FLOOD INNUDATION MAPPING BASED ON GIS PROCESSING AND MODELLING: A COMPARISION

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ABSTRACT

The paper presents some initial findings on preparing the flood inundation maps caused by climate change and sea level rise of the Can Giuoc district, a highly developing industrialization, and urbanization area of Long An province. The maps were created based on two methods: (1) GIS overlaying using GRASS, Arc-GIS based on a high resolution Digital Elevation Model (5mx5m) and long-term observed water levels as well as predicted sea-level-rise scenarios. (2) Hydrodynamic flood well-known model namely MIKE – Flood. The maps prepared by the two methods are comprehensively assessed and compared. The results showed that although the model can produce more detailed, dynamic maps, the GIS-based methods can save a lot of resources i.e. time, still provides acceptable results given a careful data preparation. In addition, the resulted maps can be used for producing other useful maps e.g. vulnerability maps, flood risk maps of Can Giuoc district that can be later utilized for adaptation measures.