



A Study on Climate Change Adaptation Strategy of Zeng-wen River

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ABSTRACT

The purpose of this study is to review and integrate different management areas of the implement and assessment methods for adaptation strategy with respect to climate change. Management areas include flood disaster, sediment disaster, coastal storm surge and inundation, coastal erosion, reservoir flood control and silting management, and water resources management.

This study collected from current research topics and adaptation strategies; establishment of integrated assessment structure; and discussion on the hydrological influence related to climate change. The results show that the disaster areas located near Tsengwen Reservoir have difference influence factors based on its space characteristics. With consideration of sediment disasters, all influence factors are interrelated because a sediment disaster can be seen as one event in the basin system. These influence factors include reservoir flood control and silt management, water resources management, flooding and coastal erosion, and storm surge inundation.

This study also provides an integrated assessment structure for Tsengwen River Basin. This structure is developed based on a basin-scale environmental simulation model for simulating long-term scenarios and obtaining discharge rate, sediment yield, and outflow rate for each node in the basin. The models used for the assessment includes physiographic drainage and inundation model, sediment budget model, water resources model, and coastal model. Instead of modifying the design or regulations, the results are used to the adaptation strategies to mitigate the damage, vulnerability, exposure degree, and risk resulted from climate change.