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Determining the Spatial Vulnerability Levels and Typologies of Coastal Cities to Climate Change: Case of Turkey

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Abstract : One of the important impacts of climate change is the sea level rise. Turkey is a peninsula, so the coastal areas of the country are threatened by the problem of sea level rise. Therefore, the urbanized coastal areas are highly vulnerable to climate change. At the aim of enhancing spatial resilience of urbanized areas, this question arises: What should be the priority intervention subject in the urban planning process for a given city. To answer this question, by focusing on the problem of sea level rise, this study aims to determine spatial vulnerability typologies and levels of Turkey coastal cities based on morphological, physical and social characteristics. As a method, spatial vulnerability of coastal cities is determined by two steps as level and type. Firstly, physical structure, morphological structure and social structure were examined in determining spatial vulnerability levels. By determining these levels, most vulnerable areas were revealed as a priority in adaptation studies. Secondly, all parameters are also used to determine spatial typologies. Typologies are determined for coastal cities in order to use as a base for urban planning studies. Adaptation to climate change is crucial for developing countries like Turkey so, this methodology and created typologies could be a guide for urban planners as spatial directors and an example for other developing countries in the context of adaptation to climate change. The results demonstrate that the urban settlements located on the coasts of the Marmara Sea, the Aegean Sea and the Mediterranean respectively, are more vulnerable than the cities located on the Black Sea’s coasts to sea level rise.

Keywords : climate change, coastal cities, vulnerability, urban land use planning
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