

## Temporal variability of suspended sediment transport in Germany & implications for integrated sediment management

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Human intervention has strongly altered the transport of suspended sediment and associated contaminants in many river systems on Earth. Increased land use pressure within many river catchments resulted in increased soil erosion and hence supply of fine sediment to rivers. In contrast, the construction of dams and reservoirs for energy and navigation purposes lead to a reduction of the transport capacity of streams and hence to a reduction of suspended sediment transport.

Suspended sediment transport in Germany is monitored in the inland waterways by the German Water and Shipping Authority since 1965 at approximately 60 gauging stations. These data provide valuable information on the long-term trends of suspended sediment transport in Germany. Here, we present an analysis of the long-term trends of selected stations of five Central European river catchments (eg. river Rhine, Elbe, Main, Neckar, Moselle and Weser). These river systems cover a broad range of topographic, climatic and geologic settings with various land use and river management histories. To identify the major causes of changing suspended sediment transport, we analyze changing climate and land use properties within these river catchments.

Preliminary results indicate that many river systems in Germany show decreasing suspended sediment loads for various reasons. Decreasing suspended sediment loads in the Rhine catchment (including the tributaries of the Main, Neckar and Moselle) are mainly caused by the construction of dams in the Upper Rhine and the Rhine tributaries. In contrast, decreasing suspended sediment transport in the Elbe catchments seems to be the results of the transformation of the land use in East Germany after the reunion of East and West Germany in 1990. The results of this study are discussed in terms of the implications for integrated sediment management at the catchment scale.