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## Modelling the long-term change in the hydrological regime of the Meuse and Mosel catchments. Effect of active forestry?

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Observed changes in hydrological behaviour of catchment are often due to complex interacting factors that are difficult to identity. This is especially true for large catchments where both natural and artificial factors interact.

Recently, in the Meuse and Mosel catchments the rainfall runoff relationship over the past 100 years was determined. Both catchments demonstrated a change in hydrological regime between the years 1930 - 1960 that could not be explained by taking into account historical land use scenarios.

We have investigated the hypothesis that this change in behaviour is associated with a change in forest management practice. The indicated period was in fact characterized by active forestry activity, in response to the high wood demand of the mining industry. The increased evaporation demand of growing forest has seldom been considered in land use change studies, although it may have important consequences for the water balance.

Although the investigated hypothesis requires further historical proof, our results indicate that it may explain the observed change in hydrological regime.

In our approach we use the concept of iterative model improvement, where we start with a simple structure and stepwise introduce further complexity. In this framework, a basic conceptual hydrological model has been improved progressively adding and testing new hypotheses of catchment behaviour.