**Working Group 2**

**TSUNAMI DETECTION, ANALYSIS AND FORECASTING**

**Progress Report**

**Introduction**

At the sixteenth Session of the Intergovernmental Coordination Group Warning System for Tsunami and Other Coastal Hazards in the Caribbean and Adjacent Regions (ICG / CARIBE-EWS-VIII), held in XXXXX on XXX to XXX, it was decided to reorganize the working group structure to align with the pillars of the UNESCO Ocean Decade. Among these a new Working Group 2: Tsunami Detection Analysis and Forecasting was established.

As established the General Tasks of the Group are as follows:

* Support the operations of a fully interoperable regional tsunami warning system.
* Support and integrate the work of the subgroups.
* Present a progress report based on the Key Performance Indicators related to the UN ODTP.
* Establish strategies to enhance the warning system by including the detection, analysis and forecasting of other coastal hazards.
* Promote the sharing of experience and expertise, and capacity building essential to effective tsunami source characterization, detection and forecasting.

In addition to the General tasks, goals and tasks related to the working group linked with different tsunami subareas are as follows:

Tsunami Source Detection, Identification and Characterization:

* Ensure the effectiveness of the observational system by promoting the open exchange of seismic and other relevant data in real time.
* Advise member states on the monitoring and detection capabilities of tsunamigenic sources needed for operating national tsunami warning centre.
* Assure the compliance with the agreed standards for the detection systems.

Tasks linked with Tsunami Wave Detection:

* Ensure the effectiveness of the observational system by promoting the open exchange of sea level data in real time.
* Advise member states on the tsunami monitoring and detection capabilities needed for operating national tsunami warning centres.
* Assure the compliance with the agreed standards for the tsunami detection systems.

Tasks linked with Tsunami Forecasting:

* Define the operational requirements for the monitoring and forecasting systems.
* Provide guidance on tsunami forecasting tools to TSPs, NTWCs and provide actionable information to emergency managers.
* Explore, experiment and test novel approaches for tsunami forecasting.

**Significant Actions/Notes Since the Last Session**

On August 7-11, 2023 The Puerto Rico Seismic Network hosted a GNSS workshop in Aguadilla, PR. The workshop was further supported by the US NOAA ITIC Caribbean office. The goal of this workshop was to enhance capacity building and collaboration across CARIBE-EWS states with regards to GNSS best practices for topics including station installation, data exchange, and data processing.

In October 2023, an IOC circular letter was distributed to the ICG/CARIBE-EWS Tsunami National Contacts (TNC) and Tsunami Warning Focal Points (TWFPs) requesting nominations for the newly established working group. Nominations remained open until the middle of November 2023; preliminary group member lists were circulated in January 2024.

On January 27, 2024 the WG2 chair attended the initial working group meeting for the IOCARIBE GOOS TAC-OOFS. TAC-OOFS, An Ocean Observing and Forecasting System for the Tropical Americas and Caribbean Region, is a UN Decade of Ocean Science supported program with the aim to create a cohesive ocean observing system in the region. Of particular interest to the ICG Caribe-EWS is the inclusion of sea level stations in the effort. TAC-OOFS provides an opportunity to possibly increase the number of sea level stations available for tsunami detection and analysis as well as a possible avenue to create more standardization of sea level station meta-data.

In February 2024, a preliminary meeting of the working group met virtually to establish working goals and dynamics for the coming year. Two key projects were noted: 1. The need to develop a working group of specialists to support implementation of cable based data into tsunami monitoring. 2. Further develop the monthly reports to indicate the impact of data availability on tsunami detection. It was also discussed that a monthly or bi-monthly webinar on topics regarding Tsunami Detection Analysis and Forecasting would be worth developing.

In March 2024, the WG2 chair participated in a meeting with UNESCO and NOAA representatives to start the organization of an English language sea level training/workshop modelled after the Spanish language workshop previously held in Costa Rica.

NOAA PTWC and the NOAA ITIC-CAR have been tracking the data availability of sea level and seismic data in the region. For sea level data, there is an endemic data gap in the northwestern Caribbean.

**Draft Recommendations For ICG/CARIBE EWS**

* **Notes** and **appreciates** the member States role of network operators in the region for the installation, maintenance, and data transmission from seismic, sea level and GNSS stations in the region
* **Appreciates** the NOAA ITIC-CAR and PTWC for improving the automated processing and continued reporting on the status of seismic and sea level stations;
* **Notes** that a high percentage of the stations in the CARIBE-EWS sea level network are currently non-operational and therefore can delay the proper assessment of tsunami events and the issuance of timely and accurate tsunami alerts;
* **Urges** Member States and operators of sea level stations contributing to CARIBE EWS to maintain their sea-level stations in an operational status and regularly review and update the status of its stations, in the IOC Sea Level Monitoring Facility, and inform ITIC-CAR and Secretariat on plans for repair;
* **Recommends** WG2 perform a quantitative study of the impact of outages in the Caribbean
* **Further Recommends** WG2 work with partners to develop a tool to include the impact of outages in the monthly reports.
* **Appreciates** the work of the UN Ocean Decade on smart cables;
* **Further Recommends** the formation of a task team under WG2 to specifically address the implementation of such technology in the Caribe-EWS.
* **Recognizing** the importance of digital technologies for capacity building;
* **Suggests** that WG2 explore developing a monthly or bi-monthly webinar on topics regarding Tsunami Detection Analysis and Forecasting.
* **Recognizing** and **Appreciating** the success of the Spanish language sea level training in Costa Rica
* **Recommends** that WG2 organize an English language sea level station workshop with the support of NOAA and the secretariat.