CRIDF VOICES

Utilising the untapped potential of Southern Africa's aquifers

CRIDF Voices provides a platform for leading figures in Southern Africa's development community to share their perspectives on water-related issues and challenges. In this issue, **Jo McDonnell**, Mobilising Finance Advisor, discusses the potential of Southern Africa's largely untapped groundwater resources – and CRIDF's efforts to mobilise funds to strategically and sustainably utilise this resource for livelihoods and climate resilience.

Q: Why is groundwater so important for Southern Africa?

A: An estimated 70 percent of the 280 million people living in the SADC region currently rely on groundwater as their primary source of water. But the majority have limited access, are forced to walk long distances and face dry wells and water shortages in the dry season. These challenges could be alleviated if extraction levels were higher – currently only 1.5 percent of the region's ample groundwater resources are utilised. This represents a significant untapped potential and means that we are losing an opportunity to help communities adapt to and mitigate the effects of climate change – and generate positive benefits for livelihoods, food security, ecosystems, natural habitats and rapidly expanding urban areas.

Q: Could you provide examples of how groundwater could be utilised?

A: It could provide additional water for agriculture, for instance, in a region where lakes and rivers are already under growing pressure because of the combined effects of climate change and growing populations. It can provide water for industry such as food processing or manufacturing. We have also identified a need along strategic regional transport corridors and border posts. Truck haulage is a large sector in Southern Africa and the border crossings between countries can be huge bottlenecks. With large numbers of cross-border travellers often waiting several days to be processed by customs, people migrate to the border towns seeking informal trading opportunities and the towns can consequently grow at a very fast rate, placing significant burdens on local water resources. Groundwater could be utilised to alleviate these pressures and provide additional water supply and sanitation for both local communities and travellers, addressing the high incidence of waterborne diseases.

Q: How do you ensure that groundwater is used sustainably?

A: It's extremely important to have monitoring equipment when you construct boreholes and to also establish management committees – similar to the River Basin Organisations that oversee surface water resources – to provide governance over the aquifers and monitor extraction rates. Because CRIDF is a climate programme we will also ensure that any groundwater projects are climate smart. So, in the case of agriculture, introducing groundwater for irrigation alongside climate-smart practices such as inter-cropping or drought-tolerant crop varieties.

Q: What are some of the key obstacles that need to be overcome?

A: The scale presents one challenge. Some of the aquifers we're exploring are extremely large and can reach approximately 100,000 km^2 in size. Many also traverse national borders, and therefore require the establishment of a transboundary coordination mechanism to oversee extraction rates and resolve disputes. Another obstacle is access to funding. Funds are needed to undertake the initial research to quantify the amount of water stored in the region's aquifers and their recharge rates, and to determine sustainable extraction rates. To date only three transboundary aquifers have been researched or developed. Funding is also needed for the construction of abstraction infrastructure, boreholes and monitoring equipment.

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Q: CRIDF supports development partners in the SADC region to mobilise funding for water infrastructure projects. Can you describe the work you are doing with the SADC Groundwater Management Institute (GMI)?

A: The SADC GMI is hosted by the University of the Free State, South Africa, under the strategic guidance of the Southern African Development Community (SADC), and they are working to raise the prominence of groundwater in national and regional policy, legal and regulatory frameworks, as well as supporting groundwater projects of regional importance. We are helping the SADC GMI to become more compliant with international climate funders such as the Adaptation Fund so they can do the work needed to unlock the potential of Southern Africa's groundwater: developing regulatory and governance systems, providing gap analyses, benchmarking, and acting as a regional center of excellence and a knowledge hub to support the implementation of groundwater projects.

Q: In your experience is it difficult to mobilise funds for groundwater development?

A: The SADC GMI have secured one large contract through the World Bank but we are working to identify other funding streams to diversify their income, strengthen their organisational development, and allow them to then take the lead and implement a regional groundwater strategy at scale. We often see that the larger international cooperating partners who typically fund water projects in Africa are less interested in funding research projects, which aquifer development requires. They prefer to fund the implementation of infrastructure and development projects, once the research has been undertaken and the water source is secured. CRIDF is supporting the SADC GMI to identify relevant climate funders and develop programmes of work that are more aligned to donor interests.

Q: What does an effective groundwater strategy look like?

A: An effective groundwater strategy would involve a diagnostic analysis – so researching and mapping aquifers to quantify the available groundwater resources, and developing a Strategic Action Plan (SAP) for the sustainable utilisation of the aquifer. This involves bringing together relevant stakeholders to identify extraction projects across the aquifer, align plans to national and regional priorities and prioritise actions; identifying the infrastructure required to extract the groundwater, monitor its utilisation and provide storage; and putting governance mechanisms in place – including for transboundary aquifers.

Q: When you look forward ten or twenty years what would you hope to see in terms of the SADC region's groundwater utilisation?

A: There is growing pressure on the region's surface waters and groundwater utilisation offers a real opportunity to not only alleviate this pressure but also to sustain livelihoods, ecosystems and natural resources against a backdrop of rising temperatures, water scarcity and increasingly variable rainfall. Looking to the future I hope to see the region's countries using this resource strategically and sustainably so that local communities benefit – whether through improved agricultural production, industrial growth or better sanitation and less exposure to waterborne diseases.

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ABOUT THE SERIES

The CRIDF Voices series provides a platform for key actors to share updates and insights on their work in Southern Africa's water sector.

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