Large scale flood inundation of Cambodia, using Caesar lisflood

Senrong Sou*, Joo-Cheol Kim**, Hyunsoek Lee***, Sarann Ly****
Gilha Lee*****; Kwansue Jung******

Abstract

Mekong River is the world’s 10th longest river and runs through China’s Yunnan province, Burma, Thailand, Laos, Cambodia and Vietnam. And Tonle Sap Lake, the largest fresh water body in Southeast Asia and the heart of Mekong River system, covers an area 2,500–3,000Km² in dry season and 10,000–16,000Km² in wet season. As previously noted, the water within Sap river flows from the Mekong River to Tonle Sap Lake in flood season (between June and October) and backward to Mekong River in dry season. Recently the flow regime of Sap River might be significantly affected by the development of large dams in upstream region of Mekong River. This paper aims at basic study about the large scale flood inundation of Cambodia using by CAESAR–Lisflood.

CAESAR–Lisflood is a geomorphologic / Landscape evolution model that combines the Lisflood–FP 2d hydrodynamic flow model (Bates et al, 2010) with the CAESAR geomorphic model to simulate flow hydrograph and erosion/deposition in river catchments and reaches over time scales from hours to 1000’s of years. This model is based on the simplified full Saint–Venant Equation so that it can simulate the interacted flow of between Mekong River and Tonle Sap Lake especially focusing on the flow direction change of Sap River by season.

Keywords: Caesar–Lisflood, Mekong River, Tonle Sap Lake

Acknowledgement

This research was supported by a grant (11–TI–C06) from Advanced Water Management Research Program funded by Ministry of Land, Infrastructure and Transport of Korean government.

* Member · Graduate student, Dept. of Civil Eng., Chungnam National University · E-mail: senrongou@gmail.com
** Member, Researcher Dept. of Civil Engineering, Chungnam National University · E-mail: kpocheol@hanmail.net
*** Member, Chief Researcher of HQ Tech · E-mail: leehs@hqtech.kr
**** Lecturer Dept. of Rural Engineering, Institute of Technology of Cambodia · E-mail: ly.sarann@gmail.com
***** Member, Professor Dept. of Civil Engineering, Kyungpook National University · E-mail: leegha@knu.ac.kr
****** Member, Professor Dept. of Civil Engineering, Chungnam National University · E-mail: ksjung@cnu.ac.kr