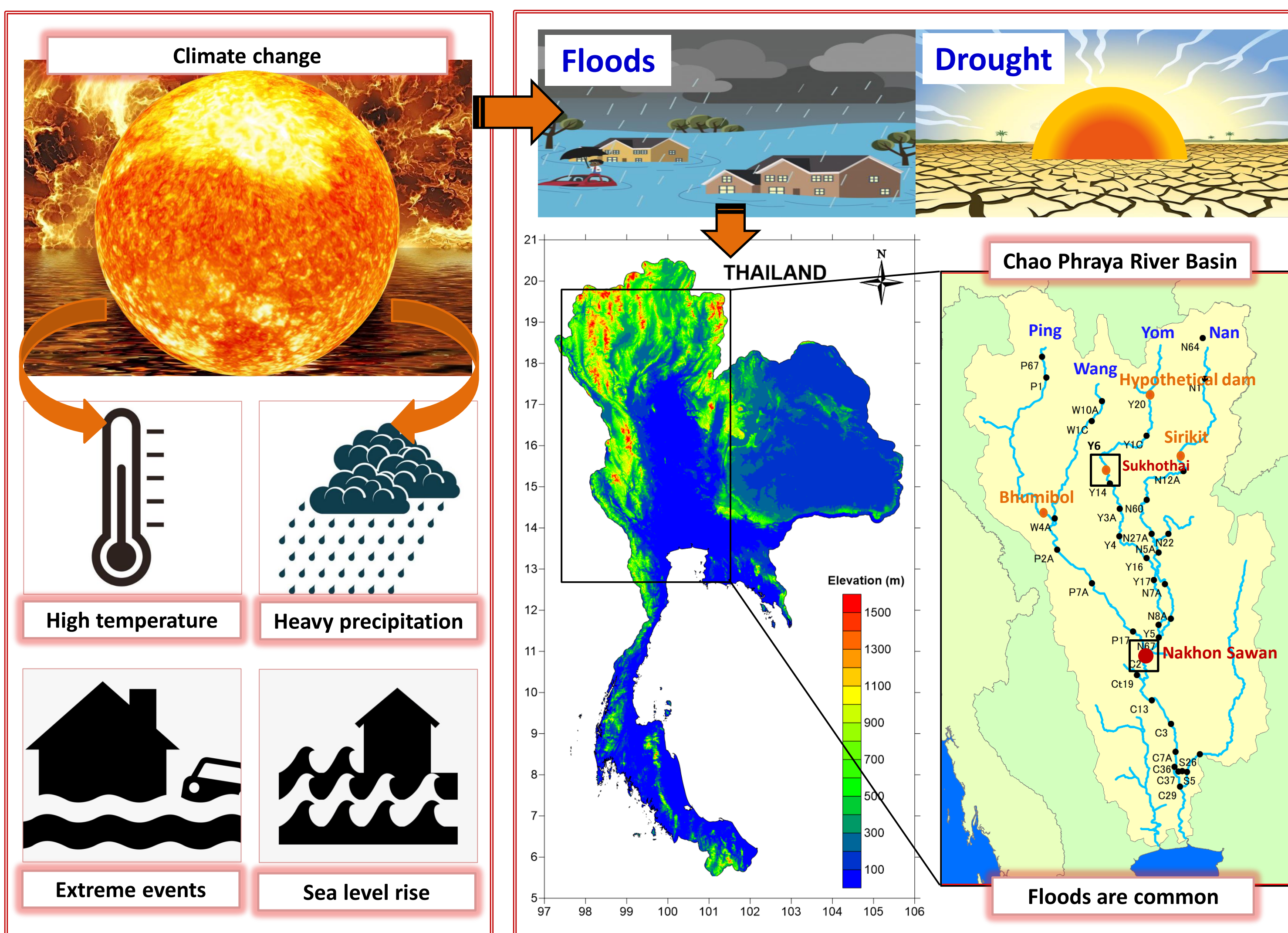
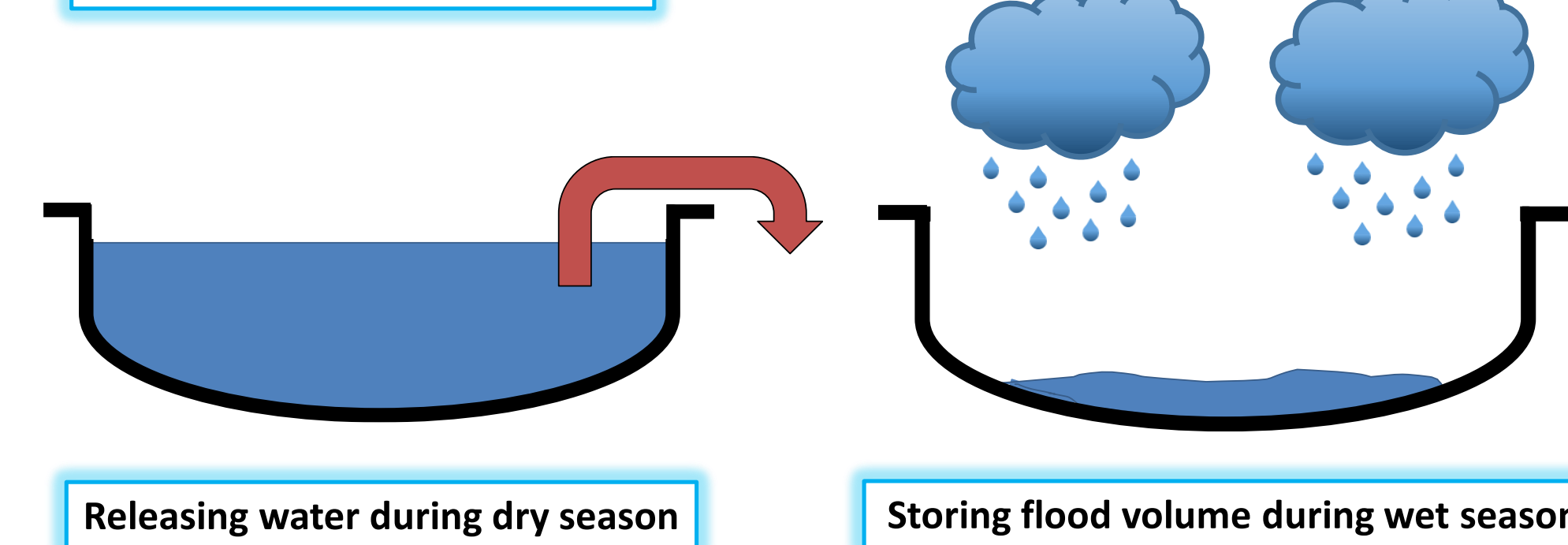


Background



Reservoir Operation

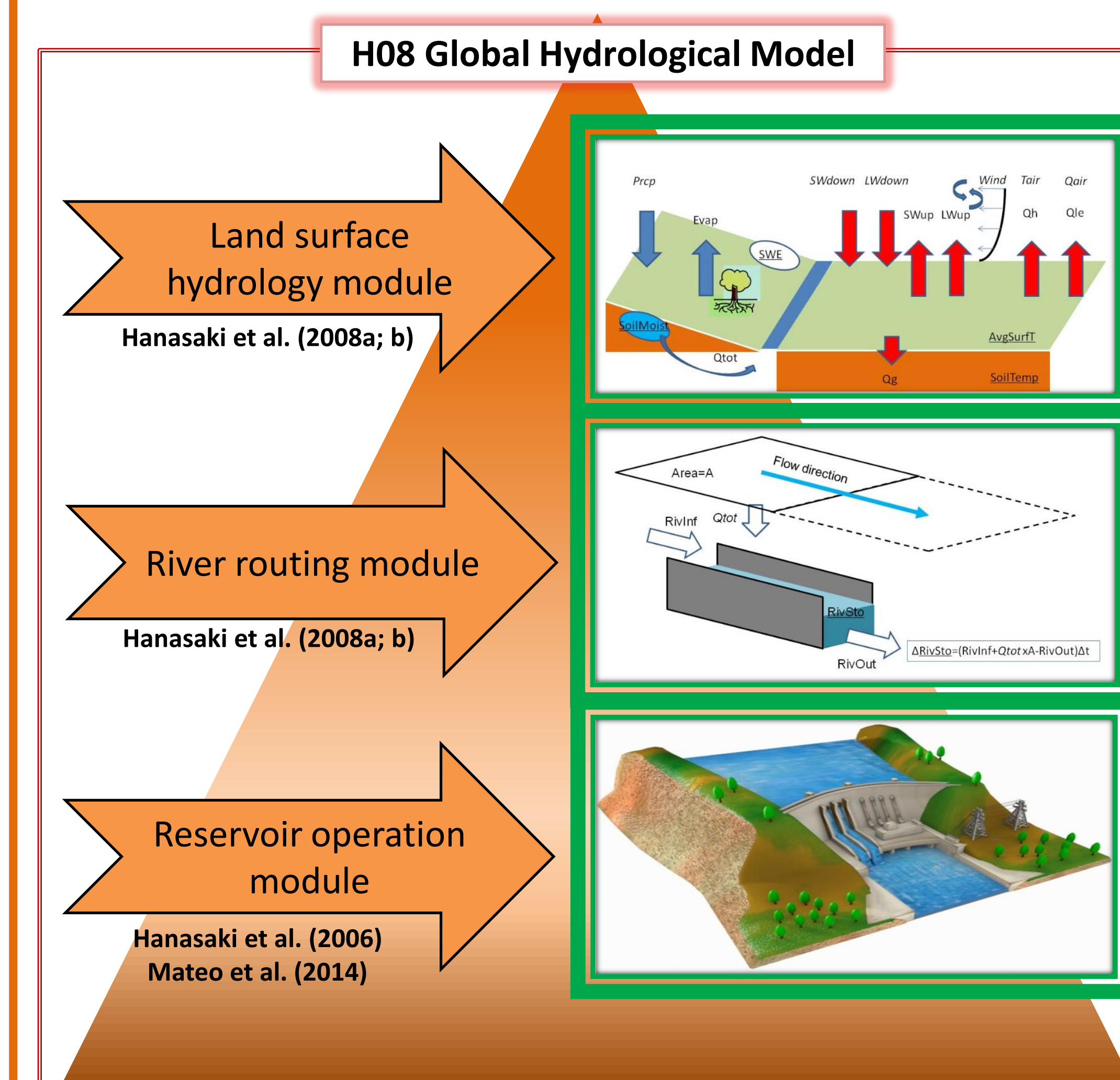


Reservoir operation is one of the most influential factors for flood mitigation under future climate change by controlling and storing the natural flow

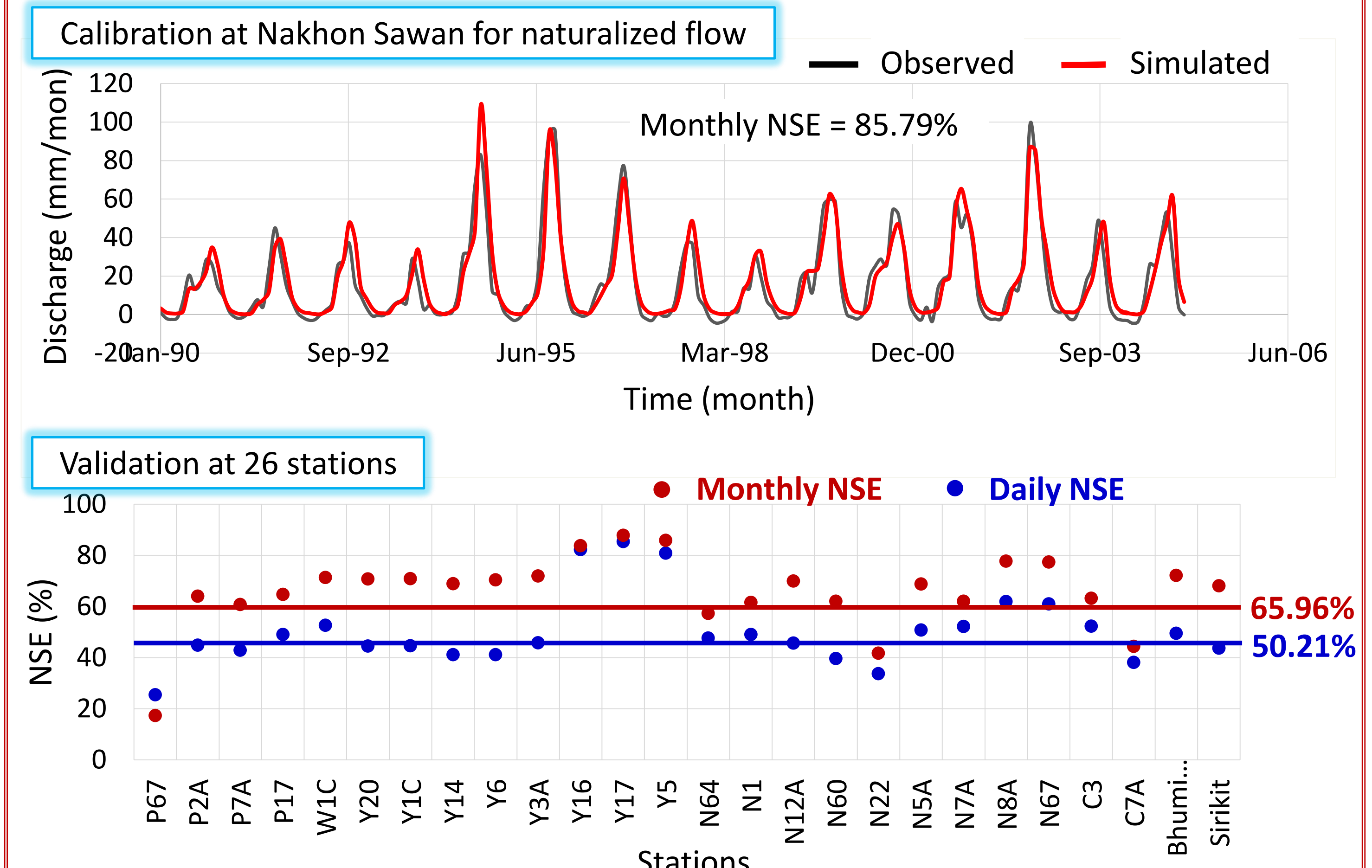
Objectives of the Study

- Analyze the effect of two largest existing reservoirs of Bhumibol (13.5 BCM) and Sirikit (9.5 BCM) at Nakhon Sawan (catchment area: 109973 km²)
 - Analyze the effect of a hypothetical dam (1.18 BCM), at Sukhothai (catchment area: 12769 km²) and Nakhon Sawan
- Legend:
- Baseline → (1990-1999)
 - Future → (2090-2099)
 - On flood peak reduction
 - RCP 6 scenario
 - H08 hydrological model

Hydrological Model

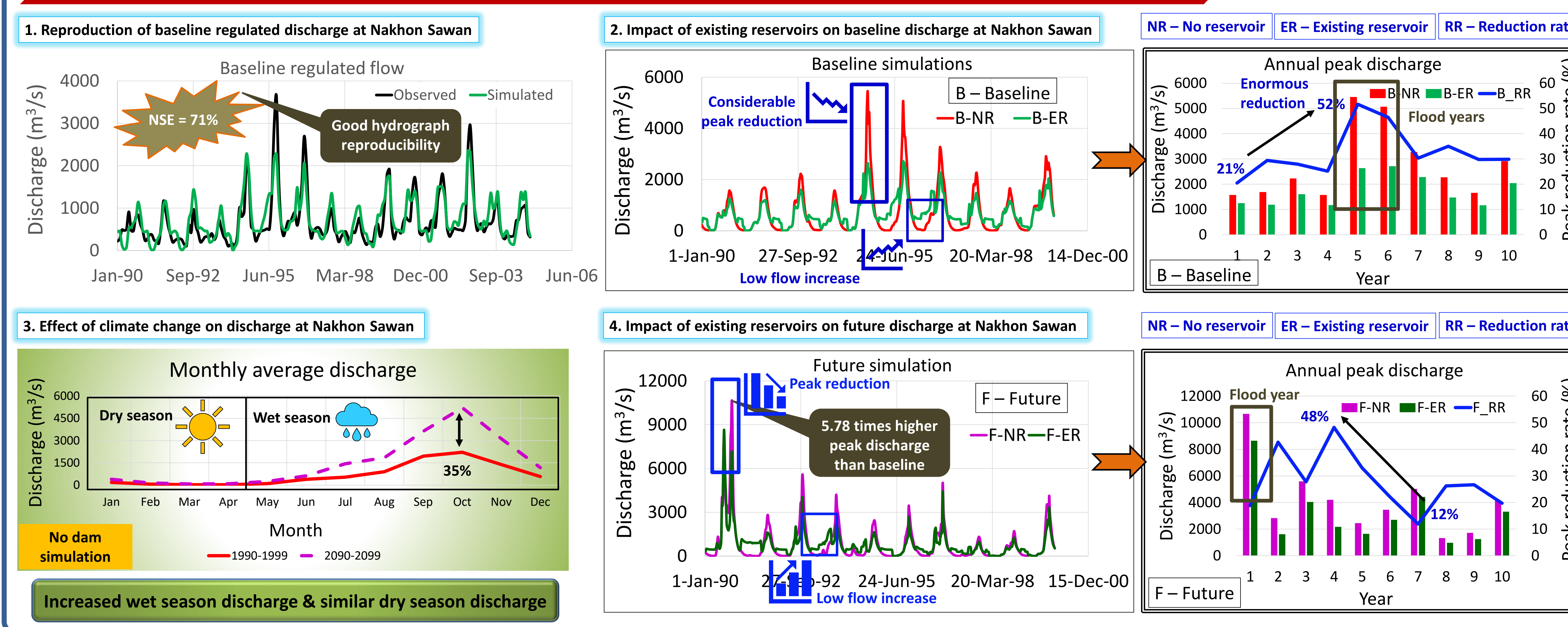


H08 Model Calibration and Validation

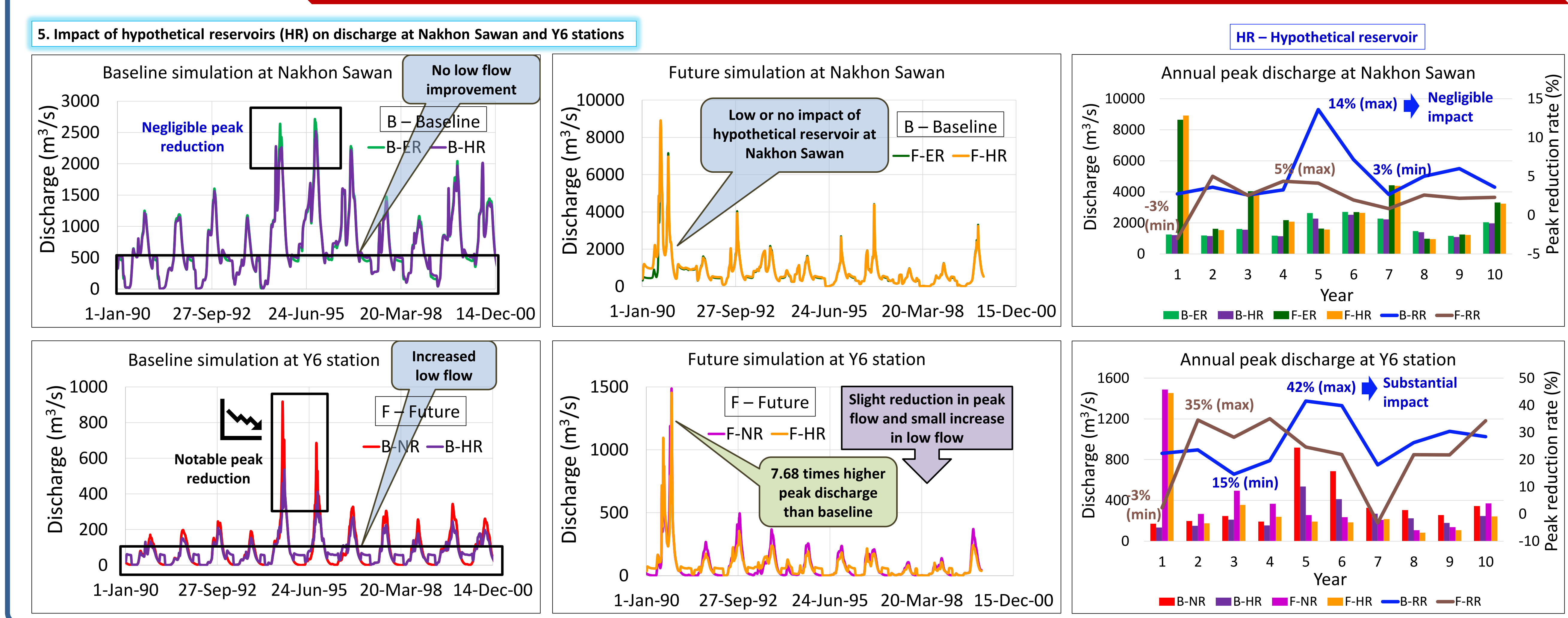


Results and Discussions

Climate change and two existing dams → How do the existing dams control the impacts of climate change?



Climate change adaptation by building a new dam → How does a new dam mitigate the impacts of climate change?



Conclusions

- The proposed hypothetical dam could reduce flood damage at the lower reaches of Yom River where flooding is regular due to gentle slope, but not at Nakhon Sawan.
- The changes in discharge due to climate change are larger than those achieved by the reservoir operations for the future scenario even though the simulated discharge highly depends on which general circulation model was used as input.

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