



**Together against landslide risk
More than 1,200 scientists signed the "Florence Declaration"
Policy document, at the end of the Sixth World Forum**

Working together to raise awareness and reduce the risk of landslides, share information and support the development of new technologies to improve disaster mitigation. This, in a nutshell, is the message coming from the "Florence Declaration on Landslide Risk Reduction" adopted by the 6th World Landslide Forum (WLF6), which ended today in Florence.

More than 1,200 participants from 69 different countries, representing the global community of scientists, experts and technicians, discussed all the aspect about landslides research: from monitoring and early warning systems, to modeling, risk assessment and mitigation techniques, as well as relationships with climate change. The forum was jointly organized by the UNESCO Chair on Prevention and Management Sustainable Management of Hydrogeological Risks at the University of Florence and the International Consortium on Landslides (ICL) within the framework of the International Program on Landslides (IPL) with the support of five United Nations organizations (UNESCO, WMO, FAO, UNDRR, UNU) and four supranational scientific organizations (ISC, WFEQ, IUGS and IUGG).

To emphasise the importance of this event, the 6th World Forum on Landslides in Florence was awarded the Medal of the President of the Italian Republic and the patronage of five ministries and three departments of the Presidency of the Council of Ministers. "The declaration issued at the 6th World Landslide Forum is a document of intent that indicates an important direction of work," explains Nicola Casagli, professor at the University of Florence, who is also President of the International Consortium on Landslides (ICL). It calls on institutions and bodies worldwide to commit to the Kyoto 2020 commitment under the Sendai for Disaster Risk Reduction 2015-2030 and to adhere to the 2030 Agenda for Sustainable Development. The declartion also contains a pledge to all those working on landslides as scientists or technicians to participate in the open-access publication of data and information so that knowledge can spread by promoting cooperation between governments, civil society and the scientific communities to reduce the risks associated with these disasters."

As the Forum is coming to an end, the nearly nine hundred scientific contributions have helped to outline the current state of landslide research worldwide. In detail, three main pillars have emerged.

The first concerns digital twins, real-time digital models of physical systems, which are proving to be indispensable tools for the anticipation and prevention of landslide risks. Such models provide real-time data that is fed into automated warning systems, ensuring that communities are immediately informed of potential hazards. By obtaining geological, meteorological and topographical data, digital twins enable a detailed understanding of the physical environment. The integration of disparate expertise is the fundamental starting point. This advanced view enables the early identification of areas at risk, facilitating the development of mitigation measures and significantly reducing the vulnerability of communities. The second pillar that emerged from the WLF6 can be

summarized as "warning for all," in line with recent UN guidelines, i.e. the need to develop an approach that leaves no one behind when it comes to the dissemination of timely warnings. Globally, the risk of landslides is not uniform, but disproportionately affects developing countries, which are marginalized and vulnerable. It is therefore crucial to inform and actively engage the most vulnerable communities. Providing clear and timely information about the risk of landslides is crucial for public safety, but it is even more important and often the only possible solution in contexts where resources and infrastructure are limited. Linked to this is the third pillar, which also corresponds to the UN guidelines for disaster risk reduction: the transition from "early warning to early action" (from early warning to early action). Warning the population is only the first step. Many speakers at the forum pointed out that predictions are becoming more accurate and technologies more sophisticated, but the bottleneck to effective risk reduction is now the difficulty of translating our capabilities into concrete and timely action. Landslide risk is not only countered with science and technology, but also with social and economic interventions. People at risk are not just passive recipients of warnings but must be seen as active players within the disaster management system. The events that have hit our country hard in recent weeks have once again underlined the urgent need to improve the warning system in terms of forecasting aspects, to significantly raise citizens' awareness of natural hazards and the uncertainties involved in predicting risk scenarios, to better link the warning system with disaster prevention plans and to involve all stakeholders in prevention: Institutions, volunteers from the scientific community, companies, the private sector, political decision-makers, in order to take a decisive step in chorus towards the hydrogeological safety of our territory.

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