

World Ocean Assessment

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The World Ocean Assessment (WOA)

A regular process for **global reporting and assessment of the state of the marine environment, including socioeconomic aspects**

(2004 UNGA Resolutions 57/141 and 58/240)

> Évaluation mondiale intégrée du milieu marin par le Mécanisme de notification et d'évaluation systématiques à l'échelle mondiale de l'état du milieu marin, y compris les aspects socioéconomiques

- Reviewing the state of the marine environment on a continual and systematic basis by **providing regular assessments at the global and supraregional levels**

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- An **integrated view of environmental, economic and social aspects** both current and foreseeable, building on existing regional assessments



General objective

- Ensure a **comprehensive overview of the ocean and the relationships between the ocean and humans**, covering all environmental, social and economic aspects
 - serve as a **background to the many decisions** that must be taken in that field at the international, national and local levels in **pursuit of sustainable development**
 - **no policy analysis or recommendations**
- *The main intended audience are **people in all sectors who will be making decisions** that will affect the marine environment*



First and second cycle

The aim is to provide an evaluation of **the state of the global ocean, the services that it provides and the human activities that influence its state.**

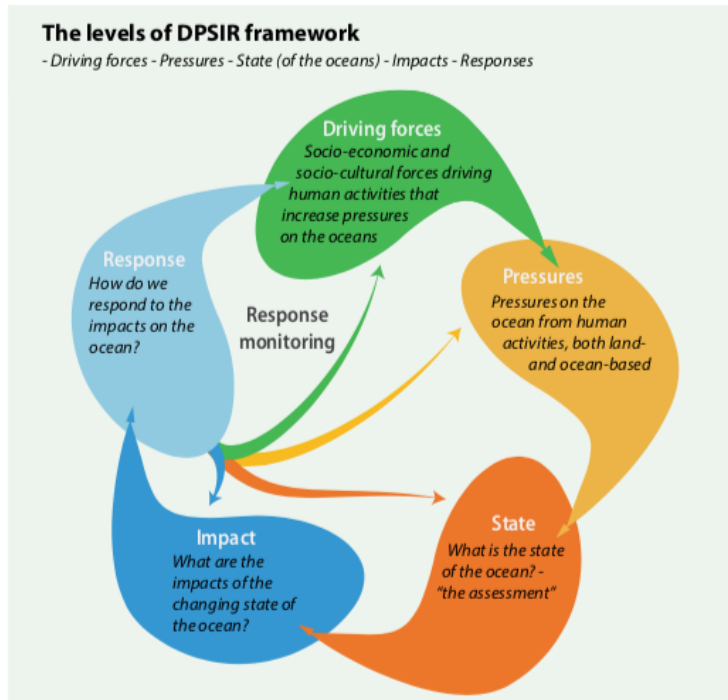
- First cycle (WOA I): focus on **establishing a baseline** (resolution 71/257) - *Completed in 2015*
Concluded that many parts of the ocean had been seriously degraded and that if the problems were not addressed, they would produce a destructive cycle of degradation in which the ocean could no longer provide many of the benefits on which humans rely
- Second cycle (WOA II and following cycles): record **developments from the baseline providing an understanding of changes**
 - *Environmental changes between 2010 and 2020*
 - *Economic and social consequences /changes*
 - *Main information gaps and main capacity-building gaps.*



Approach

- **Pool of experts** : voluntary contributions (WOA I) + nominated by States (WOA II)
 - Group of experts (assessment outline)
 - Writing teams (author list including lead /co-lead author for each chapter)
- Series of **region-specific workshops** aimed at identifying information and input (including regional capacity-building needs,..)
- Guidance for chapter writing : follows the **drivers-pressures-state-impact-response framework** + specific coverage of management issues (in WOA II).
- A **peer-review process** of chapters followed by a **process of review by States**.

Themes



1. For more information on the DPSIR framework please see: http://www.grida.no/go/graphic/sib/detail/dpsir-framework-for-state-of-environment-reporting_379f

World Ocean Assessment Overview 3

GRID-Arendal and UNEP 2016, World Ocean Assessment Overview, GRID-Arendal, Norway.

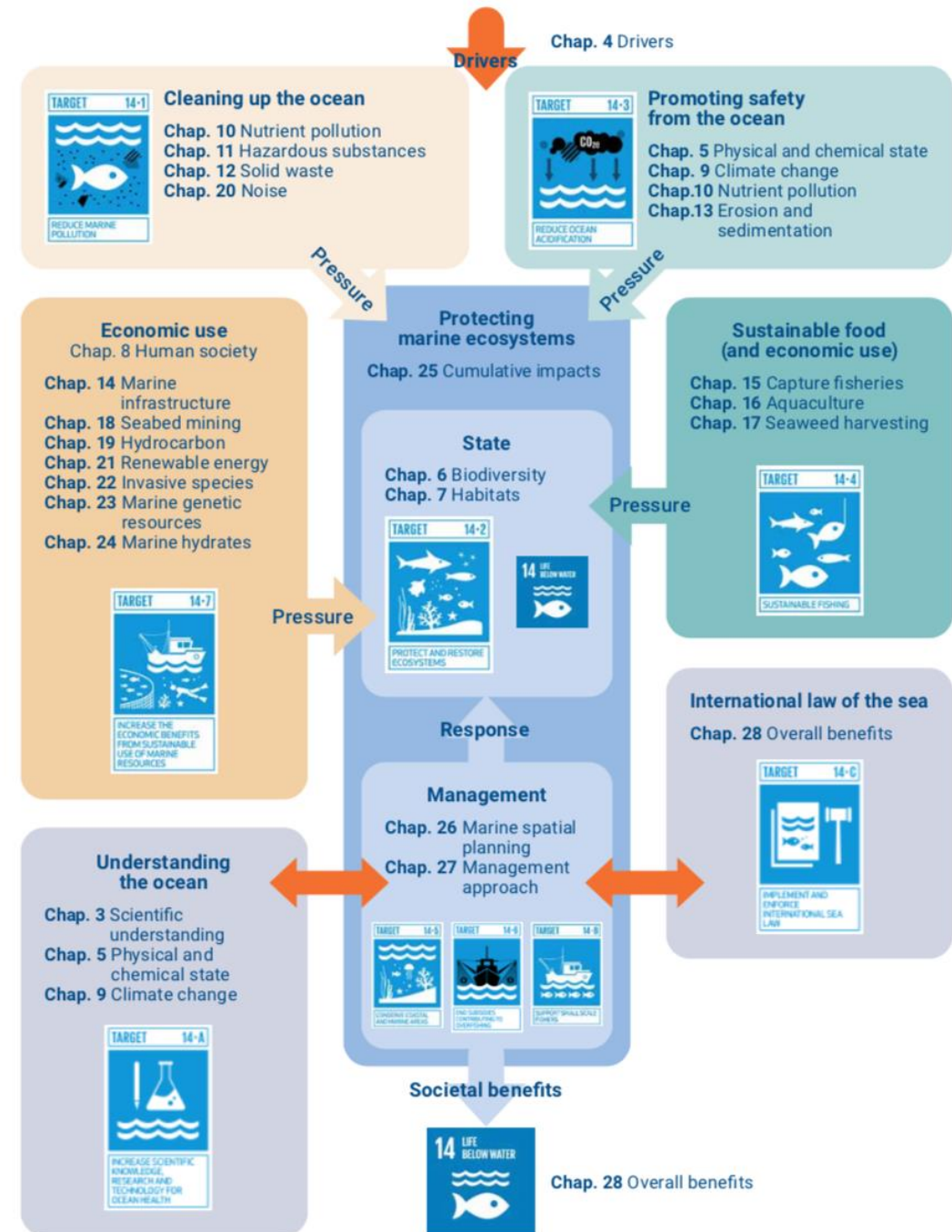
The ten themes addressed in the World Ocean Assessment

Theme A	Impacts of climate change and related changes in the atmosphere
Theme B	Higher mortality and less successful reproduction of marine biotas
Theme C	Food security and food safety
Theme D	Patterns of biodiversity
Theme E	Increased use of ocean space
Theme F	Increasing inputs of harmful material
Theme G	Cumulative impacts of human activities on marine biodiversity
Theme H	Distribution of ocean benefits and disbenefits
Theme I	Integrated management of human activities affecting the ocean
Theme J	Urgency of addressing threats to the ocean

Ref: WOA Summary, pages 10 to 41 providing details on the themes.

Linkages with the Sustainable Development Goals and the United Nations Decade of Ocean Science for Sustainable Development

WOA does not provide an update on the concept of ecosystem services or details of the new concept of nature's contributions to people as IPBES

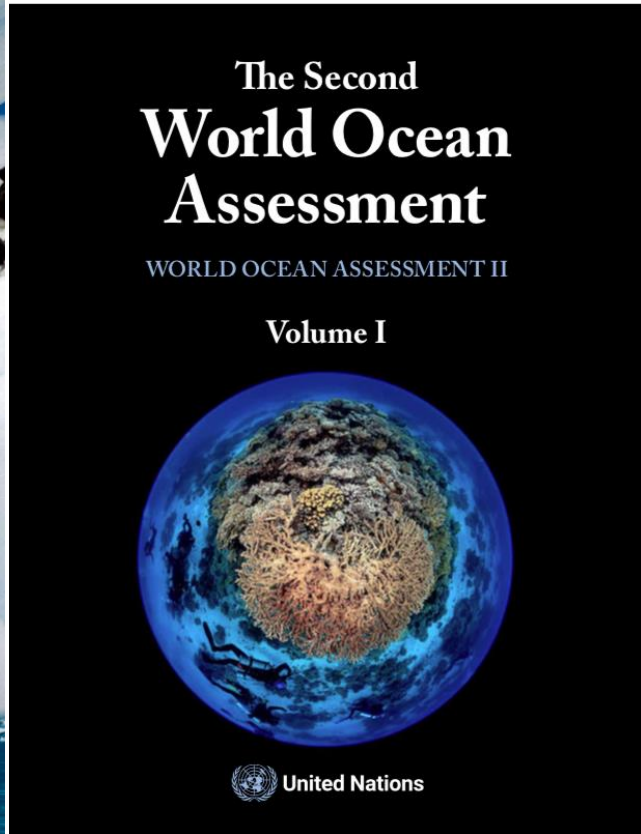




Selected national case studies and related natural and anthropogenic drivers and pressures

	Arctic Ocean		North Atlantic Ocean							South Atlantic Ocean	Indian Ocean	North Pacific Ocean	South Pacific Ocean	Indian Ocean-South Pacific Ocean boundary					
	Norway and Russian Federation, Barents Sea	Russian Federation, Arctic seas	United States, Arctic	Canada, north-east	Greenland, west and south-east	United Kingdom, North Sea	Portugal, south-west	Greece, bays and gulfs	Malta, coast	Trinidad and Tobago	Brazil, coast and bays	Bangladesh, coast	Australia, west	Viet Nam, coast	South China Sea	Russian Federation, eastern seas	Australia, north-east	New Zealand, east	
Climate warming	x	x	x	x	x	x									x	x			x
Temperature events (e.g., El Niño)													x	x			x		
Sedimentation								x		x	x	x		x					
Storms and wave action										x		x	x				x		
Bottom trawl fisheries	x			x	x	x	x	x				x		x	x	x		x	x
Overharvesting of invertebrates											x								
Spreading of new species	x	x	x	x			x		x		x								
Outbreaks of species										x							x		x
Pollution								x			x	x		x	x				
Eutrophication (from agriculture, aquaculture and sewage)								x			x				x				
Oil and gas exploitation and extraction				x		x				x	x				x				x
Offshore wind farms						x													
Large ship-breaking activities												x							
Anchoring								x	x		x								
Coastal infrastructure development								x	x		x				x				
Tourism								x	x		x	x							

Integrating changes in knowledge from multiple marine research fields



- marine ecosystem functions and processes
- ocean and climate;
- ocean crust and marine geohazards
- blue growth
- ocean health
- human health and well-be-ing;
- ocean technology and engineering
- ocean observations and marine data



The Global Integrated World Ocean Assessment: Linking Observations to Science and Policy Across Multiple Scales

Karen Evans^{1}, Sanae Chiba², Maria J. Bebianno³, Carlos Garcia-Soto⁴, Henn Ojaveer⁵, Chul Park⁶, Renison Ruwa⁷, Alan J. Simcock⁸, C. T. Vu⁹ and Tymon Zielinski¹⁰*

REVIEW

2019

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17 sous-chapitres
habitats from the coast to the
abyssal plains

- intertidal zone
- mangrove forests
- salt marshes
- estuaries
- deltas,
- seagrass meadows,
- cold water corals,
- tropical and subtropical coral reefs,
the Sargasso Sea,
- high-latitude ice
- hydrothermal vents and cold seeps,
- Seamounts + pinacles,
- submarine canyons + continental
slopes,
- trenches + ridges and plateau

Chapter 7

Trends in the state of biodiversity in marine habitats

- **Plankton**
- **Invertebrates**
- **Plants and macroalgae**
- **Fishes**
- **Marine mammals**
- **Marine reptiles**
- **Seabird**

Chapter 6

Trends in the biodiversity of the main taxa of marine biota



WOA II

Pressures - > Identified a lack of quantification of the impacts of pressures and their cumulative effects

- Climate change
- Unsustainable fishing (including illegal, unreported and unregulated fishing)
- Introduction of invasive species
- Atmospheric pollution causing acidification and eutrophication
- Excessive inputs of nutrients and hazardous substances, including plastics
- Increasing amounts of anthropogenic noise
- Ill-managed coastal development and extraction of natural resources.

Responses - > Identified needs to improving the management of human uses of the ocean to ensure sustainability

- improved coordination and cooperation to provide capacity-building in regions where it is lacking
- innovations in marine technology
- the integration of multidisciplinary observation systems
- the implementation of integrated management and planning
- improved access to, and exchange of, ocean knowledge and technologies