



CLIM-ECO²



PROJET CLIM-ECO²
**CLIMate driven reshaping
of Mediterranean fisheries:
ECOLOGical and ECONOMIC assessment**

The Mediterranean Basin...

With an expected temperature increase of between 2 and 4°C, the Mediterranean is one of the seas that could be most affected by climate change. Between now and the end of the century, profound changes in the fauna and flora are expected. Warming could favour the decline of species with a cold affinity and significantly impact certain populations of fish of high commercial interest. It could also favour the expansion of warm-water fish, mainly non-native species which, because of a negative impact on native species, could disturb the ecological balance of the Mediterranean. Although they could represent potential new food resources, these species could nevertheless offer new commercial prospects in the medium term.

Climate change not only influences the spatial distribution of endemic species but also amplifies the arrival of exotic species in the Mediterranean basin. Warming waters, the increasing presence of species with warm affinities and the retreat of temperate species in the coldest regions of the basin have led to a 'tropicalisation' of the Mediterranean (Bianchi and Morri, 2003). Today, the Mediterranean is considered one of the hotspots of marine invasions, with the rate of arrival of new species having increased considerably over the last few decades (Zenetos et al., 2010). Marine invasive species are considered as one of the main causes of biodiversity loss in the Mediterranean (Coll et al., 2010; Galil, 2007) with significant ecological, economic and social consequences (Zenetos et al., 2010). Conversely, other species (e.g non indigenous species) could expand their range if temperature rises and offer new business opportunities. Thus, some Lessepsian species, whose catches are increasing year by year in the eastern Mediterranean (currently 43% of the catches in Turkey are of Lessepsian origin and more than 70% in Lebanon), are highly appreciated by consumers.



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The CLIM-ECO² project is a multidisciplinary project bringing together biologists, ecologists and economists, which aims to assess the ecological and economic consequences of climate change on Mediterranean fisheries. In a context of over-exploitation of marine resources, decision-makers urgently need robust ecological scenarios to guide management choices. Understanding how climate change could alter the fishing income of Mediterranean countries is essential for the future well-being of the populations.

The implementation of this multidisciplinary project will take place in two distinct and complementary phases. The first phase will focus on the ecological assessment of the impact of global changes on the geographic distribution of commercially exploited fish in the Mediterranean Basin. This assessment will be done by modeling ecological niches.

In the second phase of the project, an economic analysis will quantify the consequences of a redistribution of stocks and catches. Within this framework, we will calculate, for each country bordering the Mediterranean, a vulnerability index.

OBJECTIFS DU PROJET CLIM-ECO²

MAIN OBJECTIVE

CLIM-ECO² is developed over two years (2020-2021). It aims to assess the impact of the climate on Mediterranean fisheries, from an ecological point of view (redistribution of stocks) but also from an economic point of view (redistribution of income associated with fishing).

SPECIFIC OBJECTIVES

OS1

Modelling of the
current spatial
distribution of the main
fish species exploited in
the Mediterranean
(native and non native)

OS2

Modelling of the
projected changes (up
to 2100)

according to the IPCC
climate scenarios

OS3

Assessment of
economic
consequences
induced by ecological
changes

OS4

Proposal for a
sustainable
management plan of
marine resources in
the Mediterranean
basin

COORDINATION PROJET CLIM-ECO²



PRINCE ALBERT II
OF MONACO
FOUNDATION



ECOLOGY AND CONSERVATION
SCIENCE FOR SUSTAINABLE SEAS

The CLIM-ECO 2 project is funded by the Prince Albert II of Monaco Foundation (FPA2).

It works for the protection of the environment and the promotion of sustainable development on a global scale. The Foundation supports the initiatives of public and private organizations in the fields of research, technological innovation and practices aware of social issues.

The CLIM-ECO² project is coordinated by the ECOSEAS "Ecology and Conservation Science for Sustainable Seas" Laboratory of the Côte d'Azur University



UNIVERSITÉ
CÔTE D'AZUR

PARTNERS OF THE PROJECT



<http://ecoseas.unice.fr>

Ecology and Conservation
Science for Sustainable
Seas (ECOSEAS)



<https://www.centrescientifique.mc/fr>

Scientific Center of
Monaco (CSM)



<https://www.log.cnrs.fr/Presentation-de-l-unite?lang=fr>

LOG laboratory
(Oceanology and
Geosciences laboratory)



<https://borea.mnhn.fr/>

LOG laboratory
(Oceanology and
Geosciences laboratory)



<https://www.luc.edu/>

Center for International
Business - Quinlan
School of
Business at Loyola
University



<http://www.unice.fr/CEMAFI/>

CEMAFI INTERNATIONAL



<https://www.lau.edu.lb/>

Libanaise American
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<http://www.univ-batna.dz>

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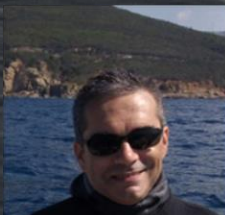
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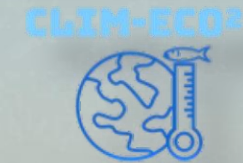
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PROJECT CLIM-ECO²

CLIMate-driven reshaping of Mediterranean fisheries: ECOlogical and ECONomic assessment

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<https://univ-cotedazur.fr/projet-clim-eco2>



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