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## LEWS2020 workshop on regional Landslide Early Warning Systems – experiences, progresses and needs

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In January 2020, the *Istituto di Ricerca per la Protezione Idrogeologica* of the Italian National Research Council, the British Geological Survey, the Norwegian Water Resources and Energy Directorate, the Swiss Federal Institute for Forest, Snow and Landscape Research, and the University of Salerno - Italy have organised a 3-day workshop on regional **Landslide Early Warning Systems** (LEWS). The workshop, held in Perugia, Italy, follows a previous meeting held in Oslo, Norway, in October 2016. The main aims of the initiative are: to collect experiences from worldwide invited experts involved in the design, the development, the operation or the analysis of LEWS, and to exchange knowledge, experiences, challenges and best practices.

The first day of the workshop is dedicated to presentations from identified participants on specific topics relevant for the optimal design, implementation, and operation of global, national and regional LEWS. This is followed by a long discussion session, aimed at addressing many of the issues that are relevant for regional LEWS, including system performance, warning communication and involvement of the stakeholders. The second day is organized around four round tables on the following four topics: (i) data; (ii) landslide forecast models; (iii) warning models; (iv) scope, management structure, stakeholder involvement, and communication. The third day is focused on summarizing and formalizing the main issues discussed in an open document to be later shared with colleagues interested in LEWS.

The final purpose of the workshop is to establish and consolidate a community of experts in LEWS and to build relationships with other communities (e.g., meteorologists, climate scientists, communications scientists). This will help to level up the quality of both theory and practice, and to define standards in early warnings in order to provide timely advisories and to initiate emergency responses to landslides (particularly rainfall-induced) avoiding or reducing life and economic losses. The main outcomes of the workshop, the most debated issues, and the key recommendations included in the open document will be presented and shared.

