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Climate change impacts and adaptation strategie

Managing Natural Coastal Risk Along The Mediterranean Coast Of Egypt

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Rising sea-level due to climate change could cause inundation of coastal lowlands and shorelines retreat. The magnitude of climate-induced sea-level rise during the present century remains uncertain. The Fourth Assessment Report (AR4) of the Intergovernmental Panel on Climate Change (IPCC) projected that global sea-level will rise by 0.18 to 0.59 m by year 2100. Recently, many higher estimates of future sea-level rise have been published. The Mediterranean coast of Egypt is vulnerable to the impact of sea-level rise, in particular the Nile delta coast due to its relatively low elevation. In addition, the delta suffers local land subsidence that exacerbates the effects of rising seas. Several studies investigated the impacts of future sea-level rise on the delta. These studies showed that coastal inundation due to rising sea-level could result in a substantial loss of the low-lying part of the delta, mainly agricultural land and urban areas. Fortunately, many of the adverse consequences can be avoided by taking timely measures in anticipation of sea-level rise. Hence, sustainable coastal management policies are needed to deal with the risk that may be provoked by future sea-level rise on the Mediterranean coast of Egypt. Reducing vulnerability of coastal areas to rising sea-level is a challenge to sustainable development and land use strategies. This paper demonstrates that the potential implications of sea-level rise would be manageable if appropriate actions are taken. It shows that development of coastal risk management policies and programs is necessary for adaptation to the impacts of future sea-level rise. Adaptation policies to minimize coastal risks include institutional coastal monitoring capabilities and imposing laws and regulations. Moreover, it is recommended to strengthen the national integrated coastal zone management plan with strategies that encourage integration, participation and decentralization. Potential adaptation strategies to reduce the risk of rising sea-level will be presented in the conference paper.