

THE NEW CWRR NEWSLETTER

Welcome to the second issue of the CWRR Newsletter 2026. As always, the CWRR Newsletter carries news and updates from our members, including staff, associates and students. For contributions, suggestions and queries, please email Dr Shaeden Gokool, GokoolS@ukzn.ac.za



PROJECT LAUNCH OF THE OPERATIONAL NATIONAL WATER RESOURCES ACCOUNTING SYSTEM FOR SOUTH AFRICA

The Water Research Commission (WRC) launched a five-year project on 23 March 2026 in Pretoria to develop a dynamic, updateable water resource accounting system for South Africa. The project aims to produce spatially and temporally consistent water resource accounts, using both measured and modelled data, to support informed water management at national and local scales. Groundwater and water quality components will also be incorporated to some extent.

The CWRR is the lead organisation, with the team including Dr Schütte (PL), Dr Gokool, Mr Kunz, Mr Horan, Prof. Smithers, Prof. Schulze, Ms K Chetty, Dr Mahomed, Prof. Clulow and Mrs M Chetty. Contractual partners are the South African Weather Service (Prof. Kruger and colleagues), the South African Environmental Observation Network (Dr Pienaar and colleagues), the Agricultural Research Council (Dr van der Laan) and North-West University (Prof. Gurmesssa and students).

Speakers at the launch included Mr Mahlobo (Deputy Minister of Water and Sanitation), Prof. Liphadzi (acting for the WRC CEO), Dr Matlala (DDG, DWS), Mr Maluleke (Statistician General, Stats SA), Dr Adams (Programme Director, WRC), Dr Schütte (CWRR/UKZN) and various stakeholders from the Council of Geoscience, WISA, Magalies Water, ESKOM and MISA.

An inception workshop followed on 27 March, attended by 44 participants from government, academia, and industry. The workshop introduced the project, gathered stakeholder input, identified potential water-use data sources, and refined the proposed methodology based on feedback, ensuring alignment with stakeholder needs and priorities.



PUBLICATIONS

- Najafi, H., Lagerwall, G. L., Obeysekera, J., & Liu, J. (2026). Machine learning in climate downscaling: A critical review of methodologies, physical consistency, and operational applications. *Water*, 18(2), 271. <https://doi.org/10.3390/w18020271>

FROM FIELD TO FUTURE: UKZN ENGAGES IN DIGITWATER EXCHANGE IN UGANDA

From 28 February to 14 March, representatives from the University of KwaZulu-Natal (UKZN) and the Centre for Water Resources Research (CWRR), including Mark Horan and PhD candidate Evania Chetty, participated in the DIGITWATER project in Uganda alongside project partners from Uganda, Ethiopia, and Belgium. This EU co-funded initiative aims to strengthen higher education and research in water resource management through the use of innovative digital technologies, with a strong focus on collaboration across Sub-Saharan Africa.

The first week, based in Mbale City, involved intensive fieldwork in the Manafwa catchment, where students and academics from partner institutions collected water quality and resource data across multiple sites. This provided valuable hands-on experience in monitoring techniques and real-world water management challenges.

During the second week at Kyambogo University, participants focused on data analysis, report writing, and presentations, while academic staff engaged in curriculum development discussions. The programme concluded with a stakeholder session exploring project sustainability and regional impact.

This integrated experience directly supports DIGITWATER's goal of equipping students with the skills to address real-world water resource challenges.



FROM CATCHMENT TO BIOSPHERE: MOMENTUM FOR KZN'S FIRST UNESCO RESERVE

Momentum is growing around the proposed Greater uMngeni Catchment Biosphere Reserve (GuCBR), with strong involvement from CWRR members in shaping this landmark initiative. Once approved by the South African Cabinet and UNESCO in Paris, it will become KwaZulu-Natal's first UNESCO-recognised Biosphere Reserve.

Support continues to expand across sectors. The uMgungundlovu District Municipality has formally endorsed the initiative, reaffirming its commitment to water resource protection, biodiversity conservation, waste management, and climate resilience.

With water quality, availability, and access at its core, the GuCBR is gaining traction among landowners, local communities, government, and industry. Its value is increasingly evident, particularly in safeguarding ecosystem services and enhancing downstream water quality. Notably, recent studies highlight significant improvements in water quality as it flows through the uMngeni Valley Nature Reserve. To learn more or get involved, contact Mark Graham or Jim Taylor at jim.taylor835@gmail.com.

DROPS OF KNOWLEDGE, WAVES OF CHANGE ON WORLD WATER DAY



On 22 March 2026, in celebration of World Water Day, Dr Thando Mthembu represented the Centre for Water Resources Research (CWRR) at the Water Smart Programme hosted by UKZN's Residence Life team. Participating as both a guest speaker and judge, he engaged with students during an inter-residence competition featuring William O'Brien (WOB), Petrie, and Haloprop residences.

Dr Mthembu delivered an insightful presentation titled "Water Use and Irrigation for Food Security", highlighting the fundamental role of water in sustaining life and livelihoods. He noted that although water covers most of the Earth, only approximately 1% is readily accessible as freshwater—underscoring the urgency of responsible and sustainable water resource management.

Focusing on the South African context, he emphasised the significant water demands of the agricultural sector and the importance of efficient water use in ensuring long-term food security. His talk also extended beyond the science, encouraging first-year students to consider careers in hydrology and water resources, and showcasing the field as both impactful and essential in addressing future environmental challenges.

The event provided a valuable platform to raise awareness, inspire young minds, and promote water-conscious thinking among the next generation.