



Workshop venue

Barton Park - Green Business Center
Viale Giuseppe Meazza, 21 - Perugia

Workshop dates

28 January 2020 09:00 - 17:30
29 January 2020 09:00 - 18:30
20 January 2020 09:00 - 13:00



Scientific Organizers

Chair: *Fausto Guzzetti*, formerly Research Institute for Geo-Hydrological Protection, Italian National Research Council, now Italian National Civil Protection Department

Co-chairs:

Michele Calvello, University of Salerno

Graziella Devoli, Norwegian Water Resources and Energy Directorate

Katy Freeborough, British Geological Survey

Stefano Luigi Gariano, Research Institute for Geo-Hydrological Protection, Italian National Research Council

Helen J. Reeves, British Geological Survey

Manfred Stähli, Swiss Federal Institute for Forest, Snow and Landscape Research

Local Organizers

Maria Teresa Brunetti, Frida Clerissi, Stefano Luigi Gariano, Ivan Marchesini, Massimo Melillo,

Silvia Peruccacci, Paola Reichenbach, Mauro Rossi, Paola Salvati

Research Institute for Geo-Hydrological Protection, Italian National Research Council

Istituto di Ricerca per la Protezione Idrogeologica - Consiglio Nazionale delle Ricerche (CNR IRPI)

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Workshop LEWS2020

Regional Landslide Early Warning Systems experiences, progresses, needs

28 – 30 January 2020 | Perugia, Italy | Barton Park, Green Business Center

The Research Institute of Geo-Hydrological Protection 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, organize the **3-day workshop on Regional Landslide Early Warning Systems experiences, progresses, needs - LEWS2020**.

The workshop follows a previous meeting entitled "Regional early warning systems for rainfall- and snowmelt-induced landslides", held in Oslo, Norway, on 26-28 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 3-day workshop is organized as follows. The first day of the workshop (28 January) 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 (29 January) 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 (30 January) 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. This will help to level up the quality of both theory and practice, and to define standards in landslide early warning.





Schedule

28 January 2020

09:00-09:30	Welcome and Registration
09:30-09:40	Introduction to the workshop
09:40-10:00	Scopes, advantages and limitations of global LEWS - <i>Dalia Kirschbaum</i>
10:00-10:20	The Norwegian landslide forecasting and warning service - <i>Monica Sund</i>
10:20-10:40	Landslide early warning system in Switzerland: a project for future - <i>Hugo Raetzo & Manfred Stähli</i>
10:40-11:00	Scope and needs for a national landslide early warning system in Japan - <i>Hiroaki Nakaya & Joko Kamiyama</i>
11:00-11:20	Coffee break
11:20-11:40	National systems: an Italian experience - <i>Mauro Rossi</i>
11:40-12:00	Scopes, advantages and limitations of regional LEWS: the Emilia-Romagna and Valle d'Aosta experiences - <i>Sara Pignone & Sara Ratto</i>
12:00-12:20	Advanced LEWS: the role of monitoring and modelling - <i>Dennis Staley</i>
12:20-12:40	Geographical landslide early warning systems: a review - <i>Fausto Guzzetti</i>
12:40-14:00	Lunch
14:00-14:20	From landslide forecasts to landslide warnings - <i>Joanne Robbins</i>
14:20-14:40	Assessing warning models: issues and perspectives - <i>Michele Calvello</i>
14:40-15:00	Communicating weather-related warnings: issues and perspectives - <i>Claudia Adamo</i>
15:00-15:20	Stakeholder's perspective - <i>Tore Humstad</i>
15:20-15:40	Coffee break
15:40-17:00	Open discussion
17:00-17:20	Presentation of LEWS managed by CNR IRPI - <i>Ivan Marchesini</i>
17:20-17:30	Introduction of the next day

29 January 2020

09:00-09:15	Introduction to the day
09:15-10:55	Roundtables first rotation
10:55-11:15	Coffee break
11:15-12:55	Roundtables second rotation
13:00-14:00	Lunch
14:00-15:40	Roundtables third rotation
15:40-16:00	Coffee break
16:00-17:40	Roundtables fourth rotation
17:40-18:30	Recap (organizers and rapporteurs only)
19:30	Social dinner

30 January 2020

09:00-09:15	Introduction to the day
09:15-10:40	Summary from the four roundtables
10:40-11:00	Coffee break
11:00-13:00	Final discussion and follow up

Participants

Claudia Adamo	RAI - Italy
Christian Arnhardt	British Geological Survey (BGS) - United Kingdom
Maria Teresa Brunetti	Research Institute for Geo-Hydrological Protection (CNR IRPI) - Italy
Michele Calvello	University of Salerno, Department of Civil Engineering - Italy
Filippo Catani	University of Florence, Department of Earth Sciences - Italy
Frida Clerissi	Research Institute for Geo-Hydrological Protection (CNR IRPI) - Italy
Graziella Devoli	Norwegian Water Resources and Energy Directorate (NVE) - Norway
Thomas Frandl	Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management - Austria
Katy Freeborough	British Geological Survey (BGS) - United Kingdom
Stefano Luigi Gariano	Research Institute for Geo-Hydrological Protection (CNR IRPI) - Italy
Heidi Anette Grønsten	Norwegian Water Resources and Energy Directorate (NVE) - Norway
Fausto Guzzetti	Italian National Civil Protection Department - Italy
Tore Humstad	Norwegian Public Road Administration - Norway
Marcel Hürlimann	Polytechnic University of Catalonia (TECH-UPC) - Spain
Joko Kamiyama	Public Work Research Institute - Japan
Min-Seok Kim	Korea Institute of Geoscience and Mineral Resources (KIGAM) - Republic of Korea
Dalia Kirschbaum	National Aeronautics and Space Administration (NASA) - United States of America
Peter Lehmann	Swiss Federal Institute of Technology (ETH Zürich) - Switzerland
Ivan Marchesini	Research Institute for Geo-Hydrological Protection (CNR IRPI) - Italy
Massimo Melillo	Research Institute for Geo-Hydrological Protection (CNR IRPI) - Italy
Hiroaki Nakaya	National Institute for Land and Infrastructure Management (NILIM) - Japan
Gaetano Pecoraro	University of Salerno, Department of Civil Engineering - Italy
Silvia Peruccacci	Research Institute for Geo-Hydrological Protection (CNR IRPI) - Italy
Tina Peternel	Slovenian Geological Survey (GeoZS) - Slovenia
Luca Piciullo	Norwegian Geotechnical Institute (NGI) - Norway
Sara Pignone	Emilia-Romagna region, Civil Protection - Italy
Paolo Putrino	Italian National Civil Protection Department - Italy
Hugo Raetzo	Federal Office for the Environment (FOEN) - Switzerland
Sara Ratto	Valle d'Aosta region, Civil Protection - Italy
Helen Reeves	British Geological Survey (BGS) - United Kingdom
Paola Reichenbach	Research Institute for Geo-Hydrological Protection (CNR IRPI) - Italy
Joanne Robbins	Meteorological Office (Met Office) - United Kingdom
Mauro Rossi	Research Institute for Geo-Hydrological Protection (CNR IRPI) - Italy
Riccardo Sabbadini	Emilia-Romagna region, Civil Protection - Italy
Samuele Segoni	University of Florence, Department of Earth Sciences - Italy
Roy Sidle	Mountain Societies Research Institute, University of Central Asia - Kyrgyzstan
Young-Suk Song	Korea Institute of Geoscience and Mineral Resources (KIGAM) - Republic of Korea
Manfred Stähli	Swiss Federal Institute for Forest, Snow and Landscape Research (WSL) - Switzerland
Dennis Staley	United States Geological Survey (USGS) - United States of America
Hervé Stevenin	Valle d'Aosta region, Civil Protection - Italy
Monica Sund	Norwegian Water Resources and Energy Directorate (NVE) - Norway
Giovanni Valgimigli	Italian National Civil Protection Department - Italy
Margarete Wöhner-Alge	Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management - Austria
Matija Zupan	Slovenian Geological Survey (GeoZS) - Slovenia