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Influences of climate changes on hydrologic system in the Lam Takhong River Basin of Thailand

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The effects of Climate Changes (CC) on the hydrologic system in the Lam Takhong Basin located in northeastern Thailand were determined using Soil and Water Assessment Tool (SWAT). The hydrologic SWAT model was set up with land use and soil data of 2002 and observed flow and weather data during 1999-2000. The model was calibrated and validated against observed flow data during 2001-2009 and its CC scenario with input weather data during 2010-2065 was simulated. The results showed that changing climate over the 56-year period appeared to affect both water yields and flows. Water scarcity will tend to take place across the Lam Takhong River Basin in the near future. Longer periods of severe droughts and floods might occasionally occur, particularly downstream. Therefore, it is critical to prepare specific management measures to mitigate climate change-related impacts in the river basin.

Biography

Nuanchan Singkran has completed her PhD from Cornell University, USA in Aquatic Science and minor field in Environmental Systems Engineering. She has worked for Water Quality Management Bureau, Pollution Control Department, Ministry of Natural Resources and Environment, Thailand. She was responsible for aquatic systems modeling works spanning from rivers through coastal zones to the sea during her work at the PCD (2008-September 2012). She is working as a Permanent Lecturer at Faculty of Environment and Resource Studies, Mahidol University, Thailand. Her research interests are in water resources management, material flow analysis in diverse systems in relation to urban development and climate change-related effects.

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