# Acquiring 3D Samoa to Increase Climate Resilience

**Alex Cowdery, Nathan Quadros and Luke Chamberlain (Australia)**

**Key words:**  Coastal Zone Management; Hydrography; Remote sensing; Risk management; climate resilience, Airborne LiDAR Bathymetry, LADS, Topographic LiDAR, Samoa, Risk Assessment, CRCSI

## SUMMARY

#1. Spatial Information Management. SIM meeting challenges – natural & environmental risk prevention and disaster management etc.

#2. Hydrography.  Hydrographic surveying & mapping

Following catastrophic natural disasters in eastern India in 1999, the Hurricanes of Katrina & Sandy in the United States and more recently a dual disaster involving flooding and earth quake in the Solomon Islands in 2014, Pacific Islands Countries have been elevated in the priority listing for natural hazard risk profiling and vulnerability assessment.

Prior to 2015, when performing national risk assessments, government officials and stakeholders utilised a combination of historical 'local' knowledge and low scale datasets that included the Satellite Radar Terrain Mission (1998) and Generalised Bathymetric Chart of Oceans (2008), and other satellite only based analysis.

On a national scale, Fugro enabled the Samoan Government to identify risks, understand the exposure and better manage vulnerabilities and impacts from hazards such as flooding, storm surge and cyclones.

This paper will look at the standards for actionable risk datasets that occurred for the Pacific nation of Samoa, using a combination of airborne terrestrial LiDAR, satellite elevation & imagery, aerial imagery and airborne LiDAR bathymetry technology.

The world is constantly evolving and coastal communities must understand and adapt to stronger

winds, larger storm surges, extreme flooding and/or near shore tsunamis.  The first step is to understand, manage and help to identify risks to coastal populations and infrastructure. Remote sensing is an essential tool to assemble datasets on a national scale.