

## **SG report on Coral Reefs – UNEP general comments and suggestions**

UNEP's marine strategy focuses on land-ocean connections, managing ecosystems for humanity, reconciling use and conservation and vulnerable people and places. A number of comments have been made around these themes below.

There are numerous targets, initiatives and processes relevant to coral reefs and dependent communities and sectors, and many of these have firm anchoring in international agreements. There are also considerable similarities and synergies between them. This redundancy has several positive and some negative implications. Overall it illustrates broad agreement on what challenges need to be addressed, while limited progress towards many targets illustrates the complexities in finding appropriate responses and solutions.

The outline the SG report on coral reefs at it stands enables presenting an overview of this, and emphasizing urgency of action, synergies, identification of new/emerging needs and most importantly means of achieving the many targets set. Particular attention could be placed on e.g. food security and livelihoods, the implications of climate change, and broad-scale ecosystem-based approaches to managing natural resources and services.

While an emphasis on tropical coral reefs is justified the report should also encompass

- consideration of closely associated ecosystems, notably mangroves and seagrass beds, insofar as it is relevant. Where coral reefs, mangroves and seagrasses co-occur e.g. the fisheries and shoreline protection services provided by these systems are often contingent on all of them being well managed. Human use of and dependence on these three ecosystems is often not possible or meaningful to delineate from a socioeconomic development standpoint.
- cold water coral reefs. Neither as immediately important to many coastal communities nor as well studied as tropical coral reefs these hold immense biodiversity and are important for a number of commercially exploited fish stocks. Current knowledge and needs are available in e.g. Freiwald, A., Fosså, J.H., Grehan, A., Koslow, T., Roberts, J.M. 2004. Cold-water Coral Reefs. UNEP-WCMC, Cambridge, UK.

In Specific sections of the report, please note the following

### Section II

For recently compiled data on threats to reefs as well as social dependence see e.g. Burke, Reyta, Spalding, Perry (2011). Reefs at Risk Revisited. World Resources Institute (WRI), Washington DC, USA. 114p

The latest global reef status overview: Wilkinson (2008). Status of coral reefs of the world: 2008. Global Coral Reef Monitoring Network and Reef and Rainforest Research Centre, Townsville, Australia, 296 p.

See also a range of global and regional coral reef status reports as well as thematic reports (including on coral bleaching, tsunamis, catchment management) by GCRMN at [www.gcrmn.org](http://www.gcrmn.org).

UNEP's Global environment Outlook 4 also provides much useful information  
<http://www.unep.org/geo/geo4.asp>

The report should also include a discussion specifically about present and projected climate change impacts and their implications, especially in the context of direct anthropogenic stress on reefs. This could consider the vulnerability of coral reefs and dependent communities, socio-ecological resilience, and the needs for adaptation. See e.g.

Obura and Grimsditch (2009). Coral Reefs, Climate Change and Resilience – An agenda for action from the IUCN World Conservation Congress. October 6-9 2008. 44 pages.

Marshall N.A., Marshall P.A., Tamelander J., Obura D., Malleret-King D. and Cinner J.E. 2010. A Framework for Social Adaptation to Climate Change: Sustaining Tropical Coastal Communities and Industries. IUCN, Gland, Switzerland

[[The word 'protection' should be understood to refer to a broad range of actions towards sustainable management that directly and tangibly protect reefs as well as the rights and interests of reef dependent people and sectors.]]

### Section III C

The Regional Seas Conventions and Action Plans have been established to address particular regional environmental and institutional needs. 13 Regional Seas programmes have been established under the auspices of UNEP, with six of these administered directly by UNEP. The Regional Seas are a primary implementation mechanism for ICRI (see below).  
[www.unep.org/regionalseas](http://www.unep.org/regionalseas)

### Section III D

See e.g. GLOBE International Commission on Land Use Change and Ecosystems (2010). GLOBE Action Plan for Coral Reefs 2010

See also Resolutions and Statements by ICRI (elaborated under E below).

### Section III E

UNEP Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA-Marine). <http://www.gpa.unep.org/>. 80% of marine pollution arises from land-based activities. GPA aims at preventing the degradation of the marine environment from land-based activities by facilitating the duty of States to preserve and protect the marine environment. The GPA is designed to be a source of conceptual and practical guidance to be drawn upon by national and/or regional authorities for devising and implementing sustained action.

International Coral Reef Initiative (ICRI, [www.icriforum.org](http://www.icriforum.org) ; the ICRI Secretariat is likely to have provided input to this report directly).

The International Coral Reef Initiative (ICRI, [www.icriforum.org](http://www.icriforum.org)) was announced at the First Conference of the Parties of the Convention on Biological Diversity in December 1994. In 1995, the ICRI workshop held in Dumaguete, the Philippines, established ICRI as a partnership among governments, intergovernmental organizations, development organizations, donors, non-government organizations and the private sector, striving to preserve coral reefs and related ecosystems, such as mangroves and seagrasses, by implementing Chapter 17 of Agenda 21 and other relevant international conventions and agreements.

ICRI advocates international recognition that coral reefs are in serious decline globally due primarily to human activities, focusing on mobilising governments and a wide range of other stakeholders around a political "Call to action", a consensus framework for achieving sustainable management of coral reef ecosystems. ICRI fosters improved management practices and capacity building, research and monitoring, the sharing of information, and fund raising, in order to preserve the biodiversity and ecosystem services of coral reefs as a building block for sustainable development. ICRI works with and through Operational Networks, including the Global Coral Reef Monitoring Network (GCRMN), which produces Status of Coral Reefs of the World Reports ([www.gcrmn.org](http://www.gcrmn.org)).

Resolutions and statements by the ICRI General Meeting raise issues of priority and/or provide specific guidance, including related to managing coral reefs in the face of climate change; reef fisheries and food security; reef fish spawning aggregations; reef rehabilitation and restoration; marine protected areas; invasive alien species; etc. These support and leverage action by members as well as other countries and organizations including MEAs.

The Global Coral Reef Monitoring Network (GCRMN) is an operational network of ICRI and compiles Global Status of Coral Reefs reports. [www.gcrmn.org](http://www.gcrmn.org). The network provides a unique service to researchers, managers and policy makers, and can also contribute to other international ocean observation initiatives such as the Regular Process. Further support to GCRMN assessment, data compilation, reporting and capacity building would strengthen this function.

UNEP is a founding member of ICRI, a member of the GCRMN Management Group, and also hosted the International Coral Reef Action Network (ICRAN), an ICRI Operational Network dedicated to supporting and strengthening reef management 2000-2010. The global network of Regional Seas Conventions and Action Plans, most of which are administered by or established through UNEP, are recognized as a key implementation mechanism for ICRI.

A Coral Reef Unit, established within the UNEP Division of Environmental Policy Implementation and located in Bangkok, represents UNEP in ICRI, and supports development and strengthening of the coral reef programmes of Regional Seas Conventions and Action Plans. This includes particular attention to climate change, poverty and food security. UNEP also supports the rotating Secretariat of ICRI through advice and input in the development of secretariat programmes of work, administering funding for secretariat operations and has over many years hosted the ICRI Secretariat designated administrative authority at UNEP-WCMC. With other ICRI members UNEP also develops motions and statements, and ensures dissemination of these within the UN system and to MEAs.

## Section VI

The role of national governments and legislation in providing an enabling environment for all stakeholders to meaningfully contribute to coral reef protection is key. The section could include some consideration of the distribution of obligations and rights, costs and benefits among

different stakeholders; the role of decentralization of decision making and management implementation, and the space for customary law.

Lastly, below are a few paragraphs of text that may be useful e.g. for sections I and II.

Tropical coral reefs are among the most biodiverse systems on the planet. They are also highly productive, and sustain human society through a range of provisioning and supporting services. Coral reefs, along with mangroves and seagrass beds, have been estimated to deliver the highest annual value in terms of ecosystem services of all natural ecosystems on the planet. Approximately 850 million people live within 100 km of reefs and derive some benefits from coral reefs, with over 275 million depending directly on reefs for livelihoods and sustenance. Reef-dependence is particularly high in small-island states, among many countries in the coral triangle, and among coastal populations in developing countries.

However, coral reefs, mangroves and seagrass beds are also highly impacted by human activities. More than 60 percent of the world's reefs are under immediate and direct threat from one or more local sources, and the world has already lost the goods and services provided by a fifth of the global coral reef area. The global coverage of seagrass beds has declined by almost a third in 100 years, and the rate of loss is estimated to have increased by an order of magnitude in the past 40 years. At least a quarter of the historical mangrove cover has been lost, but although the worldwide rate of degradation appears to have slowed in the last decade it remains several times higher than the rate of loss of terrestrial systems.

Over-fishing and destructive fishing, affecting more than half of the world's reefs, is the most pervasive direct threat. Coastal development and watershed-based pollution, as well as physical alteration and conversion also drive significant loss of mangroves and seagrasses. These threats are most severe in Southeast Asia, the global center of marine biodiversity, but are considerable in most other regions. Local stress reduces the ability of coral reefs, associated ecosystems and human populations to withstand and adapt to increasing climate change. Repeated coral bleaching has been recorded in most regions since the mass mortality in 1998. Although strong recovery has been seen in parts of the Indian Ocean and Western Pacific, especially where direct stress is low, recovery is stalled or weak where there are substantial human pressures. Under a 'business as usual' scenario almost all coral reefs will experience thermal stress sufficient to induce severe bleaching every year by the 2050s. Increasing ocean acidity constitutes an additional, if not yet fully understood, threat.

While tropical coral reefs are in a precarious situation, they provide valuable indicators of environmental stress and global change. Coral reefs are among the first ecosystems with a global distribution to show a global response to climate change related stress. They occur across a gradient of human uses and impacts, ranging from continental margins, areas of high population density and high reef dependence, to remote, oceanic and unpopulated areas, and offer opportunities for learning how to effectively tackle these challenges on local, national, regional and global levels. Coral reefs constitute a flagship system for understanding how ecosystem and societal processes interact, and for predicting future change. With mangroves and seagrass beds, they offer opportunities to understand climate change adaptation of both ecosystems and dependent communities. Mangroves and seagrass beds also offer considerable mitigation opportunities worthy of further attention.

Rivaling the species diversity of tropical coral reefs, cold water coral communities are now known to occur around the world, generally in waters deeper than 40m and to well beyond 1000m. While only a few species form actual 'reefs', cold water coral mounds and banks provide habitat and reproductive grounds for a range of species, including commercially important fish and shellfish.

Slow growing and fragile, these systems are extremely vulnerable to physical damage. Bottom fishing has already caused and continues to cause severe impacts, prospecting constitutes another potentially significant direct threat, and there is increasing concern regarding the implications of climate change. However, knowledge of cold water coral ecology, extent and status, as well as socio-economic value, remains limited.

#### Sources cited include

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