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Mapping human impacts to support sustainable uses of marine ecosystems in the Mediterranean sea

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Local and global anthropogenic pressures due to climate change and to local uses and activities are exerting significant cumulative impacts to greater extents of the oceans and seas. Coastal ecosystems are particularly threatened by the intensity and coexistence of several marine uses and pressures, including sewage and urban constructions, tourism, ship traffic, fisheries and aquaculture. Assessment of pressures and the identification of mitigation measures are key urgent actions, as already highlighted by the EU Marine Strategy Framework Directive and the United Nations Sustainable Development Goal 14. The aim of this work, developed within the Interreg-Med project SHAREMED, is to systematize existing knowledge on threats and pollution, including those of transboundary origin, for long term strategies and common action marine spatial planning, jointly developed with stakeholders. The quest is to assess coexisting environmental threats, and their propagation in space and time, at proper spatial and temporal scales, according to the type and action of each stressor (i.e. global vs. local). Cumulative pressures are tackled within a dedicated Atlas comprising three sub-basins of the Mediterranean Sea: the North Adriatic Sea, the Sicilian Channel and the North-Western region. The Atlas integrates information generated at the best available resolutions by 1) in-situ sampling, 2) remote observations, 3) numerical models, and 4) focusing on target ecosystems and habitat forming species. These sub-basins are subjected to multiple local and larger scale (e.g. climate) pressures that propagate in space and time, and across political boundaries, that need to be addressed through coordinated actions, based on evidence-rooted common understanding. Interactions with relevant Stakeholders, solicited through an online survey, and meetings, were used to select target ecosystems and to identify the key relevant pressures. The Atlas is based on open-access databases and portals, literature reviews and from ad-hoc model simulations concerning marine heatwaves, ship traffic, oil pollution, marine litter and fishing efforts. We will present the main preliminary results and needs and gaps in observations related to marine ecosystems threats.

