



SOUTH AFRICA



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SECURING SOUTH AFRICA'S STRATEGIC WATER SOURCE AREAS

PROTECTED SPRINGS – VITAL FOR WATER AND PEOPLE

ADDRESSING RURAL WATER SUPPLY THROUGH SPRING PROTECTION IN THE EASTERN CAPE DRakensBERG STRATEGIC WATER SOURCE AREA

The upper Umzimvubu catchment in the northern region of the Eastern Cape is a crucial water source for local communities and downstream ecosystems. The region has relatively high rainfall and rugged terrain marked by deep valleys, grasslands and indigenous forests.

The catchment plays a key role in the hydrology of the Umzimvubu River which is one of South Africa's most important free-flowing rivers. With its source in the southern Drakensberg near Matatiele, it flows over 400 km to its estuary on the Indian Ocean at Port St Johns.

The region supports agriculture, forestry and conservation. Unfortunately, it also faces overgrazing and other causes of land degradation, water management challenges, and having to balance environmental and socio-economic needs.

WHY SPRINGS IN THE EASTERN CAPE SHOULD BE PROTECTED

To sustain local livelihoods and provide essential water resources for rural communities, it is crucial that natural springs in the Eastern Cape are protected. Because of the area's diverse topography and semi-arid climate, people in the upper catchment rely heavily on springs as primary water sources for domestic and agricultural use.

Ironically, access to potable water remains limited in the area, and even where built infrastructure exists, it often malfunctions or fails. These springs are thus the safety net that allows rural people to continue to live and access water near their homes. Safeguarding these natural water sources strengthens the safety net for these communities by helping mitigate the impacts of climate change and droughts, reducing health risks, and promoting resilience and sustainability in the region for generations to come.

EASTERN CAPE DRakensBERG WATER SOURCE AREA IN CONTEXT

The main rivers in the Eastern Cape Drakensberg Strategic Water Source Area are the Umzimvubu, Mbashe, Kraai, Tina and Tsitsa rivers supporting approximately 1.2 million people, many of whom don't have access to tap water and who rely on the rivers and springs in the catchment for their water.

The upper Umzimvubu river loses 3.6% of its water to invasive alien trees. That amounts to billions of litres of water that could be used for groundwater recharge, farming and domestic use for households downstream.

South Africa currently has 62 free-flowing rivers, meaning they have long stretches which have not been dammed.

At an estimated cost of R12.5 billion, the next large dams — Ntabelanga and Lalini — are planned on the Tsitsa River, a significant tributary of the Umzimvubu River. These dams aim to supply water for irrigation, domestic and industrial use, and hydropower generation. However, there are concerns that these developments could negatively affect ecological processes and biodiversity in the region. Additionally, the land degradation issues in the upper catchment have the potential of silting the proposed dams.



THE LINK BETWEEN SPRINGS AND LIVELIHOODS

These uses must be considered when planning any spring protection works for domestic supply:



Springs sustain agriculture by providing water for irrigation, livestock and crop production. This safeguards food security and economic stability.



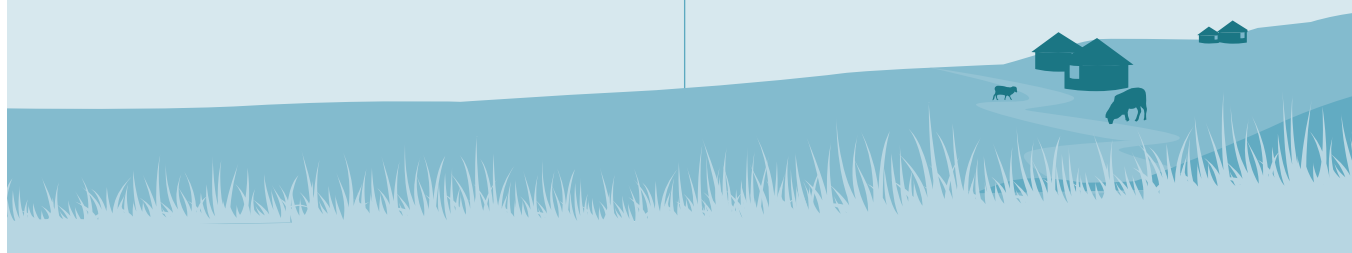
They also help maintain biodiversity which underpins ecosystem services that many livelihoods depend on, including grazing, foraging, thatch-grass and traditional medicine.



Springs supply essential drinking water, supporting the health and well-being of local rural populations.



Many springs have deep spiritual significance and require protection from waste and livestock impacts.



NATIONAL POLICY PRIORITIES FOR SPRING PROTECTION

ADDRESSING RURAL WATER SUPPLY

South Africa is a water-scarce country with socio-economic challenges that affect rural communities disproportionately. In response to this challenge, WWF funded a policy brief that was published in February 2024 addressing the critical issue of rural water supply in South Africa. The brief was entitled *Water for All: Navigating Challenges and Charting Solutions in South Africa's Rural Landscape*, and it emphasises the importance of community-driven solutions in the protection of natural water sources like springs.

The policy brief proposes the integration of cost-effective community-based spring protection models that consider local needs and local skills for any required works. This is a practical and sustainable approach to improve water quality, access and community resilience.

USING DATA

WWF (through its partnership with the WWF Nedbank Green Trust) also funded a hydro-census that was completed in February 2024 to build a database of springs in the upper Umzimvubu catchment, implemented in partnership with

LIMA and Environmental & Rural Solutions. This helps identify springs that are most critical for protection (based on use, flow, position and quality) and which are thus prioritised. A robust spring protection approach is required, tailoring designs to each spring's unique characteristics including the surrounding settlement's attributes, residents' perspectives and landscape influences. This ensures sustainability, community involvement and effective water access.

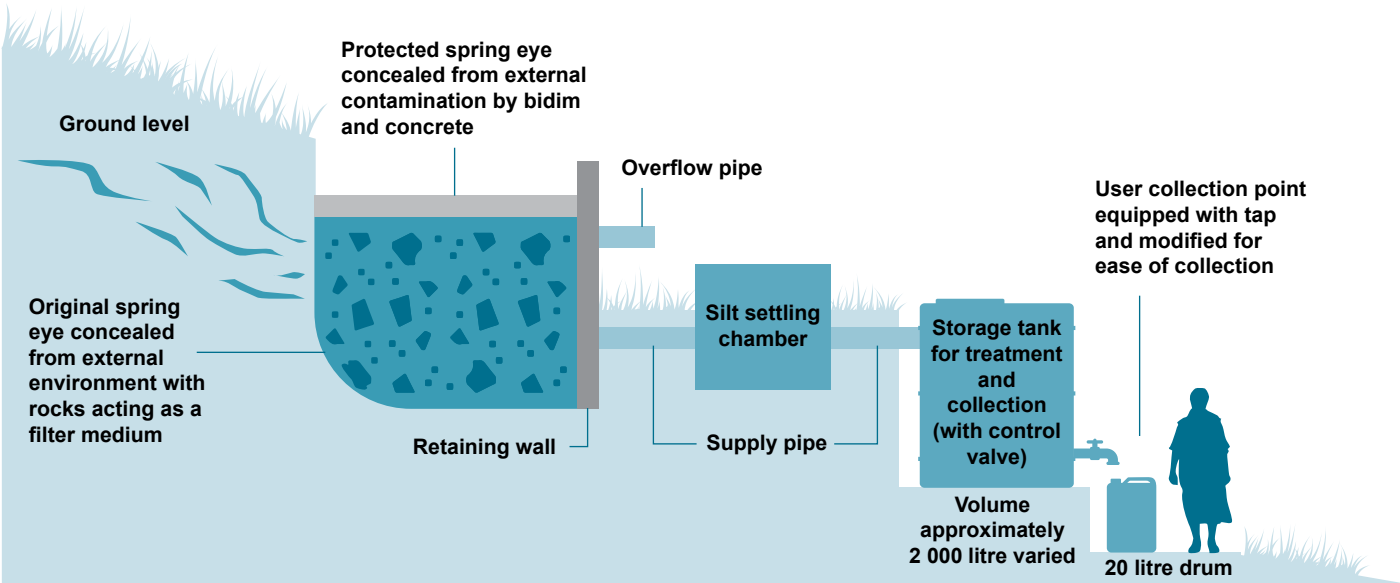
BUILDING PROTECTIVE STRUCTURES TO SUPPORT NATURE

Protective structures are constructed around springs to serve multiple functions: the initial structure filters and treats the water to remove contaminants like waste from nappies, animal feces and nearby pit latrines, reducing exposure to health risks such as *E. coli*. The resulting structure provides storage capacity of 200 to 1 500 litres, minimising wait times and improving water reliability. This particularly benefits women and children as they are the ones who collect water. Any excess water flows back into the environment, supporting ecological balance.

KEY POINTS: POLICY BRIEF

Community empowerment and participation	Prioritise co-creation through community-based approaches to empower local participation in planning, implementation and maintenance. Introduce training programmes for local communities, providing skills for sustainable water source management and accountability.
Funding and resources	Allocate funds to ensure financial resources support protective measures, surveys and threat mitigation. Encourage collaboration and co-financing among partners, including government agencies, NGOs and local communities to leverage optimal resources and expertise. A key success factor has been the deployment of local youth “Ecochamps” who foster relationships and reciprocity of awareness among local water users, leaderships and technical support.
Policy and technical guidelines	Develop technical guidelines for best practices in spring protection within policy frameworks, giving precedence to vulnerable rural communities, particularly in water-scarce or contaminated regions.
Monitoring and evaluation	Integrate robust but practical monitoring and evaluation mechanisms to assess the effectiveness of the protection initiatives and measure improvements in water quality and community access over time. This requires regular citizen science and lab-tested monitoring, with results being shared and discussed to inform better management procedures.
National alignment and knowledge sharing	Align spring protection models with both local district water supply plans and national development goals, emphasising contributions to public health and sustainable rural development. Facilitate knowledge-sharing platforms to spread successful spring protection initiatives, thus promoting collaboration and adaptation to local contexts.

THE SPRING PROTECTION MODEL: SUSTAINING COMMUNITIES THROUGH CLEAN WATER



WHY THIS MODEL WORKS

- It offers a decentralised and sustainable approach to water access.
- It is cost-effective and adaptable and is thus more inclusive.
- It hinges on local community integration involving planning, implementation and maintenance through inclusive consultation.
- It emphasises training programmes to equip, train and deploy community members to protect their water sources.
- It draws on community-based solutions thus leveraging local knowledge, skills and cultural context.
- It emphasises recognising, retaining and building skills within the community, ensuring that members can maintain and repair infrastructure. This in turn promotes ownership and sustainability.
- These solutions prioritise cultural beliefs, making interventions culturally sensitive and fostering trust within the community.
- The spring protection model also focuses on environmental sustainability, minimising natural disruption and supporting biodiversity conservation.
- Its adaptable design allows for implementation in various rural settings. While the model may face contextual challenges, it remains a cost-effective and locally-grounded solution for water supply issues.

CASE STUDY: EMPOWERING MATATIELE IN THE EASTERN CAPE DRakensBERG

AN INITIATIVE TRANSFORMING WATER ACCESS AND COMMUNITY RESILIENCE

The WWF Nedbank Green Trust initiative in Matatiele has significantly transformed water access and community resilience. Initially, a collaborative hydro-census survey – using a spatially defined open-source smart phone application – identified over 330 springs crucial to the resident community and revealed that only 23% met water quality standards. Following community consultations, 18 springs were selected for protection, involving local residents in implementing protective measures and raising awareness to reduce human-related threats.



This initiative has substantially impacted 1 412 households, or approximately 7 060 individuals, by providing reliable access to safe water. Improved water quality has enhanced health and sanitation, while the project has fostered community ownership and resilience, reducing reliance on unreliable water sources and contributing to the overall well-being and empowerment of Matatiele's residents. Women have particularly benefited through time savings, consistent access, improved water quality and shorter collection distances.

LIVELIHOODS IMPROVED THROUGH CONSTRUCTED SPRINGS

When 45 springs were completed in the upper catchment area, funded through various corporate sponsors, many people's lives were changed. It took approximately six weeks to complete each spring, and in total, 130 local people had temporary employment to help with the completion. After all were complete, almost 40 000 more rural dwellers had improved access to potable water within less than a kilometre of their homes. The average cost per spring site is approximately R100 000 to R150 000 including all aspects such as testing, design, consultation, awareness, technical supervision, employment and equipping of local artisans, and handover to traditional leadership for maintenance.



330 springs identified
of which only 23% met water quality standards



18 springs
selected for protection



1 412 households
now receive reliable access to safe drinking water



130 temporary jobs
created during local spring protection



40 000 rural dwellers
have access to potable water <1 km of their homes



R150 000
Average cost per spring site development



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The Umzimvubu Catchment Partnership (UCP) strives for healthy, resilient ecosystem functioning in the catchment, providing services and benefiting local and downstream people.

Spring protection is a key component of this and fits within the bigger vision of the UCP. To find out more about this partnership, please visit <https://umzimvubu.org/>



Lasting positive outcomes for people and nature in the places where we work and from priority environmental challenges we focus on.

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