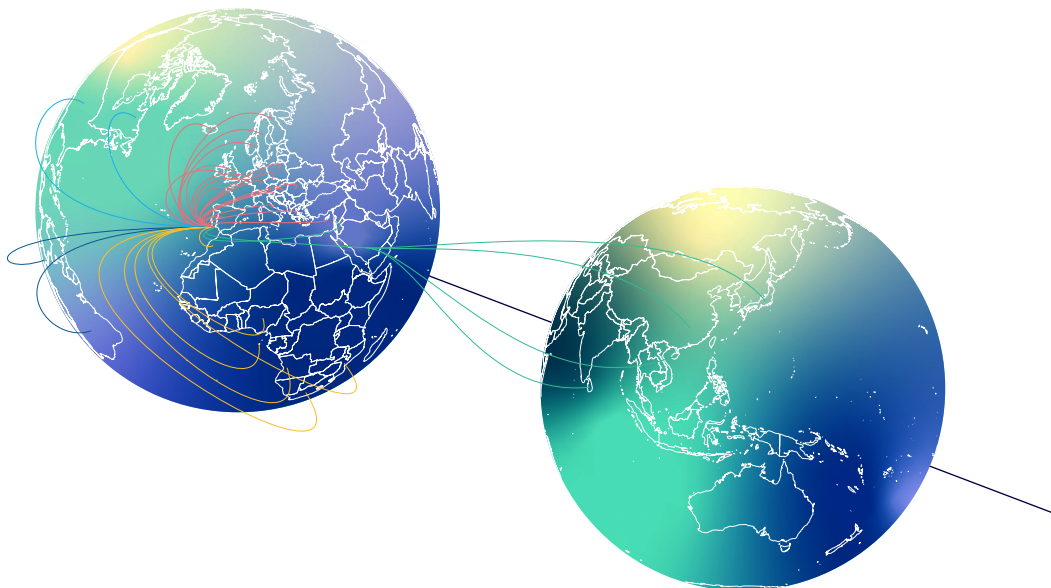




**CIMA**

CENTRE FOR MARINE AND  
ENVIRONMENTAL RESEARCH



CIMA CONNECTS  
WITH PARTNERS AT A  
GLOBAL SCALE

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CIMA - Centre for Marine and Environmental  
Research

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UIDB/00350/2020 CIMA BASE

Graphic Design: João T. Tavares

Photography: Front cover - derived from Nasa /  
unsplash.com; page 3 - derived from leio-mclaren /  
unsplash.com; Back cover - syd sujuaan / unsplash.  
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## **MISSION**

**Promote and develop scientific knowledge and innovation in the sea and environment, contributing to sustainable, innovative, integrated, and intelligent development.**

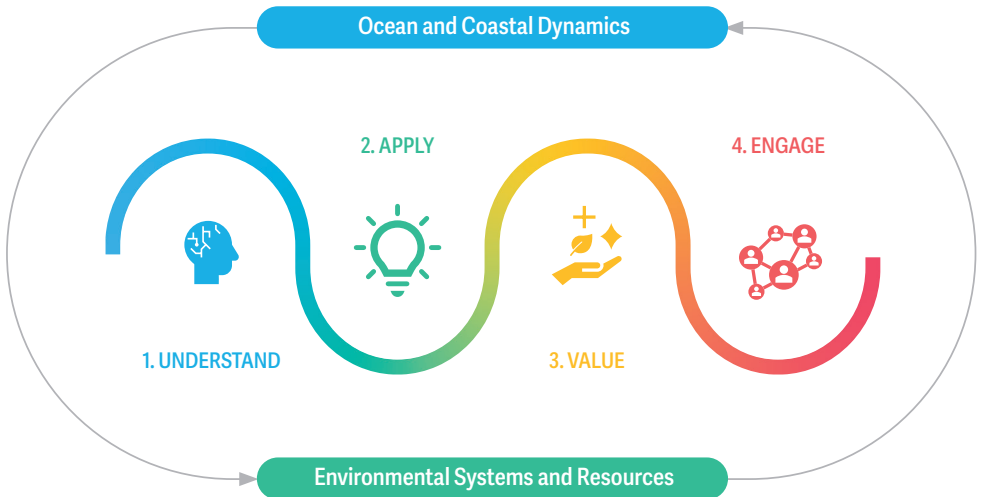
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## **VISION**

**Respond to European Union Societal Challenges and United Nations Sustainable Development Goals, through a multidisciplinary approach applied to marine and environmental research.**

# STRATEGY

It actively engages with holistic approaches to understand oceanic, coastal, and environmental systems and dynamics, applying this knowledge to develop practical solutions and value resources. Actively engage with society to extend impact beyond academia and enhance regional and global environmental resilience and sustainability.



**1. Advancing knowledge on aquatic ecosystems**

**2. Risk assessment and support to sustainable development**

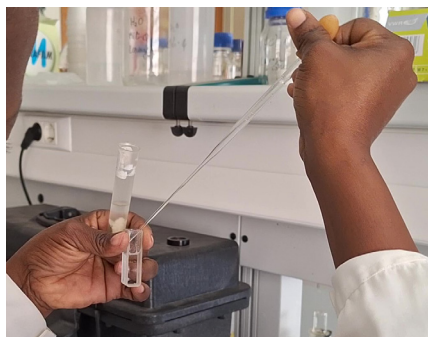
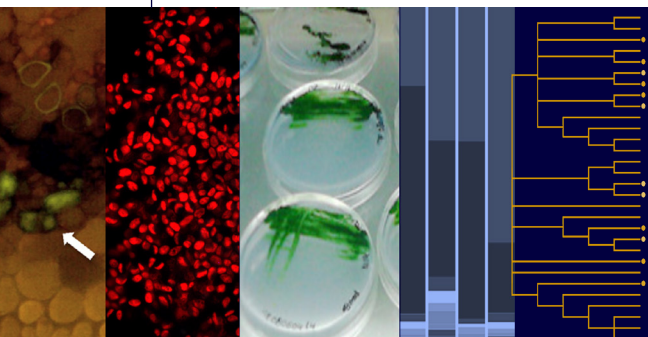
**3. Leveraging resources and technologies towards circular economy**

**4. Engaging with society**

## Laboratory of Microbial Molecular Ecology

This laboratory explores the molecular interactions, functions, and roles of microorganisms and viruses in various environments and hosts. We utilize advanced techniques, including DNA and RNA sequencing, metagenomics, and other 'omics technologies, to develop innovative diagnostic tools and practical applications that promote environmental and health sustainability

1.73



1.76

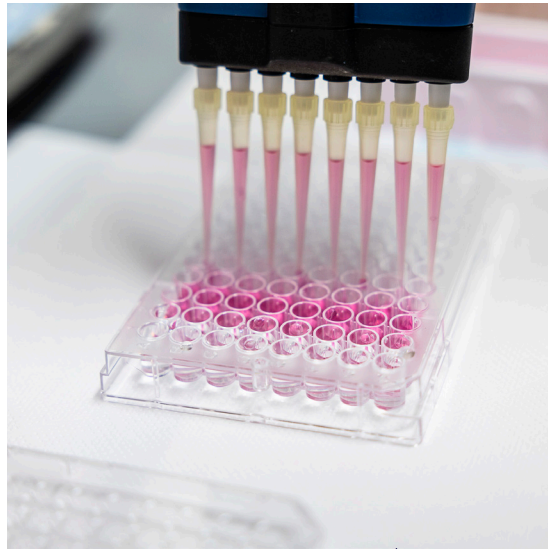
## Laboratory of Chemical Oceanography

This laboratory focuses on coastal oceanography processes namely mass exchanges in the continuum coastal systems-ocean, impact of wastewater on water quality and bivalves, eutrophication, greenhouse gas dynamics, water-sediment nutrient fluxes, deoxygenation and Net Ecosystem Metabolism.

## Laboratory of Geology and Geochemistry

This laboratory specializes in comprehensively preparing and analyzing geological rock and sediment samples using mineralogical, palynological, and geochemical techniques. Our primary focus is studying ancient environments and present-day Earth surface processes to enhance our knowledge of Earth's historical and current climates and environments.

1.78



1.84

## Laboratory of Proteomics

This laboratory focuses on the study and assessment of ecotoxicological responses in marine invertebrates caused by emerging and legacy contaminants in marine, polar, and deep-sea ecosystems. The principal molecular biology analyses are based on DNA, RNA, and protein expressed in marine invertebrates' tissues using transcriptomic and proteomic tools.

## Laboratory of Micropaleontology and Palynology

This laboratory focuses on the study of benthic foraminifera, diatoms, pollen, dinoflagellates, and spores as bioindicators and paleoenvironmental proxies. These microorganisms reveal insights into global and regional ecosystem changes, biodiversity, climate variability, and human impact.

1.87



1.89

## Laboratory of Sedimentology

This laboratory support research aimed at determining the recent evolution of coastal areas and the continental shelf. It is equipped with all the necessary means to carry out grain size, compositional and morphoscopic analyses of sediments.



## Laboratory of Marine Microbiology

This laboratory addresses challenges such as eutrophication, harmful algal blooms, and climate change, by studying the effects of natural and anthropogenic drivers on microbial plankton ecology in coastal and oceanic ecosystems, using observational, experimental, and modelling approaches.

2.8



2.19

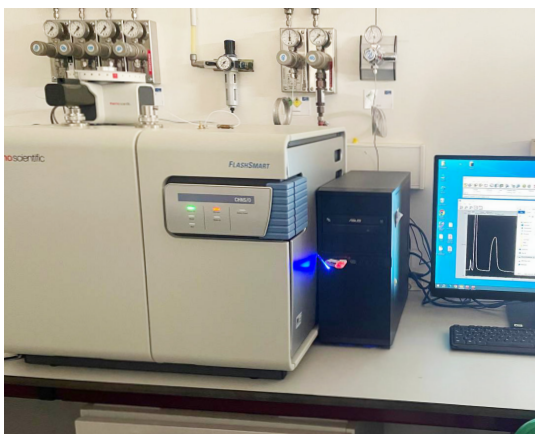
## Laboratory of Ecotoxicology and Environmental Chemistry

This laboratory conducts research to investigate and assess the ecotoxicological effects caused by emerging and legacy contaminants in organisms from marine, polar, and deep-sea ecosystems. Toxic effects are assessed by biochemical, cytotoxic, and genotoxic biomarkers.

## Laboratory of Environmental Sedimentology

This laboratory supports research on organic and inorganic characterization of sedimentological and ecological samples, analyzing grain size, organic matter, carbonate, and water content. Our aim is to document and understand marine and coastal environments and their evolution, aiding sustainable management and conservation.

2.58



1.26

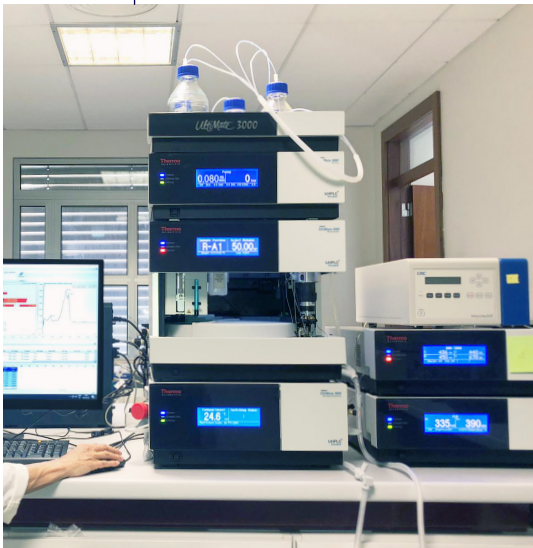
## Laboratory of Analytical Equipment I

This laboratory provides support and training to the centre in cross-cutting methodologies utilized across various laboratories and research activities conducted by different researchers. This laboratory has several highly specific analytical technologies, including Gas Chromatography and Elemental Analysis.

## Laboratory of Analytical Equipment II

This laboratory provides support and training to the centre in cross-cutting methodologies utilized across various laboratories and research activities conducted by different researchers. This laboratory has several highly specific analytical technologies, including Liquid Chromatography, Mass Spectrometry and Light Absorption.

2.39



2.40

## Laboratory of Environmental Engineering and Biotechnology

This laboratory specializes in using advanced biological systems for sustainable production alternatives that promote resource efficiency and a circular economy. It focuses on production and extraction technologies such as anaerobic digestion, bioreactor technology, and cell culture to recover high-value compounds from waste.

## Laboratory of Operational Ocean Modelling and Observation (HIDROTEC)

This laboratory develops operational ocean models that feed risk analysis and early warnings for oil spills and plastic pollution, sargassum, water quality, submersed heritage etc. Observing using AUV, drifting buoys etc. is used to improve the models.

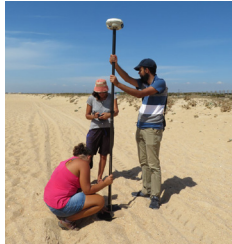
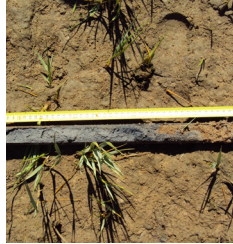
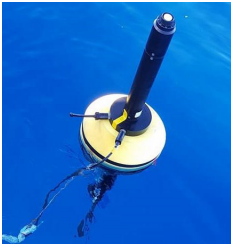


## Laboratory of Sanitary Engineering

This laboratory supports a new Urban Water Cycle approach focused on decarbonization. This involves conducting physical, chemical, and biological analyses of water, plant biomass, soils, and sediments to drive innovation. The aim is to design sustainable, intelligent coastal urban areas that leverage nature and ecosystem services to enhance climate resilience.

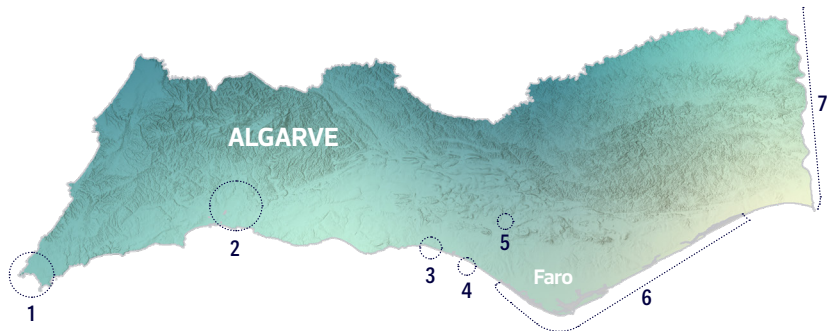
# SURVEYING COASTAL SYSTEMS

Data collected in Marine and Coastal Systems aims to understand the possible impacts of climate change and human activities on the ocean and the coast, by studying environmental evolution across different timescales: long-term (sedimentological and electromagnetic stratigraphy), medium-term (meteorological data and imagery), and short-term changes (topography, hydrodynamics, sediment fluxes, ecological data, and physical and chemical parameters). This includes data collection on natural and artificial reefs, modelling, and prototype in situ experiments.



# NATURAL LABORATORIES

Researchers from CIMA employ innovative field strategies to explore and understand coastal ocean dynamics and environmental systems. Their dedication and creativity drive impactful discoveries, contributing to the advancement of marine science.



1. SAGRES



2. ESTUÁRIO DO ARADE



3. PRAIA DA FALÉSIA



4. TRAFAL



5. CAMPINA DE CIMA



6. RIA FORMOSA



7. ESTUÁRIO DO  
GUADIANA

# PEOPLE

- Ocean and Coastal Dynamics
- Environmental Systems and Resources

Alexandra Cravo   Ana Barbosa

Ana Matias   A. Rita Carrasco



Carlos Loureiro   Delminda Moura



Duarte Duarte   Erwan Garel

Flávio Martins   Helena Galvão

João Estevão   John Icery



José Jacob   Juan Garzon



Katerina Kombadiou   Márcia Baptista

Óscar Ferreira   Rita Domingues

Sónia Cristina   Susana Costas

Tomasz Boski 

Alice Newton   André Pacheco

Badr El Mahrad   Cármen Sousa

Cláudia Sequeira   Cristina Veiga-Pires

Filomena Fonseca   Isabel Mendes

Jaime Aníbal   João Alveirinho Dias



Jorge Isidoro   José Rodrigues

Julia Luebbers   Luís Chicharo

Manuela Moreira   Maria Ângela Serafim

Maria João Bebiano   Nélia Mestre

Pasqualina Gaetano   Paulo Fernandes

Raúl Barros   Sandra Caetano

Sara Raposo   Sirak Robele

Sónia Oliveira   Tainá Fonseca

UNDERSTAND  
APPLY  
VALUE  
ENGAGE

Supported by the UIDB/00350/2020 CIMA BASE project, funded by the Foundation for Science and Technology (FCT).