



Innovative use of soft data for the validation of a rainfall-runoff model forced by remote sensing data

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The Chamcar Bei catchment in southern Cambodia is a typical ungauged basin. Neither meteorological data or discharge measurements are available. In this catchment, local farmers are highly dependent on the irrigation system. However, due to the unreliability of the water supply, it was required to make a hydrological model, with which further improvements of the irrigation system could be planned.

First, we used knowledge generated in the IAHS decade on Predictions in Ungauged Basins (PUB) to estimate the annual water balance of the Chamcar Bei catchment. Next, using remotely sensed precipitation, vegetation, elevation and transpiration data, a monthly rainfall-runoff model has been developed. The rainfall-runoff model was linked to the irrigation system reservoir, which allowed to validate the model based on soft data such as historical knowledge of the reservoir water level and groundwater levels visible in wells.

This study shows that combining existing remote sensing data and soft ground data can lead to useful modeling results. The approach presented in this study can be applied in other ungauged basins, which can be extremely helpful in managing water resources in developing countries.