

## Mozambique water project: insights into supply and use in a peri-urban area

The United Nations [reports that](#) water scarcity affects more than 40% of the global population. Just over [a third of people](#) don't have access to safely managed drinking water. This is why the [Sustainable Development Goals](#) set out to achieve universal and equitable access to safe and affordable drinking water for all by 2030.

By Ana Rita Sequeira et al. <sup>23 Apr 2019</sup>



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In sub-Saharan Africa, upgrading water infrastructure requires substantial investment and a sustainable model where the returns exceed the costs while ensuring everyone has capacity to pay for and access potable water.

But making decisions on appropriate water infrastructure in peri-urban areas is challenging. The main reason for this is that people move into these areas unpredictably, attracted by job opportunities and economic growth. This unplanned population growth can cause significant pressure on public infrastructure, including water services.

Our [recently published research](#) evaluated a water supply programme in northern Mozambique. The research is particularly important because it provides insights into water supply initiatives in peri-urban areas. These communities are typically considered high risk for infrastructure investments due to the volatility of economic development, population influx, skills, and a mix of formal and informal markets.

The research is an evaluation study of new piped water supply infrastructure in Ribáuè, a town in Mozambique's Nampula province. The evaluation showed greater use of improved water sources and an increase in water consumption and treatment by households' members. The infrastructure also led to new economic opportunities for small businesses, particularly those in the hospitality and retail sectors.

### The research

[Ribáuè district](#) has 290,000 residents. Most of them live in the administrative area of Ribáuè. This town is situated along the Nacala Economic Corridor – a development initiative that involves a range of projects. These include:

- A rail project to transport [natural resources in Tete province](#), particularly coal, to the port of Nacala.
- Road freight connecting neighbouring Malawi, which is landlocked, to Nacala port.
- An agricultural development programme, and
- The [Green Belt Initiative](#), set to develop two large scale irrigation schemes in Malawi.

The result of all these activities has been a rapid growth in the town's population of Ribáuè – both temporary and permanent residents. This has added pressure on the town's infrastructure, including its water supply.

To address the water supply problems in Nampula Province a project called the Small Towns Water, Sanitation and Hygiene Programme was launched in 2012. It ran until 2016; it was jointly funded by the governments of Mozambique and Australia, and UNICEF.



A water kiosk. (Supplied by author)

In Ribáuè, the water supply intervention included:

- Rehabilitation and expansion of a colonial-era piped water supply system using a low-cost gravity-fed system,
- Construction of a rapid filtration water treatment plant,
- Rehabilitation of existing standpipes and construction of water kiosks for small-scale private water enterprises, and
- Provision of taps to households, businesses, and public services (hospital, local government, and the local council).

## What we found

To assess the short-term impact of the project researchers surveyed households. We also interviewed businesses, private operators in the piped water industry and local NGOs.

Using data from the interviews and from a pre-intervention baseline survey, the research found a 2.5-fold increase in the use of yard taps and a 3-fold increase in the use of water kiosks. The use of water from unprotected wells fell 2.5-fold. Unprotected wells are considered unimproved water sources. That's

because of the potential water contamination and health risks, such as cholera.

Household water consumption increased by approximately 40L per day. And the treatment of water by households members nearly tripled.

The availability of piped water led to some local entrepreneurs securing lucrative contracts and expanding their businesses. This was particularly true in the hospitality sector. Accommodation establishments had to adhere to stringent contract requirements related to the water supply.

These findings and the water supply intervention show the importance of decision making informed by verifiable data.

## **Data-driven decision making**

The [baseline survey results](#) published in 2012 found that most respondents (84%) were willing to pay for access to piped water. This is important because investors (government and the business sector) are often hesitant to put money in piped water infrastructure in peri-urban areas due to questions about whether households are willing – and able – to pay.

By the end of 2014, the uptake of yard taps exceeded the private operator's expectations. This showed that households were willing and had the capacity to pay for piped water.

The findings of our research address the big gap in verifiable and publicly available data when it comes to decision making in water supply initiatives in peri-urban areas. This aligns with decision-making increasingly being informed by evidence-based research, particularly in the [health](#) and [environment sciences](#).

Our findings demonstrate what quantifiable and short-term effects an intervention can have. This may help inform what sort of outcomes can reasonably be expected for similar water supply interventions in other comparable peri-urban areas.

*Fraydson Conceição, Amélia Monguela and David Doepel also contributed to this article.*

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