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TITLE: Assessment of coastal risks to climate change related impacts at the regional scale: The case of the Mediterranean region

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ABSTRACT:

This paper presents a Coastal Risk Index (CRI-MED) developed to assess coastal risks and vulnerabilities associated with the physical and socio-economic impacts of climate change in all Mediterranean coastal zones. CRI-MED is a spatial risk index, which combines variables (multiple data layers) representing different aspects of risk in such a way that coastal areas of relatively higher risk emerge from the integration of the variables. It creates an interface between theoretical concepts of risk and the decision-making process relating to disaster risk reduction. Based on a GIS application, CRI-MED provides relative hazard, exposure, vulnerability and risk maps of the Mediterranean region that allow researchers and policy-makers to identify coastal areas most at risk from coastal erosion and coastal flooding, the so-called 'hot-spots'. Through the application of CRI-MED on 21 Mediterranean countries, coastal hot-spots are found to be predominantly located in the south-eastern Mediterranean region. Countries with the highest percentage of extremely high risk values are Syria (30.5%), Lebanon (22.1%), Egypt (20.7%), and Palestine (13.7%). The CRI-MED method is intended as a scientific tool which produces easily understandable outcomes, to support international organizations and national governments to enhance and mainstream decision-making based on information that is accessible and useful. The definition of coastal hot-spots aims to support the prioritization of policies and resources for adaptation and Integrated Coastal Zone Management (ICZM). In particular, the resulting risk maps enable identification of suitable and less suitable areas for urban settlements, infrastructures and economic activities.

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