



Deadline

23th of February, 2024

What you need

- Choose 3 proposals you're interested in
- Motivation letter
- Curriculum vitae
- Certificates of qualifications

Where to apply?

Email

mare@mare-centre.pt

Website

mare-centre.pt

Call for PhD Candidates

2024 FCT PhD Studentships

The 2024 Portuguese Science Foundation (FCT) Call for PhD Studentships is planned for March 2024. MARE - Marine and Environmental Science Centre is launching a call for candidates looking for a PhD theme. Submit your expression of interest.

Who should apply?

MARE is looking for strong and motivated national and international candidates, that wish to develop their PhD studies within research lines related to aquatic ecosystems. We are offering several competitive PhD themes and respective supervision, to which prospective candidates can apply. Upon selection, successful candidates will be invited to submit an application to the next FCT Call for PhD Studentships, with MARE as their host institution.

How to apply?

- Take a look at the PhD proposals offered in the next pages of this document;
- Select the **top 3 proposals in which you are most interested**;
- Apply to this call by preparing and sending:
 - A **motivation letter**, including information on the **3 proposals for which you are applying (please indicate proposal ID and title)**;
 - Your detailed **Curriculum Vitae**;
 - **Certificates of qualifications** (BSc.; MSc; others)
 - Any other document you consider useful to value your application;
- Send all the required information and documents to mare@mare-centre.pt, with the following title on the email subject **"MARE call for PhD Candidates"**;

Deadline for applications is 23/02/2024.

Please note

Your application does not guarantee your selection for the FCT Call for PhD Studentships. Your application will be subjected to an internal and rigorous review and the potential **supervisors are free not to select any of the candidates, when the profiles are inadequate** to the proposed PhD objectives.

Also note that a successful application at this stage does not guarantee you an immediate contract for a PhD Studentship. This is dependent of a successful application to the FCT Call.

About MARE

MARE is a RD&I centre for scientific research, technological development and innovation, oriented to societal challenges. With technical and scientific skills to address all aquatic ecosystems, including river basins, estuaries, coastal, oceanic and deep ocean ecosystems, MARE adopts an integrative approach, in close partnership with national and international institutions.

MARE is a multi-unit centre with eight regional research units, located at higher education campus in Portuguese mainland and Madeira archipelago, namely University of Coimbra (MARE-UCoimbra), Polytechnic of Leiria (MARE-IPLeia), University of Lisbon (MARE-ULisboa), NOVA University of Lisbon (MARE-NOVA), ISPA (MARE-ISPA), Polytechnic of Setúbal (MARE-IPS), University of Évora (MARE-UÉvora), and the University of Madeira/ARDITI (MARE-Madeira).





● **PhD Proposals**
2024 FCT PhD Studentships



MARE is funded by FCT - Portuguese Science Foundation, within the projects UIDB/MARE/04292/2020, UIDP/MARE/04292/2020 and LA/P/0069/2020 ARNET

Proposal ID	MARE-UC-2024-PhD1
Main Regional Research Unit:	MARE-UCoimbra
Other MARE RRUs:	-
Other partner entities:	Local aquaculture
Main supervisor (name, institution):	A. Cristina Rocha, University of Coimbra
Co-supervisors (names, institutions):	More information will be provided further (as well as collaborations with other RRUs)
Institution awarding the PhD degree:	University of Coimbra
PhD program:	Biological Sciences
PhD title:	Good Aquaculture Practices – Welfare assessment of farmed fish incoastal aquacultures
Start-date:	01-10-2025 (or before)
End-date:	4 years PhD program
Workplace(s):	MAREFOZ – Marine Ecosystems Lab Incubadora de Empresas da Figueira da Foz Parque Industrial e Empresarial da Figueira da Foz Rua das Acácias Lote 40A 3090-380 Figueira da Foz
Description of the PhD research project (maximum 1000 characters):	<p>The concept of animal welfare is still not clearly defined for farmed fish. Nevertheless, in fish farming, it is recognised that appropriate welfare conditions are of fundamental importance for aquaculture sectors. Aquatic animals that are not chronically stressed present better growth rates, are less prone to disease and the final product maintains high quality features. It is paramount to understand how growth conditions, diet, rearing methodologies applied, fishing and treatment of captured fish can influence their welfare and quality of the product.</p> <p>The candidate enrolling in this project will participate in the daily activities of a local aquaculture and be involved in the evaluation of the health and stress state of cultivated fish. He/she will participate the measurement of several physico-chemical parameters and other parameters related, e.g., physiological stress-indicators, growth performance and swimming activity, etc. The aim is to assess the welfare of the farmed fish and possibly contribute for the elaboration of a guide of good and welfare practices.</p>
R&D and/or applied projects supporting planned work:	
Type of application to the FCT Call:	Regular

Proposal ID	MARE-UC-2024-PhD2
Main Regional Research Unit:	MARE-UCoimbra
Other MARE RRUs:	-
Other partner entities:	To be defined
Main supervisor (name, institution):	Isabel Pedroso de Lima, University of Coimbra
Co-supervisors (names, institutions):	To be defined
Institution awarding the PhD degree:	University of Coimbra
PhD program:	Environmental Engineering Doctoral Programme
PhD title:	Enhancing environmental monitoring using satellite-based remotesensing products
Start-date:	To be defined
End-date:	To be defined
Workplace(s):	Laboratory of Hydraulics, Water Resources and Environment, Department of Civil Engineering, Faculty of Science and Technology, University of Coimbra / MARE Coimbra
Description of the PhD research project (maximum 1000 characters):	Currently, remote sensing facilitates continuous observation and understanding of various aspects of ecosystems, infrastructure, and the water cycle. The data provided by satellites, including environmental indicators of vegetation and hydrological status, is crucial for monitoring and managing the environment, particularly in water resource management. This is essential in addressing challenges such as climate change impacts. The main goal is to identify multispectral-based products at suitable scales for specific applications, such as droughts, floods, soil degradation, and water and weed management, and apply them to study trends and solve problems in a defined case study.
R&D and/or applied projects supporting planned work:	To be defined
Type of application to the FCT Call:	Regular

Proposal ID	MARE-UC-2024-PhD3
Main Regional Research Unit:	MARE-UCoimbra
Other MARE RRU's:	-
Other partner entities:	To be defined
Main supervisor (name, institution):	Isabel Pedroso de Lima, University of Coimbra
Co-supervisors (names, institutions):	To be defined
Institution awarding the PhD degree:	University of Coimbra
PhD program:	Environmental Engineering Doctoral Programme
PhD title:	Assessment of invasive aquatic plants in wetlands using remote sensing tools: contributions to mapping and monitoring
Start-date:	To be defined
End-date:	To be defined
Workplace(s):	Laboratory of Hydraulics, Water Resources and Environment, Department of Civil Engineering, Faculty of Science and Technology, University of Coimbra / MARE Coimbra
Description of the PhD research project (maximum 1000 characters):	Wetlands are particularly vulnerable to invasive aquatic plants, which constitute a major threat to habitat structure, biodiversity, water quality and environmental productivity. The understanding of current and changing conditions and ecosystem functions, along with precise mapping, monitoring and assessment of vegetation, are vital for wetland preservation. To this end, remote sensing tools have emerged as a key contribution in aquatic research, providing essential information. In particular, satellites offer long-term archives, large-scale records of the Earth's surface, and continuous acquisitions with high spatial and spectral resolutions. Spatio-temporal analysis of remote sensing data enables the mapping of wetlands components, while field sampling and ecosystem monitoring provide ground truth for the biophysical status of invasive aquatic plants. A case study will be selected for further investigation and development of monitoring satellite-based tools.
R&D and/or applied projects supporting planned work:	To be defined
Type of application to the FCT Call:	Regular

Proposal ID	MARE-UC-2024-PhD4
Main Regional Research Unit:	MARE-UCoimbra
Other MARE RRUs:	-
Other partner entities:	To be defined
Main supervisor (name, institution):	João L.M.P. de Lima, University of Coimbra
Co-supervisors (names, institutions):	To be defined
Institution awarding the PhD degree:	University of Coimbra
PhD program:	Environmental Engineering Doctoral Programme
PhD title:	Application of hydrometric techniques based on thermography to study the hydraulics of aquatic habitats
Start-date:	To be defined
End-date:	To be defined
Workplace(s):	Laboratory of Hydraulics, Water Resources and Environment, Department of Civil Engineering, Faculty of Science and Technology, University of Coimbra / MARE Coimbra
Description of the PhD research project (maximum 1000 characters):	The characterization of the hydraulics of aquatic habitats requires the application of adequate hydrometric techniques. This work envisages the application of technological innovations in this field, such as thermography. Thermography is based on the detection of infrared radiation, which is converted into proportional electrical signals, defining a thermal image. It constitutes a real-time testing methodology that is both fast and effective at various temporal and spatial scales, and potentially provides a support tool for investigating aquatic habitats, especially for assessing hydraulic variables in shallow flows.
R&D and/or applied projects supporting planned work:	To be defined
Type of application to the FCT Call:	Regular
Is this proposal available for application to other PhD funding sources (e.g., MIT; La Caixa; others)? Please specify:	Yes (open to all funding sources)

Proposal ID	MARE-UC-2024-PhD5
Main Regional Research Unit:	MARE-UCoimbra
Other MARE RRU's:	-
Other partner entities:	To be defined
Main supervisor (name, institution):	João L.M.P. de Lima, University of Coimbra
Co-supervisors (names, institutions):	To be defined
Institution awarding the PhD degree:	University of Coimbra
PhD program:	Environmental Engineering Doctoral Programme
PhD title:	Technological advancements towards enhancing water and soil conservation in agroecosystems within semiarid environments
Start-date:	To be defined
End-date:	To be defined
Workplace(s):	Laboratory of Hydraulics, Water Resources and Environment, Department of Civil Engineering, Faculty of Science and Technology, University of Coimbra / MARE Coimbra.
Description of the PhD research project (maximum 1000 characters):	Agroecosystems in semiarid environments have been significantly affected by extreme events such as floods and droughts, which are induced by global warming and have had a profound impact on the environment and society. The accuracy of process-oriented eco- hydrological models in predicting these occurrences largely depends on the quality of available input data. This proposal aims to enhance the model performance from plot to basin scale and beyond by leveraging technological advancements, transitioning from ground-based to remote-based UAS and satellite technologies. The utilization of tracers to monitor state variables and fluxes will enable a better understanding of the interactions and feedback mechanisms of soil and water conservation techniques across various spatial scales, ranging from plot to basin scale. The project may include laboratory investigations into the effectiveness of soil and water conservation techniques.
R&D and/or applied projects supporting planned work:	To be defined
Type of application to the FCT Call:	Regular

Proposal ID	MARE-IPL-2024-PhD1
Main Regional Research Unit:	MARE-PLeiria
Other MARE RRU's:	MARE-ULisboa
Other partner entities:	University of Santiago de Compostela
Main supervisor (name, institution):	Joana Silva, MARE/ARNET, ESTM, Polytechnic University of Leiria;
Co-supervisors (names, institutions):	Ana Amorim, MARE/ARNET, Faculdade Ciências, Universidade de Lisboa; Celso Alves, MARE/ARNET, ESTM, Polytechnic University of Leiria
Institution awarding the PhD degree:	Not defined yet
PhD program:	Not defined yet
PhD title:	Neuroprotective activity of derived components of dinoflagellate on invitro and in vivo models of Parkinson Disease
Start-date:	01/01/2025
End-date:	31/12/2028
Workplace(s):	MARE - Polytechnic University of Leiria; MARE - ISPA - Instituto Universitário de Ciências Psicológicas, Sociais e da Vida; Other research centres according to the PhD project goals.
Description of the PhD research project (maximum 1000 characters):	The incidence of neurodegenerative disorders (NDs) such as Parkinson's Disease (PD) is expected to grow in the upcoming years, essentially due to the progressive aging of the population, emerging as a serious health burden responsible for cognitive impairment, morbidity, and mortality. Despite the last scientific advances, the drugs used in PD treatments are not effective to control or block their development, promoting severe side-effects with long-term using, becoming critical the discovery and development of innovative medicines to improve the currently therapeutic regimes. Nature has revealed to be a huge source of bioactive compounds with great potential to inspire the development of new drugs with great selectivity and efficacy. Dinoflagellates is a group of microalgae that has been extensively studied as producers of biotoxins with impacts in human health. Recent work on the potential pharmacological activities of their bioactive compounds has revealed promising applications (e.g. analgesic, antitumour, anti-inflammatory, among others). Therefore, the main goal of this proposal will be to evaluate the neuroprotective and anti-inflammatory activities of derived components of two dinoflagellate species that produce distinct toxin groups and metabolites. The results will contribute to better understand the biotechnological potential of dinoflagellates as a source of bioactive compounds for the development of innovative therapeutic agents for PD.
R&D and/or applied projects supporting planned work:	NEUROVETOX; NEURONS4; BEAP-MAR; Vertical algae
Type of application to the FCT Call:	Regular

Proposal ID	MARE-IPL-2024-PhD2
Main Regional Research Unit:	MARE- PLeiria
Other MARE RRU:	-
Other partner entities:	University of Santiago de Compostela
Main supervisor (name, institution):	Celso Alves, MARE/ARNET, ESTM, Polytechnic University of Leiria
Co-supervisors (names, emails & institutions):	Frederico Almada, MARE/ARNET; Joana Silva, MARE/ARNET, ESTM, Polytechnic University of Leiria
Institution awarding the PhD degree:	Not defined yet
PhD program:	Not defined yet
PhD title:	Neuroprotective activity of fish venoms on in vitro and in vivo models of Parkinson Disease
Start-date:	01/01/2025
End-date:	31/12/2028
Workplace(s):	MARE - Polytechnic University of Leiria; Other research centres according to the PhD project goals.
Description of the PhD research project (maximum 1000 characters):	The incidence of neurodegenerative disorders (NDs) such as Parkinson's Disease (PD) is expected to grow in the upcoming years, essentially due to the progressive aging of the population, emerging as a serious health burden responsible for cognitive impairment, morbidity, and mortality. Despite the last scientific advances, the drugs used in PD treatments are not effective to control or block their development, promoting severe side-effects with long-term using, becoming critical the discovery and development of innovative medicines to improve the currently therapeutic regimes. Nature has revealed to be a huge source of bioactive compounds with great potential to inspire the development of new drugs with great selectivity and efficacy. Therefore, the main goal of this proposal will be to evaluate the neuroprotective and anti-inflammatory activities of derived components of crude venom extracts produced by fish. The results will contribute to better understand the biotechnological potential fish venomous as a source of bioactive compounds for the development of innovative therapeutic agents for PD.
R&D and/or applied projects supporting planned work:	NEUROVETOX; NEURONS4; BEAP-MAR; FishVen;
Type of application to the FCT Call:	Regular

Proposal ID	MARE- FCUL-2024-PhD1
Main Regional Research Unit:	MARE-ULisboa
Other MARE RRU's:	-
Other partner entities:	Faculty of Economics, University of Coimbra
Main supervisor (name, institution):	Isabel Maria Madaleno Domingos, MARE-ULisboa
Co-supervisors (names, institutions):	Maria Alexandra Cordeiro Almeida e Silva, Portuguese Institute for Sea and Atmosphere (IPMA) MARE-ULisboa Renato Nunes Rosa, Faculty of Economics, University of Coimbra
Institution awarding the PhD degree:	University of Lisbon
PhD program:	PhD in Marine Sciences
PhD title:	Development of spatial and bioeconomic models for the sardine fishery.
Start-date:	01/01/2025
End-date:	31/12/2029
Workplace(s):	Faculty of Sciences, University of Lisbon Portuguese Institute for Sea and Atmosphere (IPMA)
Description of the PhD research project (maximum 1000 characters):	<p>Fisheries management is based on stock assessment and management models that often disregard fish population's spatial structure and socio-economic sustainability. Spatially structured fisheries models are relevant when fish biology and dynamics vary spatially. In those cases, applying single-area models will result in biased stock assessment and increased risk of resource depletion. Bioeconomic models enable the assessment of ecological and economic sustainability and explain feedback effects between human activity and resource dynamics.</p> <p>Sardine (<i>Sardina pilchardus</i>) is a highly valuable fishing resource. The sardine fishery employs thousands of fishermen and creates numerous jobs in the canning industry. Moreover, sardine populations show phenotypic and dynamic differences in European waters making this species a good case study to develop spatial models.</p> <p>The aim of this thesis is to investigate the structure and spatial dynamics of the sardine population and to explore the benefits from fisheries policies that consider both spatial and economic factors compared to traditional policies. The current assessment model will be enhanced to account for spatial variation in the population and in the fishery.</p> <p>Moreover, a spatial bioeconomic model will be developed to simulate the effect of alternative fishery policies on the profitability and sustainability of the sardine fishery.</p>
R&D and/or applied projects supporting planned work:	SARDINHA2020 PNAB-DCF
Type of application to the FCT Call:	Non-academic

Proposal ID	MARE-FCUL-2024-PhD2
Main Regional Research Unit:	MARE-ULisboa
Other MARE RRU's:	-
Other partner entities:	Instituto Português do Mar e da Atmosfera, I. P. (IPMA, I. P.)
Main supervisor (name, institution):	José Lino Costa, MARE-ULisboa; Universidade de Lisboa Faculdade de Ciências
Co-supervisors (names, institutions):	Dorota Szalaj, Instituto Português do Mar e da Atmosfera, (IPMA) Alexandra Silva, Instituto Português do Mar e da Atmosfera, (IPMA)
Institution awarding the PhD degree:	Faculdade de Ciências da Universidade de Lisboa
PhD program:	Marine Science
PhD title:	The spatial-temporal modelling as a tool to assess the impact of offshore wind on marine ecosystem health and fisheries.
Start-date:	01/03/2024
End-date:	01/03/2028
Workplace(s):	MARE-ULisboa, IPMA
Description of the PhD research project (maximum 1000 characters):	<p>The growing interest in offshore wind farming as a renewable energy source arises from the need for sustainable solutions. However, this energy generation poses significant risks to marine ecosystems, potentially disturbing species and conflicting with fisheries. Assessing the impact of offshore wind farm placement on fisheries requires spatially explicit tools, considering climate change and shifts in species distributions. Spatial-temporal ecosystem model Ecospace, a module within the Ecopath and Ecosim modeling framework, is widely used globally, holding potential for spatial queries and wind farm impact assessments.</p> <p>The proposed thesis aims to enhance the existing Ecospace model for the Portuguese shelf ecosystem by: optimizing species-environmental response functions, coupling the model with climate data, implementing spatial fishing effort observations, and integrating potential species responses to wind farms. The thesis will develop wind farm scenarios, assessing impacts on the ecosystem and fisheries within the Ecospace model, providing insights into potential consequences on marine ecosystems and fisheries sustainability. This work is crucial for Portuguese policies, contributing to effective policies for sustainable marine resource management and supporting the development of wind farm proposals that minimize adverse impacts on marine ecosystems and fisheries</p>
R&D and/or applied projects supporting planned work:	
Type of application to the FCT Call:	Non-academic

Proposal ID	MARE-FCUL-2024-PhD3
Main Regional Research Unit:	MARE-ULisboa
Other MARE RRUs:	MARE-PLeiria
Other partner entities:	-
Main supervisor (name, institution):	Pedro Félix, MARE-ULisboa
Co-supervisors (names, institutions):	Marta Sousa Silva; MARE-ULisboa - FT-ICR mass spectrometry; Ana Pombo; MARE-PLeiria
Institution awarding the PhD degree:	Faculdade de Ciências da Universidade de Lisboa
PhD program:	Ciências do Mar
PhD title:	Towards Mass Aquaculture Production of the Sea cucumber <i>Holothuria arguinenis</i> : New Tools for Juvenile Rearing Optimization
Start-date:	02/09/2024
End-date:	29/09/2028
Workplace(s):	Faculdade de Ciências, UL; IPL Peniche
Description of the PhD research project (maximum 1000 characters):	In the Indo-Pacific the overexploitation of sea cucumbers due to overfishing forced the Asiatic market to look for alternatives such as the development of Echinoculture and the expansion of fisheries to other areas such as Europe. In Europe, due to increased and unregulated harvest, some species are showing signs of overexploitation. Attempting to avoid a depletion scenario, Europe is making a collective effort to develop sea cucumber aquaculture. However, a common constraint keeps halting future developments: high mortality and juvenile slow growth of hatchery-reared individuals. Therefore, this workplan was designed to overcome this barrier by using an innovative tool to determine the captivity conditions that cause it. Untargeted metabolomics will compare the metabolic fingerprint of wild and hatchery-reared juveniles of <i>Holothuria arguinenis</i> . This analysis will validate the need to change, up- or down regulate dietary nutrients or welfare conditions in final experiments that will enable growth optimization and mass production.
R&D and/or applied projects supporting planned work:	https://seacucumber.eu/ other European and national funding applications in progress
Type of application to the FCT Call:	Regular
Additional comments:	This work has two different approaches: an analytical one (mass spectrometry) at FCUL and one in aquaculture at Cetemares, MARE- IPLeiria, Peniche. Either one will have the support of an experienced team.

Proposal ID	MARE-FCUL-2024-PhD4
Main Regional Research Unit:	MARE-FCUL
Other MARE RRU's:	-
Other partner entities:	TBD
Main supervisor (name, institution):	Susanne Tanner, MARE-ULisboa
Co-supervisors (names, institutions):	TBD
Institution awarding the PhD degree:	Faculdade de Ciências da Universidade de Lisboa
PhD program:	PhD in Biology; PhD in Marine Sciences
PhD title:	Investigating food web dynamics, marine productivity and population structure in changing oceans: an otolith-based approach
Start-date:	01/01/2025
End-date:	31/12/2028
Workplace(s):	MARE-ULisboa
Description of the PhD research project (maximum 1000 characters):	<p>Humans are drastically impacting and altering marine ecosystems, both through climate change and fishing with profound and diverse consequences that affect all levels of biological organization. To gain insight into the biological responses of marine ecosystems to climate change and fishing, especially to allow a better understanding of the underlying mechanisms, data with the appropriate spatio-temporal resolution is needed. However, long-term observational data spanning phase shifts in major climate oscillations and ecosystem states are scarce in the marine environment.</p> <p>Yet, samples containing long-term information on fish are readily available. Fish deposit time resolved layers of carbonate material in their otoliths (fish ear bones), containing information on individual fish life- history and the environment. Otoliths are critical to fisheries stock assessment and thus, many institutions worldwide keep vast archives of otoliths that represent a unique and underexplored source of information. Three long-term, complementary biological datasets can be extracted from otoliths: 1) life-history and demographic information from growth-increment counts and widths; 2) environmental and physiological records from otolith chemical composition; and 3) genetic data from otolith attached tissue.</p> <p>Leveraging these three datasets available within otoliths, this project aims to provide novel long-term perspectives and predictions of the impacts of environmental change and exploitation in Northeast Atlantic marine ecosystems, by developing time-series on trophodynamics and genetic diversity of a set of marine fish species and evaluate environmental and biotic drivers of their variability and finally by combining long-term growth, food web and genetic data to obtain estimates of</p>

	<p>population diversity (i.e. demographic traits, trophic niche width and genetic traits, respectively), a key aspect to ensure long-term sustainability and buffer overall productivity of marine fish. The study will focus on four marine fish species with commercial interest for which otolith-increment based growth chronologies (covering 40-50 years) have been developed.</p> <p>For the trophodynamics time-series, carbon and nitrogen stable isotopes ($\delta^{13}\text{C}$ and $\delta^{15}\text{N}$) archived in the organic fraction of otoliths will reveal changes in trophic interactions over time due to otoliths' unique characteristics of time-resolved deposition and metabolic inertness. Temporal patterns and the importance of environmental and biotic drivers in food web dynamics will be investigated. Growth and food web structure chronologies will be compared to explore synchrony and to assess common oscillations aiming at identifying potential ecosystem-wide regime shifts.</p> <p>For the genetic diversity time-series, the 2b-RAD genotyping method, well suited for small amounts of highly fragmented DNA obtained from archived otoliths will be used investigate genetic diversity, population structure, gene flow and effective population size. Detecting spatial and temporal variation in genetic diversity and understanding how genetic shifts relate to environmental or biotic factors is key to support sustainable management of marine fish populations.</p> <p>The three otolith-derived long-term datasets on growth, food web structure and genetic diversity will be combined to examine congruence and complementarity in observed patterns, shifts and underlying drivers using graphical analysis and qualitative mathematical modeling. Overall, such long-term information is essential to identify and monitor biologically important indicators and reference points integrated across multiple drivers and levels of biological organization, contributing to a transition from single-species assessments to integrative ecosystem-based management.</p>
R&D and/or applied projects supporting planned work	-
Type of application to the FCT Call:	Regular

Proposal ID:	MARE-NOVA-2024-PhD1
Main Regional Research Unit:	MARE-NOVA
Other MARE RRU's:	-
Other partner entities:	-
Main supervisor (name, institution):	Rita Maurício, NOVA School of Science and Technology
Co-supervisors (names, institutions):	Paula Sobral, NOVA School of Science and Technology
Institution awarding the PhD degree:	NOVA University Lisbon
PhD program:	Environment and Sustainability
PhD title:	Exploring the Link Between Antibiotic Resistance and Microplastics in Wastewater: Implications for Public Health and the Environment
Start-date:	2024
End-date:	2028
Workplace(s):	NOVA School of Science and Technology
Description of the PhD research project (maximum 1000 characters):	<p>Wastewater antibiotic resistance (AR) surveillance is a crucial yet underutilized decision-support tool that offers valuable insights into community antibiotic resistance and the prevalence of resistant infections. This surveillance serves as an early warning system for public health, aiding in timely decision-making. Simultaneously, the presence of microplastics in wastewater adds another layer of concern, as these materials can act as hubs for enriching antibiotic-resistant bacteria (ARB) and pathogens.</p> <p>Within municipal activated sludge, microplastics emerge as carriers of ARB and pathogens, posing significant threats to both aquatic biota and human health. Activated sludge units at wastewater treatment plants (WWTPs) become critical "hotspots" where microplastics and antibiotics converge. This convergence amplifies the potential for the transfer and dissemination of antibiotic resistance in the environment.</p> <p>The synergy between wastewater AR surveillance and the impact of microplastics underscores the need for comprehensive research and action. Opportunities lie in leveraging wastewater surveillance to monitor the co-occurrence of antibiotic resistance and microplastics, providing a holistic understanding of the interconnected challenges. However, barriers such as limited awareness and resource constraints must be addressed to fully harness the potential of this integrated approach.</p> <p>Research needs in this area encompass investigating the specific mechanisms through which microplastics contribute to the persistence and dissemination of antibiotic resistance in wastewater. Additionally, understanding the implications of these phenomena for human health and ecosystems requires interdisciplinary collaboration. By recognizing the intricate relationship between wastewater antibiotic resistance and microplastics, we can develop more effective strategies to mitigate these emerging environmental and public health risks.</p>
R&D and/or applied projects supporting planned work:	An application has been made to a European project (Water4All - Research and Innovation (R&I) Partnership set up in Horizon Europe (HEU)) which could fund this work. If the application is not approved, it can be funded by service projects with companies in the water sector.
Type of application to the FCT Call:	Regular

Proposal ID	MARE-NOVA-2024-PhD2
Main Regional Research Unit:	MARE-NOVA
Other MARE RRU:	-
Other partner entities:	-
Main supervisor (name, institution):	Mário Ramos NOVA University Lisbon, NOVA School of Science and Technology
Co-supervisors (names, institutions):	Graça Martinho NOVA University Lisbon, NOVA School of Science and Technology
Institution awarding the PhD degree:	NOVA University Lisbon
PhD program:	Ph.D. in Environment and Sustainability (PDAS) https://www.fct.unl.pt/en/education/course/phd-environment-and-sustainability
PhD title:	Approaches to promote an efficient monitoring of construction and demolition waste illegal dumping
Start-date:	To be determined
End-date:	3 years after the starting date
Workplace(s):	NOVA University Lisbon, NOVA School of Science and Technology
Description of the PhD research project (maximum 1000 characters):	<p>Within the construction sector, the lack of environmental awareness, the absence of effective inspection and oversight actions, and the high cleanup costs, leads to illegal dumping of construction and demolition waste, representing a severe problem in many countries, and further contributing to the loss of resources.</p> <p>The dumpsites are often located in isolated places, persisting over time, and accumulating mixtures of construction and demolition waste, making its treatment expensive. In most cases, there is no national/local systematized data on these incidents, and updating them requires heavy and frequent fieldwork, especially in predominantly rural and large-scale territories.</p> <p>This project aims at creating prompt approaches and tools, using integrated information systems (<i>e.g.</i>, satellite images, remote sensors), to provide timely and precise alerts to competent authorities, and aiding them in addressing this issue, providing vital information about potential transgressors, discouraging this illegal activity, and achieving better environmental compliance results.</p>
R&D and/or applied projects supporting planned work:	-
Type of application to the FCT Call:	Regular

Proposal ID	MARE-NOVA-2024-PhD3
Main Regional Research Unit:	MARE-NOVA
Other MARE RRU's:	-
Other partner entities:	-
Main supervisor (name, institution):	Mário Ramos NOVA University Lisbon, NOVA School of Science and Technology
Co-supervisors (names, institutions):	Graça Martinho NOVA University Lisbon, NOVA School of Science and Technology
Institution awarding the PhD degree:	NOVA University Lisbon
PhD program:	Ph.D. in Environment and Sustainability (PDAS) https://www.fct.unl.pt/en/education/course/phd-environment-and-sustainability
PhD title:	The dynamics of knowledge transfer in the construction sector to improve the management of construction and demolition waste
Start-date:	To be determined
End-date:	3 years after the starting date
Workplace(s):	NOVA University Lisbon, NOVA School of Science and Technology
Description of the PhD research project (maximum 1000 characters):	<p>An increasingly demanding legal framework, coupled with the lack of updated technical knowledge, is one of the main barriers for circularity compliance in the construction sector. This is especially important for micro and small construction companies, which represent 95%, in number, of this sector. Moreover, there are few inspection and oversight actions about construction and demolition waste management, and the absence of a focus on creating awareness and training leading to lasting effects on this topic.</p> <p>So, it is essential to study the knowledge transfer dynamics about this waste stream to smaller construction companies, which must consider national authorities on waste, inspection and oversight entities, and the cooperation with larger construction companies, with capacitated staff.</p> <p>In this context, this research project aims at the mitigation of knowledge barriers in the construction sector value chain, and to contribute towards its circularity and sustainability. In this context, it must be focused on developing replicable and scalable outputs, using a multidisciplinary approach, together with decision-makers and practitioners.</p>
R&D and/or applied projects supporting planned work:	-
Type of application to the FCT Call:	Regular

Proposal ID	MARE-NOVA-2024-PhD4
Main Regional Research Unit:	MARE-NOVA
Other MARE RRU's:	-
Other partner entities:	-
Main supervisor (name, institution):	Mário Ramos NOVA University Lisbon, NOVA School of Science and Technology
Co-supervisors (names, institutions):	Graça Martinho NOVA University Lisbon, NOVA School of Science and Technology
Institution awarding the PhD degree:	NOVA University Lisbon
PhD program:	Ph.D. in Environment and Sustainability (PDAS) https://www.fct.unl.pt/en/education/course/phd-environment-and-sustainability
PhD title:	Innovative solutions for construction and demolition waste management in smart and sustainable cities
Start-date:	To be determined
End-date:	3 years after the starting date
Workplace(s):	NOVA University Lisbon, NOVA School of Science and Technology
Description of the PhD research project (maximum 1000 characters):	<p>The construction sector has a high potential for circularity but is confronted with various constraints that hinder this potential. One of them is the management of construction and demolition waste, which accounts for one third of the waste generated yearly in the European Union.</p> <p>Furthermore, the heterogeneity of the sector regarding the size of construction companies, the absence of effective cooperation between stakeholders, the lack of updated knowledge considering a demanding legal framework, ineffective oversight actions, and constraints in the implementation of integrated policies, are important challenges that need to be addressed. In addition, urban territories, with greater dynamics of construction interventions, play a fundamental role in enhancing circularity in the construction sector.</p> <p>In specific, this research project aims to increase sustainability values in a smart city context, addressing the above-mentioned challenges through case studies, using diversified research methods and a multidisciplinary approach, and co-constructing solutions with replicable and useful results for decision-makers and practitioners.</p>
R&D and/or applied projects supporting planned work (titles & websites, if available):	-
Type of application to the FCT Call:	Regular

Proposal ID	MARE-NOVA-2024-PhD5
Main Regional Research Unit:	MARE-NOVA
Other MARE RRU's:	-
Other partner entities:	University of East Anglia
Main supervisor (name, institution):	Carlos David Santos, NOVA School of Science and Technology
Co-supervisors (names, institutions):	Aldina Franco, University of East Anglia
Institution awarding the PhD degree:	Universidade NOVA de Lisboa
PhD program:	Doutoramento em Ambiente e Sustentabilidade
PhD title:	Using shorebirds as sentinels of environmental change in Amazonia coastal wetlands
Start-date:	01/11/2025
End-date:	31/10/2029
Workplace(s):	Departamento de Ciências e Engenharia do Ambiente, UniversidadeNOVA de Lisboa
Description of the PhD research project (maximum 1000 characters):	<p>Coastal wetlands are important ecosystems threatened by a wide range of anthropogenic impacts. Wetland loss and degradation is ongoing and accelerating due to sea level rise, impacting economically important ecosystem services. Large remote wetlands, such as the Amazon River delta, still conserve high diversity and globally relevant carbon stocks, yet they are largely unmonitored. Shorebirds may serve as 'sentinels' of environmental change in coastal wetlands, due to their specific habitat preferences and quick responses to changing conditions (e.g. saltwater intrusion in freshwater habitats). This project will analyze long-term shorebird count data from aerial surveys in combination with remote sensing approaches to infer on habitat changes and impacts of sea level rise in the coastal wetlands of the Amazon River delta. The objectives are:</p> <p>1) quantify recent large-scale coastal wetland changes and impacts to blue carbon balance using remote sensing data; 2) quantify changes in shorebird distribution and abundance in response to wetland changes;</p> <p>3) build scenario projections of the impacts of future environmental change on coastal wetlands of the Amazon River delta; 4) develop mitigation strategies in collaboration with Brazilian authorities aiming to minimize impacts on ecosystem services and the well-being of localcommunities.</p>
R&D and/or applied projects supporting planned work:	We are applying to the next FCT call for projects, with a proposal entitled: AmazonTrace: Tracing the consequences of sea level rise on Amazon coastal wetlands
Type of application to the FCT Call:	Regular

Proposal ID	MARE-NOVA-2024-PhD6
Main Regional Research Unit:	MARE-NOVA
Other MARE RRU's:	-
Other partner entities:	Instituto Português do Mar e da Atmosfera (IPMA, I.P.)
Main supervisor (name, institution):	Margarida Saavedra, Instituto Português do Mar e da Atmosfera
Co-supervisors (names, institutions):	Marta Martins, MARE-NOVA
Institution awarding the PhD degree:	FCT NOVA
PhD program:	PhD in Environment and Sustainability
PhD title:	Innovative methodologies to improve fish welfare and reduce aquaculture environmental impact
Start-date:	01/09/2024 or 01/01/2025
End-date:	31/08/2028 or 31/12/2029
Workplace(s):	FCT NOVA / IPMA
Description of the PhD research project (maximum 1000 characters):	Aquaculture faces a great challenge to improve fish quality and be sustainable. Although the recognised positive aspects of this sector, which is the main fish supplier for consumption, the intensive production affects, not only the health of reared animals and, indirectly, of humans, but also the environment. Fish kept under good welfare conditions have lower stress levels, have better quality, are less prone to diseases, requiring less medication and treatment, reducing the impact on the environment. This PhD proposal assesses potential and innovative methods to reduce stress responses in reared fish, promoting fish welfare. Several experimental trials will test different approaches to reduce fish stress: a) through diets supplemented with anti-stress additives and b) by rearing meagre with plants known to increase immunity and reduce stress in animals. Fish responses will be evaluated at three different biological levels: a) fish behaviour, b) fish physiology (levels of cortisol in the blood monoamines levels in brain) and c) transcriptomics.
R&D and/or applied projects supporting planned work:	-
Type of application to the FCT Call:	Regular

Proposal ID	MARE-NOVA-2024-PhD7
Main Regional Research Unit:	MARE-NOVA
Other MARE RRU:	-
Other partner entities:	-
Main supervisor (name, institution):	Mónica Mesquita, NOVA University Lisbon
Co-supervisors (names, institutions):	Sílvia Franco, Fundação Gonçalo da Silveira MARE NOVA - NOVA UniversityLisbon
Institution awarding the PhD degree:	NOVA University Lisbon
PhD program:	PhD in Environment and Sustainability
PhD title:	Decolonizing Ocean. Concepts, analytics, and praxis
Start-date:	2024
End-date:	2028
Workplace(s):	NOVA School of Science and Technology Department of Environmental Sciences and Engineering
Description of the PhD research project (maximum 1000 characters):	<p>Given the commitment made by the United Nations to the Oceans Decade, it is highlighted that marine ecosystems are central to political strategies for global environmental development. Science must be committed to protecting and restoring marine ecosystems, combating the effects of climate change and promoting a Blue Economy. This commitment is ambitious given the differentiated educating of professionals who understand the socio-environmental relations that permeate the encounters of latent economic and cultural diversity in today's world.</p> <p>Doctorated projects that invoke transdisciplinary and transcultural studies in marine sciences and enable the development of holistic skills required in the educating of critical and humanized professionals are waited.</p> <p>Comprehensive knowledge of the systemic complexity embedded in socio-environmental relations in marine ecosystems is here explored, bringing to universities the responsibility of educating activist professionals – as claimed by Critical Social Theory, seeking an inseparable line between oceanic justice and social justice.</p>
R&D and/or applied projects supporting planned work:	www.olo.blue
Type of application to the FCT Call:	Regular

Proposal ID	MARE-NOVA-2024-PhD8
Main Regional Research Unit:	MARE-NOVA
Other MARE RRU:	-
Other partner entities:	iMed.Ulisboa
Main supervisor (name, institution):	Marta Martins, NOVA FCT
Co-supervisors (names, institutions):	Neusa Figueiredo, NOVA FCT
Institution awarding the PhD degree:	NOVA FCT
PhD program:	PhD in Environment and Sustainability
PhD title:	The Effects of Microplastics on the Biogeochemical Cycle and Toxicity of Mercury
Start-date:	Set 2024
End-date:	Set 2027
Workplace(s):	The research plan will be carried out in the Marine Research and Environmental Risk Lab (MARlab, https://sites.fct.unl.pt/marlab), integrated into the MARE-NOVA, and the Laboratory of Toxicology of Pharmacy Faculty (iMed.Ulisboa) with the collaboration of national and international researchers.
Description of the PhD research project (maximum 1000 characters):	<p>Microplastics (MPs) and mercury (Hg) are two different categories of aquatic pollutants with evident interaction and toxicological impact. Knowing that Hg flow in a complex cycle mediated mainly by microorganisms, the research question here is: how the interactions MP:Hg and MP:Microorganisms will shape the Hg biogeochemical cycle and toxicity? To answer this, the main goal of this project is to assess the complex interactions between MPs, Hg and Hg-resistant microorganisms, and unravel the effects on the Hg's biogeochemical cycle and toxicity.</p> <p>These will be accomplished through an integrative research plan encompassing six interlinked tasks using Tagus estuary as case study. A multidisciplinary approach, combining monitoring, toxicology, microbiology, aquatic pollution, high-throughput molecular technologies and risk assessment will be adopted. The expected data will contribute to the improvement of management strategies in impacted aquatic ecosystems, including bioremediation strategies.</p>
R&D and/or applied projects supporting planned work:	The research plan of this project will initially benefit from funding via PlasticHg project 2022.04580.PTDC (funded by FCT).
Type of application to the FCT Call:	Regular

Proposal ID	MARE-UÉVORA-2024-PhD1
Main Regional Research Unit:	MARE-UÉvora
Other MARE RRU's:	-
Other partner entities:	-
Main supervisor (name, institution):	Teresa Cruz, University of Évora
Co-supervisors (names, institutions):	David Jacinto, University of Évora Pedro Duarte, Norwegian Polar Institute
Institution awarding the PhD degree:	University of Évora
PhD program:	Programa de doutoramento em Biologia, Universidade de Évora
PhD title:	Ecology and conservation of the stalked barnacle <i>Pollicipes pollicipes</i> in SW Portugal
Start-date:	January 2025
End-date:	December 2028
Workplace(s):	Laboratório de Ciências do Mar (CIEMAR), University of Évora, Sines, Portugal
Description of the PhD research project (maximum 1000 characters):	<p>The Atlantic stalked barnacle <i>Pollicipes pollicipes</i> is heavily exploited and highly priced. Its fishery is small-scaled and managed differently across Europe. Co-management and fishers participation in monitoring of <i>P. pollicipes</i> were considered to promote sustainability. The fishery of <i>P. pollicipes</i> in SW Portugal, namely in "Parque Natural do Sudoeste Alentejano e Costa Vicentina" (PNSACV) was considered to have a low level of sustainability.</p> <p>The main objectives of this project are: 1) to design and implement a joint monitoring plan between scientists and fishers of the abundance and size of this resource, including image analysis techniques (e.g. drone-based) and sampling in no-take areas of PNSACV; 2) to investigate how variability of recruitment affects the abundance, biomass and growth of <i>P. pollicipes</i>; 3) to develop a population dynamics model for <i>P. pollicipes</i> to be used as a tool to evaluate changes in management rules, towards the optimization of harvesting and conservation goals.</p>
R&D and/or applied projects supporting planned work:	A project was submitted for funding in December on the general theme of this thesis
Type of application to the FCT Call:	Regular

Proposal ID	MARE-MADEIRA-2024-PhD1
Main Regional Research Unit:	MARE - Madeira
Other MARE RRU's:	
Other partner entities:	-
Main supervisor (name & institution):	Ana Dinis, MARE-Madeira
Co-supervisors (names & institutions):	Paola Parreti, MARE-Madeira
Institution awarding the PhD degree:	Universidade da Madeira
PhD program:	Doutoramento em Ciência Biológicas
PhD title:	Marine natural capital and ecosystem services in remote oceanic archipelagos: Madeira island as a case study
Start-date:	01/01/2025
End-date:	-
Description of the PhD research project (maximum 1000 characters):	Marine natural capital provides the flow of marine ecosystem services that are directly used or enjoyed by people, providing benefits to human well-being. These services include provisioning, regulation and maintenance services. Islands are good models to conceptualize how ecosystems services are part of interactions in social-ecological systems. In this context, this work aims to identify the main marine ecosystems services in Madeira Island, and to evaluate the natural capital associated with these services.
R&D and/or applied projects supporting planned work:	Marine SABRES; Climarest
Type of application to the FCT Call:	Regular

Proposal ID	MARE-MADEIRA-2024-PhD2
Main Regional Research Unit:	MARE-Madeira
Other MARE RRU:	-
Other partner entities:	-
Main supervisor (name, institution):	Manfred Kaufmann, University of Madeira
Co-supervisors (names, institutions):	Sonia KM Gueroun, MARE-Madeira
Institution awarding the PhD degree:	Madeira University
PhD program:	-
PhD title:	Exploring dynamics and ecology of the non-indigenous <i>Cronius ruber</i> in the Atlantic
Start-date:	January 2025
End-date:	December 2027
Workplace(s):	MARE-Madeira
Description of the PhD research project (maximum 1000 characters):	<p>Understanding the niche ecology of non-indigenous species is primordial to understanding the success or not of their introduction, potential invasiveness, and impact, and forecasting future distribution.</p> <p><i>Cronius ruber</i> is a Portunidae crab exhibiting a northward spread in the Eastern Atlantic, recently reaching the subtropical archipelago of Madeira. The aim of the PhD project is to study the ecology of this NIS crab, including 1) its dynamics from the larval to the adult stage, 2) link the abiotic (salinity, temperature,...) and biotic (diet, competition, predation,...) factors that influence the recruitment (reproduction, survival, growth), 3) understand climate change impact of the recruitment and 4) use the collected data to predict potential spatial and temporal distribution of <i>C. ruber</i> in the context of climate change.</p>
R&D and/or applied projects supporting planned work:	MARE-Madeira and the University of Madeira will support the logistics for the field and laboratory work (sampling, mesocosm experiments, analysis).
Type of application to the FCT Call:	Regular



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