

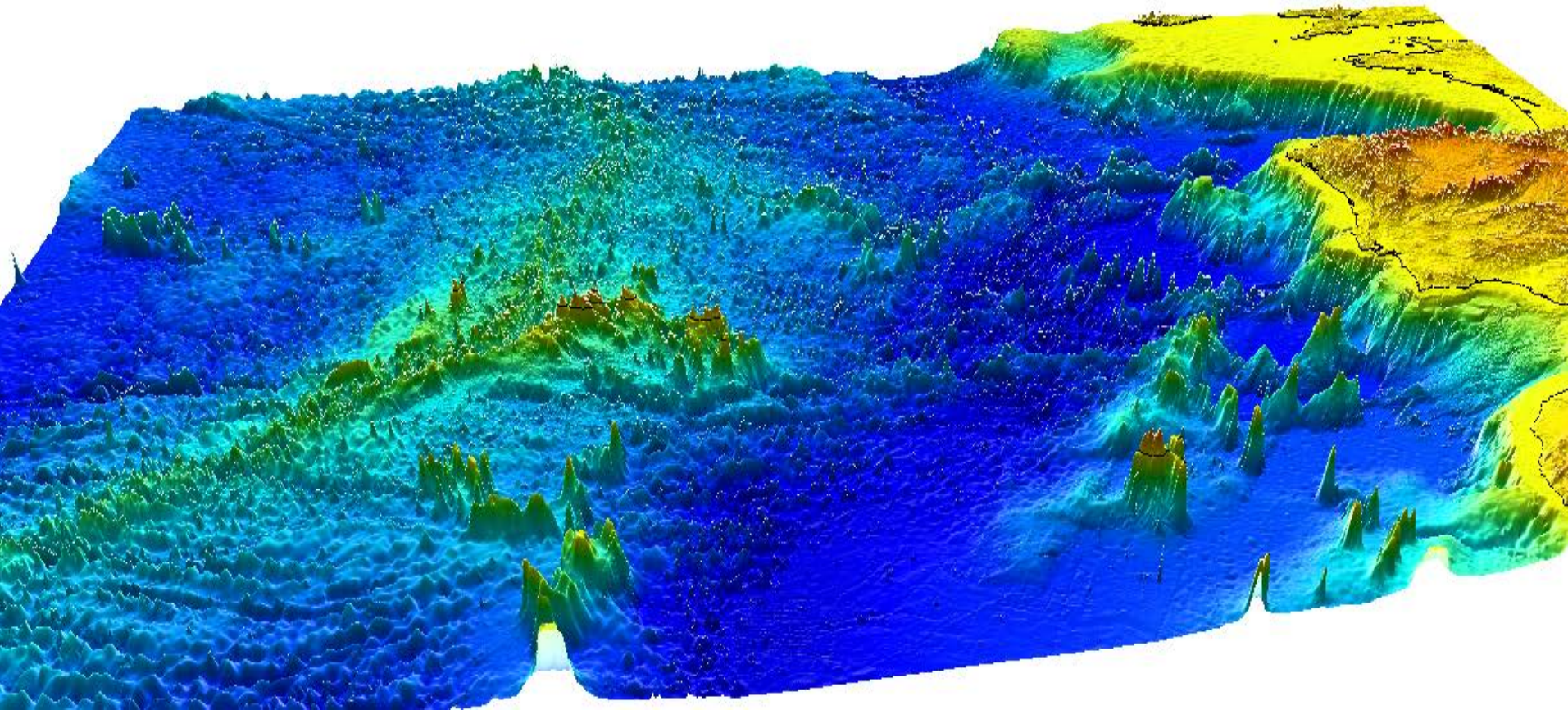


# The BIOMETORE project

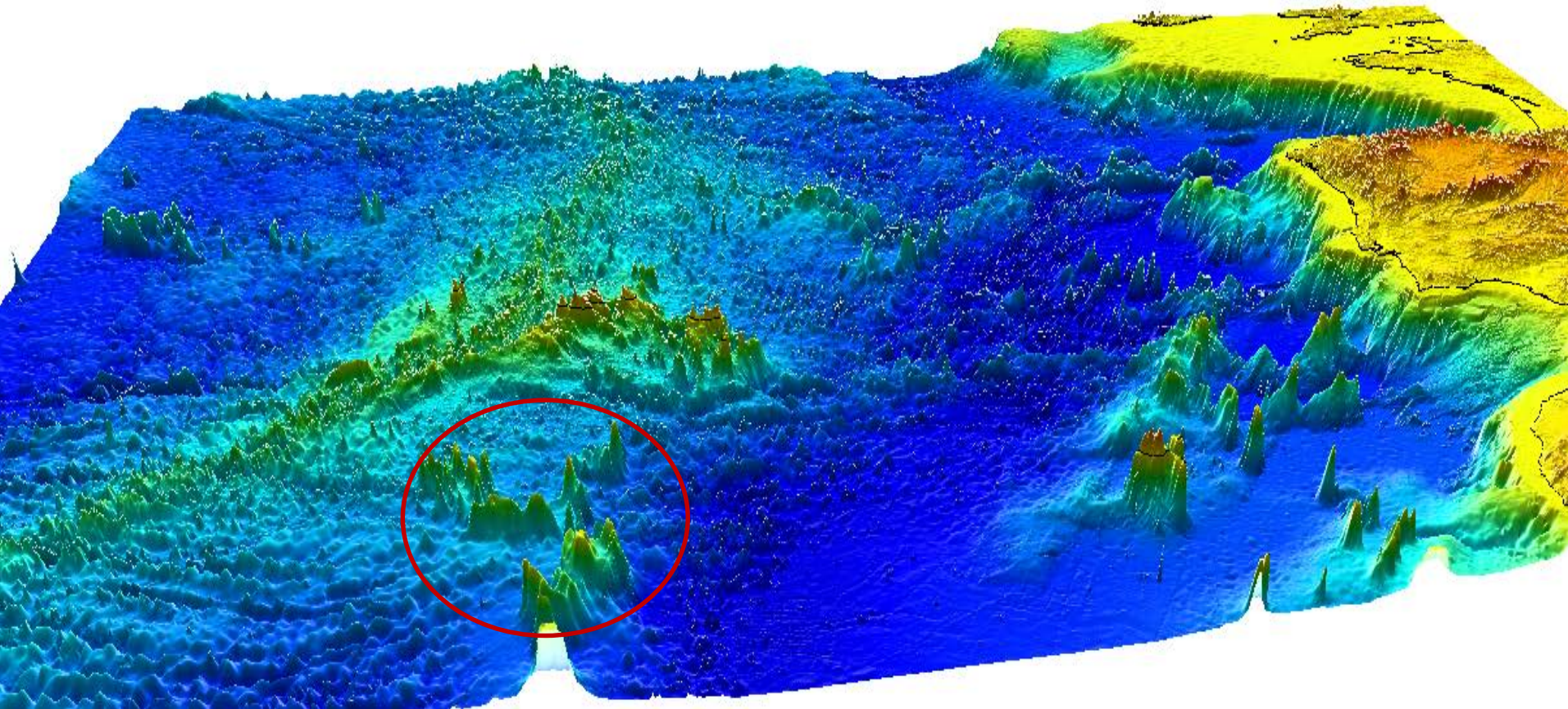
## Antonina dos Santos



# The study area

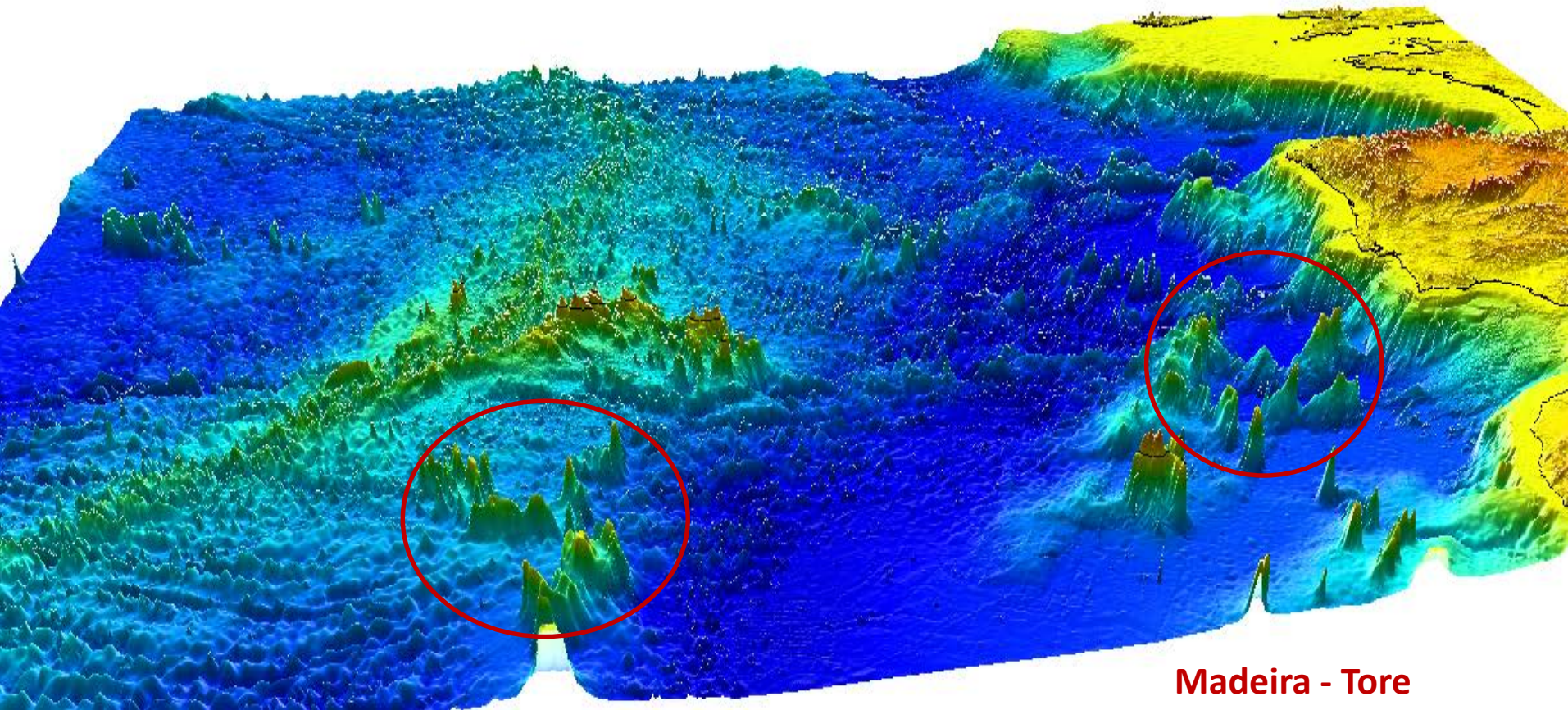


# The study area



**Great Meteor**

# The study area

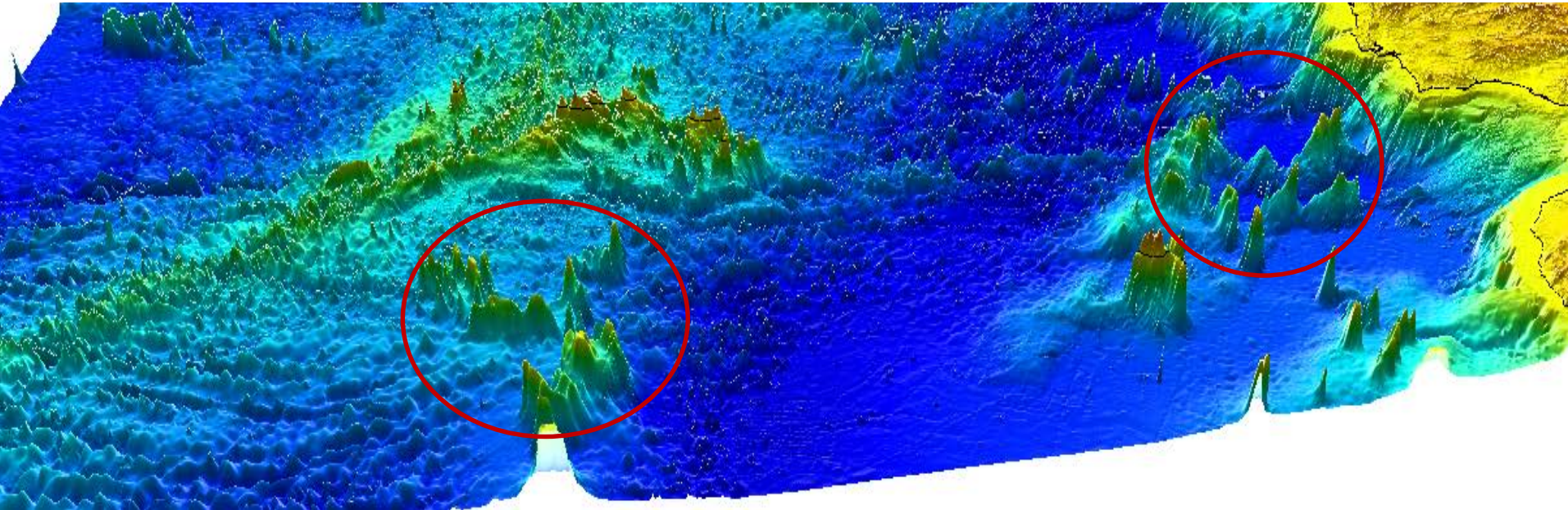


**Great Meteor**

**Madeira - Tore**

# The objectives

**Sampling surveys** encompassing **seamounts** in the **Madeira-Tore** and **Great Meteor** geological complexes to acquire knowledge on **deep-sea ecosystems, biodiversity** and **anthropogenic pressures**



# The consortium



Coordinator



# The consortium



Coordinator



Direção Regional dos Assuntos do Mar



Partners



# The consortium



Coordinator



Direção Regional dos Assuntos do Mar



Partners



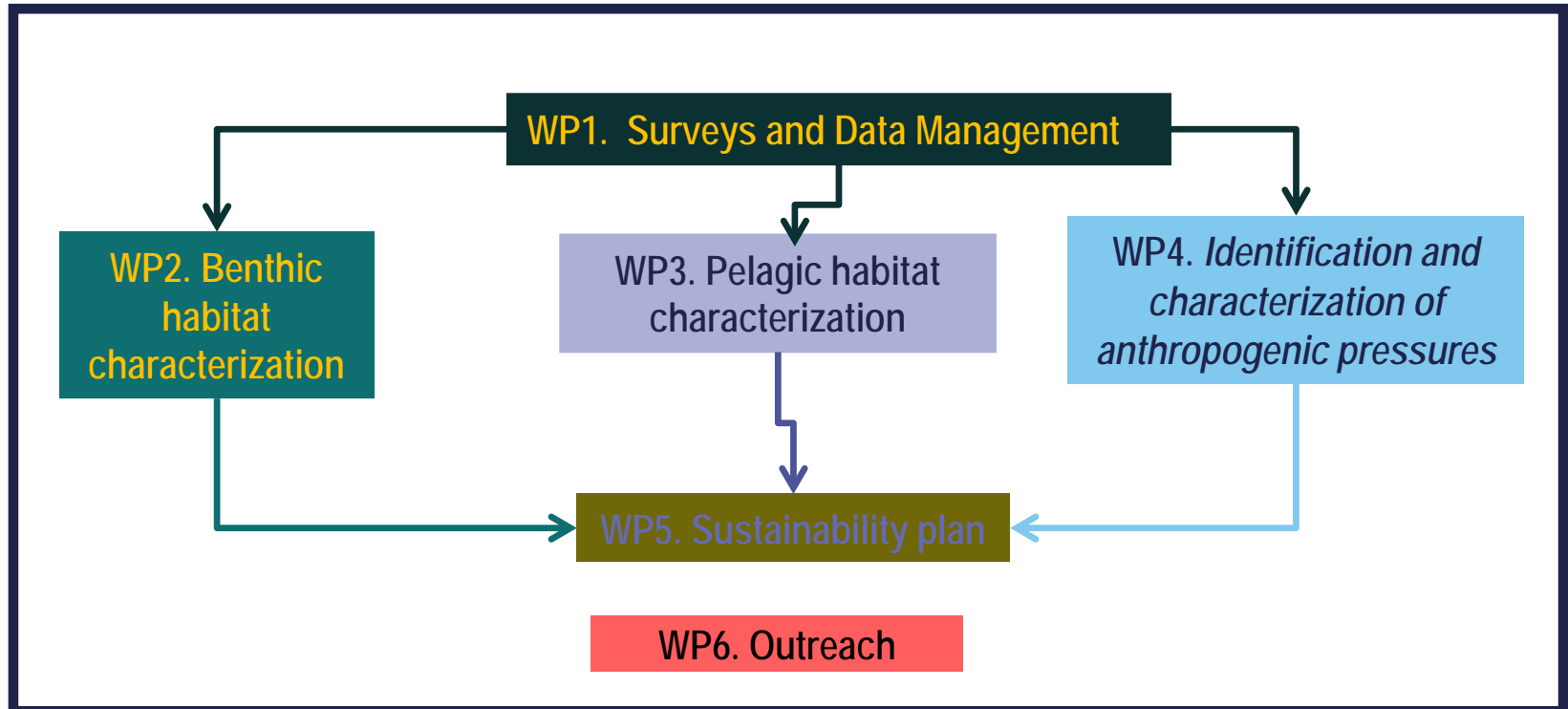
Collaborators





# The plan

WP7. Scientific coordination and meetings organization

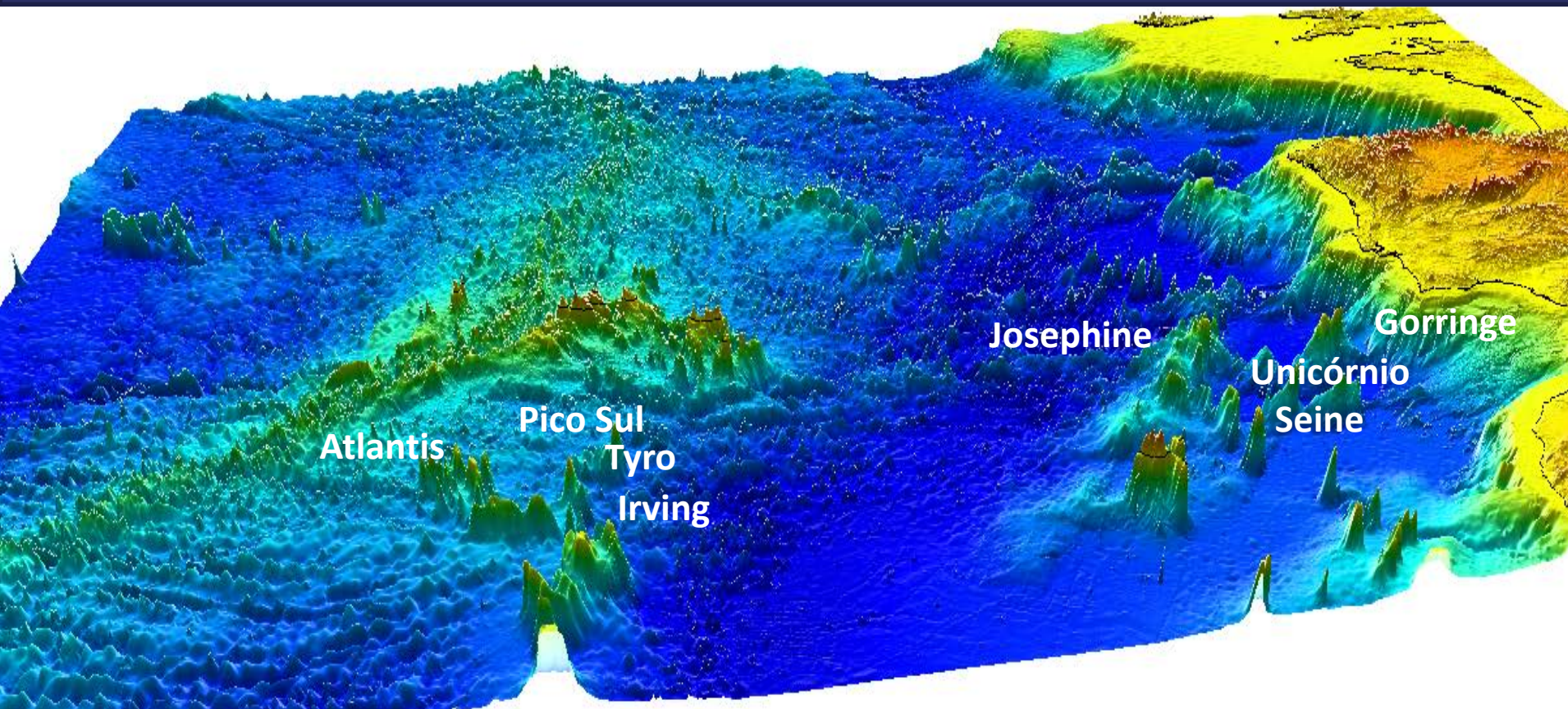




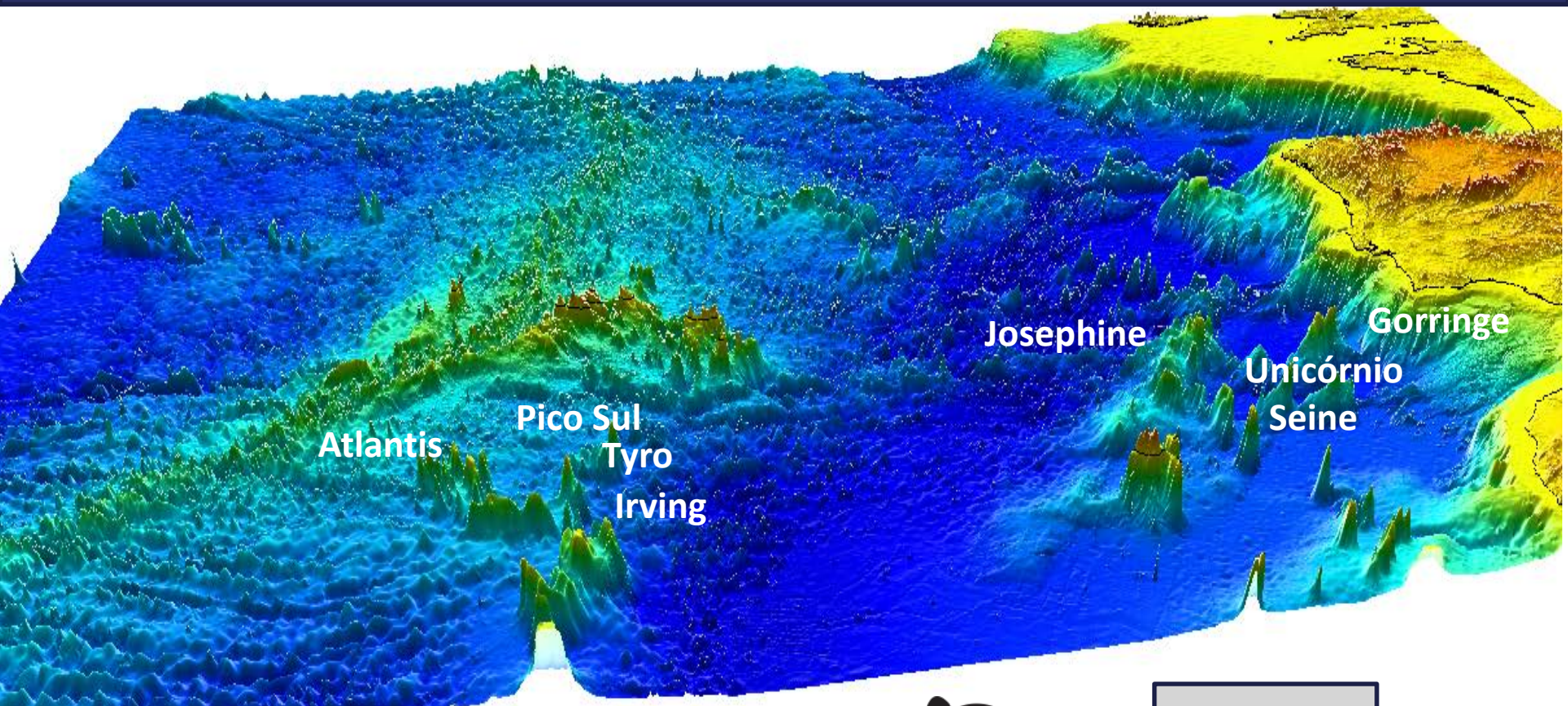
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**WORK-PACKAGE 1**

# **SURVEYS AND DATA MANAGEMENT**



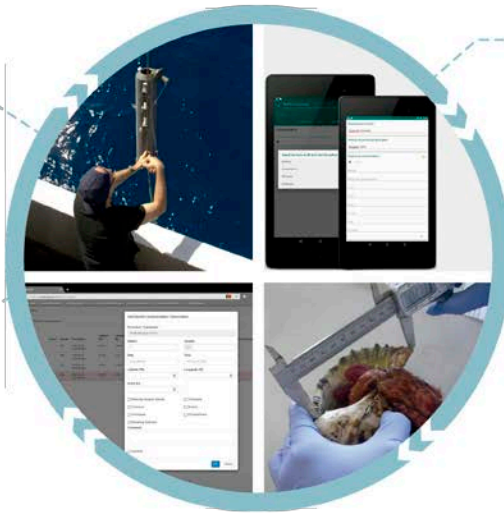
7 Surveys



Reference Biological Collection at



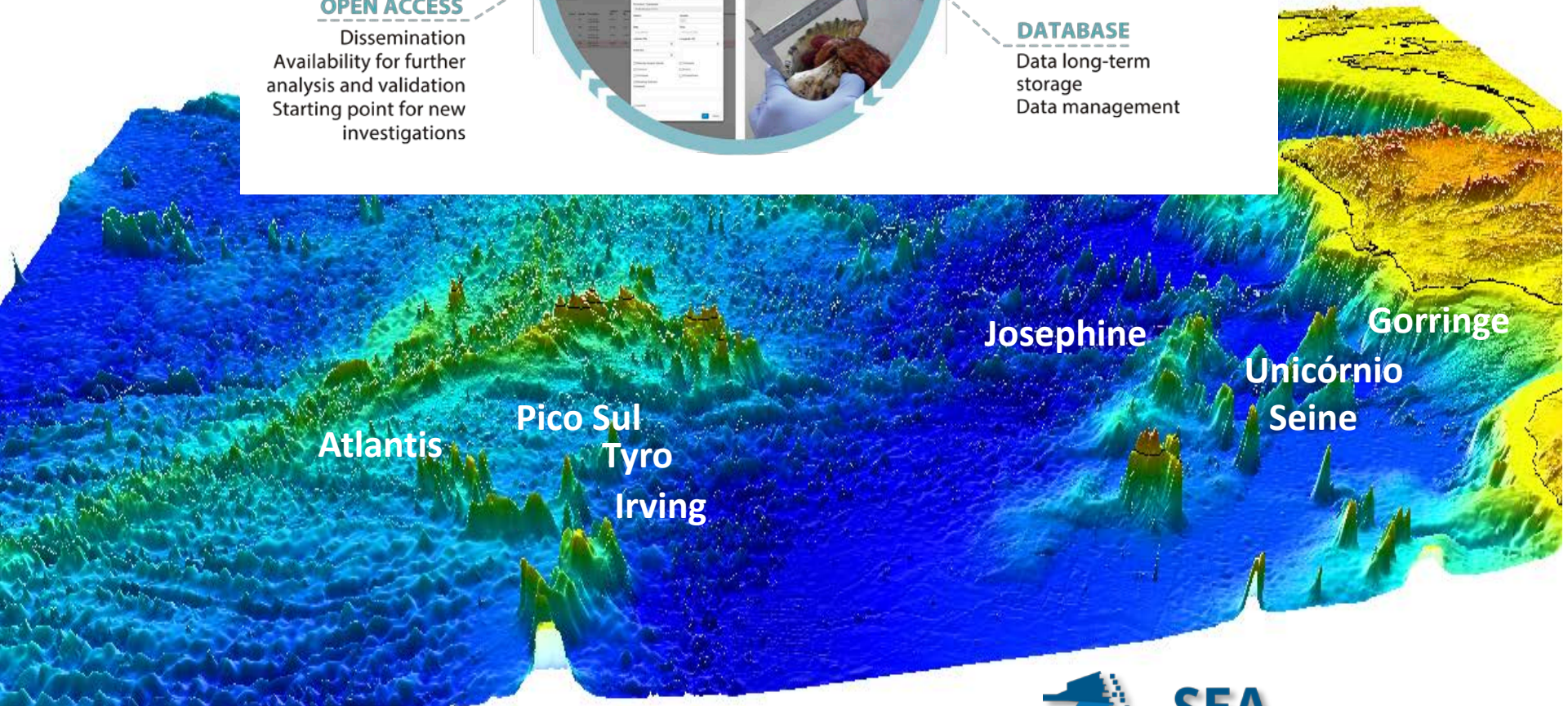
**FIELD**  
Data acquisition  
Recording on digital support



**LABORATORY**  
Data acquisition  
Data analysis and validation  
Recording on digital support

**OPEN ACCESS**  
Dissemination  
Availability for further analysis and validation  
Starting point for new investigations

**DATABASE**  
Data long-term storage  
Data management



Database by SeaBioData



**SEA  
BIO  
DATA**





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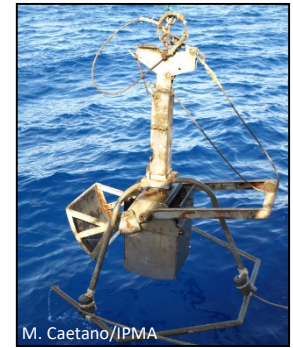
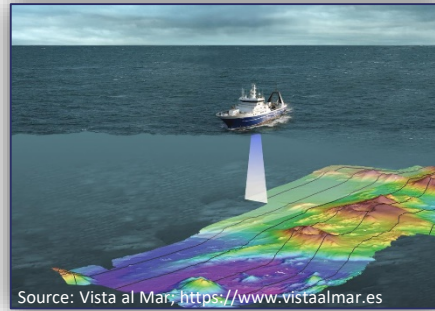
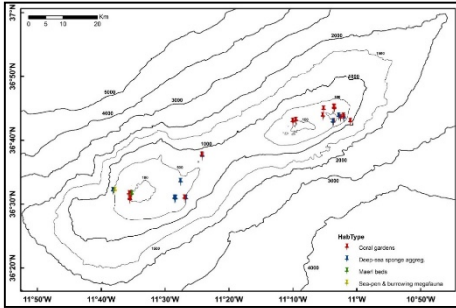
**WORK-PACKAGE 2**

# **BENTHIC HABITATS CHARACTERIZATION**

# OBJECTIVES

## Data collection for:

- Classifying seabed habitats and producing large-scale maps



- Developing VME distribution suitability models

- Improving biodiversity knowledge

- Characterizing benthopelagic fish species composition and assemblage structure
- Providing voucher specimens for museum collections



**ECHINODERMATA**

*Echinus esculentus* Linnaeus, 1758

Class: Echinoides  
Order: Camarodonta  
Family: Echinidae

Description: Test usually globular, more rarely depressed or subconical. Is closely covered with short spines, among which the primary are scarcely conspicuous. In smaller specimens, the secondary spines are not as large as the primary ones.  
Size information: Up to 16 cm in horizontal diameter.  
Colour: the test is of an intense red, on which the white spines are very conspicuous. More rarely it is pale purplish or pale green.  
Habitat: It is mostly found on hard-substrata with algae.  
Depth range: is found till depths of 1200 m.



- Testing the proof of concept of seamounts endemcity and their role as “stepping stones”

- Addressing trophic interactions



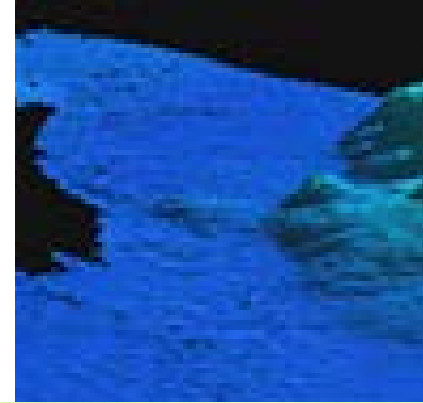
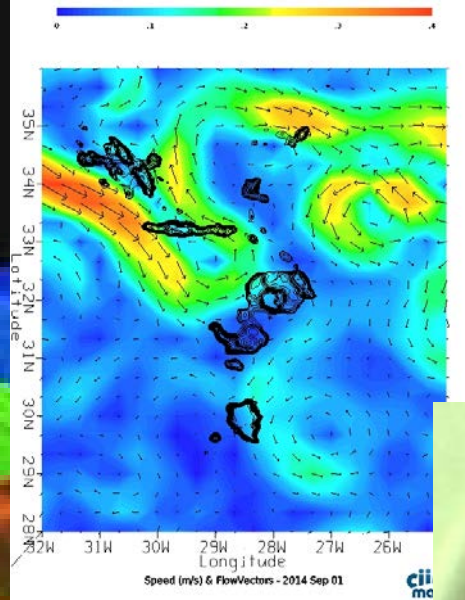
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**WORK-PACKAGE 3**

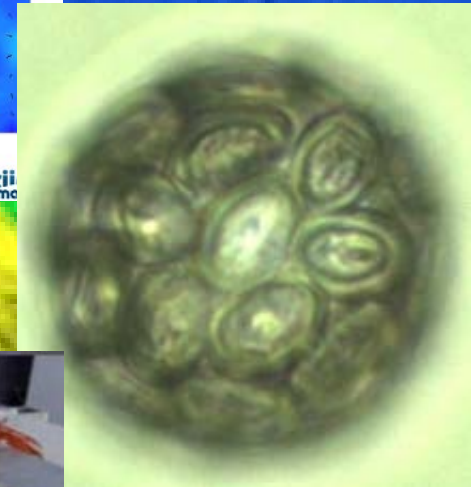
# PELAGIC HABITATS CHARACTERIZATION



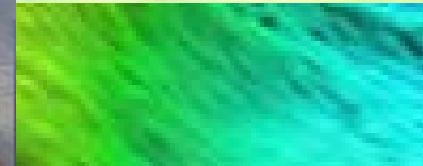
✓ Oceanographic processes



✓ Planktonic communities



✓ Nektonic communities



✓ Marine vertebrate communities





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**WORK-PACKAGE 4**

**IDENTIFICATION OF ANTHROPOGENIC PRESSURES**

Estimation of anthropogenic pressures

Estimation of fisheries catch and bycatch in offshore seamounts

Impacts of bottom fishing on VMEs and litter distribution in offshore seamounts



The figure presents the AIS information on ships passages for the period 01/01/2012 to 31/12/, which includes the fishing vessels.



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**WORK-PACKAGE 5**

# **SUSTAINABILITY PLAN**

# TEMPLATE FOR DEVELOPING SUSTAINABILITY PLANS FOR PORTUGUESE SEAMOUNTS

Fulbright Award in Marine Resources /IPMA

Prof. Dr Robert Brock, Univ Massachusetts, Boston

STEP 1: ASSEMBLE AN **INTERDISCIPLINARY TEAM OF TOPICAL EXPERTS** (ECOLOGICAL, SOCIAL, ECONOMIC, GOVERNANCE) TO ADDRESS DIRECTIVES FROM MANAGEMENT

STEP 2: **AGREE TO WHAT YOU WILL AGREE ON:** WHAT IS THE QUESTION(S) TO BE ADDRESSED? WHAT IS THE MANAGEMENT VISION(S), GOAL(S), AND OBJECTIVE(S) TO BE DEVELOPED? IS PROPOSED ACTIVITY X *SUSTAINABLE* IN BOTH TIME AND SPACE FROM AN ECOLOGICAL, SOCIAL, ECONOMIC, AND GOVERNANCE/LEGAL ASPECT AND HOW WILL YOU ANSWER THIS? WHAT TARGETS WILL YOU USE TO ASSESS SUSTAINABILITY?

STEP 3: WHAT IS THE AGREED UPON **DEFINITION OF SUSTAINABLE?**

STEP 4: **WHAT** EXACTLY IS ACTIVITY X PROPOSING TO DO? **WHERE** WILL THE ACTIVITY TAKE PLACE? **WHEN** (time of year) WILL IT TAKE PLACE? **HOW**/METHODS? **WHY** PROPOSED?

STEP 5: **WHAT DO WE KNOW?** WHAT/WHERE DO NATURAL RESOURCES EXIST (e.g., organisms, habitats) TO THE BEST OF OUR KNOWLEDGE? WHEN ARE THE RESOURCES FOUND (e.g., any seasonality)? DO ANY SIGNIFICANT INFORMATION GAPS EXIST?

STEP 6: OVERLAY OF ACTIVITY X WITH WHAT IS KNOWN ABOUT THE AREA. DOES THE ACTIVITY APPEAR TO BE **COMPATIBLE WITH THE RESOURCES** THAT EXIST THERE?

STEP 7: IMPORTANCE OF CHOOSING APPROPRIATE **INDICATORS AND MONITORING:** HOW AND WHERE WOULD WE KNOW IF ACTIVITY X APPEARS TO BE SUSTAINABLE? HOW WOULD WE KNOW IF ACTIVITY X GOES FROM COMPATIBLE TO NON-COMPATIBLE? WHAT IS THE STATUS AND TRENDS OF OUR INDICATORS OVER TIME? WHAT DOES THIS MEAN?

STEP 8: HOW WILL RESULTS OF THE MONITORING OF OUR INDICATORS AND ANY DECISIONS THAT COME FROM OUR MONITORING RESULTS BE **COMMUNICATED** TO VARIOUS GROUPS?

STEP 9: **ADAPTIVE MANAGEMENT:** DO ANY CHANGES NEED TO BE MADE BASED ON OUR MONITORING RESULTS OF THE STATUS AND TRENDS OF INDICATORS?





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**WORK-PACKAGE 6**

**OUTREACH**

- ✓ Scientific communications
- ✓ Press releases and conferences
- ✓ Website [www.biometore.pt](http://www.biometore.pt)
- ✓ Documentary on oceanographic survey
- ✓ Documentation of all scientific activities with photo and video
- ✓ Promote Ocean Literacy for children and schools

IPMA promove investigação oceanográfica entre a Madeira e o Continente

# Montes submarinos são alvo de estudo científico

MAR  
Lúcia M. Silva  
luciasilva@jm-madeira.pt

**O navio “Noruega” sairá do porto do Funchal rumo a Lisboa no âmbito de uma nova campanha de investigação oceanográfica.**



Antonina Santos explicou aos jornalistas como irá desenvolver-se o projeto.

Entre hoje e amanhã, o navio “Noruega”, do Instituto Português do Mar e da Atmosfera (IPMA), vai partir do porto do Funchal rumo a Lisboa no âmbito de uma nova campanha de investigação oceanográfica.

Ontem, em conferência de imprensa realizada a bordo do navio, Antonina Santos, investigadora do IPMA e responsável pela

em oito campanhas de investigação no total. O projeto é financiado pelo programa europeu EEA Grants e conta com um orçamento de 2,5 milhões de euros.

A campanha da Madeira a Lisboa será liderada pelo investigador e diretor do Observatório Oceânico da Madeira (OOM), Rui Caldeira, e vai prolongar-se por 20 dias. A equipa será formada

“

**O projeto pretende estudar os montes submarinos que existem entre**

montes do Complexo Madeira-Tore.

De salientar que, ainda nesta conferência de imprensa, Antonina Torres lembrou que, apesar do requerimento estar pendente (desde 2009) nas Nações Unidas, Portugal continua com a ambição de ver aumentada a extensão da plataforma continental. As Zonas Económicas Exclusivas de Portugal continental, da Madeira e dos Açores ficarão li-



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# Thank You



Direção Regional dos Assuntos do Mar

