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Coastal hazard assessment of Makran coast (SE Iran) due to global sea level rise

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SE coast of Iran is a part of Makran coast stretches about 500 km from border with Pakistan to the Strait of Hormuz. This area has great economic and environmental importance and experience rapid development. Global climate changes impact the coast as sea level rise and increasing frequency and intensity of tropical cyclones originated from the Arabian Sea. Vulnerability assessment of coastal areas to flooding and inundation has great importance for sustainable development of the region. This study aims to develop a coastal vulnerability index for Makran coast. Using satellite images and filed observations, four major geomorphic units are recognized in the Makran coast: Sandy and gravely beaches; cliffs and rocky shores; low-laying coast including tidal flats and mangrove forest and man maid coast including coastal infrastructures and human settlements. Ten risk variables are defined including, rate of relative sea-level change, coastal elevation, coastal slope, rate of sedimentation and erosion, tidal range, significant wave height, flash floods and storm surge, environmental sensibility and socio-economic sensibility. Geomorphic unit are categorized based on their sensitivity to each risk variable. The result is a vulnerability map that highlights vulnerability degree of each unit to physical, environmental and socio-economic hazards. This study tries to increase awareness amongst decision-makers and local inhabitant to be better prepared to deal with consequences of global clime changes such as coastal inundation, floods, coastal erosion and habitat lost.

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