

**ICRI General Meeting 26,
December 13th 2011 La Réunion, St-Denis**

Indian Ocean Day Report

In an effort to improve regional cooperation and enhance the regional focus of ICRI's work, a full day of the 26th ICRI General Meeting was devoted to issues in the Indian Ocean Region, focusing on three themes:

- Regional Coordination
- Monitoring of Coral Reefs in the region
- Management and conservation of coral reefs in the Indian Ocean in the light of climate change

The day ended with a special session by UNESCO World Heritage Marine Programme, on a regional comparative assessment of new potential sites in the Indian Ocean. At the end of the day, a draft recommendation was proposed for the region.

The ICRI Secretariat would like to thank Jerker Tamelander and David Obura for compiling the report.

1. Regional coordination

Recent, ongoing and future projects were presented by major stakeholders from the region:

- Indian Ocean Commission (IOC/COI) marine-related work programme activities
- Marine prioritisation process leading to the regional strategy for the conservation of marine ecosystems and fisheries, WIOMER
- The Western Indian Ocean Coastal Challenge (WIO-CC)
- The Regional Coral Reef Task Force (CRTF) of the Nairobi Convention and the Regional Coral Reef Action Plan

Summary of the session:

Several (sub-)regional entities support, facilitate and enable coral reef management and monitoring. These operate at different levels and to some extent in parallel or with overlaps in terms of geography and activities. There is a great strength in this. However, continued efforts are needed to facilitate communication among these to utilize synergies, promote collaboration and coordination. **The need for a strengthened clearing-house on coral related programmes, projects and activities in the region was emphasized.**

The important mandate of CRTF was recognized, and the request made that the Action Plan developed is disseminated broadly in the region to generate support among countries and relevant partners prior to submission to the COP 13 of the Nairobi Convention in 2012. The CRTF has operated for close to 10 years under the overall framework of the Nairobi convention and as such provides a key mechanism for supporting coral reef related action in the Western Indian Ocean Region. The commitment to implementation of the action plan and ‘rejuvenation’ of CRTF as mentioned in the presentation by WCS on behalf of the CRTF Chair was welcomed.

2. Monitoring

Country presentations on the monitoring of coral reefs provided information on activities, partnerships, participation in regional/international efforts, and recent key findings as well as notable successes and challenges. In order to facilitate the presentation of template was provided by the ICRI Secretariat. Countries presenting included:

- Comoros, Ahamed Soifa
- France, Jean-Pascal Quod
- Kenya, Judith Nyunja
- Madagascar, Jean Maharavo
- Rodrigues, Jovani Raffin
- Maldives, Abdulla Naseer
- Seychelles, Rodney Quatre
- South Africa, Michael Schleyer
- Tanzania, Rose Sallema

There were also presentations on:

- IOC/COI regional monitoring network, Said Ahmada
- CoReMo database, Jean Pascal Quod
- Regional Coral Reef Task Force and the Regional Coral Reef Action Plan by Jerker Tamelander (UNEP) on behalf of the task force chair Nyawira Muthiga (WCS)

Summary of the session:

There is notable progress in regular monitoring in terms of number of sites, variables, and participation of various partners. Most countries in the WIO region now have datasets that span more than 10 years, which cover benthos, fish community, and in some instances temperature and other variables. There are also a large number of sites, monitored with varying intensity/rigor. However, sites are not evenly distributed and monitoring in some extensive reef areas needs strengthening. Creative partnerships are useful to this end, as illustrated e.g. by work

in the Maldives and the Seychelles, where private sector partnerships are key to increasing the coverage of reef monitoring programmes. Opportunities for further developing reef monitoring by integrating variables that measure state as well as processes needs to be explored. This could include increased attention to water quality, climate change, erosion, sediment budgets and the importance of healthy reefs for healthy shorelines.

Reef recovery from impacts of the 1998 mass mortality is notable in many parts of the region. MPAs in the region are seen to have positive impacts on coral cover and recovery, fish populations and other resource species. However, the recent Reefs @ Risk assessment also highlighted that, while 19% of the region's (wider IO) reefs are within MPAs, management is deemed effective or partially effective in only 11% of the MPAs. Fishery impacts on reefs and fish populations are obvious in many areas, including through the removal of predators. Creating further linkages between ecological monitoring and other activities such as collaborative management, management effectiveness assessments, socioeconomic monitoring, and threat assessment and for other planning applications is needed.

Another notable challenge faced by the region is piracy, which is hampering monitoring and research efforts in several countries.

All country presentations highlighted the challenge in funding ongoing monitoring activities, and several countries are forced to adjust monitoring (coverage, intensity) to funding availability. Increased financial support towards monitoring is needed, as is more efficient allocation of available funding (e.g. through existing or planned projects, countries may also be in a position to re-prioritize financing). It was recommended that the many projects in the region, present and future, also support and contribute to the monitoring networks as appropriate, including through capacity building, networking, surveys, analysis etc., and involve or consult the relevant institutions and individuals.

Monitoring data management and analysis in the region could benefit from more widespread use of the CoReMo database. Continued development and improvement of CoReMo was encouraged, including for compatibility with different methods and especially emphasizing dedicated support towards importing existing/historic data.

Continued commitment to monitoring capacity building is needed. This will serve both as a means to enhancing the availability and use of monitoring data and to maintain and further extend the network. A broader and strengthened network will also be better able to operate with fluctuating financial support. The strength of existing networks, a result of institutional linkages and, importantly, personal linkages, provide a good base to work from. Emphasis needs to be placed on generating dedicated support for capacity building.

3. Management and conservation of coral reefs in the Indian Ocean in the light of climate change

Presentations:

- The process of IFRECOR The network of observatories of climate change for overseas communities. *Michel Porcher, IFRECOR*
- Climate Change and Coral Reefs Marine Working Group (CCCR) – summary of datasets from the Indian Ocean. *David Obura, CORDIO*
- Coral Reefs and Climate Change in the Western Indian Ocean (WIO). Final workshop on 8 and 9 December 2011 in Maputo, Mozambique. *Ambroise Brenier, WCS*
- Management and conservation of coral reefs from climate change: experience of Madagascar. *Ambroise Brenier, WCS*

Assessing climate change vulnerability

The presentations discussed aspects of measuring climate change vulnerability, a combined expression of exposure (the environmental threat) and sensitivity (of the system) Adaptive capacity is a reciprocal component of vulnerability. The strong need to develop approaches for assessing climate vulnerability of systems and communities was noted, and further use/develop indicators of climate change impacts, resistance or resilience.

IFRECOR and CORDIO/CCCR presented systems of indicators used in measuring these factors, while CORDIO/CCCR and WCS presented different ways to present the information for taking management responses, which include planning/zoning processes based on exposure, actions to increase resilience or reduce dependence based on sensitivity, and actions to increase adaptive capacity based on vulnerability. The need to adapt/develop tools to facilitate the dialogue between scientists and managers, and of fully using Marine Spatial Planning in its deeper sense with respect to assessing tradeoffs between competing attributes or values.

Caution was recommended in making broad-scale interpretations from necessarily limited information from field sites. While some analyses show the WIO core region of high diversity having greater resilience than other parts of the WIO, other analyses note the variability in attributes of resilience as well as of historical bleaching at many scales, cautioning against broad generalizations. Fine-scale assessments in Nosy Hara and Nosy Mitsio in Madagascar were noted as good examples of applying the resilience approach to assist in local level management planning. The inclusion of sites with variable responses was, however, noted as a strength and necessary component of monitoring and resilience assessments, to understand the full scope of potential responses to climate change. Highly patchy bleaching dynamics were noted, and matching this with discussion from the monitoring/observatory session, the observation to increase sampling to better capture variability was made.

Also overlapping with the monitoring session, the need for data management and archiving, at local, national and regional networking levels was noted, as well as the value of key sites as climate change observatories where more detailed scientific assessments can be made to be interpreted more broadly across a range of lower-intensity monitoring sites.

Climate Change and Coral Reef programs in the Western Indian Ocean

The session noted the existence of multiple programmes for addressing climate change at regional levels, including the WIOMSA project developing a Climate Change Strategy for the WIO, and the Indian Ocean Commission's projects assisting member countries to develop their individual and joint strategies. Discussions on aligning these have been held at workshops in 2011, and will be incorporated in final plan preparations, for the COI project in February 2012. At the same time, the lack of national strategies for dealing with climate change, or adaptation to climate change, relevant to coral reefs, was noted. Australia and France provided examples of how institutional and public representation in their planning processes was undertaken to develop such national climate change and coral reef strategies. Their involvement and technical assistance in furthering this process thorough information exchange and disseminating lessons learned was noted, particularly with regard to the succession of ICRI's secretariat from France/Samoa to Australia/Belize in 2012.

Science-management-policy linkages, including in relation to MPAs and adaptation

The need for enhanced science policy dialogue was also emphasized, recognizing that many findings from monitoring and science presently is not brought to the attention of decision makers or applied in decision making frameworks in a consistent way, which may weaken management and climate change action plans.

The need to develop adaptation plans and actions for coral reefs and reef users was noted in this regard, at the scales of national adaptation plans, but also local adaptation. Community-based adaptation and the needs and priorities of users at local levels were noted as key areas where work must be done. Flexibility within national/high level adaptation plans to facilitate responsiveness to local situations was noted. At the national level, the use of large datasets for generating political consensus was also mentioned. Variability in the degree to which different countries have incorporated coral reefs into national adaptation plans was mentioned. Guidelines for incorporating coral reef actions into national climate change strategies were identified as a priority for the CRTF in its Maputo workshop.

The need for training and capacity building in management and policy was noted, with mention of the WIOMSA MPA managers training programme, the MPA manager's toolkit and training programme for the Western Indian Ocean, and the Reef Manager's Guide to Bleaching. It was



noted that NOAA is working to develop a similar manual for climate change and coral reefs, which could be shared through ICRI, and there are multiple other more general tools, such as on Ecosystem Based Management, or on climate change actions and management in other ecosystems.

4. Session on UNESCO World Heritage Marine Programme, on a regional comparative assessment of new potential sites in the Indian Ocean

UNESCO's World Heritage Marine Programme works to establish conservation of all current and future marine areas of Outstanding Universal Value. UNESCO's World Heritage List currently includes 45 marine sites. As part of our mission, a new initiative is being taken to identify new potential areas in the Indian Ocean which could be of Outstanding Universal Value. The work started last October 2011 and will be finalized in June 2012. A regional expert meeting (Regional comparative assessment of potential marine areas with Outstanding Universal Value in the Indian Ocean) will be held in La Reunion from 14 to 16 February 2012. The aim of the meeting is to discuss the draft regional assessment which identifies a first set of potential marine World Heritage sites in the Indian Ocean.