

KEY ACHIEVEMENTS – SOUTH AFRICA

The Water JPI, launched in December 2011, as a ground challenge-oriented research cooperation network, is deeply committed to provide innovative solutions to the Water Challenges faced by the entire world.

Water is at the heart of all aspects of sustainable development (agriculture, food production and security, ecosystem sustainability and biodiversity, and urban area development) or central to several thematic areas (e.g. climate change adaptation or mitigation measures).

THE PARTICIPATION OF SOUTH AFRICA

The **Water JPI membership** resulting in an expanding partnership that accounts for 88 per cent of all European public RDI annual expenditure on water issues.

- ▶ 23 member countries from Europe and beyond – including Israel, Norway, Republic of Moldova, **South Africa** and Turkey
- ▶ 3 observer countries – Belgium, Greece and Hungary
- ▶ 5 partner countries associated in joint actions – Brazil, Canada, Egypt, Taiwan and Tunisia

South Africa joined the Water JPI in 2014 and participated in 4 calls and also contributes to the knowledge hubs :

- ▶ 2015 Joint Call on Waste water treatment and water reuse
- ▶ 2016 Joint Call on Water challenges in agriculture, forestry and freshwater aquaculture in 2016
- ▶ 2017 Joint Call on Water resource management in support of the United Nations Sustainable Development Goals (UN SDGs)
- ▶ 2018 Joint Call on Closing the Water cycle gap – Sustainable management of water resources
- ▶ The first knowledge hub on Contaminants of Emerging Concern, launched in March 2018
- ▶ The new knowledge hub on Sustainable Development Goals (SDGs), to be launched in end 2019

South Africa is represented in the Water JPI by the Department of Science and Technology and the Water Research Commission, a public entity established through the Water Research Act of 1971.

CONTACT INFORMATION

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WATER CHALLENGES IN SOUTH AFRICA

- ▶ A Water Scarce country, with uneven distribution of rainfall across South Africa
- ▶ 98% of all water resources already allocated, and is predicted that by 2030 demand will outstrip supply by 17%
- ▶ Non-revenue water still a huge challenge
- ▶ Managed via a large number of dams all over South Africa that store this precious water, and a number of water transfer schemes that move water from one catchment via pumps, pipes and canals into another catchment
- ▶ Water demand in progress: Agriculture (60%), Environmental use (18%), Urban and Domestic use (11,5%) and Mining / Industrial use (10%)

WATER JPI JOINT CALLS



SOUTH AFRICA IN WATER JPI JOINT CALLS





SOUTH AFRICA IN WATER JPI RDI PROJECTS



Improving ecosystem sustainability and human well-being



Safe water systems for citizens



A water-wise bio-based economy



Closing the water cycle gap



Competitiveness in the water industry



2015 Joint Call

- ▶ **IMDROFLOOD** – Improving Drought and Flood Early Warning, Forecasting and Mitigation using real-time hydroclimatic indicators - **University of Cape Town**

2016 Joint Call

- ▶ **OPERA** - Operationalizing the increase of water use efficiency and resilience in irrigation - **Stellenbosch University**

2017 Joint Call

- ▶ **IDOUM** – Innovative Decentralized and low cost treatment systems for Optimal Urban wastewater Management - **Council for Scientific and Industrial Research**
- ▶ **MADMACS** – Mass development of aquatic macrophytes – causes and consequences of macrophyte removal for ecosystem structure, function, and services - **Centre for Biological Control, Rhodes University**
- ▶ **NANO-CARRIERS** – Micro- and nanoplastics as carriers for the spread of chemicals and antibiotic resistance in the aquatic environment - **Durban University of Technology**
- ▶ **URBWAT** – Designing, implementing, monitoring and understanding a grey water drainage and partial treatment system within an urban informal settlement - **University of the Witwatersrand, Johannesburg**

2018 Joint Call

- ▶ **ENTRUGO** – Enhancing trust in government through effective water Governance strategies - **African Climate & Development Initiative, University of Cape Town**
- ▶ **EVIBAN** – Evidence based assessment of NWRM for sustainable water management - **Stellenbosch University Water Institute**
- ▶ **NATWIP** – Nature Based Solutions for Sustainable and Resilient Water Management in the Anthropocene - **Faculty AgriSciences, Stellenbosch University**
- ▶ **NEWTS** – Nudges for Economics of Water Tariffs - **Economics Policy Research Unit**
- ▶ **RAINSOLUTIONS** – Research-based Assessment of Integrated approaches to Nature-Based solutions - **Universities of Johannesburg and Pretoria**
- ▶ **SENSE & PURIFY** – Combining remote sensing with in-situ sensing to track the spatial and temporal in fresh and transitional waters - **University of the Western Cape**

More at: <http://www.waterjpi.eu/joint-calls>

FOCUS ON URBWAT – 2017

THE PROJECT COORDINATED BY UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG



A project to provide Accessible Greywater Solutions for Urban Informal Townships! URBWAT aims at designing, constructing and studying a grey-water reticulation and treatment system within urban informal settlements. Conceptually, the system will consist of a network of local disposal points, connecting to multiple subsurface flow constructed wetlands (CWs) throughout the study area and draining to either a storm-water system or sewers. The CW will provide in-situ treatment, hygienisation and divert grey water (and any sewage) from the street to protect the local population. Participating researchers and PhD students will combine experiences from community work with frontier microbial genome studies and wastewater chemical engineering research to optimize the system functioning in response to user demands.

In cooperation with Helmholtz UFZ in Leipzig, Germany, and Linköping University Sweden.

More at: <https://www.wits.ac.za/news/latest-news/research-news/2019/2019-02/when-the-water-flows-in-alex.html>