

Samoan tsunami was too close to prevent deaths: research

November 5 2009, By Bob Beale

(PhysOrg.com) -- Samoa's tsunami detection, monitoring and warning system works well and could not have prevented the more than 100 deaths caused by the devastating tsunami that hit the region on September 29, a major international study has found.

"The impossible issue here is that the earthquake that caused the [tsunami](#) occurred so close to the south coast of Samoa that there was simply not enough time to process the seismic data and issue a warning," says Associate Professor Dale Dominey-Howes, of UNSW's Australian Tsunami Research Centre, who led more than 80 scientists from 20 organisations in the landmark study.

"Samoa's Disaster Management Office (DMO) has worked hard in recent years to partner with communities to raise awareness of tsunamis, develop evacuation procedures and test those procedures with drills.

"It is clear these efforts of the DMO saved lives on 29 September because many Samoan people reacted as hoped when the earthquake occurred. That is, they moved inland without waiting for an official warning. The tsunami reportedly arrived at the coast in less than 10 minutes.

"The sad fact, however, that more than 100 lives were still lost in Samoa shows us that we must - scientists and governments alike - continue to work to improve disaster risk-reduction efforts."

The UNESCO-International Oceanographic Commission International Tsunami Survey Team joined forces with local researchers to carry out fieldwork on Samoa's two main islands - Upolu and Savai'i - two weeks after the disaster.

The main purpose was to explore the nature of the tsunami and its impacts in Samoa in order to help the national government enhance its tsunami disaster risk management strategies.

It was the first time a post-tsunami survey was undertaken in Samoa and the first time a UNESCO-IOC ITST assessment team had attempted to use multidisciplinary experts - including social scientists, engineers, ecologists, geologists and modellers - in a single group to investigate the tsunami.

The team recorded substantial inundation from the coast and a surprisingly high maximum run-up. Flow depths of the tsunami in some locations were also extremely high. The tsunami had widespread impacts on the natural environment, including erosion and deposition of sediments, damage to coastal plants and trees. Damage to agricultural gardens affected households' capacity to provide food. Building damage was extensive.

The team also collected survivor accounts of the tsunami and noted that people are experiencing severe trauma.

"In spite of historical accounts of some 40 or more tsunamis since 1837 - and evidence for a similarly large event back in 1917 - there is no social or cultural memory/oral traditions of tsunami," says Associate Professor Dominey-Howes.

"We find this very puzzling. The DMO faces a significant challenge in convincing the people of Samoa that tsunamis are a real threat to coastal

communities.

"The take-home message is that if you feel an earthquake in the coastal zone move inland to higher ground."

Provided by UNSW Sydney

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