



## **The Water Balance Portal in Saxony – An interactive web application concerning the impact of climate change on the water balance**

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Changes in weather and climate lead to increasing discussions about reasons and possible future impacts on the hydrological cycle. The question of a changed distribution of water also concerns the federal state of Saxony in the eastern part of Germany. Especially with a look at the different and increased requirements for water authorities, water economy and the public. To define and prepare these future requirements estimations of the future development of the natural water resources are necessary. Therefore data, information, and forecast concerning the development of the several components of the water balance are needed.

And to make the obtained information easily available for experts and the public, tools like the internet have to be used. Under these frame conditions the water balance portal Saxony ([www.wasserhaushaltsportal.sachsen.de](http://www.wasserhaushaltsportal.sachsen.de)) was developed within the project KliWES.

The overall approach of the project was divided into the so-called „3 pillars“. The first pillar focused on the evaluation of the status quo water balance from 1951-2005 by using a complex area-wide analysis of measured data. Also it contained the generating of a database and the development of a physically based parameter model. Furthermore an extensive model evaluation has been conducted with a number of objective assessment criteria, to select an appropriate model for the project.

The second pillar included the calibration of the water balance model and the impact study of climate and land use change (1961-2100) on the water balance of Saxonian catchments. In this context 13 climate scenarios and three land use scenarios were simulated. The web presence of these two pillars represents a classical information service, which provides finalized results at the spatial resolution of sub-catchments using GIS-based webpages.

The third pillar focused on the development of an interactive expert system. It allows the user (public, officials and consulting engineers) to simulate the water balance with user defined catchment parameters for catchments in Saxony under recent climatic und climate change conditions.