

Securing groundwater in Timor-Leste no longer a pipe dream



Carmelita da Cruz spends more time with her family and in her garden now that her village in Liquiça has a community water tap.

IN THE MOUNTAINOUS countryside of Timor-Leste's Liquiça district, people often have to walk many hours to retrieve water from springs and wells.

'We had to walk two hours to our nearest water source to collect 10–20 litres at a time', says local Carmelita da Cruz.

'My children would often have to forgo school to help with this task.

'During droughts this source would sometimes dry up so we would have to walk further', she says. Some families, instead, relocated to a closer, more reliable water source.

'Having a safe and reliable water source so close to our community, now, provides us with more time to clean, cook, water our crops and start using water to wash our hands and face.'

Securing groundwater in a changing climate

The people of Timor-Leste rely heavily on groundwater for drinking water, industry and agriculture.

By 2050, the current 1.1-million population is expected to triple.

However, climate change projections for the next 50–100 years mean rising sea levels, higher air and sea temperatures and more extreme rainfall events.



Monitoring salinity

Osorio Belo Da Piedade, Chief of Department of Water Resources Management, has recorded higher salinity levels in Dili's groundwater sources after storm surges.



Building national capacity

Mirko Garmez (*left*) and Antonio de Oviliara (*right*) are working with communities in Liquiça to raise awareness and build adaptation skills.



Preventing contamination

Alyairo Moritz, a village chief, says rainfall events are getting heavier. His village is planting trees to help protect water supplies from sediment run-off during heavy rainfall.

The impacts of these changes mean groundwater supplies are more vulnerable to shortages and contamination from sea water intrusion and waste.

The Timorese government is forming research and capacity-building partnerships with scientists and NGOs in order to understand more about how these changes will affect groundwater.

Australia funds development of national groundwater framework

Australian researchers worked with Timor-Leste government staff to produce a national hydrogeological map and framework. The framework outlines how to identify, categorise, map and monitor groundwater resources.

These resources have improved Timor-Leste water researchers' and policymakers' understanding of groundwater as well as their monitoring and management practices.

Timorese government staff are now learning how to identify the location and size of groundwater sources. Combining this with information on projected rainfall changes and population distribution will allow them to better manage groundwater reserves in a changing climate.

Local communities are stepping in as well, by taking responsibility for their water use and implementing their own better management practices.



Australian water resource advisor Craig McVeigh (left) is working with government staff in Dili to monitor water quality and quantity in the nation's capital.

Craig McVeigh, an Australian water resource advisor based in Timor-Leste says: 'The greatest thing about the hydrogeological map is that it tells us the location of groundwater sources and their potential yield.'

'This provides us with a baseline measurement for our monitoring networks.'

Mirko Garmez, a community-based adaptation program manager with CARE International, says that people in mountain areas are already very vulnerable to droughts and heavy rainfall.

'It's important to work with the community to understand these changes and how they can adapt to these changes, because they are more likely to take ownership of the practices', he says.

Photography: Econnect Communication

Only

57%

of Timor-Leste's rural population has access to safe and reliable drinking water

Meeting millennium goals

As part of a commitment to meet its Millennium Development Goals, the Timor-Leste Government aims to increase the proportion of its rural population that has access to safe and reliable water to 75 per cent by 2015.

More information

The Australian Government's **Pacific Adaptation Strategy Assistance Program** (PASAP) funded research into climate change and groundwater resources in Timor-Leste as part of Australia's International Climate Change Adaptation Initiative.

For further information about Timor-Leste groundwater research or other PASAP projects, go to www.tiny.cc/t5axxw or contact InternationalAdaptation@climatechange.gov.au



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