



“Working with our Pacific neighbours – together we can make a big difference”

Dr Mark James
Manager – Pacific Rim

‘Wai ni Cola I Qwata’ – Water for Life for the Future

Fijians in the tiny village of Votua on Viti Levu's Coral Coast have dubbed the NIWA-led project to provide sustainable water supply and waste treatment systems, “Wai ni Cola i Qwata” – “Water for Life for the Future”.

The collaborative project is working with villagers to develop pragmatic solutions to protect their health and to safeguard the coral reefs.

Deteriorating water quality along the Coral Coast is causing a range of environmental health problems and threatening the livelihoods of villagers. Increased levels of faecal bacteria, excess nitrogen, and overfishing are impacting on the health and sustainability of the lagoons and the fringing reef.

NIWA's Catchment Management Leader Dr Chris Tanner says the challenge was to develop a wastewater treatment system to treat effluent to an advanced level, but one that was cheap and easy for villagers to operate and maintain in an island environment.

“About half of the 50 houses had flushing toilets and wanted to keep them. But waste treatment was inadequate with effluent leaching out rapidly through the coral sands, into the nearby river and beaches. We also had the problem of waste from the piggeries.”

The team has worked very closely with the villagers to come up with a waste treatment system which is integrated with the infrastructure already in the village and will be simple for them to operate, and for other villages to replicate.

It was critical to the project's success that the solutions were embedded into the community in such a way that ongoing costs and maintenance requirements were low and achievable.



Rebecca Stritt, NIWA

A NIWA-led wastewater treatment project in Fiji has delivered not only cleaner water, but new skills, stronger community links, and better local understanding of the connection between water contamination and health.

The new system is based on ‘clusters’ of 3–5 houses, and separates black water (toilet waste) from the grey water generated through household activities. Black water carries most of the pathogens and excess nutrients but comprises only 20% of the total village effluent.

Existing septic tanks combined with new cluster ones collect the black water which is pumped inland to a wetland treatment system. Villagers will grow Bird of Paradise flowers for sale to resorts and rou rou – a type of leafy green taro for eating – in wetland gardens irrigated with gravity-fed, treated water. Fish ponds are also being constructed for farming tilapia to eat and sell.

The system uses a mix of methods to manage the disposal of grey water, which utilise coconut husk pre-filters followed by soil and sand infiltration.

The project has also collaborated with an AusAID-funded climate change adaptation project to upgrade the village water supply and reticulation system. The much improved water supply was an early ‘win’ for the project – previously water only dribbled from most taps and many houses had supply for only short periods each day.

FUNDER:

- New Zealand International Aid and Development Agency (NZAid) through the Ministry of Research, Science & Technology

COLLABORATORS:

- Institute of Applied Sciences, University of the South Pacific
- EcoEng Ltd
- Environmental Science and Research (ESR)