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The Elbe River Basin

The Elbe region is the driest of the major river basins in Germany due to its comparatively low precipitation (around 600 mm/a), and has the lowest mean water availability. Dry periods and periods of drought with their associated problems of water availability and water stress for both ecosystems and water users thus occur more frequently, last longer, and sometimes involve serious issues of conflict as regards water use and distribution. At the same time, as the flood of August 2002 clearly demonstrated, flooding with disastrous effects can occur.



Area: 148.268 km²
 Length: 1.165 km
 Mean discharge (North Sea): 844 m³/s
 Population: 25 Mio
 source: BfG

Further informations:



www.glowa-elbe.de



Global Change Impacts on the Water Cycle in the Elbe River Basin - Risks and Options



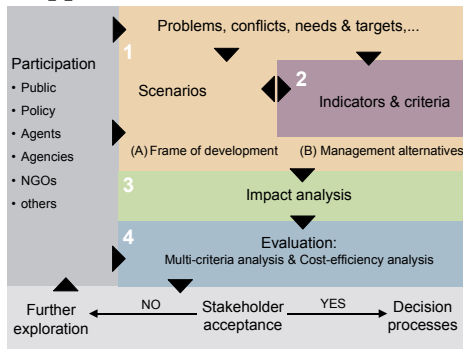
A Project in the GLOWA
 - Global Change in the Water Cycle -
 research initiative of the
 German Federal Ministry of Education and
 Research (BMBF)



Research questions

- How will regional temperature and precipitation conditions - particularly precipitation extremes - change in the Elbe region?
- What consequences do the social changes in the region have on water demand and on nutrient and pollutant emissions to surface waters?
- How do climate change and social change affect water availability, water demand and availability of surface water?
- What direct and indirect effects does global change have on the quality of surface waters?
- What alternative policy strategies exist for the German part of the Elbe basin, how should they be evaluated and which are the preferred options to be recommended to stakeholders in different scenarios of global change?

Research approach



The Integrated Methodological Approach (IMA) has been developed within the framework of GLOWA-Elbe for assessing global change effects on the water cycle. The IMA combines different methods as scenario technique, simulation studies, multi-criteria validation of effects and analysis of validation differences between actors and users to a work flow scheme.

Aims

Analysis of the regional impacts of global change on the Elbe region and appropriate policy strategies for surface water management.

Global change challenges long-term planning in water management. Practical management requires plausible and consistent scenarios of possible climatic, technological and social developments and their impacts, as well as assessments of these. The contribution of the GLOWA-Elbe project in this field of research is significant:

(1) The impacts of global change will be estimated and related to developments, which are conceivable already.

(2) Policy options which influence various effects of global change will be investigated.

Assessment of these options on the basis of a comprehensive system analysis will deliver recommendations for adapting water management to the challenges of global change in the Elbe basin. In the spirit of sustainability, detrimental effects on the ecological functions of water bodies and the corresponding land surface and wetlands should be kept as low as possible, while water management options should be aimed as far as possible to balance the conflicting interests of policy-makers, stakeholders, and society at large.

As part of a broader task which comprehends the management of surface and groundwater, GLOWA-Elbe II focuses on management problems in two fields of conflict, where a great requirement for information and consultation exists: surface water availability and surface water quality.

Working group AG GLOWA-Elbe:

Definition, Realisation and Controlling

Prof. Dr. Wolfgang Cramer (Projectleader)

Prof. Dr. Bernd Hansjürgens, UFZ (Deputy leader)

Prof. Dr. Volkmar Hartje, TU Berlin

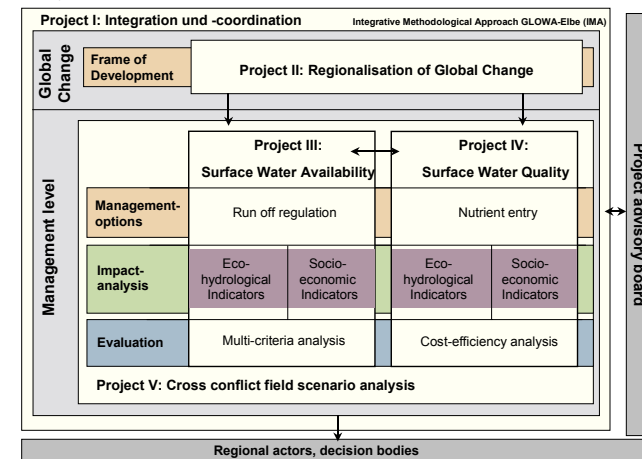
Prof. Dr. Stefan Kaden, WASY Ltd.

Dr. Horst Behrendt, IGB Berlin

Integration/Coordination

Dr. Frank Wechsung (on behalf of the working group AG GLOWA-Elbe)

Projektstructure



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