



Risk Monitoring, Modelling and Mitigation of benthic Harmful Algal Blooms along Mediterranean coasts

M3-HABs



Priority 2 Promotion of environmental sustainability at the basin level

Measure 2.1 Prevention and reduction of risk factors for the environment and enhancement of natural common heritage



Project
funded by the
EUROPEAN UNION



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CROSS-BORDER COOPERATION
IN THE MEDITERRANEAN



REGIONE AUTÒNOMA DE SARDIGNA
REGIONE AUTONOMA DELLA SARDEGNA

Project in brief

Blooms of *Ostreopsis* in coastal areas are a topic of increasing interest, mainly in the Mediterranean Sea, due to the potential hazards that this species of algae might cause to human health and the consequent negative effects on tourism, fishery and aquaculture businesses. In the last 15 years, blooms of toxic 'dinoflagellates' (harmful water microorganisms) belonging to the genus *Ostreopsis* were observed in temperate and tropical coastal waters in both the northern and southern hemispheres. In the Mediterranean region, blooms of *Ostreopsis* have taken place with increasing frequency, intensity and distribution: human mass intoxications have been recorded for the first time in Catalonia (Spain) in 2004, in Genoa (Italy) at the end of July 2005 and more recently along the Tunisian coasts. The **M3-HABs** project answers to the need of understanding and predicting toxic microalgae blooms occurrence through the performance of common monitoring procedures and protocols making the process cost and time effective and increasing at the same time the knowledge on environmental drivers affecting harmful algal blooms.

Beneficiary

National Interuniversity Consortium for Marine Sciences - CoNISMa (Italy, Lazio)

Partnership

1. Institute of Biophysics of the National Research Council - CNR-IBF (Italy, Liguria)
2. Regional Agency for Ligurian Environment Protection - ARPAL (Italy, Liguria)
3. University Pierre and Marie Curie, Oceanographic Laboratory of Villefranche (France, Provence-Alpes-Côte d'Azur)
4. University of Nice-Sophia Antipolis (France, Provence-Alpes-Côte d'Azur)
5. National Institute of Marine Sciences and Technologies - INSTM (Tunisia, Tunis)
6. National Council for Scientific Research - CNRS (Lebanon, Beirut)
7. On Air (Italy, Liguria)
8. DHI Italy (Italy, Piemonte)

Specific objective

To provide and test a common pan-Mediterranean strategy for monitoring benthic toxic microalgae, through technological improvements in sampling design, data analysis and modelling in order to prevent and reduce risk factors for the environment, human health and economic activities related to the coastal environment

Expected results

- Appropriate caution measures diffused
- Common monitoring protocols of toxic algal blooms established
- New technologies for species-specific identification and counting developed
- Common and effective prediction models of algae blooms produced
- Increased awareness of the risks associated to algal blooms

Main activities

- Establishment of an *Ostreopsis* network at Mediterranean level
- Organization of two summer schools in Tunisia and Lebanon focusing on *Ostreopsis* modelling and prediction
- Doctoral or post-Doctoral co-tutorial fellowships
- Set-up of a database of historical and new records concerning bloom events
- Development of an opto-electronic system to perform advanced three dimensional acquisition of marine samples and creation of a software for cells segmentation, classification and identification
- Development, testing and validation of a predictive tool for *Ostreopsis* blooms
- Optimization of *Ostreopsis* sampling and counting techniques
- Drafting and dissemination of guidelines on risk management of toxic algal blooms

Target groups

- Environmental local agencies
- Municipalities
- Research institutions

Final beneficiaries

- People using the coastal environment for both recreational and economic purposes: beaches and rocky shore visiting, swimming, sailing, fishery, aquaculture
- Beach concession holders
- Hotel managers
- Local touristic agencies and tourist information offices

Duration

24 months (January 2014 - December 2015)

Budget

- Total budget: € 1.998.060
- Programme contribution: € 1.798.254 (90%)
- Project co-financing: € 199.806 (10%)

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