

**Assemblée générale**

Distr. générale
24 avril 2023
Français
Original : anglais

Soixante-dix-huitième session

Point 77 a) de la liste préliminaire*

**Les océans et le droit de la mer : les océans et le droit
de la mer**

**Rapport sur les travaux du Groupe de travail spécial
plénier sur le Mécanisme de notification et d'évaluation
systématiques à l'échelle mondiale de l'état du milieu
marin, y compris les aspects socioéconomiques**

**Lettre datée du 20 avril 2023, adressée au Président
de l'Assemblée générale par le Coprésident et la Coprésidente
du Groupe de travail spécial plénier**

Nous avons l'honneur de vous transmettre le rapport** sur les travaux du Groupe de travail spécial plénier sur le Mécanisme de notification et d'évaluation systématiques à l'échelle mondiale de l'état du milieu marin, y compris les aspects socioéconomiques. Le Groupe de travail spécial plénier a tenu sa dix-huitième réunion au Siège de l'Organisation des Nations Unies, le 27 mars 2023, en application du paragraphe 352 de la résolution [77/248](#) de l'Assemblée générale.

Nous vous serions reconnaissants de bien vouloir faire distribuer le texte de la présente lettre et du rapport comme document de l'Assemblée générale, au titre du point 77 a) de la liste préliminaire.

(Signé) Kimberly Louis
(Signé) Mark Zellenrath

* [A/78/50](#).

** Distribué uniquement dans la langue de l'original.



Report of the Ad Hoc Working Group of the Whole on the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects

I. Report of the Ad Hoc Working Group of the Whole

1. The eighteenth meeting of the Ad Hoc Working Group of the Whole on the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects, was convened pursuant to paragraph 352 of General Assembly resolution [77/248](#). The meeting of the Working Group was held at United Nations Headquarters in New York on 27 March 2023.
2. The Co-Chairs of the Working Group, Kimberly Louis (Saint Lucia) and Mark Zellenrath (Kingdom of the Netherlands), opened the meeting. The Director of the Division for Ocean Affairs and the Law of the Sea, Office of Legal Affairs delivered opening remarks on behalf of the Under-Secretary-General for Legal Affairs and United Nations Legal Counsel.
3. Representatives of 24 Member States¹ and four intergovernmental organizations and other bodies² attended the meeting.
4. The following members of the Group of Experts, established pursuant to paragraph 315 of General Assembly resolution [75/239](#), also attended the meeting: Mr. Roberto de Pinho (Brazil), Ms. Karen Evans (Australia), and Mr. Jorn Schmidt (Germany). Mr. de Pinho and Ms. Evans participated in their capacity as Joint coordinators of the Group of Experts, while Mr. Schmidt participated in his capacity as Deputy Coordinator of the Group of Experts.
5. The following documents were made available to the meeting: the provisional agenda; the annotated provisional agenda; a format; a proposed organization of work; a report of the Bureau of the Ad Hoc Working Group of the Whole on its work since the seventeenth meeting of the Ad Hoc Working Group; a report from the Group of Experts; a proposed scope of the third World Ocean Assessment(s); a comprehensive annotated outline of the third World Ocean Assessment(s); a list of expertise needed for the writing teams; and an assessment of potential gaps and overlaps in expertise and the way to manage them.³
6. Under agenda item 2, the Working Group adopted the agenda (see section II) and, under agenda item 3, agreed on the organization of work as proposed by the Co-Chairs. Some delegations made general statements under agenda item 3, expressing their full support for the process, in particular with regard to the development of the third World Ocean Assessment(s). Delegations welcomed the proposed scope and outline of the third World Ocean Assessment(s), noting it covered a broad range of elements impacting maritime activities including ecological, social, economic, and governance. The need for a systematic risk-based approach to producing relevant knowledge for policy and decision-makers was highlighted. A delegation underlined the importance of collaboration between relevant stakeholders and the inclusion of knowledge from different ocean-related intergovernmental

¹ Antigua and Barbuda, Argentina, Australia, Brazil, Canada, Côte d'Ivoire, Estonia, France, Greece, Japan, Kenya, Republic of Korea, Morocco, New Zealand, Oman, Peru, Russian Federation, Singapore, Spain, Thailand, United Kingdom of Great Britain and Northern Ireland, Uruguay, United States of America, and Viet Nam.

² European Union, International Seabed Authority, OSPAR, IOC-UNESCO

³ All listed documents are available at <https://www.un.org/regularprocess/events/eighteenth-meeting>.

processes or organizations, while noting its commitment to fostering inclusive scientific approaches respectful of indigenous and traditional knowledge. It was also noted that gender equity as well as diversity and inclusion were important in marine science. A delegation expressed its commitment to participate in the development of the third World Ocean Assessment(s) by providing data and information, particularly those related to deep-sea ecosystems. It was noted that the World Ocean Assessment(s) has and continues to provide an opportunity to map knowledge gaps and identify partnership opportunities.

7. Under agenda item 4, the Co-Chairs presented the report of the Bureau of the Working Group regarding the implementation of the programme of work for the period 2021-2025 for the third cycle of the Regular Process since the previous meeting of the Working Group. The Working Group took note of the report of the Bureau.

8. Under agenda item 5, the Working Group considered the progress made in the implementation of the preliminary timetable and implementation plan for the third cycle of the Regular Process. The Joint Coordinators of the Group of Experts presented an overview of several activities conducted by the group, which covered key achievements made in a number of areas, including the completion of the regional workshops conducted in 2022, the development of scope and outline of the third World Ocean Assessment(s), and engagement with ocean-related intergovernmental processes. The Working Group took note of the presentation from the Joint Coordinators.

9. Under agenda item 6, the Working Group considered the proposed scope of the third World Ocean Assessment(s) (see annex I), the comprehensive annotated outline of the third World Ocean Assessment(s) (see annex II), the list of expertise needed for the writing teams (see annex III), and the assessment of potential gaps and overlaps in expertise and the way to manage them (see annex IV). The Joint Coordinators of the Group of Experts presented the four documents to the Working Group. The Joint Coordinator recalled that, according to the programme of work for the third cycle, the scope of the Regular Process was to continue evaluating trends and identifying gaps. The Joint Coordinator noted that the Group of Experts undertook several brainstorming sessions to process the input from the regional workshops held in 2022, which supported the production of the four documents. Following the discussions on the presented documents, the Working Group approved the proposed scope of the third World Ocean Assessment(s), the list of expertise needed for the writing teams, and the assessment of potential gaps and overlaps in expertise and the way to manage them. Several delegations made some suggestions and submitted written proposals in relation to the comprehensive annotated outline of the third World Ocean Assessment(s). The Group of Experts prepared a revised comprehensive annotated outline and responses to the comments submitted by the Working Group, which were circulated to the Working Group on 6 April 2023, and placed under the silence procedure.⁴ The Working Group approved the revised comprehensive annotated outline through the silence procedure on 12 April 2023.

10. Under agenda item 7, the secretariat provided updates on the Regular Process trust fund. The secretariat informed that since its last report to the Working Group in November 2022, the voluntary Trust Fund has received a contribution from Ireland. The secretariat noted its appreciation to Ireland and other States that had made contributions to the trust fund. It was noted that the trust fund balance that was available for the purpose of supporting the operations of the Regular Process, including for the provision of assistance to members of the Group of Experts from developing countries, was approximately \$309,000. The secretariat noted that no contributions have been received for the special

⁴ All listed documents are available at <https://www.un.org/regularprocess/events/eighteenth-meeting>.

scholarship fund and stressed the importance of contributions to the special scholarship fund to support training programs for developing countries.

II. Agenda of the eighteenth meeting of the Ad Hoc Working Group of the Whole

11. The Ad Hoc Working Group of the Whole adopted the agenda set out below.
 1. Opening of the meeting.
 2. Adoption of the agenda.
 3. Organization of work.
 4. Report of the Bureau of the Ad Hoc Working Group of the Whole.
 5. Information from the Group of Experts regarding implementation of the preliminary timetable and implementation plan for the third cycle of the Regular Process.
 6. Consideration of documents prepared by the Group of Experts on the next World Ocean Assessment(s):
 - Proposed scope of the third World Ocean Assessment(s);
 - Comprehensive annotated outline of the third World Ocean Assessment(s) containing a summary of content and format;
 - List of expertise needed for the writing teams;
 - Assessment of potential gaps and overlaps in expertise and the way to manage them.
 7. Other matters.
 8. Closure of the meeting.

ANNEX I

REGULAR PROCESS FOR THE GLOBAL REPORTING AND ASSESSMENT OF THE STATE OF THE MARINE ENVIRONMENT, INCLUDING SOCIO-ECONOMIC ISSUES

THE PROPOSED SCOPE OF THE THIRD WORLD OCEAN ASSESSMENT

The 18th meeting of the Ad Hoc Working Group of the Whole has been convened in accordance with the programme of work for the period 2021 to 2025 for the third cycle of the Regular Process. This programme of work was adopted by the Ad Hoc Working Group of the Whole on the Regular Process during its thirteenth meeting in October 2020 and endorsed by the General Assembly through its resolution 75/239 of 31 December 2020 on “Oceans and the law of the sea”.

The 18th meeting of the Ad Hoc Working Group of the Whole to be held from 27 to 28 March 2023 at the United Nations Headquarters in New York will consider the following documents:

- **The proposed scope of the next World Ocean Assessment(s);**
- **The comprehensive annotated outline of the World Ocean Assessment(s) containing a summary of content and format;**
- **The list of expertise needed for the writing teams;**
- **The assessment of potential gaps and overlaps in expertise and the way to manage them.**

In setting out the scope of the assessment(s), the Group of Experts have identified key thematic areas that the assessment(s) will cover (where scope is equivalent to the thematic and temporal extent of assessment(s)).

The programme of work for the third cycle of the Regular Process identifies:

“In resolution 71/257, the General Assembly recalled that the scope of the first cycle of the Regular Process focused on establishing a baseline, and decided that the scope of the second cycle would extend to evaluating trends and identifying gaps. Based on these considerations and the lessons learned from the second cycle, this draft programme of work assumes a similar scope for the third cycle.”

This identifies that the scope of the assessment(s) of the third cycle is required to include an evaluation of trends and identification of gaps.

This document intends therefore, to detail the main thematic areas to be included in the assessment(s) of the third cycle of the Regular Process and the temporal scale at which trends and gaps will be evaluated.

This document does not include consideration of the structure or format of the assessment(s) as these are to be included in a comprehensive annotated outline of assessment(s) which has been included in the documents provided to the 18th meeting of the Ad Hoc Working Group of the Whole.

Thematic areas identified via external consultation and approved by the Bureau of the Ad Hoc Working Group of the Whole

The concept note for the third cycle, approved by the Bureau of the Ad Hoc Working Group of the Whole, identifies the following thematic areas for inclusion within the overall scope of assessment(s) produced during the third cycle:

- sustainable and inclusive ocean economy
- gender,
- coastal communities
- Indigenous knowledge

It also identifies inclusion of the knowledge needed to support:

- the evaluation of SDG 14 targets, specifically spatial conservation measures, marine spatial planning, fisheries subsidies and small-scale fisheries, especially in Small Island Developing States (SIDS);
- the Intergovernmental Panel on Biodiversity and Ecosystem Services and Intergovernmental Panel on Climate Change processes;
- the Convention on Biological Diversity post-2020 global biodiversity framework.

Thematic areas arising from the regional workshops held to assist the scoping process

The scoping exercise and the preparation of the comprehensive annotated outline of the assessment(s) of the third cycle has been supported through regional workshops focused on identifying, among other things, regional priorities, the thematic focus of components of the assessment(s) and key topics that the chapters comprising the assessment(s). The five regional workshops were held in:

- Tanzania, 25-27 July 2022, with a focus on the Indian Ocean (including the Arabian Sea and the Bay of Bengal), the Red Sea and Gulf of Aden and the ROPME/RECOFI area
- Jamaica, 12-14 September 2022, with a focus on the North Pacific and the Wider Caribbean area
- Argentina, 28-20 September, with a focus on the South Atlantic (between the African and American coasts) and the Wider Caribbean area
- The Kingdom of the Netherlands, 28-30 November, with a focus on the North Atlantic, the Baltic Sea, the Mediterranean Sea and the Black Sea region
- Indonesia, 13-15 December, with a focus on the Indian Ocean (including the Arabian Sea and the Bay of Bengal), the Red Sea and Gulf of Aden and the ROPME/RECOFI area and the North and South Pacific

Participants of the workshops, were provided with the opportunity to provide presentation on regional perspectives, initiatives that could contribute to the third cycle and through moderated break-out group sessions were provided with the opportunity to contribute their perspectives on:

- Potential formats or products that would improve the relevance and utility of the assessment(s) of the third cycle to policymakers in the region;
- Additional products that might assist policy-makers in progressing the United Nations 2030 Agenda and reporting against the Agenda;
- Whether there should be one assessment or several targeted or thematic products
- Where the assessment(s) might produce original work produce original work and where existing assessments could be referred to;
- Whether the assessment(s) should incorporate future scenarios and associated likelihoods

- Where might assessment(s) focus on responses or solutions that could be utilized to address changes observed;
- Mechanisms/processes the Regular Process can incorporate for supporting recognition and integration of Indigenous, traditional, and local knowledge and in association how might outputs from the third cycle be best co-designed and co-delivered with custodians of Indigenous, traditional and local knowledge;
- Existing regional organizations/processes and mechanisms through which they could provide information that is relevant to the assessments of the Regular Process;
- Relevant processes and activities, such as the Ocean Decade, IPBES and the IPCC and how these might be leveraged to support the Regular Process, particularly in bringing information from outside traditional research areas into assessments (e.g., socio-economic information, indigenous and traditional owner knowledge and perspectives). In association, how might assessments produced during the third cycle better incorporate national progress against the 2030 Agenda;
- How to increase and strengthen the Pool of Experts, including building capacity, and improve networking and collaboration between experts and organizations taking part in the Regular Process, including with the Group of Experts and Secretariat;
- How to extend the outreach of the outputs from the third cycle. In association the specific outreach and communication activities that might be incorporated that could support access to the outputs of the third cycle by specific stakeholders in the region including local and indigenous communities;
- Outreach activities that might be undertaken to provide the content from the outputs of the third cycle to decision makers and support use of the content across the region, thereby bridging gaps in the science policy interface,

In considering the extensive contributions provided by workshop participants, including a number of specific proposals on assessment outlines provided by individuals attending the workshops, the Group of Experts undertook an in-depth series of brainstorming sessions aimed at identifying the key elements from the workshops that could form the basis of Output 1 of the programme of work (the assessment(s) of the third cycle). These involved dedicated meetings of the Group of Experts facilitated through the use of virtual whiteboards that focused on distilling down the content generated through the workshops with a focus on the overall structure of assessment(s), the focus of assessment(s) (i.e., the thematic, temporal, spatial focus of the assessment(s) and the specific topics (content) to be included in the assessment(s).

The key elements identified included:

1. A short update on trends since the second World Ocean Assessment

The main components of the second World Ocean Assessment (WOA II) that would need to be considered in providing an update include:

- Drivers of change in the marine environment;
- Scientific understanding of the ocean;
- The physical and chemical state of the ocean;
- The state of the main taxa of marine biota;
- The state of marine habitats;
- The state of human society in relation to the marine environment;
- Pressures on the marine environment;
- Management approaches to the marine environment;

2. Expansion of topics from WOA II where there has been rapid development or new, substantive issues requiring consideration.

A number of topics identified as emerging areas in WOA II are either undergoing rapid expansion or are being identified as growing issues. These were identified by the Group of Experts as needing some broader consideration in the assessment(s) of the third cycle (beyond a short update on trends). These included:

- Marine renewable energy

- Emerging contaminants

3. **New/emerging topics of issue/interest**

In considering new/emerging topics of interest, the following topics were identified:

- Sustainable and inclusive ocean economies
- Blue carbon/Carbon sequestration
- Decarbonisation
- New technologies for mitigating threats
- Equitable distribution/sharing of benefits
- Nature-based solutions
- Ecosystem restoration
- The ocean and human health

Other thematic areas identified from the workshops that were identified included:

- Ocean governance
- Social and economic aspects
- Capacity of ocean science to contribute to sustainable development
- Ecosystem services
- Transboundary risks and impacts
- Integration of gender issues
- Acknowledgement and integration of Indigenous (and traditional owner) knowledge

Some of these topics were identified as overlapping with those already approved by the Bureau of the Ad Hoc Working Group of the Whole.

In considering the above topics, current knowledge and capacity gaps would be considered.

Temporal scale at which trends and gaps will be evaluated

In considering the temporal period across which trends since the WOA II would be evaluated it, was recognised that there was a lack of consistency in approaches across chapters of the WOA II. This highlighted that additional effort would need to be undertaken by the Group of Experts in providing consistent and clear guidance to writing teams. Given that most drafts of chapter contained in WOA II had been drafted by mid 2019, very little further updating of content was done after this date. In light of this, it was identified that the period to be evaluated for any changes since WOA II could be 2018-2024. This time period ensures that any literature or content produced just prior to the finalisation of chapters in the WOA II could be captured and takes into account that the current timetable for the third cycle identifies that first drafts of chapters in the assessment(s) of the third cycle will be completed within the first half of 2024. It should be noted that this temporal period should not preclude literature released or published prior to this time period being included in chapters, particularly where it provides context to the evaluation of trends and gaps.

Where topics that were considered in WOA II, but identified as needing greater consideration due to rapid development/emerging issues, the same temporal scale for content would be applied. Again, it should be noted that this temporal period should not preclude literature released or published prior to this time period being included in chapters, particularly where it provides context to the evaluation of trends and gaps.

New and emerging topics should consider temporal scales of relevance to the topic and the period across which content on the topic has been developed. By nature of these topics being new and emerging the assumption is that the temporal period across which these topics would be considered would be on the order of the last decade.

Other intergovernmental processes and UN initiatives

The scoping exercise identified that the assessment(s) should also consider the following:

1. Provision of knowledge to support intergovernmental processes

In including content on the knowledge needed to support the Intergovernmental Panel on Biodiversity and Ecosystem Services and Intergovernmental Panel on Climate Change processes, the assessment(s) should focus on content that add knowledges and fill gaps relevant to these processes rather than repeat content either directly contained or utilized by the reports produced by these processes.

2. Other new international agreements

It was recognised that the process for developing an agreement under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (BBNJ) will likely conclude at around the same time that the documents on the scope of the assessment(s) and the annotated outline of assessment(s) will be considered for approval by the AHWG. In addition, progress is underway on developing a new international convention on the sustainable production and consumption of plastics (the intergovernmental negotiating committee met for the first time at the end of 2022). It was identified that it was important to capture the progress on these two agreements.

3. The UN Decades

The programme of work for the third cycle explicitly identifies that “Particular focus will be given to ensuring a dynamic and mutually reinforcing cooperation between the activities of the Regular Process and the United Nations Decade on Ocean Science throughout the first half of the Decade.” Further, the Group of Experts identified that the United Nations Decade on Ocean Science for Sustainable Development and the United Nations Decade on Ecosystem Restoration were both relevant to the third cycle, producing a policy relevant brief summarising the content of the second World Ocean Assessment within the context of the two Decades. Consideration of the activities and outputs from these two Decades was identified as important for the assessment(s) of the third cycle.

ANNEX II**REGULAR PROCESS FOR THE GLOBAL REPORTING AND ASSESSMENT OF THE
STATE OF THE MARINE ENVIRONMENT, INCLUDING SOCIO-ECONOMIC ISSUES****A COMPREHENSIVE ANNOTATED OUTLINE OF THE THIRD WORLD OCEAN
ASSESSMENT**

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- **The list of expertise needed for the writing teams;**
- **The assessment of potential gaps and overlaps in expertise and the way to manage them.**

This document provides a comprehensive annotated outline of the assessment that will form Output 1 of the programme of work for the third cycle.

Development of the comprehensive annotated outline

This annotated outline has been developed through a process of consultation facilitated through five regional workshops, where participants were asked to consider various elements of the structure, format and content of what would form the assessment(s) of the third cycle. The five regional workshops were held in:

- Tanzania, 25-27 July 2022, with a focus on the Indian Ocean (including the Arabian Sea and the Bay of Bengal), the Red Sea and Gulf of Aden and the ROPME/RECOFI area
- Jamaica, 12-14 September 2022, with a focus on the North Pacific and the Wider Caribbean area
- Argentina, 28-20 September, with a focus on the South Atlantic (between the African and American coasts) and the Wider Caribbean area
- The Kingdom of the Netherlands, 28-30 November, with a focus on the North Atlantic, the Baltic Sea, the Mediterranean Sea and the Black Sea region
- Indonesia, 13-15 December, with a focus on the Indian Ocean (including the Arabian Sea and the Bay of Bengal), the Red Sea and Gulf of Aden and the ROPME/RECOFI area and the North and South Pacific

In considering the extensive contributions provided by workshop participants, the Group of Experts undertook an in-depth series of brainstorming sessions aimed at identifying the key elements from the workshops that would form the basis of Output 1 of the programme of work (the assessment(s) of the third cycle). These key elements formed the basis for the formulation of this annotated outline. Further detail on the scoping process and the regional workshops is provided in the document on the proposed scope of the next World Ocean Assessment, included in the documents provided to the 18th meeting of the Ad Hoc Working Group of the Whole.

Resounding feedback from the workshop was that previous formats of the World Ocean Assessment were challenging in terms of accessibility, searchability and therefore utility. These challenges resulted in many participants identifying that they had rarely, if ever, used the World Ocean Assessments. Workshop participants

recommended that the Group of Experts explore mechanisms to improve the ability of stakeholders to access the assessment(s), find information within the assessment(s) and then utilise that information.

The workshops also identified that rather than providing information on pressures on the ocean and the human activities and responses to mitigating and managing those pressures as individual chapters, within separate sections of the assessment, it would be of greater use to present these in an integrated manner. This was identified as being useful in better understanding the various options of responses to individual pressures. Further, it was identified that the social components of the assessment were underdeveloped and there should be greater emphasis placed on these elements. Finally, workshop participants identified that any summaries developed from the assessment(s), whether they be in the form of the technical abstracts developed from the first World Ocean Assessment (WOA I) or the policy relevant briefs developed from the second World Ocean Assessment (WOA II), should be produced within the same cycle as the assessment, rather than waiting until the next cycle. This would ensure that the content of summaries produced in the third cycle were timely and relevant rather than being 2-3 years out of date once produced.

In response to the input provided via the regional workshops, the below comprehensive annotated outline has been developed. It will be produced as one assessment; however, this cycle will present most of the assessment in a web-based format that allows for digital linking to core datasets, repositories (including for scripts and code), data providers, literature databases etc., thereby improving accessibility to the content of each section of the assessment. It is noted that the multi-stage review process will require that the whole assessment be provided in a “hard” format, however the final assessment will not be printed as one document, as has been the case in previous cycles, and rather than being provided as a single compiled pdf on the Regular Process website, sections of the assessment will be provided in digital stand-alone, interactive formats. It has been identified that this will require the engagement of specific consultants and consulting agencies by the Secretariat and identification of potential external partners that might voluntarily contribute to the Regular Process. All content produced will be translated into the six official languages of the United Nations.

The overall summary of the assessment will be printed, as will be the thematic summaries produced from the assessment and provided in the six official languages of the United Nations.

Elements of the third World Ocean Assessment - summary

The third World Ocean Assessment will comprise six core elements:

1. An overall summary
2. A detail of the approach to the assessment
3. An overview of global ocean governance
4. An update on the change since WOA2 (containing 5 chapters and 27 sub-chapters)
5. An overview of the socioecological system of the ocean comprising:
 - a. A sustainable and inclusive ocean economy (containing 10 chapters and 8 sub-chapters)
 - b. One health (containing 9 chapters)
6. Thematic summaries

These core elements will be supported by:

- Spatial maps
- Infographics
- Short videos
- Factsheets
- Quotes
- An interactive database of literature

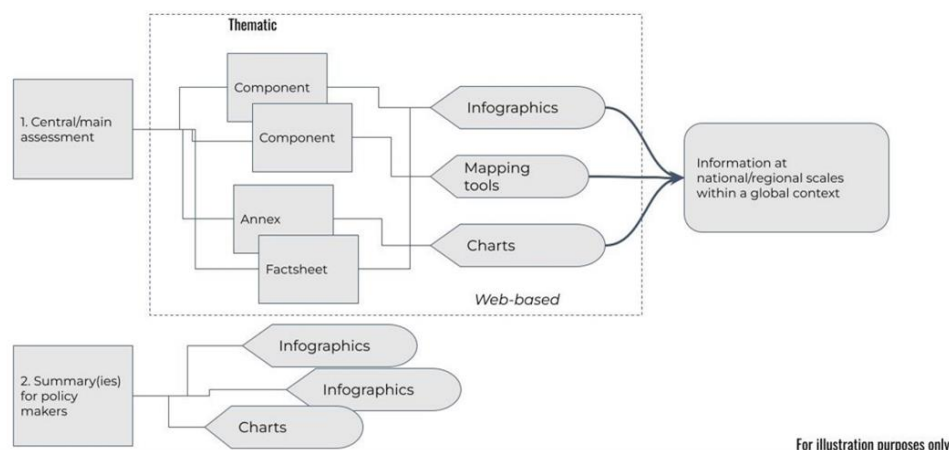


Figure 1. A schematic representation of the assessment with the core part of the assessment comprised of components (sections or chapters) which may have associated annexes where further details on core datasets, repositories (including for scripts and code), data providers, literature databases etc., could be digitally made available and from which factsheets could be produced. These components will integrate infographics, spatial maps and charts that can summarise information and provide details of regional content within a global context. Thematic summaries that also incorporate infographics, spatial maps and charts will be produced from the main assessment and provided in parallel with the publication of the assessment.

While the assessment provides a dedicated section focused on an update to the WOA II, the vast majority of updates on pressures (previously presented in chapters 9-21 of WOA II), human activities (presented in chapter 8 of WOA II) and management approaches (presented in chapters 26-28 of WOA II) are presented via an integrated approach presented in two sections of the assessment. The first of these sections focuses on human activities, associated economies and the data, knowledge and tools for facilitating sustainability and inclusivity in those economies (“A sustainable and inclusive ocean economy”) and the other focuses on the nexus between the physical and chemical components of the ocean, the organisms that live in the ocean and humans (“One health”). Where the individual chapters of these two sections provide updates to WOA II, they will be cross referenced accordingly.

The WOA II utilised the Drivers, Pressures, State, Impact, Response (DPSIR) framework to organise the chapters of the assessment. This framework will also be utilised in the assessment of the third cycle however it will utilise this framework in a more integrated way within the individual chapters of the assessment, thereby providing direct linkages between pressures, impacts and responses.

Detailed annotated outline of the third World Ocean Assessment

Section 1: Overall summary

This section will summarise the whole of the assessment. The framing of this summary will take into account the knowledge needed to support:

- The evaluation of SDG 14 targets, specifically spatial conservation measures, marine spatial planning, fisheries subsidies and small-scale fisheries, especially in Small Island Developing States (SIDS);
- The Intergovernmental Panel on Biodiversity and Ecosystem Services and Intergovernmental Panel on Climate Change processes;
- The Convention on Biological Diversity post-2020 global biodiversity framework.

This section of the assessment will be printed.

This section will be written by the Group of Experts.

Section 2: Approach to assessment

This section of the assessment contains a summary of methodologies, datasets etc., included in all of the sections and chapters of the assessment including:

- The approach to updating the second World Ocean Assessment (WOA II), including the methods used to evaluate trends and gaps
- How small-scale, medium-scale and large-scale components of fisheries and aquaculture are defined;
- The component parts, including the available scientific data, tools and knowledge that can be utilised for identifying and implementing sustainable pathways at local, regional and global scales. This will not prescribe specific use of these data, tools and knowledge for specific sectors or situations, but rather identify evidence-informed plausible scenarios of the future that incorporate the use of the data and knowledge currently available within the context of achieving the Sustainable Development Goals.
- The controlled vocabulary for the assessment
- The approach for developing other components of the World Ocean Assessment, including how the outputs from the regional workshops and any specific workshops held have been incorporated into the content of the chapters and sub-chapters of the assessment.

This section of the assessment will be web-based, thereby allowing for the provision of direct links to core datasets, repositories (including for scripts and code), data providers etc., thereby improving accessibility to the details of the methods used in each section of the assessment.

This section will be written by the Group of Experts

Section 3: A global overview of ocean governance

The section provides a high-level factual summary of overall change in conventions, associated resolutions, international agreements and regional treaties in place regulating aspects of the ocean, including the recent development of conventions and international agreements. It will also include the relevant organisations overseeing these conventions and international agreements. This section aims to provide a high-level overview of relevant international conventions and agreements and their linkages as broad background to international ocean governance.

This may include, noting the list of conventions, agreements and treaties will be a consideration of the writing team within the context of specific sectoral governance that will be included in Section 5 of the assessment:

- o The United Nations Convention on the Law of the Sea (UNCLOS), associated implementing agreements and authorities mandated under UNCLOS (including the International Seabed Authority)
- o The United Nations Framework Convention on Climate Change
- o Those with a focus on biodiversity (including those associated with the Convention on Biological Diversity, the Convention on the Conservation of Migratory Species of Wild Animals, The International Whaling Commission, Convention on International Trade of Species of Wild Animal)
- o Those with a focus on underwater heritage (including the World Heritage Convention)
- o Sectoral frameworks (legal and institutional elements) operating at global and regional scales
- Fisheries (including those implemented by FAO, RFMO's, RFBs and others such as the Central Arctic Ocean Fisheries Agreement)
- Shipping (including those implemented by the International Maritime Organisation)
 - o Conventions that are in development including: an agreement under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction
- o Other international agreements in place including the 2030 Agenda for Sustainable Development

- o Regional Treaties and Seas Conventions and relevant bodies:
 - Abidjan Convention
 - Antarctic Treaty system (this could include consideration of Convention for the Conservation of Antarctic and Marine Living Resources and Convention for the Conservation of Antarctic Seals)
 - Arctic Council
 - Barcelona Convention
 - Bucharest Convention
 - Baltic Marine Environment Protection Commission (HELCOM)
 - International Council for the Exploration of the Sea (ICES)
 - Nairobi Convention
 - Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR)
 - Permanent Commission of the South Pacific (CPPS)
 - Sargasso Sea Commission

This section will be a stand-alone section of the assessment, allowing for direct reference for those only interested in this part.

The section will be web-based, thereby allowing for the provision of direct links to core datasets, repositories, data providers, data metadata etc., thereby improving accessibility to detailed information referenced in the assessment.

The section will be written by a writing team.

Section 4: Change since the second World Ocean Assessment

This section will be specifically focused on providing detail of the changes that have occurred in the ocean since WOA II (i.e., over the period of 2018-2023) and therefore will directly relate to specific chapters in WOA II.

Chapter 1: Drivers (this chapter relates to chapter 4 of WOA II)

This chapter will cover the same drivers as WOA II to allow for consistency across assessments and direct comparison between assessments:

- Population demography and growth (including immigration and emigration, urbanization, megacities etc.)
- Economic activity (including new and expanding markets etc.)
- Technological advances (including digitalization, automation etc.)
- Governance structures and geo-political instability
- Climate change (high-level perspectives including overall trends in emissions, regulation, commitments etc.)

Chapter 2: Scientific understanding (this chapter relates to chapter 3 of WOA II)

This chapter will cover:

- Improvements in:
 - o Ocean observing and monitoring programmes/networks
 - o Seabed mapping
 - o Ocean modelling including forecasting and predictions
 - o Understanding human-ocean interactions/relationships (including the role of social sciences and humanities in improving understanding)
 - o Marine genetics
 - o Transdisciplinarity including acknowledgement of Indigenous, Traditional and Local Community Knowledge and co-creation of science-based products and outputs
 - o Citizen science

- Community science
- Advancements in solution-based science
- It will also identify linkages with the IOC-UNESCO Global Ocean Science Report and the UN Decade of Ocean Science for Sustainable Development, particularly in terms of knowledge and capacity gaps.

Chapter 3: Trends in the physical and chemical state of the ocean (this relates to chapter 5 of the WOA II)

This chapter will provide an update on changes in the physical and chemical state of the ocean since WOA II including on those elements identified in WOA II such as:

- Ocean salinity
- Ocean temperature (including ocean heat content)
- Global ocean circulation patterns at all scales (including vertical and horizontal patterns such as stratification, boundary currents)
- Sea-level change
- Ocean chemistry (including acidification and changes to carbon and nutrients)
- Dissolved oxygen (including deoxygenation)
- Sea-ice

The chapter will provide high-level reference to relevant outputs from the Intergovernmental Panel on Climate Change, including the role of the ocean in the climate system as well as information produced via other processes (noting the offset of timing of cycles between processes generating global and regional assessments). It will not contain material on the impacts of changes in the physical and chemical state of the environment associated with pressures or the responses to these as these will be covered in chapter 6 of this section and Section 5.

Chapter 4: Biodiversity (this relates to chapter 6 of WOA II)

This chapter will provide an update on changes in the abundance, distribution and functional role of the following taxa groups across the period 2018-2024 (following the temporal period identified in the document outlining the scope of the assessment). This chapter will follow the chapters and sub-chapters included in WOA II. Context will be broadly provided referencing WOA I and WOA II assessment:

Sub-chapter 4a: Plankton

This sub-chapter includes:

- Phytoplankton (including harmful algal blooms)
- Zooplankton
- Microbes (including viruses, bacteria, fungi and others)
- Fungi

Sub-chapter 4b: Cephalopods

Note that cephalopods were included as an addendum to subchapter 6B in WOA II and so will be included as a distinct subchapter in this assessment.

Sub-chapter 4c: Marine benthic invertebrates

Sub-chapter 4d: Fishes

Sub-chapter 4e: Marine mammals

Sub-chapter 4f: Marine reptiles

Sub-chapter 4g: Seabirds***Sub-chapter 4h: Marine plants******Sub-chapter 4i: Algae other than phytoplankton*****Chapter 5: Habitats (this relates to chapter 7 of the WOA II)**

This chapter will provide an update on changes in the abundance, distribution and functional role of the following taxa groups across the period 2018-2024 (following the temporal period identified in the document outlining the scope of the assessment). This chapter will follow the chapters and sub-chapters included in WOA II. Context will be broadly provided referencing WOA I and WOA II assessment:

Sub-chapter 5a: Intertidal zone***Sub-chapter 5b: Biogenic reefs and sandy, muddy and rocky shore substrates******Sub-chapter 5c: Atoll and island lagoons******Sub-chapter 5e: Tropical and subtropical coral reefs******Sub-chapter 5e: Cold water corals and sponges******Sub-chapter 5f: Estuaries and deltas******Sub-chapter 5g: Seagrass meadows******Sub-chapter 5h: Mangroves******Sub-chapter 5i: Salt marshes******Sub-chapter 5j: Continental slopes and submarine canyons******Sub-chapter 5k: High-latitude ice***

Including ice over the open ocean

Sub-chapter 5l: Seamounts and pinnacles***Sub-chapter 5m: Abyssal plains******Sub-chapter 5n: Pelagic domain***

This subchapter is an extension of Chapter 7N of WOA II and will cover epipelagic, mesopelagic, bathypelagic zones

Sub-chapter 5o: Ridges, plateaus and trenches***Sub-chapter 5p: Hydrothermal vents and cold seeps******Sub-chapter 5q: Sargasso Sea***

The chapter will also include a new sub-chapter on:

Sub-chapter 5r: Fjord systems

Chapter 6: Pressures (this chapter relates to chapters 13, 14, 22 and 25 of WOA II)

This chapter will provide an update on changes in pressures not covered explicitly in the chapters contained in section 5 including:

- Erosion and sedimentation
- Marine infrastructure (outside of coastal areas)
- Invasive species
- Cumulative effects

This is a stand-alone section of assessment, allowing for direct reference for those only interested in this part.

The section will be web-based, thereby allowing for the provision of direct links to core datasets, data repositories, data providers, data metadata etc., thereby improving accessibility to detailed information referenced in the assessment.

The six chapters and associated sub-chapters of this section will be written by individual writing teams.

Section 5: Socio-ecological systems

This section provides an integrated view of the social and ecological systems (coupled human-environment systems) of the ocean and the interactions between them. In doing so, the section will consider the pressures that human activities are placing on the ocean, the social and economic conditions, including the demographic, institutional, and technological factors associated with these systems and the data, tools and information, including management approaches available for progressing sustainable pathways for human activities in the ocean. In considering social conditions, the section will include an overview of benefits and disbenefits, gender, equity and Indigenous, traditional owner and local community knowledge. Further it will include detail of sector specific governance.

The section comprises two sub-sections, the first on ocean economies and the second on the concept of one health and the relationship between the physical and chemical state of the ocean, the organisms that live in it and humans.

A. A sustainable and inclusive ocean economy

This sub-section will include chapters that focus on human activities in the ocean, with each chapter specifically including content relating to:

i. Pressures

Where relevant the following pressures will be considered by each chapter:

- Pollution including:
 - o eutrophication/nutrients
 - o noise
 - o litter/plastics
 - o traditional contaminants (including metals, organic compounds, oil spills)
 - o emerging contaminants (e.g., pharmaceuticals, microplastics)
 - o anti-fouling
 - o catastrophic events associated with spills (oils spills, chemical spills)
- Exploitation/extraction
- Alteration of coastal inputs (including that influenced by mega-droughts and mega-flooding, dams etc.)

- Alteration of habitats (including destruction)
- Alteration of oceanographic processes
- Illegal activities including:
 - dumping
 - illegal fishing
 - trafficking
 - crime
 - piracy
- Unintended consequences of policy (harmful subsidies)
- Cumulative effects
- Contribution to climate change

ii. Sustainability pathways

These forward-looking feasible pathways will identify the scientific data, tools and knowledge that could be utilized at local, regional and global scales to ensure that human activities are sustainable and inclusive, including those relating to:

- Governance,
- Economy/markets,
- Technology
- Management

They will also provide examples of where policy has been effective at enabling balance, restoring balance, adaptation etc.

iii. Social components

Where relevant chapters will include content on social aspects including

- Benefits and disbenefits
- Equity (including social license),
- Gender
- Indigenous, traditional owner and local community knowledge

iv. Sector relevant governance

Where relevant chapters will include aspects on:

- Conventions
- Commitments
- Goals

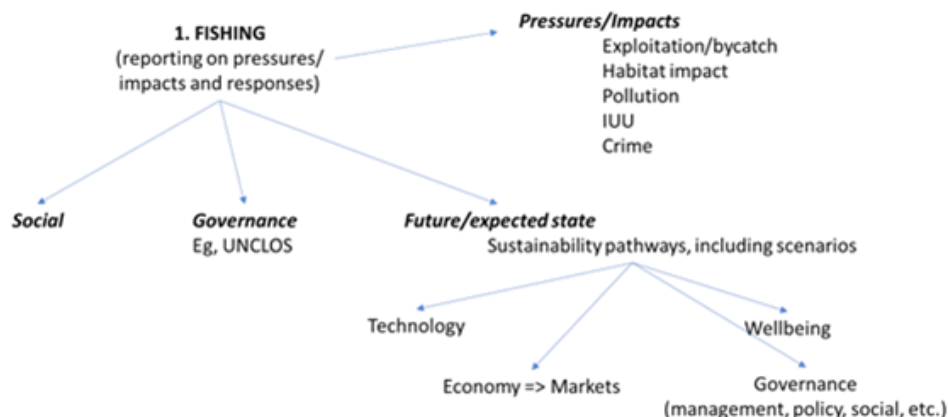


Figure 2. An example of the components that each chapter of the sub-section on a sustainable and inclusive ocean economy will provide content on. The example provided here is focused on fishing.

The sub-section will comprise the following chapters:

Chapter 1: Food systems

This chapter will provide an introduction to the topic of ocean food systems, and contain a wholistic overview of each component of these systems. It will comprise the following sub-chapters (with each containing four subsections as detailed above):

Sub-chapter 1a: Medium and large-scale fishing

Pressures and impacts

Sustainability pathways

Social components

Governance

Sub-chapter 1b: Small-scale fishing including subsistence fishing

Pressures and impacts

Sustainability pathways

Social components

Governance

Sub-chapter 1c: Medium and large-scale aquaculture

Pressures and impacts

Sustainability pathways

Social components

Governance

Sub-chapter 1d: Small-scale aquaculture

Pressures and impacts

Sustainability pathways

Social components

Governance

Sub-chapter 1e: Food processing

Pressures and impacts

Sustainability pathways

Social components

Governance

Sub-chapter 1f: Trade

Pressures and impacts

Sustainability pathways

Social components

Governance

This sub-chapter will include specific content on block-chain technologies, eco-labelling, certification etc.

Chapter 2: Recreational fishing

Pressures and impacts

Sustainability pathways

Social components

Governance

Chapter 3: Energy

This chapter will provide an introduction to the topic of ocean energy systems, and contain a wholistic overview of the renewable and non-renewable components of these systems. It will comprise the following sub-chapters (with each containing four subsections as detailed above):

Chapter 3a: Renewables

Pressures and impacts

Sustainability pathways

Social *components*

Governance

This sub-chapter will cover all forms of renewable energy therefore including specific content on wind, wave and tidal energy and any emerging forms of renewable energy.

Chapter 3b: Non-renewables

Pressures *and impacts*

Sustainability pathways

Social *components*

Governance

This sub-chapter will specifically include content on marine hydrocarbons and hydrates.

Chapter 4: Tourism

Pressures *and impacts*

Sustainability pathways

Social *components*

Governance

This chapter will specifically include content on activities associated with travel and cover large-scale tourism as well as smaller scale tourism such as community-based tourism that is important for local communities and small island states.

Chapter 5: Use of genetic resources and biotechnology

Pressures *and impacts*

Sustainability pathways

Social *components*

Governance

Chapter 6: Shipping

Pressures *and impacts*

Sustainability pathways

Social *components*

Governance

This chapter will include all forms of shipping, including coastal shipping and ferries and offshore shipping and all associated infrastructure, services and activities, including decommissioning.

Chapter 7: Mineral resources

Pressures and impacts

Sustainability pathways

Social components

Governance

This chapter will include specific content on shallow and deep-sea resources and activities associated with those resources.

Chapter 8: Desalination and salt production (liquid salt)

Pressures and impacts

Sustainability pathways

Social components

Governance

This chapter will include specific content on the production of freshwater from saltwater and the production of salt.

Chapter 9: Coastal development

Pressures and impacts

Sustainability pathways

Social components

Governance

This chapter will include specific content on all forms of coastal development and associated infrastructure, services and activities, not captured by other chapters (including urbanisation, coastal protection and associated nature-based solution and/or ecosystem approaches).

Chapter 10: Geoengineering

Pressures and impacts

Sustainability pathways

Social components

Governance

This chapter will include specific content all ocean-related and atmospheric interventions (including fertilisation, carbon sequestration and storage etc.)

B. One Health

This sub-section will include chapters that focus on the concept of “one health”. One health encompasses three main components:

- The physical and chemical marine environment
- The organisms that live in the marine environment
- People

It involves undertaking an integrated, unified approach to balancing the health of these three components. It is recognized by the World Health Organisation as being particularly relevant for food and water safety, nutrition, the control of zoonoses, pollution management, and combatting antimicrobial resistance. The concept is based on several fundamental principles including equity, inclusivity, equal access, parity, socio-ecological equilibrium, stewardship, and transdisciplinarity.

The sub-section will comprise the following chapters:

Chapter 1: The role of ecosystems in the carbon cycle

This chapter will include content that details how various marine ecosystems, and abiotic and biotic components of ecosystems, contribute to carbon cycles in the ocean. It will consider carbon biogeochemical cycles and include content associated with the concept of “blue carbon”.

Chapter 2: The ocean and human health

This chapter will cover the impacts of coliforms, faecal matter, marine pathogens and food toxins on human health and the mitigation/management responses available. It will also consider the role of the ocean in sustaining good mental health, the nutritional value of marine-sourced food and its relationship with human health, noting potential overlaps with the food systems chapters and potentially other chapters in Section 5A.

Chapter 3: Human well-being

This chapter will include specific content on:

- Recreational activities that are not associated with the economy such as swimming
- Cultural values associated with the ocean
- Spiritual values associated with the ocean
- Subjective well-being associated with the ocean (life satisfaction)
- The benefits for communities at large (individuals, communities, humanity), including economic benefits, noting potential overlaps with the chapters of Section 5A.

Chapter 4: Ocean hazards of natural origin

This chapter will include coverage of pressures associated with natural ocean hazards that may cause minor to major impacts or disasters, their impacts on humans and mitigation/management/adaptation responses available. This chapter will include specific content on:

- Tsunamis
- Earthquakes, volcanic eruptions etc.
- Storm surge (including that associated with spring tides)
- Cyclones/hurricanes/typhoons

- How climate change and other climate extremes are exacerbating these
- The atmospheric driven change in sea height

Chapter 5: Equity

This chapter will provide specific content on global aspects of equity that does not repeat content covered in the chapters and sub-chapters of Section 5A including:

- A high-level overview of the flow of benefits and disbenefits
- Human rights
- Environmental and social justice
- The role of equity in achieving the Sustainable Development Goals

Chapter 6: Gender

This chapter will provide specific content on high-level global aspects of gender that does not repeat content covered in the chapters and sub-chapters of Section 5A including:

- The role of gender in achieving the Sustainable Development Goals
- Gender issues in ocean science and ocean governance systems and the importance of the collection of gender disaggregated data in these systems
- Consideration of how the gender lens has been incorporated into ocean science and technology to strengthen science-based approaches for addressing marine issues (inter alia: fisheries, aquaculture, climate change, shipping, marine conservation).

Chapter 7: Pandemics including COVID-19 Impacts

This chapter will cover a global overview of issues associated with the COVID-19 pandemic, noting that the WOA II identified that impacts were occurring across many sectors within the ocean, but given its timing, was unable to provide a full evaluation of those impacts.

This chapter will include coverage of the following aspects:

- The impacts of an increase in mask use within the context of pollution
- The impact of lockdowns and human activities in the ocean on animal behaviour
- Changes in shipping and port activities and impacts on seafarers and port workers
- The impacts on ocean science and observing
- The decrease in fisheries and aquaculture observing systems
- The decrease in compliance and associated increase in illegal activities
- The impact on trade and supply chains

Chapter 8: Indigenous, Traditional owner and Local community Knowledge

This chapter will provide specific content on high-level approached to acknowledging and considering Indigenous, traditional owner and local community knowledge that does not repeat content covered in the chapters and sub-chapters of Section 5A including:

- Acknowledgement, consideration and integration of knowledge within western systems including the concept of the two-eyed seeing approach
- Approaches and guiding principles for working with knowledge holders
- Community supported observation of the ocean

This section is a stand-alone component of the assessment, allowing for direct reference for those only interested in this part.

The section will be web-based, thereby allowing for the provision of direct links to core datasets, repositories, data providers etc., thereby improving accessibility to detailed information referenced in the assessment.

The chapters and associated sub-chapters of the two parts of this section will be written by individual writing teams.

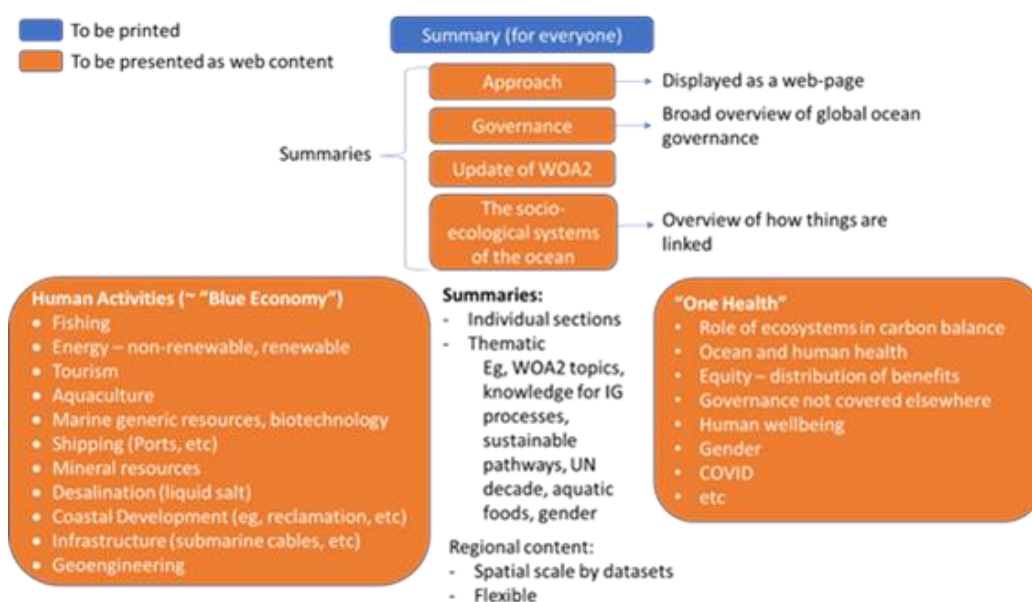


Figure 2. A figurative summary of the components of the third world ocean assessment.

Thematic summaries of the assessment

Thematic summaries will be produced that summarise the content of the third World Ocean Assessment via cross cutting themes and will be similar to the policy-relevant briefs that summarised the content of WOA II and the technical briefs that summarised WOA I. These thematic summaries will be printed. They will be compiled/written by the Group of Experts.

Specific topics for the thematic summaries will be identified through a process similar to that conducted in the early stage of the third cycle used to identify the themes of the policy relevant briefs summarising WOA II. They will therefore be developed in consultation with UN bodies and relevant ocean-related intergovernmental organisations to ensure that the summaries provide information of relevance and use to a broad range of stakeholders. As per the process undertaken with previous policy-relevant briefs and technical abstracts, outlines will be developed and provided for review by the Ad Hoc Working Group of the Whole with the draft full thematic summaries then reviewed by member states.

Supporting elements of the assessment

Several supporting elements will be produced to summarise content, improve understanding of complex information contained in the assessment and improve accessibility to content. These include:

1. Spatial maps
 - Individual maps that provide regionally disaggregated information within the global context will be incorporated into chapters where information is available.

- These will be web-based thereby allowing for the provision of direct links to datasets, repositories and data providers.
- These will be produced through engagement of specific consultants and consulting agencies by the Secretariat and potential external partners voluntarily contributing content to the assessment.
- 2. Infographics
 - Individual infographics will be developed in support of the thematic content of chapters to summarise complex information and provide that information in more easily understandable formats
 - These will be web-based thereby allowing for the provision of direct links to the detail they are representing (e.g., papers, reports, etc.)
 - These will be produced through engagement of specific consultants and consulting agencies by the Secretariat and potential external partners voluntarily contributing to the Regular Process.
- 3. Short videos
 - Individual videos will be produced summarizing the content of thematic components, sections or chapters of the assessment to facilitate broader outreach to various communities, including marginalized communities such as the visually and hearing impaired.
 - These will be produced as part of the outreach and engagement strategy outlined in the programme of work for the third cycle.
 - These will be produced through engagement of specific consultants and consulting agencies by the Secretariat and potential external partners voluntarily contributing to the Regular Process as part of the outreach and engagement strategy outlined in the programme of work for the third cycle
- 4. Factsheets
 - Individual factsheets will be produced summarizing the content of thematic components, sections or chapters of the assessment.
 - These will be produced through engagement of specific consultants and consulting agencies by the Secretariat and potential external partners voluntarily contributing to the assessment.
- 5. Quotes
 - Quotes associated with thematic content of the assessment will be produced for use in social media campaigns as part of the outreach and engagement strategy outlined in the programme of work for the third cycle.
- 6. A web-based interactive database of literature used in assessment
 - This interactive database of literature will be produced as an extension of the database of recent and ongoing global and regional assessments that the Secretariat has been identified as producing under the programme of work for the third cycle.
 - This will provide easy access to the literature used in the assessment, improving accessibility to specific content for broader global use.

ANNEX III

**REGULAR PROCESS FOR THE GLOBAL REPORTING AND ASSESSMENT OF THE
STATE OF THE MARINE ENVIRONMENT, INCLUDING SOCIO-ECONOMIC ISSUES**

**LIST OF EXPERTISE NEEDED FOR DELIVERING THE THIRD WORLD
OCEAN ASSESSMENT**

The 18th meeting of the Ad Hoc Working Group of the Whole has been convened in accordance with the programme of work for the period 2021 to 2025 for the third cycle of the Regular Process. This programme of work was adopted by the Ad Hoc Working Group of the Whole on the Regular Process during its thirteenth meeting in October 2020, and endorsed by the General Assembly through its resolution 75/239 of 31 December 2020 on “Oceans and the law of the sea”.

The 18th meeting of the Ad Hoc Working Group of the Whole to be held from 27 to 28 March 2023 at the United Nations Headquarters in New York will consider the following documents:

The proposed scope of the next World Ocean Assessment(s);

The comprehensive annotated outline of the World Ocean Assessment(s) containing a summary of content and format;

The list of expertise needed for the writing teams;

The assessment of potential gaps and overlaps in expertise and the way to manage them.

Based on the draft outline of the third world ocean assessment, the Group of Experts undertook a review of the list of expertise for the second cycle to identify those categories that are relevant to the third World Assessment and to add additional expertise categories that will be needed to write the chapters of the assessment and facilitate peer review of the assessment. The output of this review is provided in Table 1.

Following the geographic expertise identified for the second cycle, the Group of Experts suggests that the same expertise be identified for the third cycle. This is provided in Table 2.

The list of expertise provided in these two tables will be utilised to populate those parts of the database that will link to the online nomination form for the Pool of Experts as currently being developed by the secretariat for the Regular Process.

Table 1. List of expertise required for delivering the third World Ocean Assessment

#	Expertise
1	Abyssal plains
2	Algal biochemistry
3	Algal production and economics
4	Alteration of habitats
5	Alteration of oceanographic processes
6	Anthropology (general)
7	Anthropology: cultural values associated with the ocean
8	Anthropology: spiritual values associated with the ocean
9	Aquaculture economics (financing)
10	Aquaculture economics (general)
11	Aquaculture economics (livelihoods)
12	Aquaculture economics (subsidies)
13	Aquaculture economics (trade)
14	Aquaculture economics (welfare)
15	Aquaculture governance (artisanal)
16	Aquaculture governance (co-governance)
17	Aquaculture governance (general)
18	Aquaculture governance (indigenous)
19	Aquaculture science (new technologies)
20	Aquaculture science (traditional assessment)
21	Aquaculture sustainability
22	Artisanal fisheries
23	Atolls, coastal and island lagoons
24	Benthic ecology
25	Biogenic reefs and sandy, muddy and rocky shore substrates
26	Biological oceanography
27	Blue financing
28	Boundary currents
29	Carbon emission pathways
30	Carbon sequestration and storage
31	Changes in coastal and marine infrastructure
32	Changes in erosion and sedimentation
33	Channels and fjords
34	Chemical oceanography
35	Citizen science
36	Climatology
37	Coastal communities (indigenous)
38	Coastal communities (infrastructure)

39	Coastal communities (livelihoods)
40	Coastal communities (migration)
41	Coastal communities (urbanization)
42	Coastal flooding (extreme events)
43	Coastal protection and land reclamation
44	Coastal tourism and recreation
45	Cold-water corals and sponges
46	Community based fisheries management
47	Continental shelf sea-bed habitats
48	Continental slopes and abyssal plains
49	Continental slopes and submarine canyons
50	Cumulative effects
51	Cyclones/hurricanes/typhoons
52	Decarbonization
53	Deep sea ecosystems
54	Deep water habitats
55	Desalination
56	Digitalization
57	DPSIR framework and its application
58	Dumping of waste at sea
59	Economic benefits of the ocean to humans
60	Economic inequality
61	Ecosystem based aquaculture management
62	Ecosystem based fisheries assessment
63	Ecosystem restoration
64	Effects of extreme climate events
65	Effects of tsunamis
66	Environmental impact assessments
67	Erosion and sedimentation
68	Estuaries and deltas
69	Fate of hydrocarbons in the marine environment
70	Fish biology/ecology
71	Fisheries economics (financing)
72	Fisheries economics (general)
73	Fisheries economics (livelihoods)
74	Fisheries economics (subsidies)
75	Fisheries economics (trade)
76	Fisheries economics (welfare)
77	Fisheries governance (artisanal)
78	Fisheries governance (co-governance)

79	Fisheries governance (indigenous)
80	Fisheries governance
81	Fisheries management
82	Fisheries science (data poor assessment)
83	Fisheries science (ecosystem based fisheries management)
84	Fisheries science (new technologies)
85	Fisheries science (traditional assessment)
86	Fisheries technology
87	Fish-stock propagation
88	Fjord systems
89	Gender studies (especially relating to maritime industries and coastal areas)
90	Geoengineering
91	Geopolitics
92	Global demographic dynamics
93	Global demographic dynamics: megacities
94	Global demographic dynamics: migration
95	Global demographic dynamics: urbanization
96	Global economic dynamics
97	Harmful algal blooms
98	High-latitude ice habitats
99	Human health and ocean recreational activities
100	Human health and ocean sourced nutrition
101	Human health and ocean-born diseases
102	Hydrothermal vents and cold seeps
103	Illegal activities
104	Illegal activities: piracy
105	Illegal activities: trafficking
106	Illegal fishing
107	Indigenous and traditional owner knowledge
108	Infographics
109	Inputs of nutrients to the marine environment
110	Inputs of radioactive substances to the marine environment
111	Integrated coastal zone management
112	International governance
113	Intertidal habitats
114	Invertebrate biology/ecology
115	Kelp forests and algal beds
116	Local community knowledge
117	Macroalgae
118	Management of maritime cultural assets

119	Mangroves
120	Mariculture
121	Marine and coastal community-based management
122	Marine and coastal cultural-based management
123	Marine and coastal ecosystem-based management
124	Marine biogeochemistry
125	Marine ecotoxicology
126	Marine debris
127	Marine food processing
128	Marine fungi
129	Marine genetic resources
130	Marine genomics
131	Marine geology and geophysics
132	Marine hydrates
133	Marine invasive species
134	Marine mammals
135	Marine microbiology
136	Marine offshore infrastructures
137	Marine pelagic invertebrates: cephalopods
138	Marine pelagic invertebrates: zooplankton
139	Marine protected areas
140	Marine reptiles
141	Marine socioeconomics
142	Marine spatial planning
143	Maritime disaster management
144	Maritime safety
145	Maritime security
146	Maritime transport
147	Ocean acidification
148	Ocean and human health
149	Ocean chemistry
150	Ocean data and data repositories
151	Ocean governance/law of the sea
152	Ocean governance: compliance, monitoring and enforcement
153	Ocean governance: maritime regulation regime
154	Ocean governance: ocean diplomacy
155	Ocean hazards and disasters
156	Ocean management capacity building
157	Ocean modeling
158	Ocean noise

159	Ocean observing
160	Ocean salinity
161	Ocean science capacity building
162	Ocean technology
163	Ocean temperature
164	Offshore and marine renewable energy development (environmental impact)
165	Offshore and marine renewable energy development (legislation)
166	Offshore and marine renewable energy development (technology)
167	Offshore hydrocarbon exploration and exploitation
168	Offshore mineral resources exploration and exploitation
169	Operational oceanography
170	Pandemics
171	Pelagic habitats
172	Physical oceanography
173	Phytoplankton
174	Pollution
175	Pollution: anti-fouling
176	Pollution: emerging contaminants (e.g. Pharmaceuticals, personal care products)
177	Pollution: litter/plastics (micro and nanoplastics)
178	Pollution: traditional contaminants (e.g. Metals, persistent organic compounds, organic halogenated compounds)
179	Psychology (well-being)
180	Recreational/sport charter fishing
181	Ridges, plateaus and trenches
182	Role of the ocean in the climate system
183	Salt marshes
184	Salt production
185	Sargasso sea
186	Sargassum
187	Science communication
188	Science, technology and innovation indicators and data
189	Scientometrics/bibliometrics
190	Seabed mapping
191	Seabed mining
192	Seabirds
193	Sea-grass meadows
194	Seagrasses
195	Sea-level rise
196	Seamounts and similar submarine features
197	Sedimentologist - geomorphologist

198	Shipping related infrastructure
199	Shipping related services
200	Shipping
201	Small-scale/subsistence/indigenous fisheries
202	Socio-ecology
203	Sociology
204	Storm surge (including that associated with spring tides)
205	Subjective well-being associated with the ocean
206	Submarine cables
207	Submarine pipelines
208	Technological foresight/futurism
209	Transdisciplinary/interdisciplinary scientific approaches
210	Tropical and sub-tropical corals
211	Tsunamis (geophysics)
212	Unintended consequences of policy (including harmful subsidies)
213	Upwelling systems
214	Welfare and social status of fishers and workers in fish-handling trades
215	Welfare and social status of port workers
216	Welfare and social status of seafarers

Table 2. List of sea areas in relation to geographic expertise

	Sea area
1	The Global Ocean as a whole
2	The Arctic Ocean
3	The North Atlantic Ocean, the Baltic Sea, the Black Sea, the Mediterranean and the North Sea
4	The South Atlantic Ocean and the Wider Caribbean
5	The Indian Ocean, the Arabian Sea, the Bay of Bengal, the Red Sea and the Gulf of Aden and the Persian Gulf
6	The North Pacific Ocean
7	The South Pacific Ocean
8	The Southern Ocean

ANNEX IV

**REGULAR PROCESS FOR THE GLOBAL REPORTING AND ASSESSMENT OF THE
STATE OF THE MARINE ENVIRONMENT, INCLUDING SOCIO-ECONOMIC ISSUES****THE ASSESSMENT OF THE POTENTIAL GAPS AND OVERLAPS IN THE POOL OF
EXPERTS AND HOW TO MANAGE THEM
- AS OF 17 FEBRUARY 2023 -**

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The 18th meeting of the Ad Hoc Working Group of the Whole to be held from 27 to 28 March 2023 at the United Nations Headquarters in New York will consider the following documents:

The proposed scope of the next World Ocean Assessment(s);

The comprehensive annotated outline of the World Ocean Assessment(s) containing a summary of content and format;

The list of expertise needed for the writing teams;

The assessment of potential gaps and overlaps in expertise and the way to manage them.

This document outlines the current gaps and overlaps in the Pool of Experts and options for managing those gaps and overlaps.

Overview of the current status of the Pool of Experts

There are currently 265 individuals in the Pool of Experts database. These experts are from previous cycles and have identified, after being contacted by the secretariat of the Regular Process, that they would like to contribute to the third cycle. They have, for the vast majority, identified specific expertise, although the broad nature of many of the categories of expertise identified in previous cycles results in specific expertise difficult to identify.

Of the 265 individuals in the Pool of Experts database, 12 have identified no expertise, with the remaining 253 identifying between one and 29 areas of disciplinary expertise. Individuals identified expertise in 38 categories of natural sciences, 26 categories associated with human activities in the ocean and the associated economics, 15 categories of management, mitigation and responses to human activities, nine categories associated with social aspects of the ocean and three categories associated with engineering and technology. The largest number of individuals identified expertise in benthic ecology (49 experts), marine and coastal ecosystem management (43 experts), marine protected areas (42 experts) and coastal-zone planning and management (including land-use planning, marine spatial planning and effects of extreme climate events and tsunamis) (39 experts). The largest number of individuals identified expertise from the North Atlantic Ocean, the Baltic Sea, the Black Sea, the Mediterranean and the North Sea (64 experts), and the Global Ocean as a whole (59 experts), with the lowest number of individuals identifying expertise from the Indian Ocean, the Arabian Sea, the Bay of Bengal, the Red Sea and the Gulf of Aden and the Persian Gulf (19 experts) and the Arctic Ocean (17 experts).

Of the 265 individuals in the Pool of Experts database, 120 have identified a particular role that they would like to be considered for. Of these, 23 would like to be considered for all categories identified in previous cycles (member of the writing team, peer-reviewer, commentator). A further two have identified that they would like to be considered for all categories however for specific expertise areas. Fourteen individuals have identified that they would like to be

considered for a member of the writing team or for peer reviewer, three for a member of the writing team or commentator and six for peer reviewer or commentator. Seven individuals have identified that they would like to be considered for a peer-reviewer only and one for a commentator role only.

Gaps and overlaps in expertise in the Pool of Experts

The Group of Experts during their meeting of 13-17 February, undertook a review of the annotated outline of the World Ocean Assessment, to refine the list of expertise produced during the second cycle. This took into account the expertise needed to fulfil each of the chapters proposed. In considering this expertise and some of the shortcomings of the list from the second cycle to adequately meet these needs an expanded list of expertise has been developed. This comprises 216 categories of expertise, with the increase associated with:

1. Better defining the specific expertise needed to update the second World Ocean Assessment (section 4 of the annotated outline);
2. Identifying new expertise needed, particularly across social, economic and governance categories for sections 3 and 5 of the annotated outline;
3. Identifying new expertise needed in developing supporting elements of the assessment including spatial maps, infographics, factsheets etc., beyond that produced as part of the outreach and engagement strategy for the third cycle.

Newly identified categories, particularly across social, economic and governance categories, constitute the primary potential gaps in expertise.

As the experts currently in the Pool of Experts database are from previous cycles, their listed expertise was provided on the basis of previous lists of expertise as a reference. To bring the current Pool of Experts expertise in line with the revised list of expertise needed for the third World Ocean Assessment, the secretariat would need to contact each individual and ask them to provide an update to the database in order to accurately assess gaps and overlaps for the third cycle.

Managing gaps and overlaps in the Pool of Experts

There are multiple mechanisms through which the Group of Experts and secretariat of the third cycle will manage gaps and potential overlaps in the Pool of Experts. These include:

1. Working with UN bodies such as the IOC-UNESCO, UNEP, IMO, ISA, FAO, WMO and other bodies contributing to UN-Oceans to identify expertise within their organisations, programmes, working groups etc. Discussions with IOC-UNESCO have already been initiated in this regard;
2. Specific intergovernmental organisations (IGOs) will be engaged with to identify expertise. To this point, the Group of Experts has already identified a list of specific organizations that will be contacted formally through the official call for experts and also specifically where expertise is needed;
3. Working with the AHWG members and national focal points to identify expertise from member States via extensive distribution of the official call for experts to national research agencies, universities, and other relevant national bodies;
4. Drawing on the networks of GoE members to identify expertise.

The secretariat of the Regular Process has undertaken some improvements to the Pool of Experts database based on the lessons learned from the second cycle. The experts' information in the database is being re-organized and reviewed for accuracy to ensure the required information is available to support the establishment of the writing teams. Further improvements will continue to be implemented moving forward. The secretariat will introduce a new process to streamline the database registration process, which will be announced during the official call-for-nominations to the Pool of Experts to be launched in April 2023. Additional functionalities would be added to the online database to enhance its user-friendliness. Individuals will be queried on the specific expertise they possess that can contribute to the assessment. This will be limited to two categories/areas of expertise. This should provide information that is more focused and relevant for development of the assessment. It will also avoid situations that have occurred in previous cycles where individuals were contacted within the context of a particular expertise they had identified but then declined stating that they did not have adequate expertise in that area.

These improvements to the Pool of Experts database will make the database more streamlined, thereby allowing the Group of Experts to assess the expertise in the database and identify gaps and overlaps quickly, routinely and easily. This will support regular assessment of the database and allow for directed efforts in identifying experts to be nominated to the Pool of Experts to fill gaps.
