

# THE ECONOMIC VALUE OF OCEANS IN PORTUGAL

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POLICY BRIEF

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CALOUSTE GULBENKIAN  
FOUNDATION  
OCEANS INITIATIVE

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# THE GULBENKIAN OCEANS INITIATIVE

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The Gulbenkian Oceans Initiative (GOI) aims at increasing public and political understanding of the role of the oceans in human well-being and economic development. It supports the economic valuation of our oceans to reveal its multiple values to society and the economy.

More info: [www.gulbenkian.pt/oceanos](http://www.gulbenkian.pt/oceanos)

## OUR RESEARCH PROJECT AND PARTNERS

The GOI has commissioned a research project to better understand the contribution of our ocean to human well-being and economic development. Focused on the region between Peniche and Nazaré, a coastal area in central Portugal, “The Economic Valuation and Governance of Marine and Coastal Ecosystem Services” is a project led by a team of economists from the **Nova School of Business and Economics (Lisbon)** and biologists from the **Centre for Environmental and Marine Studies (University of Aveiro)**. Expected in 2016, its final results will inform policy-makers, NGOs and businesses in improving planning and regulatory decisions at the local, national and EU levels.

## BLUE CARBON SEQUESTRATION

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### WHAT IS IT?

Blue carbon is the carbon captured by oceans and coastal ecosystems and stored in the water column, seagrasses, mangroves and salt marshes. Removing carbon from the atmosphere contributes to climate change mitigation, that is, the reduction or prevention of carbon emissions. The capacity of healthy marine and coastal ecosystems to store carbon provides a strong case for their protection. It also raises the possibility of making monetary payments for blue carbon sequestration to organisations that contribute to ecosystem preservation.

## WHAT IS AT STAKE?

The amount of blue carbon captured in the study area needs to be estimated. Also, there is a need to determine whether payments for carbon sequestration are an appropriate tool to protect local marine and coastal ecosystems from the threats they face. Appropriately designed, such payments can help to internalize the total cost of economic activities on these ecosystems. This will provide economic incentives for their preservation and so reduce or eliminate the likelihood that the ecosystems will change from carbon sinks (i.e., capturing carbon) to sources (i.e., releasing it).

## PROJECT'S CONTRIBUTION

Provisional estimates indicate that the water column at the study site accumulates **150.000 tons of human-generated CO<sub>2</sub>** every year (i.e., in addition to CO<sub>2</sub> naturally produced by the environment).



By comparison, in the Portuguese EEZ, which is 18 times the size of the country's landmass, the water column currently stores over **1000 million tons of CO<sub>2</sub>**.



The project has not identified any significant problems currently affecting local ecosystems and/or their ability to capture carbon. As no clear problem exists, there is no trade-off to be considered between alternative and incompatible uses, nor do the associated benefits of preservation and costs of intervention need to be determined. Of course, these findings may change in the future if a threat emerges.

# THE SARDINE FISHERY IN PORTUGAL

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## WHAT IS IT?

Sardine is one of the most important marine resources in Portugal. A very popular fish species, its consumption peaks every year in June when traditional national celebrations take place. Sardines are caught all year round though, supplying directly the national canning industry. Portugal's purse-seine fleet, which is responsible for 98% of all the sardine landings in the country, also catches chub mackerel and horse mackerel.



## WHAT IS AT STAKE?

The amount of sardine in the ocean (i.e., biomass) has **declined from over 900.000 to less than 200.000 tons in the last 20 years**. Recent efforts to reduce catches (e.g., stricter catch limits) have not reversed this trend, and sardine biomass has fallen below sustainable limits. In part this can be attributed to changing climate conditions, but it has had a harsh impact on fishers and their communities. The sardine stock is shared and jointly managed by Portugal and Spain, with annual catch limits being set mostly on the basis of biological criteria.

## PROJECT'S CONTRIBUTION

Researchers are investigating how taking into account the economic returns of the sardine fishery, in addition to biological factors, could inform the choice of fishing strategies adopted to achieve sustainable levels of sardine biomass. Sustainability in the sardine fishery needs to be achieved within a reasonable timeframe, as the European Commission could replace Portugal and Spain as this fishery's management authority, and set even stricter catch limits. The range of possible fishing strategies for stakeholders to consider (e.g., fishing more or less sardines with more or less profit) may also include the targeting of other species – chub mackerel, horse mackerel – when sardine levels are low.

# THE GIANT WAVE OFF NAZARÉ

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## WHAT IS IT?

The over 20 meters high waves formed off the coast of Nazaré have catapulted this small Portuguese town to the front pages of newspapers all around the world. The spectacle of some of the largest waves in the world and the very few surfers experienced enough to ride them attracts hundreds of visitors from Portugal and abroad during winter. These elite surfers have broken three Guinness World Records since 2011, turning Nazaré into a world-renowned spot for big wave surfing.

## WHAT IS AT STAKE?

The predictably positive economic impact of the giant waves off Nazaré on local tourism has not yet been rigorously quantified. Yet, there are also costs involved: to derive economic benefits from the giant wave requires making investments, for example in generating and publicizing information about when the waves form, where safe watching spots are located, and what safety measures need to be followed.

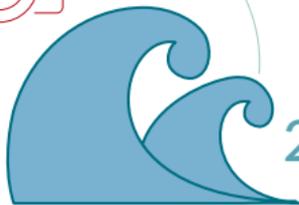
## PROJECT'S CONTRIBUTION

Provisional estimates of the economic impact of Nazaré's giant waves since 2010 indicate that **12 to 31% (i.e., approximately 2.000.000 to 5.500.000 €) of the local tourism revenue results from the giant wave impact.** Ongoing work seeks to determine the costs of public and private investments made to sustain the economic benefits of the giant wave, and the share of national and international visitors.

INVESTMENTS:  
I.E. SAFE WATCHING  
SPOTS



5.500.000 €  
LOCAL TOURISM REVENUE



20 METERS  
HIGH WAVES

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## CALOUSTE GULBENKIAN FOUNDATION

The Calouste Gulbenkian Foundation is a Portuguese private institution of public utility, which was created more than 60 years ago in accordance with the last will and testament of Calouste Sarkis Gulbenkian. It actively pursues its statutory aims in the fields of the Arts, Charity, Education and Science in Portugal and abroad, including through its UK Branch and Paris Delegation. The Foundation promotes a wide range of direct activities and grants supporting projects and programmes.

*More info:* [www.gulbenkian.pt](http://www.gulbenkian.pt)

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