



ECOMARINE is progressing!

The first phase of the ECOMARINE project has been finalized. The consortium, following a common research protocol has undertaken extensive research tasks on identifying the specific needs on marine ecosystem monitoring in Malaysia and India. The results of the research phase are outlined in detail in the publication of the [Marine ecosystem monitoring in Malaysia and India deliverable](#). Based on the aforementioned results, the EU partners under the guidance of Archipelagos and the University of Cyprus have developed a detailed Proposal on Equipment Purchase so that the institutions in the Partner Countries will be efficiently equipped according to their needs, towards setting up the four ECOMARINE Monitoring Labs. Moreover, the four Asian Universities with the support of the University of Oviedo, have developed an extensive report on the [National and EU Legislation for the Protection of the Marine Environment](#).

D1.1 Marine ecosystem monitoring in Malaysia and India

The Report outlines the results of both desk and field research on the specific needs of marine ecosystem monitoring in Malaysia and India.

Monitoring can be defined as the systematic measurement of biotic and abiotic parameters of the marine environment, with predefined spatial and temporal schedule, having the purpose to produce data sets that can be used for application of assessment methods and derive credible conclusions on whether the desired state is achieved or not and on the trend of changes for the marine area concerned. The report includes adaptations on the principles of integrated monitoring and large-scale approaches established for the European Union. More specifically, 10 descriptors are detailed:

1: BIODIVERSITY; 2: NON-INDIGENOUS SPECIES; 3: COMMERCIAL SPECIES; 4: MARINE FOOD WEBS; 5: HUMAN-INDUCED EUTROPHICATION; 6: SEAFLOOR INTEGRITY; 7: HYDROGRAPHICAL CONDITIONS; 8:

- Malaysian marine ecosystem is among the world's most diverse with wide range of habitats and 42,330 km² of coastal zone
- The Malaysian governmental Department of Environment (DOE) has 368 monitoring stations measuring 29 different water quality parameters
- India has a long coastline of more than 7500 km, and its marine resources are spread over in the Indian Ocean, Arabian Sea, and Bay of Bengal
- Climate change and human induced activities evidently affect both ecosystems and up to date marine monitoring approaches are needed

CONTAMINANTS; 9: CONTAMINATION OF FISH AND SEAFOODS; 10: MARINE LITTER; 11: ENERGY AND NOISE

The European strategy to address the impacts on marine ecosystem related with Climate Change, Blue Carbon, Marine Litter and Protected Marine Ecosystems was addressed. The same objective is then pursued for Malaysia and India after revising current studies, strategies and findings when monitoring Asian marine ecosystems.

Marine monitoring includes and defines the elements to measure, the location of sampling sites, the periodicity of sampling, the collection of field samples and data, processing of the samples in the laboratory and the compilation and management of the data.

YOU CAN READ THE REPORT ON THE [ECOMARINE WEBSITE](#).

D 1.2. Equipment Purchase Proposal for the Marine Monitoring Labs in Malaysia and India

The four targeted Partner HEIs, as evidenced in their national priorities, face similar challenges. They have not developed coherent marine research programmes and are not in the position to offer unique approaches in the areas of water monitoring, while the development of research activities through the use of eco-friendly low-cost equipment are non-present in the region.

The project is going to demonstrate the positive effects of the monitoring labs, resulting to a higher level of mobilization at a national and regional level for the introduction of similar activities in other Partner HEIs. Therefore, the EU funds are going to be the "initial capital" for larger interventions that are going to be initiated (and nationally funded) after the exploitation of the results from the operation of the Marine Monitoring Labs. The procurement process is being developed, monitored, and validated by the EU partners with the relevant expertise, namely Archipelagos.

The proposed project will revolve around the creation of 4 Marine Monitoring Labs (MMLs) – 2 in India and 2 in Malaysia - that will constitute the basis for both the long-term capacity building and ecosystem monitoring. The MMLs will quantify the existing situation and challenges of the marine ecosystems in the partner countries, with a focus on the event of climate change, ocean acidification and blue carbon, anthropogenic destruction of productive protected ecosystems and ecosystem impacts of pollution by microplastic and microplastic debris.

The necessary equipment for the 4 MMLs comprises of a) field equipment that will be deployed at sea for data collection and b) equipment that will be used in the university laboratory for the processing of the collected data and samples. The equipment for each MML is grouped into the following categories: Climate change and blue carbon, seagrass mapping, microplastics in seawater and microplastics in sediment.

D 1.3. National and EU Legislation for the Protection of the Marine Environment

This report provides detailed information about the existing legislation for the protection of marine ecosystems in the EU and

the Partner countries (Malaysia and India). It focus on various aspects of marine ecosystems protection (protected species, protected habitats, management measures and conservation schemes), fisheries and fish stock management, as well as measures that relate to the management and prevention of plastic debris at sea. The legislation analysis reveals that conservation bodies and laws are similar in the EU countries, in India and in Malaysia as all of them are aligned with international

conventions. In this regard, many of the conservation targets and approaches are shared by all countries, especially the need to reconcile conservation, ecology, economy and society, following the Agenda 21.

In the EU, the main instrument to manage Marine Ecosystems is the Marine Strategy Framework Directive (MSFD), which aligns the objectives and approaches of other Directives. The MSFD is a supranational Ecosystem Management framework based on objectives-monitoring-assessment-objectives cycles. It is aimed at achieving “Good Environmental Status”, an objective, operational definition of a sustainable, resilient, and productive ocean based on 11 main descriptors. It is suggested that countries like Malaysia and India can adopt a framework similar to MSFD in order to strive for a better, quantitative definition of the “good environmental status” and thresholds, a more effective, less complex management, more connected with models and monitoring programs. These would ensure a framework which is more integrated across national and regional scales and more transparent and accessible.

According to the 2020 Assessment of its first implementation cycle in the EU, the MSFD has achieved a holistic framework for the management of European marine ecosystems, has expanded research and management to address poorly known stressors (i.e., marine litter and underwater noise), has increased ocean literacy, awareness and public involvement and has fostered regional and international cooperation. Despite this, the MSFD will need to reach a more coherent and ambitious determination of ‘good environmental status’, a simplified, streamlined, and effective implementation of measures, a greater policy integration, a more effective regional cooperation and will have to ensure better data availability and comparability. The ECOMARINE initiative can contribute 1) to develop a common monitoring framework that will help to test, and to implement in partner countries, the “Good Environmental Status” strategy and 2) to prepare an action plan that

YOU CAN READ THE [FULL REPORT ON THE ECOMARINE WEBSITE](#)

ECOMARINE Dissemination activities

The ECOMARINE consortium has undertaken significant efforts towards disseminating the project, its aims and its products. The ECOMARINE website, as well as the ECOMARINE Facebook and Twitter have been active in promoting relevant information. Also, individual partners have undertaken initiatives towards promoting the project in relevant events, thus ensuring outreach to already interested target groups. For example:

University of Oviedo has organized an International Workshop on Sustainable fisheries and Global Changes on 25/11/2021, in which ECOMARINE was presented to 88 participants in total.



Next Steps

The next steps of ECOMARINE entail the finalization of the procurement and purchase of the equipment so that the participating institutions in Malaysia and India will have the capacity to start setting up the ECOMARINE Monitoring Labs. Moreover, the next important milestone of the project will be the development of the comprehensive training programme which is going to be based on the needs analysis and results of the first phase of the project and will be targeted at the professionals that will be tasked to operate the Monitoring Labs.

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