

South Africa's scarce water needs careful management—study finds smaller, local systems offer more benefits

August 24 2024, by Saul Ngarava



In the Umzimvubu Catchment Partnership, communities work with non-profit organisations and academics to restore and protect natural springs so that people have clean drinking water. Credit: Environmental and Rural Solutions

South Africa is a water-scarce country, the [30th driest](#) in the world.

Using water wisely will become more and more important as the population grows and droughts related to climate change increase. A lack of clean, fresh water has a negative impact on people's health and on the amount of food that can be grown.

Agricultural economist Saul Ngarava [studied 1,184 homes](#) in South Africa's North West, Northern Cape and Eastern Cape provinces to see which types of water governance resulted in better water, energy and food security. He found that the best results were achieved where water was governed democratically by different types of organizations working together.

How is water governed in South Africa?

[Water governance](#) is driven by the [constitution](#), which says "Everyone has the right to have access to sufficient food and water," and which gives different water management responsibilities to different levels of government.

At one end of the spectrum, national government manages all water resources. At the other end, local government takes care of supplying [clean water](#) to households and disposing of sewage and [waste water](#).

The [National Water Act of 1998](#) is charged with managing South Africa's scarce [water resources](#) through different local level institutions. These are [catchment](#) management agencies, water user associations, international engagement bodies and the Water Tribunal.

The [Water Services Act of 1997](#) says how these institutions should make sure that everyone has access to basic water and sanitation.

Why do water use governance arrangements matter?

Water supports development and can help with creating jobs and eliminating poverty. It is essential in [national planning](#) and therefore it is vital that it is managed properly.

In South Africa, there are different water governance arrangements: bottom-up and top-down. The two I have researched are the [water user association](#) and the [catchment partnership](#).

There are 43 water user associations in South Africa—formal, top-down associations of individual water users. An example is a [large scale irrigation scheme](#) that provides water to commercial, emerging and small-scale farmers and their local towns and villages in major agricultural areas. I researched the Vaalharts water user association, which covers the farming areas of Taung and Magareng, stretching across the North West and Northern Cape provinces.

Water user associations usually have a lot of infrastructure. This can include 100 kilometer long irrigation canals and pipelines. They're mainly centered on commercial farmers who use this common irrigation system, and although they deliver water to all homes in the farming area, they are largely dictated to by farmers.

A catchment [partnership](#) is a ground-up, informal voluntary collaboration between multiple organizations with shared interests. I researched the [Umzimvubu Catchment Partnership](#) in Matatiele, in the Eastern Cape province. It is made up of [more than 30](#) organizations, including the [local municipality](#), the non-profit [Environmental Rural Solutions](#), the [provincial forestry department](#) and the [South African National Biodiversity Institute](#), an academic research institute.

These organizations work together to build [social capital](#)—the resources linked to a network of relationships. The network is a convergence of indigenous knowledge, expertise and data, aimed at empowering all the

participants to take equal ownership of the water governance arrangement.

Management system example	Water User Association	Catchment Partnership
Example	Vaalharts Water User Association	uMzimvubu Catchment Partnership
Staff	Full time board and committee members	Non-permanent and voluntary
Function	Operate and maintain the Vaalharts Government Water Scheme. The scheme covers 39 000 ha supplying water to six towns, 4 municipalities and farmers	Conserve the full extent of the uMzimvubu river system through sustainable restoration and maintenance of the catchment area. The partnership covers 20 000 km ² , supporting 250 000 people on 435 000 ha of land
Advantages	It is a formalised institution therefore has defined rules of operation.	Diverse group of stakeholders who have breadth with voluntary participation and consensus decision-making

Credit: The Conversation

Catchment partnerships usually serve only a smaller area and everyone who lives within it. They often aim to [conserve a river system and its catchment area](#) so that the water can be used for local job creation and economic growth.

They don't have as much expensive water infrastructure and they rely on

natural benefits—water from natural springs, food from wild fruit or fuelwood that is used for cooking.

Are these arrangements unique to South Africa?

Water user associations and catchment partnerships are not unique to South Africa. [England](#), [Scotland](#), [Tanzania](#), [Nepal](#) and [Indonesia](#), among others, also have them. In these countries, water user associations and catchment partnerships have resulted in water management by a wide range of organizations and they face many of the same issues.

What problems can arise in water governance?

Water user associations such as Vaalharts water user association take more time to make decisions. Technical experts in finance, human resources, engineering, and others need to be consulted, along with subcommittees who add their voices, and even the government's Department of Water and Sanitation.

This means that infrastructure maintenance and agreements on how to distribute water fairly among the farmers, industry, towns and communities can be slow or not happen at all.

In catchment partnerships such as the Umzimvubu catchment partnership, grassroots and local organizations aim to work together to reach consensus.

This makes decision making faster, easier and more effective. However, they lack funding, mostly because they are made up of organizations without large funding bases. Sometimes, their member organizations take care of their own water needs first before considering the partnership.

What impact do these arrangements have on water, energy and food security?

My research found that the Vaalharts water user association solely focused on water security. But this mainly benefited the commercial farmers who grow cash crops such as pecan nuts, lucerne, groundnuts, wheat, citrus and grapes.

My research found that people living in the Umzimvubu catchment partnership have more water, energy and food security overall. For example, [the households I studied](#) in the Umzimvubu catchment partnership were able to supplement their water supply with clean drinking water from [a spring](#) that the catchment partnership had [restored and protected](#). The [catchment partnership](#) also tested the quality of the water and set up tanks to store it, providing clean, free, drinking water to over 700 people.

A limited amount of water was also available for their livestock. This improved the food security of homes in the Umzimvubu catchment partnership area. Free water meant the families had more money to buy electricity.

The catchment partnership had projects to [clear away invasive trees](#) which drain local water supplies. This helps [rejuvenate the natural grasslands](#), where livestock graze. This creates [more food security](#).

What changes do you propose, and why?

The South African government wants to establish more high level water governance structures such as water user associations. Based on my research comparing the Vaalharts water user association and Umzimvubu catchment partnership, this is the wrong approach.

Top-down structures that restrict broad participation, and increase bureaucracy and corruption, might not be able to provide the water, energy and food security that South Africa needs. An effective change would be to disband water user associations and replace them with catchment partnerships.

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