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Lack of instrumental hydrological data? Trying the use of interviews as a way to estimate the regime of temporary streams.

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Temporary streams are those that undergo the recurrent cessation of flow or the complete drying of the stream bed. Although they may represent the main part of the elementary drainage network, or even most of the total network in some areas due to climatic or lithological reasons, temporary streams are rarely included in stream monitoring networks. As a result, hydrological data for assessing the regime of temporary streams are often scarce.

The LIFE TRivers project is developing a software (TREHS, Temporary Rivers' Ecological and Hydrological Status), which is designed to help the managers for adequately implement the Water Framework Directive in this type of water bodies.

The first need for managing a temporary stream is the characterisation of its hydrological regime, in order to help managers selecting appropriate sampling dates and using the right methods to determine its ecological status. Yet, the deviation of the actual regime from the natural one should be determined in order to assess the potential hydrological alteration due to the human activity and thereby determine the 'hydrological status'.

TREHS applies a methodology for regime characterisation based on the results of the EU FP7 project MIRAGE. This methodology is based on the assessment of the temporal patterns of six 'aquatic states' that summarize the transient sets of mesohabitats occurring on a given reach at a particular moment, depending on the hydrological conditions. The qualitative nature of the aquatic states allowed the use of interviews to assess the regime of the streams in the lack of observed flow data. For the questionnaires, the TREHS temporal scheme was simplified from a monthly to a seasonal one and the aquatic states were reduced from six to three (flow, pools and dry). To validate the methodology based on the use of interviews, inhabitants of villages and small towns near to gauging stations were asked to fill the questionnaire.

The preliminary results on temporary stream regimes derived from interviews were rather consistent with those obtained from discharge data. However, two main sources of uncertainty were found; one was due to disparate responses to questionnaires done at the same river reach, and the other was related to the low accuracy of gauging stations for detecting flow cessation.