

Analysis of historical changes in rainfall in huai luang watershed, Thailand

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Abstrak

This study aims to investigate changes in rainfall in terms of trends, variability, spatial and temporal distributions, and extremes in the Huai Luang watershed. The trend analysis was applied to the time series of rainfall data for 32 years from 1982-2013. Changes in spatial and temporal rainfall distributions and extremes were investigated by comparing the 2 periods of the rainfall data between 1982-1997 and 1998-2013. Frequency analysis of annual maximum daily rainfall was applied to determine changes in extreme rainfall for different return periods at three stations located upstream, middle and downstream of the watershed. The results of this work show significantly increasing trends in annual rainfall, spatial variations and extreme daily rainfall in the Huai Luang watershed. The extreme rainfall resulted in increasing floods in last decade. Spatial and temporal rainfall distributions are also changing. The lower part of the watershed will have more rain. Further studies on potential impacts of rainfall changes on flood risk, water resources management, urbanization and agriculture development in the Huai Luang watershed are recommended to support preparation of adaptation strategies for mitigating potential negative impacts.