

Subsection 5A

A sustainable and inclusive ocean economy

Introduction

The present subsection, “A sustainable and inclusive ocean economy”, consists of 10 chapters addressing key ocean sectors, the impacts of human activities, socioeconomic factors, governance frameworks and sustainability pathways aligned with global sustainability and inclusivity. Chapter 1 is focused on marine food systems and consists of six subchapters. The sustainable management of medium- and large-scale fisheries, which are highlighted in subchapter 1A, is critical due to their substantial ecological and economic impacts. The subchapter examines the severe environmental pressures caused by overfishing and habitat destruction, emphasizing the need for robust governance mechanisms, such as ecosystem-based management and stakeholder collaboration, to facilitate a transition to sustainable practices. Conversely, small-scale fisheries and aquaculture, discussed in subchapters 1B and 1D, respectively, provide essential contributions to food security, livelihoods and cultural heritage. Those subchapters are focused on the socioeconomic importance of small-scale fisheries and aquaculture, which face threats from environmental changes. In those subchapters, emphasis is placed on governance strategies that integrate community-based approaches, including ecosystem-based management and traditional knowledge to improve resilience and promote fair resource management.

The role of emerging technologies, the challenges of climate change and the associated pressures on medium- and large-scale aquaculture, including those affecting the social acceptability of aquaculture or the ecological balance, are explored in subchapter 1C. The subchapter contains a discussion of related pressures, highlighting the importance of governance that actively engages local communities and applies data-driven management strategies. Subchapters 1E and 1F are focused on the processing and trade of seafood, integral components of the ocean economy that link production to global markets. Implementing sustainable practices in those sectors is crucial to minimizing environmental impacts, ensuring economic stability and advancing multiple Sustainable Development Goals. Those subchapters contain an examination of the environmental impacts of seafood processing and the associated resource depletion, emphasizing the need for governance that enforces strict processing standards and trade regulations.

The diverse uses of ocean spaces are highlighted in chapters 2 and 3, which are focused on recreational fishing and the energy sector, respectively. Chapter 2 examines the ecological and socioeconomic impacts of increased recreational fishing activities in marine environments. Subchapters 3A and 3B, focused on energy from renewable and non-renewable sources respectively, draw contrasts between the carbon reduction potential of renewable energy and the environmental challenges posed by non-renewable energies.

The impacts of tourism, the potential of marine genetic resources and sustainability challenges in shipping are discussed in chapters 4, 5 and 6, respectively. Chapter 4 serves to highlight the dual role of tourism as an economic driver and environmental stressor, presenting governance strategies aimed at mitigating the sector’s negative effects through sustainable practices and fostering eco-friendly tourism models that benefit local communities. Chapter 5 contains an exploration of the use of marine genetic resources, emphasizing governance frameworks that safeguard biodiversity and promote equitable benefit-sharing. Chapter 6 examines the significant environmental impacts of the shipping industry, stressing the urgent need for decarbonization strategies.

Chapters 7 and 8 cover emerging issues around marine mineral resources and the increasing reliance on desalination. The complex challenges of extracting marine minerals and the importance of sustainable practices and international cooperation are highlighted in chapter 7. Chapter 8 highlights technological and environmental challenges facing the desalination and salt production sector and the role of technologies that reduce energy consumption and manage waste effectively.

Lastly, sustainable coastal development and the need for a cautious approach to geoengineering are discussed in chapters 9 and 10. In chapter 9, pressures from urbanization and economic activities in coastal zones are discussed, along with the need for sustainable management strategies that serve to protect ecological health and enhance disaster resilience. The debate surrounding geoengineering as a climate mitigation approach is covered in chapter 10, which underscores the need for careful governance and international collaboration.