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High level capacity building workshop • The Azorean case

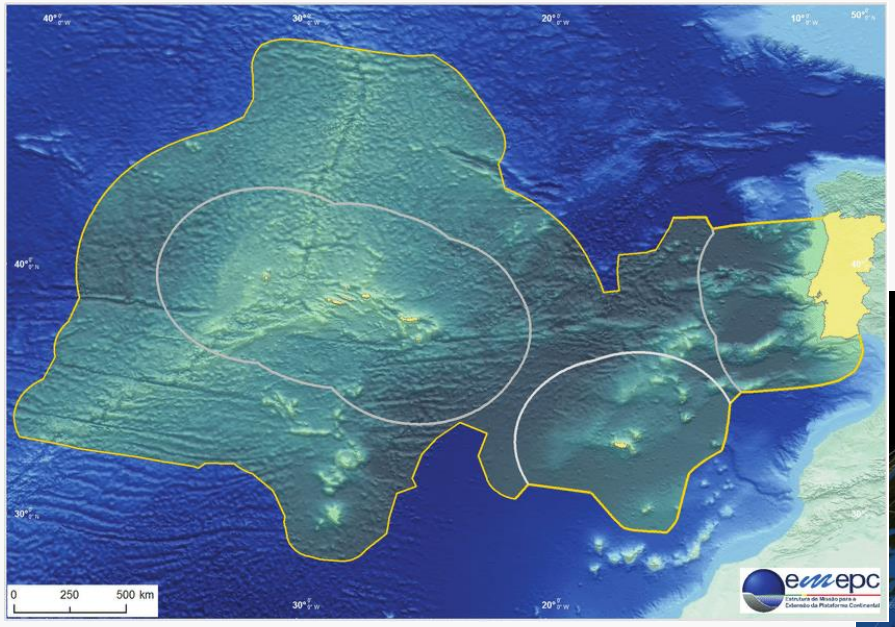
EO4GEO - Skills development in EO & Copernicus User Uptake: present and future of Coastal & Maritime sector

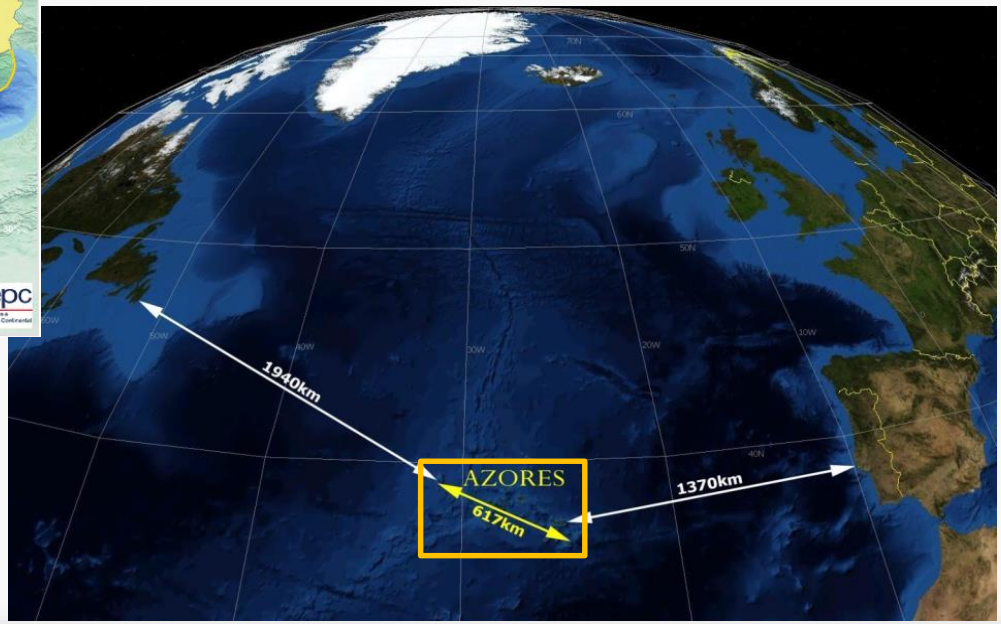
Current state of MSP activities in the Azores: needs of EO products, services & workforce

Pedro Mendonça das Neves • Regional Director for Sea Affairs (DRAM)

Governo dos Açores

CHALLENGES & THREATS
AZOREAN MARITIME SPACE





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CHALLENGES & THREATS AZOREAN MARITIME SPACE

OUR CHALLENGES

Insularity and remoteness • Extensive maritime area • High diversity of marine environments • Many human uses and activities • Economic dependency on traditional sectors (ex. shipping, fisheries, tourism)

THREATS WE FACE

Climate change and variability • Natural catastrophes and coastal erosion • Overexploitation of natural resources • Increasing growth of tourism • Increasing maritime traffic • Proliferation of non-indigenous species • Marine litter

DRAM

Valuing the Azores Sea by promoting the sustainable use of its resources, striving to maintain its magnificence and ensuring the natural sustainability.

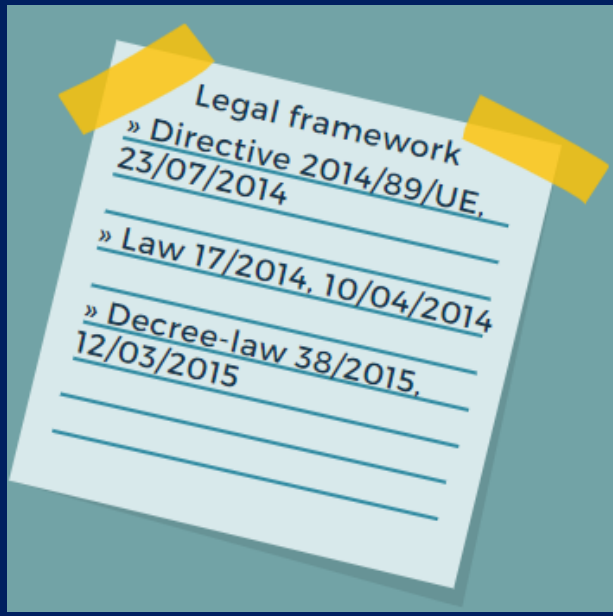
Environmental topics and legal instruments applied in the Azores (supported by MSP & sectoral policies):

- Coastal zone planning & management;
- Assessment of marine environmental status (MSFD, WFD, Habitats and Birds Directives, EIA);
- Natural resources management & sustainable blue economy;
- Nature conservation (MPA, restrictions to fisheries);
- Support to monitoring & surveillance of the maritime space.

THE CASE OF AZORES MSP

FACTSHEET DESCRIPTION

1. Maritime spatial planning (MSP) in a nutshell
2. Competent authorities
3. MSP instruments
4. Spatial dimension



THE CASE OF AZORES MSP

FACTSHEET

Online tools

Web portal
MSP Azores

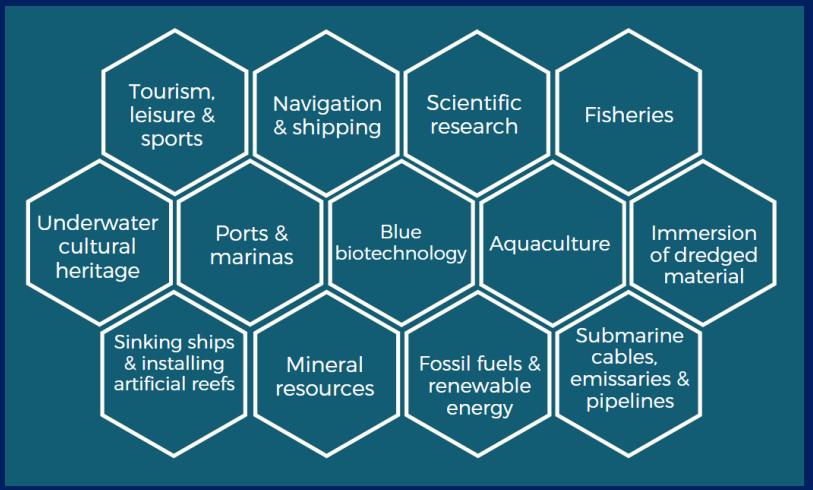
+

Geoportal
SIGMAR Azores

+

Collaborative GIS
planning tool

Human uses & activities



THE CASE OF AZORES MSP

FACTSHEET

Steps & current status

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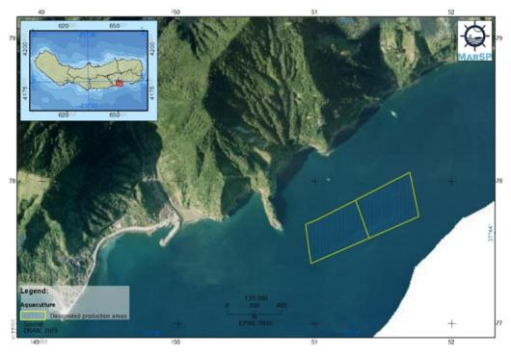


TAKE-HOME LESSONS FROM MSP AZORES

MSP is heavily reliant on data with high quality spatial and temporal resolution for effective scenario analysis & successful zoning.

Main challenge: Lack high resolution near-surface spatial & temporal data for the Azores maritime space, especially coastal areas (regional and local scales);

Limitations of the available data: accuracy of remote sensing data • climate constraints (cloud cover) • limited and unevenly distributed collection of environmental observations • datasets require *in situ* validation;

Benefits from user uptake: broad-scale oceanographic information can be applied to environmental monitoring • prediction of optimal conditions for future uses (ex. Aquaculture-Fishing Farm, maritime facilities).

EO products & services are key.

CURRENT & FUTURE NEEDS

EO PRODUCTS, SERVICES & WORKFORCE – General

Information

Core needs (our weakiness)

» **High spatial and temporal resolution data** to deliver accurate and reliable outputs at **priority maritime zones**;

» Free and **ready-to-use data** to support conservation and marine management policies;

» **Human, technical and financial resources needed (no money, no funny ☺)**;

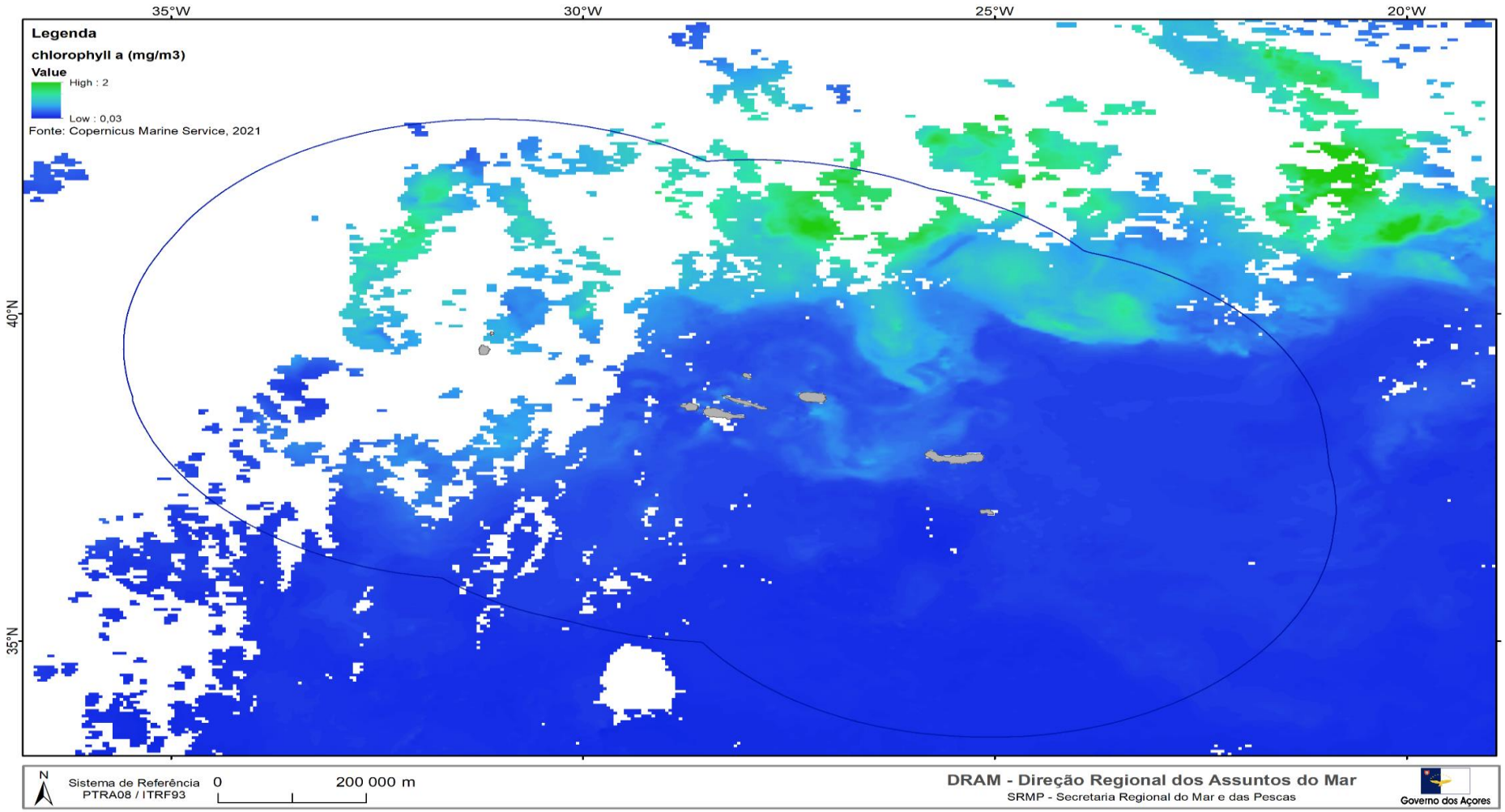
» Need for **validation from *in situ* data** infrastructure.

Applications of remote sensing imagery

Satellite remote sensing, including very high resolution Synthetic Aperture Radar (ex. oceanographic characterization, environmental monitoring, climate & seasonal forecasting).

- Complementary methods

Mapa de Localização



CURRENT & FUTURE NEEDS

EO PRODUCTS, SERVICES & WORKFORCE – Specific Information

Main areas

MSFD & WFD - Environmental monitoring • MSP Directive – Sustainable blue economy • MPA - Habitats & Birds Directives, OSPAR Convention • ICZM - Maritime public domain management • Climate change

1. Characterization of the maritime space

» **Environmental data**, from spatially explicit remote sensing data (ex. sea surface temperature, chlorophyll-a concentration, particulate carbon) and derived oceanographic data (ex. primary production) to support the application of models to predict the **distribution of species and habitats** & **climate modelling**;

» **Seabed mapping** (near coast bathymetry data).

Complementary needs

» Collection of ***in situ*** **environmental data** (ex. LIFE IP CLIMAZ);

» **Hydrographic surveys** to collect bathymetry & substrate type data.

2. Coastal zone management

» **Monitoring of hydrodynamic conditions at coastal areas** to support environmental management (MSFD D6 & D7), public domain management (ex. coastal cliff retreats, aggregate extraction effects) and help predict effects of climate change (coastal erosion, extreme events) (ex. LIFE IP CLIMAZ).

CURRENT & FUTURE NEEDS

EO PRODUCTS, SERVICES & WORKFORCE - Specific Information

Main areas

MSFD & WFD - Environmental monitoring • MSP Directive – Sustainable blue economy • MPA - Habitats & Birds Directives, OSPAR Convention • ICZM - Maritime public domain management • Climate change

3. Human uses and activities & related impacts on the marine environment

» Prediction of environmental conditions to **support zoning of potential areas** in MSP (ex. optimal oceanographic condition for aquaculture) and monitoring of resulting impacts (ex. EIA);

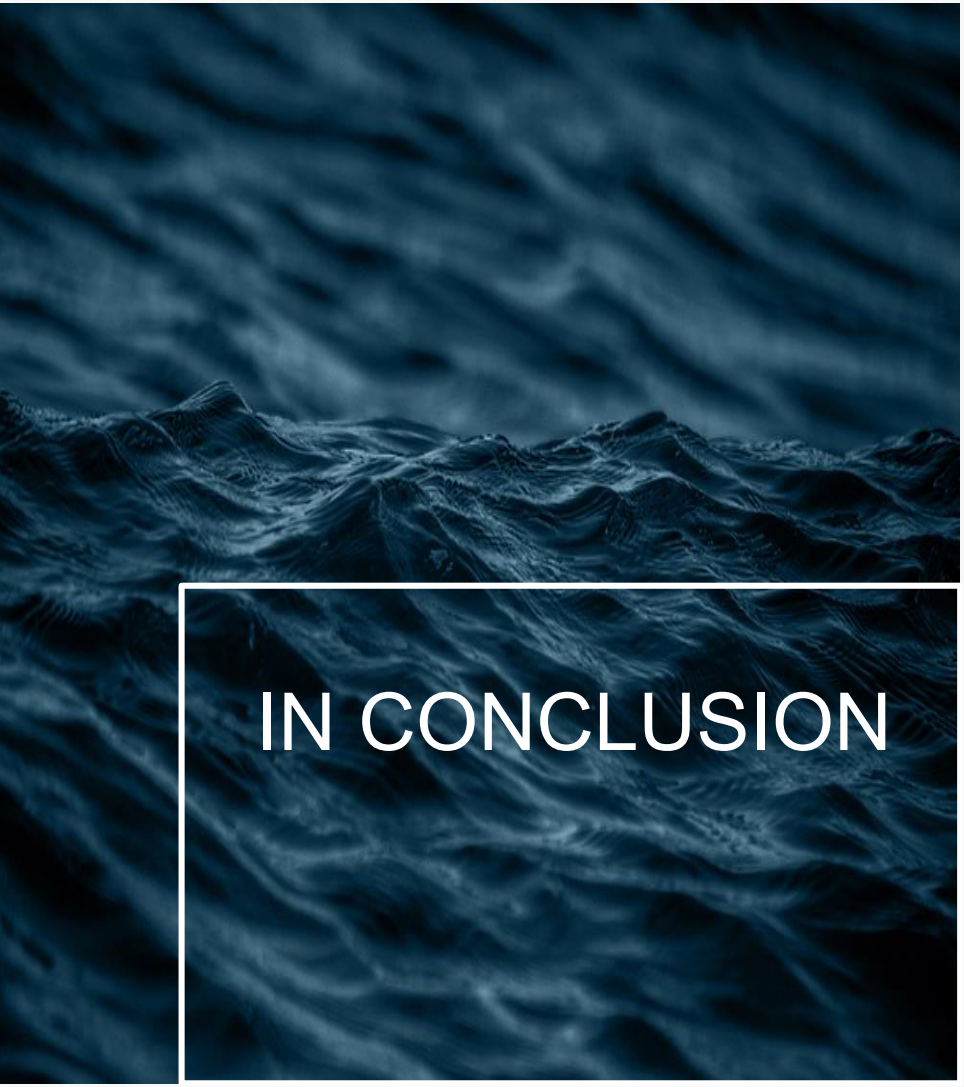
» **Environmental assessment and monitoring** to support MSFD implementation and MPA management (ex. detection of pollution events, data on contaminants and eutrophication, data on surface marine litter).

Complementary needs

» Integration with **AIS data on vessels** location and activities at sea, to support monitoring and surveillance of activities and MPA management (ex. PEAMA, LIFE-IP Azores Natura);
» Links to the collection of ***in situ*** **data on underwater noise** (hydrophones), marine litter and contaminants (ex. LIFE-IP CLIMAZ).

4. Building capacity for better user uptake

» Training and capacity building in data processing (ready-to-use products) and analysis to support decision-making and the implementation of EU policies.



Copernicus products limitations for our needs on:

- Coastal zone management;
- Human activities monitoring.

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Regional Government of the Azores

Fair Winds and Following Seas