

Where has all the water gone in South Africa?

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In the ever evolving threat to climate change and increasing water scarcity, research on water supply, delivery, usage and recovery has taken unprecedented, centre stage importance.

Water research in South Africa is typically reported on in terms of research and development expenditures for water, bibliometrics of water research in South Africa as seen in the international context, patent analysis of water inventions and human resources for water research. The water research sector has seen substantial investment over the past decade, escalating from R1.4-billion in 2000 up to R240-million in 2014. However, there are many challenges to providing safe water for all and delivering safe water to all. The country, South Africa, covers a huge geographic surface area, experiences seasonal rainfall and high evaporation rates due to semi-arid climate conditions. Engineering aspects related to water storage, supply and water re-use remain a huge challenge in South Africa due to the fact that technology is impeded by lack of infrastructure to deliver water to communities as well as internal networks for delivery to homes, recycling and safe water storage.

The Water Research Commission is the major driver of knowledge dissemination, research and training and have an extensive online database with resources for water policy, guidelines for South African and global water quality as well as well documented reports on water management in various sectors i.e. dairy industry, sorghum malt and beer industries, red meat industry, poultry industry, sugar industry, paper and pulp industry, textile industry, oil refining and re-refining industry and many other areas pertinent to the South African economy.

Researchers at the University of the Western Cape have participated in advisory, research and teaching and training capacity to build the knowledge hub of South Africa. The Institute for Water Studies (IWS) at the University of the Western Cape was formed in 2009 with the goal of promoting research, postgraduate training, and outreach on water-related issues through the collaborative efforts of UWC staff. The Institute for Water Studies aims to increase the understanding of surface water, groundwater, and ecosystems linkages and how water users are affected and affect these linkages. IWS has a multi-disciplinary approach to its research since water issues cut across disciplines.

Specialised research groups such as SensorLab (Chemistry department, UWC) addressing specific issues in water and waste water quality and management by combining completely novel smart semi-conductive materials with state of the art electrochemical technology in a problem solving approach, to develop new technologies for ultra- low level detection of agents that threaten the safety of our waters.