THESIS TITLE : FLOOD MITIGATION STUDY IN NAM SONGKHRAM
BASIN BY STORAGE IN PADDY LAND

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ABSTRACT

This thesis study about flood mitigation of the lower part of Songkhram River Basin. The Songkhram Basin is divided into two parts, the upper and the lower parts. Flood of the lower basin can be mitigated by storing surplus rain water in paddy field confinements of the upper basin. Surface runoff from the upper basin is modelled using Adirek's method (1990) which was modified from United States Soil Conservation Service (SCS) method and Water Balance Equation. Flooding in the lower basin is simulated using the model developed by the Asian Institute of Technology(1986). It was based on St. Venant's and continuity equation.

This proposed flood mitigation method was to suppose that the upper basin farmers prepare to store paddy field water at higher levels than the usual depth (5-10 cm.). This depth will be kept for sometime (2,4,7 and 10 days). The water is then completely drained from the paddy field.

This cycle is repeated from 1 July to 30 September. The maximum allowable depths were 20 cm. and 30 cm. during 26 July to 17 September and 18 September to 30 September respectively. From the results of simulation, the 10-day interval showed that annual inundation area of the lower basin decreased by 2,320 to 85,324 rai (mean=56,692 rai). This resulted in net benefit of 42.67 to 96.35 million baht (mean=66.66 million baht). The highest net benefit occurs in 1978 when 85,324 rai is prevented from flooding resulting 96.35 million baht benefit.