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Regional hazard analysis for use in vulnerability and risk assessment

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A method for supporting an operational regional risk and vulnerability analysis for hydrological hazards is suggested and applied in the Island of Cyprus. The method aggregates the output of a hydrological flow model forced by observed temperatures and precipitations, with observed discharge data. A scheme supported by observed discharge is applied for model calibration. A comparison of different calibration schemes indicated that the same model parameters can be used for the entire country. In addition, it was demonstrated that, for operational purposes, it is sufficient to rely on a few stations. Model parameters were adjusted to account for land use and thus for vulnerability of elements at risk by comparing observed and simulated flow patterns, using all components of the hydrological model. The results can be used for regional risk and vulnerability analysis in order to increase the resilience of the affected population.