SnT 2025 8 SEPTEMBER ONLINE DAY 9 TO 12 SEPTEMBER AT HOFBURG PALACE, VIENNA & ONLINE
CTBT: SCIENCE AND TECHNOLOGY CONFERENCE

The 15th anniversary of the "Tsunami Agreement" between UNESCO and CTBTO: reflections from the past and an outlook to the future

Ocal Necmioglu, **Bernardo Aliaga**, Denis Chang Seng, Srinivasa Kumar Tummala

UNESCO – Intergovernmental Oceanographic Commission

INTRODUCTION AND MAIN RESULTS

UNESCO-IOC's Tsunami Programme supports global warning efforts, with 21 NTWCs in 20 CTBT States receiving real-time IMS data. Beyond seismic data, hydroacoustic and infrasound data aid tsunami detection and monitoring. This presentation reviews 15 years of progress and explores future synergies, focusing on capacity building for developing countries and SIDS.

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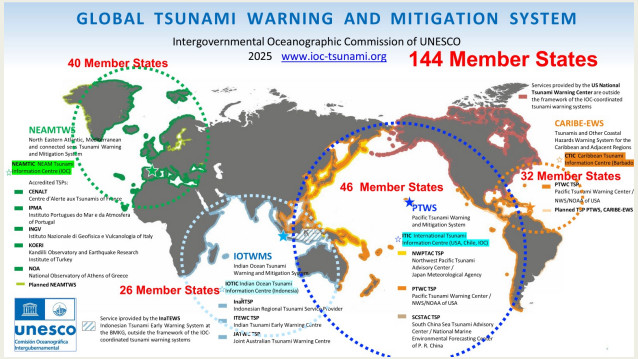
OVERVIEW OF THE UNESCO-IOC TSUNAMI PROGRAMME



UNESCO-IOC's Tsunami Programme is a science-policy interface with demonstrated success and more than a century of cumulative history of international collaboration towards a tsunami resilient world.

Countries with NDCs (left), with Tsunami Agreement (middle) and with NTWCs (right).

As of today, 21 NTWCs in 20 CTBT Signatory States have signed a Tsunami Warning Agreement with the CTBTO under this framework and receive real-time IMS data. Several other signatures are in the pipeline, such as Cuba, Peru and Viet Nam.

DIFFERENCES IN THE STRUCTURE OF NTWCs

In some cases, the National Tsunami Warning Center (NTWC) is a unique agency that monitors and issues tsunami warning, whereas in some cases the NTWC that is responsible to issue the warning may rely on a different national agency(ies) that has the capability and responsibility to monitor and assess the source of the tsunami, whether it's an earthquake or of volcano origin.

THE VALUE OF IMS DATA TO THE NTWCs

High-quality real-time seismic data contributes and improves the estimations of the earthquake parameters required for initial tsunami warning. Hydroacoustic data can be used to identify the horizontal extent of the fault ruptured during the earthquake and detection of tsunami waves, including of non-seismic origin. The value of the Infrasound data has been demonstrated in the case of the HTHH event in 2015 and can assist the NTWCs in assessing the tsunamigenic potential of a volcanic unrest.

DATA AVAILABILITY TO THE NTWCs

The Agreement between UNESCO and CTBTO refers to all IMS waveform data. Accordingly, national agencies with volcano monitoring capabilities and integrated within the National Tsunami Warning System should also be able to receive and analyse IMS hydroacoustic and infrasound data.

CONNECTING UNESCO-IOC AND CTBTO CAPACITY BUILDING EFFORTS

Noting especially the strong interest of many CTBTO Signatory States in the civil and scientific use of the IMS data, which many of them are also IOC Member States, and further noting the extensive capacity building programs of CTBTO available to the National Data Centres, there is a great potential to exploit the possibility the Agreement provides in terms of joint capacity building activities.

The aspect is in fact specifically reflected in the Agreement: "*Each Party shall keep the other Party informed of its plans for capacity-building in developing States in which there in an overlap in the technical field and the target geographical region between the two Parties. The Parties shall take measures to integrate the approach to capacity-building where there is substantial overlap in the technical field and target geographical region.*"

Moreover, "National Data Centers for All" (NDCs4All) initiative of the CTBTO provides a timely opportunity to take concrete steps towards such collaboration. In most cases, it's the same agency that assumes the role of the NDC and the NTWC and hence the use of the IMS data for the purposes of the tsunami monitoring and warning is an additional element that provides a framework for the long-term sustainability of the IMS.

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