



Integrated Water Resources Management under global change in central Europe: Impacts, uncertainty and adaptation

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Central Europe is a region in transition, climatically from maritime to continental and in terms of climate change from regions of increasing precipitation in the west and north of Europe to regions of decreasing precipitation in central and southern Europe. The Elbe basin, a trans-boundary catchment with its main river flowing from the Czech Republic through Germany into the North Sea, was selected in the framework of the German GLOWA (GLObal WAter) project to investigate the possible impacts of global change in this region.

The Elbe basin is representative of humid to semi-humid landscapes in central Europe. Water availability during the summer season is the limiting factor for plant growth and crop yields, especially in the loess areas with high crop productivity despite annual precipitation lower than 500 mm. The climate projections show that the water availability might even decrease under scenario conditions. It is therefore necessary to assess the reliability of water supply under climate change for the water-related sectors in the basin. This has to be done considering all relevant actors including the ecology and considering possible feedbacks. The study will show the methodological approach, the modeling concept and first results for the next 50 years, a time scale relevant for the implementation of water and land use management plans. Thereby, the focus is on the development of droughts and flow generation under climate change including uncertainty analysis. The results show that societies and nature in central

Europe will have to deal with severe water shortages under scenario conditions especially during the summer season.