



RENOVATE Project: ecosystem approach for compensation and mitigation actions in the coastal marine environment

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Coastal areas are affected by conflicts between the opportunities and benefits of natural resource exploitation and the preservation of natural ecosystems, as well as by additional stresses and impacts created by ongoing climate change. Coastal infrastructures are one of the major pressures in these areas potentially producing direct and indirect impacts on marine ecosystems. Our pilot project-site is in the area surrounding of the Civitavecchia harbour (Lazio, Central Tyrrhenian Sea), whose expansion could affect the existing *Posidonia oceanica* seagrass meadows, rocky and algal reefs habitats and the conspicuous presence of the giant bivalve *Pinna nobilis* specimens. In this work we present the RENOVAE project, which aims developing an ecosystem approach to manage and implement compensation and mitigation measures in the coastal marine environment. The project approach is based on the restoration of ecosystem services provided by those natural habitats and sensitive species living near the harbour, as listed before. In order to develop this approach, it is necessary to implement an integrated observing system and operational modelling at regional scale, to contribute to: the development of an early warning system for extreme events, dredging and avoidance of potential impacts; the implementation of ecological compensation measures to restore ecosystem services; the siting and implementation of Nature Based Solutions.