



United Nations  
Educational, Scientific and  
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Intergovernmental  
Oceanographic  
Commission



2021  
2030 United Nations Decade  
of Ocean Science  
for Sustainable Development

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

**new challenges and opportunities to strengthen the international  
cooperation**

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# What is the United Nations Decade of Ocean Science for Sustainable Development?

On 5 December 2017, the [United Nations proclaimed a Decade of Ocean Science for Sustainable Development](#), to be held from 2021 to 2030. This Decade will provide a common framework to ensure that ocean science can fully support countries' actions to sustainably manage the Oceans and more particularly to achieve the 2030 Agenda for Sustainable Development.

The Decade will provide a 'once in a lifetime' opportunity to create a new foundation, across the science-policy interface, to strengthen the management of our oceans and coasts for the benefit of humanity.

Through stronger international cooperation, the Decade will bolster scientific research and innovative technologies to ensure science responds to the needs of society:

- A clean ocean where sources of pollution are identified and removed
- A healthy and resilient ocean where marine ecosystems are mapped and protected
- A predictable ocean where society has the capacity to understand current and future ocean conditions
- A safe ocean where people are protected from ocean hazards
- A sustainably harvested ocean ensuring the provision of food supply
- A transparent ocean with open access to data, information and technologies
- An inspiring and engaging ocean where society understands and values the ocean



# What is the United Nations Decade of Ocean Science for Sustainable Development? (I)

## Decade Action Hierarchy

### Decade Programme

- Global or regional in scale
- To fulfill one or more of the Decade objectives.
- It is long-term (multi-year), interdisciplinary and typically multi-national.

### Decade Project

- Discrete and focused undertaking of a shorter duration.
- It may stand alone, but will typically contribute to an identified Decade programme

### Decade Activity

- In support of an outcome, objective, programme, or project.
- Typically a one-off standalone activity
- It can form part of a programme or project or can relate directly to a Decade objective.

### Decade Contribution

- Supports the Decade through provision of a necessary resource
- A contribution can support implementation of a Decade Action or for coordination costs, and be in-kind or financial.



Deliverables	Timeframe
Biennial Action Plan	Every 2 years Starting in 2021
Resource Needs Assessment	Every year
Review and Update of Decade Action Framework	Every 2 years Starting 2022
Annual Progress Report	Every year
Biennial 'State of the Decade' Report	Every 2 years Starting 2022
Mid Term Review	2025
Implementation Plan Update	2025
Final Review	2030

## Governance Framework



## Coordination Framework



# UN Decade of Ocean Science for Sustainable Development - Challenges

## Knowledge and Solutions Challenges

- ❑ **Challenge 1:** 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.
- ❑ **Challenge 2:** 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 climatic conditions.
- ❑ **Challenge 3:** Generate knowledge, support innovation, and develop solutions to optimise the role of the ocean in sustainably feeding the world's population under changing environmental, social and climatic conditions.
- ❑ **Challenge 4:** Generate knowledge, support innovation, and develop solutions for equitable and sustainable development of the ocean economy under changing environmental and social conditions.
- ❑ **Challenge 5:** 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.

# UN Decade of Ocean Science for Sustainable Development - Challenges

## Essential Infrastructure Challenges

- ❑ **Challenge 6:** Enhance multi-hazard warning systems for all geophysical, ecological, biological, and weather and climate related ocean and coastal hazards, and mainstream community preparedness and resilience.
- ❑ **Challenge 7:** Ensure a sustainable ocean observing system across all ocean basins that delivers to all users accessible, timely, and actionable data and information.
- ❑ **Challenge 8:** Through multi-stakeholder collaboration, develop a comprehensive digital representation of the ocean, including a dynamic ocean map that provides free and open access for exploring, discovering, and visualizing past, current, and future ocean conditions in a manner relevant to diverse stakeholders.

## Foundational Challenges

- ❑ **Challenge 9:** Ensure comprehensive capacity development and equitable access to data, information, knowledge and technology across all aspects of ocean science and for all stakeholders.
- ❑ **Challenge 10:** Ensure that the multiple values and services of the ocean for human wellbeing, culture, and sustainable development are widely understood, and identify and overcome barriers to the behaviour change that is required for a step change in humanity's relationship with the ocean.

# UN Decade of Ocean Science for Sustainable Development - Data & Information Management

Data and information will be key enablers of the Decade's outcomes. Digitizing, preserving, managing, exchanging and - most importantly - using a significantly increased volume and range of ocean-related data, information and knowledge will all be cornerstones of the Decade's success.

Implementing the “digital ocean ecosystem” to support the Decade will be a dynamic and continuous process, incorporating established approaches and technologies as well as those that are only just emerging.

- ❑ To build the capacity where it is still lacking
- ❑ To rally, coordinate, and make interoperable capacities across stakeholders, including the academic, philanthropic, industrial, and governmental sectors

## UN Decade - The Opportunities (I)

- ★ Inclusive and outward-facing co-design and co-construction of a distributed - but integrated and interoperable – set of digital solutions capable of representing the socio-ecological dimensions of the ocean and its many relationships with sustainable development
- ★ Provisioning and use of data, information and knowledge and contributions from a wide variety of stakeholders
- ★ The digital ocean ecosystem will enable understanding of the ocean from a social-ecological perspective using historical, contemporary (including real-time), and modelled data to describe past and current ocean conditions, while supporting prediction of their future states

## UN Decade - The Opportunities (II)

- ★ The Decade's digital ecosystem will catalyse cooperation between technologists, data producers, and diverse user groups including governments, UN entities, scientists, planners, decision-makers, as well as industry and the public
- ★ To ensure that all stakeholders have the skills and access technology needed to produce , interpret and use data, information and knowledge, all related initiatives of the Decade will be linked to capacity development and transfer of marine technology initiatives.

## Conclusions

Throughout the Decade, Calls for Action will be launched, inviting stakeholders to help build components of the digital ocean ecosystem and further specify its technical implementation guidelines.

- create new opportunities for the participation of industry and local and indigenous groups in ocean science, including those that address forms of knowledge that may not align with scientific numeration or may require new ways of digital representation of evidence.
- facilitate use by and received contributions from a wide range of stakeholders, including those in low-technology environments;
- be responsive to users' needs through proactive engagement and co-development and incorporate new ways of ensuring that data are accessible and useable at the science-policy, science-public, and science-innovation interfaces;
- champion and promote demonstrated interoperability with diverse components of the digital ocean ecosystem as well as with external systems, with strategies to ensure scalable and extensible development to address unforeseen and emerging issues; and
- interlink resources that are grounded in peer-reviewed science or transparent, quality-controlled procedures and which deliver content that can be audited and is traceable to raw observations, measurements, analyses, or models of the ocean, its component parts and its interactions, including human interactions.



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# THANK YOU



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