Section 2

Approach to the assessment

Writing team (all of whom are members of the Group of Experts): Kwasi Appeaning Addo, Maria João Bebianno, Ian Butler, Donovan Campbell, Mariamalia Rodríguez Chaves, Felicia Chinwe Mogo, Roberto De Pinho, Mehdi Ghodrati Shojaei, Rafael González-Quirós, Slimane Maliki, Enrique Marschoff, Carmen Mifsud, Eric Okuku, Renato Quiñones, Jörn Schmidt, Vasily Smolyanitsky, Joshua Tiwangye Tuhumwire, Karenne Tun, Katarina Viik, Juying Wang, Michida Yutaka, Chang-Ik Zhang and Tymon Zielinski.

Key points

- The *World Ocean Assessments* are aimed at providing the best available, scientifically informed review of the state of the marine environment, including socioeconomic aspects, on a continual and systematic basis, through the development of regular targeted outputs that respond to policy needs, and by building capacity to support decision-making at all levels.
- Their development relies on the efforts of scientists and experts from around the globe, under the guidance of the States Members of the United Nations and with the support of the United Nations Secretariat.
- The collaborative process for the development of the third *World Ocean Assessment* involved regional workshops for scoping and drafting, followed by multiple rounds of review by peers, United Nations system organizations and Member States.
- In its resolution 79/144, the General Assembly reaffirmed the need for synergy among assessments from bodies and processes such as the Intergovernmental Panel on Climate Change (IPCC), the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) and the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects, ensuring compatibility between global and regional evaluations.
- Some definitions and vocabulary required careful consideration during the development of the present *Assessment*.

1. Introduction and background

The Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects, is a multilevel initiative established after the World Summit on Sustainable Development of 2002. It is guided and overseen by an Ad Hoc Working Group of the Whole of the General Assembly, which was established in 2008.

The overall objective of the Regular Process, as set out by the Working Group in the proposed framework of the Regular Process (A/64/347, annex), is as follows:

> The regular process under the United Nations would be recognized as the global mechanism for reviewing the state of the marine environment, including socioeconomic aspects, on a continual and systematic basis by providing regular assessments at the global and supraregional levels and an integrated view of environmental, economic and

> social aspects. Such assessments would support informed decision-making and thus contribute to managing in a sustainable manner human activities that affect the oceans and seas, in accordance with international law, including the United Nations Convention on the Law of the Sea and other applicable international instruments and initiatives.

In its resolution 64/71, the General Assembly endorsed the recommendations adopted by the Ad Hoc Working Group of the Whole at its first meeting, including the recommendation that, in the first cycle, the scope of the Regular Process would be focused on establishing a baseline and that, in subsequent cycles, the scope would extend to evaluating trends (see A/64/347, annex, para. 19). In its resolution 75/239, the Assembly also endorsed the recommendations adopted by the Working Group at its thirteenth meeting, including the recommendation that, for the second cycle, the scope would extend to evaluating trends and identifying gaps (see A/75/362, annex, para. 2).

The third cycle of the Regular Process (2021–2025) is focused on three key outcomes: (a) assessments of the condition of the marine environment, including socioeconomic aspects; (b) support for and collaboration with other ocean-related intergovernmental processes, such as on producing a series of concise documents highlighting specific policy-relevant information from the second *World Ocean Assessment*; and (c) capacity-building, including a programme designed to enhance the capacity of States to strengthen the ocean science-policy interface at the national, regional and global levels.

Building on previous efforts, the programme of work in the period 2021–2025 for the third cycle of the Regular Process in relation to the development of the third *World Ocean Assessment* was focused on two specific major components (a sustainable and inclusive economy, and One Health), in addition to evaluating trends since the publication of the second *Assessment*, as guided by a scoping exercise.

The development of the *World Ocean Assessment* relied on the efforts of scientists and experts from around the globe, under the guidance of the States Members of the United Nations and with the support of the United Nations Secretariat.

To organize tasks associated with writing and review processes, various actors and parties connected with the Regular Process assumed different roles and performed tasks as contributors, institutional reviewers or other key participants in the Regular Process.

The Ad Hoc Working Group of the Whole, which oversees and guides the Regular Process, includes representatives of all States Members of the United Nations. The group has two Co-Chairs (one from a developing country and one from a developed country), who are appointed by the President of the General Assembly.

Between sessions of the Ad Hoc Working Group of the Whole, its Bureau ensures the implementation of its decisions. The Bureau consists of the Co-Chairs and representatives of 15 Member States – three appointed by each of the five regional groups in the General Assembly.

A Group of Experts was established with the general task of carrying out assessments under the Regular Process. It consists of up to 25 experts, representing the five regional groups. They structure outputs for the *World Ocean Assessments* and ensure that they are delivered on time following the available guidance and to the highest standards.

A mechanism to establish a pool of experts to assist the Group of Experts for the third cycle of the Regular Process (see A/76/391, annex I) was developed by the Bureau in accordance with General Assembly resolution 75/239. Without detracting from the other principles endorsed by the Assembly, the allocation of tasks to members of the pool of experts must reflect the principle of adherence to equitable geographical representation in all activities of the Regular Process and have due regard to a desirable balance between genders.

Members of the writing teams for each output were drawn from the pool of experts and were responsible for writing the drafts of the outputs under the guidance of the Group of Experts. The members of the writing teams were selected on the basis of relevant expertise, with a view to ensuring regional representation and gender balance within the overall writing team.

In paragraph 347 of its resolution 77/248, the General Assembly noted the endorsement by the Ad Hoc Working Group of the Whole of the Guidelines for the Writing and Review Process of the next Assessment(s) of the Third Cycle, developed by the Group of Experts in accordance with the programme of work for the third cycle (see A/77/596, annex I, para. 3), in which the vision and mission of the third cycle were described as follows:

> Vision: for the World Ocean Assessment to become the key instrument to build environmental, economic and social resilience by informing decision makers of the challenges and opportunities for achieving a healthy ocean environment that supports sustainable development.
>
> Mission: to provide the best available, scientifically informed review of the state of the marine environment, including socioeconomic aspects, on a continual and systematic basis, through the development of regular targeted outputs that respond to policy needs, and by building capacity to support decision-making at all levels.

According to the vision and mission statements, the main intended audience of the third *World Ocean Assessment* are people in all sectors who make decisions that will affect the marine environment. They cover a broad range of individuals and backgrounds, including, but not limited to, policymakers and legislators, scientists, business leaders and the general public.

The development of the third *World Ocean Assessment* was organized around three major steps: (a) scoping; (b) development of the outline; and (c) drafting and reviewing. Each of the steps is described in the present section. Interwoven within these steps were discussions on the frameworks and methodologies to be adopted, the strategies to be used to update the second *Assessment*, the expertise needed to produce the present *Assessment*, and the delivery methods to be employed.

Regional workshops played a critical role in the development of the *World Ocean Assessment*, from scoping through to drafting, by ensuring that the voices, knowledge and priorities of regional stakeholders were meaningfully integrated into the global assessment process. These workshops were designed as inclusive, highly participatory events that brought together representatives of Governments, academic institutions, civil society, Indigenous Peoples and local communities to co-create content that reflects regional realities and national specificities. By fostering open dialogue and knowledge exchange across diverse disciplinary, cultural and institutional perspectives, the workshops helped to ensure that the *Assessment* is grounded in both scientific evidence and lived experience.

Importantly, these regional engagements not only served to inform the assessment but also functioned as platforms for capacity-sharing and mutual learning, disseminating the work of the Regular Process, identifying and recruiting expertise for the writing teams and strengthening regional ownership and relevance of the final outputs. The success of the workshops, as well as the Ocean Future Scenarios and Pathways Workshop described below, relied heavily on the time, commitment and collaborative spirit of the participants. Their contributions have been essential to shaping an assessment that is globally coherent yet regionally nuanced, policy-relevant and actionable.

2. Scoping the assessment

A first round of five regional workshops was held between July and December 2022, with a view to informing the scoping of the *World Ocean Assessment* and the development of an annotated outline for it, collecting regional-level data, raising awareness of the Regular Process and generating interest from the scientific community in contributing to the drafting of the *Assessment*. It should be noted that at this stage of development there was discussion as to whether the output would be produced as a single document or split into multiple assessments.

During the first round of workshops, participants were asked to consider various elements of the structure, format and content of the assessment under the third cycle. The workshops were held in:

- United Republic of Tanzania, 25–27 July 2022, with a focus on the Indian Ocean (including the Arabian Sea and the Bay of Bengal), the Red Sea, the Gulf of Aden, and the Regional Organization for the Protection of the Marine Environment/Regional Commission for Fisheries area
- Jamaica, 12–14 September 2022, with a focus on the North Pacific and the wider Caribbean area, convened by the International Seabed Authority (ISA)
- Argentina, 28–30 September, with a focus on the South Atlantic (between the African and American coasts) and the wider Caribbean area
- 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, the Gulf of Aden, the Regional Organization for the Protection of the Marine Environment/Regional Commission for Fisheries area, and the North and South Pacific

Based on resounding feedback from the workshops, it was made clear that previous *World Ocean Assessments* were challenging in terms of accessibility, searchability and therefore utility. Many participants noted that they had not used the *Assessments* frequently due to these challenges. Participants recommended that the Group of Experts explore mechanisms to improve the ability of stakeholders to access the *Assessment*, find information in it and utilize that information. It was also pointed out that greater emphasis should be placed on the social components of the assessments.

The workshops also demonstrated that it would be of greater use to present information on pressures on the ocean and the human activities and responses to mitigate and manage those pressures in an integrated

manner, rather than providing them as separate chapters. It was also stated that the social components of the assessments were underdeveloped and required greater emphasis. Likewise, although modified versions of the drivers-pressures-state-impacts-response framework had been adopted to differing degrees in the second *World Ocean Assessment*, influencing its overall design, it would be used in the third *Assessment*, when relevant, within individual chapters, thereby providing direct linkages between pressures, impacts and responses.

3. Outline of the assessment

Taking into account the extensive input from workshop participants, the Group of Experts undertook a series of in-depth brainstorming sessions to identify key elements from the workshops that would form part of the basis for the scope of the assessment.

To address the requests identified during the workshops, particularly to give greater prominence to the socioeconomic aspects of the third *World Ocean Assessment*, its main elements were organized around changes since the second *Assessment* (see sect. 4) and socioecological systems (sect. 5). Section 5 provides an integrated view of the social and ecological systems (coupled human-environment systems) of the ocean and the interactions between them. It is further divided into subsections on a sustainable and inclusive ocean economy (subsect. 5A) and One Health (subsect. 5B).

The period under review for changes since the second *World Ocean Assessment* was 2018–2023. Changes over longer time periods have been included where gaps were identified in the content of previous assessments.

During the brainstorming sessions, another prominent aspect was the request to feature potential responses to perceived challenges. As a result, sustainability pathways were incorporated into the outline of the third *World Ocean Assessment*. They include forward-looking feasible pathways, identifying the scientific data, tools and knowledge that could be utilized at the local, regional and global scales to ensure that human activities are sustainable and inclusive, while providing examples of where policy has been effective, including management approaches. The intention was not to prescribe specific uses of these data, tools and knowledge for specific sectors or situations, but rather to identify plausible evidence-informed future scenarios that incorporate the use of the data and knowledge currently available within the context of achieving the Sustainable Development Goals.

To address these requests, and in line with the vision of informing decision makers of the challenges and opportunities of achieving a healthy ocean environment that supports sustainable development, each chapter in the subsection on the inclusive ocean economy (subsect. 5A) includes content relating to: (a) pressures; (b) sustainability pathways; (c) socioeconomic components (benefits and disbenefits, equity, gender, and Indigenous, traditional owner and local community knowledge)

Subsection 5B is organized within the framework of One Health, an integrated and unifying approach that sustainably balances and optimizes the health of people, animals and ecosystems. It recognizes that the health of humans, domestic and wild animals, plants and ecosystems is intrinsically linked while also being interdependent (One Health High-Level Expert Panel (OHHLEP), 2022). Subsection 5B has three main components: (a) the physical and chemical marine environment; (b) organisms that live in the marine environment; and (c) people. The One Health approach is recognized by the World Health

Organization (WHO) as being particularly relevant to food and water safety, nutrition, zoonosis control, pollution management and antimicrobial resistance.

Among the other notable elements included for the first time in the third *World Ocean Assessment* are: a new subchapter on fjord systems (sect. 4, subchap. 5R), a new section providing a global overview of ocean governance (sect. 3) and a new chapter on ocean hazards of natural origin (subsect. 5B, chap. 4). Subchapter 5N (Pelagic domain) of section 4 is an extension of chapter 7N of the second *Assessment* on the open ocean and covers epipelagic, mesopelagic and bathypelagic zones.

To address issues of utility, accessibility and searchability, it was decided that most of the third *World Ocean Assessment* would be produced in a web-based format that allows for digital linking between chapters and to core and external resources, including literature, graphics and supplemental material. The *Assessment* is available in the six official languages of the United Nations.

4. Drafting and review of the third *World Ocean Assessment*

To further develop the new and refocused elements of the scope of the *World Ocean Assessment*, a second round of five workshops was held between May and November 2023. These workshops were focused on the development of sustainability pathways for the chapters under subsection 5A (A sustainable and inclusive ocean economy) and the cross-cutting themes of equity, gender and Indigenous, traditional owner and local community knowledge in the chapters in subsection 5B (One Health), as well as on supporting the development of the social components addressed in each chapter of subsection 5A.

The workshops were held in:

- Santos, Brazil, 10–17 May 2023, for the South Atlantic (between the African and American coasts) and wider Caribbean region
- Kingston, Jamaica, 12–16 June 2023, for the North and South Pacific regions and the wider Caribbean area, convened by the International Seabed Authority (ISA)
- Mahe, Seychelles, 30 July–4 August 2023, for the Indian Ocean (including the Arabian Sea and the Bay of Bengal), the Red Sea, the Gulf of Aden, and the Regional Organization for the Protection of the Marine Environment/Regional Commission for Fisheries area
- Lisbon, Portugal, 25–27 September 2023, for the region of the North Atlantic, the Baltic Sea, the Mediterranean Sea and the Black Sea
- New York, United States of America, 27–29 November 2023, for the region of the Indian Ocean (including the Arabian Sea and the Bay of Bengal), the Red Sea, the Gulf of Aden, and the Regional Organization for the Protection of the Marine Environment/Regional Commission for Fisheries area

An Ocean Future Scenarios and Pathways Workshop in support of the third *World Ocean Assessment* took place in Berlin on 14 and 15 December 2023. It was organized by the German Marine Research Consortium together with the Leibniz Centre for Tropical Marine Research and with the support of the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection of Germany. The aim of the workshop was to create a technically sound vision of sustainable oceans in 2050 and to highlight the most important characteristics. To make this possible, an interdisciplinary team

worked for two days in three separate groups to sketch out what sustainable oceans could look like in 2050.

The outputs from these workshops were compiled and provided to the relevant writing teams for specific consideration and incorporation into the chapters and subchapters of section 5. Writing teams took varying approaches to considering and incorporating the outputs.

As the second round of workshops was being held, writing teams were assembled, starting with the selection of the coordinating authors. Once the coordinating authors had been identified, the Group of Experts worked with them to select the members of each writing team, striving to fill existing gaps. Pursuant to the Guidelines for the Nomination and Appointment of Experts to the Pool of Experts, Writing Teams and Peer Reviewers to Support the Works of the Third Cycle of the Regular Process (A/77/596, annex II), due regard was given to the principles of equitable regional representation and gender balance in the required expertise for all activities of the Regular Process. Further to the steps and procedures outlined in the mechanism for the establishment of the pool of experts for the third cycle of the Regular Process (A/76/391, annex I), additional guidance was provided for the recommendation of members of the pool of experts, with due consideration given to regional balance, gender balance, early career professionals, traditional knowledge holders and non-academic stakeholders.

A meeting of coordinating authors was convened in Lisbon in February 2024 to facilitate the effective planning and coordination of the development of the third *World Ocean Assessment*.

An in-person meeting of Indigenous, traditional owner and local community knowledge experts, including Indigenous knowledge holders and scientists from diverse disciplinary and cultural backgrounds, took place in Paris in August 2024, allowing direct interaction for feedback on the draft chapter on Indigenous, traditional owner and local community knowledge. Multidisciplinary experts contributed to refining the chapter and providing guidance for its development.

Once the writing teams had completed their draft chapters, the drafts underwent review by the Group of Experts, a peer review and a preliminary evaluation by United Nations system organizations, followed by two rounds of review by States Members of the United Nations and United Nations system organizations.

This overall process involved the writing teams delivering a complete draft by November 2024. During most of that month, members of the Group of Experts reviewed the drafts, before they were revised by the coordinating authors and writing teams in December 2024. After further oversight by the Group of Experts, the zero draft of the third *World Ocean Assessment* was sent to external reviewers, including expert peer reviewers selected from the pool of experts and United Nations system entities. Comments were reviewed by the writing teams and subsequently considered by the Group of Experts, which consolidated them and approved draft 1.

Draft 1 of the third *World Ocean Assessment* was sent by the United Nations Secretariat to Member States, intergovernmental organizations and non-governmental organizations (NGOs) for review in May 2025, with a deadline of mid-June. The Group of Experts reviewed all of the roughly 1,300 responses prepared by the coordinating authors and writing teams in response to the comments received from States, intergovernmental organizations and NGOs on draft 1 and provided input on those responses when necessary.

Draft 2, resulting from the previous step, was sent to Member States, intergovernmental organizations and NGOs in mid-August 2025 for another round of review lasting until mid-September. Additional comments were addressed by the Group of Experts in consultation with the coordinating authors and writing teams when needed. This final review step concluded in October 2025.

It should be noted that chapters may have followed slightly different timelines to account for specific situations and challenges in the process.

The use of artificial intelligence in the development of chapters was limited to enhancing readability and language. Its use required human oversight, with all work carefully reviewed, ensuring that writing teams remained accountable for content integrity. Writing teams were required to disclose any use of artificial intelligence and cite the system used to generate text. Artificial intelligence-generated content could not replace critical tasks such as deriving scientific insights, conclusions or recommendations, in line with the principles for the ethical use of artificial intelligence in the United Nations system (CEB/2022/2/Add.1).

5. Definitions and vocabulary

Some definitions and vocabulary required careful consideration during the development of the third *World Ocean Assessment*, some of which influenced the organization and coordination of subjects in the various chapters. Some of the main examples are presented below.

Large- , medium- and small-scale fishing are defined and primarily addressed in subchapters 1A (Medium- and large-scale fishing) and 1B (Small-scale fishing, including subsistence fishing) of subsection 5A. They are distinct in their operations, each with unique practices, impacts and sustainability measures. Fisheries are classified by operational scale (Food and Agriculture Organization of the United Nations (FAO), 2023), with large-scale and medium-scale fishing fulfilling different roles in the global fishing industry. Large-scale fishing is characterized by the use of large, high-capacity boats, often exceeding 130 m in length, with a hold capacity of more than 2,000 tons (FAO, 1985). Medium-scale fishing often occurs regionally with moderate-sized vessels (FAO, 1985). It serves as a bridge between artisanal fishing (or small-scale fishing) and large-scale fishing, adapting various fishing methods and technologies (Halimatussadiah and others, 2023). There is currently no globally agreed definition of small-scale fishing given that it can differ greatly in its operational characteristics and scale, making it challenging to identify and classify (FAO, Duke University and WorldFish, 2023). Nonetheless, some characteristics of small-scale fishing have been put forward, including being place-based and primarily for family consumption (low production), characterized by limited capital or resource inputs, but labour-intensive, and based on trips that are spatially and temporally limited (i.e. close to shore or completed within a day) (FAO, 2018). In addition, individual nation States have adopted a wide range of definitions linked to gear type (type and size of nets), length of boat and means of power, vessel ownership, trip duration and area of fishing activity (inshore, nearshore, etc.) (Pita and others, 2020; Smith and Basurto, 2019).

Small-, medium- and large-scale aquaculture are defined and primarily addressed in subchapters 1C (Medium- and large-scale aquaculture) and 1D (Small-scale aquaculture) of subsection 5A. There are no formal, globally accepted definitions to distinguish between small-, medium- and large-scale aquaculture, and scales can refer to different ranges in production, technology, economy, social factors, and environmental considerations and contexts (Krause and others, 2020). In the third *World Ocean Assessment*, medium- and large-scale aquaculture refer to commercially oriented production for domestic

or export markets, conducted by companies ranging from medium-scale enterprises with employees at several farm sites to large-scale multinational companies with thousands of employees. Since no single, globally accepted definition of small-scale aquaculture is currently available, in subchapter 1D "small-scale" refers to a single or clustered (community-based) farming unit involving relatively small production units, low investment, and limited technology and resources to raise aquatic organisms, often managed by individual farmers, their families and/or groups of farmers for local markets or as a supplementary livelihood.

The term "blue carbon" refers to the capture and long-term storage of carbon in certain marine habitats and its potential for climate change mitigation, and is defined in the IPCC *Special Report on the Ocean and Cryosphere in a Changing Climate* (IPCC, 2022) as:

> All biologically-driven carbon fluxes and storage in marine systems that are amenable to management can be considered as blue carbon. Coastal blue carbon focuses on rooted vegetation in the coastal zone, such as tidal marshes, mangroves and seagrasses. These ecosystems have high carbon burial rates on a per unit area basis and accumulate carbon in their soils and sediments. They provide many non-climatic benefits and can contribute to ecosystem-based adaptation. If degraded or lost, coastal blue carbon ecosystems are likely to release most of their carbon back to the atmosphere. There is current debate regarding the application of the blue carbon concept to other coastal and non-coastal processes and ecosystems, including the open ocean.

The term was first applied to three coastal vegetated habitats – mangroves, seagrass meadows and salt marshes – that have high carbon stocks buried in their sediments, as measured by area. Later, the term was applied to other habitats, such as marine sediments, which store significant amounts of carbon due to their geographical extent despite low accumulation rates compared with coastal zones. More recently, other habitats such as kelp forests, despite having high rates of organic matter remineralization, have been suggested as blue carbon.

In the third *World Ocean Assessment*, the term "sustainable and inclusive ocean economy" is preferred over the term "blue economy", which it replaced whenever encountered in draft chapters during the writing process. The replacement circumvents the ambiguity derived from the multiple definitions adopted for "blue economy".[1] The concept of a "sustainable and inclusive ocean economy" recognizes that economic growth and environmental stewardship must go hand in hand with social and individual well-being. It encompasses how marine resources and the systems in place to govern them are used.

Nature-based solutions are defined in United Nations Environment Assembly resolution 5.5 as "actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal, and marine ecosystems which address social, economic and environmental challenges effectively and

[1] For instance, the World Bank PROBLUE programme defines a blue economy approach as "the sustainable use of ocean resources for economic growth, improved livelihoods, and job creation while preserving the health of ocean ecosystems" (see www.worldbank.org/en/programs/problue), whereas the European Union report on the blue economy of 2025 states: "The concept of the Blue Economy is multifaceted and often subject to varying interpretations. As a result, definitions differ significantly. One of the primary challenges in defining the Blue Economy is delineating its scope, as it encompasses a broad range of coastal, marine, and ocean-related activities with complex socio-economic benefits and environmental impacts". It presents a definition that does not include a sustainability dimension (see https://op.europa.eu/webpub/mare/eu-blue-economy-report-2025/general-overview/the-eu-blue-economy.html).

adaptively, while simultaneously providing human well-being, ecosystem services, resilience and biodiversity benefits" (see UNEP/EA.5/Res.5).

The level of confidence assigned to findings is expressed using four main qualifiers that synthesize the writing teams' judgments about the validity of the finding, as determined by the evaluation of evidence and level of agreement They are as follows:

(a) Inconclusive: representative of a suggestion or speculation with no or limited evidence. It is expected that this term will be used infrequently, but it provides writing teams with the opportunity to emphasize issues that are not established in science, but are important to policymakers or might have been highlighted by a different audience;

(b) Unresolved: representative of multiple existing independent studies in which the conclusions are not in agreement;

(c) Established but incomplete: representative of general agreement, but in a situation in which there are currently a limited number of studies and no comprehensive synthesis has been conducted, or existing studies imprecisely address the question;

(d) Well-established: where a comprehensive meta-analysis or other syntheses or multiple existing independent studies are in agreement. This represents multiple, consistent independent lines of high-quality evidence. Key findings may be further emphasized when there is high confidence in the use of the qualifier "very well-established" where there is a comprehensive evidence base and a very high level of agreement, or the qualifier "virtually certain" where the evidence consists of very robust data covering multiple temporal and spatial scales and there is almost no disagreement.

Acknowledgements

The third *World Ocean Assessment* has benefited from resources in the regular budget of the United Nations and would not have been possible without them. It also relied on the scientific output of the global scientific community, the result of the efforts of countless researchers and the investment of Governments and society in general from around the globe.

The Regular Process is grateful to Argentina, Brazil, France, Germany, Indonesia, Jamaica, Netherlands (Kingdom of the), Portugal, Seychelles, the United Republic of Tanzania and the United States for their support for the third *World Ocean Assessment*. Support was also provided by the International Seabed Authority (ISA), the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization (IOC-UNESCO) and the United Nations Environment Programme (UNEP). The Regular Process is also grateful to Ireland, New Zealand, the Philippines and the Republic of Korea for their voluntary contributions to the trust fund for the Regular Process during the third cycle.

Members of the Group of Experts and members of the pool of experts received no remuneration for their work.

References

Food and Agriculture Organization (FAO) (1985). Definition and classification of fishery vessel types. Fisheries Technical Paper.

FAO (2018). The State of World Fisheries and Aquaculture: Meeting the sustainable development goals.

FAO, Duke University, and WorldFish (2023). Illuminating Hidden Harvests: The contributions of small-scale fisheries to sustainable development – Executive summary. Rome. https://doi.org/10.4060/cc6062en.

Halimatussadiah, Alin, and others (2023). Co-management of large-scale and medium-scale fisheries: An assessment of the fishery tax system in Indonesia. Marine Policy, vol. 148, art. 105458.

Intergovernmental Panel on Climate Change (IPCC) (2022). The Ocean and Cryosphere in a Changing Climate: Special Report of the Intergovernmental Panel on Climate Change. Cambridge University Press.

Krause, Gesche and others (2020). Visualizing the social in aquaculture: How social dimension components illustrate the effects of aquaculture across geographic scales. Marine Policy, vol. 118, art. 103985.

One Health High-Level Expert Panel (OHHLEP) (2022). Adisasmito W.B., Almuhairi S., Behravesh C.B., Bilivogui P., Bukachi S.A., and others, One Health: A new definition for a sustainable and healthy future. PLoS Pathog, 18(6): e1010537. https://doi.org/10.1371/journal.ppat.1010537.

Pita, Cristina, and others (2020). Small-Scale Fisheries in Europe: Challenges and Opportunities. In J.J. Pascual-Fernández, C. Pita, and M. Bavinck, eds., Small-Scale Fisheries in Europe: Status, Resilience and Governance (pp. 581–600). Springer International Publishing.

Smith, Hillary, and Xavier Basurto (2019). Defining Small-Scale Fisheries and Examining the Role of Science in Shaping Perceptions of Who and What Counts: A Systematic Review. Frontiers in Marine Science, 6.

United Nations System Chief Executives Board for Coordination (2022). Principles on the Ethical Use of Artificial Intelligence in the United Nations System. UNSCEB. https://unsceb.org/principles-ethical-use-artificial-intelligence-united-nations-system. Accessed on 25 February 2025.