

Ocean data is growing, most of its value still untapped

OCEAN DATA GOVERNANCE

Every day, ocean observing systems, research programmes, governments and the private sector generate valuable information about the ocean. Yet much of this data remains difficult to find, access or combine, limiting its value for the decisions that depend on it. Ocean data underpins weather and climate forecasting, early warnings, biodiversity conservation, sustainable ocean planning and climate adaptation. The opportunity is to connect the data we collect and already have, and turn it into services and solutions that people can use.

FROM DATA TO DECISIONS

Today, data can be fragmented across institutions and countries, held in different systems, or inaccessible outside the organisation that collected it. Differences in standards and capacity can make it difficult to combine information or turn it into something useful.

The missing links help to connect DATA → INFORMATION → SERVICES → DECISIONS and investment can strengthen that entire chain.

BUILD THE GLOBAL CAPACITY TO CONNECT OCEAN DATA

The Intergovernmental Oceanographic Commission (IOC) of UNESCO is uniquely positioned to coordinate this work across governments, observing programmes, data centres, science and the private sector, through its International Oceanographic Data and Information Exchange (IODE) programme and its ability to convene. It already runs a working example through the Ocean Biodiversity Information System.

An integrated, federated global ocean data system can be built on that model, connecting national, regional and thematic systems while allowing data to remain managed where it is generated, making it more discoverable, interoperable and useful across borders and sectors. This means investing in four mutually reinforcing areas:

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CONNECT: Establish common standards and interoperability so data can be discovered, shared and combined across borders and sectors. Unlock valuable data that is currently inaccessible and advance shared principles through a FAIR Ocean Data Charter, to be developed and deployed.

BUILD CAPACITY: Strengthen national and regional capacity to manage and use ocean data, including National Oceanographic Data Centres, technical assistance and training, particularly for Small Island Developing States (SIDS) and LDCs.

CREATE SERVICES AND SOLUTIONS: Turn data into practical products and decision-support tools, including for implementation of the BBNJ Agreement, Marine Spatial Planning, ocean and climate information for National Adaptation Plans and Nationally Determined Contributions, and integrated multi-hazard early warning.

LEAVE A LASTING LEGACY: Transform the Ocean Data Sharing Decade Coordination Office into a permanent global hub within the IOC-UNESCO ecosystem. This would sustain the partnerships and capabilities built through the Ocean Decade, including the Global Digital Atlas of the Ocean.

THE RETURN: MORE VALUE FROM DATA THAT ALREADY EXISTS

A stronger global ocean data system means more value from every dataset and every observation, because information can be found, combined and applied by more users. It can give countries better tools to anticipate risks, manage marine resources, protect biodiversity, plan sustainable ocean economies and respond to climate change. By strengthening capacity where it is currently weakest, it can enable more countries to participate in, and benefit from, a shared ocean knowledge system.

HOW TO CONTRIBUTE

The OceanEye International Alliance to support the Global Ocean Observing System (GOOS), co-led by the European Union and Canada in cooperation with IOC-UNESCO as the Secretariat for GOOS, provides a framework through which governments, philanthropy and the private sector can broaden and diversify support to IOC-UNESCO and GOOS. Data systems are within its scope. For ocean data, contributions can support standards and interoperability, national data centres, data products and services, and the coordination hub that holds the system together.

The world does not need ocean data to sit in more databases. It needs that data to move, across systems, borders and disciplines, and reach the decisions that depend on it.

Invest in the connections that turn ocean data into solutions, coordinated by the Intergovernmental Oceanographic Commission (IOC) of UNESCO.

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