



**unesco**

Intergovernmental  
Oceanographic  
Commission



International  
Oceanographic  
Data and Information  
Exchange



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

## IODE IWG-SODIS

**Strategy for Ocean Data and information Stewardship (SODIS) for the UN Ocean Decade and other key global data initiatives contributing to the Decade data vision and implementation**



**Pier Luigi Buttigieg** ([pier.buttigieg@awi.de](mailto:pier.buttigieg@awi.de)),  
on behalf of the IWG-SODIS

**4.2 Coordinating the co-implementation of the Ocean Decade's Digital Vision (Presentations and Panel discussions)**

**2022-02-16**

# Context



# IOC and the Decade

"The IOC has an important role to play in key areas needed for implementing SDG14, particularly capacity development and technology transfer."

- Peter Thomson  
UN Special Envoy for the Decade of Ocean



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



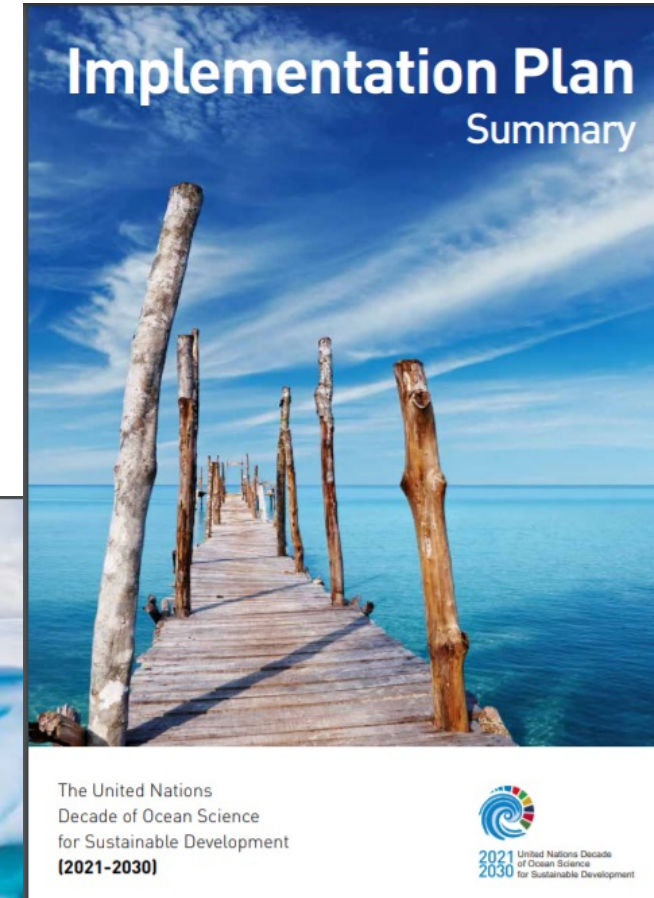
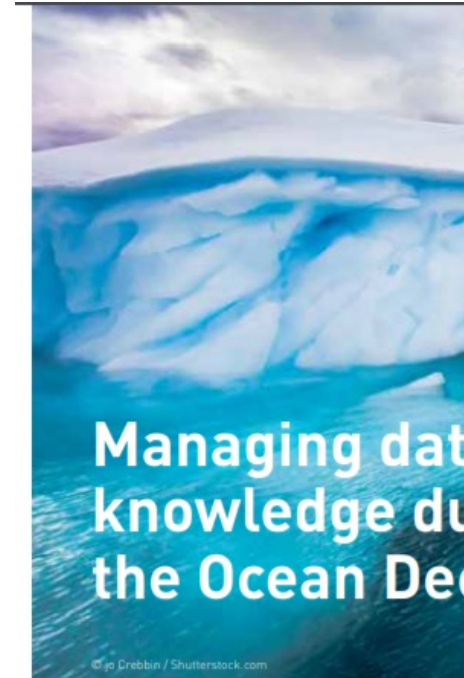
**unesco**

Intergovernmental  
Oceanographic  
Commission

**IODE** International  
Oceanographic  
Data and Information  
Exchange

# IOC and the Decade

- Since 2018, over 2,000 stakeholders have been consulted to develop the Ocean Decade Implementation Plan
- Two peer review processes generated nearly 300 submissions on the draft Plan from IOC Member States, UN agencies, and other stakeholders.
- The IOC's IODE were heavily involved in the Data, Information and Knowledge chapter of the IP, and called for wide consultation on their input



**Managing data and  
knowledge during  
the Ocean Decade**

# Establishment

- IWG-SODIS was established via IOC's Recommendation IODE-XXV.5.3 (2019) & Decision IODE-XXVI.6.2 (2021)
- The IWG-SODIS was charged with releasing recommendations on shaping global digital stewardship cultures to support an interoperable digital ecosystem for the Decade, both within the UN System and beyond it.
- The WG was charged to form recommendations around which global digital exchange policies can converge via clear, multilateral agreements.

## Recommendation IODE-XXV.5.3

### ESTABLISHMENT OF AN INTER-SESSIONAL WORKING GROUP TO PROPOSE A STRATEGY ON OCEAN DATA AND INFORMATION STEWARDSHIP FOR THE UN OCEAN DECADE (IWG-SODIS)

The IOC Committee on International Oceanographic Data and Information Exchange,

**Recalling** the proclamation by the United Nations General Assembly (UNGA) at its 72nd session regarding the United Nations Decade of Ocean Science for Sustainable Development (2021–2030), through Resolution A/RES/72/73, therein the Decade, and stating that the Decade could benefit from making scientific data and information freely and openly available in accordance with the applicable legal framework,

**Further recalling** the invitation made by the UNGA to the IOC to prepare an implementation plan for the Decade in consultation with Member States, specialized agencies, funds, programmes and bodies of the United Nations, as well as other intergovernmental organizations, non-governmental organizations and

## Decision IODE-XXVI.6.2

### IODE CONTRIBUTIONS TO THE UN DECADE OF OCEAN SCIENCE FOR SUSTAINABLE DEVELOPMENT (2021–2030) AND ESTABLISHMENT OF AN IODE INTER-SESSIONAL WORKING GROUP

The IODE Committee,

**Recalling** the proclamation, by the United Nations General Assembly (UNGA) at its 72nd session regarding the United Nations Decade of Ocean Science for Sustainable Development (2021–2030), through Resolution A/RES/72/73, therein the Ocean Decade, and stating that the Ocean Decade could benefit from making scientific data and information freely and openly available in accordance with the applicable legal framework,

**Recognizing** the important role that IODE has, and continues to play in timely and unrestricted international exchange of oceanographic data by the countries of the world for a wide variety of purposes including the prediction of weather and climate, the operational forecasting of the marine environment, the preservation of life, the mitigation of human-induced changes in the marine and coastal environment, as well as for the advancement of scientific understanding that makes this possible,

**Noting** the establishment of the inter-sessional working group to propose a strategy on ocean data and information stewardship for the Ocean Decade (IWG-SODIS) through Recommendation IODE-XXV.5.3,

**Decides** to register OTGA, OBIS, OIH/ODIS and PacMAN as UN Ocean Decade Action following the procedure established for UN entities in the United Nations Decade of Ocean Science for Sustainable Development (2021–2030) Implementation Plan,

**Structs** the IODE Secretariat, in close coordination with the IODE MG, to prepare the necessary implementation to register future IODE Decade Actions during the intersessional period,

# Objectives (part 1)

- Explore, through UN Oceans, the interest of relevant UN bodies to develop a joint data and information system under the Decade and to start assessing respective data and information guidelines and policies and identify relevant data and information access and repositories that may contribute to such a system,
- Investigate the future scope of scientific data and information stewardship activities of the Decade, including and not limited to:
  - **Agreement** on common data contributions, flow, latency, discovery, access, and re/use principles,
  - **Documenting** data and information requirements and best practices,
  - **Agreement** on data and information protocols and metadata content and structure,
  - **Agreement** on science-based **quality control/quality assurance requirements and procedures for all data types**,
  - **Agreement** on modalities for contribution and dissemination of data and information,
  - **Agreement** on modalities and establish a strategy for the long-term preservation of Decade data for future use,
  - **Agreement** on access and use of potential data synthesis and tailored data products derived from the Decade,

# Operations



# Vision

*A data stewardship culture that supports a sustainable ocean by managing, interlinking, and providing access to global stores of **interoperable** data and information.*

Interoperable – is it really **working** together?



# Membership

- Membership in IWG-SODIS is open to data management Subject Matter Experts (SME) across the United Nations, private, and academic communities.
- An open membership model, all were welcome to participate in meetings and document creation
- Still generally limited in global and community representation

<https://oceanexpert.org/group/445>

## Towards a Strategy on Ocean Data and Information Stewardship for the UN Decade of Ocean Science for Sustainable Development

Show affiliations

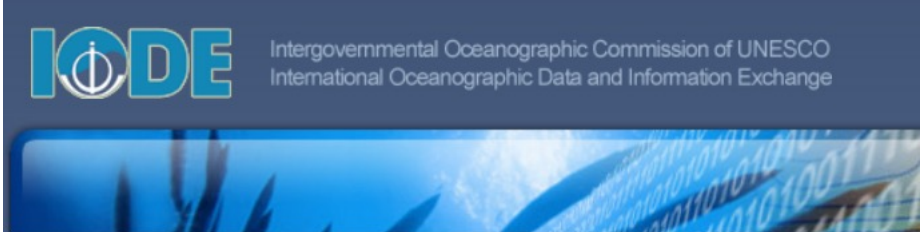
Hide authors

Buttigieg, P. L. ; Appeltans, W. ; Arias, F. ; Bajona, L. ; Belov, S. ; Boyer, T. ; Bristol, S. ; Calewaert, J. B. ; Carter, S. ; Canonico, G. ; Clausen, A. ; De Bruin, T. ; Edmunds, R. ; Gallage, C. ; Geddes, K. ; Genio, L. ; Giorgetti, A. ; Giron, A. ; Holdsworth, N. ; Isensee, K. ; Klein, E. ; Paterson, A. ; Moustahfid, H. ; O'Brien, K. ; Peng, G. ; Pissierssens, P. ; Pfeil, B. ; Scory, S. ; Provoost, P. ; Scott, L. ; Tirpak, E. ; Weatherdon, L. ; Garcia, H. E.

Access to multi-sector marine data and information is one of the top priorities of the UN Decade of Ocean Science for Sustainable Development 2021-2030 (henceforth, "the Decade"). Consequently, the Intergovernmental Oceanographic Commission (IOC) has convened an [Inter-sessional Working Group](#) to propose a [Strategy on Ocean Data and Information Stewardship for the UN Ocean Decade \(IWG-SODIS\)](#), managed by the UNESCO-IOC International Oceanographic Data and Information Exchange (IODE) programme.

# Co-consultations

- IWG meetings drove asynchronous development of reports and recommendations
- The IWG engaged with IODE consultations from within the UN Oceans consortium and with non-UN stakeholders
- Despite the pandemic, broad perspectives, needs, and interests were incorporated into the IWG proceedings



**IODDE** Intergovernmental Oceanographic Commission of UNESCO  
International Oceanographic Data and Information Exchange

ONLINE MEETING (14H00-17h15 CET)  
Workshop on data sharing between UN agencies as a contribution to the UN decade of ocean science for sustainable development  
20 April 2020, Oostende, Belgium



**IODDE** Intergovernmental Oceanographic Commission of UNESCO  
International Oceanographic Data and Information Exchange

International data sharing workshop for non-UN IGOs, Global and Regional organisations and projects, NGOs and private sector [online]  
12 October 2020, Oostende, Belgium

# Outcomes



# Distillations of recommendations on global data stewardship strategies



Restricted distribution



INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION  
(of UNESCO)

IOC/IODE-MG-2021/5.1  
Oostende, 21 December 2020  
English only

**IOC/IODE Inter-sessional Working Group  
To propose a Strategy on Ocean Data  
and Information Stewardship for the UN  
Ocean Decade (IWG-SODIS)**

First Interim Report

June  
2020

**2021 SESSION (PRE-COMMITTEE) OF THE IODE  
MANAGEMENT GROUP**

Online  
12-14 January 2021

**Proposed Data and Information Strategy  
for the Ocean Decade**

# High-level strategy aims

The aim of this strategy is to show how the Ocean Decade community can

- (i) collaboratively and openly (or as open as possible) share and exchange well-documented data and information of known-quality and
- (ii) facilitate their **timely and equitable** discovery, access, and adaptation **into user-driven value-added products and services**.

The strategy oriented itself to international data policies such as those from GEO, IOC, WMO, and WDS. This strategy also supports data principles such as FAIR, CARE, and TRUST.

Restricted distribution

IOC/IODE-MG-2021/5.1  
Oostende, 21 December 2020  
English only



INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION  
(of UNESCO)

## 2021 SESSION (PRE-COMMITTEE) OF THE IODE MANAGEMENT GROUP

Online  
12-14 January 2021

## Proposed Data and Information Strategy for the Ocean Decade

Version 1.0, 8 December 2020



# Key Challenges

Several major factors currently limit access to and use of data including:

- The data reside in many **non-interoperable** online or offline services at different geographic locations in varying formats, described using different vocabularies and metadata (descriptions of information)
- **Data governance regimes** (including aspects of data sovereignty, data residency, and data localization) with intersecting, complex restrictions and regulatory framework may preclude reuse.
- Data users may need to **[manually] request permission** to use the data from a particular data source.
- It is difficult to assess the **versioning as well as the quality of the data**.

Restricted distribution

IOC/IODE-MG-2021/5.1  
Oostende, 21 December 2020  
English only



INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION  
(of UNESCO)

## 2021 SESSION (PRE-COMMITTEE) OF THE IODE MANAGEMENT GROUP

Online  
12-14 January 2021

## Proposed Data and Information Strategy for the Ocean Decade

Version 1.0, 8 December 2020

# High-level strategy recommendations

## *In a nutshell*

Ocean Decade Data Stewardship should:

- (1) **Get one's own house in order**, using whatever standards and practices make sense to meet local needs challenges and generate quality-controlled (meta)data with full provenance
- (2) Have a mechanism to **flexibly project** (meta)data into Decade-relevant interoperability layers using regional and/or global conventions/standards (including provenance and quality information)
- (3) Build relationships to continuously align and patch gaps in global, regional, and local standards and conventions to meet **real-world needs** → **develop inclusive co-governance at these levels**

CODE-MG-2021/5.1  
ende, 21 December 2020  
sh only

OMMISSION

OF THE IODE

on Strategy  
de

# Impacts & legacy (selected)

- IODE's Ocean Data and Information System (ODIS) and Ocean InfoHub (OIH)
  - A (meta)data-driven, co-governed, and federated “hello world” pilot of a co-designed interoperability layer for the Decade (LAC, Africa, PSIDS, and others)
  - Deploying recommendations with significant early successes and reusing prevailing search conventions (schema.org) as a prelude to deeper interoperability
- Follow up working groups on IODE projects, policies, and strategies, for example:
  - IODE XXVI Group 4: IODE contribution to the UN Decade of Ocean Science for Sustainable Development ([agenda item 6.2](#))
  - Contributions to the Ocean Decade Data Coordination Group
  - ODIS Steering groups Decade Programme



+ ODIS schema.org- & KR-based global interoperability architecture

