

THE NEW CWRR NEWSLETTER

Welcome to the first 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



NOTE FROM THE CWRR DIRECTOR

The start of 2026 has already seen several positive developments for the CWRR. During 2025, a significant effort went into submitting research proposals to various funders, and we are pleased to report that several of these were successful. Of the ten proposals submitted to the WRC by, or involving, the CWRR, the following four were successful and are now up and running:

-  *Translating WRC Research into Practice for Sustainable Catchment Management.* PL: Rebecka Henriksson
-  *Setting up an Operational Water Resources Accounting System for South Africa.* PL: Stefanie Schutte. This is the largest budget project ever secured by the CWRR!
-  *Improving the Management of Strategic Water Resource Areas using Deep Learning and Remote Sensing.* PL: Feroza Morris-Kolawole.
-  *Innovative Applications of Nuclear Sciences for Enhancing Water Security in the WASH Sector in South Africa.* PL: Seifu Kebede Gurmessa.

Even though it may not seem like it, a 40% success rate is very good by international norms. Congratulations to the above project leads (PL) and teams on these project awards!

I would like to thank the following members who accepted nominations to serve on the CWRR ManCo in 2026: Duncan Hay, Michele Toucher, Stefanie Schutte, Maqsooda Mahomed, Richard Kunz, Shaeden Gokool, as well as Tinisha Chetty, who continues to serve as Operations Manager. Thando Mthembu continues with his role as the student representative on ManCo. Plans and actions for the year will be shared with members once these are finalised.

Given the nature of our business, securing projects and growing partnerships will again be priorities for the CWRR during 2026. CWRR Members, Associates and Students are encouraged to contribute actively to our research, partnerships and collaborative activities during the year. I look forward to another productive year of collaboration and research.

Warm regards, Jeff

DR GOKOOL AMONG UKZN'S TOP YOUNG RESEARCHERS

On 5 December 2025, Dr Shaeden Gokool attended the UKZN Research Awards Dinner, an annual event that celebrates research excellence at the University of KwaZulu-Natal. The awards recognise outstanding researchers across several categories, including the Top 30 Researchers, Top 10 Young Researchers (40 years and younger), and Most Cited Researchers.

The selection criteria are based on a weighted assessment that considers DHET-accredited journal publications, books and book chapters, creative research outputs, postgraduate (Master's and Doctoral) student graduations, as well as citation metrics drawn from Scopus SciVal and Google Scholar. At the ceremony, Dr Gokool was recognised among the Top 10 provisional (subject to DHET vetting) Young Researchers at UKZN for 2024, marking a significant academic achievement.



CWRR PHD STUDENTS ADVANCE DIGITAL INNOVATION FOR WATER SECURITY



CWRR PhD candidates Ms Ameera Yacoob and Ms Ntombifuthi Vilakazi recently participated in the Next Generation Digital Action (NGDA) Programme in Copenhagen, Denmark, facilitated by iLambu Global and hosted by DTU Skylab at the Technical University of Denmark. The programme supports early-career researchers in developing digital solutions to address pressing societal challenges, including water security.

Over six months, the students developed innovative, challenge-based digital water solutions through virtual training and collaborative design. Ms Yacoob led LeakNet, a platform aimed at reducing municipal water losses in South Africa through low-bandwidth community reporting, automated classification, and real-time mapping. Ms Vilakazi contributed to a water security solution integrating water quality monitoring, availability assessment, and community-led governance to support decision-making in India. The programme concluded with an in-person week in Copenhagen, where both students presented their work at DTU, exhibited at international innovation events, and engaged global audiences on citizen science and digital water governance.

GLOBAL EXPOSURE IN HYDROLOGICAL MODELLING FOR PHD STUDENT

Last month, CWRR/SAEON PhD candidate Mrs Tasmiyah Peerbhai attended an advanced training course in Hydrological Modelling and Digital Twin Technology, hosted by the IAHS Academy of the International Association of Hydrological Sciences in Ningbo, China. Tasmiyah was one of only six participants selected to receive a SYSTA travel grant, awarded in recognition of high potential among early-career scientists.

The course provided a valuable opportunity to engage with leading international experts, including Professors Salvatore Grimaldi, Fernando Nardi, and Fuqiang Tian. Participants benefited from a well-balanced programme combining theoretical sessions—exploring the evolution of hydrological modelling and the emerging potential of digital twin technologies—with practical, hands-on training. These practical components included applications of the Hydrocraft and SWAT models, as well as a machine learning-based hydrological model.

Mrs Peerbhai encourages postgraduate students and early-career researchers to consider applying to this annual programme, as it presents an exceptional opportunity for professional development, skills enhancement, and international collaboration.



PUBLICATIONS

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- Dangare P, Cronje PJR, Mashimbye ZE, Masanganise JN, Ntshidi Z, Gokool S, Naiken V, Sawunyama T and Dziki S. 2026. Modelling water - use and yield of selected irrigated subtropical crops using machine learning and hybrid models in north - eastern South Africa. *Agricultural Water Management* 324. <https://doi.org/10.1016/j.agwat.2025.110113>.
- Yacoob A, Gokool S, Clulow A, Mahomed M and Mabhaudhi T. 2026. A machine learning approach for quantifying crop water stress in smallholder farms using unmanned aerial vehicle multispectral imagery. *Agricultural Water Management* 324. <https://doi.org/10.1016/j.agwat.2026.110142>.
- Chetty, E, Mahomed, M and Gokool, S. 2026. A comparative analysis of multi-spectral and RGB acquired UAV data for cropland mapping in smallholder farms. *Drones* 10 (1), 72. <https://doi.org/10.3390/drones10010072>
- Schütte S and Schulze RE (2026) 'Critical source areas of diffuse nutrient and suspended solid pollutants – an assessment in two contrasting South African catchments', *Water SA*, 52(1). <https://doi.org/10.17159/wsa/2026.v52.i1.4137>