

# The Adaptiveness of IWRM Analysing European IWRM research

**Deliverable of the NeWater project -  
New Approaches to Adaptive Water Management under Uncertainty**

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Community research

## The Adaptiveness of IWRM Analysing European IWRM research

Editors: Jos G. Timmerman,  
Claudia Pahl-Wostl and Jörn Möltgen



### Is water management ready to face future challenges?

Integrated Water Resources Management (IWRM) is for a long time considered to be able to cope with complex water management problems. In many cases the different goals are in conflict and the notion “integrated” indicates clearly that water resources management should be approached from a broad perspective taking all potential trade-offs and different scales in space and time into account. Current challenges faced in water management are inherent in the variability and changing nature of water supplies as a result of climate change, along with the limited nature of scientific information and technical knowledge. Water management, based on the concept of IWRM, fails to satisfactorily deal with the problems it is facing and a more adaptive approach towards water management is needed.

To test if advances in European research on Integrated Water Resources Management are sufficient to perform under a situation of complexity and uncertainty, a review was conducted that covered a wide range of EU research projects. This review took off from the notion that an adaptive approach was needed, and assessed whether the available results from research accounts for the need to deal with complexity and uncertainty. The review focused on the following topics:

- Participation;
- Transboundary regimes;
- Economics;
- Vulnerability;
- Climate change;
- Advanced monitoring;
- Spatial planning;
- Social dimensions of water management.

The achievements of the selected EU research projects were considered in view of how IWRM responds to the complexity and uncertainty in water management. These achievements were positioned in a wider context of worldwide developments in the respective topics that would account for the future challenges. From this

### The book

The results of the review are collected in a book. The book explains IWRM and the need for adaptive approaches in detail. The respective chapters of the book describe the reviews of the abovementioned topics. The book thus portrays the topics relative to their adaptiveness. Finally, the findings of the book are summarised as described below.

The book provides a scientifically sound overview of the state of the art in research on the selected topics in a language that is understandable for a wide, interested audience. The book also presents insights into the expected and preferred developments in research in different scientific disciplines. It is therefore a solid reference base for a wide audience to understand the most recent developments in water management as well as gives directions for relevant research areas.

### The conclusions

From the book it is concluded that European water management research already addresses many of the future challenges. However, it is also concluded that to enable a transition towards adaptiveness in water management European research should focus specific attention towards:

- Improving disciplinary integration, among others on issues like equity and fairness, and policy sectors like spatial planning.
- Improving application of an integrative concept of vulnerability that includes resistance and resilience of systems next to exposure, and accounts for the human dimensions of vulnerability.
- Building of trust and social capital for problem solving and collaborative governance in water management.
- Developing governance models in transboundary situations where cooperation is difficult because of a lack of trust.
- Participation in a transboundary context, taking into account the differences in water management competences and political processes between countries.
- Building empirical evidence on successes and failures in water management strategies and the circumstances under which the strategies perform best.
- Developing an improved understanding of the consequences of climate change along with implementing new approaches to deal with uncertainty and scenario planning.
- Developing an integrated perspective on water information management in which information supports all the phases of the decision process.

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