

Brief on the second *World Ocean Assessment* and Sustainable Development Goal 14: life below water

Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects

1. The Regular Process is a global mechanism established by Members States of the United Nations after the World Summit on Sustainable Development, held in Johannesburg, South Africa, in 2002¹. Its aims are to regularly review the environmental, economic and social aspects of the state of the world's ocean, both current and foreseeable, and identify current knowledge gaps and capacity needs. Its purpose is to contribute to the strengthening of the regular scientific assessment of the state of the marine environment in order to enhance the scientific basis for policymaking. The Regular Process is in its third cycle (2021–2025), with the first and second World Ocean Assessments published in 2016 and 2021, respectively.

2. The Regular Process is mandated by the General Assembly to provide scientific information that supports, inter alia, the 2030 Agenda for Sustainable Development², the development of an international legally binding instrument 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 jurisdiction³, the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea⁴ and the United Nations Framework Convention on Climate Change⁵.

3. The main output of the first and second cycle of the Regular Process was a global integrated marine assessment (also known as the World Ocean Assessment), with the first World Ocean Assessment focused on establishing a baseline and the second on building on that baseline, evaluating trends and identifying gaps.

4. The first World Ocean Assessment, published in 2016, indicated that growing population, economies and agricultural and industrial requirements for feeding, clothing and housing the world's population were seriously degrading parts of the marine environment, especially near the coast. The assessment concluded that, without an integrated, coordinated, proactive, cross-sectoral and science-based approach to coastal and marine management, the resilience of coastal and marine ecosystems and their ability to provide vital services would continue to be reduced.

5. The second World Ocean Assessment, published in 2021, is structured around a slightly modified drivers-pressures-state-impact-response framework. It identifies the following overarching drivers influencing the marine environment: (a) population growth and demographic changes; (b) economic activity; (c) technological advances; (d) changing governance structures and geopolitical instability; and (e) climate change. The second assessment highlighted that although some improvements in some sectors and some regions had been made, ongoing decline in many aspects of the ocean as a result of the many unabated pressures humans were placing on the ocean had occurred.

6. The programme of work set out for the third cycle of the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects, developed by the Bureau of the Ad Hoc Working Group of the Whole on the Regular Process and to be conducted during the period 2021–2025, consists of three main outputs. Output II is focused on supporting and interacting with

ocean-related intergovernmental processes. The activities associated with this output include the preparation of policy relevant briefs specifically tailored to meet the requests and needs of a number of international agreements, intergovernmental initiatives and processes relevant to the Regular Process.

7. Four briefs have been produced, addressing Climate Change, Biodiversity, the Sustainable Development Goals and both the UN Decade of Ocean Science for Sustainable Development and the UN Decade of Ecosystem Restoration, respectively.

Purpose and preparation of the four briefs

8. The briefs provide a synthesis of relevant information from the second World Ocean Assessment related to two key global topic areas (climate change and marine biodiversity) and three United Nations processes (the Sustainable Development Goals of Agenda 2030, the United Nations Decade of Ocean Science for Sustainable Development and the United Nations Decade on Ecosystem Restoration). These key global issues and processes have been identified as priorities by the Group of Experts and the secretariat of the Regular Process, in consultation with the Bureau. The briefs have been prepared by the Group of Experts, with the assistance of the secretariat of the Regular Process. Outlines of the briefs have been reviewed by relevant UN agencies and intergovernmental processes. The briefs have been reviewed by member states, the Bureau of the Ad Hoc Working Group of the Whole on the Regular Process and considered by the Working Group at its sixteenth meeting.

9. The present brief provides a synthesis of the information presented in the second Assessment and, where suitable, in the first Assessment that is relevant to the 2030 Agenda, and can thus provide knowledge to support evaluations of global progress against, in particular, Goal 14, which is specifically focused on the ocean. The brief specifically highlights knowledge and capacity gaps that will need to be addressed if the targets of Goal 14 are to be achieved by 2030, thereby providing information for prioritizing and directing actions. It also describes the interrelationships between Goal 14 and other Sustainable Development Goals. This information can be used to guide and inform the high-level political forum on sustainable development, the United Nations platform aimed at monitoring the implementation of the Goals.

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Contributions to this brief under the programme of work of the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects were made by:

Group of Experts

Kwasi Appeaning Addo (Ghana), Maria João Bebianno (Portugal), Donovan Campbell (Jamaica), Alan Deidun (Malta), Roberto de Pinho (Brazil), Karen Evans (Australia), Jingfeng Fan (China), Mauricio Gálvez Larach (Chile), Carlos Garcia-Soto (Spain), Mehdi Ghodrati Shojaei (Islamic Republic of Iran), Slimane Maliki (Morocco), Enrique Marschoff (Argentina), Yutaka Michida (Japan), Essam Yassin Mohammed (Eritrea), Maria Amalia Chaves Rodríguez (Costa Rica), Renison Kahindi Ruwa (Kenya), Jörn Schmidt (Germany), Vasily Smolyanitsky (Russian

Federation), Karenne Tun (Singapore), Katarina Viik (Estonia) Chang-Ik Zhang (Republic of Korea).

Members of the Pool of Experts of chapters from which this brief is derived

Chapter 3: Scientific understanding of the ocean

Bing Qiao (convener), Carlos Francisco Andrade, Paulo Antunes Horta, Nene Bi Trace Boniface, Sanae Chiba (co-lead member), Mohammad Zahedur Rahman Chowdhury, Antonio Di Natale, Karen Evans, Carlos Garcia-Soto (co-lead member), Enrique Marschoff, Colin Moffat, Jocelyne Mpemba Kazadi, Henn Ojaveer, Renison Ruwa (lead member), Jörn Schmidt (co-lead member), Hoinsoude Segniagbeto, Sekou Tidiane Bangoura, Kedong Yin, Chang-Ik Zhang, Tymon Zielinski (co-lead member).

Chapter 4: Drivers

Chang-Ik Zhang (convener), Karen Evans (co-lead member), Andrew F. Johnson, Osman Keh Kamara (co-lead member), Renison Ruwa (lead member), Jörn Schmidt (co-lead member), Thomas W. Therriault.

Chapter 5: Trends in the physical and chemical state of the ocean:

Carlos Garcia-Soto (lead member and convener), Levke Caesar, Anny Cazenave, Lijing Cheng, Alicia Cheripka, Paul Durack, Karen Evans (co-lead member), David Halpern, Libby Jewett, Sung Yong Kim, Guancheng Li, Ignatius Rigor, Sunke Schmidtko, Juying Wang (co-lead member), Tymon Zielinski (co-lead member)

Chapter 6: Trends in the biodiversity of the main taxa of marine biota

Thomas Malone (convener), Maurizio Azzaro, Russell Hopcroft, Chul Park (chapter lead member), Kazuaki Tadokoro, Michael Thorndyke, Sinjae Yoo, Lis Lindal Jørgensen (convener), Christos Arvanitidis, Silvana N.R. Birchenough, Malcolm R. Clark, Igor Cristino Silva Cruz, Marina Cunha, Alan Deidun, Judith Gobin, Maruf Hossain, Ana C.M. de Jesus, Carmen Mifsud, Khac Bat Nguyen, Rachel Przeslawski, Jake Rice, Lennert Schepers, Paul Snelgrove, Natalia Strelkova, Leen Vandepitte, Thomas J. Webb (convener), Maria José Juan-Jordá, Hiroyuki Motomura, Francisco Navarrete-Mier, Henn Ojaveer (subchapter lead member), Hazel Oxenford, Clive Roberts, Mudjekeewis D. Santos, Tracey Sutton.

Chapter 7: Trends in the state of biodiversity in marine habitats

Julia Sigwart (convener), Hilconida Calumpang (chapter lead member), Karen Evans (subchapter lead member), Patricia Miloslavich, Ronaldo Christofolletti and Judith Gobin (joint conveners), Frédéric Guichard, Sergiy Medinets, Evangelina Schwindt, Ian Butler (convener), Hazel Oxenford, Hiroya Yamano, Erik Cordes (convener), Sebastian Hennige, Georgios Kazanidis, Colin D. Woodroffe (convener), Bing Qiao, Dana E. Hunt, Pablo Muniz, Moriaki Yasuhara, Hugh Kirkman (convener), Elizabeth Sinclair, Paul Lavery, José Souto Rosa Filho (convener), Nahid Abdel Rahim Osman, Judith S. Weis (convener), Luis M. Pinheiro, Katherine E.A. Segarra, Lisa A. Levin (convener), Peter Auster, Jason M. Hall-Spencer, Russell Hopcroft, Jeroen Ingels, Anna Metaxas, Bhavani E. Narayanaswamy, Joshua T. Tuhumwire (subchapter lead member), Malcolm R. Clark (convener), Angelo F. Bernardino, J. Murray Roberts, Paul Snelgrove.

Chapter 8: Trends in the state of human society in relation to the ocean

Alan Simcock (chapter lead member and convener), Austin Becker, Marcelo Bertellotti, Anthony Charles, Leandra Gonçalves, Miguel Iñíguez, Osman Keh Kamara (co-lead member), Paula Keener, Jenna Lamphere, Candace May, Ishmael Mensah, Essam Yassin Mohammed (co-lead member), Tanya O’Gara, Christina Pita,

Jean Edmond Randrianantenaina, Maria Sahib, Regina Salvador, Anastasia Strati (co-lead member), Jean-Claude Tibe, Michael Moore (convener), Martin Edwards, Bella S. Galil, Dick Vethaak.

Chapter 9: Pressures from changes in climate and atmosphere

Carlos Garcia-Soto (lead member and convener), Denise Breitburg, Monica Campillos, Patricia Castillo-Briceno, Sanae Chiba (co-lead member), Matthew Collins, Ganix Esnaola, Karen Evans (co-lead member), Louise B. Firth, Thomas Frölicher, Jason M. Hall-Spencer, David Halpern, Karen L. Hunter, Gabriel Ibarra, Sung-Yong Kim, Roxy M. Koll, Kathleen McInnes, Jon Saenz, Ca Thanh Vu (co-lead member), Bess Ward, Tymon Zielinski (co-lead member).

Chapter 10: Changes in nutrient inputs to the marine environment

Thomas C. Malone (convener), Archis Ambulker, Maria João Bebianno (co-lead member), Paula Bontempi, Michael Krom, Harri Kuosa, Joseph Montoya, Alice Newton, Yapo Ossey, João Sarkis Yunes, Walker Smith, Lars Sonesten, Georgios Sylaios, Juying Wang (lead member), Kedong Yin.

Chapter 11: Changes in liquid and atmospheric inputs to the marine environment from land (including thought groundwater), ships and offshore installations

Ralf Ebinghaus, Bjørn Einar Grøsvik, Ida-Maja Hassellöv, Colin F. Moffat, Alan Simcock, Lars Sonesten and Penny Vlahos (joint conveners), Eric P. Achterberg, Babajide Alo, Carlos Francisco Andrade, Maria João Bebianno (lead member), Miguel Caetano, Kissao Gnandi, Gi Hoon Hong, Suk Hyun Kim, Rainer Lohmann, Monika Stankiewicz, Juying Wang (co-lead member).

Chapter 12: Changes in inputs and distribution of solid waste, other than dredged material, in the marine environment

François Galgani and Aleke Stöfen-O'Brien (joint conveners), Archis Ambulkar, Maurizio Azzaro, Maria João Bebianno (lead member), Joan Bondareff, Huw Griffiths, Martin Hassellöv, Christos Ioakeimidis, Jenna Jambeck, Paula Keener, Fernanda de Oliveira Lana, Iryna Makarenko, Chelsea Rochman, Qamar Schuyler, Paula Sobral, Ca Thanh Vu (co-lead member), Konstantinos Topouzelis, Dick Vethaak, Penny Vlahos, Juying Wang (co-lead member), Judith Weis.

Chapter 13: Changes in erosion and sedimentation

Ca Thanh Vu (convener and lead member), Paulette Bynoe, Trang Minh Duong, Matt Eliot, Frank Hall, Roshanka Ranasinghe, Matthieu de Schipper, Joshua T. Tuhumwire (co-lead member).

Chapter 14: Changes in coastal and marine infrastructure

Ca Thanh Vu (convener and lead member), Sam Bentley, Lionel Carter, Catherine Creese, Robert Dapa, Regina Folorunsho, Alan Simcock (co-lead member), Alix Willemez.

Chapter 15: Changes in capture fisheries and harvesting of wild marine invertebrates

Porter Hoagland (convener), Megan Bailey, Lena Bergström, Alida Bundy, Karen Evans (co-lead member), Manuel Hidalgo, Andrew Johnson, Fernanda de Oliveira Lana, Enrique Marschoff (lead member), Essam Yassin Mohammed (co-lead member), Henn Ojaveer (co-lead member), Franklin Ormaza-Gonzalez, Imants George Priede, Ylenia Randrianisoa (co-lead member), Jörn Schmidt (co-lead member), Zacharie Sohou, Burcu Bilgin Topçu, Chang Ik Zhang.

Chapter 16: Changes in aquaculture

Rohana Subasinghe (convener), Pedro Barón, Malcolm Beveridge, Enrique Marschoff (lead member), Doris Oliva.

Chapter 17: Changes in seaweed harvesting and use

Hilconida Calumpong (convener and lead member), Franciane Pellizzari, Renison Ruwa (co-lead member), Noemí Solar-Bacho.

Chapter 18: Changes in seabed mining

James R. Hein and Pedro Madureira (joint conveners), Maria João Bebianno (co-lead member), Ana Colaço, Luis M. Pinheiro, Richard Roth, Pradeep Singh, Anastasia Strati (co-lead member), Joshua T. Tuhumwire (lead member).

Chapter 19: Changes in hydrocarbon exploration and extraction

Amardeep Dhanju (convener), Arsonina Bera, Kacou Yebowe Seraphim, Alan Simcock (co-lead member), Joshua T. Tuhumwire (lead member).

Chapter 20: Trends in inputs of atmospheric noise into the marine environment

Ana Širović (convener), Karen Evans (lead member), Carlos Garcia-Soto (co-lead member), John A. Hildebrand, Sergio M. Jesus, James H. Miller.

Chapter 21: Developments in renewable energy sources

Takvor Soukissian (convener), Joan Bondareff, Valerie Cummins, Amardeep Dhanju, Carlos Garcia-Soto (co-lead member), Lars Golmen, Osman Keh Kamara (co-lead member), Jimmy Murphy, Eric Mwangi Njoroge, Anastasia Strati (lead member), Georges Vougioukalakis.

Chapter 22: Invasive species

Thomas W. Therriault (convener), Marnie L. Campbell, Alan Deidun, Bella S. Galil, Chad L. Hewitt, Graeme Inglis, Henn Ojaveer (lead member), Chul Park (co-lead member), Bing Qiao, Renison Ruwa (co-lead member), Evangelina Schwindt.

Chapter 23: Developments in the exploration for and use of marine genetic resources

Robert Blasiak and Ellen Kenchington (joint conveners), Jesús M. Arrieta, Jorge Rafael Bermúdez-Monsalve, Hilconida Calumpong (co-lead member), Shao Changwei, Sanae Chiba (lead member), Hebe Dionisi, Carlos Garcia-Soto (co-lead member), Helena Vieira, Boris Wawrik.

Chapter 25: Cumulative effects

Karen Evans (convener and lead member), Roland Cormier, Piers Dunstan, Elizabeth Fulton, Jörn Schmidt (co-lead member), Vanessa Stelzenmüller, Ca Thanh Vu (co-lead member), Skipton Woolley.

Chapter 26: Developments in marine spatial planning

Alan Simcock (convener and lead member), Jarbas Bonetti, Louis Celliers, Karen Evans (co-lead member), Leandra Gonçalves, Marcus Polette, Julian Reyna, Ca Thanh Vu (co-lead member).

Chapter 27: Developments in management approaches

Piers Dunstan (convener), Louis Celliers, Valerie Cummins, Michael Elliott, Karen Evans (co-lead member), Antony Firth, Frédéric Guichard, Quentin Hanich, Ana Cristina de Jesus, Manuel Hildago, Hector Manuel Lozano-Montes, Chanda L. Meek, Marcus Polette, Jemma Purandare, Anita Smith, Anastasia Strati (lead member), Ca Thanh Vu (co-lead member).

Chapter 28: Developments in the understanding of overall benefits from the ocean to humans

Luciano Hermanns (convener), Denis Worlnanyo Aheto, Adem Bilgin, Robert Blasiak, Cecile Brugere, Karen Evans, Antony Firth, Deborah Greaves, Osman Keh Kamara (co-lead member), Wenhai Lu, Essam Yassin Mohamed (lead member), Iryna Makarenko, Ståle Navrud, Marinez Eymael Garcia Scherer, Jörn Schmidt (co-lead member), Anita Smith, Anastasia Strati (co-lead member), Rashid Sumaila, Kateryna Utkina, Hans Van Tilburg, Wojciech Wawrzynski.

I. Sustainable Development Goal 14 targets, state of knowledge and gaps in knowledge and capacity

10. The following sections describe the state of knowledge as presented in the second *World Ocean Assessment* in relation to the individual Goal 14 targets, as well as identified knowledge and capacity gaps.

Target 14.1: By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution (Chapters 5, 9, 10, 11, 12, 13, 14, 19, 20)

State of knowledge

11. Concentrations of some pollutants (such as persistent organic pollutants and metals) in some regions are declining in response to actions implemented through national regional and international agreements, while inputs of others, such as nitrogen and phosphorus, are increasing. The number of individual types of pollutants in the ocean continues to increase, and therefore the mixtures to which species are exposed and that are integrated into food systems are becoming more complex.

12. As a result of the increasing use of fertilizers, nutrient pollution has led to a global increase in eutrophication of the coastal ocean. This has resulted in increases in the extent and severity of hypoxic events and more frequent harmful algal blooms.

13. Marine litter is a ubiquitous problem, even in remote areas, being recorded now in all marine habitats. Plastics, in particular single-use plastics, represent the major share of marine litter, with amounts entering the ocean estimated in the range of 4.8 million to 12.7 million tons annually. Marine litter has now been recorded as affecting more than 1,400 species, primarily through entanglement and ingestion. Most litter comes from land-based sources and thus any solutions need to include consideration of a reduction of ocean and land-based entry of litter.

14. The past few decades have been characterized by an increased awareness of the importance of sound to marine life and a greater understanding of the impacts on such life of anthropogenic noise from vessels, industrial activity (including seismic exploration and renewable energy development) and sonar. At the same time, there is a growing recognition of the need to monitor and develop solutions for reducing the noise entering the marine environment.

Knowledge and capacity gaps

15. Information on the concentration of pollutants is not spatially uniform. Knowledge gaps remain with regard to not only recognized traditional but also emerging pollutants. Further, better understanding of the scale, progress and distribution of pollution and the role of coastal dynamics in determining the distributions of pollutants is needed. Similarly, as the extent of transboundary marine

pollution is poorly understood in many parts of the world, in particular with regard to airborne pollutants, more accurate data on the emissions and transport of pollutants are needed.

16. The impacts of microplastics on human health are not sufficiently known yet, and gaps in knowledge are even greater in relation to nanoplastics (< 1 micron), in particular their absorption and behaviour. Challenges remain in the understanding of the impact that noise has on marine animal populations. Methods for standardizing the monitoring of pollutants, in particular emerging ones (including noise), and data sets are needed urgently, so that both spatial and temporal differences in pollutants can be evaluated and priorities established. To reduce the duplication of efforts, the creation of a general database on hazardous substances and a baseline of ambient noise would be desirable to support risk assessment and modelling. Lastly, it is necessary to gain a much better understanding of the cumulative effects of pollutants, including anthropogenic noise, on the marine environment.

17. The socioeconomic impact of marine litter and the potential cost for key sectors and activities in or depending on the marine and coastal environment have not been well assessed, resulting in the mispricing of ecosystem values and the externalization of pollution costs. Efforts need to be focused on assessing the environmental and socioeconomic costs of the damage caused by marine litter and undertaking a cost-benefit analysis of marine litter prevention and reduction measures.

18. Capacity-building is needed to reduce the input of pollutants into the ocean, in particular through the introduction of cleaner waste production, quieter technologies and cheaper and readily deployable wastewater-processing technologies. In several regions, capacity gaps remain in applying consistent, coherent policies and related enforcement to prevent, reduce and control inputs of pollutants into the ocean.

19. Ways in which other Sustainable Development Goals contribute to achieving target 14.1

a. Goal 1 – No poverty: Reduction in exposure and vulnerability to climate-induced extreme events and building of resilience to environmental shocks and disasters

b. Goal 2 – Zero hunger: Strengthening of capacity to adapt to climate change, extreme weather and other disasters

c. Goal 6 – Clean water and sanitation: Reduction in pollution, improved wastewater management and protection and restoration of water-related ecosystems

d. Goal 7 – Affordable and clean energy: Improved access to clean sources of energy and improved energy efficiencies and associated reduction in emissions

e. Goal 11 – Sustainable cities and communities: Sustainable urbanization and reduction in the environmental impact of cities, reduction in the number of people affected by disasters, strengthening of national and regional development planning and implementation of integrated policies and plans for mitigation and adaptation to climate change, resilience to disasters and development and implementation of holistic disaster risk management

f. Goal 12 – Responsible consumption and production: Environmentally sound management of chemicals and all wastes, including by reducing waste generation

g. Goal 13 – Climate action: Strengthening of resilience and adaptive capacity with regard to climate-related and other natural disasters and support for impact reduction and early warning

h. Goal 15 – Life on land: Conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems, and reduction in the degradation of natural habitats

i. Goal 17 – Partnerships for the goals: Improved access to science, technology and innovation, enhanced knowledge-sharing and transfer of technology, and capacity-building

20. Ways in which target 14.1 contributes to achieving other Sustainable Development Goals

a. Goal 3 – Good health and well-being: Reduction in hazardous chemicals, pollution and contamination

b. Goal 6 – Clean water and sanitation: Reduction in pollution and the release of hazardous chemicals and materials and wastewater

c. Goal 11 – Sustainable cities and communities: Sustainable urbanization and reduction in the environmental impact of cities

d. Goal 12 – Responsible consumption and production: Environmentally sound management of chemicals and all wastes, including by reducing waste generation

e. Goal 17 – Partnerships for the goals: Improved access to science, technology and innovation, enhanced knowledge-sharing and transfer of technology, and capacity-building

Target 14.2: By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans (Chapters 4, 5, 6, 7, 8, 9, 10, 13, 14, 18, 19, 21, 22, 23, 25, 27, 28)

State of knowledge

21. The status of many marine species and habitats continues to decline globally, thereby putting the functioning of ecosystems at risk. Despite there being a step change in the development of management approaches for ocean resource management and sustainability over the past decade, many pressures, including climate change, pollution, invasive species, habitat degradation and modification and unsustainable resource use, continue to have an impact on the ocean.¹

22. Management frameworks are increasingly moving away from being focused on sectoral use towards incorporating diverse links between ecological, social, economic and cultural aspects of the marine environment. One of the most significant emerging paradigms for ocean management, the ecosystem approach, is now universally accepted at the global, regional and national levels as a strategy for integrated management. This approach embraces the need for the engagement of all relevant sectors of society and has motivated increasing levels of support for bottom-up, community-led approaches to ocean management that take into consideration traditional rights and social justice and apply participatory processes.

23. In support of the implementation of ecosystem-based management approaches, frameworks for assessing the interactions between the pressures being placed on marine ecosystems, known as cumulative effects, have been developed over the past two decades. These identify the intensity and footprint of activities creating pressures

¹ See also the policy briefs on the second *World Ocean Assessment* and climate change in the ocean, marine biodiversity, and the United Nations Decade on Ecosystem Restoration and the United Nations Decade of Ocean Science for Sustainable Development.

on the marine environment, the responses to those pressures and management measures that could be applied to mitigate such pressures. At the same time, tools and approaches aimed at assisting in the management of conflicts among diverse stakeholders and providing a coherent approach to the regulation of coastal and maritime activities, such as marine spatial planning, have also been developed.

24. As part of responses to minimize the impacts of coastal development on marine environments, “blue infrastructure² development”, as well as nature-based solutions, are being introduced in an attempt to harmonize coastal development and protection with habitat and ecological protection. Linked to target 14.5, other approaches such as marine protected areas and other spatial conservation measures are being promoted and implemented to protect specific marine and coastal species and habitats.

Knowledge and capacity gaps

25. Although knowledge of ecosystem composition and functioning has improved since the publication of the first *World Ocean Assessment*, gaps remain, in particular with regard to deep-sea ecosystems and open-ocean (offshore) planktonic and benthic species. Gaps also remain in understanding the biology and ecology of coastal species, in particular in the territorial waters of developing countries. Such gaps in knowledge challenge the identification and implementation of appropriate management approaches to ensure ongoing conservation and sustainability.

26. While the ecosystem approach to marine management has been widely acknowledged as an effective framework for managing human impacts, further research and capacity-building are needed to realize its full potential across the world’s ocean. In many regions, there is a lack of information needed to establish links between ecological causes and effects in order to balance them against socioeconomic priorities in decision-making. Enhanced collaboration in monitoring will help in sharing capacity across sectors and institutions and provide more efficient monitoring, data and information. Increased capacity in understanding management approaches and implementing them will support governments and other stakeholders in understanding options for the management and governance of marine areas.

27. Protecting and preserving the marine environment depends on engaging those who live or work with the sea and who gain benefits from it, in order to address deleterious behaviour, restore damaged systems and mitigate the impacts of a changing climate. There is a need to accommodate the multiplicity of values, for which real or perceived benefits cannot be equated with each other or reconciled. Greater coordination is needed in that regard between social and natural sciences, between scientists and policymakers and between science and civil society, including industry, as is the inclusion of traditional and indigenous knowledge, culture and social history in management.

28. *Ways in which other Sustainable Development Goals contribute to achieving target 14.2*

- a. Goal 6: Improved wastewater management and protection and restoration of wetlands
- b. Goal 7: Improved access to clean sources of energy and improved energy efficiencies and associated reduction in emissions
- c. Goal 9: Use of clean technologies and associated reduction in emissions

² See Kazmierczak and Carter, 2010; Edwards and others, 2013

- d. Goal 11: Sustainable urbanization and reduction in the environmental impact of cities
- e. Goal 12: Sustainable management and use of natural resources and reduction in waste along supply chains
- f. Goal 13: Implementation of climate change mitigation, adaptation and impact reduction measures
- g. Goal 15: Reduction in the degradation of natural habitats and loss of biodiversity, and prevention of the extinction of species
- h. Goal 16: Promotion of the rule of law at the national and international levels
- i. Goal 17: Improved access to science, technology and innovation, enhanced knowledge-sharing and transfer of technology, and capacity-building

29. Ways in which target 14.2 contributes to achieving other Sustainable Development Goals

- a. Goal 1: Reduction in exposure and vulnerability to climate-induced extreme events and building of resilience to environmental shocks and disasters
- b. Goal 2: Increase in agricultural productivity (including aquaculture and mariculture), ensuring sustainable food production and maintaining ecosystems and the genetic diversity of wild species
- c. Goal 8: Provision of opportunities for sustained economic growth and sustainable tourism
- d. Goal 11: Preservation of and support for those ecosystems that afford protection from disasters to coastal communities
- e. Goal 13: Contribution to resilience to climate-related hazards

Target 14.3: Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels (Chapters 3, 5, 9, 10, 11, 13, 14, 25, 26, 27)

State of knowledge

30. The input of carbon dioxide (CO₂) into the ocean is continuing although at regionally varying rates, resulting in acidification of the ocean. Global surface ocean pH has declined on average by approximately 0.1 since the Industrial Revolution, translating to a shift in pH levels towards acidity of about 30 per cent. It has long been documented that ocean acidification is making it harder for some marine organisms, such as corals, oysters and pteropods, to form calcium carbonate shells and skeletons. In some cases, ocean acidification has also been shown to lower the fitness of some species, such as coccolithophores, crabs and sea urchins. Ocean acidification is also causing the depth at which seawater is corrosive to carbonates to become shallower, threatening deep-water coral reefs worldwide through dissolution and intensified bioerosion, leading to a shift to less diverse ecosystems. Research efforts over the past decade have begun to build understanding of how marine species, ecosystems and biogeochemical cycles may be influenced by ocean acidification alone and in concert with other stressors, including eutrophication, warming and hypoxia.

31. Actions being taken to lessen the impacts of ocean acidification, and to build resilience, are primarily intended to reduce CO₂ emissions, but they also include the following: reduction of pollution and other stressors (such as overfishing and habitat damage); seaweed cultivation and seagrass restoration; water treatment, for example,

for high-value aquaculture; adaptation of human activities such as aquaculture; and repair of damaged ecosystems, for example, through rewilding and restoration efforts.

32. To further develop global ocean observations on acidification within an integrated system and ensure the comparability of acidification data, the networking and coordination of regional observation programmes have been promoted. Observation methods are being standardized and harmonized through international programmes such as the Global Climate Observing System essential climate variables³ the Global Ocean Observing System essential ocean variables⁴ [60].

Knowledge and capacity gaps

33. More research is needed to better inform models and improve projections of ocean acidification, its impacts on marine populations and communities, and the capacity of organisms to acclimatize or adapt to changes in ocean acidification-induced ocean chemistry. There remains a strong need for more extensive monitoring in coastal regions and, in association, deployment of high-quality, low-cost sensors, as well as increased access to satellite data to monitor long-term trends in the ocean.

34. Ways in which other Sustainable Development Goals contribute to achieving target 14.3

a. Goal 9: Enhancement of scientific research, upgrade of the technological capabilities of industrial sectors in all countries, in particular developing countries, and encouragement of innovation

35. Ways in which target 14.3 contributes to achieving other Sustainable Development Goals

a. Goal 1: Reduction in exposure and building of resilience to environmental shocks and disasters

b. Goal 2: Ensuring of sustainable food production systems, maintenance of ecosystems, strengthening of capacity to adapt to climate change and enhancement of cooperation in research and technological development

c. Goal 12: Support for developing countries in strengthening their scientific and technological capacity

d. Goal 13: Implementation of climate change mitigation, adaptation and impact reduction measures

e. Goal 17: Improved access to science, technology and innovation, enhanced knowledge-sharing and transfer of technology, and capacity-building

Target 14.4: By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics (Chapters 15, 16, 17)

State of knowledge

³ See <https://gcos.wmo.int/en/essential-climate-variables>.

⁴ See www.goosoocean.org/index.php?option=com_content&view=article&layout=edit&id=283&Itemid=441.

36. The sustainability of many of the world's capture fisheries continues to be hampered by overexploitation; overcapacity; ineffective management; harmful subsidies; by-catch, in particular of threatened, endangered and protected species; and illegal, unreported and unregulated fishing, with ongoing habitat degradation and loss of gear creating further pressures on the marine environment.

37. About 33 per cent of the world's fish stocks, especially at higher trophic levels, are classified as being fished at biologically unsustainable levels, with close to 60 per cent maximally sustainably fished. Overfishing is estimated to have led to an annual loss of \$88.9 billion in net benefits, and in 2016 illegal, unreported or unregulated fishing was thought to be responsible for annual catches of up to 26 million tons, with a gross landed value of up to \$23 billion. Fishing power in demersal and pelagic fisheries has continued its steady, but often imperceptible, increase in efficiency (known as "technology creep"), at 0.2 per cent annually on average, necessitating compensatory adjustments in management. Some regional fisheries management organizations or arrangements covering the high seas were not effective in assessing stocks, enforcing catch limits or providing observer coverage to account for catches, by-catches and discards. States are increasingly motivated to achieve sustainable outcomes by increasing the effectiveness of such organizations or arrangements, as exemplified by agreements on regional cooperation initiatives.

38. Promisingly, scientific stock assessments and management have been shown to lead to more sustainable fisheries outcomes across a number of regions. Progress has been made in proposing guidelines for assessing fisheries and accounting for their contributions in data-poor environments. New approaches to identifying illegal, unreported and unregulated fishing are now being applied in some regions. In June 2016, the Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing,⁵ which was the first binding international agreement to target illegal, unreported and unregulated fishing specifically, entered into force. Its effective implementation is expected to contribute to the long-term conservation and sustainable use of living marine resources and marine ecosystems. As at 30 June 2020, there were 61 States parties to the Agreement.

39. Over the past decade, the ecosystem approach to fisheries management has been conceptually developed and is gradually moving towards implementation. This approach can be operated and implemented in a single sector, as in the case of ecosystem-based fisheries management and ecosystem approaches to fisheries and aquaculture, or across multiple sectors, for example, through integrated coastal zone management. Recent research has shown that, with appropriate governance, the median amount of time required to rebuild overfished stocks could be less than 10 years, and, if reforms were to be implemented, 98 per cent of overfished stocks could be considered healthy by the middle of the twenty-first century. Little consensus exists, however, on whether recovered ecosystems and populations could reassume their original biological functions and, for some extremely depleted stocks, potential recovery times are projected to be much longer.

Knowledge and capacity gaps

40. There continues to be limited understanding of the extent to which a changing climate is contributing to the redistribution of commercially important stocks or leading to potentially irreversible shifts in marine ecosystem structures and processes. Better understanding is also needed of the commercial value and ecological significance of other as yet unexploited stocks in deep-sea environments, such as in the mesopelagic zone.

⁵ For more information, see www.fao.org/port-state-measures.

41. Financial resources for undertaking scientific stock assessments and administering effective conservation and management measures are needed to further support and reinforce many fisheries, especially those of developing States. Capacity-building gaps in the management of fisheries include those associated with identifying impacts on target species and incorporating the effects on other species into management frameworks. Ongoing capacity-building gaps in developing countries also hinder the ability of those countries to take part in regional and international negotiations for reaching consensus on management practices for sustaining healthy fish stocks.

42. *Ways in which other Sustainable Development Goals contribute to achieving target 14.4*

- a. Goal 2: Increase in agricultural productivity (including aquaculture and mariculture), ensuring sustainable food production and maintaining ecosystems and the genetic diversity of wild species
- b. Goal 8: Improved resource efficiency in consumption and production
- c. Goal 9: Enhancement of scientific research and technological development, research and innovation in developing countries
- d. Goal 12: Sustainable management and efficient use of natural resources; reduction in food losses along production and supply chains, including post-harvest losses; strengthening of scientific and technological capacity to move towards more sustainable patterns of consumption and production; implementation of methods to ensure that tourism remains sustainable, creates jobs and promotes local products; and phasing out of harmful subsidies, where they exist, to reflect their environmental impacts
- e. Goal 13: Implementation of climate change mitigation, adaptation and impact reduction measures
- f. Goal 17: Improved access to science, technology and innovation, enhanced knowledge-sharing and transfer of technology, and capacity-building

43. *Ways in which target 14.4 contributes to achieving other Sustainable Development Goals*

- a. Goal 2: Increase in agricultural productivity (including aquaculture and mariculture), ensuring sustainable food production and maintaining ecosystems and the genetic diversity of wild species
- b. Goal 8: Support for productive activities
- c. Goal 12: Achievement of sustainable management and efficient use of natural resources; reduction in food losses along production and supply chains, including post-harvest losses; strengthening of scientific and technological capacity to move towards more sustainable patterns of consumption and production; and phasing out of harmful subsidies
- d. Goal 17: Enhancement of partnerships for sustainable development

Target 14.5: By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information (Chapters 5, 6, 7, 8, 9, 10, 12, 13, 14, 22, 27)

State of knowledge

44. Marine protected areas have increased rapidly in both number and size in recent years, largely in response to internationally agreed targets under the Convention on Biological Diversity and the 2030 Agenda. In 2020, marine protected areas covered 18 per cent of the ocean within national jurisdictions, representing approximately 8 per cent of the entire ocean, while about 1 per cent of marine areas beyond national jurisdiction had been protected. Much of the recent growth in the surface area of marine protected areas can be accounted for by a small number of countries that have established large marine protected areas.

45. In 2017, the General Assembly agreed to convene an intergovernmental conference to elaborate the text of an international legally binding instrument under the United Nations Convention of the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction, with a view to developing the instrument as soon as possible. Negotiations are continuing on this instrument, including on coordination and cooperation on measures such as area-based management tools, including marine protected areas. The indicators and global targets for marine protected areas as identified under the Convention on Biological Diversity are also currently undergoing revision through the process of negotiation of a post-2020 global biodiversity framework of the Convention.

Knowledge and capacity gaps

46. The distribution of species and habitats is shifting as a result of climate change. More research is needed on ecological adaptation and resilience, inter alia, and the prediction of ecosystem response trajectories. Challenges that still need to be addressed include the gathering of data in a cost-effective manner. Better interconnected monitoring programmes across institutions need to be established. Areas beyond national jurisdiction present a major challenge in that regard, in particular in deep sea ecosystems that are poorly surveyed. The role of technology in marine conservation and management will become increasingly important, especially the collection and use of data from remote sensing and satellites.

47. Resource capacity, including financial capacity, remains a significant constraint in relation to the protection and preservation of the marine environment and marine scientific research, while technology constraints are often an impediment to effective implementation of conservation measures committed to under international agreements. Many small island developing States and least developed countries lack the detailed knowledge and skilled workforce needed for ocean conservation management, in particular in the light of their limited resources and capacity compared with the large ocean areas under their jurisdiction.

48. Ways in which other Sustainable Development Goals contribute to achieving target 14.5

- a. Goal 6: Improved wastewater management and protection and restoration of wetlands
- b. Goal 7: Improved access to clean sources of energy and improved energy efficiencies and associated reduction in emissions
- c. Goal 9: Use of clean technologies and associated reduction in emissions
- d. Goal 11: Sustainable urbanization and reduction in the environmental impact of cities
- e. Goal 12: Sustainable management and use of natural resources and reduction in waste along supply chains

f. Goal 13: Implementation of climate change mitigation, adaptation and impact reduction measures

g. Goal 15: Reduction in the degradation of natural habitats and loss of biodiversity, and prevention of the extinction of species

h. Goal 17: Improved access to science, technology and innovation, enhanced knowledge-sharing and transfer of technology, and capacity-building

49. Ways in which target 14.5 contributes to achieving other Sustainable Development Goals

a. Goal 2: Maintenance of ecosystems, strengthening of capacity to adapt to climate change, and enhancement of cooperation in research and technological development

b. Goal 11: Preservation of and support for those ecosystems that afford protection from disasters to coastal communities

c. Goal 15: Reduction in the degradation of natural habitats and loss of biodiversity, and prevention of the extinction of species

d. Goal 17: Improved access to science, technology and innovation, enhanced knowledge-sharing and transfer of technology, and capacity-building

Target 14.6: By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation (Chapters 15, 16, 17)

State of knowledge

50. The subsidization of fishing vessels continues, including through subsidies that contribute to overcapacity, excessive fishing and stock depletion. Subsidies exacerbated problems of overcapacity and overfishing, especially where illegal, unreported and unregulated fishing was involved. In 2018, annual world fishery subsidies were estimated to be \$35.4 billion, compared with \$41.4 billion a decade earlier (2009 data expressed in 2018 dollars), but the decline was not considered significant. Most subsidies were provided by developed States. Capacity-enhancing (detrimental) subsidies increased in proportion to the total, comprising 63 per cent of all subsidies (about \$22 billion) compared with 57 per cent a decade earlier. Recent research estimates that 54 per cent of high seas fishing grounds would be rendered unprofitable if subsidies were eliminated.

51. Some subsidies in well-managed fisheries were beneficial, such as investments in stock assessments. Negotiations under the auspices of the World Trade Organization on reducing harmful fishery subsidies have continued, although an agreement is yet to be reached.

Knowledge and capacity gaps

52. Capacity and knowledge to analyse the negative and positive effects of subsidies in specific situations are missing. The draft agreement on fisheries subsidies under negotiation identifies the need for targeted technical and community capacity-

building specifically for least developed country members to assist them in implementing the agreement.⁶

53. Ways in which other Sustainable Development Goals contribute to achieving target 14.6

- a. Goal 2: Increase in agricultural productivity (including aquaculture and mariculture), ensuring sustainable food production and maintaining ecosystems and the genetic diversity of wild species
- b. Goal 8: Improved resource efficiency in consumption and production
- c. Goal 9: Enhancement of scientific research and technological development, research and innovation in developing countries
- d. Goal 12: Sustainable management and efficient use of natural resources; reduction in food losses along production and supply chains, including post-harvest losses; strengthening of scientific and technological capacity to move towards more sustainable patterns of consumption and production; implementation of methods to ensure that tourism remains sustainable, creates jobs and promotes local products; and phasing out of harmful subsidies, where they exist, to reflect their environmental impacts
- e. Goal 13: Implementation of climate change mitigation, adaptation and impact reduction measures
- f. Goal 17: Improved access to science, technology and innovation, enhanced knowledge-sharing and transfer of technology, and capacity-building

54. Ways in which target 14.6 contributes to achieving other Sustainable Development Goals

- a. Goal 8: Support for productive activities
- b. Goal 12: Achievement of sustainable management and efficient use of natural resources; reduction in food losses along production and supply chains, including post-harvest losses; strengthening of scientific and technological capacity to move towards more sustainable patterns of consumption and production; and phasing out of harmful subsidies
- c. Goal 17: Enhancement of partnerships for sustainable development

Target 14.7: By 2030, increase the economic benefits to small island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism (Chapters 4, 8, 15, 16, 17, 18, 19, 21, 23, 25, 27, 28)

State of knowledge

55. Economic use of the ocean has increased globally. Many countries are developing or have developed strategies for increasing maritime activities, such as renewable ocean energy, aquaculture, marine biotechnology, coastal tourism and seabed mining. These activities are regarded as growth sectors of the blue economy – a term that can include environmentally sustainable shipping and fisheries. The distribution around the world of the economic benefits drawn from the ocean is still very uneven, however.

⁶ See World Trade Organization, document WT/MIN(21)/W/5, available from <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/WT/MIN21/W5.pdf&Open=>.

56. Coastal communities play a key role in supporting all components of the ocean economy, as well as a range of social and cultural values, and all forms of coastal and marine management and governance. Recognition of the limitations of top-down management approaches and increased understanding of the rights, tenures and traditional and indigenous customary uses of inshore marine environments have catalysed widespread recognition of the strength and sustainability of community-based management, or bottom-up, approaches to marine management. Community-based management recognizes local community stewardship, knowledge and practices in monitoring, assessing and managing marine resources and through participatory, collaborative governance structures led by or involving local communities and systems of authority.

57. Aquaculture continues to expand faster than other types of food production. The major aquaculture producer in 2016 was China, with other major producers including India, Indonesia, Viet Nam and Bangladesh. China and Indonesia were the major producers of aquatic plants in 2016. More than 19 million people (32 per cent of all people employed in the sector) were engaged in fish farming, and 95.9 per cent of all aquaculture activities were being conducted in Asia. Remarkable improvements have been made in genetics and breeding, in relation to both finfishes and shrimps, and technological improvements in feeds, nutrition, health management and disease control are contributing to intensification, expansion and sustainability. Further sustainable growth will need to consider ongoing improvements to reduce environmental impacts, including those associated with disease and escapes.

58. Further sustainable growth will need to consider ongoing improvements to reduce environmental impacts, including those associated with disease and escapes.⁷ Existing international commitments and calls for sustainable aquaculture development, such as in the Food and Agriculture Organization of the United Nations (FAO) Code of Conduct for Responsible Fisheries,⁸ Bangkok Declaration and Strategy for Aquaculture Development Beyond 2000⁹ and the Phuket Consensus of 2010,¹⁰ and the FAO Global Blue Growth Initiative for small island developing States,¹¹ which includes the ecosystem approach to fisheries and aquaculture, are generally well aligned with the 2030 Agenda and will support the delivery of target 14.7.

59. The rate of growth in the number of international tourists has continued at levels above the long-term rate. Collectively, some of the countries in South Asia and South-East Asia achieved a 119 per cent increase in inbound international tourist numbers between 2011 and 2017. Caribbean States, such as the Dominican Republic and Jamaica, have had growth rates of around 25 per cent, well above the regional average. The Middle East and North Africa have experienced relatively low growth in tourist numbers but substantial growth in tourist income, suggesting that the tourist industry is offering more upmarket experiences. Domestic tourism has grown at a similar rate to international tourism, with growth rates estimated at over 10 per cent per year in many Asia-Pacific countries, such as China, Malaysia and the Philippines, over the period 2011–2017.

60. The coronavirus disease (COVID-19) pandemic has disrupted global trade and tourism, as well as fisheries and aquaculture extensively. This was particularly the case during 2020. Passenger traffic on ferries dropped significantly early in the year

⁷ Available from www.fao.org/fishery/docs/CDrom/aquaculture/a0805e/documents/Code%20of%20Conduct%20for%20Responsible%20Fisheries.pdf.

⁸ Available from www.fao.org/3/ab412e/ab412e28.htm.

⁹ Available from www.fao.org/3/am907e/am907e.pdf.

¹⁰ Available from <https://www.fao.org/3/am907e/am907e.pdf>

¹¹ See www.fao.org/3/i3958e/i3958e.pdf.

but, by August 2020, it was beginning to recover, while cruise ship activity plummeted and had yet to recover at the time the second Assessment was released. The problems caused by the COVID-19 pandemic are challenging fishing industries, including international trade of products, and disrupting the supply chains.

Knowledge and capacity gaps

61. Efforts by less developed countries to increase their sustainable use of marine resources are hampered by gaps in capacity-building, and resource and financial constraints. There is a need to build skills in many countries to plan and develop blue economies sustainably and to manage the cumulative impacts of related human activities. The capacity to effectively plan, assess and manage ocean activities within frameworks that recognize key drivers of change and their interactions is necessary, in particular in regions where there is currently little capacity to implement such frameworks.

62. Human, institutional and systemic capacities, as well as financing, continue to be the primary limiting factors in empowering countries to fully participate in and benefit from the conservation and sustainable use of the ocean and its resources, in particular for developing countries.

63. Ways in which other Sustainable Development Goals contribute to achieving target 14.7

a. Goal 2: Increase in agricultural productivity (including aquaculture and mariculture), ensuring sustainable food production and maintaining ecosystems and the genetic diversity of wild species

b. Goal 5: Equal access for women to property, financial services, inheritance and natural resources

c. Goal 6: Improved wastewater management and protection and restoration of wetlands

d. Goal 7: Improved access to clean sources of energy and improved energy efficiencies and associated reduction in emissions

e. Goal 8: Improved resource efficiency in consumption and production

f. Goal 9: Enhancement of scientific research and technological development, research and innovation in developing countries

g. Goal 11: Sustainable urbanization and reduction in the environmental impact of cities

h. Goal 12: Sustainable management and use of natural resources

i. Goal 13: Implementation of climate change mitigation, adaptation and impact reduction measures

j. Goal 15: Reduction in the degradation of natural habitats and loss of biodiversity, and prevention of the extinction of species

k. Goal 16: Promotion of the rule of law at the national and international levels

l. Goal 17: Improved access to science, technology and innovation, enhanced knowledge-sharing and transfer of technology, and capacity-building

64. Ways in which target 14.7 contributes to achieving other Sustainable Development Goals

- a. Goal 1: Reduction in exposure and building of resilience to environmental shocks and disasters
- b. Goal 2: Increase in agricultural productivity (including aquaculture and mariculture), ensuring sustainable food production and maintaining ecosystems and the genetic diversity of wild species
- c. Goal 5: Supporting economic sectors with a high participation of women
- d. Goal 8: Provision of opportunities for sustained economic growth and sustainable tourism
- e. Goal 9: Enhancement of scientific research, upgrade of the technological capabilities of industrial sectors in all countries, in particular developing countries, and encouragement of innovation
- f. Goal 12: Achievement of sustainable management and efficient use of natural resources, and strengthening of scientific and technological capacity
- g. Goal 13: Implementation of climate change mitigation, adaptation and impact reduction measures
- h. Goal 17: Improved access to science, technology and innovation, enhanced knowledge-sharing and transfer of technology, and capacity-building

Target 14.a: Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries (Chapters 3, 5, 9, 10, 11, 13, 14, 25, 26, 27)

65. Scientific understanding of the ocean, its functioning and the impacts on it is growing faster than ever. Innovations in technology and engineering regarding sensors and autonomous observation platforms have substantially increased observations of the ocean and allowed for those observations to be collected at finer temporal and spatial resolutions.

66. Cost-effective and user-friendly sensors, along with mobile applications, enhance the participation of citizens in ocean science, and the deployment of sensors on non-scientific ships is also facilitating the expanded collection of ocean observations. That has increased understanding of the physical and biogeochemical systems in the ocean, the distribution and composition of species, food web linkages and the connectivity of species throughout regions, and further developed capacity in the early warning and prediction of hazards.

67. Advances in computing technology and in statistical approaches to analysing large data sets, such as through machine learning and artificial intelligence, have resulted in advances in remote sensing and the utility of ocean data sets, notably in the monitoring and surveillance of fisheries and in bioinvasion management.

68. New frameworks and tools that identify and assess the cumulative impact of multiple pressures on marine ecosystems and allow for the exploration of management options for the sustainable development of human society have been developed. The networking and coordination of regional observation programmes has enabled better coordination and integration of efforts and the standardization and harmonization of observation methods.

Knowledge and capacity gaps

69. In many parts of the ocean, scientific knowledge and capacity-building gaps remain.

70. Quantification of the cumulative effects of pressures on the ocean is nascent, as is the quantification of comprehensive and standardized indicators of ocean health. Most assessments of cumulative effects tend to focus on existing and past activities in the marine environment. Similarly, much marine spatial planning has been carried out in areas where activities are ongoing, and many management frameworks are applied to existing activities related to resource extraction and use, making them retrospective in nature. Assessments that allow for “foresighting” are needed to inform planning of future activities and support management that is adaptive to future conditions and sustains ecosystems and human well-being. Developing such approaches is not straightforward and will require substantial effort.

71. Disparities in infrastructure and professional capacities limit ocean research, resulting in regional and national disparities in scientific understanding. To better monitor significant changes in physical and biogeochemical environments and their impacts on ecosystems and society, further integration of multidisciplinary observation systems and improved models are needed. Innovation in funding strategies is also required to sustain such systems. The capacity to enable people to have access to and use scientific understanding remains a requirement for applying integrated approaches to the management of human impacts on the ocean. Increased capacity in transboundary cooperation, the strengthening of science-policy capacity, greater coordination between social and natural sciences and between science and civil society, including industry, and the recognition of traditional knowledge, culture and social history are needed to support holistic management.

72. Ways in which other Sustainable Development Goals contribute to achieving target 14.a

- a. Goal 13: Implementation of climate change mitigation, adaptation and impact reduction measures
- b. Goal 17: Improved access to science, technology and innovation, enhanced knowledge-sharing and transfer of technology, and capacity-building

73. Ways in which target 14.a contributes to achieving other Sustainable Development Goals

- a. Goal 9: Enhancement of scientific research, upgrade of the technological capabilities of industrial sectors in all countries, in particular developing countries, and encouragement of innovation
- b. Goal 12: Achievement of sustainable management and efficient use of natural resources, and strengthening of scientific and technological capacity
- c. Goal 17: Improved access to science, technology and innovation, enhanced knowledge-sharing and transfer of technology, and capacity-building

Target 14.b: Provide access for small-scale artisanal fishers to marine resources and markets (Chapters 15, 16, 17)

State of knowledge

74. Fish markets continue to exhibit fast-paced globalization, thus increasing the vulnerability of small-scale fisheries to the depletion of locally important stocks. The application of information technology to help expand the opportunities of small-scale fisheries in areas such as safety, the sharing of local knowledge, capacity-building

and governance have been outlined by FAO in its Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication. Implementation is dependent on the participation of small-scale fishing communities in non-discriminatory, transparent and accountable decision-making processes, promoting a human rights-based approach. Research efforts such as the Too Big to Ignore global partnership¹² are assisting in focusing attention on small-scale fisheries, and 2022 has been proclaimed the International Year of Artisanal Fisheries and Aquaculture by the General Assembly, further focusing action on improving opportunities for small-scale fishers.

75. It is estimated that small-scale fisheries employed more than 90 per cent of the world's 120 million people involved in capture fisheries (about 50 per cent of whom were women) in 2019. Despite their significant contribution to global catches, small-scale fisheries were marginalized, with increasing pressure from both industrialized (and often subsidized) fleets and other ocean uses. Climate change is expected to have an adverse impact on those involved with small-scale fisheries, and adaptive strategies have been identified, including the need for alternative livelihoods.

76. Progress on target 2.3 of the Goals, which promotes, inter alia, access by small-scale fisheries to productive resources, services and markets (indicator 2.3.1), was noted in the development of targeted regulatory and institutional frameworks. However, more than 20 per cent of fishing States, in particular those in Oceania and South Asia, exhibited only low to medium levels of implementation of such frameworks.

77. Increased understanding of the rights, tenures and traditional and indigenous customary uses of inshore marine environments has catalysed widespread recognition of the strength and sustainability of community-based management. Adaptation measures that can be carried out at the community level to build resilience include tools such as cross-sectoral coordination, flexible fishing licences, seasonal rights, transboundary management and enhanced institutional cooperation that can be applied in conjunction with market and livelihood diversification.¹³

Knowledge and capacity gaps

78. Understanding of the impacts of climate change on developing States that depend on fisheries for food security, nutrition and incomes is needed. Financial resources for undertaking scientific stock assessments and administering effective conservation and management measures need further support and reinforcement in many fisheries, especially those of developing States.

79. Ways in which other Sustainable Development Goals contribute to achieving target 14.b

- a. Goal 2: Increase in agricultural productivity (including aquaculture and mariculture), ensuring sustainable food production and maintaining ecosystems and the genetic diversity of wild species
- b. Goal 5: Equal access for women to property, financial services, inheritance and natural resources
- c. Goal 8: Improved resource efficiency in consumption and production
- d. Goal 9: Enhancement of scientific research and technological development, research and innovation in developing countries

¹² See <http://toobigtoignore.net>.

¹³ See also target 14.7.

- e. Goal 12: Sustainable management and efficient use of natural resources; reduction in food losses along production and supply chains, including post-harvest losses; strengthening of scientific and technological capacity to move towards more sustainable patterns of consumption and production; implementation of methods to ensure that tourism remains sustainable, creates jobs and promotes local products; and phasing out of harmful subsidies, where they exist, to reflect their environmental impacts
- f. Goal 13: Implementation of climate change mitigation, adaptation and impact reduction measures
- g. Goal 17: Improved access to science, technology and innovation, enhanced knowledge-sharing and transfer of technology, and capacity-building

80. Ways in which target 14.b contributes to achieving other Sustainable Development Goals

- a. Goal 2: Increase in agricultural productivity (including aquaculture and mariculture), ensuring sustainable food production and maintaining ecosystems and the genetic diversity of wild species
- b. Goal 5: Providing equal market access to women
- c. Goal 8: Improved resource efficiency in consumption and production
- d. Goal 9: Enhancement of scientific research and technological development, research and innovation in developing countries
- e. Goal 12: Sustainable management and efficient use of natural resources, and implementation of tools for monitoring sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products
- f. Goal 17: Improved access to science, technology and innovation, enhanced knowledge-sharing and transfer of technology, and capacity-building

Target 14.c: Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in the United Nations Convention on the Law of the Sea, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of “The future we want” (Chapters 4, 8, 18, 19, 21, 23, 25, 27, 28)

State of knowledge

81. The protection of marine ecosystems is embedded in various international agreements, such as the United Nations Convention on the Law of the Sea (UNCLOS) and the Convention on Biological Diversity (CBD), as well as in regional agreements and other instruments and national legislation. Efforts continue to strengthen the implementation of international law, including as reflected in UNCLOS, at all levels, including by increasing the level of participation of States in the numerous global and regional treaties that supplement its provisions.

82. Examples at the global level include the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter of 1972 (London Convention) and its update in 1996, the London Protocol; the International Convention for the Prevention of Marine Pollution from Ships of 1973, as modified by the Protocol of 1978 relating thereto and by the Protocol of 1997 (including its annex VI on the reduction in sulphur emissions from ships, which entered into force in 2020); and the Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing of FAO, which entered into force in 2016.

83. There are still major challenges to ensuring participation in international instruments, addressing resource and capacity constraints, strengthening intersectoral cooperation, ensuring coordination and information-sharing at all levels and developing new instruments to address emerging challenges in a timely fashion.¹⁴

Knowledge and capacity gaps

84. Resource capacity, including financial capacity, remains a significant constraint for the protection and preservation of the marine environment and marine scientific research, while technological constraints are often an impediment to the effective implementation of a State’s obligations. Gaps also exist with regard to the material scope of relevant instruments (e.g. no comprehensive rules on plastics and microplastics) or the geographical scope of their application (e.g. geographical coverage by the regional fisheries management organizations and arrangements).

85. Many small island developing States and least developed countries lack access to the detailed knowledge and skilled human resources needed for ocean management, and resources for managing the large marine areas under their jurisdiction are often limited. Filling these gaps will ensure that economic benefits can be maximized in an environmentally sustainable manner. Specific challenges exist in the enforcement of management measures in areas beyond national jurisdiction, owing to regulatory gaps and a lack of cross-sectoral coordination. These issues are currently being discussed at the United Nations in the context of the intergovernmental negotiations on the development of an international legally binding instrument under UNCLOS on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction.

¹⁴ See also target 14.5.

86. *Ways in which other Sustainable Development Goals contribute to achieving target 14.c*

- a. Goal 2: Ensuring of sustainable food production systems, maintenance of ecosystems and strengthening of capacity to adapt to climate change, extreme weather, drought, flooding and other disasters
- b. Goal 3: Reduction in hazardous chemicals, pollution and contamination
- c. Goal 6: Reduction in pollution, improved wastewater management and protection and restoration of water-related ecosystems
- d. Goal 7: Improved access to clean sources of energy and improved energy efficiencies and associated reduction in emissions
- e. Goal 11: Protection and safeguarding of cultural and natural heritage
- f. Goal 12: Environmentally sound management of chemicals and all wastes throughout their life cycle, within agreed international frameworks
- g. Goal 13: Integration of climate change measures into national policies, strategies and planning
- h. Goal 15: Reduction in the degradation of natural habitats and loss of biodiversity, and prevention of the extinction of species
- i. Goal 16: Promotion of the rule of law at the national and international levels
- j. Goal 17: Enhancement of policy coherence for sustainable development

87. *Ways in which target 14.c contributes to achieving other Sustainable Development Goals*

- a. Goal 2: Ensuring of sustainable food production systems, maintenance of ecosystems and strengthening of capacity to adapt to climate change, extreme weather, drought, flooding and other disasters
- b. Goal 3: Reduction in hazardous chemicals, pollution and contamination
- c. Goal 6: Reduction in pollution, improved wastewater management and protection and restoration of water-related ecosystems
- d. Goal 7: Improved access to clean sources of energy and improved energy efficiencies and associated reduction in emissions
- e. Goal 11: Sustainable urbanization and reduction in the environmental impact of cities, and protection and safeguarding of cultural and natural heritage
- f. Goal 12: Sustainable management and use of natural resources, and environmentally sound management of chemicals and all wastes throughout their life cycle, within agreed international frameworks
- g. Goal 13: Implementation of climate change mitigation, adaptation and impact reduction measures, and integration of climate change measures into national policies, strategies and planning
- h. Goal 15: Reduction in the degradation of natural habitats and loss of biodiversity, and prevention of the extinction of species
- i. Goal 16: Promotion of the rule of law at the national and international levels
- j. Goal 17: Enhancement of policy coherence for sustainable development

II. The effects of the coronavirus disease pandemic on the marine environment

88. Work on the second Assessment had almost concluded as the COVID-19 pandemic began. Some of the effects of the pandemic were noted in the Assessment. For example, as a result of mitigation efforts to reduce the spread of the virus, pressures affecting the ocean, such as fishing, tourism activities, pollution and greenhouse gas emissions, were temporarily reduced. With restrictions being placed on the movement of people and on business operations, along with the closing of borders, disruption to supply chains and declining markets were noted as having affected a number of marine industries, notably fisheries and shipping.

89. It was noted in the Assessment that reduced pressures might have an impact on drivers such as climate change, but that the effects were expected to be minimal, and it was unclear what the benefits might be for marine ecosystems. Disruptions to global supply chains highlighted the need in many countries to strengthen local supply chains and, in particular, to explore e-commerce options for supporting supply chains in general.

90. The full implications of the pandemic on human interactions with the ocean are still to be determined and could be explored as part of the assessment(s) of the state of the marine environment, including socioeconomic aspects, of the third cycle of the Regular Process. Nevertheless, the ocean and the services that it provides will have an important role in the recovery from the pandemic. It is hoped that the information in the first and second Assessments will help with that process.

III. Considerations for the third cycle of the Regular Process

91. The programme of work for the third cycle of the Regular Process indicates that assessment(s) will be produced to build on the findings of the first and second Assessments. The focus of these assessments will be developed in consultation with relevant stakeholders through a scoping exercise facilitated through regional workshops and under the guidance of the Ad Hoc Working Group of the Whole of the General Assembly on the Regular Process. Part of this process will be further identifying opportunities for dialogue with and input from other United Nations and intergovernmental processes, including the Department of Economic and Social Affairs in its capacity as the secretariat of the high-level political forum on sustainable development.

92. The opportunity for dialogue with and input from stakeholders will allow for ~~content~~ relevant information and experience ~~to~~ on the Sustainable Development Goals, especially Goal 14, to be considered during the scoping exercise, and for the inclusion of relevant content in the assessment(s) to be developed during the third cycle. This might include identifying the linkages between Goal 14 and other Goals in greater detail than what was done in the second Assessment and the present brief. It also might include identifying mechanisms that allow the transfer of knowledge to inform Goal evaluations.

93. Finally, it could also include an assessment, including that includes evaluation of good practices and lessons learned, of progress on achieving the targets of Goal 14. In addition, ~~and~~ an analysis of the maturity of the related Goal 14 indicators and identification of challenges in maturing these to the point they can be considered as tier I indicators could be conducted to support the implementation of SDG 14. These activities will not only support delivery of output I of the programme of work for the

third cycle of the Regular Process,¹⁵ focused on assessment(s) of the state of the marine environment, but also assist with the delivery of output II as set out in the programme of work focused on supporting and interacting with other ocean-related intergovernmental processes.

¹⁵ See [A/75/362](#), annex.