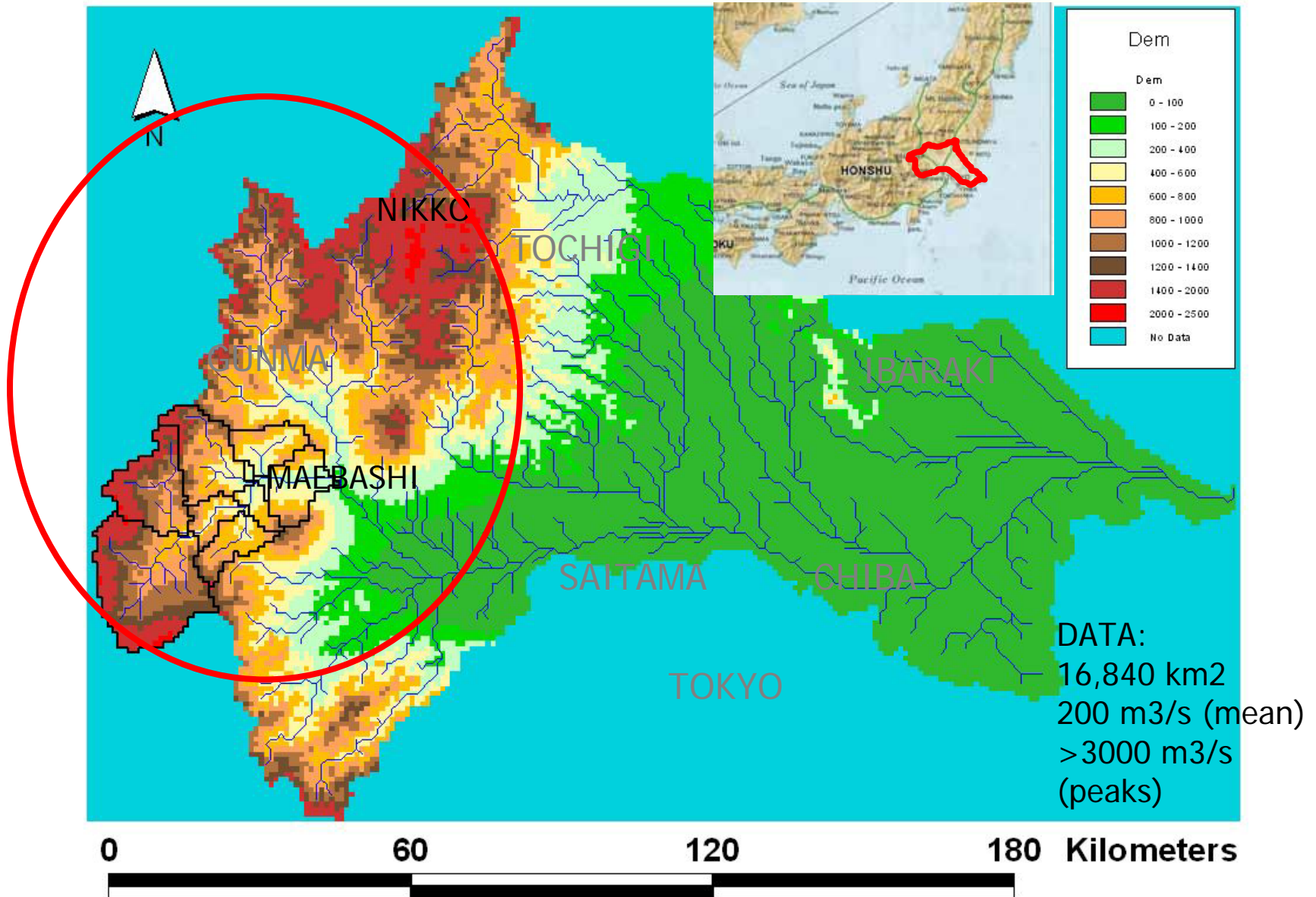
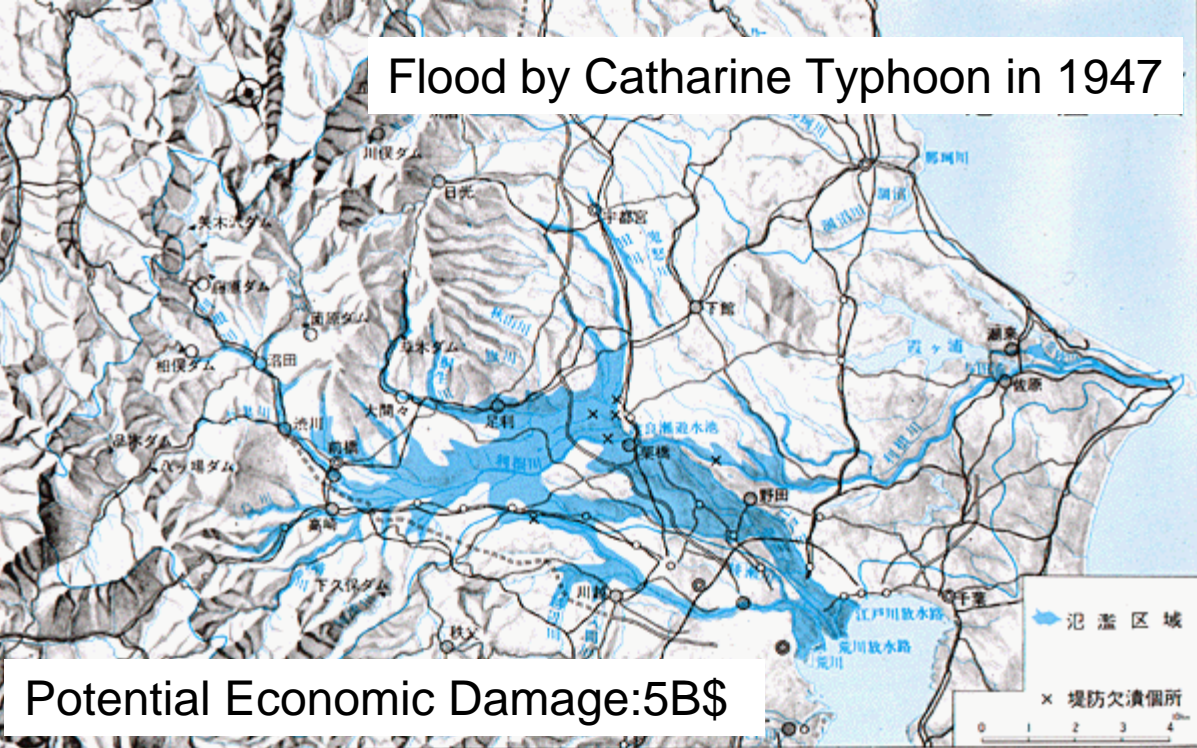


The Upper Tone River

Cooperation between River Bureau, Ministry of Land Infrastructure and Transport of Japan
and the University of Tokyo



Flood by Catharine Typhoon in 1947



Potential Economic Damage: 5B\$



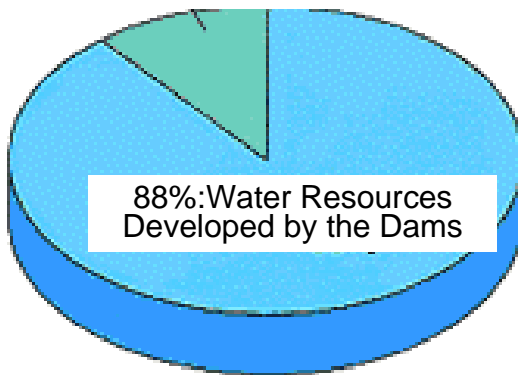
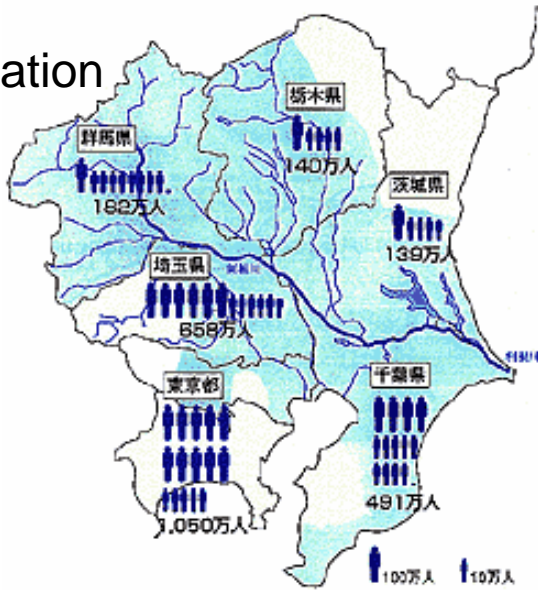
Dyke Break

High Flood Risk to the Tokyo Metropolitan Area

Water Supply to the 27M population in the Tokyo Metropolitan Area

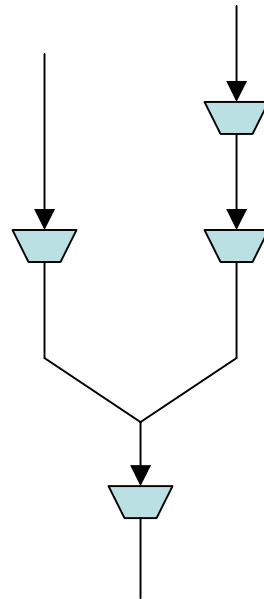
High Percentage of the Dam Supply

Importance of the Group Management of the Dams



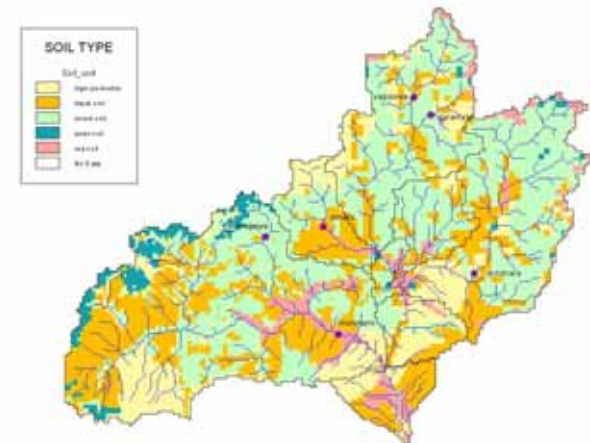
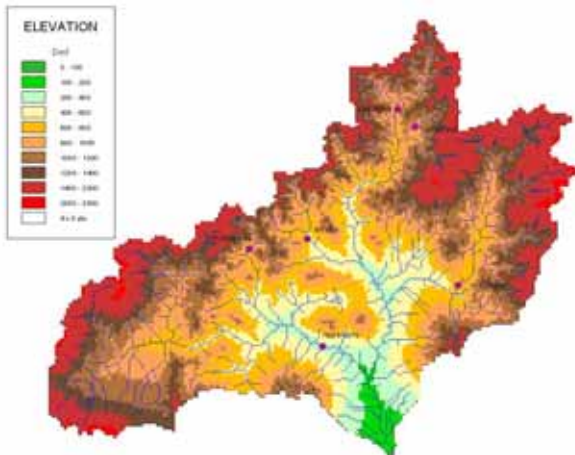
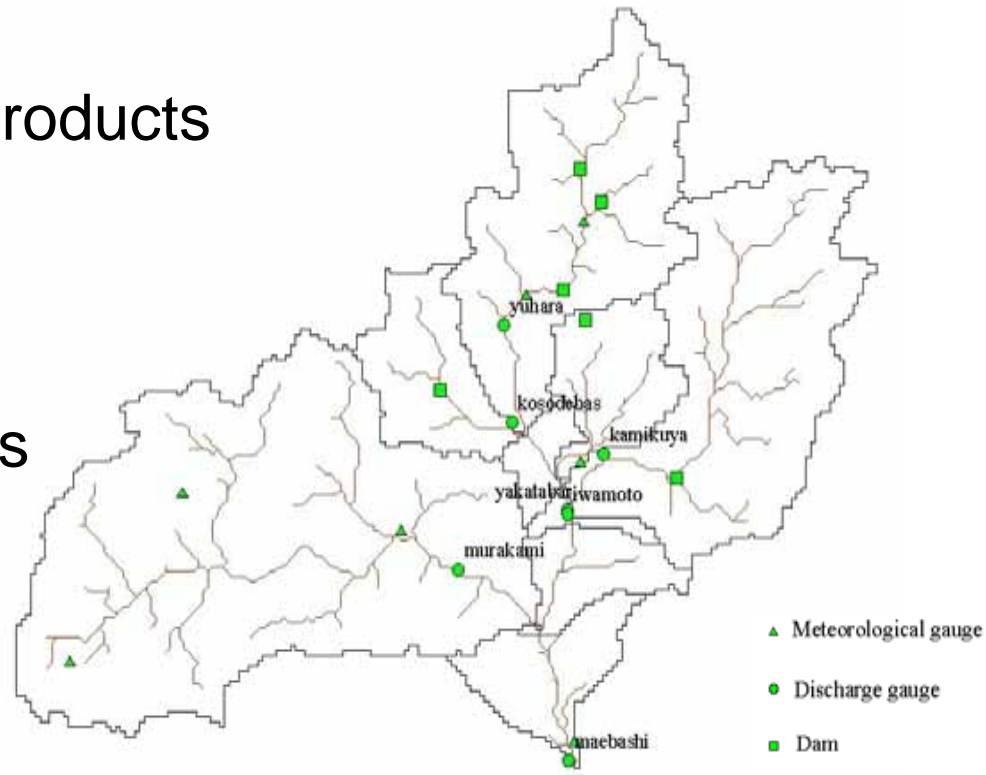
Needs

To reduce flood peak, make maximum use of water resources, and conserve the river ecosystem by effective group operation of the dams

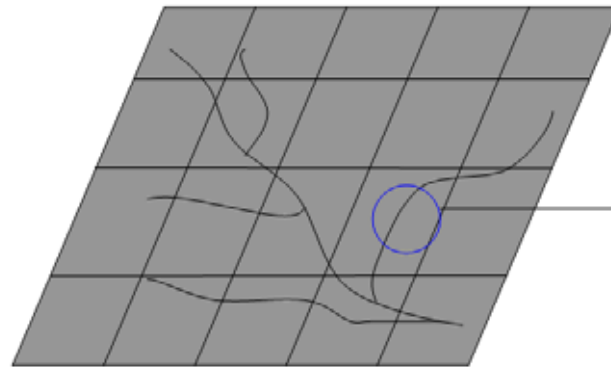
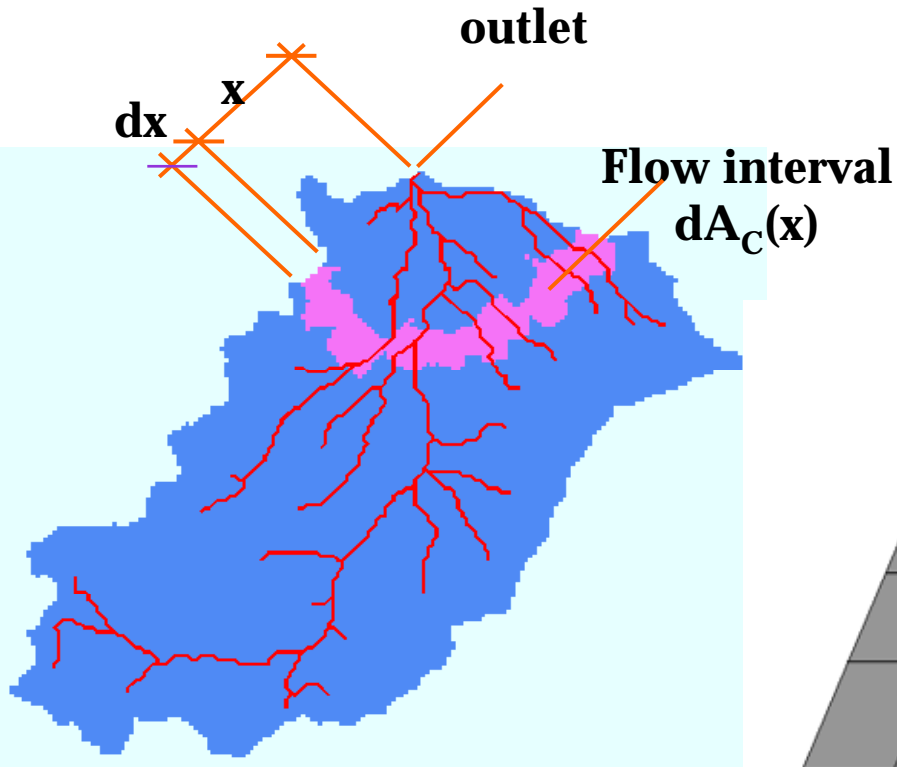


Available Data

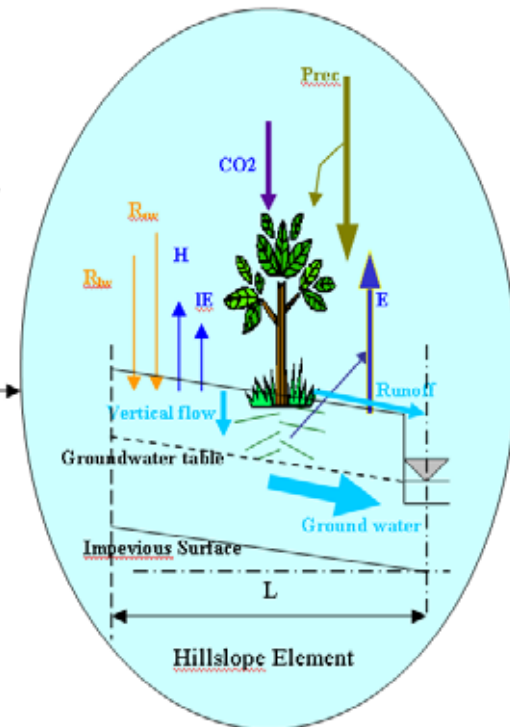
- Radar-Rain Gauge Merged Products
- Meteorological Data
- River Discharge
- Dam Control
- DEM
- Soil/Geology/Vegetation Maps



A Distributed Hydrological Model Coupled with a Land Surface Scheme

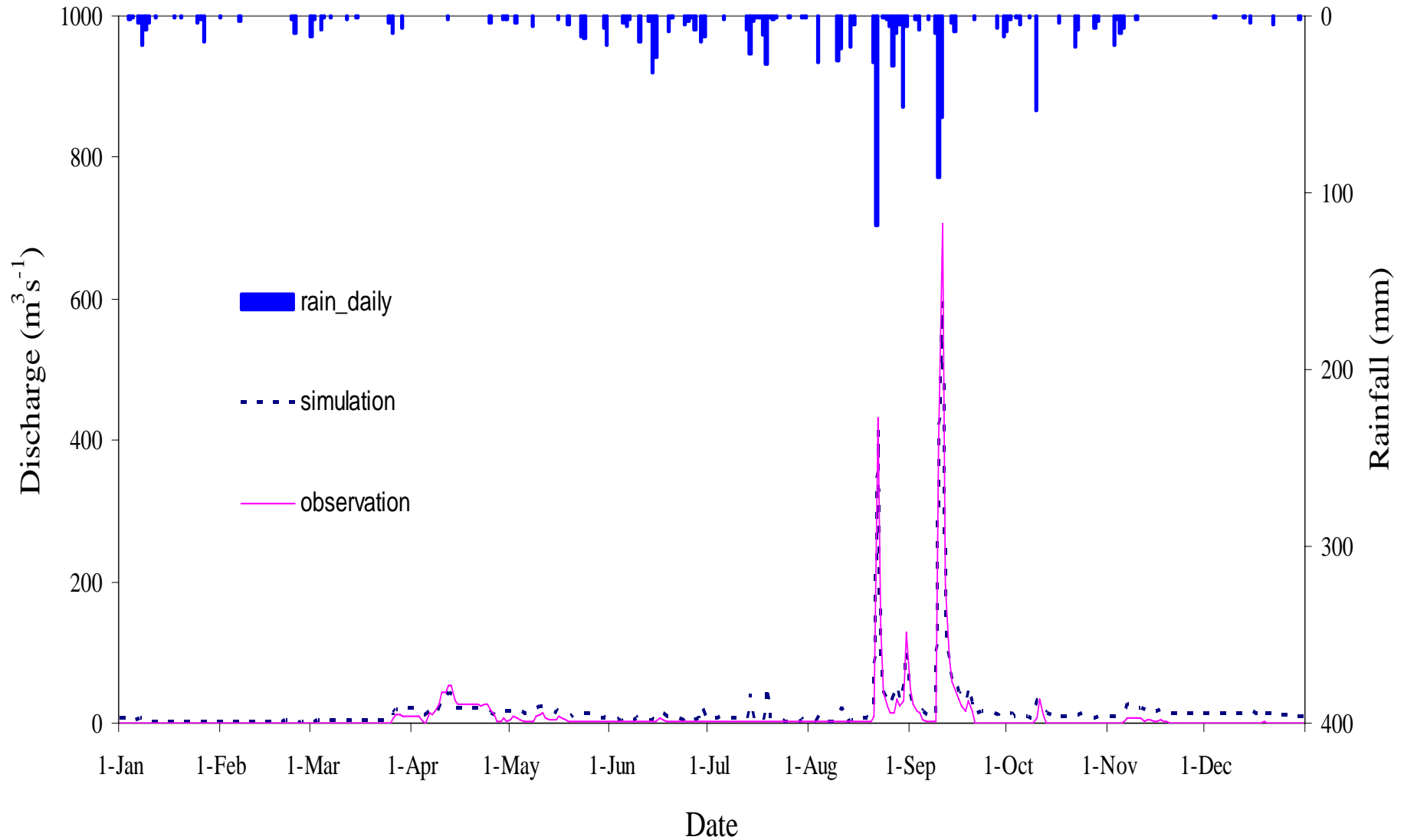


SiB2

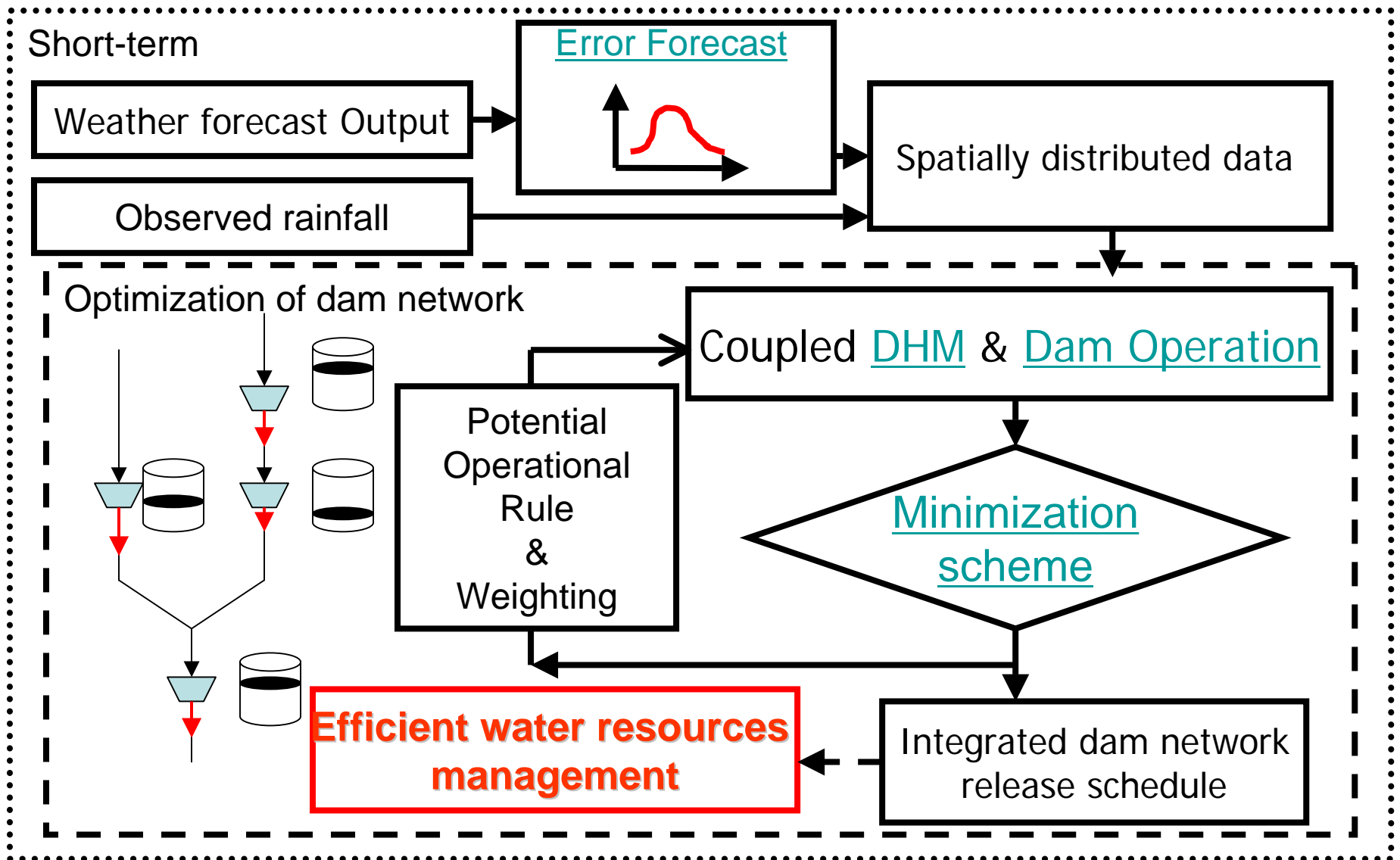


GBHM by D.Yang

Kamikuya

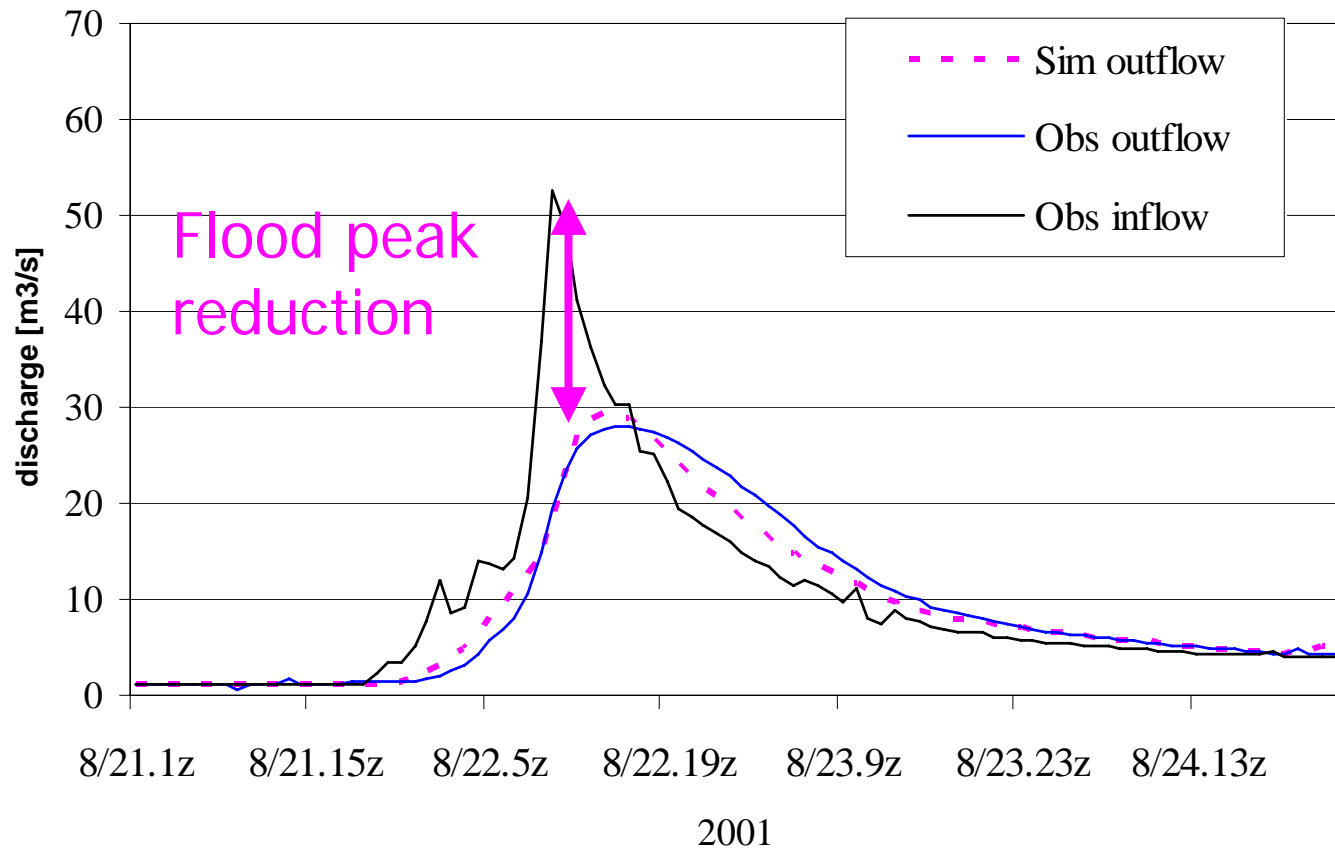


Dam Operation Optimization System by Using Rainfall Forecasting

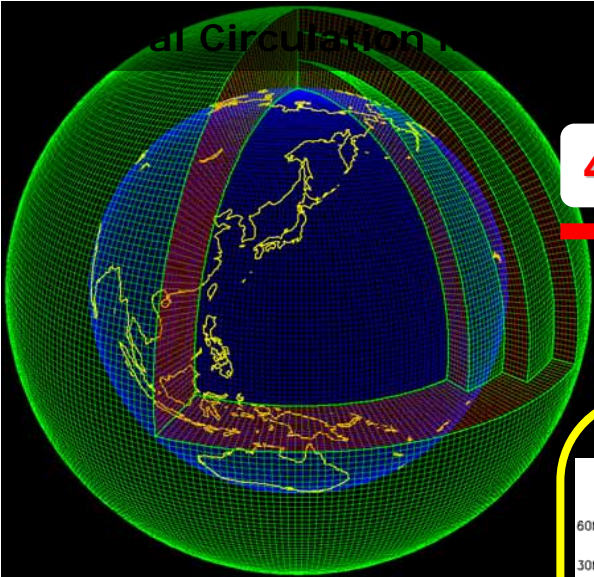


Results Agatsuma

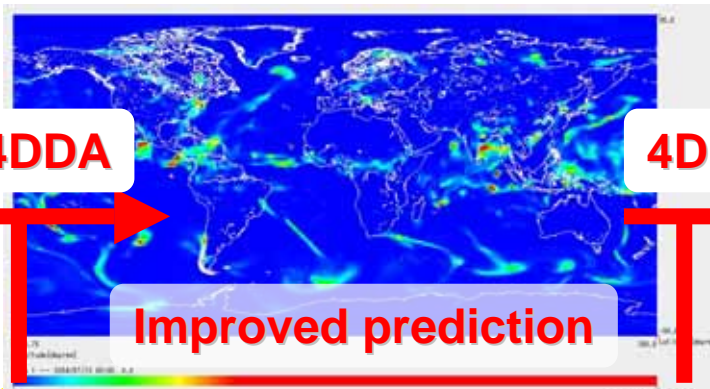
Using Spatial Radar Data



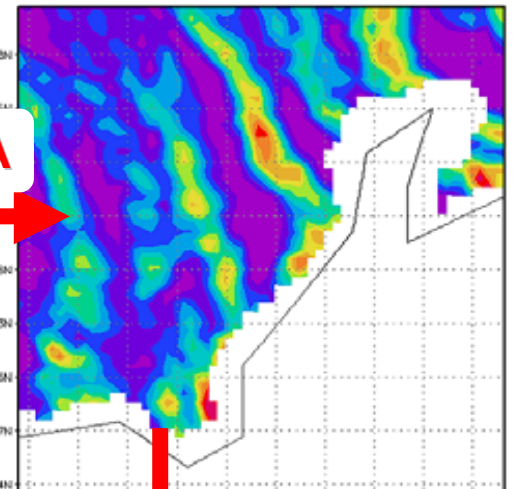
Global Data to Local Information



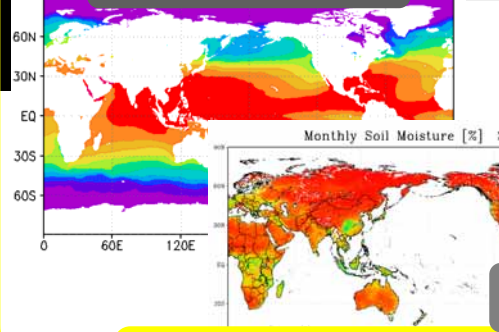
4DDA



4DDA



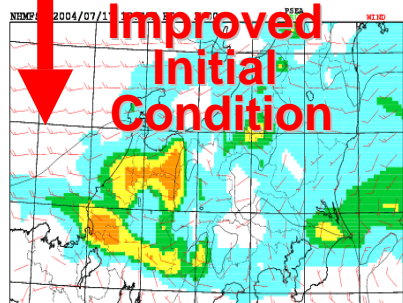
Satellite data



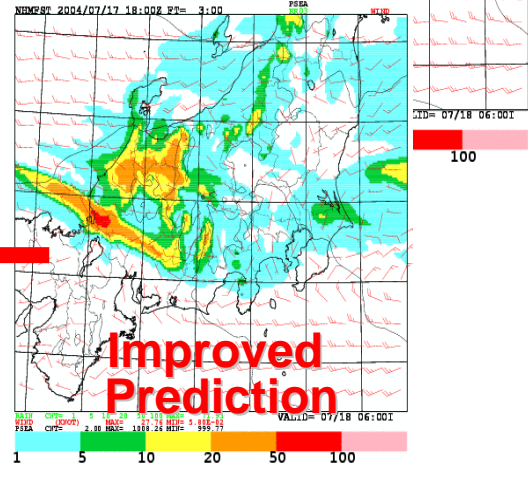
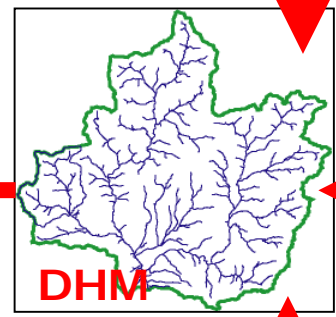
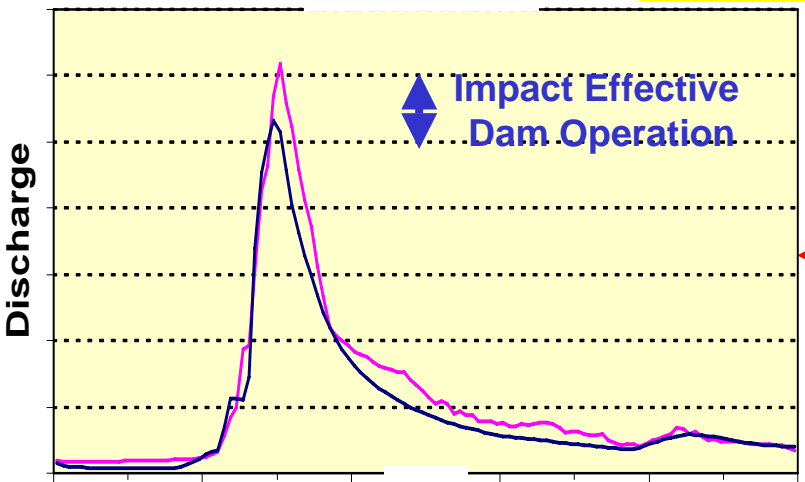
In-situ data

Centralized Data System

Regional/Meso Model



River Discharge



Socio-Economic Data