

Reporting and Supporting Coral Reef Sustainability In The Western Indian Ocean

White Paper submitted for the Nairobi Convention Science-Policy Workshop, 9-11 July 2018

Prepared by: David Obura and Mishal Gudka (CORDIO, dobura@cordioea.net) with Said Ahamada (Indian Ocean Commission), on behalf of the regional and national Coral Reef Task Forces and Global Coral Reef Monitoring Network nodes.

Background

The Western Indian Ocean contains 16% of the world's coral reefs, and the region is now thought to host the second peak of coral reef biodiversity globally. Coral reef ecosystems underpin the economies of the countries in the region, particularly fisheries and tourism sectors, and provide livelihood opportunities and income for local communities. However, anthropogenic threats at all scales, such as from fishing, development and climate change, are all increasing with human population growth and local to regional development. Western Indian Ocean coral reefs experienced widespread coral bleaching during the first global coral bleaching event in 1998, in which 30-50% of corals were estimated to have died.

Achievement of past decisions

The 3rd Conference of Parties to the Nairobi Convention (Maputo, 2001) recognized that "coral reefs and related fragile ecosystems of the region are increasingly under stress from both localised human threats and global climate change and thus are a major cause for concern". In Decision 3.2 (see Annex 1) the COP made a number of calls that have been acted on since then:

- Member states have been active participants in the International Coral Reef Initiative and at its General Meetings, and many have developed national coral reef action plans.
- UNEP established the regional Coral Reef Task Force which has developed a regional action plan (2008) and overseen regional monitoring and reporting since then.
- the Nairobi Convention Secretariat has collaborated closely with the Indian Ocean Commission (IOC), in particular recent work supported by the ISLANDS and Biodiversity Projects, with the scientific coordination of CORDIO East Africa, in implementing the work of the Coral Reef Task Force.

Status of reefs in the Western Indian Ocean - 2017

Monitoring of coral reefs at the regional scale in the WIO has been undertaken since 1998 by multiple national, organization and individual programmes under two regional reef networks under the GCRMN, and grouped under the Coral Reef Task Force.

A coral reef status report for the Western Indian Ocean summarizing data from monitoring programmes in Comoros, France, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, South Africa and Tanzania was published in 2017 by the GCRMN with support from the IOC and technical coordination from CORDIO¹. The report includes a regional synthesis and national chapters on the state of coral reefs up to 2016, visual estimates of bleaching levels during the global bleaching event in 2016, and up to date information on pressures, management and policy responses relevant to coral reefs in each country. An updated report using monitoring data from 2016-2017 quantifying the impact of the 2016 coral bleaching has been compiled and will be released at the Science-Policy workshop².

A synopsis of the recent history of WIO reefs, including impact of the 2016 bleaching event is:

- the 1st global bleaching event in 1998 led to coral reefs in the Western Indian Ocean being some of the most impacted globally:
 - Coral cover declined by one quarter, from 40% cover before 1998 to 30% after 1998, and remained at this level until 2016.
 - Algae cover increased 2.5 times after 1998, from 15% before to about 35% after.
 - By 2016, fish community structure was dominated (80% of biomass) by small-bodied herbivores and detritivores, showing the impact of fishing and potential changes in dominance of reefs by algae.

1 Obura et al. (2017) Coral reef status report for the Western Indian Ocean (2017). Global Coral Reef Monitoring Network (GCRMN)/International Coral Reef Initiative (ICRI). Indian Ocean Commission (IOC). pp 144

2 Gudka et al. (2018). Impact of the 3rd Global Coral Bleaching Event on the Western Indian Ocean in 2016. Global Coral Reef Monitoring Network (GCRMN)/Indian Ocean Commission. pp. 65

- In 2016, the 3rd global bleaching event caused a further 20% decline in coral cover, slightly less than the mortality in 1998. Algae cover increased by 35%.

Reef futures in the Western Indian Ocean

WIO coral reefs are already showing extreme levels of impact from global warming, suffering two major declines, of 25% in 1998 and 20% in 2016. This has occurred with global warming of about 1°C, whereas the Paris Agreement hopes to keep warming at less than 2°C. However, even this 2°C target may be excessive for coral reefs, with several studies having shown the extreme vulnerability of coral reefs, including of World Heritage sites containing coral reefs, of which 2 are present in the WIO (Aldabra, iSimangaliso)³.

Nevertheless, a 'hopeful' view is that reef areas that have the 'best climate futures', might be less impacted than other coral reefs globally. A recent study finds that a range of reefs in NW Madagascar, Tanzania, Kenya and south Somalia may be in this group of 'lucky reefs' best positioned to withstand climate change⁴. If this prediction is correct, then investment to ensure these reef areas are not degraded by other locally manageable impacts, such as from fishing, sedimentation and coastal development, is urgently needed to secure their long term future. Additional studies also need to be done, to provide more localized assessments of ecosystem and species vulnerability, to help countries plan for the best possible future for coral reefs.

Sustainable Development and the Blue Economy

Coral reefs provide a flagship system for delivering on, measuring and understanding sustainable development and a blue economy. Tourism and small scale fisheries are dependent on coral reefs as one of their prime assets. A recent study estimated these sectors produce some US\$ 8.4 billion of income annually for the WIO region, most of which is derived from coral reefs⁵. This is 39% of the total value generated from ocean ecosystems in the WIO, and would rank the income from coral reefs 8th compared to the GDP of WIO countries. WIO coral reefs were estimated to have an asset value of US\$ 18.1 billion.

But many benefits derived from coral reefs are poorly measured financially, and coral reef social-ecological systems are a prime example of the multi-faceted benefits obtained from the sea. The Sustainable Development Goals provide an avenue for measuring and reporting on benefits from ecosystems. For example, many SDG Targets, such as 8.3 (decent jobs), 8.9 (sustainable tourism), 12.2 (sustainable use of natural resources) and 13.1 (strengthen adaptive capacity) are supported by coral reefs, and measuring the contribution of coral reefs to these targets could be incorporated into monitoring programmes.

Moving forward

The GCRMN/CRTF reports provide a valuable record of the health of coral reefs, but the process needs strengthening, and extending to socio-economic areas to measure the true value of coral reefs to WIO countries. This is particularly important in the coming inter-sessional period of the Nairobi Convention, as 2020 is the due date for the Aichi Targets of the Convention on Biological Diversity, and the first interim assessment of the Sustainable Development Goals.

We therefore request the following recommendations of the COP, to ensure countries are monitoring the state of health of and benefits from coral reefs.

Recommendations

Commending UNEP and Parties on successful implementation and follow-up to Decision 3/2 on establishment of the Coral Reef Task Force and national Coral Reef Task Forces, and acknowledging the role

3 Heron et al. 2018. Impacts of Climate Change on World Heritage Coral Reefs: Update to the First Global Scientific Assessment. Paris, UNESCO World Heritage Centre; 9van Hooijdonk R, et al. Local-scale projections of coral reef futures and implications of the Paris Agreement. *Scientific Reports*, 6, 39666 (2016).

4 Beyer et al. (2018) Long-term risk-sensitive planning for conserving coral reefs under rapid climate change. *Conservation Letters* (in press).

5 Obura, D. et al. 2017. Reviving the Western Indian Ocean Economy: Actions for a Sustainable Future - Summary. WWF International, Gland, Switzerland. 20 pp.

of the Indian Ocean Commission in supporting and coordinating recent efforts, we request the following recommendations for consideration by COP 9:

Call on Parties and the Nairobi Convention Secretariat to:

- fully support, including through funding and capacity building, coral reef monitoring at long-term monitoring sites as a foundation for understanding the value of natural ecosystems in the blue economy and sustainable development of coastal countries;
- reinvigorate and renew the mandate and composition of the Coral Reef Task Force, building on its actions in the last few years;
- recognize coral reefs as flagship social-ecological systems in a Blue Economy perspective, to secure and safeguard their health and prominence as a flagship for sustainable development;
- take a strong stand in international fora supporting aggressive action on reducing greenhouse gas emissions.

Call on Parties, donors, organizations and all stakeholders to:

- recognize the importance of monitoring and institutionalize the costs of monitoring and staff development and retention to maximize the value of monitoring programmes;
- strengthen data archiving, and reporting processes, promote open access to reef monitoring data in accordance with international guidelines and support innovative use of data from coral reefs that motivates for increased investment in their conservation and sustainability ;
- use coral reef monitoring data in decision-support indicators and processes, and to report on progress towards international agreements;
- assess and evaluate current coral reef conservation strategies and identify challenges, gaps and areas to improve;
- increase investment to sustainably manage coral reefs and associated biodiversity for the well-being of coastal populations and national prosperity sustainably.

Annex 1: Relevant NAIROBI CONVENTION COP Decisions:

Decision CP3/2: Protection of coral reefs and associated ecosystems.

1. Urge all parties to the Nairobi Convention to:

- a) consider joining ICRI, to establish national bodies to coordinate coral reef activities within each country and to develop national coral reef action plans or strategies where appropriate;
- b) Implement relevant recommendations of the ICRI Indian Ocean Regional Workshop, Maputo, Mozambique 26-28.11.2001

2. Request the Executive Director of the United Nations Environment Programme to:

- a) Establish a Coral Reef Task Force to coordinate work on coral reefs throughout the region, including the development of a regional action plan, with particular reference to the work program of the Nairobi Convention and to initiatives and projects being implemented within the region;
- b) Collaborate with regional bodies such as the Indian Ocean Commission to ensure that skills, expertise and monitoring methodologies developed by the Contracting Parties are shared across the region.

Decision CP8/1: Preparation of a New Work Programme for the Nairobi Convention, 2018- 2022; 2.

To request the Secretariat to take note of the outcomes of the ongoing Post 2015 Development Agenda process and the expected Sustainable Development Goals, and incorporate the relevant outcomes into the new work programme for 2018-2022, especially those relating to sustainable management of marine and coastal environment.

Decision CP8/5: Agenda 2063 and the Africa Integrated Maritime Strategy 2050

1. To urge Contracting Parties to implement the Cairo Declaration of the 15th Session of the African Ministerial Conference on Environment (AMCEN) on Africa Integrated Maritime Strategy 2050 and Agenda 2063 on ecosystem-based management approaches for marine resources in the exclusive economic zones and adjacent waters and inform on progress at AMCEN sessions;
2. To request the Secretariat, in collaboration with Barcelona Convention, Abidjan Convention, Jeddah Convention, with the support of the United Nations Environment Programme, to contribute to the development of an African strategy on ocean governance in the context of the African Integrated Maritime Strategy 2050 and Agenda 2063.

Decision CP8/10: Blue and Ocean Economy

1. To urge Contracting Parties to apply blue or ocean economy approaches as pathways for sustained economic growth, food security, poverty eradication, job creation and environmental sustainability