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Commission

**Scientific Knowledge,
Research Capacity
Development and Transfer
of Marine Technology**

**Focal Points IOC-UNESCO
and GEF**

Kirsten Isensee

Ocean Decade Challenges

Describe the most immediate and pressing priorities for the Decade fully aligned with SDG 14.



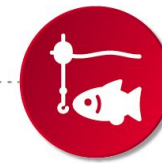
2021 United Nations Decade
of Ocean Science
2030 for Sustainable Development



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 mitigate or remove them.



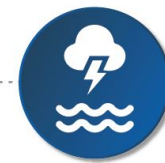
Understand the effects of multiple stressors on ocean ecosystems, and develop **solutions to protect, monitor, manage and restore ecosystems and their biodiversity** under changing environmental conditions, including climate.



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



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



Enhance understanding of the **ocean-climate nexus** and use this **understanding** to generate solutions to mitigate, adapt and build resilience to the effects of climate change, and to improve services including improved predictions and forecasts for weather, climate, and the ocean.



Expand **multi-hazard warning systems** for all biological, geophysical, and weather and climate related ocean hazards, and mainstream community preparedness and resilience.



Ensure a sustainable **ocean observing system** that delivers timely data and information accessible to all users on the state of the ocean across all ocean basins.



Develop a comprehensive **digital representation of the ocean**, including a dynamic ocean map, through multi-stakeholder collaboration that provides free and open access to explore, discover, and visualize past, current, and future ocean conditions.



Ensure comprehensive **capacity development and equitable access to data, information, knowledge and technology** across all aspects of ocean science and for all stakeholders regardless of geography, gender, culture, or age.



Ensure that the multiple values of the ocean for human wellbeing, culture, and sustainable development are recognised and 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.



2021 United Nations Decade
2030 of Ocean Science
for Sustainable Development

THE OCEAN DECADE

in a snapshot

As of November 2024

ENDORSED OCEAN DECADE ACTIONS

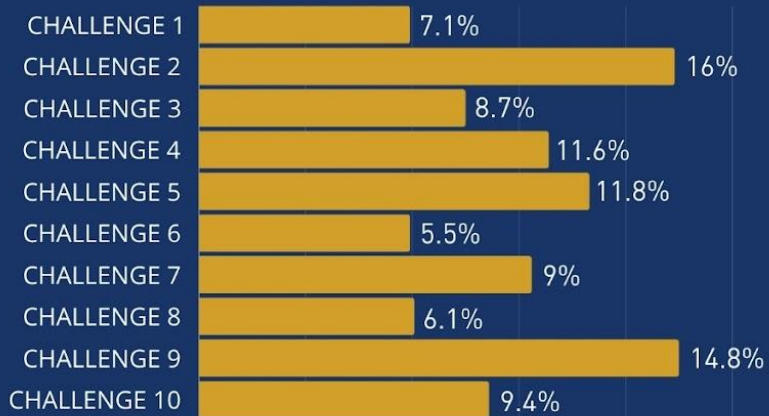


57 PROGRAMMES **98** CONTRIBUTIONS
440 PROJECTS **920** ACTIVITIES



DECADE ACTIONS LED BY PARTNERS FROM **79** COUNTRIES

ENDORSED ACTIONS PER CHALLENGE



REGIONAL AND NATIONAL COORDINATION

11
DECADE COLLABORATIVE CENTRES/ COORDINATION OFFICES

18
DECADE IMPLEMENTING PARTNERS



39
NATIONAL DECADE COMMITTEES

6
REGIONAL TASKFORCES AND PROGRAMMES

OCEANDECADE.ORG

@UNOceandecade

@un-ocean-decade

ENGAGEMENT AND OUTREACH

7 INFORMAL WORKING GROUPS

11 PATRONS AND **19** INSTITUTIONAL MEMBERS OF THE OCEAN DECADE ALLIANCE



OVER **20** MEMBERS OF THE FOUNDATIONS DIALOGUE



9,400 MEMBERS FROM **173** COUNTRIES ON THE OCEAN DECADE NETWORK

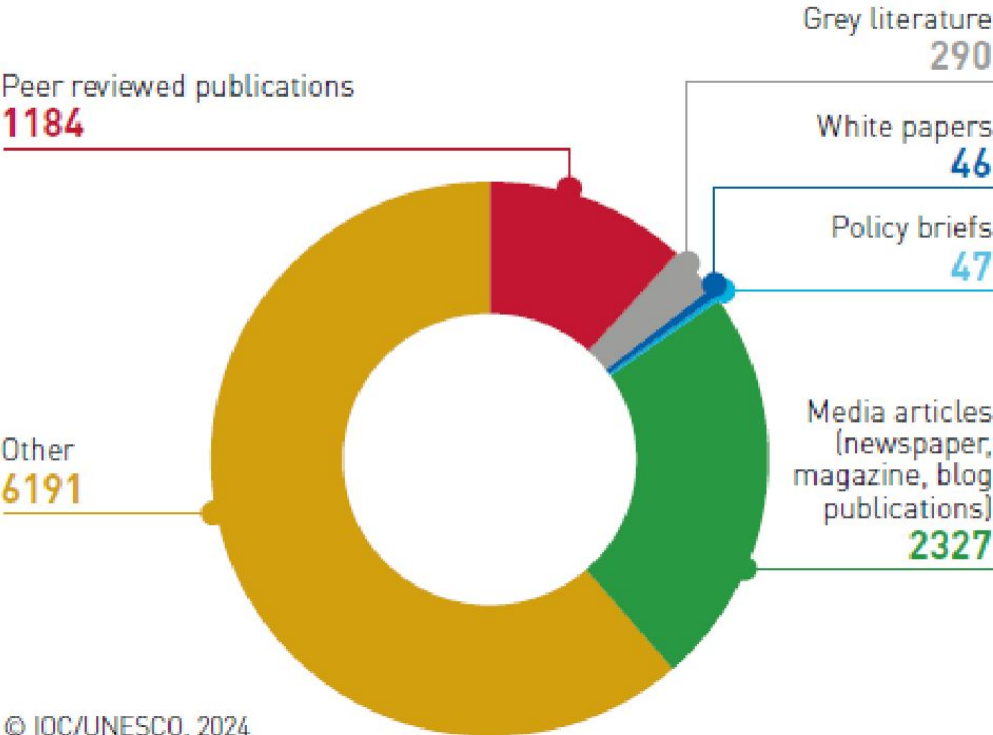


3.5+ MILLION REACH

Figure 3.a: Top 10 types of lead institutions.



Figure 8: Most common knowledge product types.



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Science and Knowledge Priorities



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- 1) Understand global distribution and human health and ecosystem impacts of **marine pollution** across the land-sea continuum,
- 2) Enhance and scale-up marine and **coastal ecosystem-based management approaches**,
- 3) Better understand **deep-sea biodiversity, ecosystems and ecosystem services**,
- 4) Encourage sustainable, resilient, and equitable **small-scale fisheries and aquaculture**,
- 5) Strengthen sustainable **aquatic food production**,
- 6) Underpin evidence-based **Sustainable Ocean Plans** at the national level and in relevant transboundary areas,
- 7) Encourage sustainable and climate resilient **ocean economy** project,
- 8) Rapidly scale up climate mitigation including through **marine renewable energy and management of coastal ecosystems**,
- 9) Allow timely understanding of the technical, ecological, and social feasibility, potential impacts of proposed **marine carbon dioxide removal (mCDR)**,
- 10) Underpin adaptive governance and management systems and decision support tools for the assessment of **vulnerability and risk to coastal communities and marine industries** from ocean and coastal hazards including climate change,
- 11) Develop economic models, policies, and innovative financial instruments to diversify and accelerate **investment in ocean science**,
- 12) Inform knowledge drawn from **transdisciplinary social science and ocean literacy** research on human ocean connection, behaviour change, and cultural engagement,
- 13) Increase engagement with the health sector and better understand **connections between ocean health and human health**.

Global Ocean Science Report



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Since 2014, the IOC has incorporated as part of its mandate the publication of the Global Ocean Science Report (GOSR) based on **decisions EC-XLVII/6.2 and XXVIII/5.1** adopted respectively by the IOC Executive Council at its 47th session (Paris, 1–4 July 2014) and the IOC Assembly at its 28th session (Paris 18–25 June 2015).

The **first edition of the GOSR, launched on 8 June 2017**, assessed for the first time the status and trends in ocean science capacity around the world.

The **second edition of the Global Ocean Science Report (GOSR2020)** was published in December 2020.

Next edition expected 2025 – some results to be presented at UNOC3.



The Current Status
of Ocean Science
around the World



Charting Capacity for
Ocean Sustainability



GOSR2020 Top findings



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- I. The findings of ocean science have direct implications for sustainable development policies and are applied in the management strategies and action plans of multiple societal sectors.
- II. Funding for ocean science is largely inadequate; this lack of support undermines the ability of ocean science to support the sustainable provision of ocean ecosystem services to humanity.
- III. Women in ocean science continue to be underrepresented, particularly in the highly technical categories.
- IV. Recognition of young ocean scientists, and the level of support offered to them, differs widely among countries.
- V. The technical capacity of ocean science remains unequally distributed among countries and regions; this imbalance is further accentuated by short-term or ad hoc funding for ocean science.
- VI. The number of ocean science publications worldwide continues to increase, especially in countries of Eastern and South-Eastern Asia.
- VII. Countries are inadequately equipped to manage their ocean data and information, which hampers open access and data sharing.
- VIII. The GOSR process offers a systematic approach to measure ocean science capacity internationally (SDG target 14.a).

State of the Ocean Report 2024

21 stories – one-stop-shop on the ocean state and supporting technical/human environment

The report covers **physical, chemical and biological parameters** describing the state of the ocean.

It summarizes **threats** posed to the ocean.

It showcases the access to **observation infrastructure, data and information**.

It provides new insights on **ocean literacy, indigenous and traditional knowledge**.



Launch of the StOR, 3 June, Iceland



Information to increase ambition

1. Supports the identification of **policy and management priorities and focus areas for research.**
2. Stimulates research and policy in the frameworks of the **2030 Agenda UN Ocean Conference 2025, the Climate Change and Biodiversity conventions, and the Sendai Framework for Disaster Risk Reduction.**
3. Tracking process towards the **seven outcomes of the UN Decade of Ocean Science for Sustainable Development .**



1. Global trends are detected but important to consider local changes to adapt and mitigate with success.
2. Detecting long-term trends is required to identify drivers of change.
3. Ocean observation is critical infrastructure to manage risk and meet future demands of sustainable ocean industries.
4. Access to knowledge remains unequally distributed.
5. Marine protected areas, coastal protection and marine spatial planning are important tools, if applied in the context of sustainability, to address ocean change.
6. Collaboration between all types of knowledge holders, governments and private sector is critical to increase ocean knowledge and understanding.