

MODULE 4: METHODOLOGIES AND RECOMMENDATIONS FOR ADAPTIVE MANAGEMENT IN THE BLACK SEA

1. OBJECTIVES

- Understanding the concept of Adaptive Management and how it can be operationalised through Maritime Spatial Planning
- Understand how AI-based emulators can supplement information of process-based numerical models
- Understanding the relevance of cumulative impacts and how they can be evaluated through Cumulative Effects Assessment
- Understanding the importance of investigating future scenarios to inform Adaptive Management
- Becoming familiar with the concept of Adaptive Management recommendations, how they are developed and used.

2. INTRODUCTION

The marine environment sustains a series of human activities, such as fisheries, transport, tourism, energy production, etc., which are known to cause impacts on marine habitats and species. To reduce these negative impacts and increase resilience of marine life, human activities at sea have to be managed.

This module explores some of the concepts and tools adopted to this end. It introduces the concept of Adaptive Management, a continuous process of “learning by doing”, and how it can be useful for Maritime Spatial Planning (MSP). It explains how Decision Support Tools (DSTs) can support the operationalization of adaptive management in a maritime context and how AI-based climate model emulators can enable to explore, optimize, or understand complex ocean dynamics without being computationally intensive.

Moreover, it highlights the importance of investigating cumulative impacts within adaptive management, that is, those impacts that may be less significant when taken individually, or at a fixed time, but may have destructive repercussion when added together. These impacts have been evaluated in the Black Sea by performing a risk-based Cumulative Effects Assessment (CEA) on selected Pilot Sites. Some of the main results of this analysis are also showcased in this topic.

Finally, it presents the idea of “future scenarios” and how analysis of different, though equally plausible, versions of the future can help shape adaptive management strategies. In this context, it offers a glimpse into the process of creating and providing long-term coherent recommendations to support decision-making.

3. READING SUGGESTIONS

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