

# Ocean Decade Data & Information Strategy

## Executive Summary

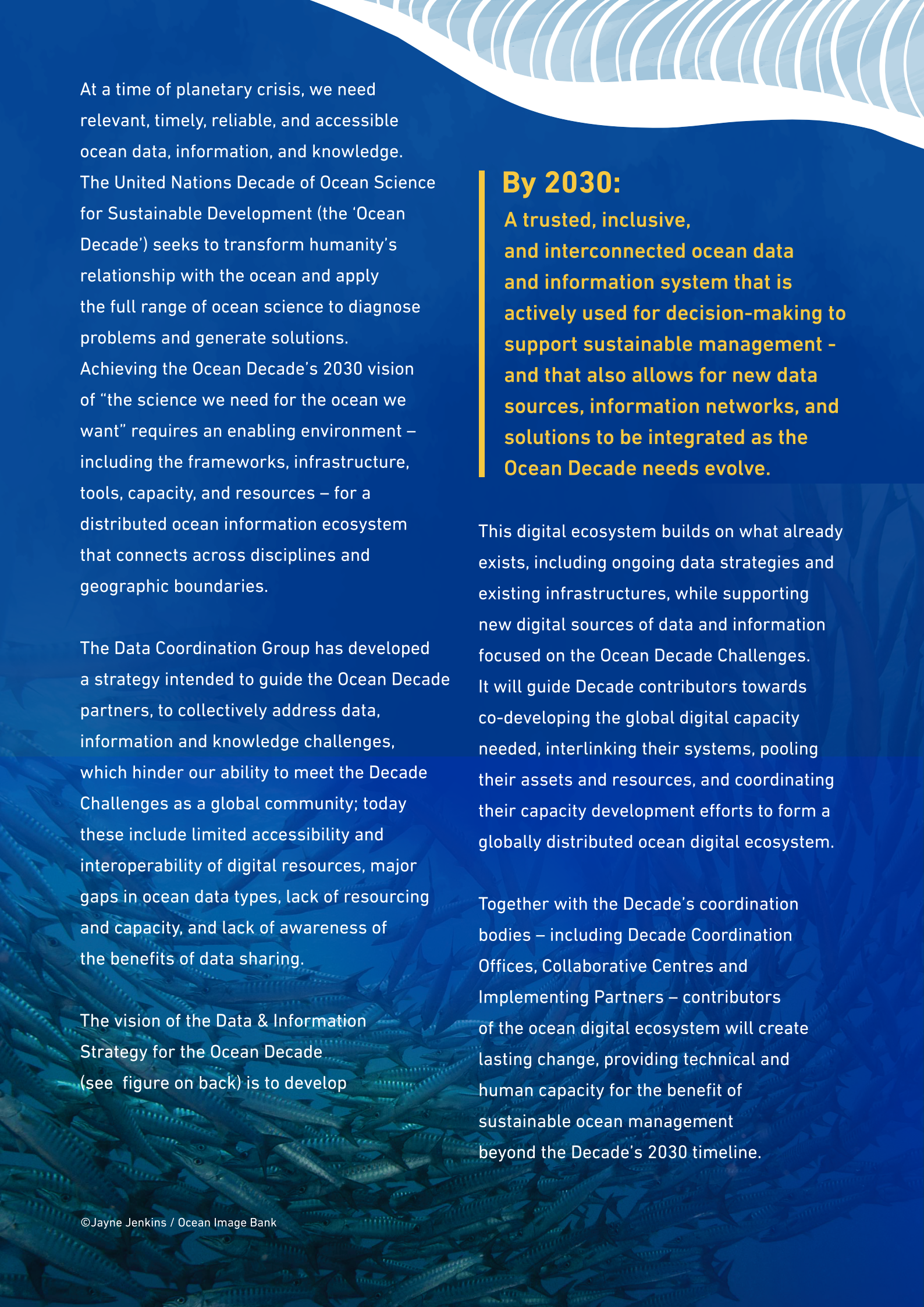
©Amanda Cotton / Ocean Image Bank

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



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





At a time of planetary crisis, we need relevant, timely, reliable, and accessible ocean data, information, and knowledge. The United Nations Decade of Ocean Science for Sustainable Development (the 'Ocean Decade') seeks to transform humanity's relationship with the ocean and apply the full range of ocean science to diagnose problems and generate solutions. Achieving the Ocean Decade's 2030 vision of "the science we need for the ocean we want" requires an enabling environment – including the frameworks, infrastructure, tools, capacity, and resources – for a distributed ocean information ecosystem that connects across disciplines and geographic boundaries.

The Data Coordination Group has developed a strategy intended to guide the Ocean Decade partners, to collectively address data, information and knowledge challenges, which hinder our ability to meet the Decade Challenges as a global community; today these include limited accessibility and interoperability of digital resources, major gaps in ocean data types, lack of resourcing and capacity, and lack of awareness of the benefits of data sharing.

The vision of the Data & Information Strategy for the Ocean Decade (see figure on back) is to develop

## **By 2030:**

**A trusted, inclusive, and interconnected ocean data and information system that is actively used for decision-making to support sustainable management - and that also allows for new data sources, information networks, and solutions to be integrated as the Ocean Decade needs evolve.**

This digital ecosystem builds on what already exists, including ongoing data strategies and existing infrastructures, while supporting new digital sources of data and information focused on the Ocean Decade Challenges. It will guide Decade contributors towards co-developing the global digital capacity needed, interlinking their systems, pooling their assets and resources, and coordinating their capacity development efforts to form a globally distributed ocean digital ecosystem.

Together with the Decade's coordination bodies – including Decade Coordination Offices, Collaborative Centres and Implementing Partners – contributors of the ocean digital ecosystem will create lasting change, providing technical and human capacity for the benefit of sustainable ocean management beyond the Decade's 2030 timeline.



## To achieve this, we have defined the following 5 strategic objectives within the Decade:

1

### **Develop an ocean digital ecosystem**

**that encourages and facilitates the sharing of and equitable access to multidisciplinary data, information, and knowledge by all.**

Identify and apply the specifications and resources needed to develop a federated ocean digital ecosystem that allows users to easily find, access, use, and contribute ocean data, information, and knowledge openly through interfaces tailored to their needs and capacities. Major gaps in many ocean data types, variables and in spatial and temporal coverage must be addressed through both new acquisitions and by unlocking existing, inaccessible datasets. Investments in digital infrastructure, human capacity, and data policy will support a more complete, robust, and equitable digital ecosystem.

2

### **Improve data and information discovery and usability across the ocean digital ecosystem.**

Within the growing number of data and information sources available today, it remains difficult to discover and use them to develop solutions and inform decision-making. As expressed in the FAIR principles, once data are available and accessible online, steps must be taken to make them easily discoverable (findable) and readily usable (accessible, interoperable, reusable). Prior to sharing ocean data, information, and knowledge, participants in the digital ecosystem should have clearly defined internal data management plans, policies, procedures, and architectures for the generation, management, licensing, and sharing of data.

3

### **Build trust in data and information shared across the ocean digital ecosystem.**

Unless there is trust in the data and information they share, as well as trust in the entire data value chain and its related infrastructure, neither providers nor users will fully engage in any collective digital ecosystem. Practices must be implemented to ensure the quality and provenance of the digital resources users rely upon are known, as well as mechanisms to ensure proper attribution. Similarly, systems and infrastructure to ensure the long-term and curated archival of data, information, software, digitised knowledge, or any other digital resource must be implemented, as well as clear data policies and terms of use.

4

### **Prioritise digital solutions that support decisions for sustainable ocean management.**

Valuable ocean data and derived insights often do not reach those that need them in a form that they can understand and act upon. Through co-design of digital solutions, a core principle of the Ocean Decade, we increase the likelihood that insights from data products and services will be relied on and acted on. The ocean digital ecosystem should be developed with the objective to support digital solutions (including meta-data standards, software, models, analytics, artificial intelligence solutions, user experiences) that can be effectively used by decision makers at all levels.

5

### **Expand, empower, and mobilise global communities to advance and maintain the ocean digital ecosystem.**

The successful implementation of this strategy depends on a thriving human community that is digitally literate and committed to sharing data, information, and knowledge to co-design ocean solutions and ocean discoveries. The purpose of this objective in the short term is to build awareness, skills, capacities and drive alignment with the strategy as we roll it out. Furthermore, this objective aims to build bridges to, and relationships with non-traditional groups and data sources that may link to the ocean digital ecosystem. The long-term ambition is to affect an enduring behavioural change towards a digitally fluent ocean community, who readily and openly share their data, insights, and understandings.



Key **enablers** that must be proactively advanced and expanded as vital building blocks to successfully implement the strategy include technological innovation, partnerships, sustained resourcing, and policy and regulatory frameworks.

A detailed **Action Plan** to implement this strategy - including specifications for a federated ocean digital ecosystem, guidelines to increase data findability, usability and trust, actions to address resourcing and infrastructure needs - will be developed by the Data Strategy Implementation Group in 2023 with particular focus on the ten Ocean Decade Challenges, to ensure the Action Plan is mission driven.

## Vision

A trusted, inclusive, and interconnected ocean data and information ecosystem that is actively used for decision making to support sustainable ocean management.

## Mission

To catalyse a solution-oriented, global digital transformation for the digital ecosystem we need to overcome the Decade Challenges.

## Strategic Objectives

1

**Develop an ocean digital ecosystem** that encourages the sharing and equitable access of multidisciplinary data, information and knowledge by all.

2

**Improve data and information discovery and usability** across the ocean digital ecosystem.

3

**Build trust in data and information** shared across the ocean digital ecosystem.

4

**Prioritise digital solutions that support decisions** for sustainable ocean management.

5

**Expand, empower, and mobilise global communities** to advance and maintain the ocean digital ecosystem.

## Enablers

Technological Innovation // Partnerships // Durable Resourcing // Policy & Regulatory Frameworks

*Figure: At-a-glance depiction of the Data & Information Strategy for the Ocean Decade.*