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## When water crosses political boundaries – dependencies and intensified scarcity

**Title of the dissertation** Global analyses of drivers of water scarcity indicators in transboundary river basins

**Contents of the dissertation** Limited resources and increasing demand strain the competition for water, especially when river basins cross political boundaries. One of the key challenges is allocating shared water resources and their benefits between different countries. This sets transboundary water scarcity analysis apart from other water scarcity analysis.

The thesis conducted a global analysis of the past, present and future projections of transboundary water scarcity and provides information to improve the understanding of the causes and factors involved. Within the thesis, a novel framework was developed to understand the evolution of transboundary water scarcity over time and to assess downstream dependencies on upstream water use.

The thesis found that although many downstream areas are highly dependent on upstream water resources, the key driver for increased water scarcity has been, and will be in future, local water use. It is therefore important to manage both local and upstream water use and action to avoid scarcity. In future water scarcity in transboundary river basins will mostly intensify in basins which are already under stress. The potential hotspots identified in the analysis provides insights to policymakers to support the long-term water management planning in those basins.

**Field of the dissertation** Water and Environmental Engineering

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