



Evaluation of global water quality - the potential of a data- and model-driven analysis

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The ongoing socio-economic development presents a new challenge for water quality worldwide, especially in developing and emerging countries. It is estimated that due to population growth and the extension of water supply networks, the amount of waste water will rise sharply. This can lead to an increased risk of surface water quality degradation, if the wastewater is not sufficiently treated. This development has impacts on ecosystems and human health, as well as food security. The United Nations Member States have adopted targets for sustainable development. They include, inter alia, sustainable protection of water quality and sustainable use of water resources. To achieve these goals, appropriate monitoring strategies and the development of indicators for water quality are required.

Within the pre-study for a 'World Water Quality Assessment' (WWQA) led by United Nations Environment Programme (UNEP), a methodology for assessing water quality, taking into account the above-mentioned objectives has been developed. The novelty of this methodology is the linked model- and data-driven approach. The focus is on parameters reflecting the key water quality issues, such as increased waste water pollution, salinization or eutrophication.

The results from the pre-study show, for example, that already about one seventh of all watercourses in Latin America, Africa and Asia show high organic pollution. This is of central importance for inland fisheries and associated food security. In addition, it could be demonstrated that global water quality databases have large gaps. These must be closed in the future in order to obtain an overall picture of global water quality and to target measures more efficiently. The aim of this presentation is to introduce the methodology developed within the WWQA pre-study and to show selected examples of application in Latin America, Africa and Asia.