



Flood risk analysis and adaptive strategy in context of uncertainties: a case study of Nhieu Loc Thi Nghe Basin, Ho Chi Minh City

Long-Phi Ho, Nguyen-Xuan-Quang Chau, and Hong-Quan Nguyen

Center of Water Management and Climate Change (WACC) - Vietnam National University of Ho Chi Minh city, Vietnam
(hlphi@wacc.edu.vn)

The Nhieu Loc - Thi Nghe basin is the most important administrative and business area of Ho Chi Minh City. Due to system complexity of the basin such as the increasing trend of rainfall intensity, (tidal) water level and land subsidence, the simulation of hydrological, hydraulic variables for flooding prediction seems rather not adequate in practical projects. The basin is still highly vulnerable despite of multi-million USD investment for urban drainage improvement projects since the last decade. In this paper, an integrated system analysis in both spatial and temporal aspects based on statistical, GIS and modelling approaches has been conducted in order to: (1) Analyse risks before and after projects, (2) Foresee water-related risk under uncertainties of unfavourable driving factors and (3) Develop a sustainable flood risk management strategy for the basin. The results show that given the framework of risk analysis and adaptive strategy, certain urban developing plans in the basin must be carefully revised and/or checked in order to reduce the highly unexpected loss in the future