



9.º FÓRUM
GESTÃO DE DADOS
DE INVESTIGAÇÃO

CENTRO NACIONAL DE DADOS OCEANOGRÁFICOS

NATIONAL OCEANOGRAPHIC DATA CENTER (NODC)

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 **RCAAP** | Repositórios Científicos de
Acesso Aberto de Portugal

Organização

 **REPÚBLICA
PORTUGUESA**
CIÊNCIA, TECNOLOGIA

FCT
Fundação
para a Ciência
e a Tecnologia

 **UNIVERSIDADE DE
ÉVORA**

Apoio

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DE ÉvORA**

Agenda



1. Necessidade de um NODC



International Oceanographic Data and Information Exchange (IODE)



The screenshot shows the IODE website homepage. At the top left is the UNESCO logo. The main header features the IODE logo and the text "Intergovernmental Oceanographic Commission of UNESCO International Oceanographic Data and Information Exchange". Below this is a navigation menu with "General Information" and "Expert Information" sections. The main content area includes a "Quality Policy" box, a "The IODE Meeting & Training Centre" box with a lighthouse image, and a "Latest News" section with two news items: "15 November 2022 : Call for abstracts International Ocean Data Conference - II" and "8 November 2022 : Call for eDNA project: Data Science Officer (Consultant)". At the bottom, there are boxes for "WOD WORLD OCEAN DATABASE", "OBIS OCEAN BIODIVERSITY INFORMATION SYSTEM", and "ODIS Ocean Data & Information System". A search bar is located at the bottom left.

IODE NODCs and ADUs



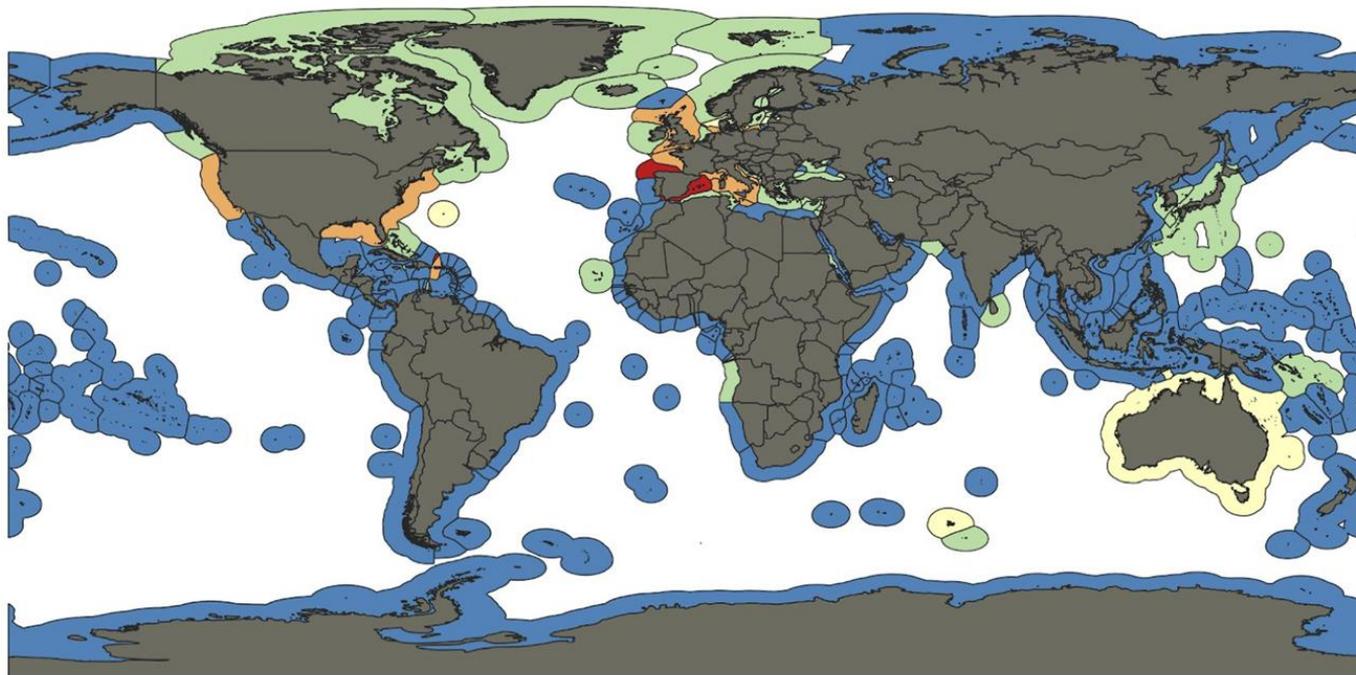
IODE National Oceanographic Data Centres (NODC) and IODE Associate Data Units (ADU) List

Portugal	1971	NODC (est. 26/10/2022) (former NODC, 1986 - no longer operational)	National coordinator for data management: Nunes Paulo, Instituto Hidrográfico Lisboa	30/10/2022
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<https://www.iode.org/>

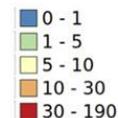
Preencher a lacuna e dados e conhecimento sobre o Oceano



Number of data stations with oceanographic data in the World Ocean Database (for 2018)

Map created by Cristian Muñoz (UN IODE) and Tara Baris using data available as of February 1, 2021 see Boyer et al. (2018). NCEI Standard Product: World Ocean Database (WOD). NOAA National Centers for Environmental Information.

stations/1000km²



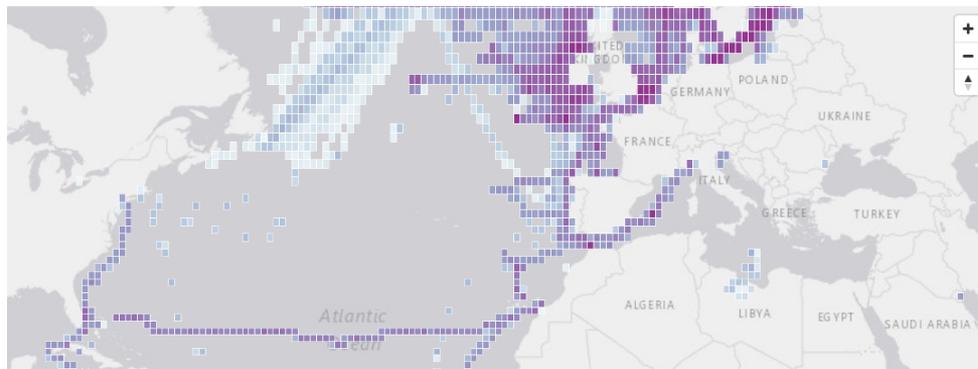
Esforço articulado

Exemplo: ODS 14.3.1 | Indicador: Acidez marinha média (pH)

SDG 14.3.1 data portal

Instructions FAQ My datasets Data Sign in

Welcome to the SDG 14.3.1 data portal



This SDG 14.3.1 Data Portal is a tool for the submission, collection, validation, storage and sharing of ocean acidification data and metadata submitted towards the Sustainable Development Goal 14.3.1 Indicator: Average marine acidity (pH) measured at agreed suite of representative sampling stations.

In 2015, the United Nations adopted the 2030 Agenda and a set of Sustainable Development Goals (SDG), including a goal dedicated to the ocean, SDG 14, which calls to "conserve and sustainably use the oceans, seas and marine resources for sustainable development". The Intergovernmental Oceanographic Commission (IOC) of UNESCO was identified as the custodian agency for the [SDG Target 14.3](#): "Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels", and the associated SDG Indicator 14.3.1 ("Average marine acidity (pH) measured at agreed suite of representative sampling stations").

Thanks to the cooperation and support received by the Commission in the past years from its [International Oceanographic Data and Information Exchange Programme \(IODE\)](#), international ocean acidification experts (including data managers) and the [Global Ocean Acidification Observing Network \(GOA-ON\)](#) the indicator methodology was developed and is now freely available.

The SDG Indicator 14.3.1 Methodology provides the necessary guidance on how to conduct ocean acidification observation, what to measure and how, providing best practice and methods approved by the scientific ocean acidification community. It further offers support on how to and what kind of data sets to submit to IOC, to ensure the production of quality controlled global and possibly regional products.

The full text of the SDG 14.3.1 Indicator Methodology, the data template, the metadata template and the metadata instructions file can all be found and downloaded here:

- [Indicator methodology](#)
- [Metadata template](#)
- [Data template](#)

<https://oa.iode.org/>

Esforço articulado

Evolução da observação oceanográfica: de local a global

- . Um Oceano Global
- . Redes de plataformas e sensores
- . Observatórios multidisciplinares
- . Harmonização e partilha de dados
- . Dados *FAIR*

New technology platforms collected more data on the oceans in 2018 than was gathered during the entire twentieth century. Tanhua et al. (2019)



2. INFRAESTRUTURAS DE DADOS



Marine Spatial Data Infrastructures



Conserve and sustainably use the oceans, seas and marine resources for sustainable development

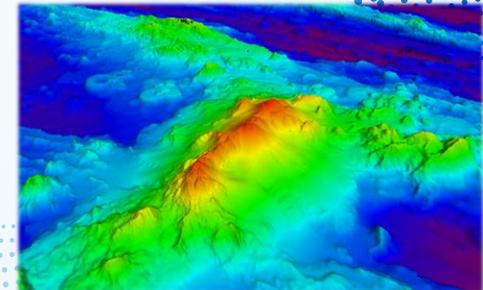
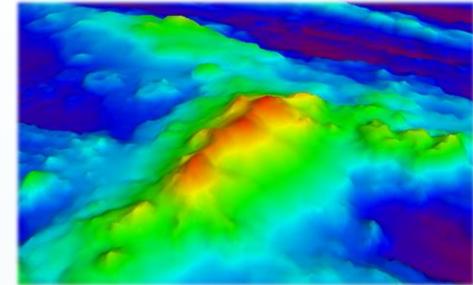
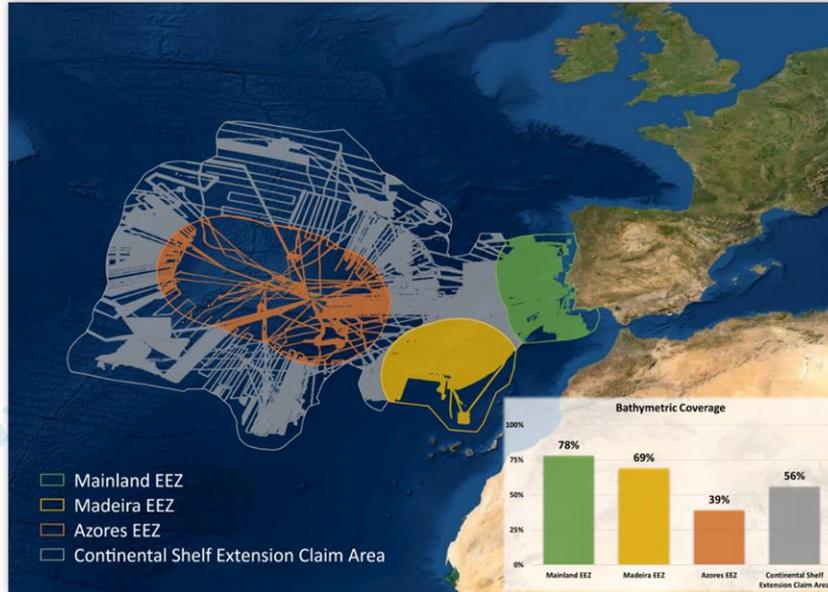
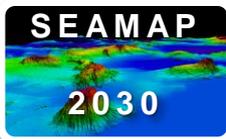


Seamap 2030

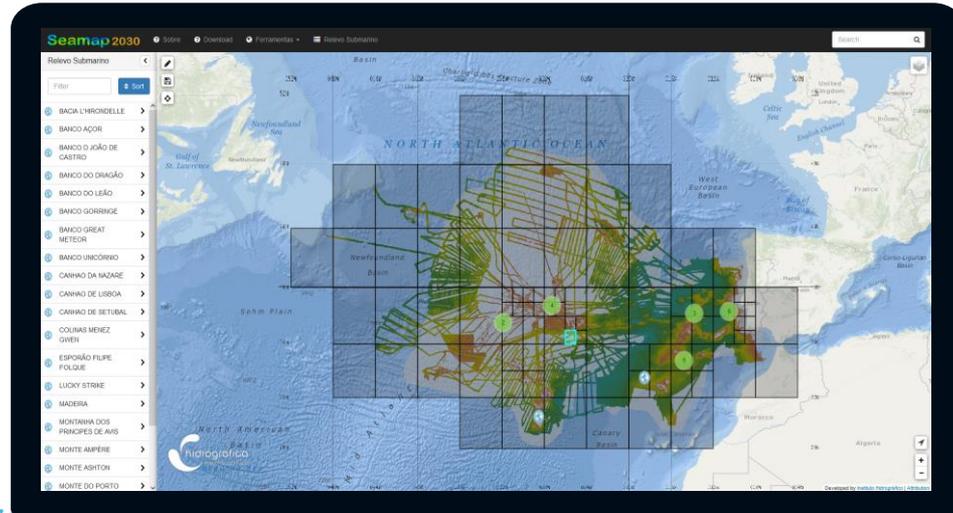
4 075 166 km²
44x área emersa

Total
cobertura ano 2020 - 55%

Cobertura Completa
Maior Resolução



Dados Seamap 2030



<https://gridmar.hidrografico.pt>



RESOLUÇÕES

Prof. 50m-250m – Res. 32m

Prof. 250m-1000m – Res. 64m

Prof. 1000m-2000m – Res. 128m

Prof. 2000m-4000m – Res. 256m

Prof. +4000m – Res. 512m

ATMOSFERA

HIDRODINÂMICA

- PROPRIEDADES DO AR
- METEOROLOGIA

- CORRENTES
- AGITAÇÃO
- NÍVEL DO MAR

- PLANCTON
- PEIXES
- MOLUSCOS BIVALVES
- ORGANISMOS GELATINOSOS
- OUTROS ANIMAIS MARINHOS
- CRUSTÁCEOS
- CETÁCEOS
- PRADARIAS DE ERVAS MARINHAS
- MACROALGAS

BIOLOGIA

GEOLOGIA

FÍSICA/QUÍMICA

- PROPRIEDADES DO SUBSTRATO
- BATIMETRIA/TOPOGRAFIA
- SISMOS

- PROPRIEDADES DA ÁGUA
- LIXO/POLUIÇÃO MARINHA



The screenshot shows the IPMA website interface with the following sections:

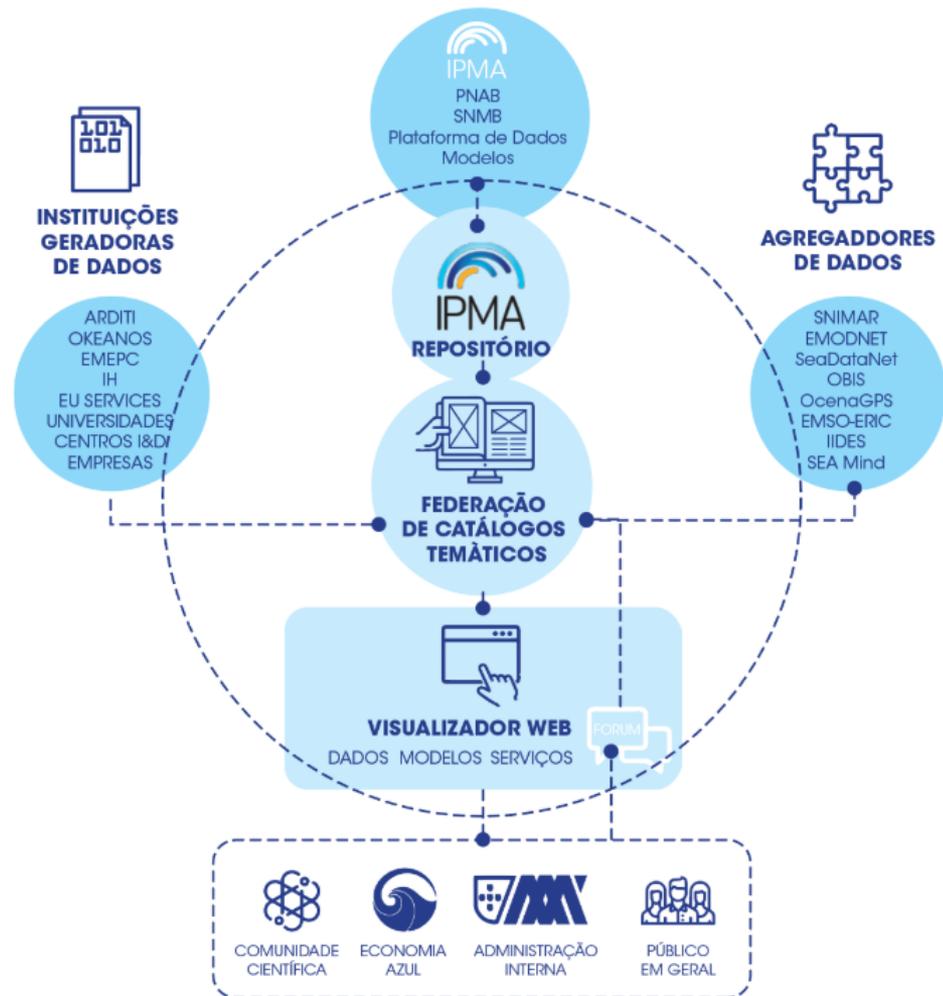
- Header:** IPMA logo, navigation menu (Tempo, Mar, Sismos, etc.), search bar, and language options.
- Previsão diária:** Daily weather forecast for Arq. Açores, Arq. Madeira, and Arq. Alentejo, showing temperature ranges and weather icons.
- Mapa:** A map of Portugal with weather data points across different regions.
- Comunicações:** Information about the DENSE depression and bivalve interdictions.
- Nível de seca:** Drought level indicators for October, September, and August.
- Extremos registados:** A table of recorded extreme weather data for 2022-11-20.
- Mapas meteorológicos:** Meteorological maps for Arq. Açores and Arq. Madeira.
- IPMA multimédia:** Multimedia content including a video of the EPPO in action.
- Atividade Sísmica:** Earthquake activity from the last 7 days.
- Última imagem de satélite:** Latest satellite image of the region.
- Footer:** Links to GelAVista, IPMA Escolas, Calculadora FishChoice, ECMWF, and Portal do Clima.

Repositório de dados do MAR - IPMA

Federação de catálogos temáticos

Visualizador *WEB* (interface)

- . Dados *in situ*
- . Modelos
- . Serviços temáticos
- . Fórum

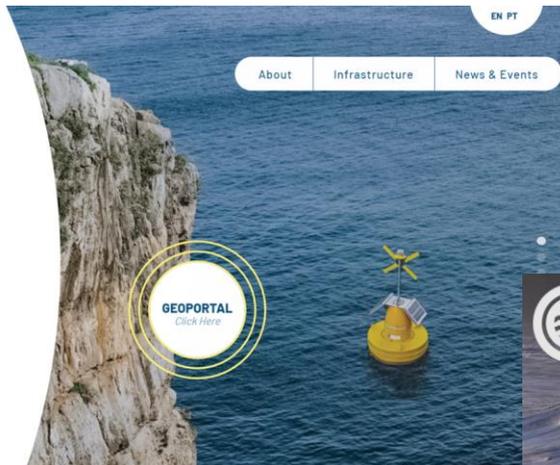




CoastNet - Portuguese Coastal Monitoring Network

CoastNet aims at monitoring important ecosystems of the Portuguese coast through relevant chemical, physical and biological parameters, collected remotely in near real-time.

Read more +



Outros esforços nacionais



INÍCIO SOBRE O COSMO DADOS DE MONITORIZAÇÃO

COSMONLINE

Programa COSMO

O "Programa de Monitorização da Faixa Costeira de Portugal Continental - COSMO" consiste na recolha, processamento e análise de informação sobre a evolução das praias, dunas, fundos submarinos próximos e arribas ao longo da faixa costeira de Portugal Continental. O Programa COSMO foi concebido e desenvolvido pela Agência Portuguesa do Ambiente IP, sendo cofinanciado pelo POSEUR - Programa Operacional Sustentabilidade e Eficiência no Uso de Recursos, no âmbito de Aviso-Convite POSEUR-09-2015-25 referente à "Proteção do Litoral - Ações Materiais e Ações que visam a produção de conhecimento, gestão da informação e monitorização".

DADOS DE MONITORIZAÇÃO

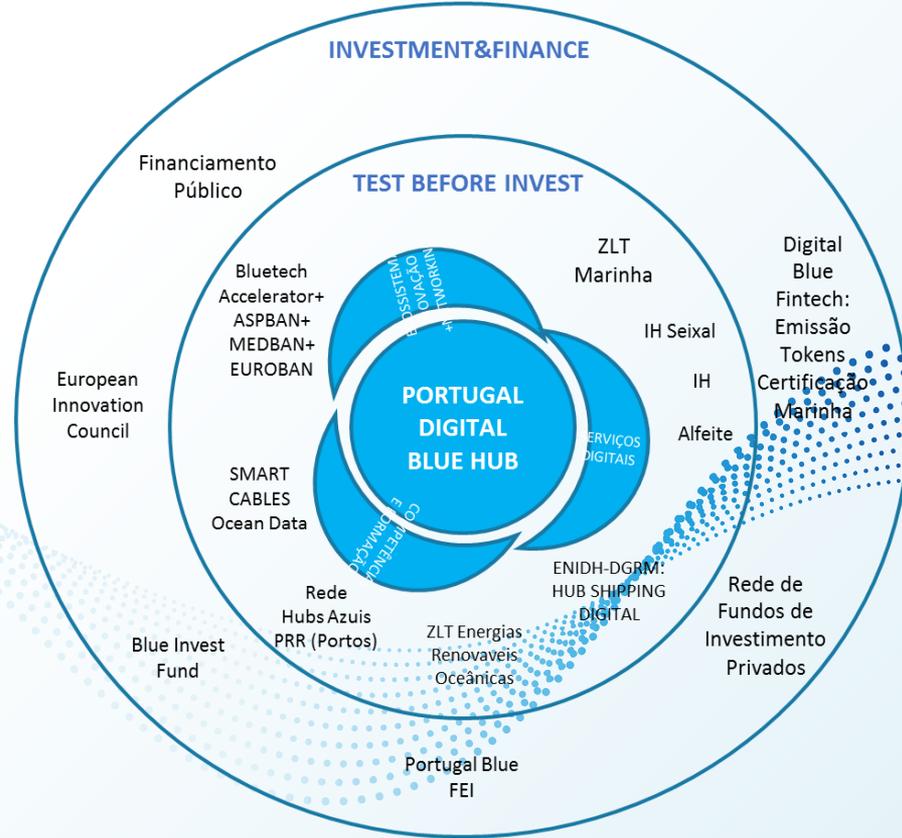
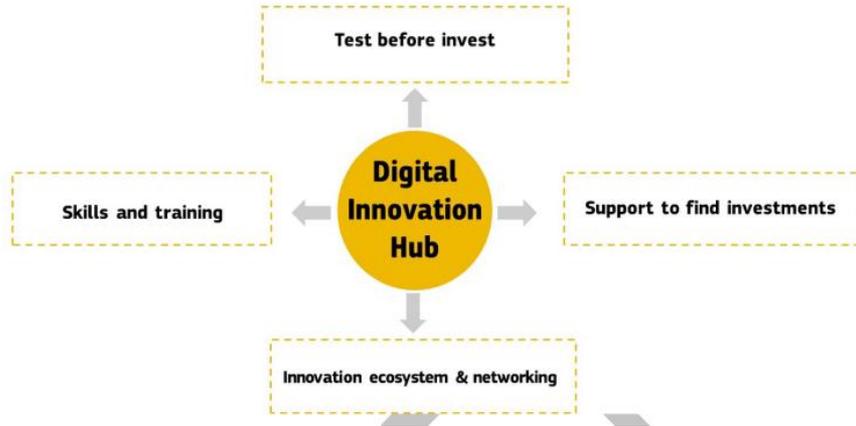


Resumo

O serviço OPENCoasts monta, a pedido, sistemas de previsão de circulação e qualidade da água para zonas selecionadas em qualquer zona costeira e mantém os mesmos em funcionamento operacional para o período definido pelo utilizador. Este serviço diário gera previsões de níveis de água, velocidades 2D e 3D, incluindo interação entre ondas e correntes, parâmetros das

Dados como catalizador económico

Blue Economy Innovation Hub



3. NODC

A decorative graphic consisting of multiple parallel, wavy lines of small blue dots. The dots are arranged in a pattern that resembles a sine wave or a series of overlapping curves, creating a sense of motion and depth. The background is a solid, medium blue color.



unesco

IOC Manuals and Guides 5

**Guide for Establishing
an IODE National
Oceanographic Data
Centre, IODE Associate
Data Unit or IODE
Associate Information Unit**

UNESCO

Missão e responsabilidades:

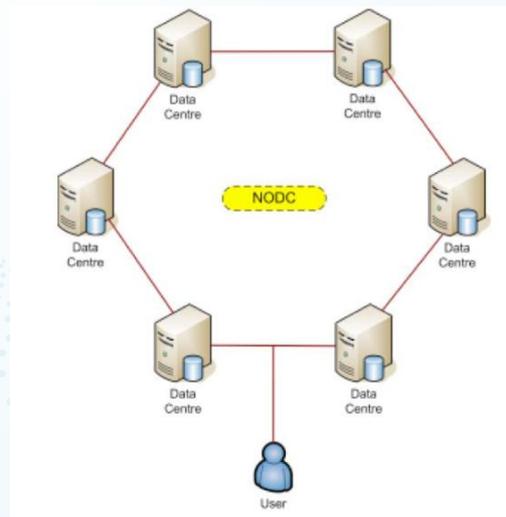
Reunir os dados oceanográficos por programas e projetos nacionais, regionais e internacionais;

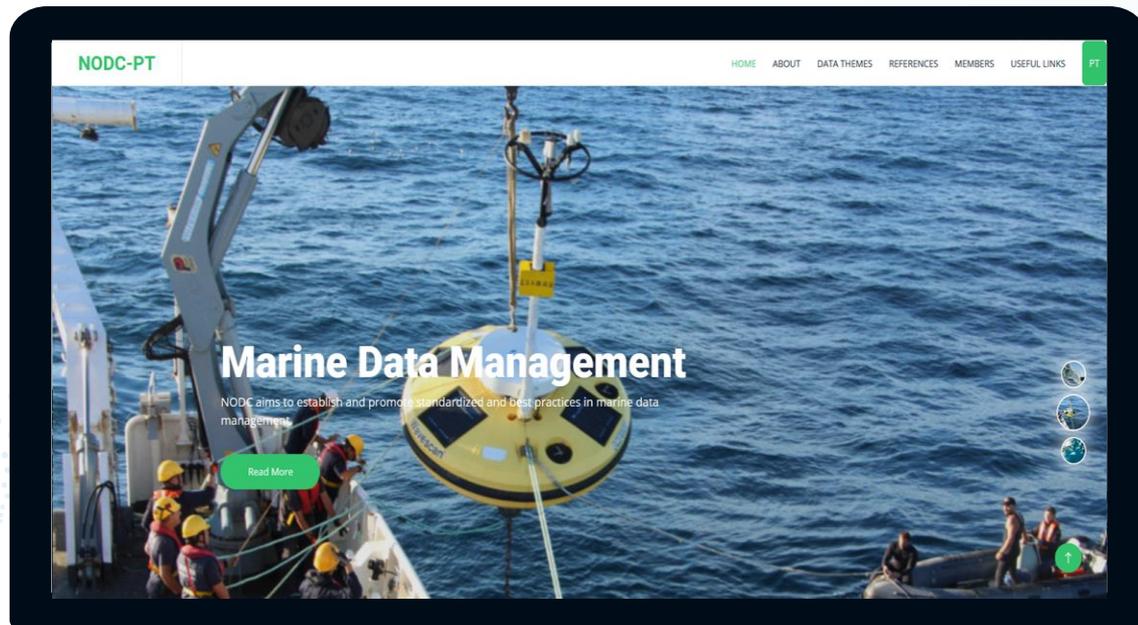
Realizar rotinas de controlo e verificação de qualidade dos dados de acordo com as boas práticas e normas específicas associadas;

Garantir a salvaguarda e a preservação dos dados e metadados;

Garantir o acesso aos dados de acordo com a *IOC Oceanographic Data Exchange Policy*.

Distributed Data Center Model



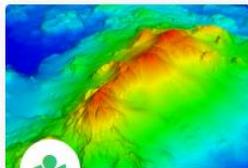


<https://nodc-portugal.pt/>

Mission

Support national and international marine knowledge

NODC



Bathymetry

Datasets on bathymetry and ocean seabed elevation.

[Read More](#) →



Biology

Datasets on marine species and marine habitats.

[Read More](#) →



Marine Chemistry

Datasets on salinity, temperature, pH and other chemistry parameters.

[Read More](#) →



Marine Geology

Datasets on sea-floor geology, geological events, and mineral resources.

[Read More](#) →



Seabed Habitats

Datasets on seabed habitats and seabed communities.

[Read More](#) →



Human Activities

Datasets on marine human activities and uses.

[Read More](#) →



Ocean Physics

Datasets on waves, currents, sea-level, and other ocean parameters.

[Read More](#) →



Marine Meteorology

Datasets on weather and associated oceanographic conditions.

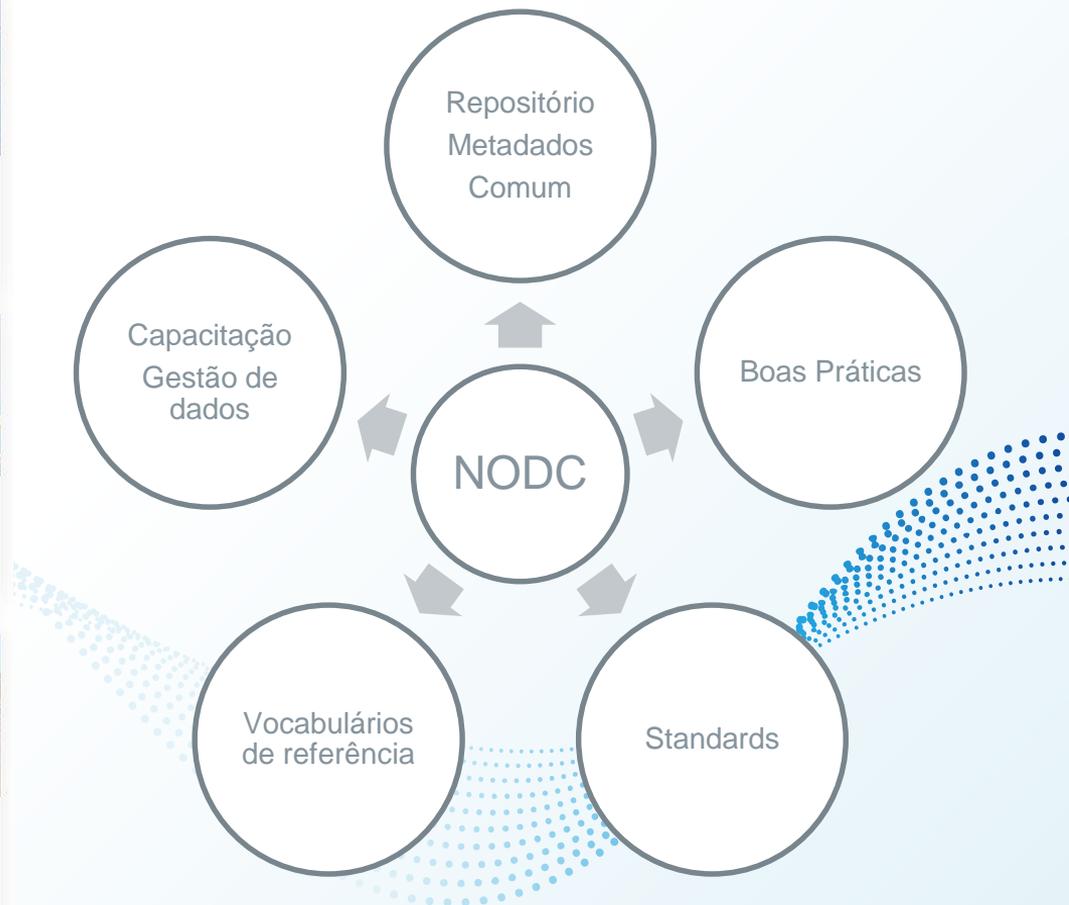
[Read More](#) →



Marine Pollution

Datasets on harmful substances to the marine environment.

[Read More](#) →



WHAT IS THE BLUE ECONOMY?

All economic activities related to oceans, seas and coasts. Blue economy covers a wide range of interlinked established and emerging sectors.



Benefícios



4. FUTURO

A decorative graphic consisting of multiple parallel, wavy lines of small blue dots. The dots are arranged in a pattern that resembles a sine wave or a series of overlapping curves, creating a sense of motion and depth. The background is a solid, vibrant blue.

Roadmap

Protocolo entre o IH e IPMA para alavancar a criação do NODC

+ Site

1

Política de dados do NODC

3

Reconhecimento nacional como IEEN

5

Aprovação dos Termos e referência do NODC + Formalização junto IOC/IODE

2

Catálogo do NODC + Estratégia DTO

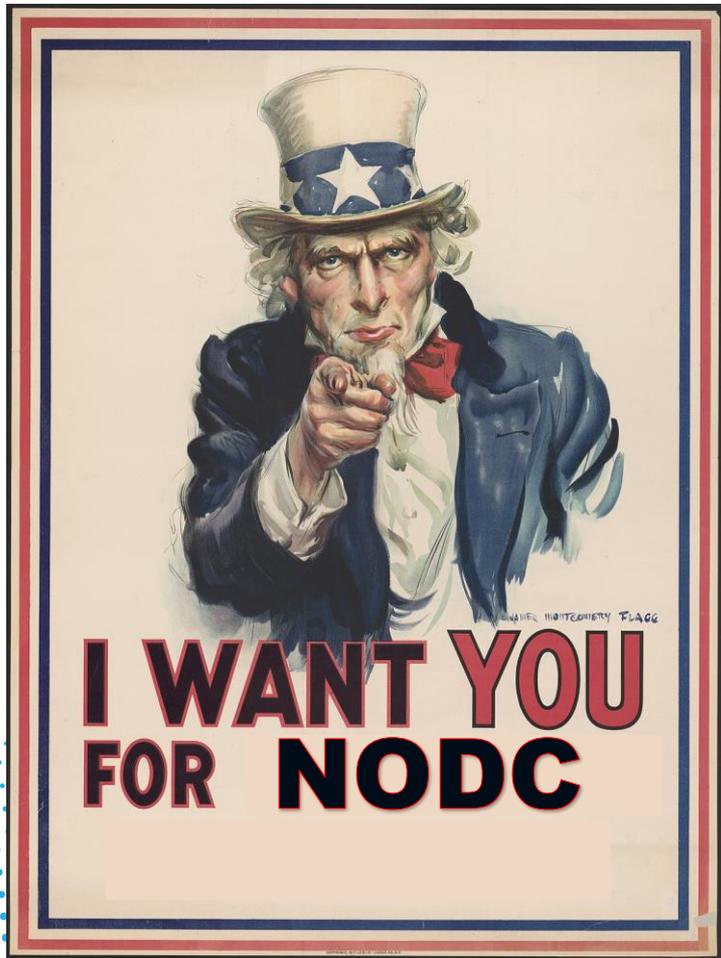
4

Certificação pela IODE como Quality Management Framework for NODCs

6

Calendário





Criar a rede:

- Criar uma rede nacional de produtores de dados oceanográficos
- Promover a partilha e as boas práticas
- Contribuir para o esforço internacional
- Potenciar o benefício do conhecimento



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Muito obrigado!

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