iMAR

INTEGRATED ASSESSMENT OF THE DISTRIBUTION OF VULNERABLE MARINE ECOSYSTEMS ALONG THE MID-ATLANTIC COAST IN THE AZORES REGION

Eurofleets+

A team of Portuguese scientists secure Eurofleets+ funding to explore the Azores Deep Sea.

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The team led by Okeanos from the University of the Azores has secured funding for research ship time under the OCEANOS DO MAR program that will allow the exploration of areas of the Portuguese sea as of yet unexplored.

The investigation of deep sea ecosystems requires complex technological equipment and capabilities, large oceanographic vessels and specialized crews, which are very costly. Access to resources such as this are rarely available to national scientific communities. The funding now guaranteed to the Okeanos deep sea research group at the University of the Azores will allow for a 17-day scientific expedition to explore unknown areas of the Middle Atlantic Dorsal. The mission is named "iMAR: Integrated assessment of the distribution of Vulnerable Marine Ecosystems along the Mid-Atlantic Coast in the Azores region".

Telmo Morato, from IMAR and Okeanos from the University of the Azores and co-leader of the research group, highlights the importance of this award:

"Deep sea research teams in Portugal have difficulty in accessing large-scale research vessels that facilitate work in deeper and more distant waters and with the appropriate technological resources. Our Regional, National and European research projects are unable to support the costs associated with the daily rate of a vessel of this nature, which can be between 20 and 60 thousand € per day. Although in recent years we have made great advances in knowledge of the deep sea of the Azores, there is still a vast area that remains to be discovered. Forthese reasons, the opportunity created by Eurofleets + and the Royal Netherlands Institute for Sea Research to use the Pelagia Research Ship in the Azores in spring of 2021 will contribute to advancing the knowledge of the deep sea in this Region. We hope that the data produced will help assess the role of the Atlantic coast in the spatial patterns of deep sea benthic biodiversity and contribute information to support deep sea conservation and management policies, particularly with regard to the conservation of vulnerable marine ecosystems. "

The Atlantic Dorsal is a volcanic mountain range that extends from the Arctic to Antarctica and, therefore, is the dominant topographic structure of the Atlantic Ocean and the most extensive mountain range in the world. As the Atlantic Ocean slowly expands, a new ocean floor is formed in the central Dorsal valley.

In this process, massive volcanic events give rise to structures similar to ridges and seamounts with depths ranging from 4,500 m to about 200 m at the top of some seamounts.

The iMAR expedition will map the bottom of this region and characterize the coral and sponge communities that inhabit the ridges and seamounts in Dorsal and also intends to identify the environmental factors that determine the spatial distribution of deep benthic biodiversity.

"The deep sea of the Azores hides a diversity of biological communities unique to the Atlantic Ocean. The Azores region has extensive gardens of cold water corals and fields of sponges and is the region with the greatest octocoral diversity known in the North Atlantic. However, exploring the deep sea is making sure that every day we discover new things. For this reason, Eurofleets + funding will enable us to continue to discover the Azorean sea and to explore areas in the North of the region never visited before. "

Commander João Vicente, Head of the Institute's Hydrography Division, highlights the importance of this scientific cruise that will also contribute to the SEAMAP 2030 program (Mapping the Portuguese Sea) of the Hydrographic Institute (IH).

Notes to Editor.

Eurofleets+

Eurofleets+ is "An alliance of European marine research infrastructure to meet the evolving needs of the research and industrial communities." The project facilitates open free of charge access to an integrated and advanced research vessel fleet.

The project will enable access to a unique fleet of 27 state-of-the-art research vessels from European and international partners. Through competitive Calls, researchers will be able to access the entire North Atlantic, Mediterranean, Black Sea,
North Sea, Baltic Sea, Pacific Southern Ocean and Ross Sea.
Building on the achievements of the two preceding Eurofleets projects, the Marine Institute are coordinators of EurofleetPlus,
which includes a consortium of 42 marine institutes, universities, foundations and SMEs from 24 countries across Europe, North America and Oceania, with funding of €9.9 million.

OKEANOS

OKEANOS is an R&D Center at the University of the Azores dedicated to the study of marine living resources in the Azores archipelago. This center is made up of members with a doctorate (integrated) and without this academic degree (collaborators).

NWO-NIOZ

Royal Netherlands Institute for Sea Research is the national oceanographic institute and principally performs and promotes academically excellent multidisciplinary fundamental and frontier applied marine research addressing important scientific and societal questions pertinent to the functioning of oceans and seas. NIOZ serves as national marine research facilitator (NMF) for The Netherlands scientific community.

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This program aims to complete the high resolution mapping of national maritime spaces by 2030 and its mission is to contribute to the conservation and sustainable use of the sea, supporting research and promoting development. IH will support the acquisition of multibeam data and will process it in support of other scientific activities. In parallel to this scientific cruise, the Portuguese Navy plans to carry out another hydrographic mission in the Azores in 2021 using its hydrographic vessels, maintaining the commitment of the SEAMAP 2030 program and sharing information with the scientific community and other institutions through the Hydrographic Institute.

The iMAR expedition also aims to identify new areas that fit the definition of Vulnerable Marine Ecosystems, determine the environmental status of benthic communities and quantify marine litter, thereby contributing scientific information to the development of policies that promote the preservation of heritage natural, guaranteeing the sustainable use of the deep sea, minimizing the negative impacts on these vulnerable ecosystems.

The expedition is funded by the Horizon 2020 Eurofleets+ project Ship-time and marine Equipment Application Programme (SEA-Programme) "OCEANS" call. , The project aims to bring together a fleet of advanced and integrated research vessels to improve coordination and promote the economic use of marine research infrastructure. The program comprises twenty-seven research vessels, seven Remote Operated Vehicles (ROVs) and five Autonomous Submarine Vehicles (AUVs) and a portable telepresence unit.

Aodhán Fitzgerald, Eurofleets+ project coordinator said that the project will enable access to state-of-the-art of vessels providing opportunities to study yet to be explored locations. *"Researchers funded through the Eurofleets+ project can access Research Vessels with different capabilities to existing National vessels which may be available to them. Such opportunities enable important expeditions such as "iMAR" to explore and study new marine ecosystems so that we can better understand negative impacts on our deep sea environments"*

This expedition will include the participation of researchers from several national and international institutions, namely the Hydrographic Institute, CIIMAR from the University of Porto, the University of Aarhus (Denmark), the National Oceanography Center (United Kingdom), GEOMAR (Germany), the PP Shirshov Institute of Oceanology (Russia), and the University of Vale do Itajaí (Brazil). Researchers hope that this mission will help make new discoveries and contribute to the enormous challenge of improving the conservation and sustainable use of the oceans and their resources.

Follow us on social media for updates on the iMAR campaign.

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