# A Generalized Approach for Operational Flood Forecasting System of the Monsoon Driven River Basins of South and Southeast Asia.

Monsoon flooding is a common natural disaster in South and Southeast Asia, where more than a billion people are affected by it. Forecasting flood with an effective lead time is a challenge in this part of the world as a few heavily populated international river basins are located there and the countries are reluctant to share hydro-meteorological data. Due to lack of real-time hydro-meteorological data, downstream nations are more vulnerable from the transboundary riverine flood. Perhaps the Numerical Weather Prediction (NWP) is the only feasible alternative of the remote sensing as a source of hydro-meteorological data in this region. Furthermore, the forecasting system using NWP has a benefit of extended lead time beyond the travel time of the basin. Therefore, a common method of predicting flood earlier using NPW model will assist the responsible agencies in this region. In this study, we show a general approach of predicting precipitation using a mesoscale NWP model for South Asia. At first, we used the Weather Research and Forecasting (WRF) model to generate the forecasted precipitation data for extreme events of the Ganges-Brahmaputra, and Indus river basins. We used twelve different WRF model setups, originated from the combinations of three cloud microphysics, along with four different sets of model initial condition. We then compared the results of the simulated precipitation for each model setup over the aforementioned two river basins. The results of this study illustrate that a generalized approach for forecasting precipitation using WRF in the South and Southeast Asian river basins is feasible.