

5.18 Multi-hazard early warning

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Author/s and affiliations: Maria Dubovik, Laura Wendling, Ville Rinta-Hiiro, Arto Laikari, Malin zu-Castell Rüdenhausen

VTT Technical Research Centre Ltd, P.O. Box 1000 FI-02044 VTT, Finland

Multi-hazard early warning system	Natural and Climate Hazards
Description and justification	Natural and climate hazards occur worldwide, and they bring casualties, property damages and substantial economic losses. Disaster risk reduction is the backbone to mitigate the destructive consequences. Several parts comprise multi-hazard early warning system: (i) Disaster risk knowledge, (ii) Detection, monitoring, analysis and forecasting of the hazards and possible consequences, (iii) Warning dissemination and communication, and (iv) Preparedness and response capabilities (World Meteorological Organisation, 2018).
Definition	The degree of implementation of multi-hazard early warning system (0-2)
Strengths and weaknesses	<ul style="list-style-type: none"> + Straightforward assessment of local disaster risk reduction - Requires municipal- or national-level measures
Measurement procedure and tool	Implementation of multi-hazard early warning system can be assessed using the scale: 0 – No monitoring implemented; 1 – Only a weather monitoring system is present; 2 – Both weather monitoring system and multi-hazard early warning system are present.
Scale of measurement	Municipality
Data source	
Required data	Disaster risk knowledge, hazard monitoring and forecasting, warning communication and preparedness capabilities on the municipal or national level
Data input type	Semi-quantitative
Data collection frequency	Annually
Level of expertise required	Moderate

Synergies with other indicators	Directly related to <i>Disaster-risk informed development</i> indicator
Connection with SDGs	SDG 9 Industry, innovation and infrastructure, SDG 11 Sustainable cities and communities, SDG 13 Climate action
Opportunities for participatory data collection	No opportunities identified
Additional information	
References	<p>World Meteorological Organisation. <i>Detection, Monitoring, Analysis & Forecasting of Hazards and Possible Consequences</i>. Retrieved from: https://public.wmo.int/en/resources/world-meteorological-day/wmd-2018/multi-hazard/detection-monitoring</p> <p>World Meteorological Organisation. Multi-hazard Early Warning Systems: A Checklist: Outcome of the first Multi-hazard Early Warning Conference. 1st Multi-hazard Early Warning Conference (Cancún, Mexico), 2018.</p>