

Progress Report of ICL Network

1. Title of Network: ICL North-East Asia Network

2. List of member organizations

1. China Geological Survey
2. Institute of Cold Regions Science and Engineering, Northeast Forestry University
3. Institute of Mountain Hazards and Environment, Chinese Academy of Sciences
4. Tongji University
5. Kyoto University, DPRI
6. Forestry and Forest Product Research Institute
7. Japan Landslide Society
8. Korea Institute of Geoscience and Mineral Resources (KIGAM)
9. Korean Society of Forest Engineering
10. National Institute of Forest Science
11. Korea Infrastructure Safety & Technology Corporation
12. Korea Institute of Civil Engineering and Building Technology

3. Progress report of activities

Progress Report of National Institute of Forest Science

1. The Korean Landslide Early-Warning System (KLES), developed in 2013, has been enhanced to extend its forecast range to 48 hours, facilitating long-term forecast information. Specifically, short-term forecast information from the KLES (up to 12 h) is utilized for evacuation purposes. In contrast, the long-term forecast (up to 48 h) is employed for decision-making to adjust the preparedness level.
2. The landslide susceptibility map has been updated annually, considering topography, land cover, and land use changes. Recently, a real-time dynamic landslide hazard map, incorporating the Soil Water Index (SWI) from the KLES and landslide susceptibility map, has been developed and provided for landslide mitigation.
3. A debris flow simulation tool utilizing the Random Walk Model (RWM) has been developed to delineate debris flow propagation ranges, known as the debris flow hazard map, for approximately 180,000 debris-flow-prone watersheds nationwide. The debris flow hazard map has been upgraded,

including updating the parameters of RWM and including more small-scale watersheds.

4. The Landslide Information System has been developed and enhanced to provide landslide susceptibility maps, debris flow hazard maps, and landslide early warning through a web GIS platform. Furthermore, various database systems have been established for landslide-prone watershed management and erosion control facility maintenance.

Progress Report of Japan Landslide Society

1. The 2024 Noto Peninsula Earthquake and co-seismic landslides

A magnitude of 7.5 earthquake which struck the western shores of Honshu, Japan caused strong shaking the entire Noto Peninsula on a New Year Day in 2024. Since the earthquake affected areas consist of dense distribution of deep-seated landslides, tremendous number of landslide disasters have been induced by this earthquake. The Japan Landslide Society established an ad hoc committee to extract landslide occurrence locations, their hazards/risks, and to clarify their mechanisms and damages of formerly adopted landslide mitigation measures. Field survey works have been going on under the difficulty due to other co-seismic phenomena such as liquefaction which also disrupted houses and infrastructures and extremely heavy rainfall in late September.

2. Actions adopted in the Annual Conference of the Japan Landslide Society (JLS) in 2023 and 2024

A research committee on Globalization of Japanese Technologies for Slope Protection held the special sessions at the Annual Conference of the Japan Landslide Society in 2023 and 2024. The session in 2024 focused on reviewing the history of technical development in Japanese slope protection works thus finding future perspectives.

An oral session of English presentation which was not common at the annual JLS conferences has been introduced to enhance globalization in the society of JLS activities in 2024.

Progress Report of Korean Society of Forest Engineering

1. Participation in inspection activities of landslide-prone areas and landslide prevention facilities
2. Working as a member of “Landslide Cause Investigation Team” organized by the Korea Forest Service
3. Conducting a research on “Slow-moving landslide-prone area management and mapping (funded by the Korea Association of Forest Enviro-conservation Technology)”
4. Conducting a research on “Assessment standard and system development of check dam safety inspection (funded by the Korea Association of Forest Enviro-conservation Technology)”

Lee, JH., Kim, S., Jang, SJ., Kim, K., Cho, YC, Kim, M. 2023. Preliminary analysis of a heavy rainfall-induced landslide on a slope with a photovoltaic power station in Hoengseong County, Gangwon Province, South Korea. *Landslide* **20**, 1763–1767. <https://doi.org/10.1007/s10346-023-02077-9>

Lee, S., An, H., Kim, M., Eu, S. 2024. Preliminary analysis of nocturnal localized heavy rain-induced landslides in Yecheon County, Northern Gyeongsang Province, South Korea. *Landslides* **21**, 429–435. <https://doi.org/10.1007/s10346-023-02182-9>

Plan of future activities

- a) Working as a member of “Landslide Cause Investigation Team” organized by the Korea Forest Service
- b) Hosting an “International Conference of KSFE-FETEC 2025” with Forest Engineering & Technologies (FETEC) Platform in Seoul in June 2025

Progress Report of Tongji University

IPL project: IPL-272 Study on catastrophic dynamics and affected area prediction of high altitude and long runout landslides in southeast Tibet



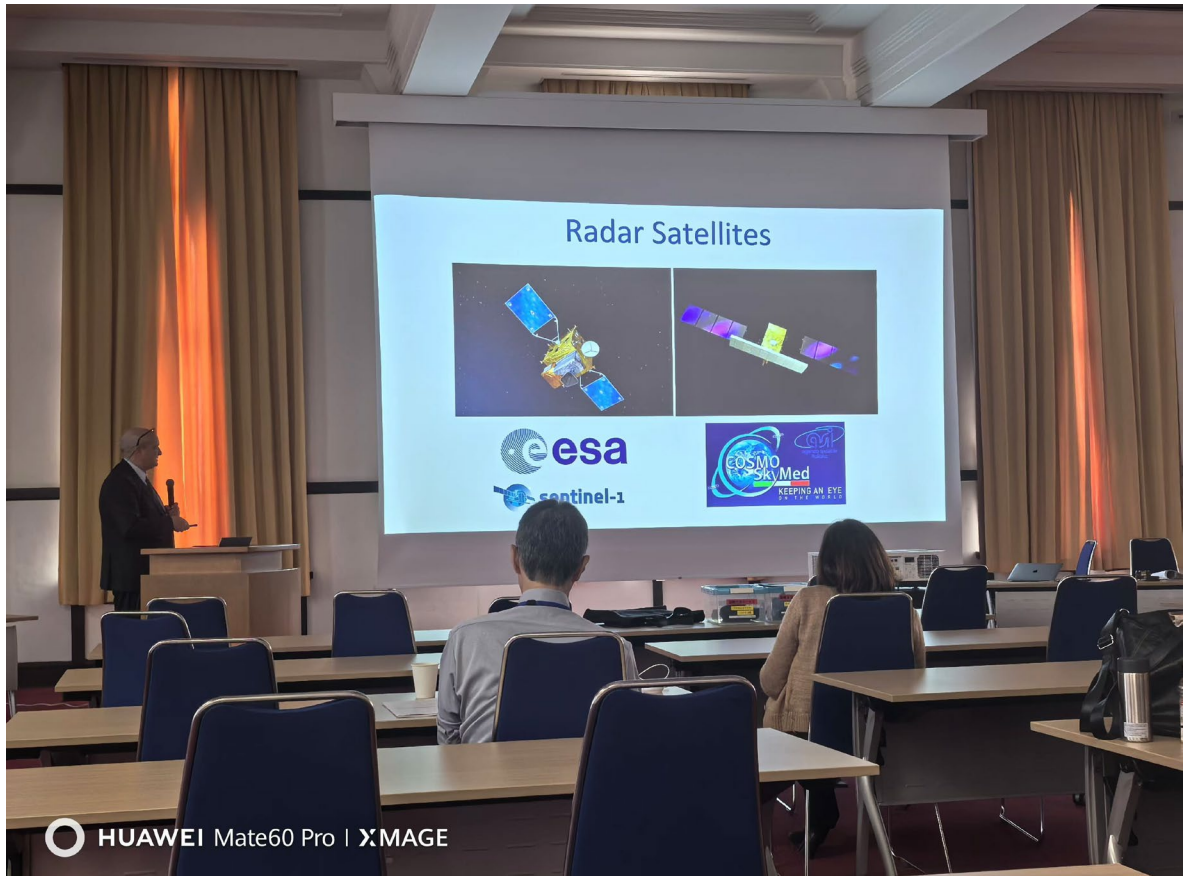


Field investigation was conducted in active landslide and debris flow area in Tibet.

Wang, F., Feng, Y., Chen, Y. *et al.* A liquefied long-runout loess landslide triggered by the Jishishan Ms6.2 earthquake on 18 December 2023 in Qinghai, China. *Landslide* **21**, 3169–3177 (2024). <https://doi.org/10.1007/s10346-024-02373-y>

Wang, F., Zhang, B., Yan, K. *et al.* Rainfall-induced Guilong landslide-mudflow in a terraced field of southwestern China on 22 June 2022. *Landslides* **21**, 2711–2724 (2024). <https://doi.org/10.1007/s10346-024-02332-7>

Wang, F., Zhang, B., Lü, Q. *et al.* Impact of a clustered rainfall-induced geo-hydrological disaster on densely populated gully villages in Fuyang District, Hangzhou City, Zhejiang Province, China on 22 July 2023. *Landslides* **21**, 1149–1154 (2024). <https://doi.org/10.1007/s10346-024-02235-7>



Attending the ICL-KLC Conference, Kyoto, Japan on 4-7 November 2024

Plan of future activities

- a) Continue the IPL-272 research activities
- b) Attend the ICL meeting in UNESCO Headquarters, Paris, 2025