

Relevance

The concept of integrated water resources management (IWRM) has become a prominent guiding principle in water research and practice. A major criticism levelled at the IWRM concept, however, is the continuing difficulty of transferring the theoretical overall concept into methods that can be applied in practice. At the same time, technical advances in operational water governance are massively increasing the amount of data and information available. Unless people have access to suitable methods for meaningfully analysing and categorising this input, it will exacerbate uncertainty in water management. Multiple stakeholders, and numerous different methods and tools running in parallel are causing significant delays to decision-making processes in water management. This is where the joint research project comes in. It will develop integrated solutions for water resources management and governance by shortening the reaction times in institutions actively involved in water management. In doing so, it will make a substantial contribution to increasing good governance in the water sector.



German project partners



South African cooperation partners



Project coordination

**IEEM gGmbH**
Institute of Environmental
Engineering and Management at the
Witten / Herdecke
Alfred-Herrhausen-Str. 44
58455 Witten, Germany
Phone: +49 / (0)2302 / 91401 - 0
Fax: +49 / (0)2302 / 91401 - 11
Email: mail@uni-wh-ieem.de
Internet: www.uni-wh-ieem.de

Contact

Jens Hilbig M.A.
Project manager
jens.hilbig@uni-wh-ieem.de

M.Sc. Dariusz Musiol
Project engineer
dariusz.musiol@uni-wh-ieem.de

Prof. Dr. mult. Karl-Ulrich Rudolph
Project supervision
karl-ulrich.rudolph@uni-wh-ieem.de

www.iwagss-grow.de www.iwagss.com

Literature

MOSA – Integrated Water Resources Management in the „Middle Olifants“ river basin, South Africa, Phase II Summary Report (ISBN 978-3-9818108-0-6)

Monitoring of Wastewater in Real Time using Toxicity screening for the technical and economical Optimisation of Wastewater Systems (Rudolph et al., 2015, Korrespondenz Abwasser Abfall Nr. 6/15)

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iWaGSS
Integrated Water Governance
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**IEEM gGmbH**
Institute of Environmental
Engineering and Management at the
Witten / Herdecke

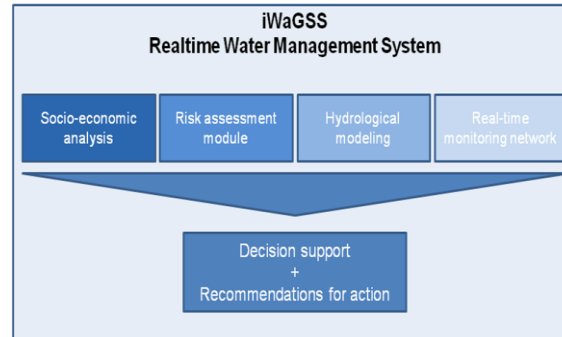
The GRoW funding measure

As part of the United Nations' 2030 Agenda for Sustainable Development the Sustainable Development Goal 6 (SDG 6) specifically aims to „ensure availability and sustainable management of water and sanitation for all“. By 2030, everyone should therefore have access to clean drinking water and adequate sanitation systems, and water-related ecosystems should be protected or restored as natural resources. With its Global Resource Water (GRoW) funding measure, which is part of the “Research for Sustainable Development (FONA)” framework, the German Federal Ministry of Education and Research (BMBF) is helping to achieve SDG 6.



The iWaGSS Project

The objective of the research project iWaGSS is the development and practical pilot implementation of an innovative water governance system basing on new technologies and tools for mitigating water stress and for a sustainable management of the water resources in the South African pilot region as well as in other regions with overstressed water resources in Africa and worldwide.



Basing on current research and new methods (such as realtime online monitoring), the sustainable water governance system to be developed under the iWaGSS joint research project will contribute to identify and minimise the risks for sustainable water supply, to increase the efficiency of water utilisation and to protect natural resources and ecosystems. Transboundary water governance, which is a main concern in the selected pilot region, is also included in the work programme.

iWaGSS – main components

- A real-time water management system basing on
 - a network of water quality monitoring stations
 - river modelling and
 - risk-assessment tools
- Economic studies on water efficiency, ecosystem goods and services and cost-benefit analysis
- Numerical simulations and measurement campaigns to analyse sediment and remobilisation behaviour within the Phalaborwa barrage

- Operational measures (development of operational schemes for the Phalaborwa barrage, improved wastewater treatment, water management options for the industrial sector)
- Use of drones for river monitoring
- Transboundary water governance issues

Pilot zone

The consortium of international cooperation partners has selected the Lower Olifants sub-catchment as the primary iWaGSS demonstration area including the Phalaborwa pilot zone. This pilot region has been selected in close cooperation with South African partners and stakeholders because the development of the region in terms of its ecological diversity and sustainability as well as economic progress and social stability is particularly vulnerable to water-related problems, including transboundary water issues. Thus the chosen area can be seen as representative for other basins and should be appropriate to proof scalability and transfer of research and innovation results to other regions.

