

A - Ecosystem approach and ecosystem models for the North Atlantic Ocean

This area will focus on better understanding the functioning of North Atlantic marine ecosystems and providing new knowledge and modeling tools for the sustainable management of these ecosystems. To achieve this goal, it is vital to understand the nature, interactions and synergies between physical, biogeochemical, chemical and biological processes, being also important to understand how human activities impact the marine ecosystems.

Marine ecosystems are not only affected by marine and maritime activities which are developed in coastal and deep-sea areas, but also are affected by human land based activities, particularly in the coastal areas, where these activities frequently lead to eutrophication, harmful algal blooms and pollution. Therefore, the key aspects are to understand how these ecosystems function and the influence of anthropogenic factors on them. Taking into account the wide range of human activities that can impact the marine environment, an integrated approach is crucial to develop a better understanding of the accumulative effects of all these human activities on marine ecosystems and their living resources.

This approach, known as “the ecosystem based approach”, integrates ecosystems function, dynamics and also the related socioeconomic aspects, to move towards a sustainable management of marine living resources and maritime activities, while preserving the integrity and the good environmental status of marine ecosystems.

The application of the ecosystem approach requires improved knowledge, models and methodologies for the integration of all these interdisciplinary aspects. Therefore, the call will be focused on the development of new knowledge to cover the existing gaps in our understanding on the functioning and dynamics of marine ecosystems, their food webs and the interactions between natural processes and human activities. The improved knowledge will be essential to develop modeling approaches to provide support to the underlying management principle set out in the Marine Strategy Framework Directive (MSFD) and in the Reform of the Common Fisheries Policy (CFP).

Even though the call is focused on the North Atlantic, Mediterranean case studies can also be considered, as the “Ecosystem Approach Process” starts to take form in this region and scientific and technical support is also needed. Therefore, the development of comparative studies between the different regional approaches is advisable.