

A new warning system for Tonga

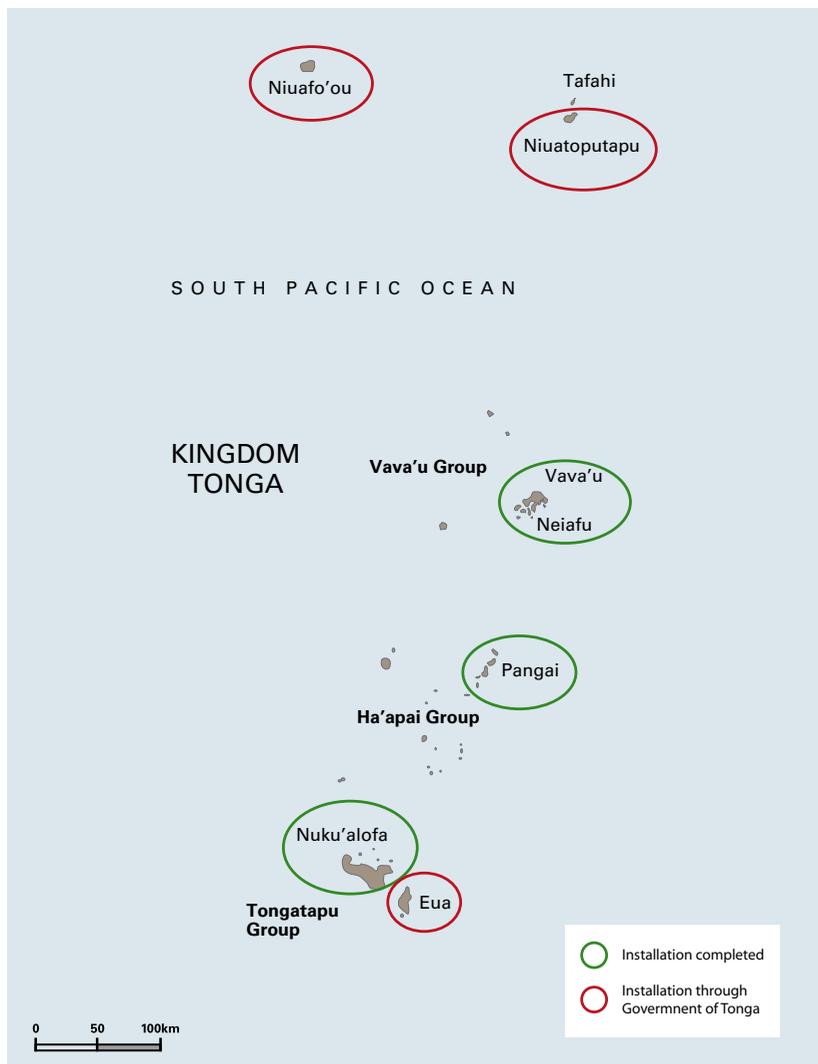
The new RANET system provides early warning of storms, tropical cyclones, tsunamis and other natural hazards. This gives inhabitants of the island kingdom the chance to take evasive action and to avoid or at least minimise personal injury and property damage in case of natural disasters. It has also improved the quality of Tonga's weather forecasts.

The Kingdom of Tonga in the South Pacific comprises 171 islands, of which some 48 are inhabited. The island kingdom is regularly hit by natural events and the disaster alarm has been raised several times. Since the beginning of the decade three major cyclones (Mona, Waka, Heta) have hit the islands. In the last three years, 17 earthquakes with a magnitude of 6 or higher have hit the islands, a tsunami was triggered by a magnitude 7.9 earthquake on 3 May 2006 and in February 2008 a severe storm crossed the islands of Tonga.

In the past no reliable early warning system existed. For example, in the event of a cyclone there was no means of communicating with

the more remote islands. For safety reasons the satellite-backed system in operation at the time had to be closed down when wind speeds exceeded 120km/h.

The situation improved when a new early warning was introduced. At the Third International Conference on Early Warning held in Bonn, Germany, in March 2006, the Munich Re Foundation presented a €50,000 award for the setting up of the best tailor-made early-warning system. Of the 130 entries submitted from all over the world, Tonga obtained first place with a project designed to link a number of strategic points in Tonga to a so called RANET system already operating in the Pacific.



Tonga is an archipelago, located in the South Pacific and comprises of 171 islands, 48 of them inhabited, spread over 748km².



Fallen goods at the central supermarket in Nuku'alofa, Tonga, after a massive magnitude 7.9 earthquake rocked the island nation in 2006.

RANET stands for "Radio and Internet for the Communication of Hydro-Meteorological and Climate Related Information". It is the product of a combined effort on the part of a number of national hydro-meteorological services, non government organisations, and communities. They have joined forces to provide weather, water, and climate information for the remote, rural populations that are often most in need of environmental forecasts, observations, and warnings. RANET has a simple mission: to help national and regional organisations relay useful information, that often tends to be confined to urban areas, to outlying rural locations, thus helping to reduce disaster losses and enhance community resilience. RANET is accordingly involved in developing new communication tools, providing training and building management capacities. It provides new "storm resistant" radio frequencies for communication and non-stop data-sharing.

Initially the complex process of procuring materials and carrying out technical trials in the humid tropical climate of the Pacific islands led to delays in setting up the radio system. Finally, in July 2008, RANET stations began

operating on the islands of Tongatapu, Vava'u and Ha'apai. The Kingdom of Tonga is now linked to the service, that also issues real-time severe weather and disaster warnings. Experts on site have performed various trials and transmission tests and are keen to press on with the task of linking more remote islands to the system.

RANET, which operates 24 hours a day throughout the year, will transmit real-time warnings of windstorms and thunderstorms. It will also warn against volcanic eruptions and tsunamis, to which Tonga is also prone.

RANET will also bring improvements for air traffic control by providing enhanced meteorological readings as well as warnings, and will improve the quality of meteorological forecasts for the island kingdom. Scientific circles, including meteorologists and universities will also benefit from the data generated by the RANET systems.

The key issue for the Munich Re Foundation, however, is to improve the warning for the people at risk.