction over VSP is still largely based on the commitment and resources of States to monitor the compliance of their own fleets and take enforcement measures against delinquent vessels. Other than the Flag State Implementation Sub-committee of IMO's Marine Environment Protection Committee, no monitoring bodies of flag State compliance exist at global or regional level.

c. Flags of Convenience

Ships registered and flagged in open registry States sail under so-called 'flags of convenience' (FOCs). Under international law there is no agreed definition of FOCs;¹¹ largely sufficient for the purposes of this paper is a succinct one employed by the International Transport Workers Federation (ITF): "a FOC ship is one that flies the flag of a country other than the country of ownership of the ship."¹² Location of the so-called beneficial ownership of the ship outside its country of registry makes it very difficult for the flag

State to enforce its rules on the ship owners, whose responsibility it is to ensure that these rules are actually carried out on and by their ships.

Powerful economic drivers in this highly competitive industry underlie the migration by ship owners to FOCs. These drivers are by no means all sinister, nor are most ship owners irresponsible; the fact is that some national rules for some national flags make little commercial sense in a globalized economy and leave the ship owner with no choice but to register in a FOC country or cease shipping altogether.¹³ It is important to recognize that not all FOC ships are substandard or particularly prone to flaunting VSP rules and not all FOC States are equally lax in meeting their obligations under international law.¹⁴ Certain national flag ships that are not FOCs are known to be substandard and to pose potential pollution risks.¹⁵ There is often little incentive for national flags to rigorously enforce their own rules against their own ships when they know that their ships are thereby put at a competitive disadvantage against FOC ships. Nevertheless, when gauged by objective criteria, such as port State control detentions, reports of casualties and ship losses, FOC ships are disproportionately involved. FOC *fishing* vessels present a particularly important and growing marine environmental problem and threat to marine biodiversity and in particular for ABNJ.¹⁶ The international community as a whole, as represented by the UNGA, voiced its concern on these issues in a formal Resolution.¹⁷

d. Effectiveness of Flag State Control

The LOSC places clear, unqualified and unequivocal primary responsibility on flag States to implement and enforce compliance with VSP rules on their ships. In practice, however, the actual execution of this responsibility by many flag States is often inadequate and ineffective. The

¹¹ For a detailed discussion, see Ademun-Odeke, 2005.

¹² The ITF, which has been campaigning against FOCs since 1948, with a specific focus on improving conditions for crews, lists 27 FOCs on its website (www.itfglobal.org), which includes the open registry states listed by UNCTAD.

¹³ See, e.g., Behnam & Faust, 2003, 2003; Ademun-Odeke, 2005.

¹⁴ For example, Panama and Liberia, by far the two largest FOC registries, have quite different international compliance reputations, at least in the Paris MOU region.

¹⁵ For example, in the Mediterranean, non-FOC states Albania, Algeria and Lebanon are stated as appearing "year after year" in the 'very high risk' category of the Paris MOU; also in this category from the region is Syria, with Egypt and Turkey just below in the 'high risk' category (IMO DOC FSI 14/7/4, 30 March 2006, Harmonization of Port State Control Activities).

¹⁶ For current work on this issue, please see, e.g., www.high-seas.org, the website of the High Seas Task Force set up by the OECD.

¹⁷ UNGA Res. 59/24 on Oceans and law of the sea, 12 February 2005, paras. 38, 41, 42, 44 and 46.

main reason for the unsatisfactory implementation of flag State control over VSP¹⁸ is that certain States exercise their right under international law to register ships to fly their flag without fulfilling their concomitant duty to control their ships as clearly required by the LOSC. The economic advantages to ship owners of such light, if not absent, flag State control, and the associated light costs, are such that about half of the world's commercial tonnage has migrated to the major so-called "open registry" States,¹⁹ who register ships with which they have no "genuine link." Essentially, many of these States run ship registers solely as a source of income. To remain cost-effective, the maritime administration side, e.g., implementation and enforcement of all those flag State duties set out in LOSC Article 94 and the IMO Conventions, is usually necessarily kept to a minimum, and it may well be contracted out to a private business that may not even be located in the registering State.²⁰

Attempts to remedy this situation by restricting the flag State's almost unlimited prerogative under international law to grant its nationality to ships have failed.²¹ "The nationality of ships remains a well-defended preserve of sovereignty of states."²² Implementation of the comprehensive and elaborate rules on VSP, MEP and fisheries set out in the LOSC, the IMO Conventions and several of the Regional Seas Conventions and Protocols has been made more difficult and the marine environment suffers in consequence. Some States, concerned about the threats to their marine and coastal environment posed by FOC ships,²³ have begun to use their own rights and obligations under the LOSC and IMO Conventions

to protect and preserve the marine environment generally, and from VSP in particular, to enforce compliance with VSP rules by all ships, regardless of flag and LOSC or IMO Convention status, navigating in their maritime zones and calling at their ports and offshore terminals.

LOSC Article 94(6) provides one avenue of recourse against the flag State directly: "a state which has clear grounds to believe that proper jurisdiction and control with respect to a ship have not been exercised may report the facts to the flag state. Upon receiving such a report, the flag State shall investigate the matter, and, if appropriate, remedy the situation." This Article has not been much used, because when it has, little has occurred.²⁴ No cases have as yet been brought before a tribunal for compulsory dispute resolution under this Article. Consequently, States now seek to enforce compliance with VSP, MEP and fisheries rules on ships by using their powers under the LOSC to do so in two, largely complementary, capacities: as coastal States and as port States (neither of which the LOSC defines). These powers are briefly described below.

2. Coastal States

a. Duties and Obligations of Coastal States

Coastal States cannot exempt their own flag ships from complying with VSP, MEP and fisheries rules; they must implement and ensure, in their adjacent maritime zones (internal waters, archipelagic waters, territorial sea, EEZ, straits for international navigation, continental shelf), as well as in other States' zones and on the high seas (ABNJ),

¹⁸ The lack of effective flag state control is also a serious problem with regard to enforcement by some flag states of GAIRS on ship safety, construction, design, equipment and manning.

¹⁹ According to UNCTAD, in 2005, the principal open registries in terms of tonnage are Panama, Liberia, Bahamas, Malta, Cyprus and Bermuda. This percentage does not include the so-called "minor" open registries. A number of small island (e.g., Vanuatu) and developing coastal states (e.g., Belize, Honduras) also maintain open registries, as do land-locked Luxembourg and Mongolia, according to UNCTAD, 2005.

²⁰ It is neither *per se* wrong, nor is it illegal, to contract out execution of flag state duties as long as these are correctly met to international standards by the contractor. For example, the registers of Liberia and Marshall Islands, FOC states with reasonable reputations, are both run by the same private US commercial entity, based in the US. Nor is such contracting out unusual. Vorbach (2001) states that two-thirds of IMO Member States "have delegated a governance function to one or more private corporations," e.g., "members of the International Association of Classification Societies (IACS) perform compliance-checking inspections for over 100 IMO Member States."

²¹ For a history see Behnam & Faust, 2003 and Anderson, 2005.

²² Treves, 2004.

²³ FOC states themselves are generally at small risk of environmental damage resulting from their lack of enforcement, because the ships registered with them rarely if ever sail in their waters or call at their ports; landlocked FOC states run no risk at all.

²⁴ See, e.g., Molenaar, 1998; Roach, 1999; Behnam & Faust, 2003; Ademun-Odeke, 2005.

compliance by ships flying their flag with both GAIRS and their own national laws and regulations adopted in accordance with the LOSC. With regard to rights of and duties by coastal States to enforce these rules on foreign flag ships in their maritime zones and on the high seas (ABNJ), these rights and duties vary, depending on whether the coastal State is seeking to enforce these rules on a ship navigating in its maritime zones, or on a ship voluntarily in its ports (in which case the rules for port States apply), or on the high seas (ABNJ).

Although coastal States have certain rights to intervene in their national jurisdictions and in ABNJ under the LOSC, their rights to do so are very limited (see further below). Actual enforcement at sea by coastal States of VSP, MEP and fisheries rules against ships rarely occurs.²⁵ This is because at-sea enforcement is difficult, costly, and subject to complex requirements under the LOSC and international law, which in this respect tend to favour freedom of navigation generally and the non-hampering of innocent passage in particular, even in the territorial sea.²⁶ Bearing in mind that this is a very complex issue deriving from the different rights and obligations of coastal States obtaining in each jurisdictional zone, detailed discussion of which is beyond the scope and objectives of this paper, as a very broad rule of thumb it can be considered that coastal State enforcement rights tend to diminish the further offshore the foreign ship is sailing.

A detailed analysis of the differences between coastal State and port State rights would be too

long for the purpose and needs of this paper, which is to give an overview of the principal issues in order to inform an interdisciplinary discussion by stakeholders of practical policy options to improve enforcement of and compliance with rules for MEP in ABNJ.²⁷ Subject to that caveat, and stated in brief for present purposes, it is useful to bear in mind that coastal States have a greater range of more practical options to enforce VSP, MEP and fisheries rules against foreign flag ships when they do so in their capacity as port States, i.e., on a ship voluntarily in their ports. In the analysis below of enforcement of these rules through port States, coastal State enforcement rights will be distinguished as necessary. Where its concurrent status as a coastal State gives the port State (or *vice-versa*) additional options to enforce these rules, this will be identified.

b. Hot Pursuit

Under LOSC Article 111, the hot pursuit of a foreign ship may be undertaken when the competent authorities of the coastal State have good reason to believe that the ship has violated the laws and regulations of that State. Such pursuit must be commenced when the foreign ship or one of its boats is within the internal waters, the archipelagic waters, the territorial sea or the contiguous zone of the pursuing State, and also, albeit under certain conditions, if the foreign ship or one of its boats is inside the EEZ or over the continental shelf of the pursuing State. The pursuit may only be continued outside these zones if the pursuit has not been interrupted, but if this criterion is met, hot pursuit by a coastal State could therefore be continued into ABNJ.

²⁵ This may be changing somewhat, at least for oil tankers, since the break-up of the *Prestige* off the coast of Spain in 2002, when France, Portugal and Spain announced spot inspections for all single-hulled tankers travelling through their Atlantic EEZs. For the Mediterranean, France announced in 2003 the establishment of strict controls on transiting oil tankers and its intention to intercept ships up to 90 miles off its coasts if they release polluting ballast water.

²⁶ See, e.g., LOSC Part II, Section 3, Article 211(3)&(4). In this context, LOSC Part III sets out rules on flag State and coastal State rights and duties with regard to compliance with environmental regulations during passage of ships through international straits and transit passage, and Part IV similarly addresses archipelagic sealanes passage, to which the same considerations limiting the practical value of at-sea enforcement of these rules by coastal States apply. LOSC Article 225 provides that States shall not endanger the safety of navigation or otherwise create any hazard to a vessel, or bring it to an unsafe port or anchorage, or expose the marine environment to an unreasonable risk in the exercise of their powers of enforcement against foreign vessels. In exercising port and coastal State enforcement powers for vessel source pollution and dumping offences, Article 226 provides that States must not delay a foreign flag vessel longer than is essential for the purpose of investigations and where investigations indicate a violation of the relevant international regulations and standards, the vessel must be promptly released subject to appropriate bonding arrangements. Where the vessel would present an unreasonable threat of damage to the marine environment, prompt release may be refused or made conditional on proceeding to the nearest appropriate repair yard but the flag State must be promptly notified and can apply for the vessel's release under Part XV of the LOSC.

²⁷ For a detailed discussion, see, e.g., ILA, 2000, on coastal State jurisdiction and Molenaar, 1998.

3. Port States

a. Duties and Obligations of Port States

The basis for the extensive authority that port States may exercise over foreign ships voluntarily in their ports is that ports are entirely inside the State's sovereign territory and subject to its sovereignty.²⁸ The following discussion applies to ships voluntarily in port. Port States may (it is not obligatory) investigate and institute proceedings in respect of any discharge from a ship in its port or at an offshore terminal that occurred either outside the port State's own maritime zones in violation of GAIRS, or in the maritime zones of other States if the violation has caused or is likely to cause pollution in the port State's maritime zones (LOSC Article 218 (1) & (2)). It is obligatory for the port State to investigate, but only "as far as practicable", discharge violations if so requested by a State who believes these occurred, caused or threatened damage to the requesting State's maritime zones, or by the flag State, in the latter case irrespective of where the violation occurred (Article 218 (3)). Where the proceedings relate to discharges occurring within marine areas under another State's jurisdiction, that State or the flag State or a State damaged or threatened by the discharge violation must consent to the proceedings under Article 218(2).

Coastal States may (it is not obligatory) institute proceedings against ships in their ports in respect of any violation of their laws and regulations adopted in accordance with LOSC and GAIRS with regard to VSP when the violation has occurred in their territorial sea or EEZ (LOSC Article 220(1)). Detention of the ship is usually permitted.

Any State, having ascertained, "either by request or on its own initiative," that a ship in port is in violation of GAIRS relating to seaworthiness and "thereby threatens damage to the marine environment," must take administrative measures to prevent the ship from sailing; it is permissible to allow the ship "to proceed only to nearest appropriate repair yard" in order to remove the

causes of the violation, after which it must be allowed to continue immediately (LOSC Article 219). With regard to dumping, laws and regulations adopted in accordance with the LOSC and GAIRS must be enforced by any State with regard to "loading of wastes or other matter occurring within its territory or at its off-shore terminals" (LOSC Article 216(1)(c)). Enforcement and compliance measures must be exercised without discrimination against any other State (LOSC Article 227). With regard to hot pursuit, if they satisfy LOSC Article 111 conditions, port States may act as coastal states.

The port State's enforcement powers for violations of GAIRS which occur in ABNJ are limited by the flag State's right of pre-emption set out in Article 228 of the LOSC, under which the flag State may take over proceedings instituted by the port State within six months of the proceedings being instituted, unless they relate to a case of major damage to a coastal State or that flag State has repeatedly disregarded its obligation to effectively enforce GAIRS.

b. Access to Ports

"It is also by virtue of its sovereignty that the coastal state may regulate access to its ports."²⁹ LOSC Article 25(2) sets out the rights of protection which may be exercised by the coastal State and provides, *inter alia*, that "the coastal state has the right to take the necessary steps to prevent any breach of conditions to which admission of ships [to its ports] are subject," thereby indicating that a coastal State may set conditions for access to its ports. This is further confirmed by LOSC Article 211(3) on VSP, which obliges states that establish particular requirements for the prevention, reduction and control of pollution of the marine environment "as a condition for the entry of foreign vessels" (emphasis supplied) into their ports or internal waters "to give due publicity to such requirements" and communicate them to IMO. Ships may also be banned from entering ports, as was done by the EU for all its ports with regard to large single-hulled tankers carrying heavy-grade oil.

²⁸ This was held by the ICJ to be both customary and conventional (LOSC) international law. *Case Concerning Military and Paramilitary Activities In and Against Nicaragua (Nicaragua v. United States of America)*, ICJ Judgment of 27 June 1986, paras. 212, 213.

²⁹ *Ibid.*, para 213. Commentators agree there is no general right of access under international law to ports.

c. Effectiveness of Port State Control

No sooner did coastal States begin using their ports to enforce compliance with VSP rules than "ports of convenience"³⁰ emerged, i.e., ports of States with less rigorous compliance and enforcement standards. Shipping and ports are both highly competitive businesses with ample scope for 'free riders'. Attempts to address this problem all have in common the recognition that unilateral action by one State to improve its compliance and enforcement standards (unless it is a very large and powerful State to whose ports access is commercially vital, such as the US) is likely to place its ports at a competitive disadvantage. It is essential to create a level playing field for ships and ports in terms of compliance with and enforcement of VSP rules. Thus was developed, in addition to the 'no discrimination' principle and the obligation that State laws and regulations on VSP must be no less effective than the GAIRS (both are found in the LOSC, discussed above), the 'no-more-favourable-treatment' (NMFT) principle. This holds that port authorities must apply GAIRS to all ships, regardless of whether their flag State is a party to the LOSC or the relevant IMO Conventions.

To counteract the "ports of convenience" issue, efforts began to coordinate compliance and enforcement between authorities from different States. Such endeavours to harmonize policy are supported by LOSC, e.g., in Article 211(3). The most successful type of regional coordination so far is taking the form of so-called MOUs on port State control.

d. Regional Arrangements for Port State Control

Originally intended as a complementary form of monitoring and control to flag State jurisdiction, port State control is increasingly becoming an essential mechanism for monitoring compliance with and enforcement of MARPOL 73/78 and other standards. The Indian Ocean MOU came into effect on 1 April 1999. Of its 14 members, France, Mauritius and South Africa are adjacent to the project area. The other two nearest port States, Madagascar and Mozambique, are not members of the MOU.

The scope of ship inspections under the Indian Ocean MOU includes both documentary and operational aspects, including the condition of a ship, its equipment and the skill levels of its crew. The number of inspections has steadily increased under the MOU, with some positive effects on the level of compliance with MARPOL 73/78 and SOLAS provisions. During 2009, 5383 ship inspections were conducted, with 3116 ships noted as having deficiencies. A total of 17,451 deficiencies were identified and 517 ships were detained in port for serious deficiencies. The concept of targeting particular vessels for priority inspection on the basis of criteria such as prior deficiencies, casualties and age was introduced to improve the efficacy of inspections and to encourage compliance. A major tool of the port State control MOU in combating substandard shipping is an intensive level of information exchange between the port State authorities and with the IMO on the condition of particular vessels trading within and between the regions. The lists of non-compliant shipping exchanged between port States are an important constraint on the operations of substandard shipping.

Although there is still considerable disparity between the operations of different port State control systems and a need for greater coordination and globalisation of port State procedures across regions, standardisation of port inspection regimes is improving. Regulatory gaps in the port State control network persist, as some key non-participants, including Taiwan and Bermuda, control substantial merchant fleets. Nevertheless, for ABNJ and the project area, the increasing cohesion of port State control systems, such as the Indian Ocean MOU, and their greater capacity to deter substandard shipping operations appear to offer at least as much potential for the prevention of harm to the marine environment as does reliance on increasing the efficacy of flag State implementation of pollution control measures. In effect, port States are now performing many traditional flag State enforcement and compliance functions.

³⁰ See, e.g., Keselj (1991), Molenaar (2006).

C. UN Fish Stocks Agreement

The LOSC contains extensive provisions on fisheries, with compliance and enforcement powers assigned to flag, coastal and port States in various forms and under various circumstances. The UN Fish Stocks Agreement is designed to reinforce the efficacy of its conservation and management measures in ABNJ, thus including the project area, in its further development of the fisheries enforcement powers contained in the LOSC. The Agreement provides model provisions for a cooperative system of monitoring, compliance and enforcement on the high seas which involves parties to the Agreement, RFMOs and port States. It also extends and strengthens individual flag State responsibility by specifying minimum standards for compliance by States Parties whose vessels fish for highly migratory and straddling stocks on the high seas. Article 18 provides best practice guidelines for rigorous flag State enforcement of conservation and management measures agreed at subregional, regional or global level for highly migratory and straddling stocks. This Article was a direct response to the problems highlighted in the Oceans Chapter of Agenda 21 of lax flag State control over fishing vessels. Article 18 provides that flag States must exercise control over their flag vessels on the high seas by means of fishing licences, authorisations or permits and prohibit fishing on the high seas by vessels which are not duly authorised. States must establish a national record of their flagged fishing vessels authorised to fish on the high seas and specify requirements for marking of fishing vessels and gear which accord with internationally recognisable standards. They must also introduce systems which accord with sub-regional, regional and global standards for reporting vessel positions and recording catch of target and non target species and fisheries effort. The development and implementation of vessel monitoring systems, including satellite transmitter systems, are included in the range of measures prescribed under the Article. States are required to introduce stringent systems for enforcing the control measures specified in Article 18, including immediate investigations of any alleged violation of subregional or regional conservation measures and the imposition of sanctions adequate in

severity to discourage violations and to ensure that offenders are deprived of the benefits accruing from illegal fishing on the high seas.

In its model provision for a qualified right of reciprocal boarding and investigation of suspected illegal fishing vessels on the high seas, the UN Fish Stocks Agreement legitimised the establishment of collaborative high seas compliance and enforcement schemes among States Parties. Article 21 of the Agreement prescribes the circumstances in which a flag State other than the flag State of the suspected fishing vessel may board and investigate the vessel for an alleged violation of conservation and management measures on the high seas. In any high seas area covered by an RFMO or arrangement (A), a State Party to the UN Fish Stocks Agreement which is also a member of the RFMO/A may send its duly authorised inspectors to board and inspect the fishing vessels of other flag States which are party to the UN Fish Stocks Agreement and suspected of violations of the conservation and management measures of the RFMO/A. Where there are clear grounds for believing that a vessel has engaged in any activity contrary to the conservation and management measures of the RFMO/A, the inspecting State must notify the flag State promptly and the flag State must respond within three working days. The flag State may then either fulfil its obligation to investigate the alleged violation or authorise the inspecting State to investigate. Where the flag State either fails to respond or to take action, the inspecting State may proceed with the investigation, including bringing the vessel to the nearest appropriate port. These provisions extend the very limited circumstances provided for under the LOSC and customary international law in which flag vessels may be boarded by officials of other flag States on the high seas.

The port State jurisdiction provisions of the UN Fish Stocks Agreement empower port States that are party to the agreement to inspect documents, fishing gear and catch on board fishing vessels where such vessels are voluntarily in their ports or their offshore terminals and to prohibit landings and transshipments of fish where it has been established that the catch has been taken in a manner which undermines the effectiveness of subregional,

regional or global conservation and management measures on the high seas. These powers represent an expansion of port State competence that is consistent with the duty of States to cooperate in conserving the living resources of the high seas under LOSC Article 118.

In 2006, the UN Fish Stocks Agreement Review Conference assessed the effectiveness of the Agreement in securing the conservation and management of straddling and highly migratory fish stocks. The Conference concluded that significant challenges remain in achieving full implementation of the UN Fish Stocks Agreement provisions, particularly with respect to the application of the precautionary approach and ecosystem-based approach to the conservation and management of highly migratory and straddling stocks. While several RFMOs have made good progress in modernizing their mandates to implement the Agreement's provisions, other RFMOs are not fulfilling all the functions outlined in Articles 10 to 12 of the Agreement. The Conference found that only some RFMOs have used closed areas, MPAs and marine reserves to manage fisheries and protect biodiversity. It recommended that States and RFMOs develop management tools, including closed areas and marine reserves to effectively conserve and manage fisheries and protect habitats, marine biodiversity and marine ecosystems. Data collection and information sharing between RFMOs were highlighted as serious challenges: the Conference recommended that States commit to collecting and sharing data and strengthening RFMO data requirements.

The Conference noted that ongoing problems of non-compliance by members, cooperating members of RFMOs and non-members continued to undermine the effectiveness of conservation and management measures adopted within RFMO Convention areas. It reported that high levels of illegal, unreported and unregulated (IUU) fishing continue to occur in many fisheries for straddling and highly migratory stocks. The Conference recommended that further steps to

combat and deter IUU fishing were needed and that States should strengthen effective control over fishing vessels flying their flag. Overall the report of the Conference conveyed the impression that RFMOs, including the IOTC and APFIC, were still at a preliminary stage in attaining the best practice guidelines recommended by the UN Fish Stocks Agreement for long-term conservation and sustainable use of highly migratory and straddling fish stocks specifically and high seas fisheries in general.

D. Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969 and its 1973 Protocol Covering Substances Other Than Oil

This Convention (the Intervention Convention) provides for the right of a coastal State to take measures on the high seas to prevent, mitigate or eliminate danger to its coastline or related interests from pollution by oil or substances other than oil or the threat thereof, following upon a maritime casualty. The coastal State is empowered to take only such action as is necessary, after due consultation with appropriate interests, including, in particular, the flag State(s) of the ship(s) involved, the owner(s) of the ship(s) or cargo(es) in question and, where circumstances permit, independent experts appointed for this purpose.

The Intervention Convention is particularly interesting for the project area as it is in an ABNJ. The thrust of this Convention is echoed in LOSC Article 221, which also defines "maritime casualty" and the two Conventions are considered to regulate the right of intervention by the coastal State in these circumstances both in the EEZ and on the high seas. However, "to IMO's knowledge, the [Intervention Convention] has never been applied. There have been interventions beyond the territorial sea where states have followed some of its regulations regarding consultations. But IMO has never been involved in the way explicitly prescribed in the treaty."³¹ To the best of the present revisor's knowledge, this continues to be correct.

³¹ Quotation from Blanco-Bazan, 2003.

E. FAO Agreement on Port State Measures

After intense negotiations from June 2008 to August 2009, the FAO Conference approved a binding agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing in November 2009. With its objective of ensuring the long-term conservation and sustainable use of living marine resources by enhancing port State measures to combat IUU fishing, the Agreement obliges each party to:

- apply the agreement and its measures to any foreign fishing vessels wishing to use its ports;
- require prior notice of a foreign fishing vessel's arrival in port;
- prohibit such a vessel's entry into port, based on the information provided in the prior notification;

- inspect vessels that are permitted to enter;
- deny the unloading of fish and the ability to access services based on the inspection report which indicates that the vessel was engaged in IUU fishing; and
- apply the Agreement in a fair, transparent and non-discriminatory manner.

F. Regional Instruments and Bodies

Any enforcement and compliance activities undertaken by the regional environmental and fishery instruments and bodies examined in part V above and identified as being relevant to the project area will need to comply with the global conventional and (customary) international law rules set out above in the present part VII.

VIII. REGULATORY AND GOVERNANCE GAPS IN THE SOUTHERN INDIAN OCEAN

The LOSC currently (1 December 2011) has 162 States Parties. The LOSC sets out principles and requirements for oceans governance to regulate activities conducted on the seas within a set of maritime zones. These zones are legal/political boundaries – not biological, ecosystem-based boundaries. The practical effect of this zonation is that ABNJ, for which no single State, but the global community as a whole, is responsible, experience regulatory and governance gaps in fisheries conservation and management and in protection and preservation of the marine environment. Nevertheless, the LOSC imposes a strong duty to cooperate on a regional and sub-regional basis with respect to protection and preservation of the marine environment, the conservation of high seas living resources, and the prevention of pollution. These and other duties set out in the LOSC, complemented by the CBD, provide the legal basis for and can be built upon to develop a comprehensive regional approach to the management of the marine environment and biodiversity in the project area. The Nairobi Convention and, if and when it enters into force, SIOFA are able to provide additional legal support tailored to the specific needs of the project area.

What is lacking is a specific regulatory and implementation mechanism for the project area and a body to administer and enforce it. The regulatory mechanism will need to address the fisheries and non-fisheries threats to the project area – essentially implementing the international and regional laws and regulations already in place to address these threats and identifying species of common concern and priorities for protection in the project area, including the creation of a representative network of MPAs in the project area.

The Nairobi Convention and its Protocols and the GEF ASCLME project each provide a platform for regional cooperation and possibly a home for the administrative body, although this ideally should be located in one of the five States nearest to the project area. There certainly are common species of concern here. The valuable industry contribution by SIODFA to the preservation and management of ABNJ in the SIO in general and the project area in particular should be recognized, encouraged and if possible reinforced with supportive legislation.

IX. OPTIONS AND RECOMMENDATIONS

At the global level and taking into account the strengths and weaknesses of the global instruments discussed in this paper, this paper makes the following recommendations for improvement in legal and regulatory governance of the project area:

1. Change the focus of the IUCN GEF-UNDP Seamounts project from the existing sectoral orientation to a broader ecosystem management approach for the region, noting that fisheries is an important component.
2. A primary aim of this project should be to enhance cooperation between existing bodies and organisations rather than creating a new body.
3. Use the ASCLME project and its existing and evolving partnerships to explore the development of an alliance as a working arrangement to demonstrate effective management and governance mechanisms for ABNJ in the Indian Ocean.
4. This alliance concept should include the initiation of joint programs, plans of action, and MOUs to promote cooperation amongst the coastal States of the South West Indian Ocean, the signatories and parties to SIOFA, and the secretariats or administrative units of all relevant public and private bodies (such as the IOTC, SWIOFC, the Nairobi Convention, the ASCLME and SWIOF projects, Indian Ocean Commission, ISA, FAO, the Port State Control MOU and SIODFA).
5. The initial composition of the alliance should not exclude consideration being given to including additional States and parties who are stakeholders in the sustainable development, management and use of the resources of the ABNJ in the Indian Ocean.
6. Within the region, it is in particular recommended to:
 - Encourage implementation of existing relevant instruments including applicable UN Resolutions
 - Encourage flag States with vessels engaged in deep-sea bottom fishing in the region to adopt measures consistent with UNGA Resolutions 61/105 and 64/72 and the 2009 FAO International Guidelines for Deep Sea Fishing
 - Encourage Parties and signatories of SIOFA to bring the agreement into force and to update the 2006 interim measures bringing them into line with the 2009 FAO International Guidelines for Deep Sea Fishing
 - Collaborate with the CBD Secretariat and FAO to convene a sub-regional workshop or workshops with relevant States, authorities, experts and stakeholders to identify EBSAs and VMEs in the Indian Ocean ABNJ
 - Remove market inefficiencies such as subsidies from industrial-level fishing operations in ABNJ
 - Encourage relevant regional bodies such as the Nairobi Convention and the IOTC to explore the feasibility and appropriateness of expanding their existing mandates so as to address ecosystem management in the ABNJ more effectively
 - And furthermore encourage effective management of all other activities that represent risks to biodiversity and ecosystem function in ABNJ in the Indian Ocean.
7. Support negotiations in the UN to draft a multilateral agreement under the LOSC on conservation of biodiversity in marine ABNJ that would create a framework for all currently unregulated activities, ensure that best conservation principles are incorporated and applied in all activities and sectors in marine ABNJ, improve communications among State and non-State actors in marine ABNJ and improve compliance and enforcement mechanisms.

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Inter-American Tropical Tuna Commission (IATTC) at
<http://www.iattc.org>

North Atlantic Marine Mammal Commission (NAMMCO) at
<http://www.nammco.no> – the area of competency is the North Atlantic.

North Atlantic Salmon Conservation Organization (NASCO) at
<http://www.nasco.int>

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<http://www.wcpfc.int>

ANNEX 1. REGIONALLY RELEVANT PARTIES AND STATUS OF THE RELEVANT LEGALLY BINDING INSTRUMENTS

Instrument	Parties	Status of Instrument
LOSC	France, Madagascar, Mauritius, Mozambique, South Africa	Entered into force 16 November 1994
CBD	France, Madagascar, Mauritius, Mozambique, South Africa	Entered into force 29 December 1993
UN Fish Stocks Agreement	France, Mauritius, Mozambique, South Africa	Entered into force 11 December 2001
FAO Compliance Agreement	Madagascar, Mauritius, Mozambique	Entered into force 24 April 2003
MARPOL 73/78 and Annexes I and II	France, Madagascar, Mauritius, Mozambique, South Africa	Annex I entered into force 2 October 1983 Annex II entered into force 6 April 1987
MARPOL 73/78 Annex III	France, Madagascar, Mauritius, Mozambique, South Africa	Entered into force 1 July 1992
MARPOL 73/78 Annex IV	France, Madagascar, Mauritius, Mozambique	Entered into force 27 September 2003
MARPOL 73/78 Annex V	France, Madagascar, Mauritius, Mozambique, South Africa	Entered into force 31 December 1988
MARPOL 73/78 Annex VI	France	Entered into force 19 May 2005
London Convention	France, South Africa	Entered into force 30 August 1975
London Protocol	France, South Africa	Entered into force 24 March 2006
Ballast Water Management Convention	France, South Africa	Not yet in force
Antifouling Convention	France	Entered into force 17 September 2008
International Convention on the Regulation of Whaling	France, South Africa	Entered into force 10 November 1948
CMS	France, Madagascar, Mauritius, Mozambique, South Africa	Entered into force 10 November 1948
CITES	France, Madagascar, Mauritius, Mozambique, South Africa	Entered into force 1 July 1975
Part XI Implementing Agreement	France, Madagascar, Mauritius, Mozambique, South Africa	Entered into force 28 July 1996
International Convention on Oil Pollution Preparedness, Response and Cooperation	France, Madagascar, Mauritius, Mozambique, South Africa	Entered into force 13 May 1995
Underwater Cultural Heritage Convention	None of the five countries are parties	Entered into force 2 January 2009

ANNEX 2: OVERVIEW OF THE SIX MARPOL ANNEXES

(a) MARPOL Annex I – Prevention of Pollution by Oil

Annex I is continuously evolving to meet the challenges posed by the operational requirements of ships, advances in shipping construction, and increasing scientific knowledge on sensitive marine environments. Acceptance of Annex I is mandatory for parties to MARPOL 73/78. The primary pollution control method adopted in Annex I is to designate distances from the nearest land and special areas where discharges of oil are either strictly controlled or prohibited. Annex I provides specific discharge restrictions for different types of vessels depending on their tonnage and date of construction. For example, Regulation 9 of Annex I provides that an oil tanker may only discharge oil or oily mixtures when it is not in a MARPOL special area and en route more than 50 nautical miles from nearest land. In addition, the instantaneous rate of discharge of oil or oily mixtures must not exceed 60 litres per nautical mile and the total quantity of oil discharged into the sea must not exceed, for existing tankers, 1/15,000 of the total quantity of the particular cargo of which the residue formed a part. For new tankers this discharge rate is halved at 1/30,000 of the total quantity of the cargo of which the residue formed a part. A similar but less stringent combination of conditions applies to oil discharges from ships other than oil tankers.

As well as specifying restrictions on the nature of oil discharge and the areas in which oil and oily mixtures may be discharged, Annex I has been amended over time to introduce construction, design and equipment standards which aim to reduce the amount of oily waste generated by ships and to lessen the risk of accidental discharge. During the 1970s, the discharge restrictions in Annex I were progressively supplemented with design and equipment standards, such as double hulls, to be phased in as new tankers were built. Improvements in ship construction are critical in preventing concentrated vessel-source pollution on the high seas, as accidents on the high seas are more likely to stem from structural failure rather than collisions. Although the majority of large known oil spills in recent years have occurred in coastal areas where the risk of collision and grounding is higher, oil spills continue to occur in ABNJ.

(b) MARPOL Annex II – Control of Pollution by Noxious Liquid Substances in Bulk

Annex II to MARPOL 73/78 governs the discharge of noxious liquid substances in bulk. It currently regulates the discharge of over 250 substances into the sea, incorporating a four-category system of noxious liquid substances, ranging from Category X substances that present major hazards if discharged into the marine environment, thereby justifying the prohibition of discharge, to Categories Y and Z substances that present hazards and minor hazards to the marine environment, justifying respectively a limitation or less stringent restrictions on discharge. No discharge of noxious substances is permitted within 12 nautical miles of land.

(c) MARPOL Annex III – Prevention of Pollution by Harmful Substances in Packaged Form

Annex III to MARPOL 73/78 regulates the proper carriage of harmful substances in packaged form which pose a threat to the marine environment. Unlike Annexes I and II, acceptance of this Annex is not required for participation in MARPOL. Harmful substances are those substances identified as marine pollutants in the International Maritime Dangerous Goods Code (IMDG Code). The provisions of Annex III require parties to issue detailed requirements on the proper packaging, labelling, stowage and documentation of any harmful substance on their flag vessels. For example, packages containing harmful substances must be durably marked with the correct technical name of the harmful substance and indicate that the substance is a marine pollutant. The information on the package must be identifiable after at least three months' immersion in the sea. Each ship carrying harmful substances in packaged form must have a special list or manifest setting out the harmful substances on board and their location or a detailed stowage plan. Jettisoning of the harmful substances is prohibited except where it is necessary to secure the safety of the ship or to save life at sea. The requirements of Annex III are very practical and compared to Annexes I and II, are less onerous for the shipping industry to implement as they do not involve substantial construction, design, equipment or manning alterations.

(d) MARPOL Annex IV – Prevention of Pollution by Sewage from Ships

Sewage discharged from ships can contain high levels of nutrients, pathogens and treatment chemicals; these can cause various problems for the marine environment of the area of discharge, including algal blooms, reduced oxygen levels, and disease. The steady increase in passenger liners engaged in international voyages renewed the interest of States in regulating the discharge of sewage from ships. Annex IV to MARPOL 73/78 entered into force on 27 September 2003. Annex IV applies only to newly constructed ships of 400 gross tonnage and above and engage in international voyages or those of less than 400 gross tonnage but certified to carry more than 15 persons. For existing ships fulfilling these conditions, Annex IV will apply 5 years after the date of entry into force of the Annex for a particular party. Under Regulation 9 of the Annex, ships must be equipped with a sewage treatment plant in compliance with IMO standards, a sewage comminuting and disinfecting system, or a holding tank for the treatment of sewage. Discharge of sewage from ships covered by Annex IV at sea is prohibited unless it is carried out through a sewage treatment plant, or through using a comminuting and disinfecting system, provided the ship is more than three nautical miles from the nearest land or it is carried out from a holding tank, provided the ship is more than 12 nautical miles from land. Each party must ensure that adequate facilities are available at its ports and terminals for the reception of sewage.

(e) MARPOL Annex V – Prevention of Pollution by Garbage from Ships

Annex V imposes a total prohibition on the disposal into the sea of all plastics, including but not limited to synthetic ropes, synthetic fishing nets and plastic garbage bags. Other garbage can only be disposed of from ships at certain distances from land. Dunnage lining and packing materials which will float can only be disposed of

at 25 nautical miles or more from nearest land and food wastes and all other garbage at 12 nautical miles or more from nearest land unless passed through a comminuter or grinder, when they can be disposed of at 3 nautical miles from land. Discharge restrictions are stricter in special areas where paper products, rags, glass, metal, bottles, crockery, dunnage lining and packing materials may only be disposed of 12 nautical miles or more from land.

Despite the stringent restrictions on garbage disposal at sea, surveys of marine litter by UNEP's Global Programme for Action (GPA) and other bodies have noted steadily increasing levels of garbage accumulating at sea and on coastlines.¹ This includes the mass concentrations of marine debris in high seas 'sink' areas, such as the equatorial convergence zone and central ocean gyres, and their lethal impact on high seas marine life which ingest and become entangled in the debris. This debris also acts as vectors for invasive aquatic species which may have reached high seas areas in ballast water. A further obstacle to securing better compliance with Annex V by ships is the lack of adequate waste reception facilities at many ports.

(f) MARPOL Annex VI – Prevention of Air Pollution from Ships

Annex VI sets limits on emissions of sulphur oxide, nitrogen oxide, ozone-depleting substances and volatile organic compounds and emissions from shipboard incinerators. The provisions of Annex VI apply, with some exceptions, to all ships of Parties. Some construction, design and equipment standards related to the modification of diesel engines, exhaust gas cleaning systems and shipboard incinerators are also prescribed. Ships covered by Annex VI must carry an international air pollution certificate issued by the authorities of the flag State after survey which is subject to inspection by port State authorities of other parties.

¹ Kristina M. Gjerde, *Ecosystems and Biodiversity in Deep Waters and the High Seas*, UNEP Regional Seas Report and Studies No. 178 (UNEP, Nairobi, 2006) pp 26-27.

ANNEX 3: MEMBERSHIP OF THE RELEVANT SIO REGIONAL INSTRUMENTS AND ORGANISATIONS

The Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region, also known as the Nairobi Convention provides a mechanism for regional cooperation to solve problems of the marine and coastal environment. Contracting Parties are Comoros, France (La Reunion), Kenya, Madagascar, Mauritius, Mozambique, Seychelles, Somalia, Tanzania and Republic of South Africa.

The *Commission de l'Océan Indien* is an intergovernmental organization between Comoros, Madagascar, Mauritius, France (on behalf of Réunion) and the Seychelles

Agulhas and Somali Current Large Marine Ecosystem (ASCLME) is a five-year project centred on the two large marine ecosystems (LMEs) of the western Indian Ocean region. These are the Somali Current LME – which extends from the Comoros Islands and the northern tip of Madagascar up to the horn of Africa – and the Agulhas Current LME which stretches from the northern end of the Mozambique Channel to Cape Agulhas. The Project Objective is “to strengthen and sustain the collective capacity of the 9 Western Indian Ocean (WIO) countries to collect and utilize environmental information needed to adaptively manage the ASLMEs. The nine participating States are Comoros, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, Somalia, South Africa and Tanzania.

The Indian Ocean Tuna Commission (IOTC) is a regional fisheries management organization that manages tuna and tuna like species in the Indian

Ocean. Current members of the IOTC are Australia, Belize, China, Comoros, Eritrea, European Community, France, Guinea, India, Indonesia, Iran (Islamic Republic of), Japan, Kenya, Madagascar, Malaysia, Maldives, Mauritius, Oman, Pakistan, Philippines, Republic of Korea, Seychelles, Sierra Leone, Sri Lanka, Sudan, Thailand, United Kingdom, United Republic of Tanzania, Vanuatu. (Cooperating Parties: Senegal, South Africa, Uruguay).

The Southern Indian Ocean Fisheries Agreement (SIOFA) is a regional fisheries arrangement whose objective is to ensure the long term conservation and sustainable use of fisheries resources other than tuna in areas of the Southern Indian Ocean beyond national jurisdiction. It has eight signatories - Australia Comoros, France, Kenya, Madagascar, Mozambique, New Zealand, and three parties – Mauritius the Seychelles, the Cook Islands and the European Union.

The South West Indian Ocean Fisheries Commission (SWIOFC) is a regional fisheries body whose main objective is to promote the sustainable utilization of the living marine resources of the South West Indian Ocean region, by the proper management and development of the living marine resources, without prejudice to the sovereign rights of coastal States and to address common problems of fisheries management and development faced by the Members of the Commission. Its members are Comoros, France, Kenya, Madagascar, Maldives, Mauritius, Mozambique, Seychelles, Somalia, South Africa, Tanzania and Yemen.

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**INTERNATIONAL UNION
FOR CONSERVATION OF NATURE**

WORLD HEADQUARTERS
Rue Mauverney 28
1196 Gland, Switzerland
mail@iucn.org
Tel +4122 999 0000
Fax +41 22 999 0002
www.iucn.org