

12.1 International Platform on Earthquake Early Warning Systems (IP-EEWS) (UNESCO)

OECD GP Activity	UN SF Activity	UN SD Goals / Targets
1. Natural hazards identification and communication, NH (early) warning systems ¹	4. Enhancing disaster preparedness for effective response	3.D Strengthen the capacity of all countries ... for early warning ,warning, risk reduction and management of national and global health risks

Classification according to OECD Guiding Principles, UN Sendai Framework Priorities/Activities, and UN SDGs and Targets

Figure 1: The village of Onna (L'Áquila (AQ), Abruzzo, Italy), seven months after the L'Áquila earthquake of April 2009



Source: Photo by Brian Roy Rosen © Darkroom Daze Creative Commons Attribution-NonCommercial-ShareAlike License (<https://www.flickr.com/photos/brize/5805741047/>)

Short Facts:	Natural Hazard(s) Considered:
<p>Governance approach: International Scientific Platform</p> <p>Source: Scientific experts from top institutions</p> <p>Entry into force: 2015</p> <p>Targeted Stakeholders: Scientists, operators and authorities</p> <p>Scope of applicability: Global</p>	<ul style="list-style-type: none"> Earthquakes <p>Climate change: Natech risks can be reduced by taking earthquake early warning systems into account more in climate change adaptation</p>

Description

As the only UN agency with a mandate in Earth Sciences, UNESCO has been very active in promoting international cooperation, scientific knowledge exchange and capacity building for the development, and implementation of geo-hazard early warning systems, including Earthquake Early Warning Systems (EEWS), worldwide.

An EEWS helps the public, emergency managers and the private sector by providing them with information about potentially catastrophic earthquake hazards. This offers enough time to implement automatized emergency measures. At the same time, CO₂ emissions produced by catastrophic impacts and subsequent effects of earthquakes, such as those generated by fires, collapses, and pollution, as well as those produced in recovery and reconstruction processes, can be reduced considerably. Furthermore, EEWS risk management, emergency planning, disaster management, climate change adaptation, and risk communication are supported by the EEWS in reducing Natech risks.

Such a system is based on state of the art technology using rapid telemetric analysis of the initial seismic waves generated by an earthquake, detected from a dense network of seismic sensors. In recent years, EEWS have been developed independently in a few countries. Further testing, increased density coverage in seismic observation stations, regional coordination, and further scientific understanding are necessary to develop an EEWS. Meanwhile, these systems require improved technical and operational capacities to be able to guide policy decisions.

The international Platform on Earthquake Early Warning Systems (IP-EEWS) was launched in December 2015 by UNESCO's Section on Earth Sciences and Geo-Hazards Risk Reduction. Leading scientific experts from top institutions from China (China Earthquake Administration and Institute of Care Life), Germany (GFZ - German Research Centre for Geosciences), Italy (University of Naples Federico II), Japan (Meteorological Research Institute), Mexico (Centro de Instrumentación y Registro Sísmico), Romania (National Institute for Earth Physics), Spain (Universidad Complutense de Madrid), Switzerland (ETH - Swiss Federal Institute of Technology Zurich), Turkey (Kandilli Observatory and Earthquake Research Institute, Boğaziçi University), and USA (University of California Berkeley, and USGS), are represented in the platform.

Since the creation of the IP-EEWS, experts have been working on:

- Fostering a multi-disciplinary approach by supporting earthquake prone countries that would like to engage in the establishment of EEWS;
- Organizing academic activities leading to build capacities worldwide for the establishment of EEWS;
- Providing guidance on how local, national, regional and international investments in EEWS would best meet to address current challenges and provide a path forward;
- Supporting education activities aiming to educate populations (from early child education to life-long learning education) on early warning systems (e.g. limitations, behaviours).
- Supporting Social Science studies for better understanding perceptions and beliefs affecting EEWS.

Through these activities, the IP-EEWS experts' work contributes to:

- Raise awareness on the importance of earthquake preparedness, and the role of EEWS therein;
- Assess current capacities, gaps, challenges and opportunities for the advancement of EEWS worldwide, from science to policy, and to strengthen cooperation between active groups developing EEWS around the globe;

- Present IP-EEWS globally in order to expand the IP-EEWS database of national, regional and international experts involved in the development and/or operation of EEWS, to seek the engagement of additional countries in IP-EEWS and to raise additional funding.
- Provide guidance, through IP-EEWS, on how local, national, regional and international investments in EEWS would best meet to address current challenges and provide a path forward.
- Promote EEWS within risk management, emergency planning, disaster management, climate change adaptation, and risk communication in order to reduce Natech risks.

Link/Contact:

<http://www.unesco.org/new/en/natural-sciences/special-themes/disaster-risk-reduction/geohazard-risk-reduction/early-warning-systems/ip-eews/>

Comments by the UN/OECD Natech-Steering Group:



The approach may be useful to reduce Natech risks and Natech consequences due to other natural hazards.

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