

## **Impacts of climate change on hydrology in the Srepok watershed, Vietnam**

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**Abstract** An investigation was made of the impacts of climate change on hydrology in Srepok watershed, located in the central highlands of Vietnam, using the SWAT (Soil and Water Assessment Tool) hydrological model. The model was calibrated and validated using daily streamflow records. The calibration and validation results indicated that the SWAT model was able to simulate the streamflow reasonably, with Nash-Sutcliffe efficiency exceeding 0.72 for the Ban Don station, for both calibration and validation at daily and monthly steps. The hydrological response to climate change was simulated based on the calibrated model. The climate change scenarios were built by using a downscaling method (delta change method) based on the outputs of MIROC 3.2 Hires GCM driven by A1B and B1 emission scenarios. The results indicated a 1.3–3.9°C increase in annual temperature and a 0.5 to 4.4% decrease in annual precipitation which corresponded to a decrease in streamflow of about 2.8 to 7.6%. The large decreases in precipitation and runoff are observed in the dry season.

**Key words** climate change; hydrology; Srepok watershed, Vietnam; SWAT model