# Framework for assessing droughts in ungauged catchments in Cambodia

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Water is a fundamental necessity to life on Earth. It has considerable contribution to the country's socioeconomic
development. Cambodia is an agricultural country which is considered to have abundant water resources. However, the distributions of water resources are spatially and temporally nonuniform in space and time thus, causing
challenge in water resources management. Heavy storms, floods, and droughts are common natural disasters in
Cambodia. Among these disasters, drought has drawn increasing attention in recent years due to evidence of reduced rainfall and its impacts on agriculture which is the major sector of the country. Drought indices have been
used as indicators of the frequency and severity of droughts. However, estimating the drought indices for Cambodian catchments is not trivial because of data scarcity associated with ungauged problems. This study therefore
attempts to address two primary challenges in the context of Cambodia by developing a framework for estimating
the drought indices in ungauged catchments. The proposed framework is divided into two main parts. The first
part is applying the ungauged prediction approach and remotely-sensed data to extend meteorological time series
that are required for the calculation of the drought indices. The second part is the estimation of the drought indices
based on the data obtained from the prior step. The Standardized Precipitation Index (SPI) was calculated and
used for assessing meteorological drought for the Baribo catchment in Cambodia. The proposed framework provided satisfactory results for assessing and monitoring droughts. This offers promising future for improved water
management in Cambodia.