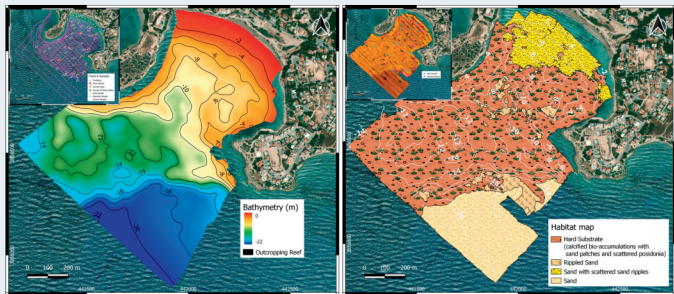
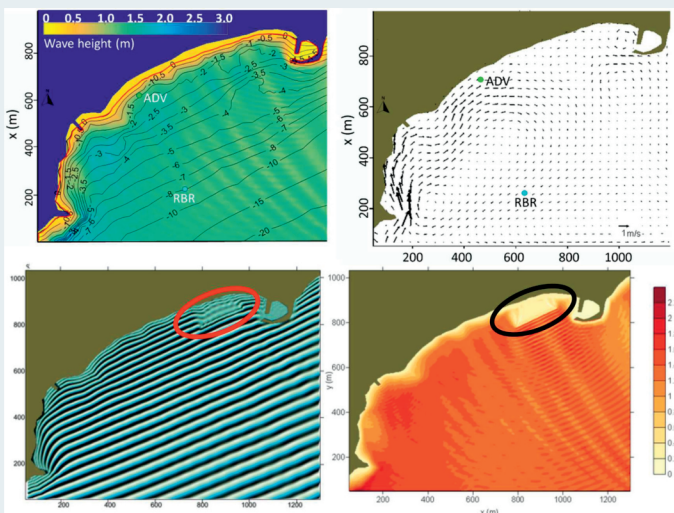


Coastline time evolution recording at Coral Bay



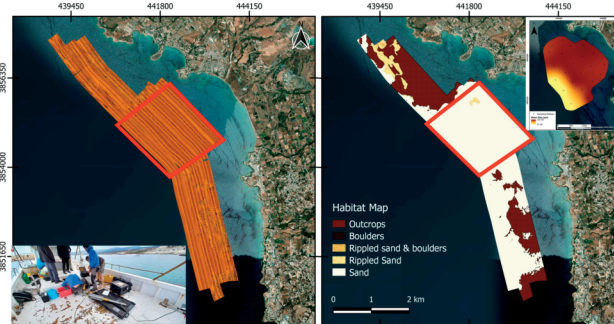
Coastal geomorphological / habitat mapping at Coral Bay



Hydrodynamic simulation modeling and wave propagation field after the use of submerged breakwaters at Komi beach

Results – Project outcomes

- Individual geospatial beach inventories for Lesbos, Chios and Cyprus with all the physical and human beach characteristics, along with risk assessment of coastal erosion and flooding under different climate change scenarios and extreme events (management tools)
- Monitoring systems (camera, meteorological station, wave sensor and recording field PC) of the pilot beaches environmental conditions, also offering information to users
- Technical solutions for the protection of the four pilot beaches under different climate change scenarios, taking into account cost-benefit analysis of the diverse defense schemes
- Detection of potential marine aggregate deposits (sand/gravels), as replenishment material at the wider areas of the pilot beaches (in Lesbos and Cyprus) and estimation of their respective volumes



Potential marine aggregate deposits near Coral Bay beach



Educational activities



BEACHTECH

Beach erosion due to climate change: evaluation and best confrontation practices in touristic beaches of North Aegean Islands and Cyprus

Department of Marine Sciences
of the University of the Aegean

Laboratory of Coastal Morphodynamics, Management and Marine Geology



PARTNERS



Duration: 7/2021 – 10/2023 | Budget: 848.096 €

www.beachtech.eu

ΔΕΣΜΟΙ
ΑΝΑΠΤΥΞΗΣ

ΔΕΣΜΟΙ
ΑΝΑΠΤΥΞΗΣ

About the project

The main objective of the project "BEACHTECH" is to highlight the way that the coastal zone may adapt to beach erosion and flooding due to climate change, through their comprehensive assessment and the evaluation of effective protection measures. These actions will contribute to the sustainable development of one of the most critical sectors of the Greek and Cypriot economy, beach tourism

Pilot study areas



LESVOS:
Petra, Neapoli
(Istoriko) Mytilini



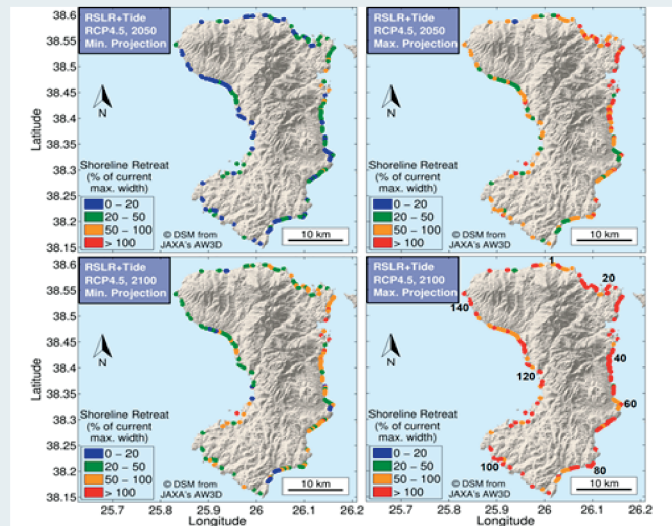
CHIOS:
Komi



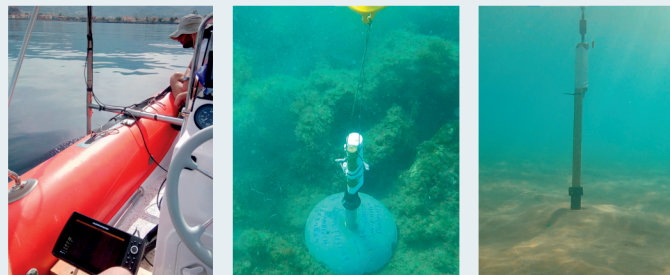
CYPRUS:
Coral Bay
(Municipality of Pegeia)

BEACHTECH objectives

- Beach inventories of Lesvos, Chios and Cyprus
- Recent and future erosion trend estimations under climate change scenarios
- Development of integrated long-term monitoring systems for the beach morphological evolution
- Erosion risk assessment of the pilot beaches using simulation models
- Design/sizing of protective schemes/structures
- Detection of marine aggregate deposits (replenishment material)
- Cost-benefit analysis of adaptation measures of the pilot beaches
- Training of new scientists and public sector employees in coastal erosion and relevant decision-making issues



Chios beaches geospatial database and their retreat under different climate change scenarios



Field work at the coastal zone

Methodology – Field work

- Construction of geospatial databases: Lesvos, Chios and Cyprus beach data digitization in G.I.S.
- Risk assessment of beach erosion and coastal flooding by means of ensemble modeling, using several environmental parameters and climate change scenarios
- Hydrological and stream sediment budget study of the catchment areas
- Topo-bathymetric, morphological, sedimentological and hydrodynamic data collection
- Monitoring of beach morphological evolution using high frequency optical systems and remote sensing techniques
- Coastal morphodynamic simulations and design of coastal protection schemes under different climate change scenarios
- Marine geophysical and sedimentological research for marine aggregate deposits
- Socio-economic approach



Coastal monitoring system (camera installation, meteorological station and wave sensor)