

Asserting the role of volcano observatories in the context of Sendai commitments and Early Warnings for All

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Abstract: Nations of the world are committed to improving multi-hazard early warning systems (MHEWS) under the Sendai Framework for Disaster Risk Reduction 2015-2030. In 2022, the UN Secretary General additionally announced a major push towards achieving global reach of MHEWS under the Early Warnings For All initiative. Most attention for MHEWS is directed towards hydrometeorological events, but it is essential that volcanic risks are well managed due to the certainty of future events with the potential for significant to catastrophic impacts. How will we achieve this?

The international aviation community already sets global requirements and recommendations for volcanic monitoring, and the marine and tsunami communities are increasingly developing better standards and recommended practices. To these can be added national best practices for disaster management, agriculture, land transport and other sectors to articulate an integrated concept for what the world needs from volcanology.

Gap assessment tools have been developed for meteorology that can be adapted to assess needs and practical actions for volcanology, including legislative mandates, professional staffing levels, standards and competencies, training and research, data, and quality-managed operations to support MHEWS best practices with respect to volcanology.

Most importantly, global coordination and resource-sharing arrangements must be developed to enable equitable practical implementation of improved volcanic hazards assessment and mitigation despite inequitable resourcing around the world. The role of IAVCEI, working with UN bodies, is critical in this process.



Above: Extracts from Marine, Aviation, and Tsunami guidance and requirements issued by WMO, ICAO, and UNESCO respectively

Some points to ponder:

- Globally, there is insufficient volcanic monitoring, and the monitoring resources are unevenly distributed. Local, national, regional and global needs cannot be met without investing in operational volcanology. IAVCEI represents operational volcanologists through the World Organization of Volcano Observatories, a volunteer organization.
- Investing in early warnings for overlapping cross-border hazards **without** structured and resourced coordination is inefficient and likely to be ineffective for governments, users and donors.
- International coordination at UN level can and should draw on volcanological expertise through IAVCEI, but should consider what resourcing can be applied to the coordination process.
- An ongoing coordination structure is urgently required to accelerate progress towards Sendai and to respond so existing and unmet requirements.



Above: IAVCEI is an effective and active Association of IUGG, although working through volunteer labour.