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Metropolises must engage with communities to understand water issues

There is an urgent need to add community experiences of water to the data used to manage this fragile resource in an era of climate change. [A multi-sectoral project](#) using the SenseMaker tool and methodology does just that, said University of Cape Town (UCT) geographer and climate change adaptation researcher Associate Professor Gina Ziervogel.

Ziervogel was appointed to the City of Cape Town's Water Resilience Advisory Committee in 2017 to provide expert input on the City's drought plans. Her work on urban water resilience and social justice involves working with community activist groups such as the Western Cape Water Caucus, Environmental Management Group, and the City of Cape Town. All are key players in this multi-sectoral project to "make sense" of water.

In the aftermath of [Day Zero](#) in 2018, Ziervogel's research has provided a lens on why metropolises must engage with residents to understand their water issues – data that is vital to shaping policy. This has not happened in marginalised communities, which is where most of the city's 4.2 million people live. Information on water leaks, failing infrastructure, sewage and billing problems is not being sufficiently harnessed.

But data from the web-based SenseMaker tool is changing this. The proprietary tool was adapted by a team of researchers including Stellenbosch University's John van Breda and Rhodes University's Luke Metelerkamp, who had both used the tool before. In the hands of citizen scientists who are community activists in the Western Cape Water Caucus, the phone-based tool uses a unique methodology to collect and collate water data from areas across the Cape Flats. This data will help to build water resilience in these communities, said Ziervogel.

The issue is in sharp focus following the release at the end of February of the second part of the [Intergovernmental Panel of Climate Change's Sixth Assessment Report \(AR6\): Impacts, Adaptation and Vulnerability](#). Ziervogel is a lead author.

"In this report, we stress that we must pay more attention to low-income areas and informal settlements. Yet so few cities have a good way of doing this, because they've tried to sideline low-income residents; because as soon as they acknowledge them, they've got to address the problem, which is really hard for cities to do.

"But ignore them at your peril. We must have more spaces for conversation around these tough issues across scaled levels, from neighbourhood to city level."

Ziervogel added, "One of the important principles when thinking about resilience of cities to climate and water stress is the importance of bringing in multiple voices and understanding the different perspectives and stories of how we might respond to the challenges."

There is a lesson for all Southern African cities, she added. "Issues of inequality are very important to address, as people have very unequal access to water services – and to resources to adapt to climate extremes."

Community-generated data

In the aftermath of Day Zero and a three-year drought, the City of Cape Town Department of Water and Sanitation showed a lot of interest in the water data from the SenseMaker tool and in engaging further with the Water Caucus, Ziervogel said.

"In developing a new water strategy for the city, they explicitly said they want to support community-generated data. I said, look, here's a project where we've *got* community-generated data, how can we collaborate and find ways to work together?"

Further developments were delayed by the COVID-19 pandemic, but the project is gathering momentum across communities where the communities' citizen scientists have been putting the SenseMaker tool to work.

Community members such as the Western Cape Water Caucus's Ann October have been going door to door to do this. They ask simply framed questions: Can you tell us [a story about water](#)? What are your problems? How did you go about resolving these?

Many stories were around bills and billing – a challenge because many households have water management devices that restrict the flow of water. "And these households are still getting water bills, which is confusing," said Ziervogel.

Other stories concerned leaks, poorly built houses, taps that were leaking and poor sanitation – the latter clearly in evidence during a community feedback meeting in Dunoon, where sewage was running in the road outside the hall, she said.

Community responses are charted in a predictive matrix, which helps respondents analyse their own story – and their own data – at a glance. The information is then fed into the broader water project. As such, these stories are key to understanding water usage and water issues.

Dr Johan Enqvist, a postdoc from UCT, coordinated the SenseMaker component of the project. He said, "Three hundred stories have been collected and analysed from these communities, and *this* is the story that those stories tell; *this* is the message that those stories communicate."

Ziervogel added, "But it's amazing for me, as a researcher, that there is this engagement and this kind of working towards listening to different perspectives – both the community listening to the city and the city listening to the community voices."

Vision 2030

The project also fits squarely into UCT's Vision 2030, with its pillars of sustainability, transformation and excellence.

Ziervogel explained: "This project is very much about social and environmental sustainability. My argument as part of this project is that if we want environmental sustainability, we need to understand the complex system of water in cities. And we have not given enough attention to the voice of people living in low-income areas, who are trying to secure water services and to try to secure and live with water."

“We really need to listen to them to understand their perspective on what’s working and what’s not working, to find solutions around water sustainability in our city – and solutions that are equitable, and just. So fundamental understanding of the role of people in the system, and their experience, is core to the sustainability of the system going forward.”

Story by Helen Swingler, UCT News

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