Tapping into **traditional water knowledge**

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Watering life, together, forever

SOUTHERN AFRICAN DEVELOPMENT COMMUNITY
SADC
TOWARDS A COMMON FUTURE

Old ways and new – **together show us what to do**

Observing the environment and learning from nature has been the way that people dealt with climate variability long before scientific weather forecasting. Drought and floods have been part of the southern African experience for thousands of years. We have learned to cope through close observation of the landscape, wildlife and weather patterns, and, over time, have developed a complex system of supporting beliefs and practices. These include prediction, disaster prevention and adaptation.

Recognising, respecting and combining this knowledge with the best of modern science is key to creating solutions and strategies to help southern African people survive and prosper in the coming years.

Climate change has caused increased rainfall variability in Southern Africa in recent years. Yet climate fluctuation is not new, and our local communities have learned to adapt to the water cycle. For example, during times of drought, people have reduced water use for personal hygiene and watering livestock, collected water from the river, or moved from one area to another for grazing and water sources.

These adaptive strategies underpin southern Africa's wealth in natural resources, its strong social networks, and traditional livelihoods. The local knowledge unique to our communities provides key support in people's daily lives. And most rural people, farmers in particular, depend on indigenous knowledge and the support of traditional leaders to plan, make informed decisions, and manage risks associated with climate variability and change.

But there is no doubt that conditions are changing more rapidly than in the past. Close to 60 per cent of our region's population relies on rain-fed agriculture, while science predicts major reductions in staple crops in southern Africa over the coming decades.

How can the coping strategies based on traditional knowledge deal with the now rapid changes predicted to increase risk in our region?

Joining Up Science and Traditional Knowledge

We now have access to sophisticated climate science and innovative technology to better understand the risk that climate change brings to water supply and quality. Meeting the challenges will require that we use *all* the knowledge resources available to us.

Local and indigenous knowledge and practices, combined with conventional scientific monitoring and forecasts, can fill gaps and contribute to building better adaptation and mitigation measures to benefit many communities.

When combined, the two knowledge systems may be invaluable in developing preparedness for climate change impacts.

Studies show that there are many benefits from traditional knowledge and practices, beyond their day to day use. Using and applying this knowledge can enhance social cohesion, reduce conflicts among communities, and help preserve the cultural diversity that is closely linked with biodiversity. There is also growing evidence that communities can manage complexity and uncertainty better when diverse types of knowledge are combined.

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About 79% of the total irrigated land in Tanzania is cultivated by farmers who have attempted to harness the available water from rivers, springs and large river flood plains. Traditional irrigation, known as vinyungu *in Tanzania, is a dynamic process that varies from place to place as people create and adapt knowledge and experience.*

Not Just Superstition

Some traditional knowledge systems and practices appear to be under threat, not only from climate change itself, but also from modernisation, general lack of recognition of traditional cultural values and norms, and failure to include them in formal education and development processes. Traditional knowledge tends to be viewed by some as being backward, compared to the scientific knowledge. This has led to loss of traditional practices as people try to embrace modern, western ways of doing things.

Respect for traditional knowledge, practices, and beliefs, while recognising that the environmental and social conditions underlying them have changed and often require developing new approaches, can lead to integration or hybridization. This process of merging scientific and traditional knowledge and technologies to create new knowledge systems can provide important insights for the design of adaptation and mitigation strategies to cope with environmental change. Most important is that respect for local knowledge reinforces peoples' confidence in their hard-won ability to adapt.

For scientists, government and local people, including both traditional and scientific knowledge in joint learning can support a process of reducing disaster risk together. Researchers and planners need to engage local communities, beginning with traditional leaders, learn from their perspectives and experiences, and identify sources of resilience they can build upon. Intermediary institutions can record, validate and share local knowledge and practices that lead to successful adaptation.

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Lessons for the Water Sector

Traditional knowledge and practice that can contribute to water management include:

- Location, collection and storage of water
- Water resource management and irrigation methods
- Conservation strategies
- Natural forest management
- Biodiversity science, including familiarity with local flora and fauna, and identification of new species
- Hunting, fishing and gathering
- Medicinal plants and their use
- Agricultural practices.

Water is a pressing concern for SADC's development efforts, and promoting water demand management – the optimal use of existing water resources – is critical. Minimising water losses and maximising the benefits from the use of surface and groundwater are recurring themes in traditional water management knowledge. This conservation approach is much needed to mitigate the probability that we will consume more as modern water supply systems are introduced.

Understanding and referring to local and indigenous knowledge can give legitimacy and credibility to water supply and management projects, as well as providing valuable information to support engineering and technical work. And, as decision making about water management is increasingly devolved to the catchment and local levels, recognising local knowledge can ensure that choices made are appropriate for the geographic area.

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Don't Lose, but Regenerate

While we need to record disappearing traditional knowledge to capture useful insights and to build understanding of social and cultural context, it is equally important to look at how local people have used and altered that knowledge to cope with change in the face of modernization, standardized education and global economic trends. Modern science should contribute to that regeneration of knowledge, making communities stronger through using it to solve our problems.

The essential lesson gained from working with traditional knowledge is that it, just like modern science, has the capacity to evolve and adapt.

"Nobody can be in control of the atmosphere, so we can hardly do anything about that. However, what we can do is use our hands and our minds to make sure we survive. We have to work very hard in harvesting the precious God-given resource whenever it rains."

Mma Tsepo Khumbane,
elder in Gauteng Province South Africa

SADC's Role

Just as water resources and their management vary across the member states of SADC, vulnerability to climate change risk and adaptive capacity differ according to location. For that reason, identifying appropriate local solutions is key. Traditional knowledge offers the entry point to these solutions.

SADC is encouraging its member states to document and disseminate traditional knowledge and practices for forecasting purposes. This can build resilience of rural communities as the beneficiaries of climate information, to manage their food production systems.

SADC can also help by calling attention to similar and shared problems its countries are facing, pointing to common solutions that cross political boundaries. SADC governments should foster partnerships of scientists and indigenous knowledge holders so as to find solutions to climate change challenges.

SADC's experience as a regional policy bridge-builder is needed to nurture open dialogue between the two.

Recognising the value of traditional knowledge goes beyond collecting and analysing local practices. SADC countries need to seek out the people living in the region, as active stakeholders, to become part of a knowledge sharing process. Indeed, SADC's Regional Water Strategy and Action Plan promotes stakeholder participation, capacity development and empowerment through raising awareness, encouraging dialogue and debate, and providing incentives for citizen engagement in water management processes.

Using a mix of old and new ways, SADC and its member states can build effective partnerships and create the new knowledge we need to deal with the risks that climate change is bringing.

In Lesotho, planning of the location of villages by the older generation of Basotho was done with the climate in mind. As an example, most old villages are located on foothills within wind shadows of the mountains.

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