



POST-CYCLONE RAPID ASSESSMENT ASSISTS TONGAN EMERGENCY AUTHORITIES

A rapid post-disaster assessment recently conducted by specialists from the Secretariat of the Pacific Community's (SPC) Applied Geoscience and Technology Division (AGTD) will help Tongan emergency managers better understand the impacts of Cyclone Ian and prepare for future storms.

In early January, Cyclone Ian devastated parts of Tonga, particularly in the Ha'apai Group. The category-five storm killed one person, injured 14 others, displaced more than 4,000 people, and destroyed two crops and infrastructure.

In the wake of the storm, Tongan authorities requested assistance from AGTD's Applied Geoscience and Technology Division (AGTD) to assess damages on the island of Lufua in the Ha'apai Group.

"They wanted us to provide technical data on the extent of foundation and erosion in

coastal zones as well as water supplies and groundwater contamination in Lufua," AGTD Senior Technical Assistant and Oceanographer Zulfkar Beggs explains. "They also asked us to train their geologic staff so that they could do the same rapid assessments in the outer islands."

Having previously completed extensive coastline surveys at Lufua's coastal and water resources in 2011 as part of the Pacific Adaptive Strategy Assistance Programme (PASAP), the AGTD team arrived in Lufua on 26 January ready to hit the ground running.

What did they find? According to Beggs, "There was a lot of inundation – up to 34 metres measuring from the base of the beach. Because of that inundation impact, now at spring tide and high tide, the water moves further inland than it used to. At high tide, the water moves up to the road or sometimes into the compound of

the government buildings."

Lufua has faced serious coastal inundation challenges since the island suffered following an earthquake in 2005. Much of the island's key infrastructure, including the hospital and government buildings, is now very vulnerable to flooding. The seawalls, sea defences and infrastructure built to protect the coast in the last few years were scattered by Cyclone Ian," reports Beggs.

Data collected by the AGTD team will be used to generate an inundated wave model, allowing emergency managers to visualise how the waves impacted the coast during the storm. This will help authorities better anticipate future cyclone events.

In addition, says Beggs, "The Tongan government will use our data to decide whether to build houses in the same area with improved building codes or to move them elsewhere."

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