INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION
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МЕЖПРАВИТЕЛЬСТВЕННАЯ ОКЕАНОГРАФИЧЕСКАЯ КОМИССИЯ
اللجنة الدولية الحكومية لعلوم المحيطات
政府间海洋学委员会

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(Available in English and French)

IOC/VR/BA/DCS/DV
31 August 2022

To : ICG/NEAMTWS Tsunami National Contacts (TNCs)
ICG/NEAMTWS Tsunami Warning Focal Points (TWFPs)
ICG/NEAMTWS Officers
ICG/NEAMTWS Steering Committee

cc. : Official National Coordinating Bodies for liaison with the IOC
Permanent Delegates/Observer Missions to UNESCO and
National Commissions for UNESCO in ICG/NEAMTWS Member States[1]

Subject: Workshop on the Requirements, Challenges, Opportunities for Local Tsunami Warning Systems in the Context of Multi-Hazard Disaster Risk Mitigation in the North-Eastern Atlantic and Mediterranean Region, 4–5 October 2022, Ispra, Italy

This workshop aims to bring earthquake, volcano and tsunami (including meteo-tsunami) early warning experts to discuss in detail the requirements of effective local tsunami warning in the multi-hazard disaster risk mitigation context. The outcome report of the workshop is expected to assist the development of an integrated, truly multi-hazard-oriented coastal community resilience policy brief for Europe and help to further advance the Tsunami Early Warning and Mitigation System in the North-Eastern Atlantic, the Mediterranean and Connected Seas.

This letter is an invitation to participate to the workshop which will be held in hybrid mode and in English on 4–5 October 2022 in Ispra (Italy) under the auspices of the Joint Research Centre (JRC) of the European Commission in partnership with IOC-UNESCO. The concept note of the workshop and its provisional agenda is enclosed hereafter. Additional information, including the registration link, is provided here.

The Intergovernmental Oceanographic Commission (IOC) of UNESCO and the JRC have collaborated on many aspects in the North-Eastern Atlantic and Mediterranean (NEAM) region, including the preparation of tsunami scenarios, provision of operational tsunami early warning software to Tsunami Service Providers, the establishment and management of inexpensive sea-level devices network, and recent initiatives towards community preparedness and response in the Mediterranean region through the Tsunami Last Mile Projects in Greece, Türkiye and Malta.

[1] Albania, Algeria, Belgium, Bulgaria, Cabo Verde, Croatia, Cyprus, Denmark, Egypt, Estonia, Finland, France, Georgia, Germany, Greece, Iceland, Ireland, Israel, Italy, Lebanon, Libya, Malta, Mauritania, Monaco, Montenegro, Morocco, Netherlands, Norway, Poland, Portugal, Romania, Russian Federation, Slovenia, Spain, Sweden, Syria, Tunisia, Türkiye , Ukraine, United Kingdom of Great Britain and Northern Ireland

The hybrid workshop is open to all ICG/NEAMTWS Member States representatives and experts on a self-funding basis for those willing to attend in person. Please note that in presence participation is limited due to COVID-19 restrictions.

Participants are kindly requested to register on the JRC page after creating their account. Once registered, we would be grateful if you could inform the IOC Secretariat by email to Ms Esmeralda Borja (e.borja-aviles@unesco.org) copied to Dr Denis Chang Seng, Programme Specialist and Technical Secretary of ICG/NEAMTWS (d.chang-seng@unesco.org), no later than 16 September 2022.

With the assurances of my highest consideration, I remain,

Yours sincerely,

[signed]

Vladimir Ryabinin
Executive Secretary

Enclosures: (2)

- Workshop Concept Note
- Provisional Agenda

Appendix 1: Concept Note for the JRC/DG-ECHO/UNESCO-IOC Joint Hybrid-Workshop on

Local Tsunami Warning in the context of Multi-Hazard Disaster Risk Mitigation – Requirements, Challenges, Opportunities

4–5 October 2022 | EC-JRC Ispra-Italy

The classical tsunami warning methodology mainly addresses tsunamis due to earthquakes depending on the reliable identification of earthquake parameters, which generally dictates >7 min before the initial tsunami warning is issued with acceptable reliability. This may sound fast, however, such a delay may still be late for some coastal locations, where tsunamigenic earthquake sources are very near the shoreline. In addition to the historical 1908 Messina Strait earthquake and tsunami, 2018 Palu, 2018 Anak Krakatau and 2022 Hunga Tonga-Hunga Ha'apai are other events that clearly remind us of the urge the relevant communities to fill the gaps of local/near-field tsunami warning in the context of multi-hazard monitoring and early warning systems.

In that respect, coastal community tsunami resilience requires an integrated, multi-disciplinary and multi-hazard-oriented approach, as underlined by the target (g) of the Sendai Framework for Disaster Risk Reduction: which aims to increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to people by 2030.

Local tsunami warning systems configured as part of multi-hazard early warning systems coupled with earthquake or volcano early warning systems could, in theory, reduce the warning time significantly and could help the evacuation process, especially in coastal communities with low awareness of the tsunami threat after a strong earthquake or volcanic activity. In fact, the inadequacy of centralized tsunami warning systems at the local level — based on determination of earthquake parameters — might perhaps be only remedied by having such systems embedded in the National Tsunami Warning Centre (NTWC) – Tsunami Service Provider (TSP) operational framework. This would have to be a close collaboration between dedicated local or community-based tsunami awareness and preparedness programmes, where different stakeholders are involved.

Several attempts were made to address this gap, ranging from conceptual systems to pilot implementations. In the meantime, there are also important developments in the publicly available earthquake early warning systems around the globe, and the need to address meteo-tsunamis in the context of tsunami early warning has also been recognised.

The European Commission Joint Research Centre (JRC) is closely involved in the work of the UNESCO-Intergovernmental Oceanographic Commission (IOC), contributing to its work in many aspects: from the generation of tsunami scenarios to the provision of operational tsunami early warning software and inexpensive sea-level devices (IDSL) globally; or initiatives towards establishing Tsunami Ready communities in the Euro-Mediterranean region. The JRC develops innovative technological solutions for disaster risk management, including newly designed sensors and alerting devices for tsunami risk. The Directorate General for European Civil Protection and Humanitarian Aid Operations (DG ECHO) has funded the test of their effectiveness and interoperability during 2018-2021, through the Tsunami Last Mile projects, as implemented first in Greece and Turkey (2018/2019) and in Malta and Indonesia (2020/2021) through “Last Mile” projects.

One of the most recent examples of such collaboration in capacity building was the DG-ECHO / UNESCO-IOC project “Strengthening the Resilience of Coastal Communities in the North-East Atlantic and Mediterranean Region to the Impact of Tsunamis and Other Sea Level-Related Coastal Hazard (CoastWAVE)“. This initiative started in late 2021, aimed to strengthen the resilience of vulnerable coastal communities in the North-East Atlantic, Mediterranean and its

connected seas (NEAM) region to tsunamis and other sea level-related hazard by adapting Global Tsunami Ready Standards and Guidelines and pilot Tsunami Ready within the framework of the Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North-Eastern Atlantic, the Mediterranean and Connected Seas (ICG/NEAMTWS) and providing a sustainable sea-level measurement network.

Based on the framework described above, this workshop will bring earthquake, volcano and tsunami (including meteo-tsunami) early warning experts to discuss in detail the requirements of effective local tsunami warning in the multi-hazard disaster risk mitigation context. The outcome report of the workshop is expected to assist the development of an integrated, truly multi-hazard-oriented coastal community resilience policy brief for Europe.

Appendix 2: Workshop Agenda

JRC/DG-ECHO/UNESCO-IOC Joint Hybrid-Workshop on

Local Tsunami Warning in the context of Multi-Hazard Disaster Risk Mitigation – Requirements, Challenges, Opportunities

4–5 October 2022 | *EC-JRC Ispra-Italy*

AGENDA

Day-1: 4 October 2022

12:30 – 13:30 Welcome Buffet Lunch

14:00 – Welcome
Alessandro Annunziato - *JRC*

14:05 – Workshop Introduction
Olimpia Imperiali - DG-ECHO
Denis Chang Seng - UNESCO-IOC
Ocal Necmioglu - JRC

14:15 – Overview of the "CoastWAVE" Project
Denis Chang Seng - UNESCO-IOC

14:30 – Global Tsunami Early Warning Systems and Remaining Challenges
Bernardo Aliaga - UNESCO-IOC

14:45 – Global Efforts To Develop Guidelines on Monitoring and Warning For Tsunamis Generated by Non-Seismic and Complex Sources
Rick Bailey - UNESCO-IOC

15:00 – InaTEWS: achievements and lessons learnt from recent events
Dwikorita Karnawati - Indonesian Agency for Meteorology, Climatology and Geophysics (Indonesia)

15:30 – CAT-INGV as an ICG/NEAMTWS Example TSP
Alessandro Amato - National Institute of Geophysics and Volcanology (Italy)

16:00 – 16:15 Coffee Break

16:15 – Early Warning Systems of the Stromboli Volcano
Maurizio Ripepe - University of Florence (Italy)

16:45 – Early Warning Systems of the Krakatau Volcano
Semeidi Husrin - National Research and Innovation Agency (Indonesia)

17:15 – Meteo-Tsunami Early Warning
Ivica Vilibić - Ruđer Bošković Institute (Croatia)

17:45 – Earthquake Early Warning Systems
Aldo Zollo - University of Naples Federico II (Italy)

18:15 – End of Day 1

19:30 Workshop dinner hosted by the EC-JRC

Day-2: 5 October 2022

09:00 – Summary of Day-1 and Outlook for Day-2
Denis Chang Seng - UNESCO-IOC
Ocal Necmioglu - JRC

09:15 – Revisiting 1908 Messina Strait Earthquake & Tsunami: What if it happens today? Collective scenario development and critical discussion on the efficiency of the existing tsunami warning chain.
Introduction by INGV - moderation by JRC

10:30 – 10:45 Coffee Break

10:45 – EC-JRCs “Last Mile” TEWS implementations around the world
Alessandro Annunziato - JRC

11:15 – Collective discussion on the requirements for local tsunami early warning systems in the context of multi-hazard disaster risk mitigation

12:45 – Workshop Summary
Ocal Necmioglu - JRC
Denis Chang Seng- UNESCO-IOC

13:00 – End of Workshop

13:00 – 14:00 Buffet Lunch