

# Implementation Plan Summary



The United Nations  
Decade of Ocean Science  
for Sustainable Development  
**(2021-2030)**



**2021**  
**2030** United Nations Decade  
of Ocean Science  
for Sustainable Development

# Table of contents

---

<b>3/</b>	<b>Acknowledgements</b>
<b>5/</b>	<b>Foreword</b>
<b>6/</b>	<b>Why a UN Decade of Ocean Science for Sustainable Development?</b>
<b>8/</b>	<b>What does the Ocean Decade aim to achieve?</b>
<b>10/</b>	<b>Designing the science we need</b>
<b>14/</b>	<b>Managing data and knowledge during the Ocean Decade</b>
<b>15/</b>	<b>Developing capacity and ocean literacy</b>
<b>16/</b>	<b>How can I engage in the Ocean Decade?</b>
<b>17/</b>	<b>How will the Ocean Decade be coordinated?</b>
<b>18/</b>	<b>How will the Ocean Decade be financed?</b>
<b>19/</b>	<b>Measuring the success of the Ocean Decade</b>

---

Published in 2021 by the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization, 7, place de Fontenoy, 75352 Paris 07 SP, France



This publication is available in Open Access under the Attribution-ShareAlike 3.0 IGO (CC-BY-SA 3.0 IGO) license (<http://creativecommons.org/licenses/by-sa/3.0/igo/>). By using the content of this publication, the users accept to be bound by the terms of use of the UNESCO Open Access Repository (<http://www.unesco.org/open-access/terms-use-ccbysa-en>).

The present license applies exclusively to the textual content of the publication. For the use of any material not clearly identified as belonging to UNESCO, prior permission shall be requested from: [publication.copyright@unesco.org](mailto:publication.copyright@unesco.org) or UNESCO Publishing, 7, place de Fontenoy, 75352 Paris 07 SP France.

The designations employed and the presentation of material throughout this publication do not imply the expression of any opinion whatsoever on the part of UNESCO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The ideas and opinions expressed in this publication are those of the authors; they are not necessarily those of UNESCO and do not commit the Organization.

UNESCO-IOC (2021). *The United Nations Decade of Ocean Science for Sustainable Development (2021-2030) Implementation plan – Summary*. Paris, UNESCO. (IOC Ocean Decade Series, 19.)

The full text of the Implementation plan is also available as: UNESCO-IOC (2021), *The United Nations Decade of Ocean Science for Sustainable Development (2021-2030) Implementation Plan*. UNESCO, Paris (IOC Ocean Decade Series, 20)

Cover : © Dmitry Pichugin / Shutterstock.com  
Right: © axily / Shutterstock.com





# Acknowledgements

The Intergovernmental Oceanographic Commission (IOC) of UNESCO, under the leadership of Ariel Troisi (IOC Chair) and Vladimir Ryabinin (IOC Executive Secretary), gratefully acknowledges the many individual and institutional contributors to the Implementation Plan over the last three years.

The idea of the Ocean Decade was born out of a meeting of IOC officers and senior secretariat staff in early January 2016 in Gilleleje, Denmark. The meeting was chaired by the then IOC Chair, Peter Haugan, and benefited from the strategic advice of the former IOC Executive Secretary, Gunnar Kullenberg.

The Implementation Plan had its genesis in the discussions of an Interim Planning Group throughout early 2018. Following these reflections, an Executive Planning Group (EPG) comprising 19 global leaders in ocean science was established in mid-2018 and made significant contributions to the development of the Implementation Plan.<sup>1</sup> An Informal Working Group of Early Career Ocean Professionals that was established in late 2019 contributed to the shaping of the Implementation Plan.

Between June 2019 and May 2020, global, thematic and regional planning meetings convened over 1,900 participants from the scientific community, governments, UN entities, NGOs, private sector and donors across ten ocean basins. These meetings provided important input to the Implementation Plan on scientific priorities and capacity development needs, as well as information on existing and future partnerships to implement Decade Actions. The governments of Brazil, Canada, Denmark, India, Italy, Japan, Kenya, Mexico, Norway, Republic of Korea and Sweden, as well as secretariats of the UN Environment Programme (Nairobi Convention, Mediterranean Action Plan, Caribbean Environment Programme), the European Commission, the Ocean Frontier Institute (Canada), the North Pacific Marine Science Organization (PICES), the National Institute of Ocean Technology (India), the International Council for the Exploration of the Sea (ICES), the Permanent Commission for the South Pacific (CPPS), the Mediterranean Science Commission (CIESM), the Danish Centre for Marine Research, the Autonomous National University of Mexico (UNAM), the Research Council of Norway, Arctic Frontiers, the Pacific Community (SPC), the American Geophysical Union (AGU), the UN Global Compact, the Western Indian Ocean Science Association (WIOMSA), Velux Foundations, Fundação Grupo Boticario and the Carlsberg Foundation provided invaluable support to the organization of these workshops.

In late 2019, over 50 leading ocean institutions provided written submissions to inform the development of the scientific priorities of the Ocean Decade and over 230 written submissions were received in response to the peer review of the zero draft of the Implementation Plan in March and April 2020. The current version of the Implementation Plan benefited from a comprehensive review by the Member States of the IOC and members of UN-Oceans in June and July 2020.

---

<sup>1</sup> Information on EPG members is provided on the Ocean Decade' website: <https://www.oceandecade.org>



# Foreword

We live on a blue world.

The ocean covers 71% of the planet's surface. It feeds us, protects us and absorbs more than 90% of the excess heat generated by global warming. It is an inestimable source of economic, social and cultural wealth – 3 billion people depend on marine and coastal biodiversity for their livelihoods.

Yet we are far from understanding the ocean's mysteries. Although progress has been made in this field, around 80% of the ocean floor remains unmapped, and an estimated one million species have yet to be discovered.

However, we do know that the ocean is neither immeasurable, nor invulnerable. According to predictions, tropical coral reefs may disappear by the turn of the century. By 2050, there could be more plastic than fish in the ocean. Nevertheless, ocean research remains poorly funded: it only receives a tiny fraction – an average of less than 2 per cent – of national research budgets

As the world grapples with global challenges, such as the COVID-19 pandemic, climate change and biodiversity erosion, there is little doubt that our health and well-being depend on the health and resilience of ocean ecosystems. We must take action to protect them now – and that is what the United Nations Decade of Ocean Science for Sustainable Development aims to do.

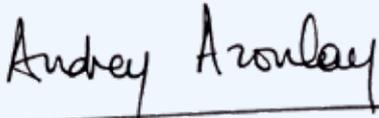
Proclaimed by the United Nations General Assembly, the 'Ocean Decade' aims to produce 'the science we need for the ocean we want', catalysing transformative ocean science solutions for sustainable development, from 2021 onwards.

As a unifying framework across the entire UN system, it will enable countries to achieve all of their ocean-related Agenda 2030 priorities, guided by the UN Convention on the Law of the Sea, and focusing on Sustainable Development Goal 14 – the conservation and sustainable management of ocean and marine resources. It will mobilize support towards Small Island Developing States, which are at the forefront of many ocean-related challenges.

The Decade is coordinated by UNESCO's Intergovernmental Oceanographic Commission, the United Nations body responsible for supporting global ocean science and services. It is already building on the successes achieved so far, working in partnership with countries and institutions around the world. Over 2,500 stakeholders, for instance, have contributed to the development of this Implementation Plan.

However, if the Ocean Decade is to succeed, we need to do more. We are now calling on our United Nations partners, scientists, governments, philanthropists, industry, civil society, and indigenous and local knowledge holders from across the globe to join this incredible movement. To maintain momentum, we can and must use all of the potential at our disposal, including that of women – who today only account for 39% of all ocean scientists worldwide.

We now have an opportunity to unlock ocean knowledge and deliver the ocean we need for the future we want. We have a chance to bring about a blue post-pandemic recovery, building back better and ensuring that we truly are one planet, one ocean.



---

Audrey Azoulay  
Director-General of UNESCO

# Why a UN Decade of Ocean Science for Sustainable Development?

Human health and well-being, including sustainable and equitable economic development, depend on the health and safety of the world's ocean. The ocean provides food and supports the livelihoods of over 3 billion people. It is an essential ally in the fight against climate change and a source of significant cultural, aesthetic and recreational values. Emerging services, including renewable energy, marine genetic resources or deep-sea minerals, have the potential to generate significant benefits but they also raise questions about risks to fragile ecosystems and equitable access to the benefits generated by the ocean. From an economic point of view, the ocean is of monumental importance. In 2010, the ocean economy generated over 30 million direct, full-time jobs and prior to the COVID-19 pandemic, the ocean's economic output had been predicted to reach US\$3 trillion by 2030.

Traditionally perceived as invincible, the ocean is under threat. Multiple impacts, from land-based and sea-based activities, affect over 40% of the ocean's surface. Deoxygenation is creating ocean 'dead zones' and harmful algal blooms are generating significant risks for human health and economies. Live coral cover, which harbours significant biodiversity and provides coastal protection and livelihoods, has nearly halved in the last 150 years. We cannot manage what we do not understand and there is much about the ocean that remains a mystery. To date, only 19% of the ocean floor is mapped and there are vast swathes of the deep ocean and Arctic and Polar regions where we know virtually nothing about species distribution, ecosystems, ocean processes and stressors.

At the beginning of the third millennium, ocean science is largely competent for diagnosing problems. However, its ability to offer solutions of direct relevance to sustainable development requires a massive upgrade. The world needs a large-scale and adequately resourced campaign of transformational ocean science that will empower and engage stakeholders across disciplines, geographies, generations and genders and be of sufficiently long duration to deliver the lasting change that is required.

In 2016, the Intergovernmental Oceanographic Commission of UNESCO (IOC) initiated a concept for such a campaign. In December 2017, this work culminated in the proclamation by the 72nd Session of the UN General Assembly (UNGA) of the **UN Decade of Ocean Science for Sustainable Development 2021-2030** (referred to as 'the Ocean Decade'). UNGA called on the IOC to prepare an Implementation Plan for the Ocean Decade in consultation with Member States, United Nations partners and diverse stakeholder groups.

The Ocean Decade is being prepared in the midst of the COVID-19 pandemic that has changed the world and ocean science, forever. The pandemic has highlighted the importance of science and knowledge for decision-making and policy. As the world adjusts to a new normal, the ocean will need to play a central role in post-pandemic recovery efforts. The High Level Panel for a Sustainable Ocean Economy<sup>1</sup> recently concluded that sustainable ocean-based investments could yield benefits at least five times greater than their costs, confirming their importance as part of a holistic approach to ensuring equitable and inclusive post-COVID-19 recovery. Such solutions will deliver optimal benefits if they build upon robust ocean science that is co-designed and co-delivered by a diverse range of stakeholders. However, for this to occur there needs to be nothing short of a revolution in the way we generate and use ocean science. The Ocean Decade creates the conditions for this revolution by facilitating a paradigm shift in the design and delivery of qualitative and quantitative ocean knowledge to inform solutions that will contribute to the 2030 Agenda for Sustainable Development.

---

1 <https://www.oceanpanel.org/>



# What does the Ocean Decade aim to achieve?



© StanislavBeloglazov / iStock / Via Getty Images

The vision of the Ocean Decade is **'the science we need for the ocean we want'**.

The mission of the Ocean Decade is **'to catalyse transformative ocean science solutions for sustainable development, connecting people and our ocean'**.

The Ocean Decade will be implemented on a voluntary basis within the legal framework of the United Nations Convention on the Law of the Sea (UNCLOS). The Ocean Decade will facilitate the generation of data, information and knowledge needed to move from the 'ocean we have' to the 'ocean we want'. Seven outcomes describe the 'ocean we want' at the end of the Ocean Decade:

1. A **clean ocean** where sources of pollution are identified and reduced or removed.
2. A **healthy and resilient ocean** where marine ecosystems are understood, protected, restored and managed.
3. A **productive ocean** supporting sustainable food supply and a sustainable ocean economy.
4. A **predicted ocean** where society understands and can respond to changing ocean conditions.
5. A **safe ocean** where life and livelihoods are protected from ocean-related hazards.
6. An **accessible ocean** with open and equitable access to data, information and technology and innovation.
7. An **inspiring and engaging ocean** where society understands and values the ocean in relation to human well-being and sustainable development.

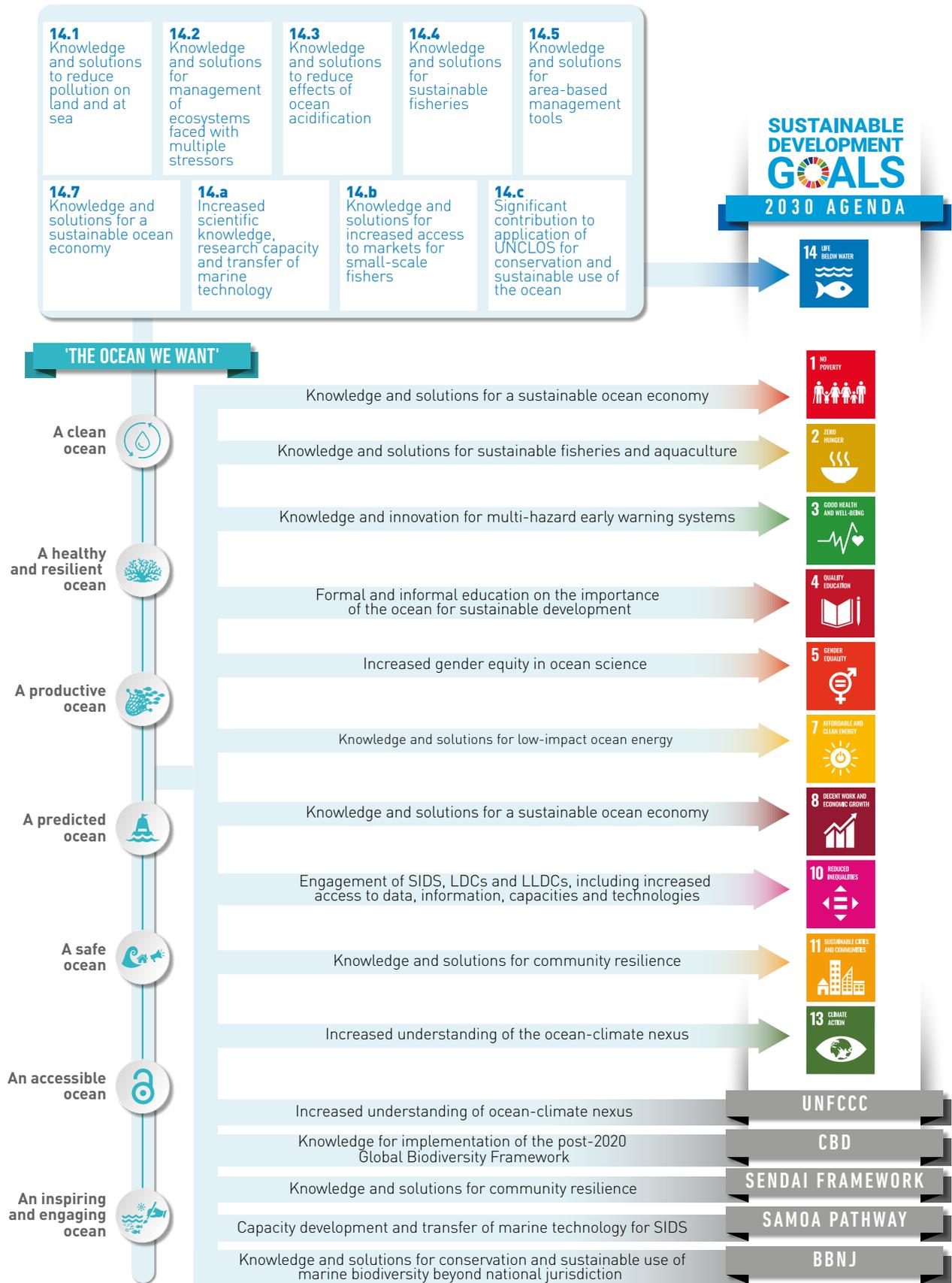
The ambition of the Ocean Decade is beyond the capacity of any single nation, stakeholder group, generation or scientific discipline, any single generation or any single scientific discipline. The Ocean Decade will convene a

wide range of stakeholders to collectively align their research, investments and initiatives around a set of common priorities, so that the result of their shared efforts is exponentially greater than the sum of the parts.

Initiatives will grow and flourish at the local, national or regional scales according to specific contexts and priorities. Capacity development, including improved access to data and technology, increased ocean literacy and the creation of an enabling environment that ensures broad inclusivity, including gender, generational and geographic diversity, will be essential elements at each stage of this process.

The Ocean Decade will not set ocean policy, but it will build scientific capacity and generate knowledge that will directly contribute to the goals of the 2030 Agenda for Sustainable Development and other relevant global legal and policy frameworks, as illustrated on the next page. The Ocean Decade will also support SDG17 – Partnerships for the goals, that seeks to strengthen global partnerships to achieve the ambitious targets of the 2030 Agenda.

## Interactions with the 2030 Agenda and related policy frameworks



# Designing the science we need

The Ocean Decade Action Framework, which is shown in the overleaf, will guide the design and implementation of the initiatives carried out during the Ocean Decade. The Ocean Decade Challenges, which are shown below, form the highest level of this framework and represent the most immediate and pressing priorities for the Ocean Decade. They aim to unite Decade partners in collective action at the global, regional, national and local scales and will contribute to the achievement of the Ocean Decade outcomes, thus shaping the overall contribution of the Decade to the 2030 Agenda and other policy

frameworks. They may evolve throughout the Ocean Decade to respond to emerging issues.

The Ocean Decade Objectives form the second level of the framework and will guide the multi-step, iterative and cyclical process that is required to fulfil the Ocean Decade Challenges and thus move from the 'ocean we have' to the 'ocean we want'. As illustrated in the overleaf, this process involves three non-linear overlapping steps: (i) the identification of ocean knowledge that is required for sustainable development; (ii) the generation of the data, information and knowledge for the development of a comprehensive understanding of the ocean, its components and its interactions; and (iii) the use of the generated knowledge and understanding of the ocean to deploy solutions for sustainable development. This process requires a substantial expansion in ocean science capacity as an integral part of every step to ensure that no one is left behind during implementation of the Ocean Decade. The Objectives are relevant across all of the Ocean Decade Challenges and will be used to structure and track Decade Actions and identify where additional efforts may be needed.

## Ocean Decade Challenges



Understand and map land- and sea-based sources of pollutants and contaminants and their potential impacts on human health and ocean ecosystems, and develop solutions to remove or mitigate them.



Understand the effects of multiple stressors on ocean ecosystems, and develop solutions to monitor, protect, manage and restore ecosystems and their biodiversity under changing environmental, social and climate conditions.



Generate knowledge, support innovation and develop solutions to optimize the role of the ocean in sustainably feeding the world's population under changing environmental, social and climate conditions.



Generate knowledge, support innovation and develop solutions for equitable and sustainable development of the ocean economy under changing environmental, social and climate conditions.



Enhance understanding of the ocean-climate nexus and generate knowledge and solutions to mitigate, adapt and build resilience to the effects of climate change across all geographies and at all scales, and to improve services including predictions for the ocean, climate and weather.



Enhance multi-hazard early warning services for all geophysical, ecological, biological, weather, climate and anthropogenic related ocean and coastal hazards, and mainstream community preparedness and resilience.



Ensure a sustainable ocean observing system across all ocean basins that delivers accessible, timely and actionable data and information to all users.



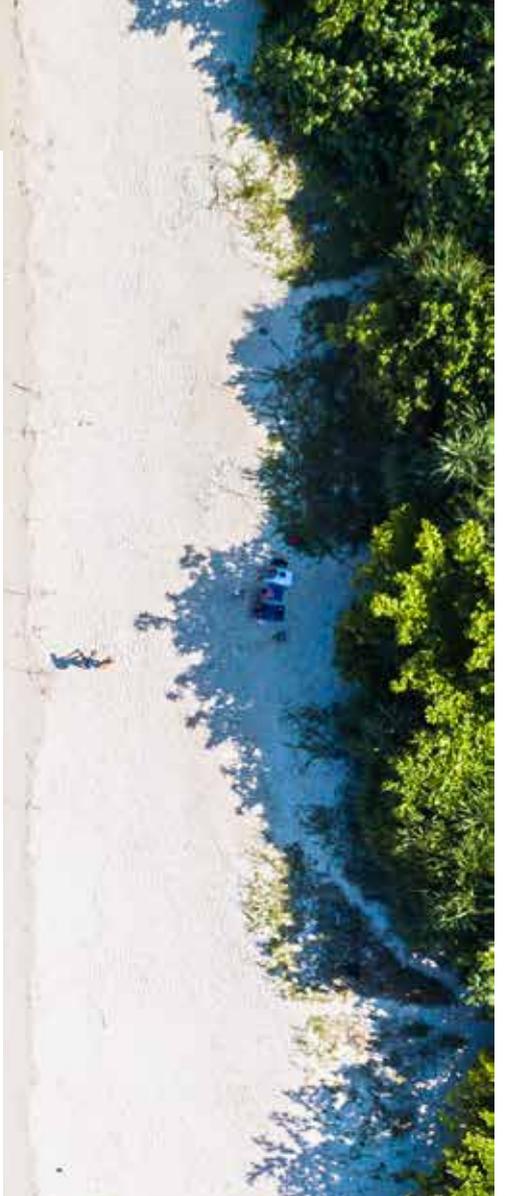
Through multi-stakeholder collaboration, develop a comprehensive digital representation of the ocean, including a dynamic ocean map, which provides free and open access for exploring, discovering and visualizing past, current and future ocean conditions in a manner relevant to diverse stakeholders.



Ensure comprehensive capacity development and equitable access to data, information, knowledge and technology across all aspects of ocean science and for all stakeholders.



Ensure that the multiple values and services of the ocean for human well-being, culture, and sustainable development are widely understood, and identify and overcome barriers to behaviour change required for a step change in humanity's relationship with the ocean.



## Ocean Decade Action Framework

2030 AGENDA & REGIONAL AND GLOBAL POLICY FRAMEWORKS



DECADE OUTCOMES

'THE OCEAN WE WANT'



### OCEAN DECADE CHALLENGES

The most immediate and pressing needs of the Decade, Challenges may evolve throughout the Decade and new Challenges will be added. Each Challenge contributes to one or more Decade Outcomes.



### DECADE OBJECTIVES

The steps in the process from the ocean we have to the ocean we want. Objectives are relevant to all Challenges. Prioritization and translation of Objectives into Actions will vary depending on context.



### DECADE ACTIONS

The tangible initiatives and endeavours that will be implemented by a wide range of Decade stakeholders to fulfil the Objectives and thus achieve the Challenges.

© UNESCO

## OCEAN SCIENCE IN THE CONTEXT OF THE OCEAN DECADE

In the context of the Ocean Decade, the ocean is considered as a part of the larger Earth system stretching from the coast to the open sea and from the ocean surface to the deep ocean seabed. The term 'ocean science' encompasses natural and social science disciplines, including interdisciplinary topics; the technology and infrastructure that supports ocean science; the application of ocean science for societal benefit, including knowledge transfer and applications in regions that are lacking science capacity; and the science-policy and science-innovation interfaces. It considers the land-sea, ocean-atmosphere and ocean-cryosphere interactions. Ocean science recognizes, respects and embraces local and indigenous knowledge.



© pigphoto / iStock / Via Getty Images

## Moving from the ocean we have to the ocean we want



### 'THE SCIENCE WE NEED'

UN Decade of Ocean Science for Sustainable Development



© UNESCO

## Decade Objectives

**Objective 1: Identify required knowledge for sustainable development and increase the capacity of ocean science to deliver needed ocean data and information.** This objective includes sub-objectives related to the provision of knowledge for regular integrated assessments of the state of the ocean and of ocean science capacity, promotion of new technology and increased access to technology, enhancement and expansion of observations infrastructure and development of mechanisms to optimize citizen science initiatives and the recognition and inclusion of local and indigenous knowledge.

**Objective 2: Build capacity and generate comprehensive knowledge and understanding of the ocean, including human interactions and interactions with the atmosphere, cryosphere and the land-sea interface.** This objective includes sub-objectives related to the mapping and understanding of ocean components, understanding of thresholds and tipping points for the ocean system, increased use of historical ocean knowledge, improved ocean models and prediction services and increased efforts in education, training and transfer of marine technology.

**Objective 3: Increase the use of ocean knowledge and understanding and develop capacity to contribute to sustainable development solutions.** This objective includes sub-objectives related to the increased understanding of the role of ocean science in sustainable development, development of interoperable and

open-access data platforms and services, facilitation of co-designed and co-delivered ocean solutions including planning, management and other tools and services and the promotion of formal and informal education, including ocean literacy.

Decade Actions are the tangible initiatives that will be carried out across the globe over the next ten years to fulfil the Ocean Decade vision. They will be carried out by a wide range of proponents, including research institutes and universities, governments, UN entities, intergovernmental organizations, other international and regional organizations, business and industry, philanthropic and corporate foundations, NGOs, educators, community groups or individuals.

## Decade Actions

**Decade Actions** include **programmes and projects**, as well as **activities** and/or **contributions**:

- A **Decade programme** is typically global or regional in scale and will contribute to the achievement of one or more of the Ocean Decade Challenges. It is long-term, multi-year, interdisciplinary and multi-national. A programme will consist of component projects and potentially enabling activities.
- A **Decade project** is a discrete and focused undertaking. It may be regional, national or sub-national and it will typically contribute to an identified Decade programme.

- A **Decade activity** is a one-off, standalone initiative (such as an awareness-raising event, scientific workshop or thematic training opportunity). It enables a programme or project or directly contributes to an Ocean Decade Challenge.
- A **Decade contribution** supports the Ocean Decade through provision of resources (e.g. funding or an in-kind contribution). A contribution can support either the implementation of a Decade Action or the coordination functions of the Ocean Decade.

Endorsement of Decade Actions will ensure that initiatives are collectively contributing to the priorities of the Ocean Decade and will allow ongoing assessment of impact. Proponents will request endorsement of **programmes** and **projects** in response to periodic Calls for Action that will be launched by the Decade Coordination Unit, the central coordination hub for the Ocean Decade. These Calls may relate to specific themes or geographies and are expected to be launched twice per year. Proponents can submit **activities** or **contributions** at any time via an online platform to request endorsement by the Decade Coordination Unit. United Nations entities can register Actions at any time with the Decade Coordination Unit.

When requesting endorsement or registering potential Actions, proponents will provide information on the alignment of their proposed Action with the criteria below. Decade Actions should:

- Contribute to fulfilling the Ocean Decade Challenges and to achieving the Decade Objectives and associated sub-objectives.
- Accelerate the generation or use of knowledge and understanding of the ocean, with a specific focus on knowledge that will contribute to the achievement of the SDGs and complementary policy frameworks and initiatives.
- Be co-designed or co-delivered by knowledge generators and users and thus facilitate the uptake of science and ocean knowledge for policy, decision-making, management and/or innovation.
- Ensure that all data and resulting knowledge are provided in an open access, shared, discoverable manner in accordance with the provisions of UNCLOS and are appropriately deposited in recognized data repositories consistent with the IOC Oceanographic Data Exchange Policy<sup>2</sup> or the relevant UN subordinate body data policy.
- Strengthen existing or create new partnerships across nations and/or between diverse ocean actors, including users of ocean science.
- Contribute toward capacity development, including, but not limited to, beneficiaries in SIDS, LDCs and LLDCs.

- Overcome barriers to diversity and equity, including gender, generational and geographic diversity.
- Collaborate with and engage local and indigenous knowledge holders.

Potential Decade Actions can be submitted for endorsement without having secured all required financial and in-kind resources. Where required, the Decade Coordination Unit may facilitate connections between proponents of Actions and resource providers. Both ongoing and new initiatives can be considered for endorsements as Decade Actions.

Once endorsed, Actions will be announced on the Ocean Decade website. Proponents of endorsed Actions will be able to use the Ocean Decade logo during the implementation of the Action. Proponents will be required to provide a brief annual report on the implementation of the Action. Endorsement will be valid for the duration of the Action.

## TRANSFORMATIVE OCEAN SCIENCE

The notion of transformation is central to the Ocean Decade. The Decade, both in terms of action and outcomes, needs to move beyond business as usual to a true revolution in ocean science. In the context of the Decade, we need transformative ocean science that:

- ▶ uses the 2030 Agenda as a central framework to identify and address the questions that are most important to society;
- ▶ is co-designed and co-delivered in a multi-stakeholder environment and that involves the generators of knowledge and the users of knowledge;
- ▶ is solutions-focused;
- ▶ where needed, is big, audacious, forward-looking and spans geographies;
- ▶ reaches across disciplines and actively integrates natural and social science disciplines, as well as the arts and humanities;
- ▶ embraces local and indigenous knowledge holders;
- ▶ is transformative because of who is doing it or where it is being done, including in both less developed and developed countries;
- ▶ strives for generational, gender and geographic diversity in all its manifestations;
- ▶ is communicated in forms that are widely understood across society and that trigger behaviour change; and
- ▶ is shared openly and available for re-use.

<sup>2</sup> See [https://www.iode.org/index.php?option=com\\_content&view=article&id=51:ioc-oceanographic-data-exchange-policy&catid=24&Itemid=100040](https://www.iode.org/index.php?option=com_content&view=article&id=51:ioc-oceanographic-data-exchange-policy&catid=24&Itemid=100040)



# Managing data and knowledge during the Ocean Decade

© jo Crebbin / Shutterstock.com

Data and information are key enablers of the Ocean Decade outcomes. Digitizing, accessing, managing and, most importantly, using ocean-related data, information and knowledge will be cornerstones of the success of the Ocean Decade. No single data, information and knowledge management infrastructure system will be able to support the Ocean Decade ambitions. The focus will be on the collective design and construction of a distributed, multi-component digital network capable of representing the entire ocean system, including its social and economic characteristics. An expanded human and institutional network of data, information and knowledge generators and users will support the development and operation of this digital ecosystem. Eventually, it will embrace all types of ocean data, including physical, geological, bathymetric, biogeochemical, biological, ecological, social, economic, cultural and governance-related data. It will incorporate both already existing and newly constructed digital management platforms and tools.

The Ocean Decade digital ecosystem will contribute to understanding the ocean using historical, contemporary and modelled data to describe the past and current conditions and predict future ocean conditions. The data sources will include industry or citizen-science data, as well as less-quantifiable data sources, such as indigenous and local knowledge. The development of the ecosystem will overcome existing barriers, including differing levels of capacity and access to technology and computing power, data fragmentation and siloing, impediments to data sharing including language and hidden or underexploited datasets.

The Ocean Decade digital ecosystem will catalyse cooperation between knowledge generators and diverse user groups, including governments, UN entities, scientists, planners and decision-makers, as well as industry and communities. These users need to be able to access, assess and influence the data and knowledge being generated so that it meets their needs.

The Decade Coordination Unit, working with data management experts from UN entities, governments, industry, philanthropic foundations, research institutes and other partners, will coordinate and promote the development of the digital ocean ecosystem. The main challenge of the Ocean Decade will be to build capacity and access to technology where it is still lacking and to enhance efforts to rally and consolidate capacities across the academic, philanthropic, industrial and governmental sectors. Throughout the Ocean Decade, Calls for Action will be launched for digital products to form part of the ecosystem.

To ensure that all stakeholders have the skills and can access technology needed to generate, interpret and use data, information and knowledge, data management related initiatives of the Ocean Decade will be linked to capacity development and transfer of marine technology initiatives where relevant. To provide further guidance on the stewardship of data, a working group is developing a strategy on ocean data and information stewardship for the Ocean Decade that will be finalized in the early phases of implementation.



# Developing capacity and ocean literacy

© Alexpunker / Shutterstock.com

All parts of the ocean are connected and all countries need the knowledge and capacity to understand, observe and manage the ocean. Yet, ocean science skills remain unequally distributed across genders, across geographies and across generations. If the Ocean Decade is to achieve its ambition, there needs to be a significant, collective and accelerated effort to reverse the existing imbalance in knowledge, skills and access to existing and new technology.

Capacity development initiatives during the Ocean Decade will aim to develop individual and institutional skills. They will also aim to improve equitable access to data and knowledge, technology and infrastructure, for example research facilities, equipment or high power computing. A wide variety of types of capacity development initiatives, including ocean literacy initiatives, will be implemented throughout the Ocean Decade to best respond to local, national and regional priorities and stakeholder needs. Capacity development initiatives will target a diverse range of stakeholders, including generators and users of knowledge and privilege long-term partnerships that build on existing resources and networks.

Advances in capacity throughout the Ocean Decade will be measured as part of the monitoring and evaluation process. The second edition of the *Global Ocean Science Report*, released in 2020, provided baseline information against which progress in capacity development will be measured.

Efforts to increase ocean literacy will contribute to capacity development by increasing understanding of the human influence on the ocean and the ocean's influence on people. As part of the Ocean Decade, an Ocean Literacy Strategy identifies four priority areas for action, namely: mainstreaming ocean literacy in policy formulation, formal education, corporate action and community engagement. The Ocean Decade will support governments and other stakeholders to develop national ocean literacy strategies and to increase the monitoring and evaluation of the impacts of increased ocean literacy.

## TO MEET THE CHALLENGE PRESENTED BY THE OCEAN DECADE, CAPACITY DEVELOPMENT INITIATIVES WILL

- ▶ Be needs-driven with adequate investment in tools that can match the demand for capacity development to different opportunities.
- ▶ Be developed to respond to regional and national priorities.
- ▶ Privilege long-term partnerships that build on existing resources and networks.
- ▶ Include a focus on mechanisms that accelerate the use of knowledge.
- ▶ Target both scientists and users of science.
- ▶ Recognize, respect and engage local and indigenous knowledge holders.
- ▶ Identify and overcome barriers to gender, geographical and generational balance.

# How can I engage in the Ocean Decade?

Active engagement of diverse stakeholders, including the scientific community, national and sub-national governments, UN bodies and intergovernmental organizations, business and industry, philanthropic foundations, NGOs and Early Career Ocean Professionals (ECOPs) will be central to the success of the Ocean Decade.

Engaging in the Ocean Decade will bring a wide range of benefits. Partners will have the opportunity to join a highly visible, shared, global effort that builds on decades of achievements in ocean science. There will be opportunities to create new collaborations across disciplines, geographies and generations, as well as opportunities to access new sources of support or to invest in innovative and audacious ocean science and to raise the visibility and reach of partners' actions and initiatives.

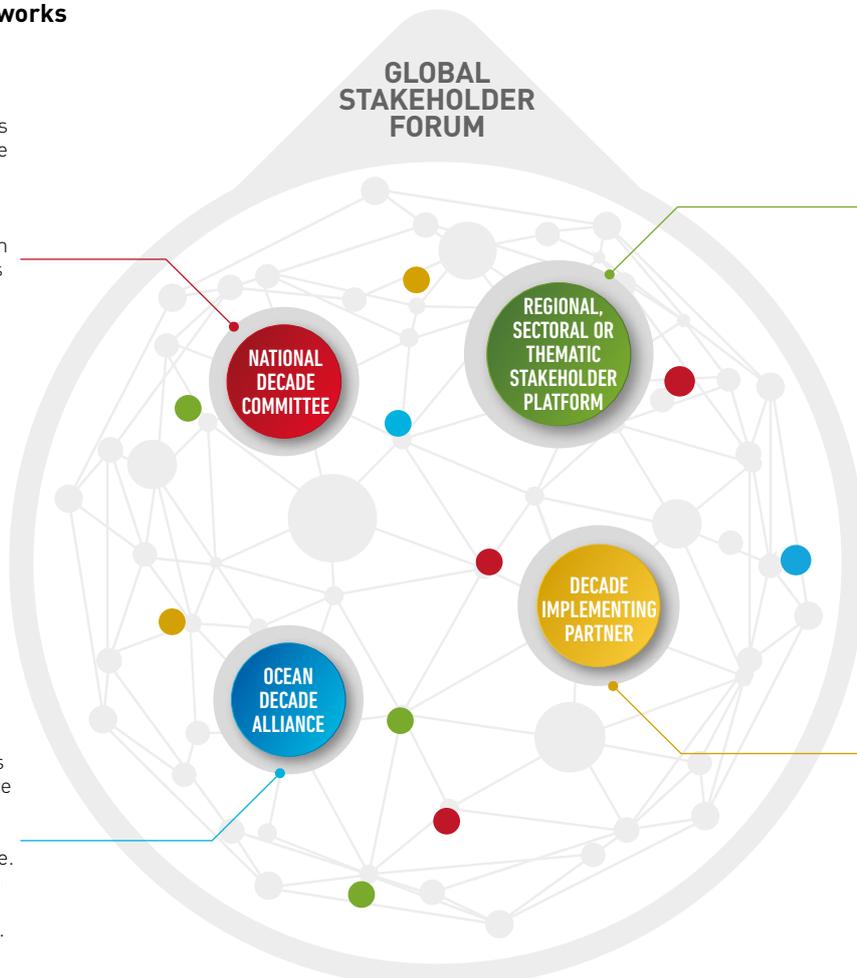
There is no limit to the number of ways that an individual or an organization can engage in the Ocean Decade. Proponents of Decade Actions or other interested partners can establish or join a voluntary, self-organizing Ocean Decade stakeholder engagement network, examples of which are illustrated below. The stakeholder engagement networks will play a key role in the co-design and co-delivery of Decade Actions and in raising awareness about the Ocean Decade at the local, national and regional scales; however, membership of such a structure is not a requirement for engagement in the Ocean Decade.

Voluntary stakeholder engagement networks can register via an online platform with the Decade Coordination Unit. Once registered, these stakeholder networks will become members of the Global Stakeholder Forum that will provide a platform for catalysing virtual and in-person connections and collaborations. The Decade Coordination Unit will use the Global Stakeholder Forum to convene communities of practice around the Ocean Decade Challenges and will promote exchange between stakeholder groups with similar interests. Funding opportunities, partnership opportunities, training events, meetings or conferences, or requests for inputs to Decade review processes will also be broadcast via the virtual platform. The members of the Global Stakeholder Forum will meet in regular regional and international conferences, which will be a mix of in-person and virtual events.

## Ocean Decade voluntary stakeholder engagement networks

Existing or new structures to coordinate actors at the national level. Inclusive multi-agency and multi-stakeholder platform for the co-design and co-delivery of Actions and to facilitate access to benefits such as data, products, science-policy advice or capacity development.

The Alliance will catalyse large-scale commitments towards the Ocean Decade through targeted networking, resource mobilization and influence. Members will be part of a highly visible platform of supporters of the Decade.



Existing or new groups of ocean actors that work together to contribute to the Decade vision. Groups could convene on a geographic basis (e.g. at the regional level), for a specific theme (e.g. deep ocean, underwater cultural heritage) or for a particular stakeholder group (e.g. NGOs or private sector).

Stakeholder institutions (e.g. research institutes, NGOs, universities) that are committed to the vision and mission of the Ocean Decade and that are making significant and sustained efforts to implement Decade Actions.



© armiblue / iStock / Via Getty Images

## How will the Ocean Decade be coordinated?

The Ocean Decade will involve a large number of partners and activities around the world so it cannot be rigidly governed. A simple, robust coordination structure will manage day-to-day implementation. The Decade Coordination Unit, to be located in the IOC Secretariat, will be the central hub for the coordination of Ocean Decade activities. Governments or partners will host

a number of Decade Coordination Offices and Decade Collaborative Centres – referred to as decentralized coordination structures – that will be located in different regions around the world. These structures will help to coordinate efforts between national, regional and global initiatives, share knowledge and tools developed through the Ocean Decade, create links between potential Decade partners and monitor and report on the impact of the Decade.

The Decade Advisory Board will be a multi-sector, strategic advisory body that will provide advice on the implementation of the Ocean Decade. United Nations entities will be members of the Decade Advisory Board. The Governing Bodies of the IOC will provide intergovernmental oversight to the Ocean Decade and will report to the United Nations General Assembly through existing reporting processes.



© Nomad1988 / Shutterstock.com

## How will the Ocean Decade be financed?

The Ocean Decade itself is not a funding mechanism but it includes mechanisms and opportunities to increase funding available for ocean science and to bring together resource providers around common priorities.

Resources for ocean science come from a range of organizations, including governments, philanthropic foundations and business and industry. To achieve the ambitions of the Ocean Decade, the amount and type of resources available for ocean science will need to increase significantly in coming years. Both financial

support and in-kind support (e.g. use of research vessels, data, access to infrastructure) will be important to the success of the Ocean Decade.

The Ocean Decade Alliance will be an important mechanism for resource mobilization. It will comprise a network of high-level supporters of the Ocean Decade who will lead by example to mobilize resources for Decade Actions. Alliance members will provide significant financial and in-kind support for Decade Actions and will inspire action in other partners through networking and awareness raising.

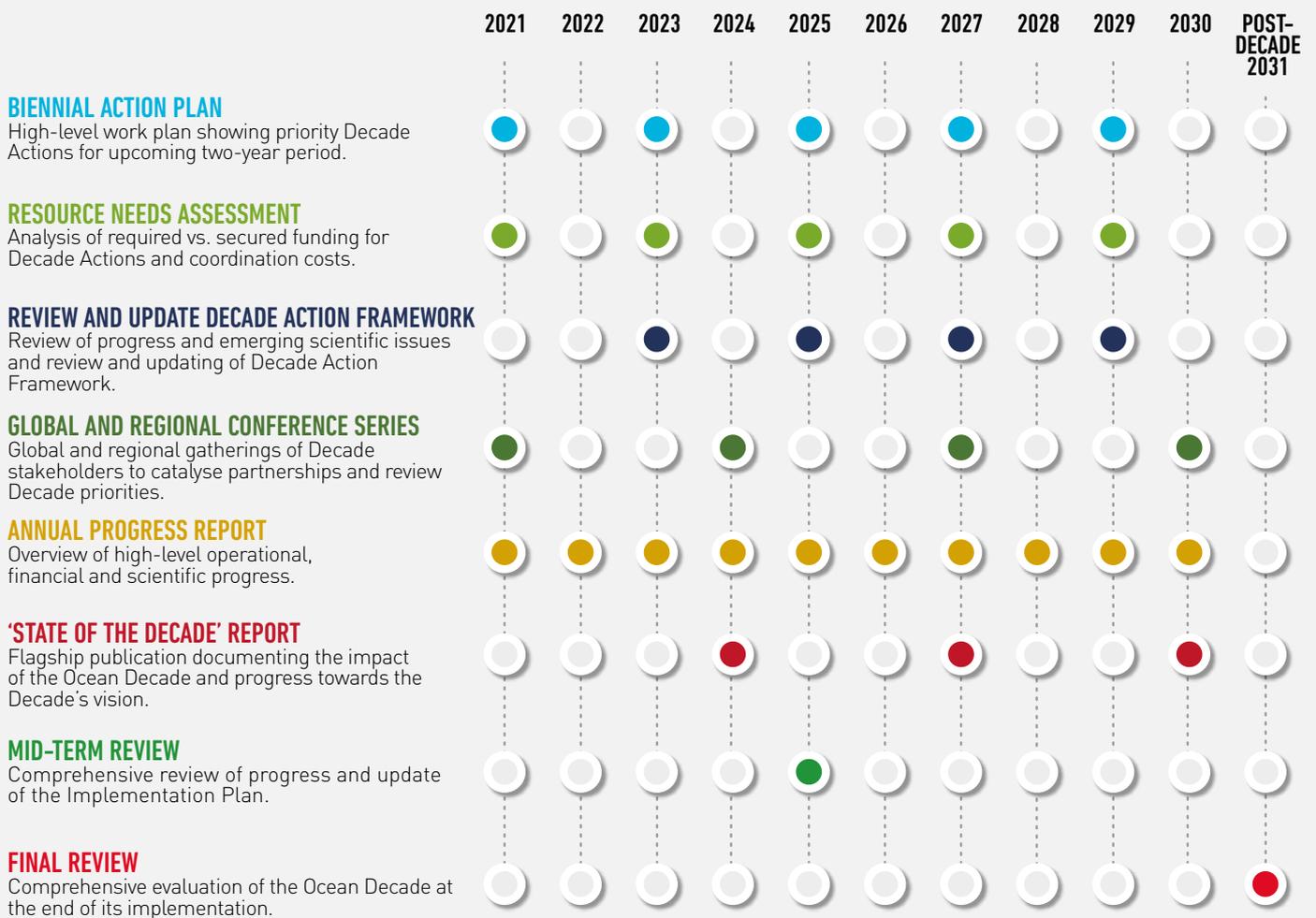
Decade Actions will be financed in different ways. Proponents of Decade Actions can secure their own financing via traditional mechanisms, for example research grants. Via the Global Stakeholder Forum and the Ocean Decade Alliance, the Decade Coordination Unit will also create connections between Ocean Decade partners carrying out ocean science and partners who can provide resources and thus become part of a collective, highly visible global effort to transform ocean science.

# Measuring the success of the Ocean Decade

The Ocean Decade is taking place in a dynamic world. Changing social and economic conditions influence society's needs for ocean knowledge. Advances in technology and scientific discoveries, as well as global events like the COVID-19 pandemic, will continue to reveal new priorities and opportunities for the Ocean Decade. A detailed monitoring and evaluation framework is being developed and will allow tracking of the impact and achievements of the Ocean Decade, as well as its operational progress. This information

will allow adaptive management of the Ocean Decade, including reviews and updating of the Decade Action Framework and the Implementation Plan, regular reporting on progress towards the Ocean Decade vision and matching of available resources to the highest priority Decade Actions. Monitoring and evaluation will benefit from and contribute to regular evaluation and reporting processes within the UN system. The proposed review processes and milestones for the Ocean Decade are illustrated below.

## Ocean Decade milestones and review processes



## LEAD OR PARTICIPATE IN A DECADE ACTION

Decade Actions will be implemented by a wide range of proponents throughout the Ocean Decade. Regular Calls for Action will be issued and Actions that are submitted for endorsement will need to demonstrate how they meet the criteria described in the Implementation Plan.

## ESTABLISH OR JOIN A VOLUNTARY STAKEHOLDER NETWORK

Decade stakeholder engagement networks convene ocean actors with common interests to facilitate connections and collaboration. All registered networks are members of the Global Stakeholder Forum.

# HOW TO ENGAGE?

## BECOME A MEMBER OF THE OCEAN DECADE ALLIANCE

The Ocean Decade Alliance is a key mechanism for resource mobilization during the Decade and will act as a matchmaker between resource providers and proponents of Decade Actions – in line with the priorities of the Decade.

## JOIN GENERATION OCEAN

It is everyone's Decade! 'Gen0' convenes all living and future generations to build a new kind of society by 2030, one in which all of humanity will use the best available science and knowledge to deliver the ocean we need for the future we want.

© UNESCO

Learn more about engaging in the Ocean Decade on [oceandecade.org](https://oceandecade.org)



UNOceanDecade



unoceandecade



OceanDecade



UN-Ocean-Decade