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Assessing the effect of additional information on operational drought management decisions in the Ebro basin

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The contribution of information to improve decisions largely depends on the capacity of the user to change the course of action as a result of new information. Therefore, a good knowledge of the decision processes that the information can contribute to improve is crucial to developing useful datasets and ensure that these reach the users that can benefit from them. Here we examine operational drought management decision processes in the Ebro basin and how the role of information on them can be assessed.

First we consulted decision makers' at basin, irrigation district and farmer scale to better understand their decision processes and how they use information to support them. This allowed us to identify the courses of action available to the farmers and water managers and analyse their choices as a function of the information they have available to them. A decision model representing the interrelated decisions of the irrigation association and farmers was built with the aim to assess the effect of additional information on the decisions. The modelled decisions on allocation of water are determined by the expected availability of water during the irrigation season, which is primarily informed by reservoir level data from the automatic stations. The decision model was extended to include additional information on snow cover from remote sensing. The additional information was found to contribute to better decisions in the simulation and ultimately higher benefits for the farmers. However, the ratio between the cost of planting and the market value of the crop proved to be a critical aspect determining the course of action and the value of the information.