

THE SAPPHIRE PROJECT PRESENTS

THE STATE OF OCEAN GOVERNANCE IN THE WESTERN INDIAN OCEAN



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Acronyms

AAMA	Association of African Maritime Administrations	DSM	Deep-Seabed Mining
ABNJ	Areas Beyond National Jurisdiction (≈ high seas)	EAC	East African Community
AIMS	Africa's Integrated Maritime Strategy	EBSA(s)	Environmentally and Biologically Sensitive Areas
AMCEN	African Ministerial Conference on the Environment	ECCAS	Economic Community of Central African States
AMD	Africa's Maritime Domain	ECOWAS	Economic Community of West African States
AMTC	African Maritime Transport Charter	ECS	Extended Continental Shelf
ANS	Adjusted net savings	EEZ	Exclusive Economic Zone
APRM	African Peer Review Mechanism	EIA(s)	Environmental impact assessment(s)
ASF	African Standby Force	EU	European Union
AU	African Union	FAO	United Nations Food and Agriculture Organization
BE	Blue economy	FARI	Forum of Heads of Academic/Research Institutions in the Western Indian Ocean
BMP	best management practices	GDP	Gross Domestic Product
CBD	Convention on Biological Diversity	GEF	Global Environment Facility
CCAMLR	Convention for the Conservation of Antarctic Living Marine Resources	GES	Good Environmental Status
CCSBT	Convention for the Conservation of Southern Bluefin Tuna	GGC	Gulf of Guinea Commission
CCZ	Clarion-Clipperton Zone	GHG	Greenhouse gases
CEMZA	Combined Exclusive Maritime Zone of Africa	GoG	Gulf of Guinea
CGPCS	Contact Group on Piracy Off the Coast of Somalia	GPP	Green Port Programme
CI	Conservation International	HMFS	Highly Migratory Fish Species
CITES	Convention on International Trade in Endangered Species	HMS	Highly Migratory Species
COMESA	Common Market for Eastern and Southern Africa	HRA	High Risk Areas
CORDIO	Coastal Oceans Research and Development in the Indian Ocean	ICC	International Chamber of Commerce
CSR	corporate social responsibility	ICZM	Integrated Coastal Zone Management
DCC	Djibouti Code of Conduct	IGAD	Intergovernmental Authority on Development
DRR	Disaster Risk Reduction	IGO	International Governmental Organization
		IHO	International Hydrographic Organization

Acronyms continued

IMO	International Maritime Organization	NEPAD	The New Partnership for Africa's Development
INTERPOL	The International Criminal Police Organization	PCASPs	Privately Contracted Armed Security Personnel
IOC	Indian Ocean Commission	PMAESA	Port Management Association of Eastern and Southern Africa
IORA	Indian Ocean Rim Association	PMAWCA	Port Management Association of West and Central Africa
IOTC	Indian Ocean Tuna Commission	PSMA	Port State Measures Agreement (FAO)
IOTO	Indian Ocean Tourism Organization	PSSAs	Particularly Sensitive Sea Areas
IOTOA	Indian Ocean Tuna Operators Association	REC(s)	Regional Economic Community (ies)
IPCC	Intergovernmental Panel on Climate Change	RFB/RFO(s)	Regional fisheries bodies/ Organizations
ISA	International Seabed Authority	RFMO	Regional Fisheries Management Organization(s)
ITLOS	International Tribunal for the Law of the Sea	RSO	Regional Seas Organization
IUCN	International Union for Conservation of Nature	SADC	Southern African Development Community
IUU	Illegal, unreported and unregulated (fishing)	SAIIA	South African Institute of International Affairs
IWC	International Whaling Commission	SAP	Strategic Action Plan (of the Nairobi Convention)
JMA	Joint Management Area	SAR	Search and Rescue
LBS	Land-based sources (of pollution)	SeyCCAT	Seychelles Conservation and Climate Adaptation Trust
LME	Large Marine Ecosystem	SIOFA	Southern Indian Ocean Fisheries Agreement
LRIT	Long Range Identification and Tracking	SWIOFC	South West Indian Ocean Fisheries Commission
MARPOL	International Convention for the Prevention of Pollution from Ships	UASC	Union of African Shippers Council
MASE	Maritime Safety Program	UN	United Nations
MCS	Monitoring, control and surveillance (of fisheries)	UNCLOS	United Nations Convention on the Law of the Sea
MoU	Memorandum of Understanding	UNDOALOS	Division for Ocean Affairs and the Law of the Sea
MS	Member State (EU)	UNECA	UN Economic Commission for Africa
MSFD	Marine Strategy Framework Directive	UNEP	United Nations Environment Program
MSP	Marine Spatial Planning	UNGA	UN General Assembly
MPA	Marine Protected Area	UNODC	United Nations Office on Drugs and Crime
NC	Nairobi Convention	VME(s)	Vulnerable marine ecosystem(s)
NDC	Nationally Determined Contributions	VMS	Vessel Monitoring Systems

Acronyms continued

VTs	Vessel Tracking System
WIO	Western Indian Ocean
WIO countries	Comoros, Kenya, France, Madagascar, Mauritius, Mozambique, Seychelles, Somalia, South Africa
WIOMSA	Western Indian Ocean Marine Science Association
WMO	World Meteorological Organization
WOMESA	Association for Women in the Maritime Sector in Eastern & Southern Africa
WWF	World Wide Fund for Nature

SUMMARY

This background document has two objectives:

1. to review the status and trends in ocean governance in the Western Indian Ocean (WIO) and identify key gaps, challenges and opportunities in relation to global norms and best practices; and
2. to provide background information to inform a dialogue on an ocean governance strategy at a regional ocean governance workshop organized by the Nairobi Convention and supported by the SAPPHIRE project.

The background document was also used as a foundation to prepare a Draft Cooperative Ocean Governance Strategy for the Western Indian Ocean. The Draft Strategy outlines the advantages and disadvantages of different approaches. The approaches were selected for the purposes of illustration and discussion. Many alternative approaches could also be considered depending on the scope and objectives of the proposed strategy. Throughout the background document, efforts are made to identify examples of cooperation at the regional level or models of cooperation that might be used to further WIO ocean governance. The revised background document has benefited from inputs from the stakeholders who attended the Workshop on Ocean Governance held in Seychelles 4-5 September 2019.

The state of ocean governance at the regional level. Section 1 reviews the status and trends in ocean governance at the regional level in the WIO. It focuses on the principal policy and legal instruments and strategic plans at the global, pan-African and WIO levels.

Sector and thematic governance. Section 2 addresses the specific governance arrangements in different sectors, such as maritime security or fisheries. It summarises regional ocean governance modalities in relation to selected themes, such as marine pollution and conservation of biodiversity.

Ocean governance at the national level. Section 3 endeavours to summarise features of national ocean governance across selected themes. A comprehensive mapping of national ocean governance is beyond the scope of the document. However, comparative tables illustrate possible gaps and opportunities to align governance instruments among WIO countries, for example, through adhesion to key international treaties by all countries. This initial comparative mapping of governance and governance-related indicators is complemented by notes on selected features of national ocean governance. The selection is made to illustrate challenges specific to a country, or to flag initiatives which may offer lessons or potential for replication. It is not intended to be an exhaustive exercise to examine ocean governance at the national level. However, a comprehensive mapping of ocean governance instruments at national level could potentially illustrate lessons and models for the region.

International experiences and lessons. Section 4 describes selected international experiences in regional ocean governance. These range from the mandatory EU regime to the high seas Marine Protected Areas (MPAs) in the North Atlantic and high seas fisheries closures in the Western Central Pacific to recent developments in the Arctic and the Black Sea. The merits and challenges of applying some of these approaches in the WIO are noted. Other governance regimes could also be of considerable interest, but are not described. These include the Sargasso Sea initiative, cooperation in the Caribbean and the South West Pacific and among ASEAN countries.

Stakeholders should also take note of developments within the climate regime and in the Oceans Agenda of the United Nations General Assembly. The presentations made at the Workshop on Ocean Governance held in Seychelles 4-5 September 2019 also complement and expand on several of the themes and subjects addressed in the background document.

The background document does not cover a range of cross-cutting activities that underpin connectivity, cohesion and a common understanding and vision for ocean governance. These include public awareness, independent scientific advice, human and institutional capacity building, means of enhancing political will and the management of reforms required to ensure healthy oceans. The document does not examine shared principles and paradigms, such as the precautionary principle, the ecosystem approach, sustainable use, or public trust doctrine.

The background document avoids presenting conclusions or making recommendations, as this is seen as the cooperative task of the regional stakeholders. The document can be regarded as a starting point for identification and discussion of priorities and tasks to be undertaken by individual countries, by joint efforts and by regional institutions to advance cooperative ocean governance in the WIO.

INTRODUCTION

The Conference of the Parties (COP) to the Nairobi Convention (NC) instructed the Secretariat of the NC to take steps to examine modalities to improve regional ocean governance in the Western Indian Ocean (Box 1). In order to enable stakeholders to consider the scope, priorities and process involved, the Nairobi Convention Secretariat engaged WIOMSA to prepare background documentation for consideration by a Regional Workshop on Ocean Governance in the Western Indian Ocean region planned for September 2019. The background documentation includes: (i) a review of the state of ocean governance (this document); and (ii) a complementary draft proposal for a cooperative regional ocean governance strategy to include consideration of the coastal zones, the exclusive economic zones (EEZs) and high seas [1] of the WIO.

While the NC was tasked with this exercise, the scope of ocean governance extends beyond the essentially environmental mandate of the NC and includes several themes which have a direct bearing on the regional institutional architecture of ocean governance, regional priorities and strategic plans. These considerations include:

- maritime security and maritime boundaries
- fisheries
- exploitation of offshore mineral resources (including oil and gas)
- climate change
- maritime transport and transport corridors; and the
- management of river basins draining into the WIO.

[1] The terms 'high seas' and 'areas beyond national jurisdiction' (ABNJ) are generally used interchangeably in this document. However, there are important differences between the two terms, in particular in relation to national jurisdiction over resources of the extended continental shelf (ECS).

Box 1. Decisions of the Nairobi Convention related to regional ocean governance

Decision CP8/10 (Blue and Ocean Economy) urges Contracting Parties to cooperate in improving the governance of ABNJ, building on existing regional institutions including the Nairobi Convention and developing area-based management tools such as marine spatial planning to promote the blue economy pathways in the Western Indian Ocean Region.

Decision CP8/6 (Support to implementation of projects) requests Contracting Parties, the GEF and other partners, to support projects on, amongst others, conservation and sustainable exploitation of seamount and hydrothermal vent ecosystems of the South West Indian Ocean in ABNJ and collaborate in the management of activities in their adjacent waters by IUCN.

Decision CP8/5 (Agenda 2063 and the Africa Integrated Maritime Strategy 2050) urges Contracting Parties to implement the Cairo Declaration of the 15th Session of the African Ministerial Conference on Environment (AMCEN) on the Africa Integrated Maritime Strategy 2050 and Agenda 2063 on ecosystem-based management approaches for marine resources in the EEZs and adjacent waters and inform on progress at AMCEN sessions.

Source: Nairobi Convention

For the purposes of this working document, the geographical scope of the Western Indian Ocean (WIO) is considered as the marine and coastal areas falling under the jurisdiction of the parties to the Nairobi Convention [2] and including the 'adjacent high seas areas of interest' and the Chagos Archipelago [3]. The working document focuses on oceans and coasts and does not address the governance of watersheds. Although the Nairobi Convention works largely within the framework of the AU, for the purposes of this document, the term "blue economy" is used in relation to economic activities in coasts and oceans and does not embrace economic activities in inland waters [4].

The objective of the working document is to inform the Nairobi Convention process and cooperating parties on the status and possible future governance actions related to the environmental health of the coasts and oceans. Analysis and development of ocean governance, however, demands consideration of a broader palette of policies and activities which contribute, directly or indirectly, to ocean health. These range from the quality of national governance and political stability, through trends in investment and political engagement, to the coherence and effectiveness of regional institutions and their joint actions. Ocean governance needs to address a wide set of challenges: from increasing coastal populations, stressed fisheries, degraded coral reefs and diminished environmental flows of rivers, to the management of waste in coastal cities and emerging environmental challenges posed by offshore extractive industries and impacts of climate change. The working document explores a selection of these governance challenges to highlight advances, underscore gaps and illustrate opportunities to advance regional ocean governance. In this regard, this background document should be considered simply as an introduction to many complex issues and challenges.

[2] Comoros, France, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, Somalia, Tanzania and the Republic of South Africa.

[3] The International Hydrographic Organisation (IHO) sets out the limits of seas and oceans (http://iho.int/iho_pubs/standard/S-23/S-23_Ed3_1953_EN.pdf). The 'high seas areas of interest' are deliberately left loosely defined as the areas can vary by interest, e.g., in relation to tuna distribution, or migratory paths of threatened species; as a result of identification of seamounts as vulnerable ecosystems, or in the case of potential impacts of future deep-seabed mining. This is consistent with the Nairobi Convention's treatment of considering the extent of the coastal environment as a function of a specific protocol (see: Nairobi Convention, Article 2(b)).

[4] It should be noted that the AU regards economic activities in inland waters, such as Lake Victoria, as falling within the scope of Africa's blue economy. This background document restricts discussion of the blue economy to the coastal and ocean economy.



Why is regional ocean governance necessary?

Regional ocean governance enables a specific regional response and application of the United Nations Convention on the Law of the Sea (UNCLOS) [5] and enables countries to discharge their obligations under UNCLOS through cooperation with neighbouring countries with which they share the ocean. The conventional rationale includes the need to manage shared fish stocks, prevent transboundary pollution, conserve ecosystems, and facilitate marine transport. Governance responses to emerging issues—such as piracy, deep seabed mining and ocean acidification—also benefit from a regional approach.

What exactly does regional ocean governance mean?

Is regional cooperation at the sector level (e.g., on fisheries), or in relation to a specific problem (e.g., piracy) sufficient? An approach that maintains a sector-by-sector or theme-by-theme approach is unlikely to deliver the outcomes set out in national and regional goals. However, a more holistic approach, whereby sectors and themes interact and cooperate, is more likely to deliver sustainable benefits for all, as there are numerous synergies and conflicts among sectors and thematic areas. A regional ocean governance approach can also generate economies of scale when WIO countries share scarce resources, exchange knowledge and secure finance to support common endeavours. A broad-based regional governance approach can also generate a common vision and collaboration on emerging challenges, such as the sustainable use of the Areas Beyond National Jurisdiction (ABNJ), on climate change, or on combating illegal fishing. Broad regional cooperation can also foster consensus and a stronger regional voice in African or global oceans fora.

In the WIO, regional ocean governance is founded on three main pillars: (i) regional political will; (ii) international legal obligations; and (iii) the benefits accruing from existing regional cooperation. Each of these pillars is examined in more detail in the following section.

AU member states have agreed to cooperate on ocean affairs, many by endorsing Africa's Integrated Maritime Strategy (AIMS). [6] The AU has mandated the RECs to play a leading role in this cooperation. In the Cairo Declaration, the African Ministerial Conference on the Environment (AMCEN) has called for the development of an ocean governance strategy.

WIO states have a duty to cooperate as part of their obligations under UNCLOS.

WIO countries have already established intergovernmental institutions and other institutional arrangements for the purposes of cooperating on regional ocean governance. These include the NC; regional fisheries bodies (RFBs); the Contact Group on Piracy (CGPCS); and various partnerships, Memorandums of Understanding (MoUs), networks, and joint programmes.

[5] In legal terminology, 'UNCLOS' is used to refer to the Conference, while the term 'the Convention' is used to refer to the 'law' itself. However, to avoid confusion with other conventions the term 'UNCLOS' is used here to refer to the Convention.

[6] Some AU member states have not endorsed the AIMS.

1. The State of Regional Ocean Governance

Ocean governance is framed by three main types of instruments:

- a) state's rights and obligations under international law, under regional agreements and in national law
- b) policies, plans and norms endorsed at the international, regional or national level by states; and
- c) 'soft' law instruments, such as codes of conduct (e.g., the Code of Conduct for Responsible Fisheries), principles (e.g., the precautionary principle) and international guidelines or recommendations (e.g., IMO Guidelines for the Inventory of Hazardous Materials).

These instruments largely dictate the behaviour of individuals, of business and of state actors. Each sector governs through a lattice of these instruments. The first category ((a) above) is often seen as 'hard law' where rights and obligations are affirmed through compliance mechanisms, such as monitoring, reporting, sanctions and dispute settlement (see section 1.3). The second and third categories are founded on political engagement as summarized below.

1.1 Political engagement

Political engagement takes place on three levels for African states in the WIO: the national, regional and pan-African. The regional institutional framework is described in section 1.2 and selected national ocean governance actions are described in section 3.

The African Union (AU) plays a key role in defining the African and regional approach to ocean governance. The AU Agenda 2063 [7] makes numerous references to oceans, particularly in relation to the blue economy, including sustainable use of natural resources, offshore energy, ports and shipping (Box 2). These references include, in particular, Aspiration 1 on a prosperous Africa based on inclusive growth and sustainable development, and Goal 6, which envisages a blue/ocean economy as a major contributor to continental growth and transformation. However, none of the Agenda 2063 flagship projects directly address ocean issues.

Agenda 2063 emphasizes the need for regional cooperation at all levels, adherence to international norms, knowledge management and capacity building. Agenda 2063 specifically identifies the Regional Economic Communities (RECs) as the fulcrum for cooperation, policy coherence and strategic alignment among their members. The role of the AU is seen as providing the overarching vision and policy guidance [8] at the African level, and where possible articulating an African position at the global level.

This key role of the RECs is evident in the 2050 Africa Integrated Maritime Strategy (AIMS), adopted by the AU in 2014. [9] The vision or objective of the AIMS is: "to foster increased wealth creation from Africa's oceans and seas by developing a sustainable, thriving blue economy in a secure and environmentally sustainable manner". [10]

[7] African Union. 2015. Agenda 2063 Framework Document. The Africa We Want.

[8] Under the Africa Peer Review Mechanism's mandate there is a possibility of assessing performance in ocean governance and maritime security through the African Governance Architecture (AGA) and the African Peace and Security Architecture (APSA) of the AU.

[9] At the 22nd AU Summit, 2014, following adoption by the maritime ministers in 2012.

[10] African Union 2015 Integrated Maritime Strategy (<http://pages.au.int/maritime>): Par. 18; and par 19. "Increased wealth creation from AMD that positively contributes to socio-economic development, as well as increased national, regional and continental stability, through collaborative, concerted, cooperative, coordinated, coherent and trust-building multilayered efforts to build blocks of maritime sector activities in concert with improving elements of maritime governance."

Box 2. Selected Ocean-related goals, priorities and outcomes of Agenda 2063

Goals & Priority Areas of Agenda 2063

(6) Blue/ ocean economy for accelerated economic growth with a focus on marine resources and energy, and on port operations and marine transport

(7) Environmentally sustainable and climate resilient economies and communities with a focus on sustainable natural resource management, biodiversity conservation, and climate resilience and natural disasters preparedness and prevention

Key Transformational Outcomes of Agenda 2063

The beginnings of value addition blue economy – fisheries, eco-friendly coastal tourism, marine bio-technology products and port operations - will emerge

At least 10% of coastal and marine areas would have been preserved and 30% of farmers, fisher folks and pastoralist will be practicing climate resilient production systems

Source: Extracted from Agenda 2016.

Box 3. AIMS Strategic Objectives and Action Areas

AIMS Strategic Objectives

- i. Establish a Combined Exclusive Maritime Zone of Africa (CEMZA)
- ii. Engage civil society and all other stakeholders to improve awareness on maritime issues
- iii. Enhance political will at community, national, regional and continental levels
- iv. Enhance wealth creation, and regional and international trade performance through maritime-centric capacity and capability building
- v. Ensure security and safety of maritime transportation systems
- vi. Minimize environmental damage and expedite recovery from catastrophic events
- vii. Prevent hostile and criminal acts at sea, and Coordinate/harmonize the prosecution of the offenders
- viii. Protect populations, including AMD heritage, assets and critical infrastructure from maritime pollution and dumping of toxic and nuclear waste
- ix. Improve Integrated Coastal Zone/Area Management in Africa
- x. Promote the ratification, domestication and implementation of international legal instruments
- xi. Ensure synergies and coherence between sectoral policies within and between the RECs/RMs
- xii. Protect the right of access to sea and freedom of transit of goods for landly-connected States.

Strategic Action Areas

Natural resources Fisheries and Aquaculture Integrated Marine Tourism and Leisure Strategy for Africa Maritime Spatial Planning Giant Africa Aquariums Hydrography, Oceanography and Meteorology Environmental and Biodiversity Monitoring	Maritime security Piracy and Armed Robbery at Sea Maritime Terrorism Illegal Oil Bunkering/Crude Oil Theft Handling and Shipment of Hazardous Materials and Dangerous Goods Money Laundering, Illegal Arms and Drug Trafficking Human Trafficking, Human Smuggling and Asylum Seekers Travelling by Sea Environmental Crimes, incl. dumping of toxic waste
Capacity and capability building Integrated maritime human resources strategy for the continent Outreach initiatives Representation in international institutions	Legal and Regulatory Regimes Maritime Boundaries/Delineation Maritime Governance Combined Exclusive Maritime Zone of Africa (CEMZA)
Ports and shipping Coordination on Maritime Safety and Security Regional Maritime Operational Centers Container Security and Control Programme Flag State and Port State Control Aids to Navigation Strategic Communications Systems Disaster Risk Management	Economic benefits: wealth creation Improved maritime trade and competitiveness

Source: Extracted from Agenda 2016.

The AIMS underscores the need for understanding, knowledge and awareness of the contribution of the oceans; the challenges and priorities for action; and the importance of concerted, coherent regional and international coordination on ocean governance. It further advocates a common action template for both the AU and the RECs to guide policies and plans and prioritize resource allocation. [11] It identifies targets for eventual integration, for example by creating a Combined Exclusive Maritime Zone of Africa (CEMZA) for “Africa’s Maritime Domain” (AMD). The AIMS ascertains “Information Sharing, Communication, Collaboration, Cooperation, Capacity-building and Coordination” as a guiding philosophy [12] and identifies over twenty action areas (Box 3) and sectors, several of which are examined in more detail in section 1.3.5.

[11] AIMS, par 20.

[12] Based on Article 4 of the AU Constitutive Act.

A Plan of Action to operationalize the AIMS was also endorsed. The Plan [13] sets out numerous short and medium-term tasks, many of which indicate a lead role for the AU. The specific 'governance' tasks focus on maritime governance [14] rather than integrated ocean governance, perhaps reflecting the AIMS title and the focus on an African Maritime Domain. [15] Commentaries on the implementation of AIMS point out that the role of the AU Secretariat could be more effective and that planned institutional arrangements within the AU Commission have not been created. [16] Nevertheless, the RECs have advanced the AIMS, particularly in the area of maritime security and to a lesser extent on fisheries and environmental management (see section 2).

The African Ministerial Conference on the Environment (AMCEN) has an important role in developing and promoting ocean governance initiatives, including by implementing the relevant parts of the AIMS (Box 4).



A number of ocean governance initiatives have emerged from political engagement at African level. These include:

- the Revised African Maritime Transport Charter (1994, revised in 2012) and Plan of Action, endorsed by AU transport ministers in 2009
- the Cairo Declaration on Managing Africa's Natural Capital for Sustainable Development and Poverty Eradication (Cairo Declaration) (2015). [17] The Declaration agrees that African States will develop an ocean governance strategy in accordance with UNCLOS, Regional Seas Conventions, the AIMS and Agenda 2063.
- the African Charter on Maritime Security, Safety and Development (Lomé Charter) on Maritime Security, Safety and Development, and the related Djibouti Code of Conduct, revised by the Jeddah Amendment (2017) (see section 2.2)
- the Abuja Declaration on sustainable fisheries (2005)
- the African Continental Free Trade Area (AfCFTA) Agreement [18]
- the African Convention on the Conservation of Nature and Natural Resources (1968), and
- the designation of 2015-2025 as the Decade of African Seas and Oceans.

AMCEN has acknowledged "the critical importance of the Regional Seas Conventions and Action Plans and of the regional fisheries bodies in enhancing the application of ecosystem-based approaches, marine spatial planning and ocean governance in Africa" (Box 5).

[13] Annex C: 2050 AIM Strategy PoA. Last update (02/05/2013).

[14] The term 'maritime' generally refers only to activities connected with shipping.

[15] The terms "maritime governance", "marine governance" and "ocean governance" may be considered largely synonymous. However, the term "maritime" implies a focus on shipping and human use of the seas, while "marine" and "ocean" imply a broader scope that includes concerns relating to ocean processes and non-human activities.

[16] E.g., a fully operational maritime/ oceans unit has not been established in the AU Commission. This "standalone Department of Maritime Affairs" was to have been modelled on UNDOALOS. It is understood

that from 2021 the AU Commission establish a dedicated maritime and blue economy unit. The following have not been established (as of 2018): a "High Level College of Champions" composed of African leaders to help generate political will and resources; a Strategic Foresight Marine Task Force focused on wealth creation and a Strategic Special Task Force to examine the establishment of the CEMZA. In 2018, the President of the Republic of Seychelles was nominated as the AU Champion for Blue Economy.

[17] African Ministerial Conference on Environment (AMCEN), 2015. (http://www.unep.org/sites/default/files/amcen6/amcen_sixth_special_session_cairo_declaration_final.pdf)

[18] All WIO countries have signed the agreement. Only Kenya and South Africa have ratified (as of 16 July 2019).

Box 5. Highlights of ocean-related outcomes of AMCEN, 2017 (Libreville)	
1.	To support the Lomé Charter and the regional seas programmes as platforms for ecosystem-based ocean governance frameworks in Africa;
2.	To strengthen institutions, policies, legislation and use of marine spatial planning at national and regional levels;
3.	To encourage the secretariats of the regional seas and fisheries conventions to conclude cooperative agreements and support inclusive value-addition approaches throughout the blue economy;
4.	To develop integrated ocean management policies both for the EEZs and adjacent waters (ABNJ)
5.	To continue fostering regional cooperation in the management of common or shared marine resources through information-sharing, communication, collaboration, cooperation, capacity-building and coordination
6./7.	To request the support of partners on global ocean issues including implementation of SDG 14.
Source: Libreville Declaration ¹⁹	

The African Governance Report (2018) [20] does not mention marine resource governance and there are no AU reviews of ocean governance. It should be noted that, in general, [21] the declarations, strategies and action plans are essentially aspirational. The means to monitor progress is often weak and, other than peer pressure, there are no compliance mechanisms.

1.2 Regional Institutional Framework

At the regional level, the institutional framework comprises two primary groups of actors: (i) the Regional Economic Communities (RECs) and (ii) the bodies underpinning regional stewardship of natural resources. The latter include the Regional Seas Conventions (RSCs) and the Regional Fisheries Bodies (RFBs). The primary actors all have the following generic tasks:

- coordination of the activities of the parties (countries) within the scope of their mandate and promotion of joint or complementary actions in the common interest
- preparation of policies, strategies and plans to advance the common interest
- periodic review and appraisal of the state of the region, sector, or target resources and activities
- reporting on compliance with country obligations and establishment of measures to improve compliance
- establishing formal or informal relationships with the other actors; and
- helping to bridge gaps between national behaviour and African or global best practices.

The activities of these actors are underpinned and advanced by a range of other institutions. These include other specialized inter-governmental agencies (IGOs), industry associations, scientific networks, international development partners and non-governmental organisations.

1.2.1 Regional Economic Communities

The WIO region has four RECs which are charged with implementation of Agenda 2063 and the AIMS:

- the Common Market for Eastern and Southern Africa (COMESA)
- the East African Community (EAC)
- the Southern African Development Community (SADC); and
- the Intergovernmental Authority on Development (IGAD).

Their ocean mandate and governance-related activities are summarized in Table 1. Although a Commission rather than a REC, the Indian Ocean Commission (IOC) undertakes a number of ocean governance coordinating activities for island nations and benefits from the inclusion of France as a member.

[19] Libreville Declaration on Investing in Innovative Environmental Solutions African Ministerial Conference on the Environment (2017). See: Decision 16/2. I. Governance mechanisms for ocean- and ecosystem-based management in Africa.

[20] Economic Commission for Africa 2018. African Governance Report V: Natural Resource Governance and Domestic Revenue Mobilization for Structural Transformation. It does, however, refer to transparency, science and resource knowledge, measures to avoid the resource curse, revenue capture and sharing, and economic diversification.

[21] The Lomé Charter, for example, is an exception.

For convenience, the IOC is generally grouped with the RECs in the course of the following discussions. Although the RECs seek to coordinate ocean governance activities, they face the same problems as countries: the fragmentation of the ocean agenda and the institutional architecture. For example, they face difficulties in bridging activities in marine transport, offshore energy, fisheries and conservation, as well as in finding space on a crowded ministerial or summit agenda. However, the RECs have made significant progress in response to specific problems, such as combating piracy in the Horn of Africa and Gulf of Guinea.

1.2.2 Nairobi Convention and the Regional Fisheries Bodies

The Nairobi Convention (NC) [22] is one of several Regional Seas Conventions. [23] Its mandate (in summary) is:

- to provide a regional framework for member states to develop, plan, coordinate and cooperate in the protection and sustainable use of the coastal and marine environment; and
- to provide a platform for relevant knowledge generation and sharing and capacity development at the national, regional and African levels, as well as with global partners.

The Nairobi Convention is the only regional institution mandated to address the environmental governance of land and sea sources of pollution, integrated coastal zone management, conservation of habitats, including through protected areas, and transboundary pollution emergency management. Operationally, it supports the implementation of three protocols; on combating pollution, pollution emergencies, and habitat protection. [23] The 1985 Action Plan has been revised and updated as part of projects funded by the GEF. The geographical scope of the NC is specified in relation to each protocol and does not include internal waters (as defined by UNCLOS, Article 8) unless otherwise specified.

In addition to the normative work of the NC, the Conference of Parties (COP) has mandated the Secretariat to examine measures to advance the region's blue economy (BE), liaise with the RECs on approaches to effective ocean governance, and examine the role of the NC with respect to Areas Beyond National Jurisdiction (ABNJ). [24] Although the NC is engaged in dialogues related to the ABNJ, largely within the context of the Large Marine Ecosystem (LME) projects, its charter does not currently extend to coverage of the ABNJ.

The more recent COP decisions reflect the need to extend the NC activities from the predominantly technical towards greater engagement with political processes. This is based on the perception that despite a shared vision of healthy oceans, the technical recommendations are constrained by political will and competing priorities. A greater engagement at political levels may also reflect the increasing threats to the marine and coastal environment and continued decline in ocean health, despite the considerable advances made by the NC. [25]

[22] Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region (Nairobi Convention), [1986] O.J.C. 253/10, 46 I.E.L.M.T. 985 (amended 2010). The amendments extended the mandate to include biological diversity and hazardous wastes.

[23] The Abidjan (West Africa), Barcelona (Mediterranean) and Jeddah (Red Sea) Conventions are the other conventions covering African seas.

[23] Protocol concerning Cooperation in Combating Marine Pollution in cases of Emergency in the Eastern African Region (1985); Protocol concerning Protected Areas and Wild Fauna and Flora in the Eastern African Region (1985); Protocol for the Protection of the Marine and Coastal Environment of the Western Indian Ocean from Land-Based Sources and Activities (2010). Although several protocols were adopted in 1985, none came into force until 1996. Negotiations on a fourth protocol on Integrated Coastal Zone Management concluded in 2019 and the protocol awaits endorsement at the next Conference of Parties.

[24] Decision CP8/13, CP9/6 and CP9/13. Report of the Partnership Meeting with Regional Economic Communities and Commissions in the Western Indian Ocean (WIO) Region 11 – 12 April 2019. Durban, South Africa.

[25] For a critique of NC performance, see: Martin, A. 2014. Lessons Learned from the Nairobi Convention. MMP Analytical Paper. (U.Del.) 2014.

Table 1. Selected Oceans and Blue Economy activities in the RECs

REC and mandate	Issues/ actions	Selected Strategies/ programmes
Common Market for Eastern and Southern Africa (COMESA) COMESA Treaty, Article 6, 88 (shipping), 122 & 123 (sustainable use), 124 (pollution), 127 (science)	Trade focus	Regional Maritime Security Programme for Eastern Southern Africa and Indian Ocean (MASE) with a focus on, addressing financial flows that support piracy Mitigation of climate change impacts Partnerships, incl. with NC Fisheries programme
East African Community (EAC) Cooperation with ECA states in all relevant areas with a vision of integration Protocol on Environmental and Natural Resource Management (ENRM)	Major investments in transport and connectivity with landlocked partner countries, incl. development of the ports of Lamu, Mombasa and Dar-es-Salaam	Promote common policies and rules on ocean use, including on offshore oil and gas ENRM Protocol includes measures to prevent and reduce marine pollution and for sound management of the coastal environment Transboundary Ecosystem Management Bill (2015) Policies on Fisheries and on Climate Change Transboundary MPA (KH-17) Coast Guards established
Southern African Development Community (SADC) Protocols on Fisheries (2001); Wildlife Conservation and Law Enforcement (1999); environmental management, transboundary rivers; and on tourism	Focus on equitable and sustainable economic growth and economic integration	Regional Indicative Strategic Development Plan (2015-XI) Plan of Action on IUU fishing (2008) Fisheries Strategy/ Action Plan (2016) Transport Plan (2012) Fisheries Coordination Unit DE Strategy (pending)
Intergovernmental Authority on Development (IGAD)	Robust ocean meteorological data is of major importance to IGAD in order to enhance drought prediction models	Integrated Maritime Strategy 2015 Biodiversity Management Programme in the Horn of Africa region MASE
Indian Ocean Commission (IOC - COI)* Facilitate regional coordination and collaboration within a national subsidiary framework	Projects include: SWIOFish, SMARTFish (completed) ECOFISH ReCoMap (completed) MASE GMCS	Focus on peace and stability (incl. maritime security), responsible economic development, environmental management and capacity building Adheres to SIDS Samoa Pathway IOC regional frameworks exist to address fisheries, sustainable use of coastal zones, marine pollution, marine security and waste management Developing an action plan on the Blue Economy

Compiled by author

Box 6. Decisions of the Nairobi Convention on relationships with RECs and on the Blue Economy

1. Decision CP8/13.2: To agree to establish additional partnerships, including with regional economic communities, such as the East Africa Community, Common Market for Eastern and Southern Africa, Southern Africa Development Community, Indian Ocean Commission.
2. Decision CP9/1.1: To urge the Contracting Parties to work with regional economic communities, regional fisheries management organizations and other appropriate regional initiatives to implement the Caro Declaration on Managing Africa's Natural Capital for Sustainable Development and Poverty Eradication, adopted by the African Ministerial Conference on the Environment at its fifteenth session in 2015, the 2050 Africa Integrated Maritime Strategy and the provisions of Agenda 2063 on ecosystem-based management approaches for marine resources in the exclusive economic zones and adjacent waters.
3. Decision CP.9/13.2 Repeats CP8/13.2 and adds a range of other organisations active in fisheries management and cooperation and in conservation of biodiversity and migratory species. Other CP9/13 articles refer to partnerships with other key stakeholders.

Source: Nairobi Convention COP reports

The NC is supported by a broad group of partners, a network of scientific institutions and specialized advisory groups and task forces. The Consortium for the Conservation of the Coastal and Marine Ecosystems in the Western Indian Ocean region (WIO-C) provides for connectivity between conservation NGOs and the NC and helps to interface science, policy and access to resources. [27] Smaller, local NGOs, however, may face difficulties in engaging at the regional level.

[27] The members are: Nairobi Convention, International Union for Conservation of Nature (IUCN), WIOMSA, Birdlife International, World Wide Fund for Nature (WWF), Wildlife Conservation Society (WCS), East Africa Wildlife Society (EAWLS), Coastal Oceans Research and Development-Indian Ocean (CORDIO), Wetlands International, Blue Ventures, Rare, The Nature Conservancy (TNC), Flora & Fauna International (FFI), and Conservation International (CI).

Three Regional Fisheries Bodies (RFBs) are active in the region: [28]

- The Indian Ocean Tuna Commission, which has a mandate to manage the tuna stocks (specified highly migratory species (HMS)) of the entire Indian Ocean
- The Southern Indian Ocean Fisheries Agreement (SIOFA), tasked with managing fisheries outside the EEZs (excluding tunas and other HMS falling under the IOTC mandate), and
- The South West Indian Ocean Fisheries Commission (SWIOFC), which does not have a management role but provides a means of coordinating the fisheries policies and activities of the region's coastal states. [29] Its Scientific Committee regularly assesses the status of fishery resources to provide advice to Member Countries on management measures.

Three further commissions are charged with the management of living marine resources which may migrate through or frequent parts of the WIO:

- the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), mandated to manage the fisheries and other living marine resources (excluding whales) in the Southern Ocean/ Antarctic (which includes French and South African jurisdictional waters)
- the Commission for the Conservation of Southern Bluefin Tuna (CCSBT), charged with managing a single circumpolar species harvested in the EEZs of some WIO countries, and
- the International Whaling Commission (IWC).

The role of the Regional Fisheries Bodies (RFBs) is discussed in section 2.3.1. Relationships between RECs, the NC and the RFBs are essentially ad hoc. A WIO technical group has recommended establishing a formal mechanism. [30]

1.2.3 Supporting actors

Regional intergovernmental organisations

All African WIO countries are members of the Indian Ocean Rim Association (IORA), which is an inter-governmental organisation (IGO) aimed at strengthening regional cooperation and sustainable development within the Indian Ocean region (Box 7). [31]

Box 7. IORA priorities and actions

The IORA Sustainable Development Program (ISDP) is to:

- encourage the lesser developed Member States to actively participate and to optimize the benefits from its cooperation with the Association;
- encourage peer-to-peer learning, capacity building, and the sharing of information, experiences and best practices;
- enhance the sense of community and belonging among the Member States and to strengthen the sense of participation in the activities and programs of the Association;
- extend the opportunity to the less developed Member States to share their experience and expertise in specific areas that would benefit their economies.

IORA priorities (Action Plan 2017-2021) include:

- maritime safety and security	- trade and investment facilitation
- fisheries management	- disaster risk management
- science and technology cooperation	- tourism and cultural exchange
- women's economic empowerment	- broadening institutional arrangements
- blue economy	

The IORA Action Plan 2017-21 provides for "cooperation with other regional bodies such as the African Union", Declaration of the Indian Ocean Rim Association on the Blue Economy in the Indian Ocean Region, Jakarta, Indonesia, 2017 also prioritises Offshore Hydrocarbons and Seabed Minerals and Deep Sea Mining.

In 2018, the Indian Ocean Dialogue 2018 (ocean ministers meeting) focused on cooperation for peace, stability and sustainable development.

Blue Economy Declarations: Mauritius (2015) and Jakarta (2017).

Source: Compiled by author from IORA documents.

[28] Note that the parties to IOTC and SIOFA include countries which are not in the WIO.

[29] SWIOFC was established in 2005 under Article VI of the FAO Constitution (advisory Regional Fisheries Body)

[30] AU-IBAR. 2017. Report of the consultative meeting to establish mechanism for the coordination of common position and voice and to provide support to AU member states in the implementation of Regional Fisheries Management Organization (RFMOs). Recommendations. March 2017.

[31] IORA has 22 Member States and 9 Dialogue Partners.



A number of sector organisations also contribute to the regional governance seascape, including for shipping, maritime security, trade and tourism (see section 1.3.5). Examples include:

- Port Management Association of Eastern and Southern Africa (PMAESA) [32]
- Association of African Maritime Administrations (AAMA)
- Indian Ocean Memorandum of Understanding on Port State Control (IOMOU PSC)
- The Association for Women in the Maritime Sector in Eastern & Southern Africa (WOMESA), “a professional association spearheading the advancement of women as a key resource in the maritime sector”.
- The Fisheries Transparency Initiative (secretariat based in Seychelles).

Business associations include the:

- African Shipowners Association
- Chambers of Commerce
- Indian Ocean Tourism Organisation (IOTO), which includes environmental sustainability among its objectives
- Indian Ocean Tuna Operators Association (IOTOA).

An extensive knowledge network contributes to a sound scientific basis for ocean governance. Many of the knowledge institutions have been fostered by the NC and may be heavily dependent on continued project funding by WIO partners in development, science, or marine conservation. Institutional fora (as opposed to ad hoc events) targeting innovation, marketing, business development and trade in the blue economy are still to emerge. The knowledge and scientific institutions include the:

- Western Indian Ocean Marine Science Association (WIOMSA)
- Coastal Oceans Research and Development in the Indian Ocean (CORDIO)
- South African Institute of International Affairs (SAIIA)
- Forum of Heads of Academic/Research Institutions in the Western Indian Ocean (FARI)

Advancing ocean governance would not be possible without the support of other partners that backstop WIO governance in terms of financing and resources, capacity building, and technical support, for example:

- IGOs responsible for implementing or supporting international ocean conventions. These include the UNDOALOS, the International Seabed Authority (ISA), the IMO and many others addressing specialized areas and issues, such as trafficking (UNODC) and maritime security
- Agencies engaged in environmental conservation, ocean science and fisheries, such as UNEP, IOC-UNESCO and FAO
- Multilateral financial institutions, such as the World Bank, the African Development Bank and the GEF (support for the large marine ecosystem (LME) projects)
- Bilateral partners, such as the EU, France and a range of global conservation NGOs (including IUCN, WWF and CI). [33]

A more ample review of regional ocean governance would benefit from a comprehensive mapping of the support provided by these actors and the current and potential future gaps in the support.

[32] The PMAESA is a non-profit organization made up of port operators, government line ministries, logistics and maritime service providers and other port and shipping stakeholders. Comoros, Madagascar, Seychelles and Somalia have limited engagement with PMAESA. The Pan Africa Association for Port Cooperation (PAPC) is a federation of the three sub-regional African port associations.

[33] Five different NGO roles can be distinguished: advocacy; provision of expertise; management, watchdog and enabling services. Some NGOs exercise multiple roles.

1.3 Legal Considerations and Governance Challenges

1.3.1 United Nations Convention on the Law and the Sea

The United Nations Convention on the Law of the Sea (UNCLOS) [34] is the cornerstone of ocean governance at the national, regional and global levels. It sets out the rules and limits of maritime boundaries, the rights and duties of States in relation to ocean resources (including the rights and duties of all States for the conservation and sustainable exploitation of marine living resources), freedoms of navigation and overflight, as well as the freedom to lay submarine cables and pipelines in accordance with the relevant provisions of the Convention. UNCLOS establishes a general obligation for all States to protect and preserve the marine environment and sets out international rules and standards to prevent, reduce and control pollution of the marine environment. It lays out general principles and specific rules for the conduct of marine scientific research in marine areas under national jurisdiction as well as in the Area and in the water column beyond the exclusive economic zone. The Convention also sets out detailed provisions for the settlement of disputes, including compulsory procedures entailing binding decisions. UNCLOS has two implementing Agreements, namely the Agreement relating to the Implementation of Part XI of the Convention and the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (1995 UN Fish Stocks Agreement). A UN Intergovernmental Conference is currently preparing a third implementing Agreement on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (ABNJ). In addition to these legally binding instruments, a number of resolutions of the UN General Assembly (UNGA) on the ocean and the law of the sea also provide for the implementation of UNCLOS.

UNCLOS has near universal state adhesion. [35] States are the basic implementing units of ocean governance: they are required to give effect to the provisions of UNCLOS and to enforce these provisions through national laws and regulations. It is only when the basic provisions of UNCLOS are ignored that its value emerges, as was illustrated in the case of Somali piracy. All WIO countries have ratified the Convention.

UNCLOS obliges not only states to cooperate on a range of ocean governance challenges, but also obliges “competent international organizations, whether sub-regional, regional or global” to cooperate. Cooperation is such an important obligation throughout UNCLOS that political declarations that merely call repeatedly for cooperation on ocean affairs might be considered largely redundant: states and the relevant international organisations already have a legal obligation to do so. [36] While outside the scope of this background study, a review of the extent and effectiveness of the cooperation specified in UNCLOS, as implemented (or not) by WIO countries and relevant international organisations, could identify specific governance gaps.

UNCLOS repeatedly refers to ‘standards’ in relation to the obligations of states: e.g., “applicable international rules and standards for the prevention, reduction and control of pollution of the marine environment”. Calls to harmonize rules and laws at regional level might be best served by identifying the relevant international norms and supporting states’ efforts to apply these norms, if necessary appropriately adjusted to regional requirements. Effective state (and IGO) compliance and alignment with UNCLOS norms [37] could form a useful element of a governance ‘scorecard’.

[34] In legal terminology, ‘UNCLOS’ is used to refer to the Conference, while the term ‘the Convention’ is used to refer to the ‘law’ itself. However, to avoid confusion with other conventions the term ‘UNCLOS’ is used here to refer to the Convention.

[35] UNCLOS has currently 168 Parties. The USA is a notable exception.

[36] The term ‘cooperate’ appears 38 times in the UNCLOS text.

[37] UNCLOS does not prescribe ‘norms’ per se, but obliges countries to cooperate to establish such norms. For example IMO has established norms for safety at sea. Norms have not been agreed for some activities, such as carbon dioxide pollution of the ocean from land-based sources (resulting in ocean acidification).

1.3.2 Other international law

Numerous other international conventions contribute to ocean governance: for maritime security and safety at sea, to prevent and control marine pollution, to conserve marine biodiversity, to manage fisheries, or to address climate change. Conventions specific to sectors and themes are briefly described in section 2. The status of selected conventions for WIO countries is summarized in section 3.

The importance of admiralty law is often overlooked, although it anchors shipping behaviour at sea and the rights and responsibilities of vessel operators and owners. International commercial law on the carriage of goods underpins maritime trade. Examples include the Hague Rules [38]/Hague Visby Rules and new emerging multimodal instruments and rules that govern the digitization of bills of lading and 'legitimize' electronic documentation in international trade. These legal instruments are vital to the blue economy in ensuring a timely and cost-effective movement of goods. Consider the arrangements that must be in place to move a product by truck from Rwanda, then by rail to Mombasa, by container to Port Louis for transshipment to Singapore and then by road to Malaysia: a trip that involves multiple handlers; multiple contractual requirements each involving liability for delivery, damage, customs clearance, or payment of charges and tariffs. These contracts must be enforceable under international commercial law. This is an area where the RECs can have an important role in guiding and assisting state and regional actions to reduce costs and make maritime trade more efficient.

1.3.3 Soft Law and Case Law

The above conventions and agreements are considered to be 'hard law', which generally includes some form of compliance mechanism (see below). Hard law is complemented by 'soft law' instruments which inform, extend and interpret as well as encourage implementation of hard law. Soft law can be considered as a body of exhortative, rather than legal, norms and includes international resolutions and regional declarations which are not legally binding. [39] The following are some international examples:

- UNGA Resolution (A/RES/70/1) Transforming our world: the 2030 Agenda for Sustainable Development. Sustainable Development Goal 14: Conserve and sustainably use the oceans, seas and marine resources. 25 September 2015.
- UNGA Resolution A/RES/68/70. Oceans and Law of the Sea. (on the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects).
- UNGA Resolution A/RES/71/312. Our ocean, our future: call for action.
- Washington Declaration on Protection of the Marine Environment from Land-based Activities, 1 November 1995, 31 L.O.S.B 76 (1996).
- SIDS Accelerated Modalities of Action Pathway (Samoa Pathway)
- United Nations Environment Assembly of the United Nations Environment Programme, Resolution on Marine Litter and Microplastics, UNEP/EA.3/L.20, 2017
- IMO Action Plan to Address Marine Plastic Litter from Ships (Resolution MEPC.310(73)).

Soft law also includes widely accepted principles, goals, plans of action, approaches and codes of conduct that frame the regional approach to ocean governance. Arguably, these include:

- the precautionary approach
- the ecosystem approach
- participatory processes
- sustainable use and equity
- the notion of the high seas as the 'common heritage of mankind' [40]
- the Code of Conduct for Responsible Fisheries and
- the Djibouti Code of Conduct (on combatting piracy).

[38] International Convention for the Unification of Certain Rules of Law relating to Bills of Lading.

[39] For a discussion see: Pierre-Marie Dupuy, Soft Law and the International Law of the Environment, 12 Mich. J. Int'l L. 420 (1991). (<https://repository.law.umich.edu/mjil/vol12/iss2/4>).

[40] UNCLOS specifies the seabed resources of the Area (ABNJ) as the common heritage

However, it should be noted that the requirement to implement the precautionary approach and ecosystem considerations into fisheries management have been incorporated in the provisions of the 1995 UN Fish Stocks Agreement and has therefore become legally binding for States Parties. [41] As to the legal status of "equity", UNCLOS emphasizes, for instance, that the delimitations of the exclusive economic zone and the continental shelf between States with opposite or adjacent coast shall lead to an "equitable solution" [42].

International case law also interprets and clarifies the application of UNCLOS. The following International Tribunal for the Law of the Sea (ITLOS) advisory opinions and decisions are of particular interest to the region:

- Case No. 21, Fisheries Commission (SRFC), Advisory Opinion of April 2, 2015. (on flag state responsibility for illegal fishing)
- Case No. 17. Responsibilities and obligations of States sponsoring persons and entities with respect to activities in the Area (on responsibilities with regard to deep sea mining in the ABNJ); and
- the ICJ decision in *Costa Rica v. Nicaragua* (compensation for environmental destruction of mangroves and wetlands).

1.3.4 Regional ocean governance challenges

In addition to the thematic challenges (e.g. marine pollution), regional ocean governance faces a number of structural challenges. Several of these stand out: decision-making; compliance, change management and reform; and connectivity.

Decision-making

Many Regional Fisheries Management Organizations (RFMOs), including the IOTC, illustrate the dilemma of international decision-making. Substantive decisions in RFMOs are generally based on consensus, but frequently one or more party dissents and reaching consensus among all parties can prove difficult, given the differing national interests and the respective impacts of decisions. In such cases, a majority vote is the alternative and the convention may allow the dissenting party the option of stating that the decision does not apply to that party. This is called an "opting out" or "objection" procedure that would allow a member State to dissent from an RFMO-agreed conservation and management measure.

The procedure could cause a "free rider" problem, as the dissenting party may benefit from the implementation of the decision by the other parties but does not incur the costs of complying with the decision. An alternative solution often involves the weakening of the decision or binding resolution through compromises and the dilution of its application, effectiveness, or compliance mechanism. In order to address this issue, which could have adverse impacts on the long-term conservation and sustainable use of fishery resources, a growing number of RFMOs have established innovative procedures that have the potential to restrict the use of the practice. Some RFMOs provide for the establishment of a "Review Panel" to examine the validity of the grounds over which objection is invoked. Others, while allowing objection, require the dissenting Member State to adopt alternative measures that are equivalent in effect to the objected decision. In those circumstances, the only admissible grounds for objection are the obvious discriminatory character of the decision against the concerned member and the inconsistency of the decision vis-à-vis UNCLOS and the 1995 UN Fish Stocks Agreement (UNFSA). [43]

Peer pressure can be applied by other parties, e.g., by discussing modifications of the decision to make it acceptable to the dissenting party. The application of the decision can be deferred for the dissenting party, allowing time for adaptation. Another approach is to compensate the dissenting party for costs or losses. But since many parties may incur costs, this approach can lead to difficulties in assessing 'damages' and sets a dangerous precedent for future decision-making. A different approach is to make decisions by qualified majority, e.g., 'a majority of countries in favour, but subject to the assenting countries representing at least 70% of the registered shipping tonnage of the region'. [44]

[41] 1995 UN Fish Stocks Agreement, Art.5 (d) (e) (f) and (g); and Art.6.

[42] UNCLOS, Art.74 (1) & 83 (1).

[43] See Tahindro A., *Sustainable Fisheries: The Legal Regime of the 1995 Fish Stocks Agreement and Its Contribution to Subsequent Developments Promoting Sustainable Fisheries*, in *Legal Order in the World's Oceans*, UN Convention on the Law of the Sea, 2018 Koninklijke Brill Nijhoff NV, Ed. by Myron H. Nordquist, John Norton Moore & Ronan Long, 325-369.

[44] Used in the EU (Council of Ministers), some MARPOL annexes, and the WCPFC (see Article 20 of the Convention, which effectively gives the SIDS a veto).

The nature of decisions or measures

Decisions can be hortatory (effectively recommendations), e.g. 'parties should ratify the Port State Measures Agreement'. Decisions can be discretionary, e.g., 'parties shall make best efforts to undertake at least 300 days of offshore patrols each year'. Decisions can be mandatory, e.g. 'from 2020, parties shall prohibit the use of microplastics in cosmetics'.

Hortatory measures ('parties should') tend to have broad support or consensus but may have little impact. Nevertheless, they may be a useful entry point for subsequent mandatory measures. Mandatory measures ('parties shall') carry substantially more force and impact but may have limited support and be undermined by dissenting parties. It may be effective to use 'process' measures: e.g., 'by 2025 parties shall agree on a binding measure to ensure that non-compliant vessels are denied access to their ports'.

Compliance mechanisms

Without a compliance mechanism, international (or regional) ocean governance measures may be relatively ineffective. The simplest compliance measures involve parties reporting to the convention secretariat on their compliance. However, independent assessments of compliance are more useful, as are the outputs of competent watchdog agencies. [45] Scorecards can be used to raise awareness on compliance or performance. Transparency, participatory processes, peer pressure and sanctions all contribute to compliance.

There is an expectation of 'due diligence' in many conventions, i.e., parties are required to act in accordance with international norms and to the best of their abilities when obliged to make 'best efforts'. The interpretation of the due diligence obligation is the subject of considerable debate by legal scholars. Some international conventions make provision for sanctions (e.g. port denial). A non-compliant party may be the subject of a dispute resolution process provided for by the convention to which it is a party.

Change management and reform

Experiences in the political economy of fisheries reform suggest that the reform process requires a consensus

vision of the future of the fishery across the political spectrum; broad agreement on the steps to be taken; recognition that some stakeholders may be 'losers' and specific measures put in place to address the concerns of the losers. A shared understanding of the social and economic impacts and adjustments to stakeholder power structures can be instrumental to a constructive political dialogue on reform. [46]. Reform processes could also use estimates of foregone economic rents to increase political will for reform. However, there are few such estimates available for fisheries in the region. [47].

1.3.5 Connectivity

Connectivity may be the single greatest barrier to effective ocean governance. How can the diversity of WIO stakeholders effectively cooperate to achieve common purposes? There is consensus on the need for cooperation in a wide range of areas, e.g., maritime security, fisheries, capacity building, knowledge management, investment.

The nature of cooperation requires some attention as there are considerable differences between alignment, harmonization, collaboration and integration. The objective of the AU and RECs is not only to cooperate but to integrate their communities. The AIMS - the title includes the term "integration" - begins with (i) a common understanding of the challenges as a basis for cooperation. [48] It then suggests (ii) a "common template to guide maritime review, budgetary planning and effective allocation of resources" accompanied by (iii) a "business plan that specifies milestones, capacity building targets and implementation requirements, including technical and financial support". These three steps could be useful elements in the development of a WIO ocean governance strategy. However, the AIMS' emphasis on integration and coordination at the African level may itself be a stumbling block, as even at the national level, the implementation of an integrated maritime strategy can be challenging.

[45] For example, Pew Trusts (or its affiliates) often produce analyses of state's compliance with international environmental norms.

[46] See, e.g., Leal, D. (Ed.) 2010. Political Economy of Natural Resource Use: Lessons for Fisheries Reform Prepared for the Global Program on Fisheries (PROFISH). The World Bank. Washington DC.; de la Torre-Castro, M. (2012). Governance for Sustainability: Insights from Marine Resource Use in a Tropical Setting in the Western Indian Ocean, Coastal Management, 40:6, 612-633.

[47] World Bank, 2008. The Sunken Billions. The economic justification for fisheries reform. Washington DC.

[48] AIMS, par. 20.



The RECs and other key regional institutions, such as the NC and the RFBs, have discussed a range of actions to coordinate ocean governance activities. [49] However, the mechanism for operationalizing connectivity remains elusive: its structure, representation, means of articulation with decision-makers and institutional home need reflection. Use of the AU/UNECA Sub-Regional Coordination Mechanism to coordinate blue economy policies and initiatives has been suggested. Assuming that the intergovernmental agencies would be the major units of connectivity, [50] a number of questions arise, including:

- What is the most effective architecture for cooperation (i) among technical agencies; (ii) between technical agencies and the RECs, and (iii) among the RECs?
- Which institution(s) should take leadership or act as a secretariat(s), and how are they given such a mandate?
- How can decisions be reached? How can any of the above arrangements be approved and assessments validated, or programmes approved?
- Can WIO nations speak with a common voice at the level of the AU, in global fora, or at IORA?
- Is this desirable?

Comprehensive mapping of the inter-relationships between actors is beyond the scope of this brief analysis. However, a mapping of the formal relationships (e.g., MoUs) would be of value, not only to show existing relationships, but to identify gaps, opportunities and regional models for cooperation (see Table 7). Sectors and thematic stakeholders tend to work in silos and perceive regional governance through a thematic lens of their 'comfort zone'. [51] Suggestions that these silos should integrate risks rendering existing instruments less effective and creating further layers of inter-sectoral bureaucracy, changes not easily accepted. [52]

The IOC has arguably the most advanced suite of regional ocean governance activities. While this can partly be attributed to the relatively few IOC member countries and long-term support of the EU and France, which have a territorial interest in the IOC (sub) region, it can also be attributed to two factors. First, the goal of the IOC is not integration or harmonization of ocean governance but rather a coordination of national actions that largely reflect national priorities and capacity. Secondly, there is a focus on agreed regional priorities and practical actions to support capacity in less effective member countries, including through support from development partners. [53] Further, the activities are based on a shared understanding at the technical level of the steps and the national commitments involved.

[49] See the Report of the Partnership Meeting with Regional Economic Communities and Commissions in the Western Indian Ocean (WIO) Region. Durban, April 2019. The meeting proposed establishment of an (ad hoc) 'Core Group' to communicate with the Executive Secretaries of the RECs. The NC/WIOMSA could provisionally function as the Secretariat for the Core Group.

[50] See: Nairobi Convention Secretariat. 2018. Concept Note: Partnership Meeting with Regional Economic Communities and Commissions in Western Indian Ocean Region.

[51] UNEP (2016): Regional Oceans Governance. Making Regional Seas Programmes, Regional Fishery Bodies and Large Marine Ecosystem Mechanisms Work Better Together.

[52] For further discussion of this point see: Egede, Edwin E. 2018. Maritime Security: Horn of Africa and Implementation of the 2050 AIM Strategy. Horn of Africa Bulletin. March-April 2018 Volume 30 Issue 2.

[53] In addition on-going programmes with major development partners and UN agencies, the IOC has MoUs with IOTC and SWIOFC and with WIOMSA, IUCN, IRD and CIRAD.

2. Sector and Thematic Governance

2.1 Maritime Boundaries and Areas Beyond National Jurisdiction

2.1.1. Boundaries and extended continental shelf claims

Countries have already agreed on many maritime boundaries in the region (Table 2). Several agreements are outstanding: including: Comoros/Mozambique; Comoros/Tanzania; Comoros/Madagascar; Mozambique/South Africa and Madagascar/ Mozambique.

Table 2. Maritime boundary agreements in the WIO

Parties	Date	Agreement
Kenya/ Tanzania	17 Dec 1975 to 3 Jul 1976	Exchange of Notes between the United Republic of Tanzania and Kenya concerning the Delimitation of the Territorial Waters Boundary between the two States. 17 December 1975 – 3 July 1976
Mozambique / Tanzania	28-Dec-88	Agreement between the Government of the United Republic of Tanzania and the Government of the People's Republic of Mozambique regarding the Tanzania / Mozambique Boundary
France/ Seychelles	19-Feb-01	Agreement between the Government of the French Republic and the Government of the Republic of Seychelles concerning Delimitation of the Maritime Boundary of the Exclusive Economic Zone and the Continental Shelf of France and of Seychelles
Seychelles/ Tanzania	23-Jan-02	Agreement between the Government of the United Republic of Tanzania and the Government of the Republic of Seychelles on the Delimitation of the Maritime Boundary of the Exclusive Economic Zone and Continental Shelf
France/ Madagascar	14-Apr-05	Agreement between the Government of the French Republic and the Government of the Republic of Madagascar concerning the delimitation of maritime spaces located between the Reunion Island and Madagascar
Mauritius/ Seychelles	29-Jul-08	Agreement between the Government of the Republic of Mauritius and the Government of the Republic of Seychelles on the Delimitation of the Exclusive Economic Zone between the Two States
Kenya/ Tanzania	23-Jun-09	Agreement between the United Republic of Tanzania and the Republic of Kenya on the delimitation of the maritime boundary of the exclusive economic zone and the continental shelf (with map)
Mauritius/ France	2 Apr-1980	Agreement between the Government of the French Republic and the Government of the Republic of Mauritius concerning Maritime Boundary Delimitation between Reunion Island and Mauritius Island
Mauritius/ Maldives	na	ITLOS Case No. 28. Dispute concerning delimitation of the maritime boundary between Mauritius and Maldives in the Indian Ocean (Mauritius/Maldives)

Source: UNDOALOS.

All countries, with the exception of Comoros (which does not have a claim) have lodged claims for an extended continental shelf with the Commission on the Limits of the Continental Shelf (CLCS) (Table 3).

The AIMS proposes the establishment of a Combined Exclusive Maritime Zone of Africa (CEMZA). However, the formal process for identifying how this might be achieved has not been initiated. In this regard, it can be noted that, although the EU legislates [54] for governance of 'EU waters', there is no EU combined maritime zone, as EU Member States retain sovereignty over their maritime areas. They share only a common fisheries policy.

In 2012, Mauritius and Seychelles agreed to the establishment of a Joint Management Area (JMA) in which the two States exercise sovereign rights jointly for the purpose of exploring the continental shelf and exploiting its natural resources. The Joint Zone is enforced by two treaties, namely the:

- (i) Treaty Concerning the Joint Exercise of Sovereign Rights over the Continental Shelf
- (ii) Treaty Concerning the Joint Management of the Continental Shelf, both signed on the 13 March 2012 [55].

[54] The Marine Strategy Framework Directive.

[55] Treaty concerning the Joint Exercise of Sovereign Rights Over the Continental Shelf in the Mascarene Plateau Region (entry into force: 18 June 2012); Treaty concerning the Joint Management of the Continental Shelf in the Mascarene Plateau Region (entry into force: 18 June 2012).

These treaties prescribe the joint exercise of sovereign rights by the two coastal states and the sustainable management of natural resources in the Extended Continental Shelf in accordance with international law, as reflected in the relevant provisions of the 1982 United Nations Convention on the Law of the Sea.

The Joint Commission is currently undertaking a stand-alone Demonstration Project under the GEF/UNDP (SAPPHIRE) framework. This project will identify and demonstrate new management approaches for the extended continental shelf areas which can provide lessons and management techniques to be replicated both within the Western Indian Ocean as well as other similar maritime zones globally.

Table 3. Extended continental shelf claims

Country	Date	CLCS ref.
Joint submission by the Republic of Mauritius and the Republic of Seychelles - in the region of the Mascarene Plateau	1-Dec-2008	CLCS/62, 66, 70
Yemen - in respect of south east of Socotra Island	20-Mar-09	CLCS/68
South Africa - in respect of the mainland of the territory of the Republic of South Africa	05-May-09	CLCS/68, 83, 98
Joint submission by France and South Africa - in the area of the Crozet Archipelago and the Prince Edward Islands	06-May-09	CLCS/68, 80, 83
Kenya	06-May-09	CLCS/64, 85, 90
Mauritius - in the region of Rodrigues Island	06-May-09	CLCS/64, 83
Seychelles - concerning the Northern Plateau Region	07-May-09	CLCS/64, 83, 105
Mozambique	07-Jul-10	CLCS/70
Somalia	21-Jul-14	CLCS/95
Mauritius - concerning the Southern Chagos Archipelago region	26-Mar-19	
Madagascar	29-Apr-11	CLCS/72
United Republic of Tanzania	18-Jan-12	CLCS/76

Source: https://www.un.org/Depts/los/clcs_new/commission_submissions.htm. Submissions with CLCS reference in **bold** have been adopted.

An agreement also exists between Mozambique and South Africa with respect to the harmonization of extended continental shelf (ECS) claims.[56] Interestingly, in West Africa, the REC (ECOWAS) was involved in securing support for preparation of the joint ECS submission by six countries.

2.1.2 Maritime boundary disputes

There are several sovereignty and/ or maritime boundary disputes between States in the WIO region. With few exceptions, the disputes are all based on claims over land (islands and reefs).

Ideally, the boundary disputes should be resolved in the interests of better ocean governance. If resolution currently appears unrealistic, then, pending agreement, functional arrangements for governance, as provisional arrangements, could be considered without prejudice to claims, in accordance with UNCLOS. [57] For example, a common High Risk Area was designated to facilitate the combat against piracy. In the case of the Guinea Bissau/ Senegal maritime boundary dispute, a resolution was achieved through the creation of a joint zone (segment of the EEZ) with a management authority and a formula for sharing costs and revenues from natural resource exploitation. [58]

[56] Agreement between the Republic of South Africa and the Republic of Mozambique on harmonization of their individual submissions for their respective claim for an extended continental shelf; 21 April 2009. See also: Jamine, Elisio B. 2011. Aspects Affecting Maritime Boundary Delimitation in the Mozambique Channel (Indian Ocean): The Case of Mozambique Boundaries with Neighboring States. UN-NF African Alumni Meeting. Nairobi, 11 - 15 July 2011.

[57] UNCLOS, Art.74 (3) & 83 (3).

[58] Agency Management and Cooperation between Guinea-Bissau and Senegal (<http://agc-sngb.org/en/>).

2.1.3 Areas Beyond National Jurisdiction

Vast areas of the WIO lie in the ABNJ, including numerous ocean ridges and seamounts, particularly south of Madagascar and Réunion and between Somalia and Maldives. Most of the Mascarene Plateau lies within the JMA and the Exclusive Economic Zones (EEZs) of Mauritius and Seychelles. The entire area of the Saya de Malha Bank and other shallow-water banks lies within the internationally-accepted boundaries of the JMA. This unique ecosystem, which hosts the world's largest seagrass area, lies under the jurisdiction of the JMA where both Mauritius and Seychelles exercise sovereign rights over the seabed and subsoil as per article 77 of UNCLOS. The challenges of deep seabed mining (DSM) and protecting environmentally vulnerable areas in the ABNJ are addressed elsewhere.

2.2 Maritime Security

Peace and stability are fundamental pillars of governance. [59] Maritime security and the rule of law is consequently a foundation of environmentally-healthy oceans and the blue economy. All WIO countries except Somalia have ratified the Convention for the Suppression of Unlawful Acts Against the Safety of Maritime Navigation (SUA)(1988) but not the more recent SUA (2005) (see Table 14). [60]

2.2.1 The response to piracy in the WIO

Somali piracy resulted in an estimated loss of US\$18 billion per year to the world economy. An international effort to combat piracy was backed by several UN Security Council Resolutions. [61] Shipping companies collaborated with naval vessels from several WIO and non-African countries in an effort to combat piracy. [62] Seychelles has had a particularly important role in detaining convicted pirates.

Contact Group on Piracy off the Coast of Somalia (CGPCS)

The Contact Group on Piracy off the Coast of Somalia (CGPCS) was established in 2009 to coordinate the response to piracy and consolidate and develop regional maritime security. CGPCS is an unusual governance mechanism as it has no formal members. Over 60 states and representatives of navies, regional and international organisations, such as the UN Office of Drugs and Crime (UNODC) participate in meetings and working groups.

Box 8. The unique architecture of the CGPCS

The CGPCS is an inclusive hybrid mechanism that facilitates cooperation between states, IGOs, NGOs, and industry with a focus on practical steps to deliver outcomes in the areas of their joint and individual concern.^[63]

It is participatory, open to all cooperating entities. It has no formal membership, no convention, formal agreement, or terms of reference, no secretariat. Consequently, costs are minimal. Over 60 states and representatives of navies, regional and international organisations participate in meetings and working groups and support their own costs. It works through existing organisations and institutionalises regional initiatives within national agencies. Its mandate was secured through UNSC resolutions.

Its working groups allow for progressive inclusion and adaption and are backed by both formal relationships and informal networking. It allows RECs to lead efforts in areas of their particular interest and expertise. It provides for a range of coordination modalities – harmonisation, collaboration, integration, in relation to the requirements of the tasks, e.g., at sea operations are highly integrated.

The complexity of the 'piracy ecosystem' is reduced by focusing on practical steps and manageable initiatives. Adaptive management and the flexible architecture facilitates balance, review and adaptation to changing external conditions, e.g., expansion to include trafficking and other maritime crime as piracy reduces.^[64]

The CGPCS can be thought of as taking an ecosystem-based management approach to ocean governance in relation to the 'piracy ecosystem'.

However, the CGPCS remains heavily dependent on external funding and resources and its development was largely led by countries from outside the region.

Source: Author

[59] Sustainable Development Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.

[60] Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation 1988 (SUA Convention).

[61] UN Security Council Res.1851 (2008) replaced by UN Security Council Res.1918 (2010).

[62] Under UNCLOS Art. 101, piracy refers to crimes outside of territorial waters.

[63] See: UN Security Council Resolution 1851 of 18th December 2008.

[64] Zach, D.A. at al. 2013. Burden-sharing Multi-level Governance: A Study of the Contact Group on Piracy off the Coast of Somalia. One Earth Future and Oceans Beyond Piracy Report.

The activities of the CGPCS are supported by several initiatives. Notably, the Maritime Safety Program (2012) (MASE), which is largely financed by the EU, [65] engages with 15 countries and four IGOs: COMESA, EAC, IGAD and IOC. It focuses on five areas:

- addressing the root cause of piracy by reducing poverty and improving Somali governance capability (coordinated by IGAD with FAO engagement)
- enhancing national and regional law enforcement capacity (coordinated by EAC with INTERPOL support)
- building national and regional law enforcement capacity (EAC with INTERPOL and UNODC)
- blocking the flow of funds from piracy (COMESA with INTERPOL)
- IOC coordinates at-sea actions through: (i) a Regional Coordination Operational Centre (Seychelles) and (ii) the Regional Information Fusion Centre (Madagascar), which tracks vessel movements in real-time. The Centres operate under regional agreements (2018).

The result of these efforts is that pirate attacks in the WIO off Somalia have substantially decreased. [66] The Regional Maritime Information Fusion Centre is operationally effective. However, the Centres are dependent on EU support: not all WIO countries have signed a MoU with the centre.

The structure, functional relationships, flexibility and participatory processes of CGPCS offer a unique model for ocean governance. Given the success of CGPCS, the model is worthy of consideration in relation to broader ocean governance institutional arrangements for the region. [67]

Djibouti Code of Conduct

The Djibouti Code of Conduct (2017) is a binding multilateral agreement to combat piracy in the region. [68] The region includes the Gulf of Aden and the Red Sea. It was the result of collaboration between WIO countries, Middle Eastern countries and UN organisations, including the International Maritime Organisation (IMO) and UNDOC.

The Code was initiated as an information sharing and training platform to address maritime piracy. It evolved into a broader maritime security architecture adapted to the needs of the region. The scope of the Code has been subsequently expanded through the Jeddah Amendments. [69] The Amendments respond to the threat of other maritime crimes, including trafficking in people, arms and drugs, illegal fishing and toxic waste dumping. Consideration is also given to illegal export of charcoal from Somalia.

The IMO has developed guidance on best management practices (BMP) against Somali piracy for shipping. [70] These BMPs are to be applied in the High Risk Area (HRA). The determination of the HRA has been the subject of considerable stakeholder discussion as stakeholders have used different definitions of the HRA to assess insurance risks, adjust pay scales for crew, or plan surveillance operations. Other regional initiatives include activities linked to the IORA, such as the Indian Ocean Naval Symposium and the Indian Ocean Maritime Crime Forum. The Montreux Document on the role and status of Privately Contracted Armed Security Personnel (PCASPs) has contributed to IMO guidance on the role and use of private security on board commercial vessels.

[65] Complemented by a programme on Port and Maritime Security and Safety for the region.

[66] 237 incidents in 2011, nine in 2017, three attempted attacks in 2018 and in 2019 the capture of a Yemeni dhow in Somali territorial waters and an attack on the Korean fishing vessel 280 nautical miles off the coast of Somalia (<https://issafrica.org/iss-today/can-we-afford-to-drop-the-guard-against-piracy>).

[67] For further information see: Bueger, Christian and Timothy Edmunds, "Mastering Maritime Security: Reflexive Capacity Building and the Western Indian Ocean Experience – A Best Practice Toolkit." Safeseas. Cardiff/Bristol, 2018; and <http://www.lessonsfrompiracy.net/archive/>.

[68] The Code was initially adopted by Djibouti, Ethiopia, Kenya, Madagascar, Maldives, Seychelles, Somalia, Tanzania and Yemen. Subsequently, Comoros, Egypt, Eritrea, Jordan, Mauritius, Mozambique, Oman, Saudi Arabia, South Africa, Sudan and United Arab Emirates adopted the Code – 20 countries. For the text of the Code see: <http://www.imo.org/en/OurWork/Security/PIU/Documents/DCoC%20English.pdf>.

[69] Revised Code of Conduct concerning the Repression of Piracy, Armed Robbery Against Ships, and Illicit Maritime Activity in the Western Indian Ocean and the Gulf of Aden Area.

[70] IMO, 2015. Information regarding the High Risk Area (HRA) and Best Management Practices for Protection against Somalia-based Piracy. MSC.1-Circ.1506.

Box 9. Djibouti Code of Conduct

The signatories to the Code have agreed to co-operate, in a manner consistent with international law, in:

- the investigation, arrest and prosecution of persons, who are reasonably suspected of having committed acts of piracy and armed robbery against ships, including those inciting or intentionally facilitating such acts;
- the interdiction and seizure of suspect ships and property on board such ships;
- the rescue of ships, persons and property subject to piracy and armed robbery and the facilitation of proper care, treatment and repatriation of seafarers, fishermen, other shipboard personnel and passengers subject to such acts; particularly those who have been subjected to violence; and
- the conduct of shared operations – both among signatory States and with navies from countries outside the region, such as nominating law enforcement or other authorized officials to embark on patrol ships or aircraft of another signatory.
- the sharing of information, through coordination centres and national focal points using existing infrastructures and arrangements
- fit for purpose review of national legislation on piracy
- capacity building

A trust fund has also been established to support the implementation of the Code. The trust fund is administered by the IMO.

Source: Author

In conclusion, although piracy in the region has been largely contained, it is well recognized that the root causes - poverty, lack of economic opportunities, conflict and the fragility of states - must be addressed. The ease with which piracy can re-emerge has also been shown. The strategic maritime balance in the WIO is changing with an increasing Chinese military presence in Djibouti and the development of the Belt and Road initiative. Maritime security in the region remains heavily dependent on the presence and support of external partners. The acquisition, operation and maintenance of ocean-going patrol vessels remain a significant constraint.

2.2.2 Other African initiatives on maritime security

AU and AIMS

The AIMS called for the creation of a naval component capacity within the African Standby Force (ASF) and the establishment of working group of Chiefs of African Navies and/or Coast Guards (CHANS) to prioritize cooperative actions. The creation of an ASF Maritime Coordination Cell was proposed in 2016. [71] The Malabo Declaration called for the establishment of a multi-member strategic task force, consisting of representatives from member states, the AU Commission and the RECs. Progress at the AU and ASF level with respect to an integrated maritime security mechanism appears to lag behind the aspirations, partly as a consequence of a lack of budget. [72]

Lomé Charter

The 'African Charter on Maritime Security, Safety and Development in Africa' (Lomé Charter) was adopted by 30 AU member states at a summit in 2016. The Charter is an international, legally-binding instrument that creates obligations for states that become parties to it. Most WIO countries have signed the Charter, although none have ratified it (as of 8 Jan. 2018).[73] Several elements of the AIMS have been reflected in the Lomé Charter.

[71] Maputo Five Year Strategic Work Plan on the African Standby Force ((2016-2020).

[72] For discussion see: Egede, Edwin E. 2018. Maritime security: Implementing the AU's AIM strategy. Africa Portal. 08 Jun 2018; Engel, U. 2014. The African Union, the African Peace and Security Architecture, and Maritime Security. African Security, Friedrich-Ebert-Stiftung, Addis Ababa Office.

[73] For analysis of the Charter see: Egede, E. 2017. Africa's Lomé Charter on maritime security: What are the next steps? (<http://piracy-studies.org/africas-lome-charter-on-maritime-security-what-are-the-next-steps/>)



Box 10. The Lomé Charter

The Lomé Charter covers:

1. The prevention and control of all transnational crimes at sea, including terrorism, piracy, armed robbery against ships, drug trafficking, smuggling of migrants, trafficking in persons and all other kinds of trafficking, IUU fishing, prevention of pollution at sea and other unlawful acts at sea, under the jurisdiction of a state party in its area of responsibility;

2. All measures to prevent or minimise accidents at sea caused by ships or crew or aimed at facilitating safe navigation; and

3. All measures for the sustainable exploitation of marine resources and optimisation of the development opportunities of sectors related to the sea (Article 4).

States are required to guarantee resources for investments in maritime security and safety (Article 6).

Cooperation between flag and coastal states is encouraged with respect to the sharing and support of financial obligations (Article 10).

Article 11 mandates states to establish a Maritime Security and Safety Fund. These articles acknowledge the likelihood of resource limitations and seek to address them. States are to develop maritime governance, including maritime boundary delimitation, to counter human and drug trafficking, and to ensure safety of navigation.

Source: the Lomé Charter

In West Africa, ECOWAS and ECCA have established a joint initiative on maritime security which is supported by the Africa Partnership Station, an activity promoted by the United States Africa Command. [74]

2.3 Blue economy

In 2015, the Parties to the Nairobi Convention decided to pursue a blue economy approach to development. The Blue Economy (BE) includes a diversity of economic activities [75], inter alia:

- shipping and port services
- maritime trade
- offshore energy and natural resource extraction
- fisheries and coastal aquaculture
- marine and coastal tourism and cruise tourism
- marine cultural heritage
- undersea cabling and telecommunications
- marine exploration and mapping

The BE extends throughout policy and regulatory aspects of the national economy through connectivity to ports, energy grids, investment and financial flows. Each BE sector or activity tends to have its particular governance regime, whether for shipping, fisheries, or offshore gas. However, they share a common denominator of ocean health and the sustainable use and capture of benefits for the coastal states and for the region.

The collective governance challenge is to understand how the fragmented sector governance regimes can contribute to these common goals and a building framework for effective cooperation. At the national level, this is done in various ways: through a national blue economy strategy and plan, an inter-ministerial task force, or the establishment of a ministry, or agency with responsibility for coordination of ocean affairs. Several countries have prepared BE strategies or programmes (see section 3). There are two main regional facets of regional BE governance. The first is cooperation on transboundary economic activities such as shipping and fisheries, a key measure of which is the ratification and application of the relevant international conventions at the national level. The second is the transfer or sharing of technologies, lessons, knowledge and skills in areas which have a less direct transboundary dimension, such as coastal and marine tourism or best practices for governance of extractive industries within the EEZs.

[74] Kelleher, K. 2017. Evolving Maritime Security in Gulf of Guinea and West Africa. Faculty of Law, UCC.

[75] UNECA 2016. The Blue Economy; UNECA, 2014., Unlocking the full potential of the blue economy, Addis Ababa.

In this latter case, regional partnerships and engagement with global initiatives to address climate change or to regulate emerging technologies, such as subsea carbon storage, are of increasing importance. [76]

At the AU level, the AIMS is largely orientated towards the development agenda. It lists numerous BE activities to be promoted and identifies areas where cooperation would be useful. But although it promotes human resource development and institutional strengthening while also calling for investment, it is relatively weak on how this can be achieved – assigning this task to the RECs. [77] Several RECs are developing a BE strategy and a number of regional BE guidelines and analyses have been prepared. [78] The EAC Protocol on Environment and Natural Resources and the Transboundary Ecosystem Bill are examples of supporting instruments. The AIMS is also relatively silent on governance of the BE. IORA has advanced a vision of “peaceful, productive and sustainable use of the Indian Ocean and its resources” [79] and the Indian Ocean Rim Business Forum and Indian Ocean Rim Academic Group have been instructed to provide expert advice to member states.

2.3.1 Shipping

Over 90% of Africa’s trade is by sea and foreign-flagged vessels transport 95% of Africa’s cargo. From an environmental standpoint, regional governance of shipping involves two main axes: (i) implementation of MARPOL and related instruments; and (ii) development of green ports.[80] In addition, technological advances, such as digitization of freight documentation within a Continental Free Trade Area (ACFTA), can contribute to a reduced energy footprint for shipping and cargo handling. The AIMS lists a wide range of areas for cooperation, primarily focused on the development agenda (e.g. ports and transport corridors), rather than on cooperative governance. Many of the cooperative activities are detailed in the Revised African Maritime Transport Charter. [81]

Some WIO countries have not ratified important IMO conventions (see Table 14). Two WIO countries have not ratified MARPOL Annexes III, IV and V which address the disposal of garbage and other pollution from ships. Only two countries have ratified MARPOL Annex VI on prevention of air pollution from the use of non-compliant fuel (expected to enter into force in 2020). This is a measure to reduce the carbon/climate footprint of shipping. Only three countries have ratified the London (Dumping) Protocol. This convention may become increasingly important in relation to emerging threats from ocean fertilization, ocean carbon storage and deep seabed mining.

Several ports in the WIO region have already started ‘going green’. The Kenya Ports Authority has adopted a Green Port Programme (GPP). The Tanzania Port Authorities has developed a GPP in Dar-es-Salaam, where the Maritime Gateway Project includes a ‘climate-smart’ design. In South Africa, the Port of Ngqura has a Transnet National Ports Authority green status which includes biodiversity conservation measures.[82] The Port Management Association of East and Southern Africa (PMAESA) is engaged in a baseline energy audit to support green port policy in the region. Companies which are heavily invested in container traffic, such as DB Ports, have green port policies. In Mauritius, studies on the possible impact of planned expansion of the Port Louis port on a RAMSAR site are ongoing.

Port development for the Northern and Central corridors offer the opportunity for green port design and a modern regulatory framework. [83] However, these infrastructure investments also pose threats, not only from the increased traffic, but in regards to the handling of oil, gas and mineral cargos and the conservation of the World Heritage site at Lamu.

[76] See: Report on the Global Sustainable Blue Economy Conference, November 2018, Nairobi, Kenya. Nairobi Statement of Intent on Advancing a Sustainable Blue Economy.

[77] Timothy Walker. 2017. Reviving the AU’s maritime strategy. ISS Policy Brief 96, February 2017.

[78] Both IGAD and SADC are developing BE strategies. See: UNECA. Africa’s blue economy: A policy handbook, 25, (www.uneca.org/publications/africas-blue-economy-policy-handbook); UNECA; The Blue Economy Handbook of the Indian Ocean Region (IORA).

[79] IORA ‘Blue Economy’ Declaration October 2014; Timothy Doyle (2018) Blue Economy and the Indian Ocean Rim, Journal of the Indian Ocean Region, 14:1, 1-6,

[80] Agenda 2063, Goal 6.

[81] www.au.int/en/treaties/revised-african-maritime-transport-charter.

[82] Mwakio, Philip. 2017. Green Policy Declared for All Ships at Mombasa Port. The Standard, 20 June 2017; Deltares, 2017. Green Port Policy in Tanzania; World Bank. Projects & Operations: Dar es Salaam Maritime Gateway; Arnoldi, Marleny. 2019. Port of Ngqura maintains only ‘green port’ status in South Africa. Engineering News, 26 March 2019. See also: UNECA 2016 on the success story of public-private partnership in Ehoala Port (Madagascar)

[83] For details of the developments see online: Northern Corridor Transit and Transport Coordination Authority (NCTTCA), the Central Corridor Transit Transport and Facilitation Agency (CCTTFA).

2.3.2 Offshore energy and extractive industries

Offshore renewable energy

Offshore renewable energy [84] in the region is in its infancy and does not make a significant contribution to the energy mix. [85] However, there is considerable potential.[86] Governance is essentially national. Measures to promote offshore renewable energy include investment incentives, public private partnerships, opening access to the electric grid and technology transfer. Marine spatial planning is an important governance measure which can underpin investment and avoid, or minimize negative ecosystem impacts. Environmental Impact Assessments (EIAs) participatory planning and licensing are common measures. Environmental impacts include possible changes in coastal currents and topography, mortality of fish and seabirds by turbines, underwater noise, and habitat change as a result of Ocean Thermal Energy Conversion (OTEC) waste water.

Offshore extractive industries

Governance of offshore extractive industries is also essentially national. The industries include oil, gas, minerals (such as coastal titanium sands) and the operations of terminals used for shipping products. The oil and gas reserves are considered large, but the extraction costs may also be high. [87] Regional cooperation can benefit the design of regulatory frameworks, lessons in avoidance of Dutch disease and in the establishment and management of sovereign mineral wealth funds. Although countries do not generally allow offshore hydrocarbon concessions to overlap with Marine Protected Areas (MPAs), the area allocated to the concessions is generally far greater than the areas designated as MPAs. [88]

The Africa Mining Vision affirms the importance of environmental health and calls for mainstreaming strategic environmental assessment and EIAs. Action Plan 3 provides some guidance on exploiting coastal and offshore minerals. A variety of regulatory frameworks and numerous standards and guidelines on best practices are available for specific extractive industries. These have been developed by international bodies, major mining countries and corporations as an element of their corporate social responsibility statements. [89] The four WIO countries which have joined the Extractive Industries Transparency Initiative (EITI) have all made 'meaningful progress'.

Evaluation of EIAs for investment projects is particularly challenging given the technical complexity involved. A particular problem is that the investors may engage much of the available national expertise to prepare the social, economic and environmental evaluations, creating a potential conflict of interest for potential government assessors. Identifying a regional pool of expertise and sharing regional experiences could help alleviate this problem.

A second issue which may surface is the extraction of hydrocarbons from a shared field, for example in the Northern Mozambique Channel. Provisional agreements to establish a 'no exploration/ no extraction' buffer zone across maritime boundaries could create the space to negotiate benefit-sharing or joint exploration/ extraction arrangements on shared fields. Disputes on this issue have already soured relationships between countries in West Africa. [90]

[84] ORE includes wind, wave, tidal and ocean thermal energy conversion (OTEC). For an overview see: IRENA Ocean Energy Technology Brief 1. June 2014.

[85] The Deep Ocean Water Application (DOWA) project in Mauritius is the only OTEC investment in the region.

[86] Hammar L., et al. 2012. Renewable Ocean Energy in the Western Indian Ocean. Sustainable and Renewable Energy Reviews 16(7):4938-4950; Mauritius Research Council, 2012. Marine Based Renewable Energy for Small Island States - the Case of Mauritius.

[87] Brownfield, M.E., et al. 2012, Assessment of undiscovered oil and gas resources of four East Africa Geologic Provinces: U.S. Geological Survey Fact Sheet 2012-3039, 4 p. <http://pubs.usgs.gov/fs/2012/3039/contents/FS12-3039.pdf>.

[88] Venegas-Li, R. et al. 2019. Global assessment of marine biodiversity potentially threatened by offshore hydrocarbon activities. Global Change Biology, March 2019.

[89] International Council on Mining and Metal, 2003. ICMM Sustainable Development Framework; ICMM, 2006. Good Practice Guidance for Mining and Biodiversity. (<http://www.icmm.com/document/13>); IFC Performance Standards on Social & Environmental Sustainability

[90] ITLOS Case No. 23. Dispute Concerning Delimitation of the Maritime Boundary between Ghana and Côte d'Ivoire in the Atlantic Ocean (Ghana/Côte d'Ivoire). Ghana asked the Arbitral Tribunal to "delimit [...] the single maritime boundary dividing all the maritime areas appertaining to Ghana and to Côte d'Ivoire in the Atlantic Ocean, including in the continental shelf beyond 200 M."

Deep-sea mining (DSM)

Five contracts have been approved by the International Seabed Authority (ISA) for DSM in the Indian Ocean ABNJ (Table 5). [91] The financial and technical requirements and issues of liability for environmental damage may constrain direct engagement in DSM in the ABNJ by WIO countries. WIO countries would have direct responsibility for DSM in their jurisdictional waters.

DSM is in its infancy. Risks are largely unknown, but DSM has potentially serious environmental impacts on deep-sea ecosystems. Under UNCLOS, WIO countries are required to adopt “laws and regulations to prevent, reduce and control pollution of the marine environment from activities in the Area undertaken by vessels, installations, structures and other devices flying their flag or of their registry or operating under their authority...” (i.e. the ABNJ). The ISA Mining Code includes the regulations on Polymetallic Nodules and Cobalt Crusts together with recommendations on the conduct of contractors. Regulations adopted by the ISA impose environmental protection obligations on the States and State-sponsored entities involved in the prospecting and exploration phases of deep seabed mining.[92]

Table 4. ISA DSM contracts in the Indian Ocean

Contractor	entry into force	Sponsoring State	General location	Area Size (km ²)	expiry of contract
Government of India	25 Mar 2002	India	Indian Ocean	75,000	24 Mar 2022
China Ocean Mineral Resources Research and Development Association	18 Nov 2011	China	Southwest Indian Ridge	10,000	17 Nov 2026
Government of the Republic of Korea	24 June 2014	Republic of Korea	Indian Ocean	10,000	23 June 2029
Federal Institute for Geosciences and Natural Resources of the Federal Republic of Germany	5 May 2015	Germany	Central Indian Ocean	10,000	5 May 2030
The Government of India	26 Sep 2018	India	Central Indian Ocean	10,000	25 Sep 2031

Source: ISA.

Because of the costs, pioneering nature and emerging technology involved, the existing ISA contracts are with state-sponsored agencies. WIO countries lack adequate marine-mining policies, experience and resources to deal with the requirements. As a result, WIO countries may associate with other countries to participate in technologies and benefits. However, some of the liability for environmental damage would remain with any such sponsoring WIO country.[93]

To date, only two EIAs have been submitted to ISA, both for the Clarion-Clipperton Zone (CCZ) in the Eastern Central Pacific. Only one environmental management plan has been prepared, also for the CCZ. In addition to the application of the environmental guidelines for mining operations, this plan requires the establishment of extensive MPAs which are representative of the range of habitats, vulnerable ecosystems and threatened species or habitats. [94] The MPAs must be sufficiently removed from the risks posed by mining plumes. [95]

Despite the advances in precautionary and other measures, the understanding of the impacts of DSM on ecosystems remains rudimentary, both because of the poor understanding of these ecosystems and the evolving nature of technologies, which need to weigh cost-effectiveness against certain long-term damage to deep-sea ecosystems.[96] The threats include the risks in management of waste and the transport of minerals to the surface and onwards. The regional framework developed by the Pacific Islands offers guidance for the

[91] ISA, 2017. Marine Minerals Resources of Africa's Continental Shelf and Adjacent International Seabed Area. Briefing Paper 04/2017; ISA, 2015. International Seabed Authority Map of Polymetallic Nodules and Polymetallic Sulphides Exploration Areas in the Indian Ocean. ISA, Kingston (<http://www.isa.org.jm/sites/default/files/maps/indianocean.jpg>). See also: GRID-Arendal, 2014. Deep Sea Minerals and the Green Economy. GRID-Arendal.

[92] ISA, 2000. Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area.; ISA. See also: 2013. Towards the development of a regulatory framework for polymetallic nodule exploitation in the Area. Technical Study No. 11.

[93] ITLOS Case No. 17. Responsibilities and obligations of States sponsoring persons and entities with respect to activities in the Area. (on responsibilities with regard to deep sea mining in the ABNJ).

[94] ISA, 2008. Biodiversity, species ranges, and gene flow in the abyssal Pacific nodule province: predicting and managing the impacts of deep seabed mining. ISA Technical Study: No.3.

[95] ISA, 2011. Environmental Management Plan for the Clarion-Clipperton Zone.

[96] See: SPC, 2016. An Assessment of the Costs and Benefits of Mining Deep- Sea Minerals in the Pacific Island region.

WIO [97] - it emphasizes that the responsibilities are on individual states.

2.3.3 Coastal Tourism

Other than the operation of cruise ships and yachts, marine leisure and coastal tourism is largely a matter of national governance, but can benefit from regional and global experiences. [98] All WIO countries share similar sustainable tourism goals. WIO countries use many of the same tools to plan and foster sustainable tourism. These include national strategies and plans; integrated coastal zone management (ICZM); marine spatial planning (MSP); creation of parks and reserves; and use of codes of conduct for tourism operators. [99] The tools are often backed by revised foreshore legislation which attempts to balance use rights with environmental, social and economic goals. Implementation of ICZM/ MSP plans frequently encounter issues in the division of powers between national agencies and local authorities, even when a key objective of ICZM is to avoid fragmentation.

International guidelines [100] and good practices have been blended into the Nairobi Convention draft protocol on ICZM. The region also has several coastal World Heritage Sites which attract tourists and require special measures.[101] Examination of the relative costs and benefits of different tourism segments and the management of these segments is beyond the scope of this overview. The segments include cruises, high-end enclaves with golf courses and a substantial carbon footprint, and eco-lodges, some with private marine parks. Many countries have growing domestic tourism. Concessions for large hotels tend to provide more government revenue, while smaller 'guest-house' models favour engagement with the local economy but may not contribute as much to government revenue. The larger concessions may deny access to beachfronts for the growing numbers of local tourists. However, the definition of the public domain and protection of any right of public access to the foreshore varies considerably in the region. Private sector behaviour and codes of responsible tourism play an important role, particularly with respect to vulnerable habitats and species, e.g., sharks, manta rays, cetaceans, turtle beaches, dugongs, or coral reef diving.

2.3.4 Trade and Investment

The regional governance of trade and investment is already embedded in the fabric of the RECs, which need to interpret and apply the relevant environmental policies and integrated approaches to the blue economy. The value of investment in the region's blue economy is unclear. The extent to which investments are sustainable, climate proofed or minimize negative environmental impacts is also not known. The value of the blue natural assets was conservatively estimated at US\$333.8 billion, [102] but robust estimates of the BE's contribution to GDP, estimates of changes in the value of the natural capital, or indications of the environmental footprint of the region's blue economy are lacking. [103]

Regional cooperation is essential for functionality of several blue economy activities that underpin ocean governance. These include telecommunications and subsea cables; hydrography; meteorology and space-based services, such as vessel monitoring systems, search and rescue, and remote sensing which contribute to cost-effective fisheries surveillance and the oceanographic data vital for weather forecasting.

[97] The Regional Environmental Management Framework for Deep Sea Minerals Exploration and Exploitation and the accompanying Regional Financial Framework. Available at: <http://dsm.gsd.spc.int/index.php>.

[98] E.g., World Tourism Organization (UNWTO) and Asia-Pacific Tourism Exchange Center (APTEC), 2016. Sustainable Cruise Tourism Development Strategies.; Sustainability Accounting Standards Board, 2014. Sustainability Accounting Standard. Cruise Lines Provisional Standard (www.sasb.org) (USA). The members of the Cruise Lines International Association have made a range of commitments to the SDGs.

[99] International Hotels Environment Initiative (IHEI) and the Tourism Operators' Initiative for Sustainable Tourism Development.

[100] Examples are: Leung, Yu-Fai, et al. 2018. Tourism and visitor management in protected areas : guidelines for sustainability. IUCN; Eagles, P.F. 2002. Sustainable tourism in protected areas : guidelines for planning and management; CBD Secretariat, 2004. Guidelines on Biodiversity and Tourism Development (CBD Guidelines) Montreal: Secretariat of the Convention on Biological Diversity 29.

[101] Ilha de Mozambique, Zanzibar Stone Town and Lamu.

[102] Obura, D. et al. 2017. Reviving the Western Indian Ocean Economy: Actions for a Sustainable Future. WWF International, Gland, Switzerland. 64 pp.

[103] For guidelines see: Milligan, B. et al. 2014. GLOBE Natural Capital Accounting Study, 2nd Edition.

Discussion of regional financial support mechanisms is beyond the scope of this document. However, attention might usefully be directed to identifying the scale and nature of future financing gaps facing the implementation of regional ocean plans and strategies, both to ensure funding of core recurrent activities and to direct resources to priority regional investments. Mechanisms to attract and manage regional project funding could also receive attention. [104]

2.4 Environment and Natural Resources

2.4.1 Coastal Zones

By definition, governance of coastal zones is essentially national. There is broad regional consensus on the governance objectives, approaches and the principal tools. The objectives are to protect and manage the coastal zones to sustain and grow social well-being and economic benefits. The principles include precaution, the ecosystem approach and effective stakeholder participation. The tools include ICZM and MSP, with growing attention to climate smart investments. Most MPAs are in coastal areas. The proposed Tanzania/ Kenya joint MPA is a significant innovation which will generate lessons for the region.

All countries have some form of ICZM and/or MSP. After seven years of negotiation, the final text of the Nairobi Convention Integrated Coastal Zone Management (ICZM) Protocol was agreed to in early 2019. The protocol provides a legal framework to promote regional and national ICZM and enhance cooperation for sustainable development. The RECs do not have specific coastal zone governance instruments but have benefited from joint projects (e.g. ReCoMAP/ IOC), including through the development of coordination, policy analysis and project management skills.

Although ICZM and MSP schemes may be approved, the institutional reforms required for their implementation incur a political and administrative cost. The agencies responsible for the land, sea and foreshore may resist integration of their activities. Tensions may arise between sectors and between local and national administrations. The scale of investment in major development projects may undermine ICZM and marine spatial plans. The agencies responsible for ICZM may be poorly resourced and the consultation and approval process may be undermined by political and other pressures.[105]

The UNEP has proposed an updated coastal strategy [106] which includes actions to underpin cross-sectoral cooperation across IGOs such as the RFBs, RECs and RSOs with the support of the Intergovernmental Oceanographic Commission, FAO and others. While the proposed strategy elevates the role of the circular economy and places additional emphasis on funding, it mainly restates the intent and approaches of previous strategies and initiatives led by UNEP. The strategy acknowledges the continued degradation of coastal ecosystems, but the theory of change appears to rely largely on doing more of the same, but more effectively. There may be insufficient attention to issues of political economy: how to build political support for long-term investments in the environment across short political cycles, or how to justify a greater allocation of scarce public resources to investment in healthy coasts and oceans in terms of jobs and incomes. The social and economic costs of degradation need to have greater weight in political choices, suggesting that greater attention may be required to guiding the political economy of change.[107]

2.4.2 Sustainable Coast Cities

The impact of the growing coastal urban population presents a major challenge to sustainable oceans and conservation of maritime heritage sites, such as Lamu in Kenya. Population pressure has negative impacts

[105] Ahmed, Fathima 2010. Approaches to and tools for managing environmental conflicts in coastal zones in Africa. Challenges and prospects in relation to Integrated Coastal Zone Management (ICZM). AJCR 2010/2, 26 Oct 2010.

[106] UNEP 2019. Proposal for a new marine and coastal Strategy of United Nations Environment Programme for the period 2020–2030. UNEP/EA.4/INF.7.

[107] World Bank. 2010. The political economy of natural resource use: lessons for fisheries reform. World Bank PROFISH series. Washington DC; Paul Collier, 2010. The Political Economy of Natural Resources. Social Research Vol. 77, No. 4, From Impunity to Accountability: Africa's Development in the 21st Century (Winter 2010), pp. 1105-1132.

[104] See, e.g., the regional window and account established under SWIOFish and managed by the IOC on behalf of all participating countries.

[107] World Bank. 2010. The political economy of natural resource use: lessons for fisheries reform. World Bank PROFISH series. Washington DC; Paul Collier, 2010. The Political Economy of Natural Resources. Social Research Vol. 77, No. 4, From Impunity to Accountability: Africa's Development in the 21st Century (Winter 2010), pp. 1105-1132.

[108] Louis Celliers and Cebile Ntombela. 2015. Urbanisation, Coastal Development and Vulnerability, and Catchments. Chapter: 29. The Regional State of the Coast Report: Western Indian Ocean. UNEP/Nairobi Convention Secretariat.

on all habitats and natural resources: reefs, mangroves, rivers and wetlands and the quality of air and water. [109] Coastal cities may be subject to flooding and storm surges as the natural buffers are degraded and extreme weather events increase. Mozambique's second city, Beira, is a striking recent example of the threat.

In principle, encroachment of the built environment into wetlands, mangroves and lagoons is addressed by ICZM. Industrial pollution could more effectively be managed by siting industries in dedicated industrial zones which are serviced by waste handling facilities. A suite of generic approaches is suggested by stakeholders. [108]

However, there are major infrastructure costs involved in addressing the problems of urban waste water and solid waste. These investments may not be a priority in urban politics. The EU provides a useful regional approach through the Habitats, Waste Water and related directives that establish standards and guidelines. EU citizens also have legal recourse to ensure EU member states meet the requirements. A new directive on the circular economy is in preparation. The EU measures can be applied at both the national and local administration levels.

2.4.3 Rivers and Wetlands

This working document does not review the governance of watersheds, although they may be included within the remit of the Nairobi Convention. However, two issues are of particular note in relation to ocean governance. The first is marine pollution from land-based sources, including agricultural runoff. The Nairobi Convention already has a protocol to address this threat. The second issue is the management of environmental flows, and in particular the decline in flows to estuarine habitats and coastal wetlands in the more northern rivers. In contrast, poor land management practices in the watersheds of the more southern cities has contributed to costly flooding in the recent past.

A number of governance instruments are of note. At the regional level, the SADC Revised Protocol on Shared Watercourses (2000) incorporates many of the elements of the UN Watercourses Convention (see below). A number of bilateral or multilateral river agreements (e.g. Kunene, Limpopo, Zambezi)[110] offer platforms for sustainable management. However, the SADC Protocol and many African transboundary river agreements are considered to be weak in relation to conflict-resolution tools, modalities for public participation and means for prioritization of water-usage. These challenges are common to ocean and coastal resource management.[111]

International law on shared watercourses offers guidance and models of best practices, in particular the Convention on the Law of Non-Navigational Uses of International Watercourses (in force 2014). Of the WIO countries, only South Africa is party. Article 7 of the Convention, the "Obligation not to cause significant harm," requires parties to "take all appropriate measures to prevent the causing of significant harm to other watercourse states" and to compensate for any such harm. This provision has proven particularly contentious and the issue has contributed to the weak adoption of the Convention and weakness in some transboundary river agreements (e.g. for the Nile). [112] Approaches to resolving this issue have application to the trade-offs which may be required for ocean governance.

2.4.4 Biodiversity

Although UNCLOS does not refer to 'biodiversity' per se, obligations to protect and preserve the marine environment and the conservation and sustainable use of living marine resources are embedded throughout the text. Many of the principles governing the protection and sustainable use of the oceans area also set out.

[109] Fourth United Nations Environment Assembly Cities Summit. 2019. Innovation for Livable and Sustainable Cities: Multi-Level and Integrated Urban Systems. Outcome statement.

[110] E.g., in 2004, the Agreement establishing the Zambezi Watercourse Commission (ZAMCOM) was concluded; in 2003, Agreement on the Establishment of the Limpopo Watercourse Commission was concluded.

[111] Giordano, Meredith A. and Aaron T. Wolf .2003. Transboundary freshwater treaties. In: International waters in Southern Africa. Edited by Mikiyasu Nakayama. United Nations University Press.

[112] E.g., see: Agreement on Declaration of Principles between The Arab Republic of Egypt, The Federal Democratic Republic of Ethiopia And the Republic of the Sudan On the Grand Ethiopian Renaissance Dam Project (GERDP).

To this end, states have obligations to use the best scientific advice; take a precautionary approach; take due account of ecosystem effects; exchange information and notify other entities of damage. States also have an obligation to preserve rare or fragile ecosystems and endangered species. Similarly, the ISA is required to adopt appropriate rules, regulations and procedures to protect and conserve the natural resources of the Area and to prevent damage to the flora and fauna of the marine environment. All WIO countries are party to the Convention on Biological Diversity (CBD) which further reaffirms these obligations.

The NC protected areas protocol [113] develops regional norms to comply with these obligations. It refers to species and habitats rather than ecosystems and distinguishes and lists 'protected', harvestable and migratory species. The NC is also associated with the Sustainable Ocean Initiative (SOI), a CBD initiative in support of regional seas cooperation in order to achieve the 2020 Aichi Targets on biodiversity. In this respect, a CBD SOI Regional Capacity Development Workshop for East Africa was held in Nosy Be, Madagascar from 18-22 January 2016, in collaboration with NC Secretariat. The workshop was aimed at enhancing national implementation towards achieving the Aichi Biodiversity Targets in marine and coastal areas by strengthening the scientific, technical and managerial capacity of relevant policy makers, managers and scientists in the region in the use of MSP as an approach to enhance cross-sectoral coordination, planning and management. It also built on regional experiences in (a) integrated marine and coastal area management, (b) the description of ecologically or biologically significant marine areas (EBSAs), and (c) the application of impact assessments. [114] In addition to improved cooperation in regions and exchanges between regions, the SOI has flagged the human and financial resource deficit. [115]

Protected area approach

All WIO countries have established Marine Protected Areas (MPAs). [116] These range from small 'private' MPAs and 'community' MPAs to RAMSAR sites and large oceanscape MPAs, as in Seychelles. [117] They may target the protection of representative or vulnerable habitats, endangered species, migratory routes, genetic resources, or unique heritage sites. They provide different levels of protection: from 'no take' areas to limited extractive or recreational use. Numerous factors influence compliance with the rules and the effectiveness in conserving biodiversity and habitats. The legal frameworks governing MPAs and financial arrangements underpinning their sustainability are often undergoing refinement. The NC has established a Group of Experts on Marine Protected Areas (GEMPA) to assist member countries (protocol, Art. 16). Two WIO marine sites are designated World Heritage sites: the entire Aldabra Atoll ecosystem (Seychelles) and iSimangaliso Wetland Park (South Africa). [118] Tanzania and Kenya are exploring the possibility of developing a transboundary MPA. The possibility of creating a special conservation area in the Northern Mozambique Channel has been raised as this vulnerable ecosystem is likely to be subject to growing environmental pressures.[119] Biodiversity offsets are not currently used in the region. [120]

The creation of MPAs in the ABNJ is challenging but could possibly be initiated through declarations with compliance measures to be progressively developed through regional consultations, including with the RFMOs and ISA, both of which have a mandate to develop legally-binding resolutions. Pending the establishment of a competent RFMO, the Southern Indian Ocean Deepsea Fishers' Association (SIODFA) (which represents four fishing companies from Australia, Japan, New Zealand and United Kingdom with bottom trawling operations in the Southern Indian Ocean), agreed in 2006 to set up its own benthic protected areas (BPA), where trawling and dredging were forbidden to SIODFA members.

[113] Protocol Concerning Protected Areas and Wild Fauna and Flora in the Eastern African Region (1985). Numerous COP resolutions also refer to biodiversity

[114] Report of Sustainable Ocean Initiative Capacity Building Development Workshop for East Africa, Nosy Be, Madagascar, 18-22 January 2016 (UNEP/CBD/SOI/WS/2016/1/2), paras. 7-8.

[115] Second meeting of the Sustainable Ocean Initiative (SOI) Global Dialogue with Regional Seas Organizations (RSOs) and Regional Fisheries Bodies (RFBs) on Accelerating Progress toward the Aichi Biodiversity Targets and Sustainable Development Goals convened from 10-13 April 2018.

[116] WIO countries also made commitments to establish a representative network of MPAs in the Convention on Biological Diversity; the Jakarta Mandate, the Johannesburg Summit and the 2003 World Parks Congress.

[117] Kenya protects 8.7% of its ocean with MPAs, Tanzania 8.1%, and Mozambique 4%.

[118] Obura, D.O., Church, J.E. and Gabri  , C. 2012. Assessing Marine World Heritage from an Ecosystem Perspective: The Western Indian Ocean. World Heritage Centre, United Nations Education, Science and Cultural Organization (UNESCO). 124 pp.

[119] Mozambique, Madagascar, Tanzania, Comoros, Seychelles and France are engaged in the NMC Initiative. For a rationale see: Obura DO et al. 2018. The Northern Mozambique Channel. In: World Seas: an Environmental Valuation, Volume II: The Indian Ocean to the Pacific, Second Edition. Editor: Charles Sheppard. Elsevier.

[120] Niner, H.J., Milligan, B., Jones, P.J.S., Styan, C.A. 2017. A global snapshot of marine biodiversity offsetting policy. Marine Policy, 81 pp. 368-374.

The CBD has identified a large number and diversity of Environmentally and Biologically Sensitive Areas (EBSAs) which include the Saya de Malha Bank and parts of the Mozambique Channel. SIOFA has designated five Vulnerable Marine Areas, [121] but the associated provisional 'no fishing' measures have not been approved. ISA has also designated seabed areas as reserves. There are currently no IMO Particularly Sensitive Sea Areas (PSSAs) or special areas designated in the WIO (with the exception of some southern South African waters). The regional Marine Protected Areas Outlook (under preparation by the NC) may provide for more informed pathways to designate and effectively manage protected areas.

Threatened species

The Nairobi Convention protected areas protocol lists species to be protected. NGOs are heavily engaged in the conservation of species and many of the measures in place are as a result of NGO advocacy and development of participatory approaches with stakeholders. For migratory species, the protected area approach needs to embrace protection for breeding sites, feeding grounds, nurseries, spawning grounds, migratory routes and attention to special requirements during spawning periods.

The IOTC has measures to protect and conserve threatened species, such as sharks, turtles and seabirds which are vulnerable to longline fishing activities. Tuna gillnets are not extensively used by the parties to the NC, but gillnet activities undertaken by other WIO countries may have significant impacts. IMO has a range of measures to prevent transport of invasive species through ballast water and sediments. However, only four countries are party to the Ballast Water (2004) convention. CITES targets trade measures - one WIO country is not a party to CITES. The CITES lists include products from sharks and rays (e.g., sharkfin), turtles and corals.

The Western Indian Ocean - Marine Turtle Task Force (WIO-MTTF) was created in 2008 and links the Nairobi Convention to the CMS IOSEA Marine Turtle Memorandum of Understanding which provides for cooperation on turtle conservation. [122] Only Comoros, Kenya and Madagascar are signatories. WIO countries have sixty four (64) RAMSAR sites. Madagascar (20) and South Africa (23) have the most. Five WIO countries are members of the International Whaling Commission.

Threatened habitats

Habitat protection is a major objective of protected areas. Wetlands, mangroves, coral reef and seagrass beds are among the most threatened. Habitat in the ABNJ/ Biodiversity Beyond National Jurisdiction (BNNJ) is discussed in section 2.4.6. Coral reefs are discussed in section 2.4.7 in the context of climate change. The unique habitat of the Mascarene Plateau is briefly discussed below.

Because of its isolation, the Mascarene Plateau is poorly known in terms of its natural resources and its contribution to the recruitment of commercial species harvested throughout the WIO. Recent research cruises are extending knowledge on the marine ecosystems and the morphological structure of the area. [123] The 40,808 km² of the Mascarene banks represent one of the largest shallow tropical marine ecosystems on Earth and the Saya de Malha and associated Banks of the Mascarene Plateau are considered to support the largest contiguous seagrass beds in the world. [124] An estimated 80-90% of the shallow water area is covered by seagrasses. The seagrass beds sequester an estimated US\$35 million worth of carbon each year. [125] In addition, the carbon sequestration may have some regional buffering effect on ocean acidification. The Mascarene plateau is known to have an important role in the circulation of the WIO currents and influences the mainland and island ecosystems.

Other threatened habitats are further discussed below (VMEs and EBSAs) (section 2.4.6).

[121] For a methodology see: Ardron, J. A., et al. 2014. A systematic approach towards the identification and protection of vulnerable marine ecosystems. - Marine Policy, 49, p. 146-154.

[122] Convention on the Conservation of Migratory Species of Wild Animals (CMS). Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia.

[123] E.g., The Dr Fridtjof Nansen conducted research in 2018 in the Joint Management Area.

[124] http://www.vliz.be/projects/marineworldheritage/sites/2_Masc%20Plateau_S%20Malha.php?item=The%20Indian%20Ocean; Hilbertz et al. 2002. There are other large seagrass areas, but they are not contiguous.

[125] Based on a previous estimate prepared by the consultant for the World Bank (see World Bank, 2017).

2.4.5 Pollution

Prevention and control of marine pollution is conventionally separated into marine sources of pollution (MSP) and land-based sources of pollution (LBS/ LBSP).

Marine sources of pollution

Shipping, mining and fishing are the main sources of pollution. Shipping is almost universally subject to MARPOL, [126] which includes requirements for ports to provide shore facilities for waste disposal. However, minor ports may not have adequate facilities, and the monitoring of at-sea pollution, such as the flushing of oil tanks or garbage disposal, is often deficient. Emissions are also subject to MARPOL rules. As already noted, a number of WIO countries are not party to the IMO convention which covers ballast water discharge. [127] Oil spill emergencies are the subject of a number of IMO conventions on liability and compensation and the NC protocol of 1985.

The question of disposal at sea is becoming increasingly important and is covered by the London (Dumping) Convention. It is important in relation to several emerging threats: ocean fertilization (currently banned), under seabed carbon storage (currently, only a small number of projects are active) and disposal of waste from seabed mining. However, less than half of the WIO countries adhere to either the '72 Convention or the '96 Protocol.

The effects of undersea noise pollution are not well understood, but it is known to affect the behaviour and navigation of some species and cetaceans in particular. Noise from seismic surveys can travel thousands of miles. The Lofoten Islands (Norway) have banned all seismic surveys off their coasts, believing that they have a significant effect on their fisheries. In 2014, IMO approved guidelines on reducing underwater noise from commercial shipping and IMO also adopted the notion of "Particularly Sensitive Sea Areas" (PSSAs) which could subject shipping to rerouting. [128] It is suggested that adherence to all the relevant IMO conventions and their effective implementation is a priority for regional cooperation in order to prevent, control and reduce all marine sources of pollution.

Land-based sources of pollution (LBS)

WIO countries have obligations under UNCLOS to 'prevent, control and reduce' LBS of marine pollution. There are no comprehensive, internationally-binding norms and few regional norms.[129] Following the preparation of the Montreal Guidelines (1985), the Global Programme of Action (GPA) was established as a technical body with an advisory function. Implementation of measures was ceded to the regional level where many of the RSOs have weak or no compliance provisions. The Montreal Guidelines and the subsequent Montevideo Process envisaged the creation of a LBS convention with binding global norms and obligations. The need for such an instrument appears to be growing in relation to global marine pollutants like plastics and greenhouse gas (GHG) emissions.[130]

The Global Environment Facility-funded Strategic Action Programme for the protection of the Western Indian Ocean from land-based sources and activities (WIOSAP), a project being executed by the Nairobi Convention, is a key regional initiative that assists WIO countries to combat LBSP and addresses many of the sources of pollution. A discussion of LBS is beyond the scope of this overview. However, several major challenges stand out for the WIO region.

[126] International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 Relating Thereto, 17 February 1978, 1340 U.N.T.S. 61. (MARPOL). MARPOL has numerous annexes which are constantly being revised and extended.

[127] International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM).

[128] IMO, 2014. Guidelines for the reduction of underwater noise from commercial shipping to address adverse impacts on marine life. MEPC.1/Circ.833. See also: UNEP/CBD/IMO. 2014. Expert Workshop on Underwater Noise and its Impacts on Marine and Coastal Biodiversity. (<https://www.cbd.int/meetings/MCBEM-2014-01>); See also: Wildlife Conservation Society, 2019. Threats posed to Marine Life in the Western Indian Ocean from Anthropogenic Ocean Noise and Shipping, including Ship strikes. Science to Policy Workshop, Durban; Convention on Migratory Species - 2017. Resolution 12.14 (UNEP/CMS/Resolution 12.14); IUCN, 2016. Effective planning strategies for managing environmental risk associated with geophysical and other imaging surveys.

[129] Some specific chemicals are subject to conventions, e.g., the Minamata Convention on Mercury. Only two WIO countries have ratified this treaty.

[130] UNEA 2019. Possible options for the future of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities: An analysis. UNEP/EA.4/INF/14.

The first is the implementation of effective controls on mining and industries which produce noxious or hazardous wastes. There are often substantial political difficulties in implementing controls, sanctions or remedial actions against large corporations, particularly when they may be in partnership with national mining interests or generate significant government revenue. WIO institutional capacity to assess the EIAs, monitor compliance and enforce mining environmental regulations is an area where regional skills and experience could be pooled to transfer lessons, buffer national agencies, or provide an element of peer review, transparency or independent opinion.

The second is the problem is the management of urban waste. Urban waste water requires costly treatment plants and sewage infrastructure. Both problems require increased political will to commit funds and an informed public to support the political decisions in the face of competing demands for urban services. The problem of solid waste is discussed in more detail below in relation to plastic waste.

The third challenge is to address the twin global threats from plastic pollution and carbon dioxide pollution. Both are discussed below.

Marine plastic pollution

A growing regional and global problem, marine plastic pollution originates from both marine and land-based sources with an estimated 80% originating from land-based sources. A proposal for a global convention under the auspices of UNEP has been raised at UNEA. [131]

However, long-term solutions require measures in diverse sectors outside the traditional scope of environmental law. These include product manufacturing processes, the circular economy, extended producer liability, the economics of solid waste management, and changed consumer behaviour. Possible future trade measures may be required that specify recycled content in plastic products and extend to controls over international trade in plastic feedstock. These latter measures would require development of standards, criteria and compliance mechanisms, such as on the traceability and certification of recycled raw material.

At a regional level, it is suggested that the EU has by far the most advanced suite of measures to address marine plastic pollution (see section 4.6) in the context of a circular economy.

Ideally, a common suite of similar policy and legislative instruments could be tailored for progressive implementation at the level of the RECs. A suite of measures common to all four RECs has a major advantage in terms of economies of scale for manufacture and trade in plastic products, a market in recycling technologies, separation of waste streams, and reuse of recycled plastic. It could provide businesses with common standards for packaging, recycling, innovation and product development and enable consumer behaviour to respond at a regional level, which could partly offset economic or political costs at the national level. The EAC Protocol on Environment and Natural Resources Management has some similarities to the EU approach in that it requires member states to take specific actions to protect the marine environment. [132]

Marine plastic pollution from shipping is addressed through MARPOL.[133] Likewise, FAO has produced guidance on plastic waste from fisheries.

[131] See: UNEP/EA.4/11: Analysis of voluntary commitments targeting marine litter and microplastics pursuant to resolution 3/7: Report of the Executive Director; UNEP/EA.4/12: Progress report on the work of the ad hoc open-ended expert group on marine litter and microplastics established by resolution 3/7, Report of the Executive Director; UNEP/EA.4/RES.6 Marine Plastic Litter and Microplastics; Global Partnership on Marine Litter.

[132] The Protocol is not in force and hence not a legally binding document pending ratification.

[133] See MARPOL Annex V and the IMO's Resolution MEPC.310(73) on an Action Plan to Address Marine Plastic Litter from Ships.

2.4.6 Sustainable use of the ABNJ

Governance of activities in the ABNJ relies largely on general UNCLOS rights and obligations with respect to the high seas and the Area.

The ABNJ/Biodiversity Beyond National Jurisdiction (BBNJ) negotiations target certain gaps in the UNCLOS architecture with a focus on four thematic areas: (i) marine genetic resources (including benefit sharing); (ii) area-based management tools (including MPAs); (iii) environmental impact assessments, and (iv) capacity building and technology transfer. The draft ABNJ text includes principles on ecosystem resilience; prevention of 'indirect' pollution through the transfer or transformation of pollution; internalization of environmental costs (e.g. in DSM operations); accountability; non-regression and adaptive management.

Despite several years of negotiations, progress with the proposed UNCLOS implementing arrangement on BBNJ appears stalled. [134] The draft text undertakes to protect the right of states under UNCLOS, but consensus appears to founder on the problem of compliance. By definition, the area is beyond national jurisdiction and in the negotiations, flag states are (understandably) unwilling to cede rights to control their activities on the high seas. Without an effective enforcement mechanism, the proposed global ABNJ/BBNJ arrangement is likely to be ineffective. This is where a regional approach can move from global provisions, which are difficult to negotiate, to specific provisions targeting clearly-defined regional challenges.

In the WIO, RFMO rules cover harvesting of migratory species (UNCLOS, Annex 1) in the ABNJ (IOTC, CCSBT). RFMO rules also cover the harvesting of mobile non-migratory species (SIOFA, CCAMLR). Some of these rules extend to the protection of threatened species (birds, turtles, sharks). IWC rules cover cetaceans. ISA rules govern seabed mining activities, excluding the exploitation of sedentary living marine resource. Arguably, the fisheries regimes have an indirect mandate to protect Vulnerable Marine Ecosystems (VMEs) and Ecologically and Biologically Significant Areas (EBSAs) where fishing is concerned. ISA has a similar mandate in relation to seabed mining activities.

All of these regimes use area-based management tools and apply EIAs (although RFMOs may not use that term). CCAMLR has pioneered an ecosystem approach and the precautionary approach is applied in many fisheries management measures using risk assessments and scientifically-derived precautionary limits for fish biomass or mortality. One of the purposes of the proposed draft agreement on BBNJ is to address gaps between these regimes, for example in relation to genetic resources and the future allocation of benefits from 'the common heritage of mankind'.

Seamounts are generally considered to be VMEs and the majority of WIO seamounts lie in the ABNJ. [135] Those within national jurisdiction generally have some form of protection under fisheries or DSM regulations. However, the effectiveness and compliance with any such rules is problematic. If all vessels were fitted with VMS, seamounts adequately mapped and catalogued, and a VMS signature for seamount fishing established, then, combined with the use of port inspections under the PSMA, a measure of control could be exercised. For seamounts outside the EEZs, the SIOFA regime could apply if WIO countries are party to SIOFA and have established the necessary regulations. Indeed, in 2019 SIOFA adopted conservation and management measures for the interim management of Bottom Fishing in the Agreement Area. These measures were intended to promote the sustainable management of deep-sea fisheries resources, including target fish stocks and non-target species, and to protect the marine ecosystems, including, inter alia, the prevention of significant adverse impacts on VMEs [136] in accordance with relevant United Nations General Assembly resolutions [137] and the FAO 2008 International Guidelines for the Management of Deep-Sea Fisheries in the High Seas. [138]

[134] Draft text of an agreement under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction. Advance, Unedited Version 25 June 2019; see also: Tiller, R. et al. 2019. The once and future treaty: Towards a new regime for biodiversity in areas beyond national jurisdiction. *Marine Policy*, Volume 99, January 2019, Pages 239-242

[135] For further discussion, see: Galetti, F. Marsac, F. and Ternon, J.F. 2018. Governance of the South West Indian Ocean Seamounts. Science to Policy meeting before the 9Th COP of the Nairobi Convention, 09 -11 July 2018 – Durban. Note however, that the area of the Nairobi Convention does not extend to the ABNJ unless a specific protocol or other instrument provides a basis.

[136] CMM 2019/01, Conservation and Management Measure for the Interim Management of Bottom Fishing in the Agreement Area, <http://www.siofa.org/>

[137] UNGA Resolutions 61/105 (2006), 64/72 (2009) and 66/68 (2011).

[138] www.fao.org/fi/website/FIRetrieveAction.do?dom=topic&fid=166308&lang=en

The ABNJ clearly provides a range of global ecosystem services. There is also growing evidence of the discrete provision of services at the regional level, as ABNJ water mass and the attendant nutrients and biota are moved by ocean current systems. Recent studies indicate that the ABNJ associated with the Somali current is the world's most connected with coastal states.[139]

The role of the WIO current systems in the recruitment of species with an extended pelagic larval phase is largely unknown.[140] However, emerging research shows significant connectivity at ocean scale in the WIO. [141]

Given that the ABNJ negotiations are unlikely to be concluded in the near future, in the absence of an overarching framework for BBNJ, the attention of the NC could be focused on an exercise to consolidate the mandates of the RFMOs and ISA into a collective instrument. This instrument could both map the legal, institutional and compliance gaps and explore the reinforcement of the existing mandates to bridge these gaps. A number of projects and initiative could support a collective exercise, starting with MoUs and gradually extending to resolutions and compliance modalities of the partners to fill the gaps.[142]

2.4.7 Climate Change, Ocean Acidification, and Coral Reefs

Climate change is projected to have many ocean-related impacts: sea-level rise, alterations in the patterns of monsoons and cyclones, coastal flooding, etc. Arguably, the greatest threat to the WIO is the likely loss of coral reefs due to a combination of several stressors: (i) ocean warming and ocean acidification, both of which are transboundary and global; and (ii) coastal pollution and habitat loss, which is largely national and has already been addressed above. Unsustainable fishing practices disrupt the integrity and resilience of coral reefs, but do not necessarily destroy the reefs directly.

Ocean warming is an accepted part of the climate regime and is addressed within the remit of the UNFCCC. [143]

Ocean acidification (OA), however, tends to get bundled with climate change and its regulation (if any) dwells in a 'twilight zone' between UNCLOS and the UNFCCC. UNCLOS obliges states to prevent, control and reduce pollution from and through the atmosphere, but global norms and standards for carbon dioxide pollution have never been developed and this provision has largely been ignored.[144] The vast proportion of anthropogenic carbon dioxide emissions are from LBS. In 1985, the Montreal Guidelines [145] envisaged a global instrument on LBS, an intent subsequently endorsed by 'Montevideo'. [146] However, the establishment of the GPA aside, subsequent UNEP actions focused on regional approaches, which by their regional nature are unable to adequately address global marine pollutants. Over 20 years after 'Montreal', 'Montevideo IV' merely undertook to examine the feasibility of a global instrument. [147] It could be argued that the dialogues between regional seas organizations are a poor substitute for the failure to negotiate a global convention on LBS or establish global norms for ocean pollution through the atmosphere.

Arguably, UNFCCC does not see OA as "interference with the climate system" but as a solution to reducing atmospheric CO₂, for example, through the "enhancement of reservoirs" or ocean fertilization. In the Paris Agreement, the National Determined Contributions (NDC) refer to aggregate GHGs. The Agreement makes no reference either to carbon dioxide or OA. Indeed, some have argued that OA is 'not the business' of UNFCCC.

The relative contributions of the different stressors to the degradation of coral reefs is difficult to determine, but given the bleaching of isolated, un-

[139] Popova, E. 2019. Ecological connectivity between the areas beyond national jurisdiction and coastal waters: Safeguarding interests of coastal communities in developing countries. *Marine Policy*. Volume 104, June 2019, Pages 90-102.

[140] IOTO has undertaken some tuna tagging studies; the SWIOFP undertook some genetic studies, but these mainly focused on coastal species with a relatively short pelagic larval stage.

[141] Crochelet, et al. 2016; Gamoyo et al. 2019.

[142] The Partnership for Regional Ocean Governance; the STRONG High Seas project and others. See for example: Wright, G. and Rochette, J., 2019. *Regional Ocean Governance of Areas Beyond National Jurisdiction: Lessons Learnt and Ways Forward*. STRONG High Seas Project, 2019

[143] For latest scientific report see: IPCC, 2019. Chapter 5: Changing Ocean, Marine Ecosystems, and Dependent Communities IPCC SR Ocean and Cryosphere. Final Draft.

[144] MARPOL's provisions on ship's emissions are an exception.

[145] UNEP, 1985. *Montreal Guidelines for the Protection of the Marine Environment against Pollution from Land-based Sources*. UNEP(092)/E5. [1985] UNEP, Nairobi.

[146] UN. *Land-Based Sources of Marine Pollution*. In: Report of the Preparatory Committee for the UNCED. A/CONF. 151/PC/71 of 17 July 1991. International Organisations and the Law of the Sea. *International Yearbook 1991*. Netherlands Inst. For the Law of the Sea. (par.94(b)).

[147] Governing Council of the United Nations Environment Programme (2009). *Fourth Programme for the Development and Periodic Review of Environmental Law*. Nairobi, 16–20 February 2009 UNEP/GC/25/INF/15. (par. II.A.(e)).



fished reefs which are not subject to coastal pollution, the contribution of the global stressors in the region is considerable. Monitoring of OA in the WIO is in its infancy and no studies have been conducted that distinguish the effects of OA from other stressors.[148]

The loss of coral reefs is projected to result in major economic losses in the region. Regional cooperation might focus on (i) support for harmonized national actions, possibly including estimates of the potential economic losses, and (ii) development of common positions and actions in global fora.[149]

The first would involve preparation of a regional programme to i) source funding and resources for a major regional effort to reduce local stressors, in particular financing infrastructure for collection and treatment of waste water; ii) develop incentives and measures to reduce agricultural runoff and siltation; and iii) reduce unsustainable fishing and tourist use of coral reefs. This means mainstreaming actions to combat marine pollution into urban and coastal development, embedding reforms into agricultural development and land management (e.g., management of fertilizer, herbicide and pesticide use), and addressing how to offset the impact of reduced fishing on communities dependent on fishing. [150] Potential sources of funding include the international financial institutions, climate funds, local authorities, the GEF and other partners. The programme undertaken by Queensland to save the Great Barrier Reef is a useful model. [151]

The second is to consider enhanced actions in support of GHG emissions reduction through global fora, in association with the AU, Small Island Developing States, and others. This could be supported by specific regional commitments on CO2 reductions in NDCs. The joint actions could also develop a common position on the approach to OA in the UNFCCC.

There is a crucial difference between the impact of climate change and the impact of OA. Damage caused by OA is caused directly by CO2 emissions, while damage attributable to climate change is proving difficult to attribute directly to GHG emissions. There are numerous provisions in international law which address transboundary damage from pollution and potentially apply to the causal link between OA and CO2 emissions. Secondly, there is a growing body of litigation on climate change that seeks the reduction of emissions as part of a human right to a healthy environment, including for future generations. [152] Consideration could be given to applying similar actions to OA. Thirdly, an estimate of the regional damage (economic costs) of the loss (or partial loss) of coral reefs could focus political will at various levels.

2.4.8 Fisheries

The state of fisheries

The Southwest Indian Ocean Fisheries Commission (SWIOFC) estimates that 67 percent of the assessed fish stocks were exploited at biologically sustainable levels in 2015. [153] With regard to the highly migratory species, IOTC's advises that (other than yellowfin) the main commercial species are fished sustainably. Some species of marlin are overfished and the

[148] Establishing relationships between OA and reef health is important. A better understanding of the resilience of Red Sea reefs to high sea temperatures is of particular interest as part of the scientific efforts. See work by the International Coral Reef Initiative (ICRI).

[149] For additional policy actions see: UNEA 2019. Progress in the implementation of resolution 2/12 on sustainable coral reefs management, Report of the Executive Director. UNEP/EA.4/23.

[150] Lagoon and reef management reforms in Rodrigues Is. offer one example.

[151] It should be noted that despite considerable effort, the Gt. Barrier Reef has continued to degrade.

[152] The Urgenda case (Netherlands) was a watershed in climate litigation. In the Netherlands there is a constitutional right to a healthy environment which was basis for the litigation. For a review, see: UNEP, 2017. The Status of Climate Change Litigation – A Global Review. UNEP, Nairobi.

[153] For details by country and species see: SWIOFP, 2019. Report of the Eighth Session of the Scientific Committee Maputo, Mozambique, 12–15 February 2018. FAO Maputo, 2019.

[154] For details see: https://www.iotc.org/sites/default/files/Summary_of_Stock_Status.pdf.

status of many coastal tunas and sharks has not been assessed. [154] There are a number of instruments and initiatives that support regional fisheries cooperation.

African Union level

The 2005, the Abuja Declaration on sustainable fisheries and aquaculture in Africa established a common purpose on sustainable fisheries development. The Conference of African Ministers of Fisheries and Aquaculture (CAMFA) subsequently provided a platform for further cooperation. Building on the Comprehensive Africa Agricultural Development (CAADP), the AU/ NEPAD developed a Pan-African Fisheries and Aquaculture Policy (2014).

The cooperation dimension is largely orientated to accessing funding, sharing experiences, assessment of trajectories for fisheries development, sustainability and poverty reduction. The policy calls for coordinated mechanisms among RECs and RFBs to ensure coherence of fisheries policies and aquaculture development, including their adoption and adaptation, and to increase and consolidate the African Voice in the governance and management of high seas and in the ABNJ negotiations.[155]

The Policy is being implemented through the NEPAD Agency Fisheries and Aquaculture Program (2015-2020). [156] The Program focuses primarily on the improvement of the social and economic performance of sustainable national fisheries. [157] The activities are substantially orientated by application of the FAO Code of Conduct for Responsible Fisheries and its plans of action and guidelines (e.g. on illegal fishing, small-scale fishing, etc.); and by links to AU rural development and trade policies. In the Atlantic, the Regional Convention on Fisheries Cooperation among African States bordering the Atlantic Ocean (ATLAFCO) (22 countries, Morocco to Namibia) sets out the modalities of regional fisheries cooperation between member states.

WIO

The SADC Protocol on Fisheries (2001) undertakes “to support national initiatives taken and international conventions for the sustainable use and protection of the living aquatic resources and aquatic environment of the region” and a statement of (re)commitment was made in 2008. SADC has an action plan to combat IUU fishing and take measures to establish a regional MCS centre. EAC has a particular focus on cooperation on inland fisheries; COMESA’s cooperation reflects its interests in regional trade; IGAD’s cooperative efforts reflect a concern with food security. IOC implements or has implemented a number of regional fisheries projects [158] and currently hosts the MASE maritime security programme, which includes a regional fisheries enforcement dimension. IOC has also developed a fisheries strategy.

In 2004, FAO established the South West Indian Ocean Fisheries Commission (SWIOFC) under Article VI of its Constitution. An RFB, SWIOFC includes all WIO countries. [159] Its role is to promote the sustainable utilization of fisheries resources. Though it supports the management and development of fisheries, it does not have a mandate to manage fisheries (i.e., it has an advisory role only). [160] In 2015, SWIOFC endorsed a process for members to adopt Guidelines for Minimum Terms and Conditions (MTC) for Foreign Fisheries Access in the SWIOFC region. [161]

[154] For details see: https://www.iotc.org/sites/default/files/Summary_of_Stock_Status.pdf.

[155] AU-IBAR. 2017. Report of the consultative meeting to establish mechanism for the coordination of common position and voice and to provide support to au member states in the implementation of regional fisheries management organization (RFMOs) recommendations.

[156] AUC-NEPAD (2014). The Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa.

[157] FAO and NPCA. 2014. De Graaf, G. J. and Garibaldi, L., “The Value of African Fisheries”. FAO Fish. Tech. Paper.

[158] SmartFish (EU-financed); SWIOFish (WB/GEF).

[159] Comoros, Kenya, Madagascar, Maldives, Mauritius Mozambique, Seychelles, Somalia, South Africa, Tanzania, France and Yemen.

[160] For an overview see: Harris, A. and Gove, D. 2015. Ten Years Promoting And Strengthening Regional Cooperation For Securing Sustainable Fisheries In South West Indian Ocean (SWIO) Region. South West Indian Ocean Fisheries Commission/ WWF.

[161] Implementation of the Maputo Declaration on Regional Minimum Terms and Conditions.



SWIOFC is beginning to assume a role as a technical arm of the RECs. It is creating space in its agenda for fisheries cooperation among the RECs and with other actors, such as the NC, with which is about to start a 5-year partnership project, funded by Sida.

Regional fisheries management

Management of highly migratory fish stocks (HMFS) falls under the IOTC. CCSBT has management responsibility for Southern Bluefin Tuna in all oceans. CCAMLR has management responsibility for the fisheries and other living marine resources in the Southern Ocean. SIOFA has management responsibility for those fisheries on the high seas, including bottom fisheries, which are not covered by the other RFMOs. There are no regional arrangements for management of shared non-HMS fish stocks. Regional cooperation on the fisheries covered by the RFMOs effectively means working with and through the RFMOs. It means cooperation between the RFMOs and (ideally) cooperation between the RFMOs and the RECs. Decision-making by the RFMOs can be challenging, as it is generally done by consensus. However, countries can lodge objections which exempt them from the provisions of the decision. As a consequence of the establishment of new RFMOs and the modernization of "older" ones through external performance review of their *modus operandi*, more and more RFMOs have adopted new decision-making procedures that restrict member states' objections or ability to opt out of their decisions.

All RFMOs function within the UNCLOS framework, and in the case of highly migratory fish stocks, there are obligations on states to comply with agreed management measures, in accordance with the relevant provisions of the UN Fish Stocks Agreement. [162] All RFMOs espouse an ecosystem approach to fisheries management and the precautionary principle but often face practical challenges in their application. A recurring problem is the uncertainty regarding the state of fish stocks and the trade-offs between short and long-term benefits. It should be noted that many vessels from distant-water fishing nations (i.e. from outside the WIO) operate in the region, particularly in the tuna fisheries and the deepsea fisheries. Many of these nations are party to the RFMO conventions (or have the status of cooperating non-parties) and influence the decisions of the RFMOs.

Other fisheries cooperation

Regional cooperation on scientific research in fisheries is generally in support of the RFMOs through their scientific committees, SWIOFC assessments, or targeted research (e.g. work on genetics undertaken by projects such as the SWIOFP). The importance of the Port State Measures Agreement (PSMA) for fisheries enforcement has already been noted. [163] Cooperation also takes place at the industry level. [164] The Indian Ocean Tuna Operators Association (IOTOA) was created in 2011 to foster industry sustainability and potentially develop a regional eco-certification. As mentioned previously, the Southern Indian Ocean Deep Sea Fishers' Association (SIODFA) is a group of four companies active in the deep-sea high-seas fisheries of the Southern Indian Ocean. SIODFA has established marine protected areas around VMEs where members are not permitted to fish. [165]

[162] It is unclear if there are straddling fish stocks in the WIO.

[163] The Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported, and Unregulated Fishing. See also: Anon. Towards the establishment of a Regional Harmonized Port Inspection Program (RHPIP) in the ATLAFCO area. Report of meeting of restitution and validation of the study on "the establishment of a regional harmonized program port inspection (RHPIP) in the ATLAFCO area". Rabat, March 12-13 2018.

[164] E.g., African Women Fish Processors and Traders Network (AWFishNET).

[165] SIODFA & IUCN, 2006. Fishing Companies Announce World's First Voluntary Closures to Highseas deepwater trawling. Marine species protected in Eleven Deep-sea Areas of the Indian Ocean. (<http://www.scoop.co.nz/stories/BU0607/S00061.htm>).

In summary, the main focus of regional cooperation has been on compliance and enforcement, mostly through regional MCS projects from the late 1990s. A range of additional capacity building, scientific and other cooperation takes place within various projects and RFMO programmes. The SWIOFC is emerging as a primary regional forum to address fisheries cooperation.

2.5 Selected Cross-Cutting Themes

2.5.1 Knowledge, Participation and Capacity Building

The Western Indian Ocean Marine Science Association (WIOMSA) has a particularly comprehensive suite of regional activities covering ocean literacy, knowledge exchange, targeted research, and a science to policy interface. Its partnerships and network facilitate training and capacity building while research reports, briefs and regional reviews support a broad spectrum of stakeholders from schools to policy working groups and NGO activities. The partnerships also enlist the skills and knowledge of international organisations and support research grants and human capacity development in marine science.

The Ocean Data and Information Network for Africa (ODINAfrica) has assisted African marine institutions to access and exchange data and information for coastal management. Other institutions include CORDIO and offshoots of the Nairobi Convention, such as the WIO-C. Seychelles has shown leadership in fisheries transparency by hosting the International Fisheries Transparency Initiative.

The NC Clearinghouse Mechanism has been established to pool coastal and marine environment information held by numerous institutions in the region in order to improve the scientific knowledge base for policy and management decision-making. Partners have included ODINAfrica of IOC/UNESCO and RECOMAP (Regional Coastal Management Programme) of the Indian Ocean Commission.

2.5.2 Regional ocean governance indicators

Development of a scorecard for ocean governance could be considered in order to provide a standard means of assessing performance of institutional frameworks and processes and track ocean health. Scorecards could be produced on a country by country basis and also used to assess the level of regional cooperation (see Table 5). Possible indicators are further developed in section 3.

Table 6 is an illustration of a cohesion mapping exercise which could be undertaken. A similar mapping exercise has already been undertaken showing that up to 40 international agreements are common to some WIO countries.

Table 5. Potential indicators of ocean governance

Indicator	Source	Notes
Rule of law	Mo Ibrahim Index; age of primary legislation on oceans	
Fish stocks	National authorities; regional fisheries bodies	SDG 14.4.1
Area management	% of waters under MPAs/ MSPs	SDG 14.5.1
Pollution	Nutrient and plastic pollution index	SDG 14.1.1
Ecosystems protected	% of waters under ecosystem approach	SDG 14.2.1
International law	Relevant conventions ratified/ implemented	SDG 14.c.1
Participatory processes	Fisheries Transparency Initiative	Availability trends
Ocean health	Ocean Health Index (OHI - CI)	
Carbon footprint	Net NDC from oceans (incl. sinks)	
Regional cohesion	% of RECS, RFMOs and others with MoUs	
Investment	National oceans budgets; regional oceans projects	
Social	Blue economy employment	
Maritime security	Trends in incidents (OAP reports)	

Source: Author

Table 6. Illustrative cohesion matrix of agreements on oceans/ marine affairs

	SADC	EAC	COMESA	IGAD	IOC	NC	SWIOFC	IOTC	SIOFA
SADC									
EAC									
COMESA									
IGAD									
IOC							✓		
NC							✓		
SWIOFC					✓	✓			
IOTC									
SIOFA									

Note: the mapping framework could be extended to other partners, e.g. the Contact Group, AU.

Source: Author

2.5.3 Other themes

Table 7 provides an overview of regional cooperation in selected sectors and thematic areas.

Table 7. Selected cooperative actions on sectors and themes

Issue	Key actors/ leaders	Other partners	Current Actions	Future possible actions
Boundary disputes	Coastal states	Law of the Sea Tribunal	Kenya/Somalia dispute before ICJ Conflicting maritime claims maintained	Submission of outstanding disputes to Law of the Sea Tribunal
Maritime security	Coastal states	Abilanta partners MASE	Few countries have comprehensive & effective anti-piracy legislation MASE project Jeddah amendment to Djibouti Code of Conduct	Replicate Seychelles' equivalent legislation ¹⁶⁶ Prepare contingency plans for renewed piracy/ maritime terrorism Provide additional support to Somalia
Pollution from shipping	Coastal States, Port/ Maritime authorities; Shipping companies	IMO GESAMP	Variable levels of enforcement and compliance	Scorecard and support for countries facing difficulties. Vessel tracking, listing violators
LBS	Countries, Nairobi Convention	Municipalities, industry	Moderate investment in waste management, EIAs, some monitoring	NC scorecard, substantial investment in waste management
Deep seabed mining	Extractive industry companies (many state-owned)	Int. Seabed Authority	Mauritius is reviewing its legal and regulatory framework with regards to Deep Seabed Mining	Raise regional awareness of potential environmental impacts. Regional resolution(s) to ensure ISA environmental requirements are met
ABNJ	Relevant coastal states	OALOS Pro-active NGOs	Some engagement in ABNJ/BBNJ negotiations, UNGA resolutions	Mauritius and Seychelles could consider designating Saya de Malha as a Vulnerable Marine Area; establish roadmap to formalise N. Moz. Channel institutional mechanism
Climate change (CC) and oceans/ Ocean acidification (OA)	Energy industry Economic planners Consumers	SIDS, NGOs GOA-ON	Numerous on CC, little or nothing on OA Monitoring OA	Joint international responses at UNFCCC Greater engagement on ocean issues and IPCC oceans
Shipping and green ports	Port authorities	IMO	Several Green ports	Adoption of MARPOL provisions on emissions ¹⁶⁷
Science and innovation	WIOMSA, SAIHA	IOC, UNEP,	Wide-ranging	Increased attention to political economy issues
Biodiversity	Countries, UNEP	WWF, IUCN, CI, 'Green' funds	SAPHIRE support to the JMA	Mauritius and Seychelles could consider designating Saya de Malha as a Vulnerable Marine Area
Hydrography	Southern African and Islands Hydrographic Commission (SAIHC)	International Hydrographic Organisation (IHO)	Technical co-operation in hydrography, marine cartography	Extend activities to all WIO countries. Incl. information exchange, surveys, research, scientific and technologies and collaborative planning

Source: Author

Valuation and ocean wealth. Ocean governance needs to be informed not only by the physical and biological sciences but also by the economic and social sciences. Improved economic valuation could generate the evidence base and political will for more robust decisions. The approaches include:

[166] See also: Mauritius: Piracy and Maritime Violence Act 2011 and related contingency plans.

[167] MARPOL Annex VI. Regulations for the Prevention of Air Pollution from Ships.

- improved valuation through standardized national ocean economy satellite accounts. This could offer a framework for monitoring the contribution of a country's ocean economy, which is not shown by core national accounts
- improved methodologies for valuing ocean and coastal ecosystem services and integrating these into national accounting frameworks
- use of adjusted net savings estimates for the ocean economy
- improved assessment of the benefits of public investment in ocean science, monitoring and measures to improve sustainable use.

Preliminary valuation of the WIO ocean resources indicates that the capital assets have a value in the order of US\$333 billion and annually generate a 'gross ocean production' the order of US\$21 billion. [168] However, these estimates do not cover all assets and services and there are strong indications that the asset base is eroding. For example, the annual lost economic rent (net benefits) as a result of poorly-managed fisheries (excluding tuna) was estimated to be in the order of US\$224 million - ample justification for fisheries reforms. [169] Economic modelling can also provide a basis for prioritizing blue economy investment. [170] However, as with all such tools, the exercise of placing a monetary value on ecosystems is subject to a range of assumptions and must be treated with due caution.

Disaster preparedness. As noted above, the response to oil spills already has a coordinating mechanism through IMO instruments, namely, MARPOL, the Fund and the CLC at the global level and through the Nairobi Convention at the regional level. Coordinated responses to cyclones may draw upon the African Regional Strategy for Disaster Risk Reduction (DRR). However, as the recent flooding in Beira demonstrates, many coastal areas remain vulnerable and regional rapid response capability requires improvement.

3. The State of National Ocean Governance

A detailed examination or comparative analysis of national ocean governance is beyond the scope of this working document. Consequently, the focus of this section is on: (i) developing the notion of a national scorecard or indicators for ocean governance; (ii) governance activities which are common to most WIO countries and (iii) selected national initiatives which may provide models, lessons or opportunities for greater regional cooperation and illustrate the diversity of challenges facing different countries.

3.1 Indicators of national governance

Mo Ibrahim index. The Mo Ibrahim index measures the quality of governance in African countries. While the index does not track marine and coastal governance, it may serve as a proxy if ocean governance is considered to be correlated with overall national governance.

Table 8. Mo Ibrahim index

Country	2017		Trend 2008-2017	
	Score 2017	Rank 2017	Overall	Rule of Law
Comoros	47.5	34th	+3.9	+10.7
Kenya	58.9	11th	+6.1	+6.6
Madagascar	49.0	31st	-4.4	+2.0
Mauritius	79.5	1st	-0.7	-2.7
Mozambique	51.0	25th	-3.0	-6.6
Seychelles	73.2	2nd	+4.0	-0.3
Somalia	13.8	54th	+6.0	+13.9
South Africa	68.0	7th	-0.6	-1.4
Tanzania	58.5	14th	+1.3	+1.7
Africa average	49.9	54 countries	+1.0	N/A

Source : <http://mo.ibrahim.foundation/iag>.

[168] WWF 2017. Reviving the Western Indian Ocean Economy. Actions for a Sustainable Future. WWF/ CORDIO/ BCG.

[169] K. Kelleher. Estimate prepared for World Bank SWIOFish project document (2015).

[170] World Bank, 2017. The Ocean Economy in Mauritius. Making it happen, making it last. Washington DC.

Adjusted net savings (ANS) reflects the change in a countries' wealth. For example, if the amount of offshore gas declines as a result of exploitation, then there is a reduction in natural gas wealth. It is an important indicator of sustainable resource management, as GDP may increase at the expense of the depletion of natural capital and GDP does not account for a reduction in national capital. The following graph shows a trend of declining ANS in the region. There may be many reasons for this, but an ANS estimate for the blue economy could indicate trends in governance outcomes.

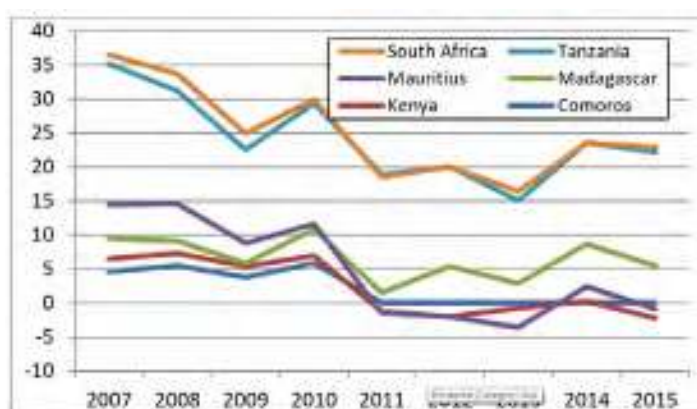


Figure 1: A trend of decline in Adjusted Net Savings for WIO Countries
Source: World Bank. No data for Seychelles and Somalia.

Ocean Health Index. Most countries in Africa have a constitutional and/or legal requirement to regularly report on the state of their environment. Although there are some technical issues with regard to the methodology supporting the Ocean Health Index (OHI), it provides one proxy which could be used in association with other indicators to assess national ocean governance.

Table 9. Indicators of Ocean Health, Environmental Performance, SDG 14

Country	OHI score (rank)	Environmental Performance Index ¹⁷¹	MPAs as % of jurisdictional waters ¹⁷²	SDG 14 Index** (rank)
Comoros	53 (189)	44.24 (146)	0.02	28.3 (137)
Kenya	61 (187)	47.25 (130)	0.00	50.1 (125)
Madagascar	54 (211)	33.73 (175)	0.75	57.8 (158)
Mauritius	68 (118)	56.83 (80)	2.23 (provisional)	69.5 (105)
Mozambique	61 (184)	46.37 (135)	0.00	74.0 (136)
Seychelles	77 (33)	86.02 (39)	0.04*	
Somalia	48 (215)		na	
South Africa	69 (84)	44.73 (142)	12.06	56.5 (113)
Tanzania	67 (112)	50.83 (119)	3.02	65.0 (128)
WIO high seas	79 (rank 1/15)			

Notes: The global average OHI is 70. MPA data from: Wb Databank 2018 based on protectedplanet.net.

* More recent developments have raised the Seychelles coverage to an estimated 20%.

** Source: Sachs, J., Schmidt-Traub, G., Kroll, C., Lafortune, G., Fuller, G. (2019): Sustainable Development Report 2019. New York: Bertelsmann Stiftung and Sustainable Development Solutions Network (SDSN). Note: Denmark is ranked No. 1.

3.2 Ocean policies and strategic plans

The following tables summarize selected aspects of ocean governance policy in WIO countries.

Table 10. Ocean policies and plans

Country	Ocean policy	Strategic plan	Blue economy
Comoros	✓	✓	
France	✓	✓	Document stratégique de bassin
Kenya	✓	✓	Blue Economy Revival Initiative
Madagascar	National Oceans and Fisheries Policy, 2008		
Mauritius	The Ocean Economy A Roadmap for Mauritius, 2013	Mauritius Ocean Economy: Making it happen (2017)	Ocean economy strategic plan with WB 2017. JMA initiatives with Seychelles
Mozambique	✓	✓	
Seychelles	✓	✓	Innovative 'Blue bond', SeyCCAT
Somalia			TBD
South Africa	White paper 2014	Operation Phakisa	Operation Phakisa 2013
Tanzania	✓	✓	Blue economy strategy (Zanzibar), natural capital assessments

Source: Author

[171] Wendling, Z. A., et al. (2018). 2018 Environmental Performance Index. New Haven, CT: Yale Center for Environmental Law & Policy. <https://epi.yale.edu/>

[172] See also: United Nations Environment Programme, Nairobi Convention, Global Environment Facility, Western Indian Ocean Marine Science Association. Western Indian Ocean Marine Protected Areas Outlook: Towards achievement of the Sustainable Development Goals. Nairobi (forthcoming).

Table 11. ICZM and MSP

Country	Policy	Strategic plan	
Comoros	✓	✓	
France	✓	✓	Document stratégique de bassin
Kenya	✓	✓	
Madagascar	✓	✓	Integrated coastal management program 1997
Mauritius	✓	✓	ICZM 2009; JMA Strategic Plan; MSP under development
Mozambique	✓	✓	
Seychelles	✓	✓	MSP prepared; JMA Strategic Plan
Somalia			State and federal waters distinguished
South Africa	✓	✓	Integrated Coastal Management Act 2008, National Coastal Management Programme; Operation Phakisa
Tanzania	✓	✓	Integrated strategy 2003 (mainland); also Zanzibar

Source: Author

As illustrated (Table 12), responsibility for ocean governance at the national level is often split between ministries or agencies, and coordination of ocean affairs can be challenging. For example, fisheries may often be coupled with agriculture and rural development, or coastal zone management may be a function of local government. Creation of an 'oceans ministry' may undermine the functions of traditional portfolios such as marine transport. Further development of national oceans policies and strategic plans may refine a shared national vision and catalyse effective inter-agency cooperation.

Table 12. Primary responsibility for ocean affairs

Country	Dedicated ministry/ directorate	Split responsibility
Comoros		Ministère de l'Agriculture, de la Pêche et de l'Environnement Ministère des Transports maritimes et aériens
France	Secrétariat Général de la Mer	Ministère de l'Agriculture et de l'Alimentation Ministère de la Transition écologique et solidaire
Kenya	Kenya Oceans and Fisheries Council, 2009, Presidential blue economy committee 2016	
Madagascar		Min. de l'Agriculture, de l'Elevage et de la Pêche Min. de l'Environnement et du Développement Durable ; others
Mauritius	Min. of Ocean Economy, Marine Resources, Fisheries and Shipping	
Mozambique		Ministério do Mar, Águas Interiores e Pescas Ministério dos Transportes e Comunicações Recursos Minerais e Energia Min. da Terra, Ambiente e Desenvolvimento Rural
Seychelles	Dedicated department on blue economy in the ministry of finance	Ministry of Agriculture and Fisheries/ SFA Ministry of Tourism, Civil Aviation, Ports and Marine Ministry of Environment, Energy and Climate Change
Somalia		Evolving: split with state governments
South Africa	Environment, Forestry and Fisheries, Oceans & Coasts; Operation	Operation Phakisa
Tanzania		Numerous ministries: fisheries, energy/ hydrocarbons, transport. Deep Sea Authority manages the (mainland) Tanzania / Zanzibar agreement

Source: Author

3.3 IMO and Shipping

The following tables illustrate the adhesion of WIO countries to the various IMO conventions and the related port-state measures MoU.



Table 13. WIO parties to IMO Conventions

Convention	CO	FR	KE	MA	MU	MZ	SY	SO	SA	TZ
IMO Convention 48		x	x	x	x	x	x	x	x	x
SOLAS Convention 74	x	x	x	x	x	x	x		x	x
SOLAS Protocol 78	x	x	x				x		x	
SOLAS Protocol 88		x	x		x		x			
LOAD LINES Convention 66	x	x	x	x	x	x	x	x	x	x
LOAD LINES Protocol 88		x	x		x		x			
TONNAGE Convention 69	x	x	x	x	x	x	x		x	x
COLREG Convention 72	x	x	x	x	x	x	x		x	x
CSC Convention 72		x	x						x	
Caps. Town Agreement 2012		x							x	
STCW Convention 78	x	x	x	x	x	x	x		x	x
STCW-F Convention 95		x							x	
SAR Convention 79		x	x	x	x	x	x		x	x
IMSO Convention 76	x	x	x		x	x			x	x
INMARSAT OA 78		x	x		x	x			x	x
FACILITATION Convention 85		x	x	x	x		x			x
MARPOL 73/78 (Annex I/II)	x	x	x	x	x	x	x		x	x
MARPOL 73/78 (Annex III)	x	x	x	x	x	x			x	x
MARPOL 73/78 (Annex IV)	x	x	x	x	x	x			x	x
MARPOL 73/78 (Annex V)	x	x	x	x	x	x			x	x
MARPOL Protocol 97 (Annex VI)		x	x						x	
London Convention 72		x	x				x		x	x
London Convention Protocol 98		x	x	x					x	
INTERVENTION Convention 69		x			x				x	x
INTERVENTION Protocol 73		x			x				x	x
CLC Convention 69		d	d		d	d	d		d	
CLC Protocol 76		x			x					
CLC Protocol 92	x	x	x	x	x	x	x		x	x
FUND Protocol 76		x			x					
FUND Protocol 92	x	x	x	x	x	x	x		x	x
LLMC Convention 78		x			x					
LLMC Protocol 86	x	x	x	x						
SUA Convention 88	x	x	x	x	x	x	x		x	x
SUA Protocol 88	x	x	x	x	x	x	x		x	x
SALVAGE Convention 89		x	x		x					
OPRC Convention 90	x	x	x	x	x	x	x		x	x
OPRC/HNS 2000		x		x	x					
BUNKERS CONVENTION 01	x	x	x	x	x					
ANTI FOULING 2001		x	x						x	
BALLASTWATER 2004		x	x	x			x		x	
NAIROBI WRC 2007	x	x	x						x	

Notes: Several conventions which have not been adopted by any WIO country are excluded. 'd' = denunciation. No WIO country is party to the SUA Convention and Protocol 2005, the Fund Protocol 2003, or the NUCLEAR 71.

Source: IMO

Table 14. Implementation of the WIO-MoU on Port State Measures

Country	Detentions under the IO MoU on PSM (2018)	% flag vessels detained	No. of green ports
Comoros	15	28%	
France	43	0%	
Kenya	493		Mombasa (policy)
Madagascar	0 (joined 2018)		
Mauritius	2	0%	Port Louis Port Environment Charter
Seychelles	17	0%	
South Africa	353		Nqoura (certified)
Tanzania		21%	Dar es Salaam (project)
Total (% vessels inspected)	896 (16%) ^a		

Source: <http://www.iomco.org/> Notes: ^a A total of 5697 vessels were inspected in the region's ports, of which 252 ships were detained (4%).

3.4 Fisheries Governance

Countries have endorsed the FAO Code of Conduct and are implementing various FAO action plans and guidelines, e.g. to combat illegal fishing, co-management of small-scale fisheries, or sustainable trade.

Table 15. Fisheries policies and plans

Country	Policy	Strategic plan	Notes
Comoros	✓	✓	Management plans for about 45% of fisheries
France	✓	✓	
Kenya	✓	✓	Shrimp, Beach Mgt. Units local bye-laws
Madagascar	✓	✓	Management plans for shrimp
Mauritius	✓	✓	Rodrigues Is. provides an example of good practices
Mozambique	✓	✓	Management plans for all major fisheries
Seychelles	✓	✓	Management plans for snapper, beche de mer, Tuna industry development plan
Somalia			Fragmented
South Africa	✓	✓	Management plans for most/all commercial fisheries
Tanzania	✓	✓	Deep Sea Fishing Authority (mainland/Zanzibar) management plans for most commercial fisheries

Source: Author

Table 16. Adherence to global and regional fisheries instruments

Convention/ Agreement	COM	FRA	KEN	MAD	MAU	MOZ	SEY	SOM	SAF	TAN
UN Fish Stocks Agreement (UNFSA)		✓	✓		✓	✓	✓		✓	
IOTC	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SWIOFC	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SIOFA	s	✓	s	s	✓	s	✓			
PSMA (ratification) (Nov. 2019)		✓	✓		✓	✓				
Compliance				✓	✓	✓	✓			✓
Minimum Terms and Conditions (SWIOFC)										

✓ = ratification; s = signature.

Source: Author

Table 17. State of fish stocks

Country	Not Overexploited	Overexploited	Unknown
Comoros		3	1
France			
Kenya	5	1	
Madagascar	1	3	2
Mauritius	5	3	
Mozambique	15	5	
Seychelles	4	8	
Somalia			
South Africa	5	3*	1
Tanzania	11	4	

Source: Summarized from SWIOFC Report of the Eighth Session of the Scientific Committee, February 2018.

Note: The values refer only to stocks on which there is information. Tuna/HMS are reported by IOTC. * Value includes some multispecies fisheries.

All WIO countries have or are in the process of negotiating offshore oil or gas exploration contracts, and several have negotiated production contracts/ concessions. However, only South Africa, Mozambique and Tanzania are significant active producers. While regional cooperation on oil and gas can be useful, countries are also in competition for investment. Nevertheless, cooperation and sharing of experiences in negotiating and managing offshore hydrocarbon contracts is an area which could yield substantial mutual benefits and include the sharing of information on the performance and corporate social responsibility of offshore contractors or investors active in the region.

3.5 Notes on national achievements and challenges

3.5.1 Comoros

Political issues linked to territorial disputes have constrained Comoros' development of ocean governance (Table 18). As a result, Comoros has lagged behind many WIO countries in its adherence to and implementation of international law on oceans. This suggests that increased efforts by WIO countries to engage with Comoros are a priority for effective and inclusive regional ocean governance.

A Petroleum Code (2012) paved the way for the signing of a Production Sharing Contract for the three offshore blocks that cover an estimated 16,063 km² of offshore hydrocarbon concessions. Substantial Middle Eastern investment has taken place in fisheries and has been complemented by public investment largely directed to small-scale fisheries (World Bank/ GEF).

Table 18. SDG 14 index for Comoros

SDG14 – Life Below Water	Value	Rating	Trend
Mean area that is protected in marine sites important to biodiversity (%)	0*	•	•
Ocean Health Index Goal-Clean Waters (0-100)	36.7	•	•
Percentage of Fish Stocks overexploited or collapsed by EEZ (%)	24.0	•	•
Fish caught by trawling (%)	na	•	•

* the protected area value is not consistent with other sources.

Similar SDG information is available for most other WIO countries (Seychelles and Somalia not available). See: https://www.bertelsmann-stiftung.de/fileadmin/files/BSt/Publikationen/GrauePublikationen/Sustainable_Development_Report_2019_comple.pdf

The Mohéli National Park, established in 2001, contains marine reserves and is managed by local communities. A protected areas act and an environmental fund will support five new parks and contribute to the Comoros' vision of protecting 25 per cent of its territory by 2021. [173] Special measures are in place to protect the iconic coelacanth.

3.5.2 Kenya

In 2016, Kenya's Blue Economy Committee/task force developed a Blue Economy Revival Initiative to unlock the blue economy potential in Kenya. The priorities include fisheries and maritime transport and logistics services. An updating of the National Oceans and Fisheries Policy (2008) has also been envisaged.

In 2018, Kenya hosted a global Sustainable Blue Economy conference with over 180 countries represented. The Conference resulted in the Nairobi Statement of Intent on Advancing a Sustainable Blue Economy. [174] The statement's messages emphasized people-centered strategies, participation, inclusive growth and gender equality. It also stressed the importance of cooperation, science-based decision-making and maritime security. In 2018, Kenya launched a new Coast Guard and pledged to ensure sustainable fisheries resources through the strengthening of ocean governance and environmental protection. [175]

Offshore hydrocarbon development and transport corridor development are among the most important investments related to the blue economy. The Lamu Port - South Sudan - Ethiopia Transport Corridor (LAPSET) is associated with the development of major port infrastructure in Lamu. A submission to construct a coal-fired power plant has encountered some environmental impact issues and Kenya's energy plans may be somewhat at odds with its position on climate change. Development of special economic zones is also envisaged in association with Lamu and Mombasa. Kenya also has a thriving coastal tourism industry but has encountered problems in the alienation of foreshore land and beach access. [176] Kenya introduced a ban on single use plastic bags in 2017.

Reduced flows in Kenya's rivers due to abstraction by agriculture and cities are impacting on the integrity of coastal wetland ecosystems. This reflects the classical political struggle between the interests of upstream and downstream water users. Proceedings on the Kenya/Somalia maritime boundary dispute have been repeatedly delayed.

3.5.3 Madagascar

Operational coordination of ocean governance in Madagascar functions through the Maritime Fusion Centre. Agencies working in the maritime domain include the: Prime Minister's office agencies, National Defence, Environment, Maritime, Port and River Agency (Agence maritime, portuaire et fluviale (APMF)), Meteorology, National Gendarmerie, Internal Security, Scientific Research, National Hydrographical Institute, and Fisheries Surveillance. These agencies have information sharing agreements with the Maritime Fusion Centre. Madagascar also hosts the MASE regional information center.

[173] Global Environment Facility. "Islands of the Moon: Building a Network of Marine and Coastal Protected Areas in Comoros." Global Environment Facility, World Bank Group, 2018, www.thegef.org/news/islands-moon-building-network-marine-and-coastal-protected-areas-comoros.

[174] Sustainable Blue Economy Conference Technical Document Review Committee. "Report on the Global Sustainable Blue Economy Conference." Blue Economy Conference, Dec. 2018, www.blueeconomyconference.go.ke/wp-content/uploads/2018/12/SBEC-FINAL-REPORT-8-DECEMBER-2018-rev-2-1-2-PDF2-3-compressed.pdf.

[175] Speech by H.E. Hon. Uhuru Kenyatta during the Leaders' Commitment Segment of the Sustainable Blue Economy Conference at Kenyatta International Convention Centre, Nairobi, On 26th November, 2018." The Presidency of the Republic of Kenya, (26 Nov.2018).

[176] Republic of Kenya, (2013), National Tourism Strategy: 2013 to 2017. Nairobi: Ministry of East African Affairs, Commerce and Tourism

Madagascar faces a number of marine environmental challenges: its mangrove area has decreased by an estimated 15% over the past 60 years and over 94% of Madagascar's coral reefs are classified as threatened due to a combination of pressures, including fishing, sedimentation, pollution and ocean warming and acidification. Until 2012, Madagascar had remained free of white spot syndrome (WSS), a highly contagious viral disease which decimates shrimp farming. Both Madagascar and Mozambique suffered substantial economic losses as a result of the disease. The outbreak underlines the importance of regional cooperation on biosecurity and invasive species, including implementing best practices on ballast water. Community co-management of beche-de-mer and beche-de-mer culture provide useful lessons. While the main shrimp fishery has been in decline, innovative management measures have been used for the shrimp trawl fishery, including spatial management and effort controls.

Madagascar's Protected Areas System includes 50 national parks managed by Madagascar National Parks and over 70 new protected areas, which have substantial community involvement for conservation and sustainable development, particularly to address poverty in both inland and coastal areas. The Madagascar Locally Managed Marine Area Network (MIHARI) involves over 200 community associations operating in over 80 locations and is supported by 23 NGOs and other organizations. [177] MIHARI provides a range of technical and advisory support to local action groups. Madagascar also has considerable experience in ICZM.

3.4.5 Mauritius

Mauritius has decided to make the "Ocean Economy" a pillar of its economic development strategy. Mauritius created an Oceans Economy Roadmap with the aim of doubling the contribution of the ocean economy to GDP by 2025. A new Ministry for Ocean Economy, Marine Resources, Fisheries, and Shipping was established to coordinate and manage ocean-related activities.

Following approval of the joint submission for the Extended Continental Shelf in the Mascarene Plateau Region in 2011, Mauritius and Seychelles established the world's first Joint Management Area covering such an area and exercise joint jurisdiction over the same.

A three-tiered joint administrative structure consisting of a Ministerial Council, a Joint Commission and a Designated Authority has been established to jointly control, manage and facilitate the exploration of the continental shelf within the JMA and the conservation, development and exploitation of its natural resources.

Mauritius has also established a Coordinating Committee to prepare a Marine Spatial Plan for the EEZ of Mauritius. The Joint Commission is undertaking a MSP project for the JMA under the GEF/UNDP framework.

Mauritius is currently reviewing its legal and regulatory framework with regards to Petroleum and Mineral resources.

The challenges facing Mauritius include degradation of coral reefs and increasing erosion; depleted inshore fisheries; reliance on imported supplies for the important tuna processing industry (the largest employer) and the relative isolation of Rodrigues Island.

3.5.5 Mozambique

A number of Mozambique's maritime boundaries remain to be agreed, notably with Madagascar. Mozambique has also recently adopted policies on ICZM. Offshore hydrocarbons are of growing importance, particularly in the Northern Mozambique Channel.

Concerns about the impact of the rapidly expanding oil and gas operations in proximity to vulnerable coral reef areas led to the establishment in 2015 of the Northern Mozambique Channel Initiative, a partnership between Comoros, Madagascar, Mozambique, and Tanzania. The objectives included:

- laying the foundation for an integrated management of marine resources and MSP
- planning and adoption of environmental and social best practices in the oil and gas sector
- reducing impacts on biodiversity and ecosystem services; and
- improving and sharing successful models and practices for resource management by local communities.

[177] <https://mihari-network.org/>.

The “Crescendo Azul” - Growing Blue: Sustainable and Shared Exploitation of Oceans conference was held in Mozambique in 2019. The conference blended the aspirations of the AIMS with activities focused on achieving the SDG 14 goals in the context of four thematic areas: ocean governance; ocean innovation; ocean highways; and ocean power. [178]

Marine protected areas cover about 2.3% of the maritime domain. Some of the MPAs (e.g. Bazaruto archipelago) are home to rare or endangered species or serve as breeding, nursery or feeding grounds for whale sharks, manta rays, turtles and cetaceans. Several MPAs have been created in the vulnerable North Mozambique Chanel (Primeiras and Segundas reserve and Quirimbas National Park). [179]

The basic legal and institutional framework for ocean governance is considered adequate, but there are significant challenges regarding implementation and compliance. For example, the important Sofala Bank shrimp fisheries are substantially depleted due to overfishing, particularly by fishing of juveniles in the inshore waters, often by small-scale fishers, including through the use of small-mesh beach seines. The catastrophic flooding of Beira in 2019 was a stark reminder of the likely impact of a changing climate on the coastal economy. As much of the watershed of Southern Africa drains into Mozambique’s rivers, coastal areas of Mozambique have been particularly susceptible to flooding. Major major flooding has occurred repeatedly in the coastal areas of the Limpopo and Zambezi valleys.

3.5.6 Seychelles

The Seychelles has demonstrated regional and global leadership on ocean governance. The ocean economy is embedded in its national development plan as well as in sectoral plans and strategies for the blue economy, for tourism, biodiversity, climate change and fisheries. [180]

The BE strategy is implemented through the office of the Office of the Vice President. It has four pillars:

(i) economic diversification and resilience; (ii) shared prosperity through creating employment and investment; (iii) food security; and (iv) sustainable use of healthy oceans. The Roadmap is expected to enhance the capacity for effective ocean governance. The Ocean Health Index gives Seychelles a score of 100 for tourism and carbon storage. Seychelles is engaged in several innovative ocean ventures.

A ‘Blue bond’ (US\$15m.) was negotiated in 2018. [181] The Blue bond raises capital to finance marine and ocean-based projects that have positive environmental, economic, and climate benefits. The investments are directed towards fisheries governance, expansion of the MPA network and development of the BE. The joint ECS and JMA (with Mauritius) is a world first. As the ECS gives the parties jurisdiction over the living sedentary resources, it potentially provides for protection of the Saya de Malha seagrass beds, a significant regional carbon sink, which are reportedly threatened by fishing activities. [182]

The Seychelles Conservation and Climate Adaptation Trust (SeyCCAT) screens and finances community projects, blue economy innovation and conservation activities. SeyCCAT is also financed through a dedicated corporate social responsibility (CSR) tax on companies which helps finance community environmental conservation projects.

With the assistance of The Nature Conservancy, a marine spatial plan [183] has been prepared facilitating the designation of two new MPAs covering 210,000 km². The TNC also brokered a ‘debt-for-nature’ arrangement raising US\$21 million in exchange for a commitment from the Seychelles to increase the area of its MPAs to 30% of its marine area. Subsequently, a further two MPAs have been created bringing coverage to 26%. One of these MPAs includes Aldabra atoll, a UNESCO World Heritage Site and home to giant tortoises. The World Bank has also approved a US \$20m sustain-

[178] Ministry of the Sea, Inland Waters and Fisheries of the Republic of Mozambique. “Concept Note: Growing Blue: Sustainable and Shared Exploitation of the Ocean.” 20.12.18, http://www.mozpesca.gov.mz/Concept_Note.pdf.

[179] For a review see: Pereira, M. A. M., et al. (2014). Mozambique marine ecosystems review. Final report submitted to Fondation Ensemble. 139 pp. Maputo, Biodinâmica/CTV.

[180] National Blue Economy Strategic Framework and Roadmap (2018); Seychelles National Biodiversity Strategy and Action Plan (2015-2020). In 2018 a revised National Maritime Security Strategy was prepared

[181] Ministry of Finance, Trade and the Blue Economy. “Progress on the Development of the Blue Economy in Seychelles.” UN Environment Document Repository; World Bank. “Sovereign Blue Bond Issuance: Frequently Asked Questions.” World Bank, www.worldbank.org/en/news/feature/2018/10/29/sovereign-blue-bond-issuance-frequentlyasked-Questions; TNC. “Seychelles Protects 81,000 Square Miles of Ocean.” The Nature Conservancy, www.nature.org/en-us/about-us/where-we-work/africa/stories-in-africa/seychelles-conservationcommitment-comes-to-life/.

[182] Mauritian ‘Banks’ fishers have reported trawling activities.

[183] Blue Economy Department. “Seychelles Blue Economy.” Seychelles Marine Spatial Plan Initiative.

able fisheries project. The Seychelles hosts the IOTC secretariat, and in 2019, the Fisheries Transparency Initiative (FiTI) opened its International Secretariat in Seychelles. Seychelles has already undertaken a FiTI exercise. In 2019 Seychelles hosts several ocean governance events: a Blue Economy Investment Forum, the African Shipowners Forum and a workshop on the ECS agreement between Seychelles and Mauritius.

3.5.7 *Somalia*

As Somalia has only recently established an EEZ in conformity with UNCLOS, its ocean governance is still at an early stage of development.[184] An agreement between Somalia's federal government and the states has enabled offshore hydrocarbon licensing. The key to the agreement is a revenue sharing arrangement whereby the federal government retains 55%; the oil producing state 25%; the local area of oil production 10%; and the non-oil producing states receive 10%.

Considerable progress has been made to address some of the root causes of piracy, but optimal ocean governance remains hostage to political instability. The root cause of piracy has generally been attributed to poverty and lack of economic opportunities in the coastal regions. Efforts by the federal authorities and the states, with the support of FAO and others (e.g. through MASE and IGAD), are making some progress in addressing poverty in target areas.

The Somali Current seasonal upwelling of nutrient rich water is a major regional driver of fisheries productivity, particularly for tuna. It is a key element of ocean connectivity in the northern part of the WIO (see section 2.4.6). Since 2018, Somalia has been able to benefit from the Nairobi Convention's SAPPHIRE project.

3.5.8 *South Africa*

The White Paper for Sustainable Coastal Development in South Africa (1999) fostered increased attention to ICZM and sustainable development in coastal regions. A 2014 environment strategy considered strategic environmental impact

assessments, use of spatial planning tools and enhanced regional and international cooperation and governance mechanisms. It highlighted the need for sound science and ocean knowledge and underlined the links to meteorology, climate change and carbon storage.[185] South Africa recognizes that moving from coordinated ocean management to an integrated regime presents a major challenge. The Marine Spatial Planning (MSP) Act became law 2019 and in 2018, South Africa's cabinet approved the creation of 20 new MPAs, raising its protected area coverage from 0.4% to 5%.

South Africa's blue economy is made operational through Operation Phakisa, launched in 2014. Operation Phakisa projects that the ocean economy has the potential to contribute up to US\$12 billion to the GDP and create up to one million jobs by 2033.[186] It has six priority "work streams": marine transport and manufacturing; offshore oil and gas exploration; aquaculture; marine protection services and ocean governance; small harbours; and coastal and marine tourism.

South Africa is the only WIO signatory to the Antarctic Treaty. The Southern Ocean territories and the accompanying ECS claims account for around 2 million km² of jurisdictional claims, about half of South Africa's total. It is also of note that the Southern Ocean ecosystem is (globally) the most susceptible to the impact of ocean acidification.

The National Biodiversity Assessment (2011) recognized that different pressures represent different sets of ocean environmental management challenges. The pressures identified include: land-based activities; shipping and port operations; mining; fishing; sea water abstraction; aquaculture; energy production; bioprospecting; communication cables; recreation and tourism; and emerging technological use.

3.5.8 *Tanzania*

One of the most unusual features of Tanzania's ocean governance is the split jurisdiction between mainland Tanzania and Zanzibar. A joint offshore fisheries regime was established in 1998. [187] Management of the inshore waters remains split.

[184] The previous claim involved a 200-mile territorial sea which was not in compliance with UNCLOS.

[185] The Government of the Republic of South Africa. 2014. National Environmental Management of the Ocean White Paper. Staatskoerant, 29 Mei 2014.

[186] Department of Environmental Affairs of South Africa. "Operation Phakisa - Oceans Economy." DEA, www.environment.gov.za/projectsprogrammes/operationphakisa/oceanseconomy.

[187] Deep Sea Fishing Authority Act CAP 388 (1998). Other coastal and oceans-related legislation includes: Fisheries Act CAP 279 (2003); Marine Parks and Reserves Act CAP 146; Tanzania Fisheries Research Institute (TAFIRI) Act CAP 280.



Tanzania has established 18 mainland MPAs and several other MPAs on Zanzibar. The MPAs include an innovative proposed transboundary MPA between Kenya and Tanzania. [188]

Construction of the proposed onshore liquefied natural gas export terminal is expected to start in 2022 at a location near Lindi in association with the exploitation of the offshore gas concessions. The national oil company, the Tanzania Petroleum Development Corporation, is expected to be closely involved. Development of a major transport corridor is expected to generate increased shipping through the expansion and improvement of ports facilities in Dar es Salaam, Tanga and Mtwara.

Stone Town (Zanzibar) is a World Heritage site and helps preserve an important maritime heritage through dhow sailing. Studies on Zanzibar's tourism have shown that 'high end' tourism that uses international hotels and resorts generates significant government revenues but have less distributional impact in the local economy than tourism that uses smaller, family-operated establishments. The latter, however, contribute less to government revenue.

3.5.10 France, UK and the EU

Both France and the UK are important actors in the WIO, both individually and through the EU. They provide important development support and have provided significant maritime enforcement assets to combat Somali piracy.

France actively participates in the sustainable management of the environment, coastal zones and marine resources in the WIO region. Two maritime spatial planning projects are currently underway:

- the drafting of the Maritime Basin Strategic Document, which aims to build a sustainable maritime strategy for the French territories of the Indian Ocean zone (implementing the Marine Strategy Framework Directive).
- the "Ocean Metiss" project, which aims to create dynamic planning to feed strategic decision-making concerning the management of this vast maritime area.

France also participates in international projects aimed at promoting sustainable management of fishery resources in the region, such as the SWIOFISH project, and notably conducts IUU fishing surveillance campaigns in the area. Scientific projects concerning, for example, the state of fish stocks, the conservation of marine biodiversity, the fight against marine litter, or the development of a science-policy dialogue in the area are also carried out by AFD, IFREMER or the IRD.

EU-flagged tuna fishing vessels are the largest distant-water fleet operating in the region (in terms of catch). These fleets operate under 'partnership' access agreements which involve both a 'cash for fish' element and sustainable fisheries development support. The EU tuna catches provide essential raw material for the region's tuna processors. The sale of fleet services provides important income, particularly to the Port Louis and Victoria ports. Preferential access to the EU market for fisheries products is essential to the region's tuna processing industry. It should be noted that raw (frozen) tuna which leaves the region and is subsequently processed in Asian plants competes directly on EU supermarket shelves with WIO tuna products. The EU tariff preferences which make WIO-produced tuna competitively priced are being gradually eroded.

[188] The proposed Transboundary Conservation Area (TBCA) extends from the northern boundary of the Diani-Chale Marine National Reserve in Kenya to the southern boundary of Mkinga District in Tanzania, Tanzania and Kenya jointly committed to establishing the TBCA at the 2017 UN Ocean Conference.

4. International Practices and Lessons

This section provides summaries of selected experiences in regional ocean governance to illustrate the different approaches and the diversity of issues facing different regions. In all cases, the regimes have been developed as a result of cooperation between states and invariably rest on the foundation of UNCLOS.

4.1 EU Marine Strategy and the Black and Baltic Seas

Integrated Maritime Policy. The EU Integrated Maritime Policy provides coordination between different policy domains and focuses on issues that do not fall under a specific sector policy or require coordination between different sectors. [189] It prioritizes cross-cutting policies on blue growth; marine data and knowledge; maritime spatial planning; integrated maritime surveillance; and sea basin strategies (e.g. Baltic, Mediterranean). The implementation is backed by funding from EU programmes, for example, on science or infrastructure; through an action plan; and through best practice guidelines. [190]

Marine Strategy Framework Directive. The EU's Marine Strategy Framework Directive provides a model for regional ocean governance in relation to the environment, including marine biodiversity.

Box 11. EU Marine Strategy Framework Directive (MSFD)

The MSFD places a legal obligation on EU Member States (MS) to achieve Good Environmental Status (GES). It enshrines the ecosystem approach in a legislative framework and differentiates certain requirements on a regional seas basis: Baltic, North-east Atlantic Ocean, Mediterranean and the Black Sea. Each MS is required to develop an adaptive marine strategy which is assessed and updated every six years.

A national marine strategy

- undertakes an initial assessment of the current environmental status of national marine waters and the environmental impact and socio-economic analysis of human activities in these waters
- determines what GES means for national marine waters
- establishes measurable time-bound environmental targets and indicators to achieve GES
- implements a monitoring programme for on-going assessment and the regular updating of targets
- develops and implements a programme of measures to achieve or maintain GES.

The GES standards, targets and monitoring are required to meet common EU and region-specific guidelines. The outcomes are evaluated and deficiencies can trigger compliance measures.

The MSFD acts in concert with several other directives such as the Habitats Directive and the Water Framework Directive (coastal inshore water). For example, treatment of waste water and reduction of agricultural runoff (fertilisers, pesticides) is generally required to meet MSFD standards. Representative habitats, including marine and coastal habitats are preserved under the Habitats Directive. A directive on single-use plastics has recently been approved.

Compiled by author from various EU sources.

The MSFD has had significant success. The MSFD creates marine environmental norms and a mechanism to enforce country compliance with the norms or ensure best efforts are made to do so (a due diligence verification). In recognition of the need for cooperation at the regional sea level, the EU provides support to non-members to take complementary actions (e.g. North African coastal countries). UNCLOS requires countries to cooperate to establish such norms. The MSFD provides the quantitative norms and compliance mechanisms lacking in many of the regional seas conventions.

The key difference between the Integrated Marine Policy and the MSFD is that the Policy is a tool that facilitates member states to make plans which meet their individual requirements; the MSFD sets out environmental standards which member states must meet.

Oceans governance agenda. The EU's global oceans governance agenda [191] focuses on three areas: (i) improving the international ocean governance framework; (ii) reducing anthropogenic pressures and build-

[189] Communication on an Integrated Maritime Policy for the European Union (2007) 'Blue Book'.

[190] European Commission, 2008. Guidelines for an integrated approach to maritime policy: towards best practice in integrated maritime governance and stakeholder consultation. COM/2008/0395 final.

[191] International Ocean Governance: an agenda for the future of our oceans. JOIN(2016) 49.

ing a sustainable blue economy; and (iii) improving ocean knowledge.[192] The EU-ECOFISH programme supports the WIO in these areas.

Black Sea Common Maritime Agenda. The Black Sea countries include two EU members and four non-members. The Black Sea ecosystems are substantially degraded and the marine transport corridors form part of the China-sponsored Belt and Road initiative. The oil and gas pipelines also suggest some similarities to the WIO/ East Africa transport corridors and onshore and offshore hydrocarbon extraction under development. In an effort to ensure effective cooperation on the blue economy, particularly with regard to seamless transport and environmental sustainability, the Black Sea states have developed a Black Sea Common Maritime Agenda linked to an existing Black Sea summit mechanism. The Agenda is backed by a Black Sea Strategic Research and Innovation Agenda, and there is an expectation that elements of the MSFD will be progressively extended to and adopted by the non-EU countries.

Baltic Sea. The Baltic has seen a major reduction in nutrient pollution, attributable partly to the work of the Helsinki Baltic Marine Environment Protection Commission (HELCOM) and the accession of Baltic countries to the EU. HELCOM has been particularly active in preparing regional IMO initiatives. This work facilitated the decisions for an 80 percent reduction in nitric oxide emissions from ships' exhaust gases; a complete ban on untreated sewage discharges into the Baltic; and improved rules on ballast water to reduce invasive species.

4.2 High Seas MPAs in the North Atlantic

In order to protect marine biological diversity and VMEs, the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention) established six high seas MPAs in 2010.[193] This raised issues of legitimacy, enforceability and compliance.

Several UNGA resolutions provided support, if not legitimacy. [194] An MoU with the North-East Atlantic Fisheries Commission (NEAFC) facilitated spatial coordination of conservation measures in order to protect VMEs from bottom trawling. NEAFC has a mandate consistent with UNCLOS to take measures to protect fisheries. NEAFC already had a system of at-sea monitoring of fisheries and VMS monitoring of authorized vessels. In addition, parties to NEAFC (which includes all North Atlantic countries) could deny port access to delinquent vessels and take other port-side or trade measures, such as deeming unauthorized catches illegal for the purposes of prohibiting their import. Close coordination with the International Council for Exploration of the Seas (ICES) ensured that the design and monitoring of the MPAs was based on sound science. In addition to the OSPAR/ NEAFC MoU, under a 'collective arrangement' other MoUs have been concluded with the IMO and the London Convention (dumping). [195] The 'collective arrangement' is open to other competent organizations that espouse the OSPAR principles.

The experience demonstrates that a cooperative effort by organizations mandated to protect the marine environment, manage fisheries and generate scientific advice has led to the creation of science-based, high seas MPAs which have a measure of enforcement to which the parties to OSPAR are legally-bound and that can be applied in practice to non-parties.[196]

[192] The Copernicus Ocean State Report tracks the state of the physical environment (<http://marine.copernicus.eu/science-learning/ocean-state-report/>).

[193] OSPAR, 2009. OSPAR's Regulatory Regime for establishing Marine Protected Areas (MPAs) in Areas Beyond National Jurisdiction (ABNJ) of the OSPAR Maritime Area.

[194] See UNGA Resolutions of 2004(59/25), 2006(61/105) and 2009(64/72). See also: UNEP (2016): Regional Oceans Governance. Making Regional Seas Programmes, Regional Fishery Bodies and Large Marine Ecosystem Mechanisms Work Better Together. UNEP Regional Seas Reports and Studies No. 197.

[195] NEAFC and OSPAR, 2018. Collective arrangement between competent international organisations on cooperation and coordination regarding selected areas in areas beyond national jurisdiction in the North-East Atlantic. (OSPAR Agreement 2014-09 (Update 2018)).

[196] For additional analyses see: Rudd Murray A., et al. 2018. Ocean Ecosystem-Based Management Mandates and Implementation in the North Atlantic. *Frontiers in Marine Science* 5, p. 485; O'Leary, B.C. et al. 2012. The first network of marine protected areas (MPAs) in the high seas: The process, the challenges and where next. *Marine Policy* 36(3):598–605; Danielle Smith, D. and J. 2018. MPAs in ABNJ: lessons from two high seas regimes. *ICES Journal of Marine Science*, Volume 75, Issue 1, January/February 2018, Pages 417–425;

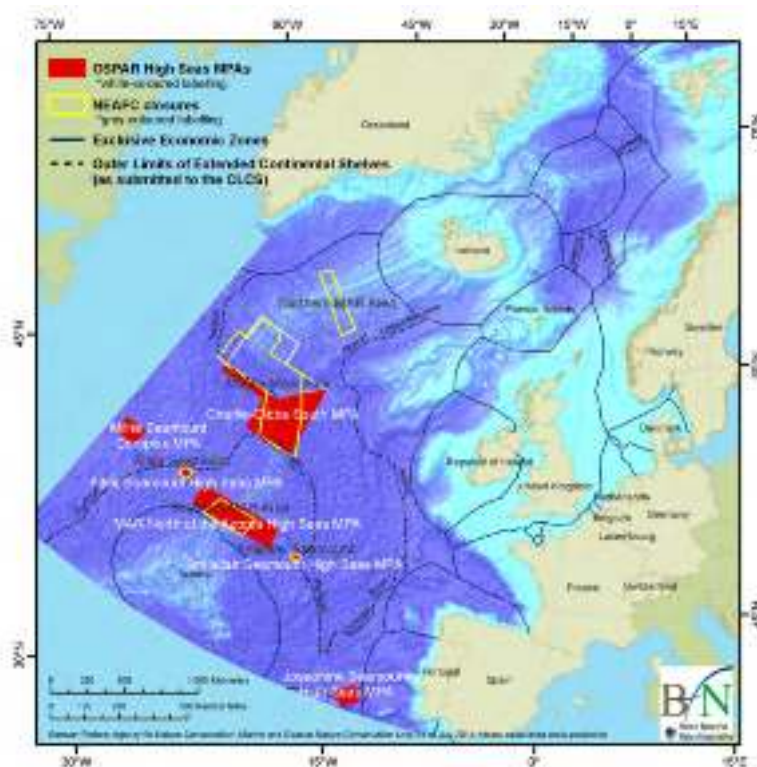


Figure 2: OSPAR MPAs and overlapping NEAFC fisheries area closures

Source: Federal Agency for Nature Conservation

This cooperation provides an important lesson for the WIO: “In the North East Atlantic, the conclusion has been that if the IMO and the ISA join NEAFC and OSPAR in the collective arrangement, or at least become closely involved in the work relating to the arrangement, this will be close enough to a fully comprehensive approach” (to governance of the regional ABNJ). [197] Extrapolating this reasoning to the WIO, if IOTC, SIOFA, FAO, the Nairobi Convention, IOC, IMO and ISA formed a collective arrangement, the collective would have competence under international law to regulate almost all activities in the ABNJ of the WIO.

4.3 Arctic Council

The Council membership is limited to countries with Arctic EEZs. The Arctic has a small high seas enclave. Indigenous people are also represented. The Arctic Council is a forum. It has a secretariat but no programming budget. All initiatives are sponsored by one or more Arctic States or supported by other entities such as the Nordic Council of Ministers. The Arctic Council does not have a mandate to implement or enforce its guidelines, assessments or recommendations: this is the responsibility of individual Arctic states. The mandate excludes matters of military security. The Arctic Council has binding agreements on oil pollution and on search and rescue.[198]

The Arctic is a shallow enclosed sea and particularly vulnerable to environmental degradation. The harsh conditions require special safeguards on the operation of vessels or hydrocarbon platforms and special arrangements for search and rescue. The Council works through several programmes and working groups:

- Arctic Contaminants Action Program – to reduce emissions and other pollutants
- Arctic Monitoring and Assessment Programme – to monitor ecosystems, human populations, and provide scientific on pollution and climate change
- Conservation of Arctic Flora and Fauna Working Group - conservation of Arctic biodiversity and living resources
- Emergency Prevention, Preparedness and Response
- Protection of the Arctic Marine Environment - protection and sustainable use
- Sustainable Development Working Group - sustainable development and improvement of the conditions of Arctic communities.

[197] NEAFC and OSPAR (2015) The Process of Forming a Cooperative Mechanism Between NEAFC and OSPAR. UNEP Regional Seas Reports and Studies No. 196.

[198] Agreement on the Cooperation of Marine Oil Pollution Preparedness and Response in the Arctic (2013); the Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic (2011).

High seas fishing reserve. In a related initiative, an agreement was negotiated to create a no-fishing reserve in the Arctic high seas. Parties to the agreement (which include China) agree not to engage in commercial fishing activities in the high seas area of the Central Arctic Ocean for an initial period of 16 years. [199] The period can be extended automatically every five years. The Agreement also envisages joint scientific research and monitoring. While the restriction does not apply to non-parties, their flag vessels would face high risks operating in the area if denied the port access and search and rescue services of the parties.

4.4 Coral Triangle

The Coral Triangle Initiative on Coral Reefs, Fisheries, and Food Security (CTI-CFF) is a multilateral partnership of six countries cooperating on coral reefs and coastal resources, food security, climate change and marine biodiversity (Figure 3). The initiative blends sustainable development with the sustainable use of marine resource and focuses on addressing the drivers of coral reef degradation.

Governance essentially targets the coastal and near-shore areas: the CTI targets ‘seascapes’ rather than ‘oceanscapes’. The CTI council of ministers is supported by four technical working groups on ecosystems, MPAs, climate change and threatened species. Three governance working groups focus on resources, finance, and monitoring and evaluation. Partners include non-member governments, international financial institutions and major conservation NGOs. There are formal cooperation arrangements with other IGOs and regional centres of excellence.

The plan of action aims to: (i) strengthen the management of seascapes; (ii) promote the ecosystem approach to fisheries; (iii) effectively manage MPAs; (iv) improve coastal community resilience to climate change; and (v) protect threatened species. The CTI addresses poverty reduction and biodiversity and ecosystem conservation through economic development, improved food security, and sustainable livelihood initiatives for coastal communities. The CTI has made considerable long-term investment in community awareness of the need and means of sustainably managing the reef and coastal ecosystems.

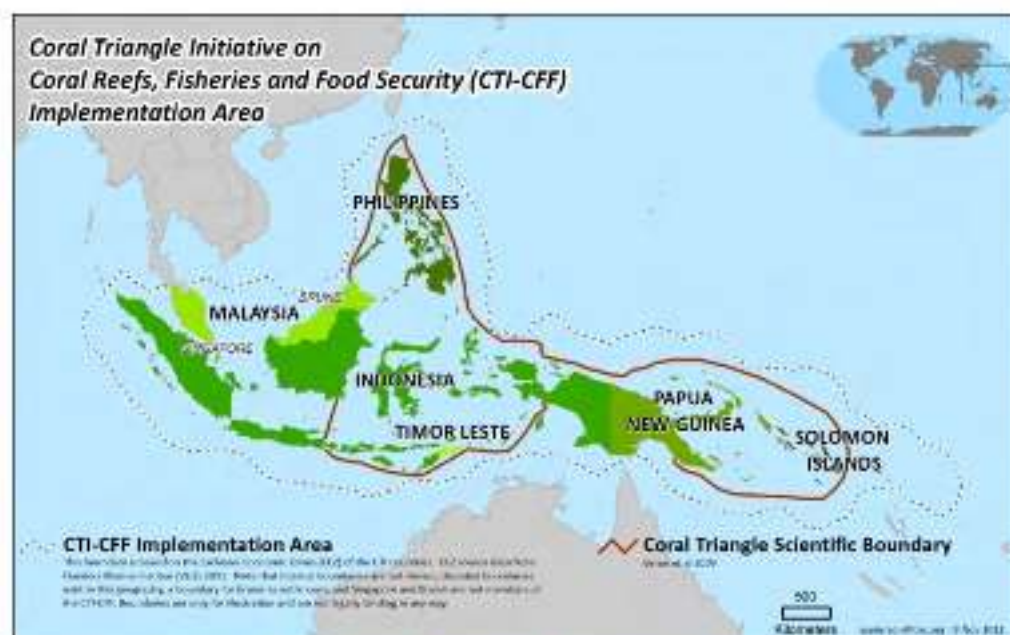


Figure 3: Coral Triangle Initiative seascape

Source: The Nature Conservancy 2011

There are some similarities between the CTI and the Northern Mozambique Channel Initiative. In particular, the ‘seascapes’ approach allows for an area-specific, sub-regional action plan. For example, Malaysia is not involved in decisions or programmes for the eastern area, while Solomon Islands has little interest in the western area.

[199] Agreement to prevent unregulated high seas Fisheries in the Central Arctic Ocean. COM/2018/453 final. Annex.

4.5 High Seas enclaves in the Western Central Pacific

The Parties to the Nauru Agreement (nine island countries) have progressively developed a suite of measures to control tuna fishing for the collective benefit of the Nauru group. Because the benefits to the Nauru Group were undermined by fishing on the adjacent high seas, the Group effectively 'closed' adjacent high seas enclaves to fishing by requiring any vessel licensed by a Party to refrain from fishing in the designated high seas areas. As the viability of the fisheries relied heavily on fishing within the EEZs of the Group, the foreign fleets complied with the closures. Some of the high seas closures were later sanctioned by the RFMO as conservation measures. However, when the high seas no-fishing areas were first put in place, the RFMO had not yet been established.



Figure 4: Nauru Group high seas fisheries closures in the Western Central Pacific (2010)

Source: K. Kelleher, 2009.

Many of the compliance measures currently used in the various tuna RFMOs were developed initially by the Nauru Group. These include a regional register of vessels and a prohibition on licensing vessels placed on an 'illegal list'. The Nauru Group continue to innovate. A scheme to simultaneously conserve the tuna resources and increase the benefits from the fisheries was established based on a cap and trade type of arrangement for fishing effort allocations between the Parties (referred to as the Vessel Days Scheme or VDS). In addition to VMS, compliance measures include 100% observer coverage for purse seine vessels and on-board video for longliners with the capability of real-time or near-real time access to the video records. These schemes have also effectively internalized the costs of these compliance measures through the various fees and service charges.

4.6 Marine Plastic Pollution

Global use of plastic is projected to increase about five-fold by 2050, suggesting that even with substantial measures to combat marine plastic pollution, the threat is growing. A number of global initiatives have been proposed, including a proposed international agreement brokered by UNEP.

[199] Agreement to prevent unregulated high seas Fisheries in the Central Arctic Ocean. COM/2018/453 final. Annex.

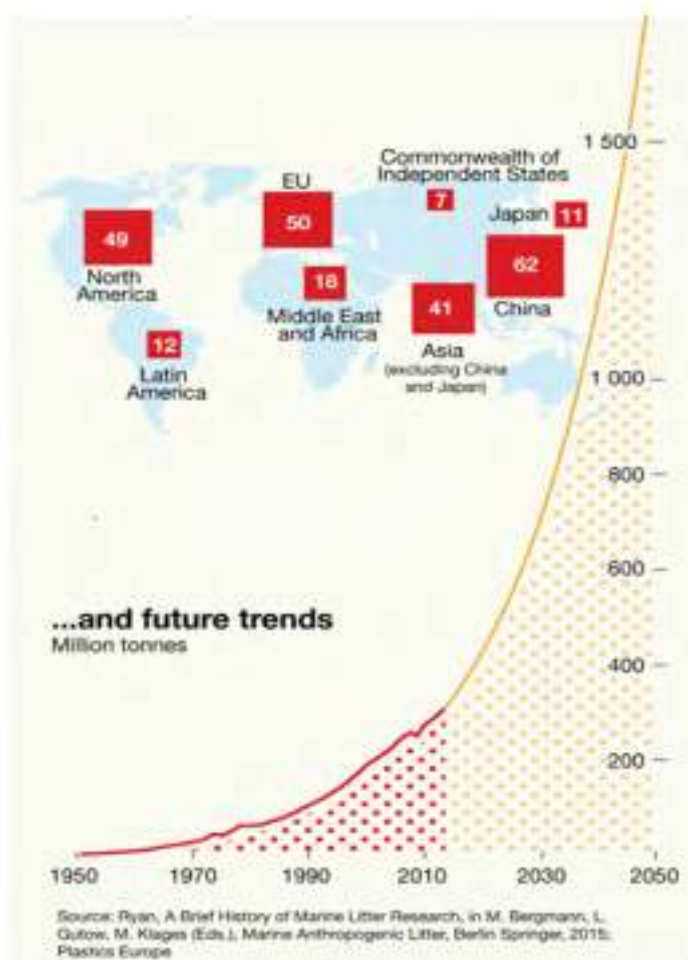


Figure 5: Projected trend in global plastic production

The EU has the only significant regional scheme to combat marine plastic pollution. The scheme addresses the proximate causes of marine plastic pollution, such as solid waste management, enforcement of MARPOL and recovery of lost fishing gear, but the essence of the scheme is based on the plastic life cycle and progressively building a circular economy for plastics.

The proximate measures rely on a set of evolving mandatory requirements for member states. These include directives on waste management, waste water, marine environmental quality, single use plastics and the circular economy (in preparation). [200] The new measures will include a ban on the top ten single-use plastic products found on beaches and at sea, as well as introducing new rules on lost and abandoned fishing gear. The package is complemented by a proposal for a new Directive on Port Reception Facilities to address the problem of marine litter from ships, including fishing vessels and recreational craft.

The EU Strategy for Plastics in a Circular Economy [201] consists of a comprehensive approach to eliminating plastic waste and microplastic leakage, in particular from/to the marine environment.

The directives should be seen against a background of Court of Justice of the European Union (CJEU), which has powers to enforce member state compliance with environmental directives. The Aarhus Convention on environmental justice also provides a means by which countries' compliance may be held to account by citizens and includes non-EU countries.

WIO countries could selectively apply some of the EU initiatives. In terms of regional cooperation, the most important may be to build a single regional market for recycled plastics. This can underpin economies of scale in recycling and waste stream separation. Part of such a market could be the establishment of a common tariff scheme for single use plastics and plastic products with low or no recycled content. This could foster regional manufacture of products to substitute single-use plastics or products using recycled plastic while also creating opportunities for regional certification and plastic auditing.

4.7 Issues for further consideration

This background document does not address several issues which could feature on a future regional ocean governance agenda. These include:

- sustainability of the ocean economy in relation to non-renewable resources, including the establishment and management of sovereign wealth funds
- development of international norms in relation to ocean acidification, and
- the 'common heritage' in relation to East Africa's landlocked countries. [202]

[200] Marine Strategy Framework Directive; Water Framework Directive; Urban Waste Water Treatment Directive; Waste Framework Directive; REACH Directive; Plastic Bags Directive (2015); and the Single-Use Plastics Directive (2019). These are backed by the EU Plastics Strategy and the EU action plan for the Circular Economy.

[201] Strategy for Plastics in a Circular Economy COM(2018) 28 final.

[202] Kiss, Alexandre-Charles, "La notion de patrimoine commun de l'humanité (Volume 175)", in: *Collected Courses of the Hague Academy of International Law, The Hague Academy of International Law*; See also for information Tahindro, A., "The Concept of Regional Common Heritage: Its possible application in the South China Sea", in the *UN Convention on the Law of the Sea and the South China Sea*, Ashgate Publ., London, UK, 2015

ANNEX: MAPS AND GRAPHICS

The designations employed and the presentation of the material on any maps does not imply the expression of any opinion whatsoever concerning the legal status of any country, territory, or concerning the delimitation of frontiers or boundaries. The boundaries are those illustrated in the source materials. Maps are provided for illustrative purposes only.



Figure 6: Joint management Area (Mauritius- Seychelles)

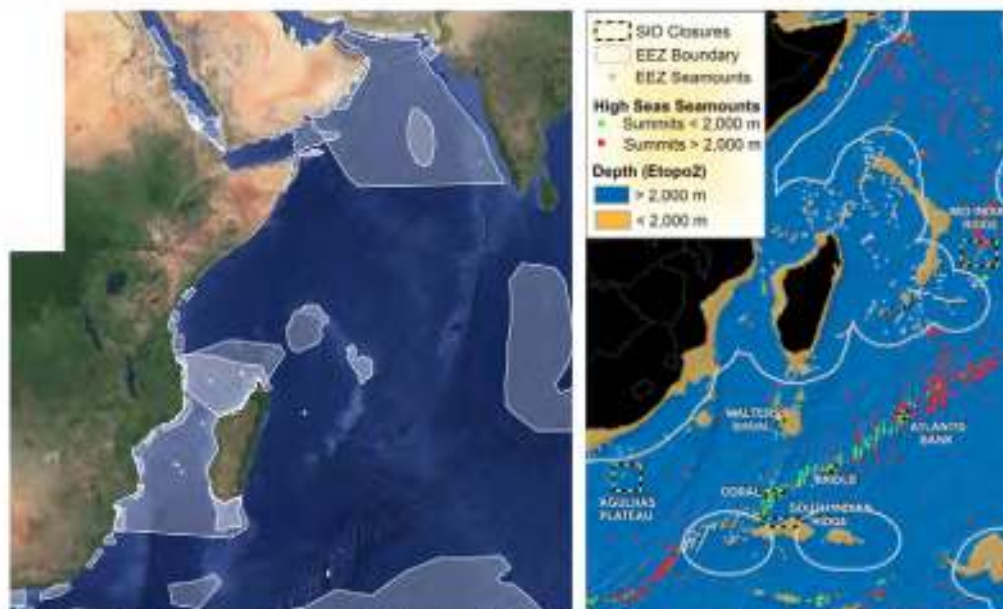
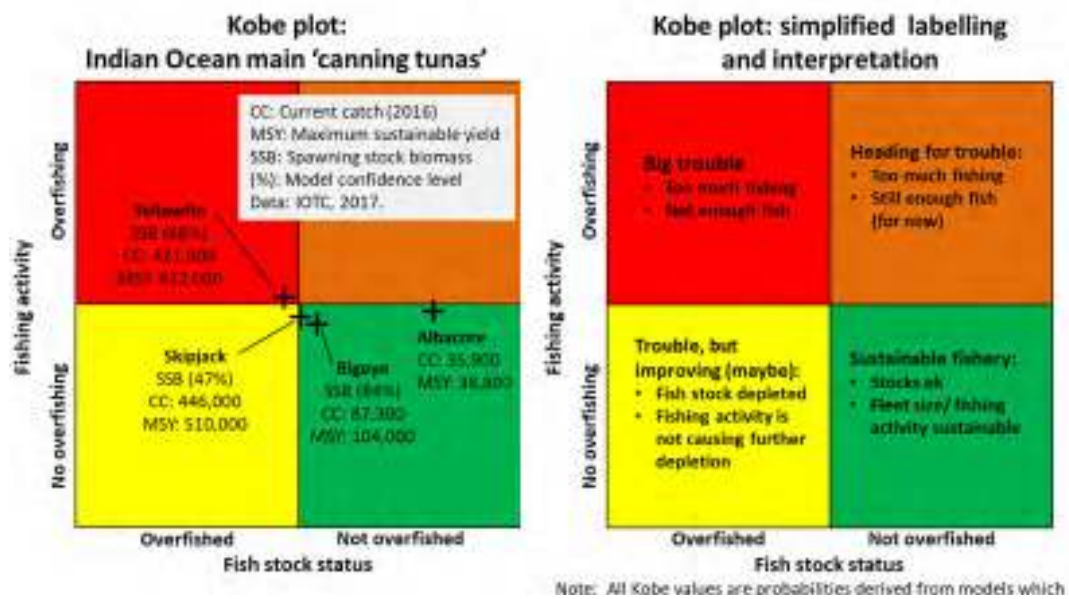


Figure 7: Environmentally and Biologically Sensitive Areas and seamounts in the WIO (boundaries are illustrative only)

Source for Figure 6: Mauritius Oceanography Institute, 2012.

Source for Figure 7: Convention on Biological Diversity; Dr. Frijhof Nansen, 2009/MSBI 2009.



Source: K. Kelleher (2019), based on IOTC reports.

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About the partners

The United Nations Environment Programme (UNEP) is the leading global environmental authority that sets the global environmental agenda, promotes the coherent implementation of the environmental dimension of sustainable development within the United Nations system, and serves as an authoritative advocate for the global environment.

The Nairobi Convention, signed by Comoros, France, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, Somalia, South Africa, and Tanzania, aims to promote a prosperous Western Indian Ocean region with healthy rivers, coasts, and oceans. It provides a platform for governments, civil society, and the private sector to work together for the sustainable management and use of the marine and coastal environment.

The United Nations Development Programme (UNDP) partners with people at all levels of society to help build nations that can withstand crisis, and drive and sustain the kind of growth that improves the quality of life for everyone. On the ground in nearly 170 countries and territories, we offer global perspective and local insight to help empower lives and build resilient nations.

The Global Environment Facility (GEF) was established on the eve of the 1992 Rio Earth Summit to help tackle our planet's most pressing environmental problems. Since then, the GEF has provided close to \$20 billion in grants and mobilized an additional \$107 billion in co-financing for more than 4,700 projects in 170 countries. Through its Small Grants Programme, the GEF has provided support to nearly 24,000 civil society and community initiatives in 133 countries.

The Western Indian Ocean Marine Science Association (WIOMSA) is a leader in promoting the development of marine and coastal science professionals, advancing the educational, scientific and technological development of all aspects of marine and coastal sciences throughout the Western Indian Ocean region and promoting the conservation and sustainable development of the coastal and marine environment.

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