**INTERGOVERNMENTAL OCEANOGRAPHIC OMMISSION of UNESCO**

**Sixteenth Session of the Intergovernmental Coordination Group for the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE EWS-XVI)**

**Heredia, Costa Rica, 25–28 April 2023**

Nicaragua Country Report

San José, Costa Rica, 25 April 2023

1. 2021 Installation of accelerometers Nicaragua (25), El Salvador (25), Guatemala (17), Costa Rica (4) within the EEW project with Switzerland; Drastic improvement of detection and location capability of CATAC and possibility to use FINDER especially in the N of Central America.
2. 2021 three further members of CATAC staff start Masters studies at UNAN university in Managua.
3. 2021, 40 reception equipment with EWBS transmission system are installed
4. 2021/12 ICG/PTWS XXIX:  CATAC is accepted to start working in routine mode in Jan 2022.
5. 2021, Telegram is used to transmit messages to groups of recipients
6. 2022, Creation of App for EEW
7. 2022, With the cooperation of Switzerland, a program is developed to send EEW messages through EWBS
8. 2022 Civil Defense installs 20 sirens at the Caribbean coast of Nicaragua.
9. 2022 CATAC starts to integrate GPS data for the definition of Strong Earthquakes.
10. 2022 CATAC investigates with numeric simulations the widespread possibility of local tsunamis with very short warning time in all countries of Central America.
11. 2022 CATAC reduces the time necessary for initial tsunami simulation with TOAST using magnitude from Moment Tensor with W-phase and escalated durations of tsunami propagation and the precision of the bathymetric model (between  [15, 30](callto:15,%2030) or 90 arc seconds).
12. 2022 CATAC starts to test the FINDER procedure from ETHZ for the fast definition of the parameters of large earthquakes for EEW and to investigate the possible use for tsunami warning. FINDER uses high frequency seismic data from a large number of stations.
13. 2022 CATAC starts to develop a concept for the tsunami warning in the big lakes of Nicaragua and the Gulf of Fonseca due to both tectonic earthquakes and volcanic phenomena and landslides form the volcanoes.
14. 2022/02 CATAC analyses the SOP of COPECO in Honduras and proposes changes permitting the use of CATAC products.
15. 2023/01 CATAC is integrated in the administrative structure of INETER on the level of the Executive Directorate.
16. 2023 CATAC prepares and carries out 15 Webinars (2 hours each) with all recipient institutions of its products (cooperation with CEPREDENAC and JICA). On CATAC procedures and products and improvement and acceleration of interaction. CATAC will support CEPREDENAC in the 3rd regional Exercise on Disaster mitigation (June 2023, Panama.
17. 2023/04 CATAC starts a project with JICA on capacitation for institutions in Central America and Belize and Dominican Republic which receive CATAC products (Revision of SOP; CATAC products; exchange of data and cooperation of seismological institutions).
18. 2023/03 CATAC starts to send its messages to PTWC (in Spanish) by email.
19. 2023/04 INETER is preparing a project proposal to the government of Nicaragua on the enforcement of CATAC (software licenses, IT hardware especially faster GPU, more redundancy, communications equipment).