

COMMUNITY-BASED SUSTAINABLE WATER MANAGEMENT AND OBSERVATION SYSTEM (CoSMOS)

Initial Phase

PROJEKTINFORMATIONEN

FÖRDERGEBER:

Bundesministerium für
Bildung und Forschung (BMBF)

LAUFZEIT:

2018-2020

PROJEKTPARTNER:

Institute of Environmental Engineering and Management at the Witten/Herdecke University (IEEM), GIS and Digitalisation at OWL University of Applied Sciences and Arts (TH-OWL), Environmental Engineering + Ecology at Ruhr-University Bochum (eE+E), Disy Informationssysteme, DIE GEWÄSSER-EXPERTEN!, chromgruen, IBC Ingenieurtechnische Beratung Christoffels, South African National Parks, Centre for Environmental Studies at University of Pretoria, School of Biology and Environmental Sciences at University of Mpumalanga, Letaba Water Users Association, Kaap River Valley Major Irrigation Board, Inkomati-Usuthu Catchment Management Agency, Water Research Commission (assoc.), GIZ South Africa (assoc.), Department of Water Affairs and Sanitation DWS (assoc.)

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Hintergrund

South Africa is a country facing increasing water scarcity and additionally struggling to keep up with a growing population. Consequently, the country needs to secure water supply for economic development in the face of climate change. South Africa is facing several water-related challenges - both resource-related (e.g. water stress, deteriorating water quality) as well as governance-related challenges (e.g. mismanagement, collapsing infrastructure). This is manifested for example by the deterioration of water and wastewater infrastructure or the lack of a comprehensive water quality monitoring network. Previous research and practical experience have shown that top-down approaches to establish sustainable catchment and resources management as outlined by national legislation (RSA 1997, 1998) have not yet been completely implemented, and consequently have not achieved the expected results. Informal actors and local stakeholders have increasingly stepped in to fill the gaps in formal governance systems for water management, although these actors frequently lack the appropriate capacities, resources or mandate.

Ziel des Vorhabens

The objective of the Research and Development (R&D) project, outlined here, is to design and establish a "Community-based Sustainable Water Management and Observation System" (CoSMOS) for the mitigation of water quality problems and detrimental drought effects on water availability at the river basin level. Community-based social and citizen science approaches are characterised by a bottom-up water management and governance strategy to bridge implementation gaps of official water management institutions. Focusing on collaborations between local stakeholders, single water users and Water User Associations, the project will establish a system of best practice examples in co-existence with governmental and administrative water management institutions.

Vorgehensweise

The main phase of the project, to be applied for in 2023, shall combine Intelligent Geodata Management and Modelling to generate appropriate information on water resources with a pilot-solution designed for a sustainable Water Reuse and Wastewater Utilization. It will tackle water-related quality and supply deficits on community and river basin level. The concept will strengthen Public Participation and Local Socio-Economic Development, being flanked by concrete concept solutions to improve the ecosystem status by Ecological Optimisation of Water Bodies and Biotope Networks with focus on Near-to nature Solutions. CoSMOS can build on its' previous R&D outcomes and implementation in the target region and has located a pilot community with ideal conditions to leverage R&D funding and replicate the pilot solution throughout the WASA area.

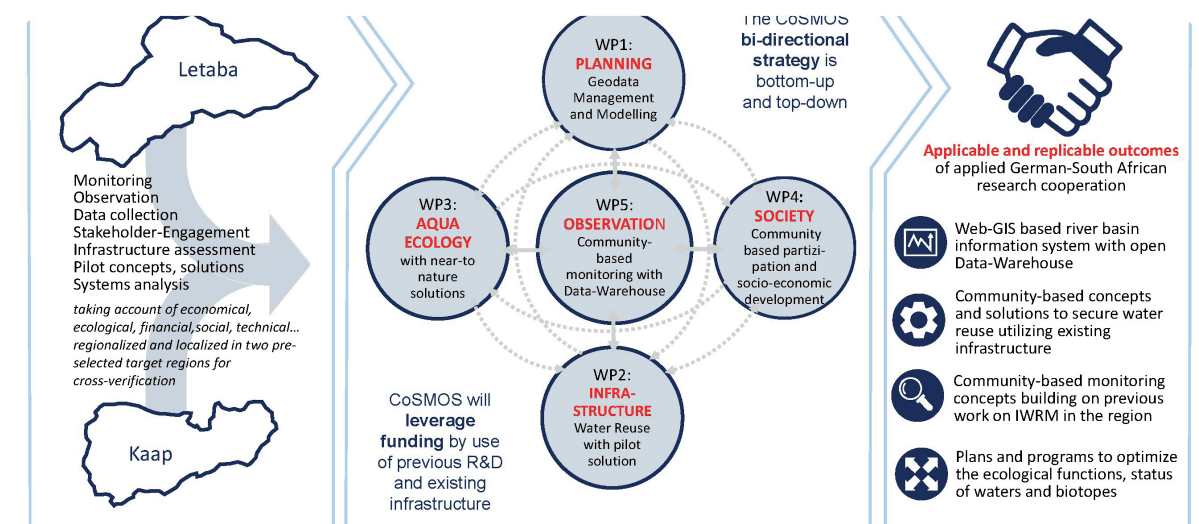


Abb. 1: Schematische Übersicht des Projektes