



Ho Chi Minh City adaptation to increasing risk of coastal and fluvial floods

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Coastal megacities in southeast Asia are a hotspot of vulnerability to floods. In such contexts, the combination of fast socio-economic development and of climate change impacts on precipitation and sea level generates concerns about the flood damage to people and assets. This work focuses on Ho Chi Minh City, Vietnam, for which we estimate the present and future direct risk from river and coastal floods. A model cascade is used that comprises the Saigon river basin and the urban network, plus the land-use-dependent damaging process. Changes in discharge for five return periods are simulated, enabling the probabilistic calculation of the expected annual economic damage to assets, for different scenarios of global emissions, local socio-economic growth, and land subsidence, up to year 2100. The implementation of a range of adaptation strategies is simulated, including building dykes, elevating, creating reservoirs, managing water and sediment upstream, flood-proofing, halting groundwater abstraction. Results are presented on 1) the relative weight of each future driver in determining the flood risk of Ho Chi Minh, and 2) the efficiency and feasibility of each adaptation strategy.