

## **Water availability assessment in data scarce catchments: case study of the Ping River basin, Thailand**

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**Abstract** The overall objective of this research is to improve the methodology for water availability assessment at ungauged sites in Thailand and other comparable regions through suitable data quality control and regionalisation procedures. The upper Ping River basin is selected as a study catchment. A measure to classify data quality is proposed. To regionalise gauged responses to ungauged locations, a number of catchment attributes are related to hydrological responses using regression analysis. The mean elevation of the catchment is found to be a primary control factor on the hydrological responses; and the percentage urban area and mean annual rainfall are also found to be significant factors. The results of simple linear regression show it to be a promising approach for regionalisation in this case study. The exclusion of gauges perceived to have quality problems, although severely reducing the number of data points, is shown to potentially improve regional relationships, although further work is needed to verify this.

**Key words** regionalisation; ungauged catchments; streamflow prediction; Thailand; Ping River basin; rainfall–runoff model