

Impact of ocean acidification on marine biology and fishing

One of the side effects of ocean acidification could be the difficulties that calcified organisms (coral, snails, bivalves, etc.) have in producing shells. This phenomenon could also affect their physiology and living conditions

OBJECTIVE

AcidBiv's aim is to analyze the impact of changes in temperature, rainfall and pH on bivalves, and thus contribute to action plans for the fishing industry.

Ocean acidification, i.e. reduced pH in water due to higher concentrations of CO₂ in the atmosphere, is a major topic for research into climate change. The AcidBiv programme will evaluate the impact of ocean acidification on the growth and calcification of bivalves with a view to proposing appropriate solutions adapted to the environmental threats these molluscs face.

The bivalve: an 'ecosystem engineer'

Because they play an important role in the structure of the aquatic ecosystem, bivalves (mussels, oysters, clams, etc.) are called the 'ecosystem engineers'. The changes predicted for the oceanic environment (temperature, salt levels, pH) should affect bivalves and will in return alter their impact on their environment (cadences of filtration, respiration, organic dejection, etc.).

One of AcidBiv's missions is to evaluate these impacts.

The methodology

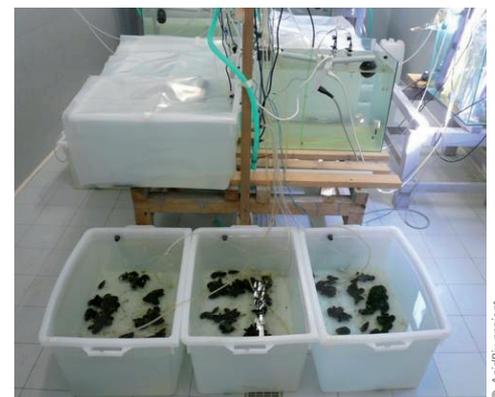
The project is structured on a bottom-up approach: selection of bivalves species to be studied, definition of tests to be used, experiments in the laboratory and then *in situ*. With these results, AcidBiv will propose appropriate measures that will sustain the biodiversity of bivalves but also, more broadly, the fishing industry and aquacultural production in Galicia, the Algarve, the Adriatic and the Bay of Tunis, some of the regions involved in the project.

The economic and political issues involved

As bivalves are an important economic resource for the fishing and aquacultural sectors, studying their situation will have a major environmental and social impact. Thus, the species of bivalves to be studied will be selected on the basis of their pertinence for the territory in question, in terms of both ecological and economic aspects. The solutions proposed will be discussed with decision-makers in aquatic circles, directors of environmental conservation areas, and companies involved in the fishing and aquaculture sectors.



Experimental laboratories.



Experimental laboratories.

THE PARTNERS IN THE PROJECT The integrated impacts of marine acidification, temperature and precipitation changes on bivalve coastal biodiversity and fisheries: how to adapt? (AcidBiv) - 2008/2011: CCMAR Algarve (Portugal); University of Padua (Italy); FSB (Tunisia); CSIC (Spain)