

United Nations Global Ocean Assessment

First global assessment of the state of the oceans

Peter Harris

Is the wealth generated by marine industries increasing or decreasing? Is the condition of global marine ecosystems improving or declining? What is the overall state of the global marine environment? How can we measure the state of the oceans at a global scale in a meaningful way? These questions were posed in 2002, when Heads of State gathered in Johannesburg, South Africa, for the World Summit on Sustainable Development. They decided to commence a Regular Process to review the ocean's condition every five years. It was noted that a large number of marine environmental assessments are already carried out by countries, regional authorities and international organisations. Consequently, it was decided that the best approach was to take advantage of these as much as possible. A key decision was to include social and economic aspects within the scope of the Regular Process, which has the full title 'Global Reporting and Assessment of the State of the Marine Environment including Socio-economic Aspects'.

The progress of the Regular Process within the United Nations (UN) has been managed by an Ad Hoc Working Group of the Whole, which is a subset of the General Assembly. The Working Group has determined that the Regular Process should be an integrated assessment of the oceans, including the cross-cutting thematic issue of food security, and that it should provide a baseline for future global assessments. The Working Group is a subset of the General Assembly and is open to all member countries.

In 2006 a start-up phase commenced to review over 500 existing marine environmental assessments from around the world (UNEP, IOC-UNESCO 2009). In 2010 the UN General Assembly appointed 25 experts representing all nations to carry out the first cycle of the Regular Process between 2010 and 2014. The immediate tasks for the Group of Experts include preparing a draft outline for the First Global Integrated Marine Assessment (the Assessment) and to design a process for drafting and reviewing it. Producing the Assessment will be a major undertaking that will have to involve many marine

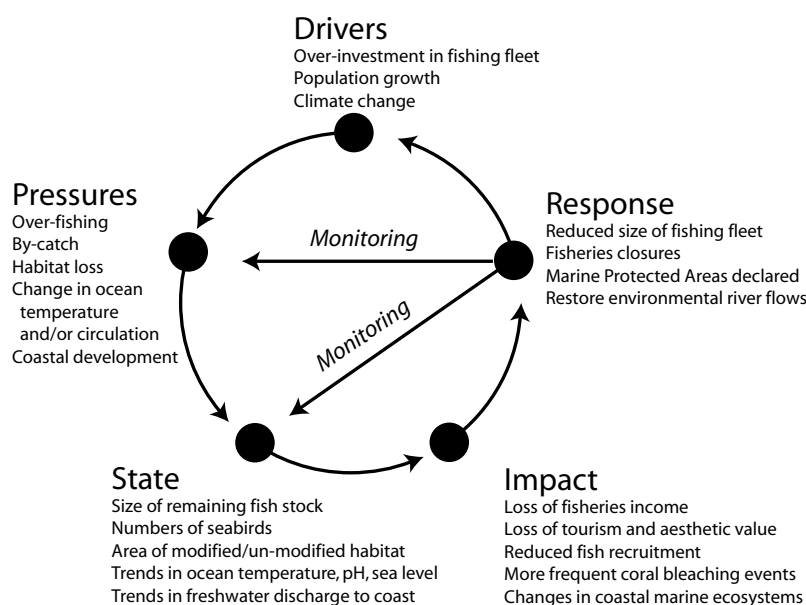


Figure 1. Drivers-Pressures-State-Impact-Response (DPSIR) Framework as used by the Regular Process in relation to the ocean environment (UNEP 2009). Drivers result in Pressures that have an effect on the State of the environment. Measuring the State of marine ecosystems also allows the Impact of pressures to be assessed and guides government policy Responses. Monitoring is required to gauge the effectiveness of the policy Responses.

experts from around the world in order to succeed. The Australian Government has supported the development of the Regular Process by providing experts to participate in the start-up phase (2006–2009). For the current phase of drafting the Assessment Dr Peter Harris of Geoscience Australia has been appointed as Australia's member of the Group of Experts.

Rationale for the structure of the Assessment

The Drivers-Pressures-State-Impacts-Response (DPSIR) framework shown in figure 1 suggests at least three possible approaches for structuring the Assessment:

- Pressures
- Habitats
- Ecosystem Services.

Using Pressures as chapters in the Assessment report has the advantage that the associated human activities are commonly linked with data collection and reporting structures for regulatory compliance purposes. For instance, permits that are issued for offshore oil and gas development require that specific monitoring and reporting obligations be met by operators.

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Using marine habitats as chapters has the advantage that Habitat is the property that inherently integrates many ecosystem features, including higher and lower trophic level species, water quality, oceanographic conditions and many types of anthropogenic pressures (UNEP, IOC-UNESCO 2009). The cumulative aspect of multiple pressures affecting the same habitat, that is often lost in sector-based environmental reporting (Halpern et al 2008), is captured by using Habitats as reporting units.

Using Ecosystem Services as chapters follows the approach of the Millennium Ecosystem Assessment which has the advantage of broad acceptance in environmental reporting (Millennium Ecosystem Assessment 2005). It includes provisioning services (food, construction materials, renewable energy, coastal protection) while

highlighting regulatory services and quality-of-life services that would not be captured using a pressures or habitats approach to structuring the Assessment.

Given that each approach has their own particular advantages, the Group of Experts proposed that all three approaches be included in the Assessment which would be structured into seven broad sections:

- I. Summary for decision-makers
- II. The Context of the Assessment
- III. Ecosystem Services
- IV. Cross-cutting issue—food security
- V. Other human activities
- VI. Biodiversity and habitats
- VII. Overall evaluations

It should be noted that this structure has not yet been adopted by the Working Group.

The coverage of the Assessment

A summary for decision-makers comprises Part 1 of the Assessment. This is followed by a broad, introductory survey of the role played by the oceans and seas in the life of the planet, the way in which they function, and human relationships to them in Part 2. This section will also explain the mandate from the United Nations to carry out the Assessment and how it was carried out.

Part 3 of the Assessment will describe the ecosystem services provided by the oceans. Provisioning services will not

be addressed in detail in this Part because they are covered in the pressures and habitat sections of the Assessment. Chapters on the earth's hydrological cycle, air/sea interactions and primary production will draw heavily on the work of the Intergovernmental Panel on Climate Change—the aim would be to use the work of the Panel, not to duplicate it or challenge it.

The cross-cutting issue of the oceans and seas as a source of food will be addressed in Part 4. This part of the Assessment will draw substantially on information collected by the Food and Agriculture Organisation of the United Nations. The economic significance of employment in fisheries and aquaculture and the relationship these industries have with coastal communities, including capacity-building needs of developing countries, will also be addressed.

All human activities that relate to the oceans (other than fisheries) will be covered in Part 5. Each chapter will outline the location and scale of activity, the economic benefits, employment and social role, environmental consequences, links to other activities and capacity-building needs. The inclusion of chapters on offshore oil and gas, the renewable energy (wind, wave and tidal power) sector, and seabed mining will be of particular significance for Geoscience Australia.

The aim of Part 6 is to:

- a) give an overview of marine biological diversity and what is known about it, drawing heavily upon the Census of Marine Life (Ausubel 2010)
- b) review the status and trends of, and threats to, marine ecosystems, species and habitats that have been identified by competent authorities at the global, regional or national level as threatened, declining or otherwise in need of protection (FAO 2008)
- c) review the regulatory and management approaches to conservation, the range of their application and results
- d) identify capacity-building needs.

Drafting the Assessment

The First Global Integrated Marine Assessment will be carried out by the Group of Experts (under the supervision of the Ad Hoc Working Group of the Whole) and will be assisted in drafting the report by a Pool of Experts who will be nominated by member states. The types of expertise required by different members of the Pool of Experts will include all aspects of marine industry and scientific research.

Successfully drafting the First Global Integrated Marine Assessment is a major undertaking that will require the full cooperation and participation of the world's community of marine experts. If the types of experts required are multiplied by the number of different

geographic regions covering the Earth, plus the number of chapters (including the different roles required for producing each chapter), it is likely that the Pool of Experts will require the contributions of about 1000 individuals.

The timeline for the production of the Assessment calls for the establishment of the Pool of Experts by April 2012 and for the final report to be submitted to the Ad Hoc Working Group by the end of 2014. Establishment of the Pool of Experts requires that individuals be nominated by their country. The Australian Government is calling on Australian marine experts interested in participating and supporting the Assessment to volunteer to become members of the Pool of Experts to ensure that the First Global Integrated Marine Assessment is as thorough and accurate as possible.

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For more information

email ausgeomail@ga.gov.au

Australian marine experts who are interested in being considered for appointment should contact

Travis Bover

Australian Department of Sustainability, Environment, Water,
Population and Communities

email travis.bover@environment.gov.au



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