

Including irrigation in flood inundation modelling –An initial exploration of the Mekong Delta

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Deltas are home to approximately 7% of global population and play a crucial role in regional food security owing to the favorable conditions for agriculture. As a result, these areas are often heavily irrigated as humans strive to use the local water resource to maximise production. This study aims to incorporate irrigation practices into the LISFLOOD-FP hydrodynamic model to determine the impact of irrigation on the flood dynamics of the Mekong Delta, one of the most intensively irrigated deltas. Irrigation data is based on global databases of irrigation area, crop type and crop calendars, supplemented with local information allowing for this approach to be used across irrigated areas around the world. This study therefore builds upon the localized estimates of flood storage capacity of paddy fields through the region and generates a new estimate across a wider area that is subsequently used to assess the impact on the hydrodynamics and flood inundation pattern. It is envisaged this approach can be used for future analysis of the impact of the changing irrigation practices of the Mekong Delta.

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