

Detecting tsunami events before they occur

May 3 2013



Credit: Unsplash/CC0 Public Domain

The saying to be 'forewarned is to be forearmed' sums up the principle objective behind the DEWS (Distant Early Warning System) project, which can detect tsunami events before they occur.

It is systems like this, which ensured that warnings were sounded last

year in Hawaii of an impending tsunami, spurring residents to stock up on essentials and sending tourists in beachside hotels to higher floors in their buildings. The advance warning gives communities in the path of the oncoming wave critical time to prepare - and could ultimately save many lives.

The DEWS project surfaced after the tragic tsunami event, which hit the countries bordering the Indian Ocean back in 2004. What emerged from the aftermath were the shortcomings in [tsunami detection](#) and public warning procedures. Scientists then realised that to avoid a similar event happening again, [early warning](#) systems needed to be improved to reduce the [time interval](#) between the initial earthquake, and the detection of the tsunami.

Indeed, the 'United Nations International Strategy for Disaster Reduction' (UN/ISDR) identified four important inter-related elements of effective Early Warning Systems (EWS): risk knowledge, monitoring and warning service, dissemination and communication, and response capability.

The DEWS project also worked on providing warning messages, which could be generated more rapidly and communicated to the responsible authorities and those at risk. Particularly important was the need for international communication and warning exchange between countries in the region predicted to be affected.

To achieve all their objectives, the DEWS project led by José-Fernando Esteban Lauzán, head of innovation at [Atos Origin](#) in Spain, obtained EU-funding of EUR 6.1 million. The [research consortium](#) of 20 partners included public and private organisations from several EU Member States and Indonesia, Thailand, Sri Lanka, Japan and New Zealand.

Two major objectives steered the project; the use of 'Free and Open

Source Software' (FOSS) and the development of a generic early warning framework, not only for tsunamis but also for other natural hazards. In addition, research included; providing information logistics and dissemination modules, as well as an early warning and warning distribution system. Integrators for systems were also devised for issuing warnings to the public, and information and decision support products.

Tests were also conducted for future implementation and exploitation of the systems in different parts of the Indian Ocean region, with end-users involved in the development and testing to ensure their practical use.

A professional review and assessment of the overall system was carried out with positive feedback from domain experts at the 'Meteorology, Climatology and Geophysics Agency' (BMKG) in Jakarta, Indonesia and at the 'Kandilli Observatory and Earthquake Research Institute' (KOERI) in Istanbul, Turkey.

Although the project has ended, further developments are being carried out within the project TRIDEC ('Collaborative, Complex and Critical Decision-Support in Evolving Crises'), funded by the Seventh Framework Programme of the European Commission.

More information: DEWS www.dews-online.org/

TRIDEC www.tridec-online.eu/web/guest/project

Provided by CORDIS

Citation: Detecting tsunami events before they occur (2013, May 3) retrieved 25 April 2024 from <https://phys.org/news/2013-05-tsunami-events.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.