The changing climate dynamics affects and impacts the marine ecosystem and the socio-economical activities related to blue growth.
The research of the University of Bologna related to climate-ocean dynamics, interactions, impact on ecosystems and on blue-growth related socio-economical structures, spans a wide range of interdisciplinary topics as:

- Data analysis of the ocean-atmosphere interactions. Hindcast (Copernicus re-analyses) and scenario modeling of ocean dynamics under changing climate and anthropogenic pressure to understand general trends.
- Data analysis of climate/marine physical, biogeochemical, biological data relevant to ecosystem management and sustainable exploitation of the marine resources.
- Defining and projecting interactions (from the molecular to the community level) between local anthropogenic and global climatic stressors (pH and temperature) in coastal ecosystems.
- Projecting changes of intertidal sandy shore ecosystem due to the predicted sea level change.
- Hindcast/predictions of the past/future climate dynamics and climate change impact on ecosystems and exploitable marine resources (fisheries to recreational activities).
- Effects of climate changes on aquaculture systems.
- Tools development for risk assessment, conservation practices, environmental planning and emergencies management.
- Analysis of sea level change impact on coastal geomorphology.

HIGHLIGHTS

Observing the changing ocean trough observational systems and modeling:
H2020: SeaDataCloud - Further developing the pan-European infrastructure for marine and ocean data management; ATLANTOS - Atlantic Ocean Observing system; ODYSSEA - Operating a network of integrated observatory systems in the Mediterranean sea.
Interreg Italy-Croatia: ADRIACLIM - Climate change information, monitoring and management tools for adaptation strategies in Adriatic coastal areas.

Impact of changing climate and anthropogenic pressure on the marine environment:

Corals and global warming:

Sustainable coastal ocean management:
OceanGov COST Actions Ocean Governance for Sustainability – Challenges, Options and the Role of Science.

Innovative technologies for sustainable use of Mediterranean Sea fishery and biological resources: International PhD program FishMed-PhD.