

Mediterranean and Black Seas Hydrographic Commission (MBSHC)

and

Tsunami Early Warning and Mitigation System in the North Eastern Atlantic, the Mediterranean and Connected Seas (NEAMTWS)

16th Meeting of MBSHC
Odessa, Ukraine (22-24 September 2009)

Executive Summary

This background paper provides a brief introduction to the NEAMTWS and outline areas where national hydrographic institutions can contribute to NEAMTWS.

Member States of the MBSHC are invited to note the information provided and to take action as appropriate.

Background

In 2005 the Intergovernmental Oceanographic Commission of UNESCO was given the mandate by its member states and the international community to coordinate the development of the NEAMTWS. The coordinated development of NEAMTWS is done through an Intergovernmental Coordination Group of which all Mediterranean and Black Sea member states are full members.

The core elements of the NEAMTWS are networks of seismometers, sea level gauges and deep ocean pressure sensors that report their observations in real time to designated regional tsunami watch centres where alerts are issued to national focal points (disaster authorities). Following the detection of a seismic event in the ocean, real time sea level observations can help to confirm the existence of a major tsunami or are used to cancel a tsunami watch. Contributing, and in return receiving, the relevant data is a key element in developing national early warning capacity.

For planning the national response to such hazards, coastal zone planning tools are increasingly used. Inundation models provide the basis for scenario development and subsequent risk assessment. To do this effectively high-resolution bathymetry in the national coastal zone is required. Such models will also be available to assist in planning coastal zone development and evaluating the impact of such development.

The Mediterranean region is estimated to have accounted for 14% of the 1,100 tsunamis that occurred globally between 1650 B.C. and A.D. 2008; some 60% of which were caused by an earthquake (Lisbon 1755, Nice 1979, Messina 1908, Greece 1956, Algeria 2003). Several tsunamis which caused significant loss of life and damage to property were generated by volcanic eruptions and landslides; a high percentage of these affected the eastern and central Mediterranean Sea and originated in the Hellenic Arc subduction zone.

After the establishment of the ICG/NEAMTWS in 2005, steady progress has been made towards the establishment of the regional early warning and mitigation system for tsunamis and other sea-level related hazards. In particular, the architecture of the early warning system has been defined around a combination of regional/sub-regional centres in charge of broadcasting tsunami “watches” (RTWCs) that would then be assessed by national tsunami warning centres (NTWCs), responsible for issuing warnings for potentially affected coastal populations within their territories. France (Commissariat à l’Energie Atomique - CEA), Greece (National Observatory of Athens - NOA), Italy (National Institute of Geophysics and Volcanology - INGV), Portugal (Meteorological Institute - IM) and Turkey (Kandilli Observatory - KOERI) have all offered to act as regional watch centres, with Germany (GFZ) providing a backup function.

A number of countries have already established Tsunami National Contacts (TNCs) which are focal points at the diplomatic level and Tsunami Warning Focal Points (TWFPs) which are the national institutions authorized to receive tsunami watches from the regional centres, and issue national tsunami warnings.

NEAMTWS relies on the enhancement and strengthening of existing national monitoring networks and their close cooperation in a regional context. For the sea level network, the Global Sea Level Observing System (GLOSS) is directly coordinated by UNESCO/IOC. For seismic coverage several networks are involved: Mediterranean Very Broadband Seismographic Network (MedNet); Virtual European Broadband Seismographic Network (VEBSN); Hellenic Seismological Broadband Network (BBNET); Western Mediterranean (WM) broad-band seismological network; and the GEOFOrschungsNetz (Geo Research Network). The multi-purpose aspect of these observing networks should also be mentioned – for example sea level observations can assist, inter-alia, in operational storm surge monitoring and modelling, the production of flood maps for coastal zone management and studies of long-term sea level change.

Several meetings and studies have highlighted gaps in the seismic and sea level observation networks in the Mediterranean and particularly in the North African region thereby exposing coastal regions to greater risks from tsunamis. There are seismic/tsunamigenic regions directly off the coast of Algeria and Tunisia. In order to improve the quality of NEAMTWS all countries are urged to participate actively in IOC’s Intergovernmental Coordination Group for the Mediterranean Tsunami Warning System (NEAMTWS) and to participate actively in its technical working groups.

In order to further the implementation of NEAMTWS, Member States are kindly asked to:

grant permission for the exchange of seismic, sea level and bathymetric data meeting the appropriate technical requirements with the established international networks sponsored by IHO and IOC and for the use within the North East Atlantic and Mediterranean Tsunami Warning System;

consider full participation in the technical working groups of NEAMTWS by the national sea level agency/Hydrographic Office and the seismic institute/agency. The next meeting of NEAMTWS/ICG will be in Istanbul from 13-15 November 2009;

designate the Tsunami Warning Focal Points (TWFP) and the Tsunami National Contacts (TNC) and inform the IOC secretariat. For the definition of the TWFP and TNC please see Annex I.

Supplementary Information

Woodworth P.L., Rickards L.J. & B. Pérez (2009) A survey of European sea level infrastructure. *Natural Hazards and Earth System Sciences*, 9, 927–934.

<http://www.nat-hazards-earth-syst-sci.net/9/927/2009/nhess-9-927-2009.pdf>

More information about the NEAMTWS is available at: http://www.ioc-tsunami.org/index.php?option=com_content&task=view&id=138&Itemid=1042

Annex I

Tsunami Warning Focal Points (TWFP): The 7x24 contact person, or other official point of contact or address, is available at the national level for rapidly receiving and issuing tsunami event information (such as warnings). The Tsunami Warning Focal Point either is the emergency authority (civil defense or other designated agency responsible for public safety), or has the responsibility of notifying the emergency authority of the event characteristics (earthquake and/or tsunami), in accordance with national standard operating procedures. The Tsunami Warning Focal Point receives international tsunami warnings from the NEAMTWS or other regional warning centers.

Tsunami National Contacts (TNC): The person designated by a Member State to an Intergovernmental Coordination Group (ICG) to represent his/her country in the coordination of international tsunami warning and mitigation activities. The person is part of the main stakeholders of the national tsunami warning and mitigation system. The person may be the Tsunami Warning Focal Point, from the national disaster management organization, from a technical or scientific institution, or from another agency with tsunami warning and mitigation responsibilities.

The designation of the TNCs and TWFPs and corresponding updates should be communicated in writing using the IOC Tsunami National Contact Form and IOC Tsunami Warning Focal Point Form (both attached to this letter), respectively. UNESCO and/or IOC Member States shall forward to the IOC Executive Secretary, designations for TNCs and TWFPs through one of the following channels:

1. Minister of Foreign Affairs

2.Head of UNESCO National Commission

3.Permanent Delegate to UNESCO

4.Head of the specified national coordinating body for liaison with the IOC (“IOC Focal Point”). UNESCO/IOC shall request validation through either the Permanent Delegate to UNESCO, the Head of the UNESCO National Commission or the Minister of Foreign Affairs

Contact details for your country’s designated TWFP and TNC should be forwarded to Mr Koltermann at p.koltermann@unesco.org, copied to Mr Ulrich Wolf (e-mail: u.wolf@unesco.org) and Ms Collins (e-mail: f.collins@unesco.org).