

## Investigate the Movement of Salt-Wedge at Co Chien Estuary, Vietnam in the Context of Climate Change and Reduce Upstream Flow Using 3D Model

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**Abstract :** Nowadays, drought and salinity intrusion becomes a severe problem in the Lower Mekong region due to climate change, especially in coastal provinces. Freshwater resources are decreased due to sea-level rise and the decline in water flow from upstream in the dry season. The combination of the above issues can lead to many effects on the environment and human health in affected areas such as the pathological of digestive or decreased the immune system. Tidal cycle and upstream flows are the two main factors affecting the saline intrusion process and the former salt-wedge in the estuary. Under suitable conditions, salt-wedge can be going further upstream under the water surface and affected groundwater. In order to have a proper plan for the mitigation of the above adverse effects, we need to understand the characteristics of this process. In this study, 3D model is used to investigate the movement of salt-wedge under different conditions of tidal and flow discharge. The salinity in the vertical profile is also measured in the dry season of 2017 and 2018 for model calibrating. The data has proved that there is the presence of salt-wedge in the study area. The obtained results will help strategic planners to use and preserve water resources more effectively and serve as a basis for new research directions on saline intrusion and human health.

**Keywords :** salt-wedge, salinity intrusion, human health, 3D model

**Conference Title :** ICEMHP 2020 : International Conference on Environmental Mutagens in Human Populations

**Conference Location :** Tokyo, Japan

**Conference Dates :** March 23-24, 2020