

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. In 2025, approximately 2,637 landslides occurred during the summer season in the Republic of Korea. The landslide-damaged area was estimated as 612.10 ha. The number and area of landslides were larger than the 10-year averages of 1,376 and 270 ha, respectively. In particular, landslides this year recorded the largest number of fatalities (29 people) compared to the 10-year average (3 people). Most of the landslides were concentrated in Gyeongsangnam-do, Chungcheongnam-do, and Gyeonggi-do, which are located in the southern, middle, and northern parts of the country.

2. In March 2025, a historical wildfire burned more than 100,000 ha in the southern parts of the Republic of Korea. To consider the effects of wildfires on landslide early warning, we analyzed the Soil Water Index (SWI) of previous landslide events that occurred in the wildfire-affected area in 2023. Consequently, the revised warning thresholds (SWI level) of the Korean Landslide Early Warning System (KLES) were applied to the 2025 wildfire-damaged area.

3. To consider the change in landslide susceptibility due to severe wildfires in March 2025, we reassessed the landslide susceptibility nationwide by considering the change in forest cover by wildfire, resulting in increased portions of more hazardous areas in wildfire-affected areas. The debris flow hazard map was also renewed, corresponding to the change in the landslide susceptibility map, which was used for estimating the source area of the debris flow.

4. The Landslide Information System was developed and enhanced to provide landslide susceptibility maps, debris flow hazard maps, and landslide early warnings through a web GIS platform. Currently, the Korea Forest Service is gathering various hazard assessment data and spatial information about slope-related disasters from other departments to provide comprehensive information to central and local government officials responsible for landslide and slope-related hazard mitigation. As an ongoing project, the GUI and inner contents of the Landslide Information System are also being revised to demonstrate various information effectively.

Progress Report of Japan Landslide Society

1. Research on Co-Seismic Landslides Induced by the 2024 Noto Peninsula Earthquake

The JLS formed a committee to study the characteristics and causes of landslides triggered by the magnitude 7.5 earthquake that struck the Noto Peninsula in central Japan in 2024.

Several survey teams have been dispatched, and preliminary results are available on the JLS website (<https://japan.landslide-soc.org/report/2024noto.html>). Currently the results are only available in Japanese.

Furthermore, the committee has identified the following four research themes:

- 1) Development of a Simplified Evaluation Method for Earthquake-Induced Landslide Hazard
- 2) Feasibility Study on Applying Design Methods for Earthquake-Induced Landslide Countermeasures Based on Dynamic Simulation
- 3) Collection of Actual Case Studies of Landslides and Collapses that occurred During the Noto Peninsula Earthquake and Subsequent Heavy Rainfall
- 4) Stability Evaluation of Landslides Based on Displacement Rate

In 2026, we plan to compile research findings on the characteristics, mechanisms, and countermeasure methodologies of earthquake-induced landslides, which occur particularly frequently in Japan.

2. Actions Adopted at the 2025 Annual Conference of the JLS

The Internationalization Committee for Slope Countermeasures of the JLS discussed the issues and global adaptability of Japanese slope countermeasure design technologies during the JLS Annual

Conference in Nara. The results are being compiled in the archives on the JLS website.

Since 2023, an oral session of English presentations has been held at the annual JLS conferences. Ten young researchers applied for it in 2025.

Progress Report of Korean Society of Forest Engineering

- Hosting the International Conference of KSFE-FETEC 2025 in collaboration with the Forest Engineering & Technologies (FETEC) Platform in Seoul, from June 30 to July 2, 2025
- Serving as a member of the Landslide Cause Investigation Team organized by the Korea Forest Service
- Conducting a research on ‘2025 field investigation of landslide occurrence and study on management measures (funded by the Korea Forest Service)’
- Conducting a research on ‘Development of an intelligent detection and alert system for on-site landslide hazards (funded by the Korea Forestry Promotion Institute)’
- Conducting a research on ‘Delineating inventory map boundaries for slow-moving landslide-prone area and formulating subsurface structural risk assessment measures (funded by the Korea Association of Forest Enviro-conservation Technology)’

Plan of future activities (2026)

- Serving as a member of the Landslide Cause Investigation Team organized by the Korea Forest Service
- Conducting several landslide-related research projects

Progress Report of Tongji University

1. Progress report of activities

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

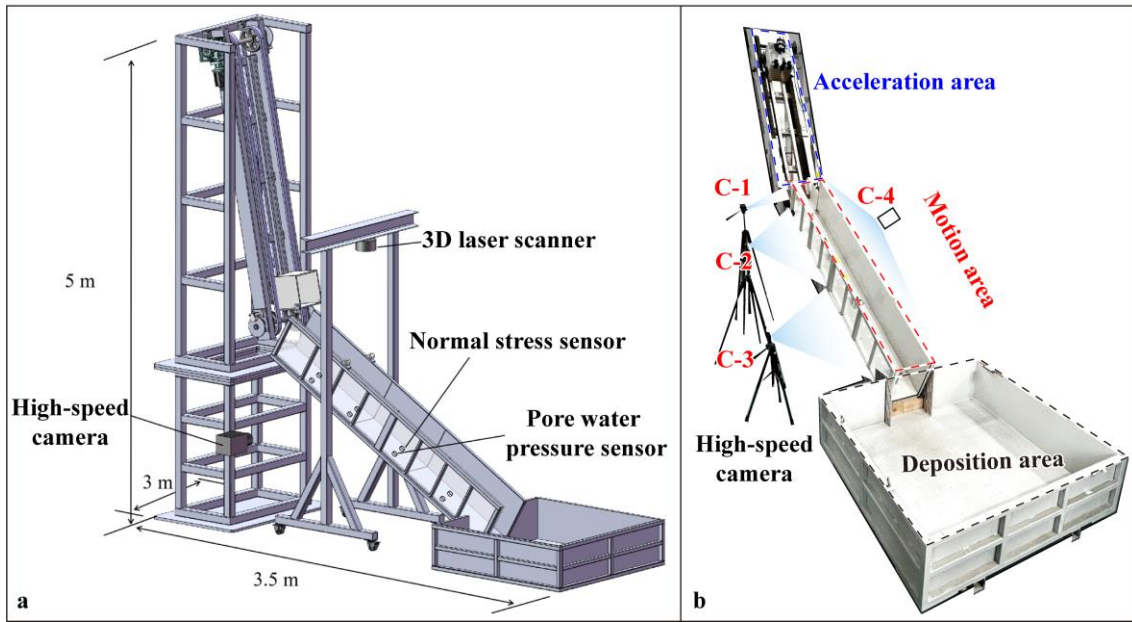


Fig. 1. Engineering schematic (a) and photograph (b) of the device

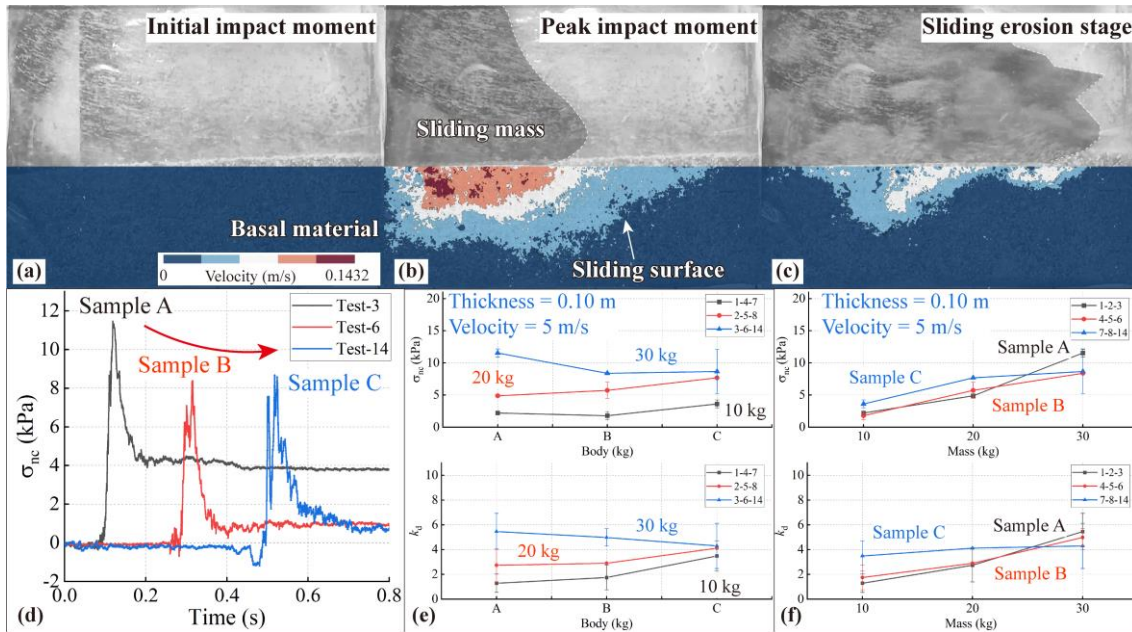


Fig. 2. Movement characteristics and mechanical responses during erosion. (a-c) Evolution of the sliding surface at different moments; (d) Variation of normal stress during erosion; (e-f) Variations of peak normal stress and dynamic coefficient k_d with sliding mass type and mass.

b) Contribution to Landslides Journal

Fu, Z., Wang, F., Zhong, J., Catani, F., Dou, J., You, Q. & Zhang, B.. A CNN-Transformer hybrid network for efficient cross-region landslide detection by transfer learning.

Landslides (submitted after major revision on September 26, 2025).

Ma, H., Wang, F., Fu, Z. et al. Characterizing the clustered landslides triggered by extreme rainfall during the 2024 typhoon Gaemi in Zixing City, Hunan Province, China. *Landslides* 22, 2311–2329 (2025). <https://doi.org/10.1007/s10346-025-02510-1>

Liu, W., Li, S., Wang, F. Two types of erosion caused by the 2000 Yigong long-runout landslide and their impact on the evolution of the Zhamunong Valley from a quantitative geomorphic perspective. *Landslides* (submitted)

2. Plan of future activities

a) Continue the IPL-272 research activities;

b) Attend the ICL 2026 meeting/Forum

3. Publication (ICL Journal Landslides, ICL Book Series, etc.)

Try to publish 3 papers in *Landslides* journal, and if possible, submit one paper for the ICL book series.