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RENAQUA Decision Support System, co-location Opportunities for Marine Renewable Energies and Aquaculture facilities

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Integrated Coastal Management seems to be the next challenge for future development of sustainable growth of marine economies. The progressive increase in worldwide demands for marine-based renewable energies (MRE) combined with higher market demands for aquaculture-based food requires better knowledge on marine spatial planning tools that allow optimizing the use of this space for different purposes.

Among the most emergent activities in the context of developing marine economies are renewable energies and aquaculture, which have increasingly been enabled to operate in hostile environments. Competition over space will become a delicate issue for the sustainable development of the marine environment and will require creative and innovative solutions for co-location of activities.

The Copernicus Programme holds a huge potential for the creation of real-time insights for decision makers. In particular, the Copernicus Marine Environment Monitoring Service (CMEMS) provides regular and systematic core reference information on the state of the physical oceans and regional seas. The observations and forecasts produced by the service support all marine applications, including marine energy production and aquaculture activities.

The RENAQUA Decision Support System (DSS) makes use of the CMEMS data as an input to the RENAQUA value-added services, which are applied to the aquaculture and MRE sectors. The DSS provides three main services to end users: (1) integrated assessment of co-location opportunities for MRE and aquaculture facilities worldwide, (2) the data hub to enable prototyping devices and research activities virtually and (3) the Health and Safety Operational Maintenance Service (HSOM), which provides information to apply security measures for operators, and support day-to-day activities in order to increase productivity at MRE and aquaculture platforms.

Targeted end users of the RENAQUA DSS include private actors from micro companies to large companies (Co-location and HSOM Services), public authorities (Co-location Service) and scientific labs or research centres (Data hub Service).

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