

Traditional water sources – Lifeline in a time of need

Traditional water resources are proving the only lifeline to poor rural communities in the scenic coastal region of north-eastern KwaZulu-Natal amidst failed local service delivery and drought conditions. Althea Grundling investigates the importance of traditional sources of water to a community in the grip of a nine-year drought.



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Maputaland in north-eastern KwaZulu-Natal is well known for its beautiful beaches on the warm Indian Ocean and picturesque lakes such as Kosi Bay. The Maputaland Coastal Plain stretches from Mtunzini in the south, northwards into Mozambique, with the Indian Ocean to the east and the Lebombo Mountains to the west. It falls within the Maputaland-Pondoland-Albany biodiversity hotspot, which is an important centre of plant endemism and is home to the iSimangaliso Wetland Park, South Africa's first World Heritage

Site that was rewarded this status in December 1999.

The area is characterised by sandy soils with rapid infiltration rates and a low soil water-holding capacity that forms the Maputaland Coastal Aquifer. Very little rainwater has recharged the aquifer over the last decade, and this has negatively influenced the wetlands in the area. The once expansive grasslands, forests and unique wetlands and peatlands (see *The Water Wheel* of July/August 2010) are facing increased threats from uncontrolled activities such as grazing lands and the encroachment

by local farmers into peat swamp forests by slash-and-burn activities and draining these unique and threatened ecosystems. The expansion of plantations and groundwater abstraction pose serious threats to the wetlands of the Maputaland Coastal Plain.

Living in this remarkable landscape is the friendly and always helpful Tsonga people of the Tembe Tribe. This is one of South Africa's poorest communities, which almost entirely depend on the land and wetlands for their survival. Since 2002 the region has experienced a drought

with below-average rainfall. The current rainfall (average of 580 mm/year from 2002-2010) is far below the long-term average annual rainfall of 760 mm/year (measured over the past 22 years). Many families are therefore suffering from a shortage of water for domestic, irrigation and livestock use. While tourists experience the region as a tropical paradise, dry wells and low groundwater levels are quite common at present, stressing the day-to-day struggle for clean drinking water.

Service delivery by the local municipality continues to fail in its efforts to supply reliable sources of domestic water. As a result of a massive borehole pump and pipeline initiative, the KwaNgwanase area has some hope of reliable water supply in the future if the groundwater levels can be maintained, but there remains many communities in the area that have no expectation to receive water from this source. Instead, these communities continue to struggle and depend primarily on traditional and natural water sources such as wells, streams, lakes, fountains and wetlands.

A LOCAL LIFELINE

Withdrawing water from shallow wells in the sandy aquifer is common practice among the Tembe people. Traditionally it is the women and children that draw water and carry it some distance for use at their homes. Water is also drawn from wells and boreholes to irrigate vegetables in the cultivated fields nearby or to water cattle and other livestock. Wetlands are important natural resources that are crucial to the survival of the inhabitants of this area not only in terms of fishing, harvesting of wetland vegetation and subsistence cultivation but also for precious drinking water. The need to access water and the lack of practical health and safety measures has been identified during research studies in the area.

Declining groundwater levels have forced the Tembe people to dig



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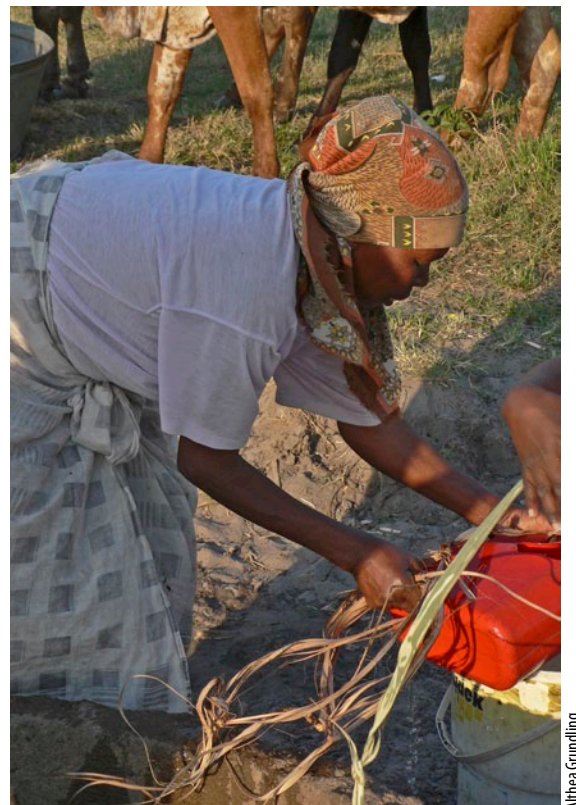
Above: Children collecting water from a well fitted with a hand pump. A broken rubber washer (although relatively easy and cheap to replace) has rendered many of these wells in the area useless.

*Below: A local woman using Lala Palm (*Hyphaene coriacea*) leaves to make a rope.*

their wells deeper each year. Areas surrounding deepened wells can be very dangerous due to collapsing walls and edges of the wells. Unlined wells are also collapsing, not only blocking access to the water but rendering these wells potentially life threatening. Well sites are not always clearly marked or fenced-off and misbehaviour leads to wells and boreholes being polluted by litter. In some cases homemade ropes from Lala Palm (*Hyphaene coriacea*) leaves are used to draw water and hand pumps are not in use due to poor maintenance.

Maintenance on wells, boreholes and pumps is a high priority. There is a continual need for nylon rope, buckets and water containers as well as spare parts and tools to maintain hand pumps. The following practical measures could greatly enhance access to and sustainable use of these natural water sources:

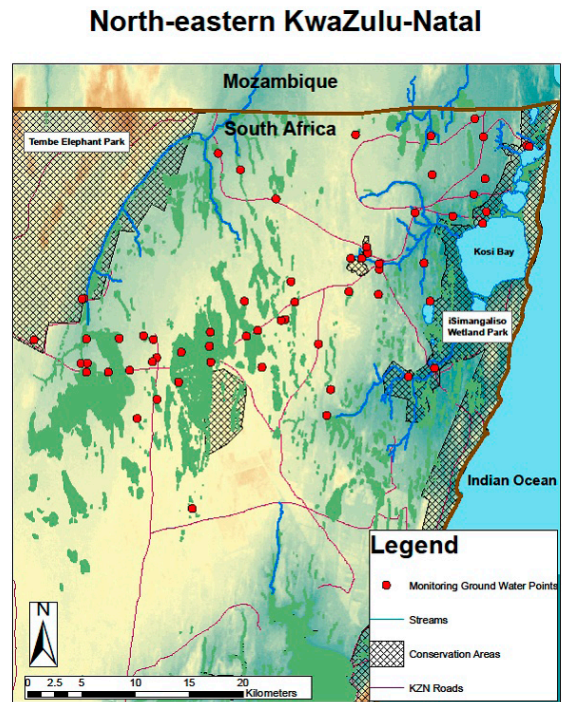
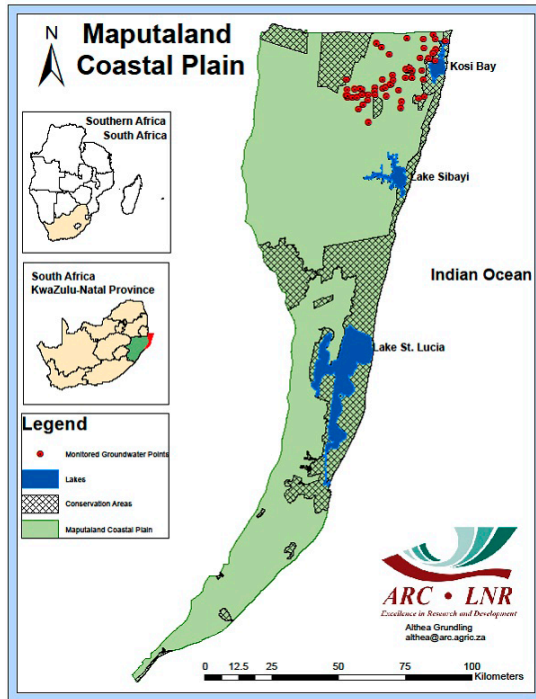
- Erect notice boards indicating well sites.
- Stabilise walls and edges of the wells and line deep wells.
- Fence off wells with a gate that can be closed.
- Address the problem of littering in wells and boreholes.



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Below: Local communities are very dependent on the environment, such as harvesting wetland vegetation for weaving and thatching.

Bottom: Kosi Bay. While one of the most scenic areas in South Africa, the persistent drought in north-eastern KwaZulu-Natal has brought much hardship to the local rural people.



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- Train local community members so that they can maintain their own hand pumps.


Research studies conducted in this area form part of an Agricultural Research Council – Institute for Soil, Climate and Water (ARC-ISCW) project funded by the Water Research Commission to investigate the regional environmental factors and wetland processes on the Maputland Coastal Aquifer. Groundwater levels were *inter alia* monitored and measuring points include natural features such as lakes, pans, rivers, wetlands and springs as well as anthropogenic

features such as wells, boreholes and drains.

The research has shown that groundwater levels have a direct relationship with surface water bodies such as wetlands, streams and lakes and reiterated the fact that there is a lack of groundwater monitoring information and a strong and crucial need for a groundwater monitoring network in the area. From the observations made over the past decade there is a steady decline in the groundwater levels and it will take an extreme rainfall event or at least five years of above-average rainfall to replenish the



Maputland Coastal Aquifer.

It is important to raise local awareness on water as a scarce resource on the Maputland Coastal Plain and the fact that the pressure to utilise the groundwater resource is increasing. The local communities are vulnerable and due to limited alternative options, they often fall back on the natural resources, such as groundwater through wells. Certain commercial activities such as plantations are detrimental to the water source and other more beneficial and appropriate economic activities such as sustainable farming systems (outside sensitive wetland areas) and tourism initiatives need to be promoted. Working for Wells is one of the promising initiatives that have been identified by the author at the ARC-ISCW and any interested persons who would like to contribute towards this awareness raising and training initiative are welcome to contact her through *the Water Wheel* Editor. 



Piet-Louis Grundling

Above: Althea Grundling (right) and research assistant Siphwe Mfeka measuring groundwater levels in wells.

Right: The project team came across various precarious traditional water sources. As the water table drops the community is forced to dig deeper after water.



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