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Assessing the coastal risk landscape in the Maresme region (NW Mediterranean)

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Abstract:

The coastal risk landscape can be defined as an integrated picture of all the relevant existing risks in the coastal area. To address this, it is necessary to adopt a systemic approach in defining the hazards, the acting mechanisms, their impacts and the societal perception. In addition to “objective” (quantitative) components, the integration of “subjective” (qualitative) aspects such as public perception is acknowledged to be crucial in risk management.

Within this framework, the objective of this work is to present a first assessment of the coastal risk landscape by integrating quantified/computed risks and public risk perception. The final goal is to identify gaps and misunderstandings in public awareness which can be worked into risk communication campaigns. The study area is the Maresme coast (NW Mediterranean), a 45 km sandy coast northwards of Barcelona, a highly developed area facing significant problems due to natural hazards.

The risk assessment for the most relevant hazards has been undertaken by applying the S-P-R-C model at different time scales and for the main socio-economic components. This has enabled an identification of sensitive areas for each component. In parallel, the qualitative assessment was carried out through a survey of experts (e.g. public administration, representatives of socio-economic sectors and ecologists) based on semi-structured interviews and questionnaires. This permitted a characterisation of public perception on coastal risks, specific to the study area.

Results show that coastal risk managers are well aware of current hazards and their importance, which is a direct consequence of the present level of induced impacts. However, long term hazards, such as SLR, are weakly perceived as threats, which can affect long-term risk management policies. Moreover, the analysis has identified different sub-regions according to both assessed and perceived risks, which could guide the production of dedicated plans within a unique administrative unit.