

CHAO PHRAYA RIVER FLOODING IN 2011 AND ITS CAUSES

Susumu OGAWA^a and Yoshiki OGAWA^b

^a Faculty of Technology and Environment, Prince of Songkla University, Phuket, Kathu, Phuket 83120, Thailand; Phone: +66-76-276-100; FAX: +66-76-276-102

E-mail: ogawa.susumu.phd@gmail.com

^b Institute of Industrial Science, University of Tokyo, 4-6-1 Komaba, Meguro-ku, Tokyo 1530041, Japan; Phone: +81-3- 5452-6001; Fax: +81-3-5452-6071

E-mail:ogawa@cisi.u-tokyo.ac.jp

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Abstract: Chao Phraya River flooding occurred in September, 2011 in Thailand. In the central and south watershed flooding spread and brought serious damage to many industrial complexes, agricultural fields and many residences. Some explanations of the causes were presented so far. Then, from published hydrological data, the true causes were discussed. First, one of the causes is abnormal rainfall, but not so serious for long term prediction. In dam operation, even though long term rainfall season was predicted, the outflow during May and July was not enough, therefore, the operation did not function in the peak of the season, September, and this is the main cause of flooding. If the operation was the same as the ordinal years, the industrial complex at Ayutthaya could escape from flooding. Moreover, the amount of accretion of sand in the lake became at one third of the full capacity and this is the second cause. Finally, the flood prediction simulation was based on DEM basically and the boundary conditions are not enough to predict precisely. Next time the simulation should be assembled with the boundary conditions: drainage networks in urban areas, revetment structures and their drainage conditions, and tide fluctuation.