UNESCO CHAIR/UNITWIN NETWORK PROGRESS REPORT FORM

Title of the Chair/Network:	UNITWIN-UNESCO/KU/ICL Landslide, Earthquake and Water-related Disaster Risk Management for Society and the Environment Cooperation Programme
Host Institution:	The Disaster Prevention Research Institute, Kyoto University and the International Consortium on Landslides
Date of establishment of Chair/Network: *(mm, yyyy)*	UNITWIN-UNESCO/KU/ICL Landslide Risk Mitigation for Society and the Environment Cooperation Programme established in March 2003, revised in November 2010, and further revised to the current title in March 2019
Period of activity under report: *(mm, yyyy - mm, yyyy)*	1 November 2022 to 31 October 2024
Report established by: *(name, position)*	Kyoji Sassa, Secretary General of the International Consortium on Landslides, and Ryosuke Uzuoka (Professor) and Kaoru Takara (Specially appointed professor) of the Disaster Prevention Research Institute, Kyoto University

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1. Executive Summary:

Major outcomes, results and impact of the Chair, including on national policies, in relation to its objectives as stated in Article 2 of the Chair Agreement (between the Institution and UNESCO)
(Not exceeding 300 words)

1. ***Landslides**-Journal of the International Consortium on Landslides,* 24 issues (5,896 pages) have been published from November 2022 to October 2024 under the cooperation of this network and ICL supporting organizations. The 2024 Journal Impact Factor was 5.8, it was No.5 rank among 63 journals in the field of Engineering, Geological of the Impact Factors.
2. **Kyoto Landslide Commitment 2020**
   The Kyoto Landslide Commitment 2020 for global promotion of understanding and reducing landslide disaster risk (KLC2020) was proposed by the ICL and the Network and launched on 5 November 2020 during the 2020 ICL-IPL Online/virtual conference in Kyoto, Japan. Representatives from 90 organizations including David Malone, UN Under-Secretary-General, Miguel Clusener-Godt, Director, Division of Ecological and Earth Sciences, and UNESCO, Juichi Yamagiwa, President of Kyoto University signed it in 2019-2020. 16 New partners including FAO, JICA singed at KLC2020 Geneal Conference at the first day of the Sixth World Landslide Forum in Florence, Ialy in 2023. Total number of KLC2020 parters is 106 in 2024.
3. **The Sixth World Landslide Forum (WLF6)** was organized from 14 to 17 November 2023 at the Palazzo dei Congressi in Florence, Italy. A total of 1,202 persons from 61 countries/regions. The number of oral presentation is 643 in 48 paralel sessions.

2. Activities:
Overview of activities undertaken by the Chair during the reporting period

UNITIWN network includes Kyoto University, ICL headquarters, and 61 ICL full-member organizations and 22 ICL associates, 12 supporters and 18 KLC2020 official promoters.

Any person is invited to contribute their activities to the International Journal "*Landslides*" in 6 categories (Review papers, Original papers, Recent Landslides, Technical Notes, Landslide News and News/Kyoto Commitment. The contribution fee is free. Any person is invited to contribute to the open access book series "Progress in Landslide Research and Technology *(P-LRT)*" in 7 categories (Original articles, Review articles, ICL landslide lessons, IPL/WCoE/Kyoto Commitment activities, Teaching tools with online extras, Technical note & Case studies, World Landslide Reports). Anybody can access and download all articles of *P-LRT* free of charge.

Both publications are the core of UNITWIN-UNESCO/KU/ICL Landslide, Earthquake and Water-related Disaster Risk Management for Society and the Environment Cooperation Programme. Activities of this UNITWIN network have been published in the monthly Journal "*Landslides*" since 2004 and published in the twice-yearly open access book series "Progress in Landslide Research and Technology" from 2022.

Other activities taken by the UNITWIN Network are reported as below.

a) Education/Training/Research
i) Education leading to Certificate

Sixteen (16) Ph.D. were awarded as the UNITWIN education/training/research in the reporting period 2022.11-2024.10.
Ninety-six (96) Master's degrees were awarded as the UNITWIN eucation/training/research in the reporting period 2022.11-2024.10.

- 3 PhD were awarded at Kyoto University, Japan
- 4 PhD, 17 Masters in Geological Sciences and Technologies, 21 Master Theses in Civil Engineering and in Environmental Engineering, and 3 in Geoengineering were awarded at the UNESCO CHAIR on Prevention and Sustainable Management of Geo-hydrological Hazards of the University of Florence. The UNESCO Chair continued to propose the International Academic Master's Degree (totally in the English language) on "Geoengineering" focused training the experts on the prevention, management and mitigation of geo-hydrological risks. The Master started in the academic year 2017/2018 (https://www.ing-gem.unifi.it)
- 2 Ph.D. and 11 Masters in Engineering were awarded at UL FGG, Ljubljana, Slovenia. Two generations of students of the ERASMUS + Master Studies in Flood Risk Management had lectures at UL FGG in Socio-economic Assessment of Flood Protection and in Spatial Planning for Flood Protection.
- 2 Master's degrees was awarded at UNIRI-GF (Croatian Landslide Group), Croatia.
- 3 PhD 12 Master's degrees were awarded at Northeast Forestry University, China.
- 2 PhD 19 Master's degrees were awarded at National Central University, Chinese Taipei.
- 4 Master's degrees were awarded at Tongji University, China.
- 1 PhD 7 Master's degrees were awarded at China University of Geoscience, Wuhan, China.
- 1 PhD was awarded at Tsinghua University, China.

ii) Training (short term)

Unesco Chair on Prevention and Sustainable Management of Geo-Hydrological Hazards of the University of Florence

- Seminar: "Educating for sustainability: the experience of the UNESCO Chair in Prevention and Sustainable Management of Hydrogeological Risk", organized by the UNESCO Chair in Water Resources Management and Culture of the University for Foreigners of Perugia, with the

participation of the network "Dialogues of the UNESCO Chairs: a laboratory of ideas for the world to come", Perugia, Italy, January 24, 2023.

- Seminar: "Use of data remotely sensed from ground and satellite in the creation of sinkhole hazard and risk maps: the case studies of Camaiore and Guidonia. Sinkholes and underground cavities: perspectives of scientific research towards the drafting of Guidelines", organized together with ISPRA, University of Naples Federico II, and the Italian Geographical Society, Rome, Italy, February 2, 2023.
- Webinar: "Monitoring using interferometric radar measurements from ground and satellite. Monitoring using Doppler systems. Technical characteristics, use of reference costs", organized by ISPRA within the "Higher education course on landslide monitoring", second edition, October 10, 2023.
- Webinar: "Floods and Cultural Heritage", PHD Course for the students of the PHD program in Heritage Science, curriculum "Advanced materials and methodologies for safeguarding cultural heritage: ecological and digital transition for mitigation of anthropogenic and natural hazards", Rome, Italy.
- 1st Summer school Copernicus for Cultural Heritage - Action 2020-2-21: Parco Regionale Dell'appia Antica Rome, Italy, June 13-16, 2023.
- LARAM (LAndslide Risk Assessment and Mitigation) International School 2023, September 4-15, 2023, Salerno, Italy.
- LARAM (LAndslide Risk Assessment and Mitigation) International School 2024. September 9-20, 2024, Salerno, Italy.

UNESCO CHAIR: Water-related Disaster Risk Reduction at University of Ljubljana

- Unesco Chair Summer School HydRoData 2023 on data in hydrology, University of Ljubljana, 4 – 8 September 2023, 26 participants from 21 countries.
- Unesco Chair Summer School HydRoData 2024 on data in hydrology, University of Ljubljana, 2 – 6 September 2024, 24 participants from 16 countries.
- Workshop in R, in the scope of the Conference of the Danubian Countries on Hydrological Forecasting and Hydrological Bases of Water Management at Vienna, Austria, August 2023.
- Workshop in R, "R Program use in hydrology" for Flood Risk Management students (Erasmus plus Joint degree master programme) at UL FGG, Ljubljana, Slovenia, January 2024.

National Central University, Chinese Taipei

- Course: A course on Natural Hazard of Himalaya -landslide and fault activityis started during the academic year 2024. This course is designed based on overview of the geological background of the Himalaya, exploring factors that contribute to landslide vulnerabilities. Investigation with laboratory test and field monitoring will be included. Moreover, the institute will introduce participants to InSAR.

Amrita University, India

- Disaster Resilience Conclave @ Sikkim, India, April 29 to 30, 2023.
  The Sustainable and Resilient Communities Conclave, held in Sikkim from April 29 to 30, 2023, aimed to shape policy recommendations for G20 leaders. Key themes included climate resilience, social justice, environmental sustainability, and net zero emissions. The conclave served as a platform for dialogue among policymakers, experts, and civil society organizations, promoting collaborative efforts towards sustainable community development.
  A two-day workshop titled "Disaster Resilience - Conclave" was organized in collaboration with the UNESCO Chair on Experiential Learning, Sikkim State Disaster Management Authority (SSDMA), International Consortium on Landslides (ICL). The workshop prioritized raising awareness of disasters, utilizing participatory preparedness approaches, and training on operational tools like the Landslide Tracker and Amrita Kripa apps. It emphasized risk awareness, collaboration, and community engagement. Eighty-five students from Nar Bahadur Bhandari Government College, Deorali Govt Girls' Senior Secondary School, and Tadong Senior Secondary School in Gangtok emerged as community trainers, empowering their peers with vital disaster resilience skills.

- Geoscientific Investigation on Wayanad Multi-Hazards Event (landslides-flash flood and soil/riverbank erosion)
  On 30th July 2024, Wayanad District in Kerala, saw one of the most devastating disasters in its recent history. On 23rd August 2024, the team of experts from Amrita Center for Wireless Networks and Applications and Amrita School for Sustainable Futures, Amrita Vishwa Vidyapeetham, Kerala consisting of an interdisciplinary team of eight members, visited the landslide and flood-affected region and conducted a detailed first-hand preliminary investigation. In this disaster event, more than 200 buildings, mostly houses and home-stays, were swept away which resulted in the death of around 400 people and around 200 people missing.
  The total landslide runout distance was observed to be around six kilometers from the crown of the landslide at an elevation of 1587 m above m.s.l. to the toe of the landslide at an elevation of 819 m above m.s.l. In the process, the bridge near Chooralmala, which connects with Mundakkai, was washed away by flash floods in River Iruvazhinji Puzha. Many people got buried under heaps of debris, and so were the homes, shops, vehicles, and places of worship, including a temple and a mosque. The rapid-motion debris avalanche, which traveled about 6 km, has also indirectly affected Attamala and Noolpuzha villages. Besides, the disaster had also disrupted the connectivity of these places with the rest of the Wayanad district thereby hampering rescue efforts.

- Certificate Course in Disaster Resilience & Risk Reduction (DRR)
  This certificate course series is structured across three levels, each tailored to different age groups and target audiences, aiming to build a community-wide awareness and competency in disaster risk reduction.
  Level 1: Training the Trainers and Building Social Responsibility
    Objective: Equip trainers with the skills to promote prevention-focused strategies, foster social responsibility, and enable impactful community contributions.
    Audience: NGOs, Local Bodies, Teachers, Officials
    Duration: 3 months
    Mode: Offline
    Start Date: December-January 2024
  Level 2: Empowering the Youth
    Objective: Train college students in DRR skills, introducing them to job opportunities within the disaster resilience field.
    Audience: College Students
    Duration: 2 months
    Mode: Offline
    Start Date: December-January 2024
  Level 3: Empowering the Next Generation
    Objective: Teach schoolchildren essential DRR skills, building a foundation for lifelong disaster awareness.
    Audience: School Children
    Duration: 2 months
    Mode: Offline
    Start Date: December-January 2024

iii) Research

- Research is the main activity of this UNITWIN Network. At the suggestion of 6 participants from UNESCO at the ICL foundation meeting in January 2002, the International Programme on Landslides (IPL) was established within the frame of the UNESCO Chair/UNITWIN programme at the same time of ICL foundation in 2002. The core of Research activities in the UNITWIN Programme is IPL projects. Currently 43 IPL projects are conducted in 20 countries. 19 Word Centres of Excellence on Landslide Risk Reduction 2020-2023 worked for landslide disaster risk

reduction in 17 countries .12 Word Centres of Excellence on Landslide Risk Reduction 2023-2026 are working for landslide disaster risk reduction in 8 countries

- A new research project is the SATREPS (Science and Technology Research Partnership for Sustainable Development) project "Development of early warning technology of rain-induced rapid and long- travelling landslides in Sri Lanka which is funded by JICA (Japan International Cooperation Agency) and JST (Japan Science and Technology Agency) in 2019-2025. The International Consortium on Landslides and one of the UNITWIN programme partners "National Building Research Organization of Sri Lanka" are the main partners in Japan and Sri Lanka.

b) Conference/Meetings

- ICL 20th Anniversary and 2022 ICL-KLC Hybrid Conference was held on 22-25 November 2022 at the Kyoto University Centennial Clock Tower Building in Kyoto, Japan.
  ICL 20th Anniversary ceremony and reception was organized at the Kyoto Akagane Resort from 17:30-20:30 on 22 November 2022. Opening greetings were by ICL president Nicola Casagli, Soichiro Yasukawa (UNESCO), Hiroshi Kitazato (IUGS), Salvano Briceno (former director of UNISDR, Senior advisor of ICL). ICL President conferred the medal of the Special Award for Appreciation to Prof. Paolo Canuti for his long contribution to the ICL.
  22nd session of ICL Board of Representative and 18th session of the Global Promotion Committee of the IPL and KLC 2020 was organized on 23 November 2022. After proposals, discussion and voting by ICL full members, the ICL President from 2024.1.1-2026.12.31 was decided to be Željko Arbanas, and the 7th World landslide Forum was decided to be organized by the National Central University & Taiwan Geotechnical Society. (In April 2024, the venue of the 7th World Landslide Forum was changed to the Amrita University, India which is a member country of the United Nations).

- 2023 IPL-KLC Symposium was held on 22-23 June 2023 online.
  9:30-12:00 PM 22-23June (PDT) , 6:30-9:00 AM 23-24 June (CET) , 1:30-4:00 PM 23-24 June (JST)
  16 Applicants of WCoE 2023-2026 orally presented their plan.
  Chairs of 1st day: Chair of the GPC/IPL-KLC: Matjaž Mikoš and Chair of the IPL Evaluation Committee: Irasema Alcántara-Ayala
  Chairs of 2nd day ICL President: Nicola Casagli and ICL incoming President: Željko Arbanas

- 2023 BOR/ICL and GPC/IPL-KLC Meetings was held at Palazo degli Arrari 4th Floor, Hall 4, in Florence on 13 November 2023.
  Participants: 66 ICL members including 34 voting members
  1. 23rd Session of the Board of Representatives: 14:30-16:00 on 13 November 2023
     Chair: Nicola Casagli (President), 3 vice presidents: Željko Arbanas (Europe), Faisal Fathani (Asia) and Binod Tiwari (America). Secretary: Kyoji Sassa (ICL)
     Decisions: ICL officers (2024.1.1-2026.12.31), Approval of 2023 Varnes medal and Oldrich Hungr Award, the best paper award for Journal "Landslides".
  2. 19th Session of the Global Promotion Committee of the IPL and KLC2020
     Chair: Matjaž Mikoš (ICL), Qunli Han (IRDR) , Hiroshi Kitazato (IUGS treasurer),
     Secretary: Kyoji Sassa (IPL and KLC2020)
     Decisions: 16 WCoEs 2023-2026, Approval of new IPL projects, the ongoing IPL project/ termination of inactive IPL project. Approval of IPL-KLC Award for Success, Hiroshi Fukuoka IPL Award, and ICL Book Article Award. Report of the open access book series "Progress in Landslide Research and Technology (Vol.2-1 and Vol.2-2 in 2023) and plan of Vol.3-1 and Vol.3-2 in 2024,

The 6th World Landslide Forum (WLF6; https://wlf6.org) was held from November 14 to 17, 2023, in Florence at the Palazzo dei Congressi
The WLF6 was focused on landslide science for sustainable development as a contribution to the Kyoto 2020 Commitment for Global Promotion of Understanding and Reducing Landslide Disaster Risk (KLC2020), a commitment to the Sendai Landslide Partnerships 2015–2025, the Sendai Framework for Disaster Risk Reduction 2015–2030, the 2030 Agenda Sustainable Development Goals, the New Urban Agenda, and the Paris Agreement.
The 6th World Landslide Forum was attended by a broad international audience interested in landslide disaster risk reduction: research and academic institutions, UN organizations, EU institutions and agencies, national governments and local authorities, non-governmental organizations with an interest in and activities related to disaster risk reduction, international and national civil protection and disaster relief organizations and agencies, and the private sector engaged in research, development, and practical application of landslide risk reduction technologies and solutions. In particular, the WLF6 was attended by more than 1200 participants from 61 countries. In total, 853 abstracts were submitted: 643 oral presentations and 210 e-posters.

- The IRDR parallel session 4 Landslides-induced Tsunami and their Disaster Risk Reduction was organized by IUGS, INQUA and ICL in hybrid mode (both onsite and online) at the Aerospace Information Research Institute (AIR) in Beijing, China in 16:00-17:30 (CST), 17:00-18:30 (JST), 10:00-11:30 (CEST) on 22 October 2024. 6 speakers presented on Landslides-induced Tsunami and their Disaster Risk Reduction.

- ICL-Kyoto Landslide Commitment Workshop 2024 as a -Side event of the 2024 October IRDR Conference was organized online in 13:00-17:30 (CST), 14:00-18:30 (JST), and 7:00-11:30 (CEST) on 23 October 2024 (Wednesday).
  Two technical sessions were organized where 13 Speakers from ICL members presented their research contributing to KLC2020 in two technical sessions.
  ICL partnerships Session was organized after the greeting from Željko Arbanas (President of the ICL), Qunli Han (Co-chair of the Global Promotion Committee of IPL and KLC2020, the immediate past Executive Director of IRDR), Kyoji Sassa (Secretary General of ICL and KLC2020) as the ICL headquarters explained current projects of ICL (Publication-Journal and ICL open access book series, ICL-KLC Memorial Conference at UNESCO in 2025,WLF7 in India, 2026) and conditions for ICL members (Full, associates, supporters) and KLC2020 official promoters. Finally free discussion was conducted for promotion of cooperation and development of KLC2020.

Kyoto University

- The 10th edition of the International Conference on Computational Methods for Coupled Problems in Science and Engineering (COUPLED PROBLEMS 2023), Chania, Creta, Greece, June 5-7, 2023
- 8th International Conference on Earthquake Geotechnical Engineering (8ICEGE), Osaka, May 7-10, 2024
- 14th International Symposium on Landslides, 8th -12th July 2024, Chambery, France
- The 5th Conference on Slope tectonics, 10-14 September 2024, Chateau Křtiny (Brno) and the Outer Western Carpathians

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- 1st Italy-Croatia joint workshop "Landslide monitoring, prediction and risk assessment", organized by the UNESCO Chair on Prevention and Sustainable Management of Geohydrological Hazards at the University of Florence, February 15, 2023.
- 1st Conference of the Italian UNESCO Chairs Network (ReCUI): "Reimagining the Future Together - The Challenge of Education and Higher Education", Florence (Italy), March 24, 2023.
- 15th International Symposium on River Sedimentation, that was held in Florence, from the 5th to the 8th of September 2023 (www.isrs2022.it).
- 6th World Landslide Forum (WLF6), which was held in Florence from 14th to 17th November 2023. The Forum was entitled “Landslide Science for Sustainable Development” and was jointly organized by the International Consortium on Landslides (Kyoto, Japan), the International Programme on Landslides (IPL) and the UNESCO Chair on Prevention and Sustainable Management of Geohydrological Hazards at the University of Florence.

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- Fachtagung Wildbäche 2024: Modellierung von Wildbachprozessen, Rapperswil, Switzerland, 31 October, 2024.
- ICOLD Annual Meeting 2024, New Delhi, India, 29 September – 3 October 2024.
- International Conference: A Decade of the Sendai Framework for Disaster Risk Reduction: Envisioning the Road Ahead, on-line, 26 September, 2024.
- International Sediment Initiative (ISI), Intergovernmental Hydrological Program (IHP) UNESCO, 2nd Advisory Board meeting (on-line attendance), Beijing, China, 24 September, 2024.
- International Symposium on Dams and Earthquakes, Athens, Greece, 12-13 September 2024.
- International Seminar: From Barriers to Bridges: Strategies for Reconnecting the Danube River Basin, Ljubljana, Slovenia, September 2024.
- UNESCO Chairs Seminar: Transforming Global Governance / Transformer la gouvernance mondiale, on-line seminar, 17 July, 2024.
- Resilience Catalysts – Global webinar of UNESCO Chairs focused on DRR and Resilience - The Interplay of Education, Science and Culture in Transforming Governance for Building Resilience to Disasters, on-line meeting, 19 June, 2024.
- EUTOPIA Connected Community Activities - Digitization for Hydro-Climatic Risk Reduction, on-line meeting, 17 June, 2024.
- INTERPRAEVENT Congress in Vienna, Austria, 10 – 13 June, 2024.
- 8th IAHR Europe Congress, Lisbon, Portugal, 4 – 7 June 2024.
- 26th Session of the Intergovernmental Council of the Intergovernmental Hydrological Programme (IHP) UNESCO, Paris, France, 3 – 7 June, 2024.
- Online webinar: Dams and digitalisation: numerical models and BIM, hosted by ICOLD YEF, SPANCOLD, and EURcold, online 28 May, 2024.
- International Sediment Initiative (ISI), Intergovernmental Hydrological Program (IHP) UNESCO, 1st Advisory Board meeting, Paris, France, 22 – 23 April, 2024.
- EGU Annual General Assembly, Vienna, Austria 14 – 19 April, 2024.
- 40th Goljevšček Memorial Day, Ljubljana, Slovenia, 11 April, 2024.
- International conference Climate change and water supply in Istra, Pula, Croatia, 18 – 19 March, 2024.
- Slovenian Association of Geodesy and Geophysics Annual meeting 2024, Ljubljana, Slovenia, 1 February, 2024.
- 34th Mišič Water Day, Maribor, Slovenia, 6 December, 2023.
- 6th World Landslide Forum “Landslide science for sustainable development”, Florence, Italy, 14 – 17 November, 2023.
- HydroCarpath International Conference 2023, Vienna Austria, 9 November 2023.
- ResiliEnhance Field-Trip FVG 2023, Friuli Venezia Giulia, Italy, 6 – 7 November 2023.

- 3rd Congress on Waters in Slovenia, Ptuj, Slovenia, 19. – 20. October 2023.
- Source-to-sea Regional Dialogue: Managing water resources from mountains to ocean in South-East Europe and the Mediterranean, Venice (Italy), 2 – 3 October, 2023.
- Land4Flood Conference, Dortmund, Germany, 27 – 29 September 2023.
- 12th ICOLD European Club Symposium, Interlaken, Switzerland, 5 – 8 September, 2023.
- Damsweek 2023, Foz do Iguaçu, Brasil, 27 – 31 August 2023.
- 40th IAHR World Congress, Vienna, Austria, 21 – 25 August 2023.
- 30th Conference of the Danubian Countries on Hydrological Forecasting and Hydrological Bases of Water Management, Vienna, Austria, 21 – 23 August 2023.
- 12th International Conference on Fluvial Sedimentology Riva del Garda, Italy, 2 – 7 July 2023.
- ICOLD Annual Meeting 2023, Gothenburg, Sweden, 9 – 15 June 2023.
- EGU Annual General Assembly, Vienna, Austria 23 – 28 April, 2023.
- 39th Goljevšček Memorial Day, Ljubljana, Slovenia, 20 April, 2023.
- Slovenian Association of Geodesy and Geophysics Annual meeting 2023, Ljubljana, Slovenia, 26 January, 2023.
- 33th Mišič Water Day, Maribor, Slovenia, 4 December, 2022.

National Central University, Chinese Taipei

- Conference: Participants of 2023 Rock Engineering and Engineering Geology Symposium in Taiwan. 19~20 Oct, 2023.
- Conference: Participants of 2024 Geotech 2024 in Taiwan. 26-28 Aug, 2024.
- Conference: 2023 WLF6 as the original host of 2026 WLF7.
- Conference: 2023~2024 AOGS IG session Convener: Identification, Mapping, Monitoring and Forecasting of Landslide and Erosion Processes.

Institute of Geography, National Autonomous University of Mexico

- X International Congress of Geography of Latin America, Santiago de Compostela, Spain, January 26, 2023
- UNDRR Regional Platform, Punta del Este, Uruguay, February 28 - March 2, 2023
- Sendai Midterm Review – MTR-SF Viewpoints and Discussion for the Next Seven Years of the Sendai Framework, Kyoto University, Japan, March 14, 2023
- Workshop on Disaster Science - Past, Present, and Future: The Contribution of CEMADEN, National Center for Monitoring and Alerts for Natural Disasters, São José dos Campos, Brazil, May 17, 2023
- 5th International Congress on Integrated Risk Management and Resilience in Cities, Mexico City, October 11-13, 2023
- 6th World Landslide Forum, Florence, Italy, November 14-17, 2023
- Cities on Volcanoes 12, Antigua Guatemala, Guatemala, February 11-17, 2024
- 5th Open Discussion Forum of GADRI, Kyoto University, Japan, March 12, 2024
- Humanitarian Networks and Partnerships Weeks (HNPW), Geneva, Switzerland, May 8, 2024 (online)
- 35th International Geographical Congress, Dublin City University, Ireland, August 24-29, 2024
- UNDRR Global Assessment Report, September 18, 2024
- Finisterra Annual Lecture, Center for Geographical Studies, Lisbon, Portugal, October 17, 2024

Amrita University

- Disaster Resilience Conclave @ Sikkim, India, April 29 to 30, 2023

c) Interuniversity Exchange.

Within 61 ICL full member organizations from 28 countries, and 21 associate members from 10 countries, and 12 supporters from three countries, 20 KLC2020 official promoters from 5

international organizations, one government organization and 5 universities and 9 companies. Those member organizations have conducted the interuniversity exchanges through ICL-IPL-KLC annual conference in 2022, 2023 and 2024 (in coming November 2024) and collecting and editing articles for the open access book series (Volume 1, Issue 1 and Issue 2 were published in 2022, Volume 2, Issue 1 and Issue 2 were published in December 2023, Volume 3, Issue 1 was published in June 2024, Volume 3, Issue 2 will be published in November 2024).

ICL Headquarters:

Visiting students

- Yuxin Li, Ph.D. student in Faculty of Geographical Science, Beijing Normal University, China has been invited to ICL headquarters in Kyoto, by the Chinese Scholarship Council from October 2022 to September 2023.
- Feng Zhang, Ph.D. student in Faculty of Infrastructure Engineering, Dalian University of Technology, China has been invited to ICL headquarters in Kyoto, by the Chinese Scholarship Council from March 2023 to March 2024.

As a part of SATREPS Project-Development of Early Warning Technology of Rain-Induced Rapid and Long-Travelling Landslides in Sri Lanka- between National Building Research Organisation (Sri Lanka) and ICL (2019-2025), 6 members of NBRO have been invited to obtain Ph.D. or Master's degree in Japan.

- Sanchitha Jayakody has been invited to a Doctor Course at Kyoto University by the Japan International Cooperation Agency (JICA) scholarships from 2020 to 2023
- Imaya Ariyarathna has been invited to a Doctor Course at Kochi University by the Japan International Cooperation Agency (JICA) scholarships from 2020 to 2023
- Danushka Jayathilaka has been invited to a Doctor Course at the University of Tokyo by the Japan International Cooperation Agency (JICA) scholarships from 2021 to 2024
- Sandaruwan Karunarathne has been invited to a Doctor Course at Yamanashi University by the Japanese Government scholarships from 2021 to 2024
- Anuththara Bandara has been invited to a Master's Course at Tokyo Institute of Technology by the Japan International Cooperation Agency (JICA) scholarships from 2022 to 2024
- Sajith Bandaranayake has been invited to a Master's Course at Yamanashi University by the SATREPS-ICL fund scholarships from 2022 to 2024

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3 visiting PhD students:

- Kunal GUPTA (IITI Indore, India)
  Thesis title: Combined landslide hazard mapping and monitoring for development of early warning system in Uttarakhand state
  Tutor: Neelima Satyam
- Fumeng Zhao (China University of Geoscience, Wuhan, China)
  Thesis title: Historical Analysis of Glacier Retreat and Associated Geohazards Using Optical and SAR Remote Sensing Images
  Tutor: Wenping Gong
- Kangning Zhang (China University of Mining and Technology, China)
  Thesis title: Mining subsidence and strata movement for shallow buried coal seam, ground fissures identification
  Tutor: Yixin Zhao

UNESCO Chair on Water-related Disaster Risk Reduction, University of Ljubljana

- Annually master students from the Erasmus-Mundus Flood Risk Management Master Program are attending courses at University of Ljubljana, hosted by the UNESCO Chair on WRDRR.
- Invited lecture was given within Doctoral Seminar series in doctoral study program in Built Environment by dr. Stefano Grimaz (UNESCO Chair on Intersectoral Safety for Disaster risk reduction and Resilience, SPRINT-Lab, University of Udine, Italy) in January 2023.
- Invited lecture was given within Doctoral Seminar series in doctoral study program in Built Environment by Prof. dr. Glenn Tootle, (University of Alabama, USA) in June 2023.
- Mark Bryan Alivio (PhD student) from the Philippines and Yusuf Ogunfolaji (PhD student) from Nigeria are working on their PhD theses.
- Dr. Mateja Klun spent 4 months in 2024 as sabbatical leave at the Polytechnic University of Valencia, Spain, 31 January – 1 June, 2024.
- Dr. Yun Bai (Professor) from the Chongqing Technology and Business University, China visited UL in July – August, 2023.
- Visiting students:
- Oana Berzescu (PhD student at the West University of Timisoara, Romania) visited UL in September 2024 within the Erasmus + Programme – Student Mobility for Traineeships, Short Term Doctoral Mobility at the University of Ljubljana, Faculty of Civil and Geodetic Engineering
  Elisa Vialette (MsC Student), Université Grenoble Alpes, Grenoble, France, June – August 2024.
  Mateo Klein (MsC Student), Université Grenoble Alpes, Grenoble, France, June – August 2023.

Charles University has Interuniversity Exchange with 31 universities

- Heidelberg University (Germany)
- Johannes Gutenberg University Mainz (Germany)
- University of Stuttgart (Germany)
- University of Strasbourg (France)
- University of Cagliari (Italy)
- Adam Mickiewicz University in Poznan (Poland)
- University of Sheffield (UK)
- University of Camerino (Italy)
- University of Malta (Malta)
- Free University of Berlin (Germany)
- University of Tuebingen (Germany)
- Dresden University of Technology (Germany)
- University of Seville (Spain)
- University of Lausanne (Switzerland)
- Maynooth University (Ireland)
- University of Bonn (Germany)
- Freiberg University of Mining and Technology (Germany)
- Technical University of Munich (Germany)
- University of Florence (Italy)
- Trinity College Dublin (Ireland)
- University of Pécs (Hungary)
- Humboldt University of Berlin (Germany)
- University of Santiago de Compostela (Spain)
- University of Lisboa (Portugal)
- University of Pavia (Italy)
- University of Göttingen (Germany)
- University of Helsinki (Finland)
- Pavol Jozef Šafárik University in Košice (Slovakia)
- University of Leicester (UK)
- University of Leuven (Belgium)

- University of Ulster (UK)
- University of Basilicata (Italy)
- University of Campania (Italy)
- University of Twente (Netherlands)
- Istanbul Technical University (Turkey)
- University of St. Andrews (UK)

China University of Geosciences, Wuhan

- One PhD student, named Hamza Daud, came to China University of Geosciences, Wuhan for PhD career in 2022. He was from Pakistan and he majored in geohazards.

Northeast Forestry University, China

- Programme of video-meeting about scientific and educational cooperation between the institute of cold regions science and engineering of Northeast Forestry University (China) and The technical institute (branch) North-Eastern Federal University (Russia) . 2021/10/29.

d) Publications/Multimedia Materials

Refer to the attached list (pages: 45-71)

e) Cooperation with UNESCO Headquarters, Field Offices

ICL was founded by UNESCO-Kyoto University Joint symposium (IGCP-425 Landslide Hazard Assessment and Cultural Heritage) in 2002. IPL (International Programme on Landslides) was founded as a landslide version of IGCP together with the IPL Global Promotion Committee for the management of all IPL matter in 2006. Based on the Kyoto Landslide Commitment 2020, the IPL Global Promotion Committee was changed to the Global Promotion Committee of the International Programme on Landslides and Kyoto Landslide Commitment 2020 in 2021. Chair: Matjaž Mikoš (University of Ljubljana, Slovenia), Co-Chairs: Qunli Han (Integrated Research on Disaster Risk), Soichiro Yasukawa (UNESCO Disaster Risk Reduction Unit), Hiroshi Kitazato (IUGS Treasurer), John Labreque (Chair of IUGG Georisk Commission). Yasukawa attended all meetings of the Global Promoiton Committee of IPL and KLC in 2022, 2023, 2024 and advised ICL and IPL.

Ms. Shamila Nair-Bedouelle and Ms. Lida Arthur Brito from November 2023, Assistant Director-General for Natural Sciences supported the International Journal *Landslides* as an advisory member of the Journal management committee. Shichiro Yasukawa (specialist of Disaster Risk Reduction of UNESCO) has served as an editor of International Journal Landslides since 2013 to present. Ms. Lida Arthur Brito presented the opening greeting for the sixth World Landslide Forum in Florence, Italy.

The Secretary General and the Acting Executive Director of the ICL visited UNESCO Headquarters in Paris on 10 May 2024 and discussed on the further cooperation. Following this meeting and further examination, the ICL and UNESCO have agreed to organize ICL-KLC Memorial Conference for the Sendai Landslide Partnerships 2015-2025 (SLP2015-2025) and the 5th year of the Kyoto Landslide Commitment 2020 (KLC2020) at Salle IX, Fontenoy Building UNESCO Headquarters, Paris on 2-5 December 2025

Unesco Chair on Prevention and Sustainable Management of Geo-Hydrological Hazards of the University of Florence

- The Chair is contributing to International Programme on Landslides (IPL) of the ICL with several scientific projects.
- The Chair, as a member of ICL, has been signatory of the Kyoto Landslide Commitment 2020 (KLC2020), which is devoted to promoting global landslide disaster risk reduction, as contribution to the International Strategy for Disaster Reduction, the Sendai Partnership 2015-2025, the 2030 Agenda for Sustainable Development, the New Urban Agenda and the Paris Climate Agreement. The KLC2020 for global promotion of understanding and reducing landslide

disaster risk is signed by more than 100 signatories (including UNESCO, UNU, WMO, UNDRR WFEO and many others).

- The Chair participates to several national and international missions, in collaboration with UNESCO and official partners, to promote the protection of the World's cultural heritage threatened by geo-hydrological hazards, some of which part of the UNESCO World Heritage list, especially in developing countries:
    - 17-22/10/2023: Hydrogeological invistigations for the safeguard of the UNESCO heritage site of Dambulla (Sri Lanka) from water infiltration, under the coordination of UNESCO New Delhi and in cooperation with the Sri Lanka Ministry of Culture.
    - 27-2/11/2023; engineering geology for the valorization and consolidation of Western Buddha niche in Bamiyan valley (Afghanistan). The mission was also visiting the site of Shar-e-Zohak, to evaluate the current work for soil erosion mitigation.
- The UNESCO Chair organized an online course for the UNESCO Regional Office for Southern Africa (ROSA) as part of the implementation of the project "Biosphere Reserves as Observatories for Climate Change Adaptation in Southern Africa (Be-Resilient)". The course was aimed at all those involved in the study and management of landslides in African countries, particularly in Zimbabwe, where severe landslides occurred in 2019 due to Cyclone Idai. The course was entitled "Landslide risk assessment, monitoring, and forecasting" and provided an overview of the main topics related to landslide disaster risk reduction, including an introduction to the main landslide typologies and their characteristics, an overview of the data required and the techniques most commonly used for landslide risk assessment, the most cost-effective methods for investigating and monitoring the different landslide typologies and the best options for hazard management, including the implementation of mitigation measures and early warning systems. Aimed at both experts and non-experts, the course is divided into 5 modules and provides advanced but easy-to-understand keys about landslide disasters and the main methods used to analyze and manage the associated risks. The course addresses practical aspects and case studies that provide useful links to land use planning, risk reduction/adaptation in vulnerable areas and integrated management of exposed sites.
- The UNESCO Chair has participated to International Conference "Transforming Knowledge for Just and Sustainable Futures" for the 30th anniversary of the UNITWIN/UNESCO Chairs Programme at the UNESCO Headquarters in Paris November 3-4, 2022; 850 university chairs and UNITWIN research networks from over 110 countries participated to plenary sessions, workshops and side events on their strategic role in strengthening connections between knowledge, research, education, and public policies.
- The UNESCO Chair has organized together with the International Consortium on Landslides (ICL) the 6th World Landslide Forum (WLF6, wlf6.org). The Assistant Director-General for Natural Sciences of UNESCO has provided the greeting written message during the Opening ceremony of the WLF6 on November 14, 2023.

  The UNESCO Chair - prof. Nicola Casagli and prof. Silvia Bianchini - have joined the Scientific Advisory Board of the International Sediment Initiative (ISI) Flagship Initiative of the IHP (Intergovernmental Hydrological Programme) within Phase IX (2022-2028). They attended (in person) the 1st Advisory Board Meeting of ISI Strategy for IHP-IX on 22- 23 April 2024 in Paris, France at UNESCO Headquarter, and (online) the 2nd Advisory Board Meeting of ISI Strategy for IHP-IX on 24th September 2024, Beijing, China.

Institute of Geography, National Autonomous University of Mexico

- International Geoscience Programme Council, IGCP, UNESCO, Scientific Board Member, Geohazards (Irasema Alcántara-Ayala).

f) Other

Unesco Chair on Prevention and Sustainable Management of Geo-Hydrological Hazards of the University of Florence:

- The UNESCO Chair of the University of Firenze is recognized World Centre of Excellence (WCoE) on landslide risk reduction by the Global Promotion Committee of the International Programme on Landslides (IPL/GPC), since 2008.
- The Earth Sciences Department of the University of Firenze (UNIFI) is the official Centre of Competence of the Italian Civil Protection for hydrogeological and volcanic risk monitoring, since 2005.
- For the mandate 2021-2023, the Deputy Chairholder Prof. Nicola Casagli was the President of ICL and Prof. Veronica Tofani, the Programm Coordinatoor of the Chair, was the vice president.

UNESCO CHAIR: Water-related Disaster Risk Reduction at University of Ljubljana:

- The Faculty of Civil and Geodetic Engineering, University of Ljubljana, hosting UNESCO Chair, is recognized as the World Centre of Excellence (WCoE) in Landslide Risk Reduction for 3 years (2023-2026) – ever since the first recognition in 2008
- The Chair holder was elected to the Chairman of the Global Promotion Committee of the International Programme on Landslides and the 2020 Kyoto Landslide Commitment (GPC/IPL-KLC) (starting January 1, 2022).
- The Faculty of Civil and Geodetic Engineering, University of Ljubljana is hosting the Slovenian National Committee of the UNESCO Intergovernmental Hydrological Program (IHP) (since 2019).
- The Chair holder was elected to the new Advisory Board of the International Sediment Initiative (ISI) under the UNESCO IHP IX Programe (March, 2024).
- Continuous activities regarding the IX Programme og IHP UNESCO, collaboration with IHP UNESCO HQ in Paris and UESCO Regional Office in Venice.

a) Education/Training/Research
(key education programmes and training delivered and research undertaken by the Chair during the reporting period, target group and geographical coverage)

i) Education (leading to certificate)

Education leading to Ph. D

ICL Headquarts (3 Ph.D) with cooperating universities
Imaya Ariyarathna
Date obtained PhD: September, 2023
Field: Life Environment Conservation Science
Institution: Kochi University

Danushka Jayathilaka
Date obtained PhD: March, 2024
Field: Civil Engineering
Institution: University of Tokyo

Sandaruwan Karunarathne
Date obtained PhD: September, 2024
Field: Engineering, and Agricultural Sciences
Institution: Yamanashi University

Kyoto University (3 PhD):
Doan Huy Loi
Date obtained PhD: May 23, 2023
Field: Civil Engineering
Institution: Graduate School of Engineering, Kyoto University
Thesis title: Physical and Numerical Modelling of Co-seismic Coastal Landslides-Generated Tsunamis

Sanchitha Hema Sharendra Jayakody
Date obtained PhD: September 25, 2023
Field: Civil Engineering
Institution: Graduate School of Engineering, Kyoto University
Thesis title: Hydro-Mechanical Analysis of Unsaturated Slopes Subjected to Rainfall and Groundwater Flow

Chao Huang
Date obtained PhD: March 25, 2024
Field: Geophysics
Institution: Graduate School of Science, Kyoto University
Thesis title: Variable effects of non–plastic fines on the initiation and mobility of fluidized landslides: An experimental study

Unesco Chair on Prevention and Sustainable Management of Geo-Hydrological Hazards of the University of Florence (4 PhD)

Ph.D thesis in Earth Sciences

- Title: Spatial and temporal analysis of interferometric data for ground deformation detection from local to national scale
  Candidate: Davide Festa
  Tutor: Nicola Casagli
  Co-tutor: Federico Raspini

- Title: Analysis of community resilience during natural disasters using data mining on massive social network exchanges
  Candidate: Rachele Franceschini
  Tutor: Filippo Catani
  Co-tutor: Ascanio Rosi

- Title: Analysis of the influence of rainfall and vegetation in the spatial and temporal forecast of landslides through machine learning approach
  Candidate: Nicola Nocentini
  Tutor: Riccardo Fanti
  Co-tutors: Samuele Segoni, Ascanio Rosi

- Title: Application of geophysical investigation to landslide and soil characterization for precision agriculture
  Candidate: Agnese Innocenti
  Tutor: Simone Orlandini
  Co-tutors: Riccardo Fanti, Marco Napoli

University of Ljubljana, Ljubljana, Slovenia (2 PhD):

Tamara Kuzmanić – PhD
School: Faculty of Civil and Geodetic Engineering, University of Ljubljana, Slovenia
Title: Laboratory tests of mineral aggregates' properties in fluvial abrasion of coarse sediments
Date of Certification: September 2024

Yaser Ghafoori – PhD
School: Faculty of Civil and Geodetic Engineering, University of Ljubljana, Slovenia
Title: Optimization of early seepage detection in embankments using a distributed temperature system based on fiber optic sensing
Date of Certification: January 2023

China University of Geosciences, Wuhan (1 PhD):
Pengju An – PhD
School: Faculty of Engineering, China University of Geosciences, China
Title: Strength degradation of sliding zone and dynamic stability evaluation of Huangtupo landslide under hydrodynamic condition
Date of Certification: June 2022

Tsinghua University (1 PhD):
Jun Fang
Date obtained PhD: June, 2024
Field: Engineering Geology
Thesis Title: Understanding the impact, overflow, and landing mechanism of debris flow against rigid barrier and subsequent mitigation measures
Institution: Tsinghua University

Northeast Forestry University, China (3 PhD):
Zhichao Xu – PhD
School: Faculty of Engineering technology, *Northeast Forestry University, China*
Title: Study on the Influence of Geologic Methane Emission on Wildfire and Surface Deformation in Xiaoxing'anling Permafrost Region
Date of Certification: 2022

Min Ma – PhD
School: School of Civil Engineering, *Northeast Forestry University, China*
Title: The process, mechanism, and countermeasures of geological disasters in the road area caused by the permafrost thawing in Northeast China.
Date of Certification: 2023

Chengcheng Zhang – PhD
School: School of Civil Engineering, *Northeast Forestry University, China*
Title: Spatiotemporal evolution and linear engineering response of permafrost in Northeast China
Date of Certification: 2023

National Central University, Chinese Taipei (2 PhD):
Nguyen, Xuan Xinh
Measuring the mechanical and hydraulic apertures of smooth, rock joints using porosimeter/permeameter—Viewpoints from hydromechanical couple behaviors
Date of Certification: 2023

Chien-Yu Liu
Research on the Behavior of Rock Slope Failure and the Critical Angle of Intersection.
Date of Certification: 2024

Education leading to Master's Degree

ICL headquarters (2 Master' degree) with cooperating univesities

Anuththaara Bandara
Date obtained Master degree: March, 2024
Title: Integrated Technology of Numerical Weather Simulation and Machine Learning for Orographic Rainfall Prediction in Sri Lanka
Institution: Tokyo Institute of Technology

Sajith Bandaranayake
Date obtained Master degree: September, 2024
Title: Development of Landslide Susceptibility Map for Weathered Metamorphic Rocks based on Field Tests, Laboratory Tests and Safety Factor Analysis
Institution: Yamanashi University

Unesco Chair on Prevention and Sustainable Management of Geo-Hydrological Hazards of the University of Florence:
Education leading to Master's Degree (43 MSc)

Master Thesis in Geological sciences and technologies:

- Title: Integration and validation of direct and indirect measurements for soil water content.
  Candidate: Pettinelli Tommaso
  Tutor: Fanti Riccardo

- Title: Site-scale conceptual models for hydrogeological characterization in the construction of open-circuit geothermal plants
  Candidate: Maestrelli Laura

	Tutor: Fanti Riccardo • Title: Analysis of monitoring data and geotechnical modelling of the Ancona landslide Candidate: Sestini Lorenzo Tutor: Tofani Veronica • Title: Influence of atmospheric conditions on the GB-InSAR data quality aimed at improving the Quincinetto landslide alerting capabilities Candidate: Butti Matteo Tutor: Gigli Giovanni • Title: Landslide risk mitigation along paths in the Monti Sibillini Park through the integrated use of advanced surveying and monitoring technologies Candidate: Brogi Daniele Tutor: Gigli Giovanni • Title: Experimentation of ground displacement monitoring techniques using optical tag recognition Candidate: Corazzi Sofia Tutor: Gigli Giovanni • Title: Caratterizzazione da remoto di ammassi rocciosi per la mitigazione del rischio in corrispondenza di pareti rocciose artificiali Candidate: Spanò Sara Tutor: Gigli Giovanni • Title: Identificazione e caratterizzazione semi-automatica dei processi deformativi del terreno, mediante l'utilizzo di dati radar satellitari interferometrici e sistemi di alberi decisionali Candidate: Pan Zihao Tutor: Bianchini Silvia • Title: Assessment of the stability of built-up areas in Tuscany through the integrated analysis of interferometric data and geomorphological survey Candidate: Belli Stefano Tutor: Bianchini Silvia • Title: Automatic detection of deformation patterns from satellite InSAR time series: an application at national scale in United Kingdom Candidate: Becattini Francesco Tutor: Raspini Federico • Title: Optical and radar satellite monitoring of the Southern Patagonia Icefield Candidate: Musiari Juriy Tutor: Raspini Federico • Title: Combinazione di dati InSAR e dati geotecnici per l'analisi delle deformazioni di aree portuali Candidate: Rami Giacomo Tutor: Del Soldato Matteo • Title: Analysis of the ground effects of the flood event of 15 September 2022 in the basin of the Misa River (Marche) using satellite data Candidate: Scarpitta Luciano Tutor: Confuorto Pierluigi

- Title: Analysis of the Impacts of Hydro-geomorphological Phenomena on the Italian Real Estate Heritage
  Candidate: Panariello Andrea
  Tutor: Segoni Samuele

- Title: Analisi dei dati telerilevati per lo studio delle deformazioni del terreno indotte dalle attività di Underground Gas Storage
  Candidate: Landini Neri
  Tutor: Intrieri Emanuele
- Title: Application of semi-empirical methods on InSAR satellite data for the prediction of structural collapses of tailings dams
  Candidate: Scerbo Martina
  Tutor: Intrieri Emanuele

- Title: Instability phenomena in the La Fossa Cone (island of Vulcano)
  Candidate: Giorgio Maria
  Tutor: Intrieri Emanuele

Master Theses in Civil Engineering and in Environmental Engineering

- Title: The role of road-related variables and climatic conditions in the accident rate in the Tuscany Region
  Candidate: Bartolozzi Chiara
  Tutors: Meocci Monica, Arrighi Chiara

- Title: Evaluation of the effectiveness of new hydraulic works for risk reduction in the Florentine plain
  Candidate: Stefani Elena
  Tutors: Castelli Fabio, Arrighi Chiara

- Title: Analysis of extreme precipitation in Tuscany in the context of climate change
  Candidate: Lombardi Elisa
  Tutors: Forzieri Giovanni, Castelli Fabio

- Title: Flotation processes of plastic particles in the water: determination of optimal sperimental set up
  Candidate: Cossa Camilla
  Tutors: Francalanci Simona, Solari Luca

- Title: Study of sedimentary dynamics and solid transport in the Ombrone Grossetano river basin.
  Candidate: Giovanchelli Giacomo
  Tutors: Solari Luca, Francalanci Simona

- Title: Characterization and diffusion of microplastics in the river environment and influence of the San Colombano (FI) purification plant
  Candidate: La Rosa Serena
  Tutors: Francalanci Simona, Gori Riccardo

- Title: Solid transport modeling and identification of altimetric evolutionary trends at the stretch scale of the Magra river
  Candidate: Marchiani Nicola
  Tutors: Solari Luca, Francalanci Simona

- Title: Intervention proposals to overcome hydraulic problems in the municipality of Castelsardo.

Candidate: Megale Giulia
Tutors: Francalanci Simona, Caporali Enrica

- Title: Study of the evolutionary dynamics of the Arno river in the Casentino section
  Candidate: Pittelli Anna Maria
  Tutors: Solari Luca, Francalanci Simona
- Title: Semi-distributed hydrologic modelling of the Orcia River basin for frequent discharges characterisation
  Candidate: Giuliano Alessandro
  Tutors: Lompi Marco, Caporali Enrica

- Title: Investigation of a reservoir sedimentation: the Astrone dam
  Candidate: Bernardini Virginia
  Tutors: Solari Luca, Caporali Enrica

- Title: Modelling with HEC-HMS of the effect of land use change on sediment accumulation in hilly reservoirs
  Candidate: Degli Innocenti Elia
  Tutors: Castelli Giulio, Caporali Enrica

- Title: Performance of spectral indices for the identification of small agricultural reservoirs in Tuscany via Google Earth Engine
  Candidate: Marjouee Shirin
  Tutors: Lompi Marco, Caporali Enrica

- Title: Geomorphic effects of the extreme Coldwater River flood of 2021
  Candidate: Fabiani Enrico
  Tutors: Solari Luca, Rinaldi Massimo

- Title: Experimental investigations to estimate the removal efficiency of microplastics in purification plants
  Candidate: Vannini Elena
  Tutors: Solari Luca, Gori Riccardo

- Title: Experimental study on transport processes of plastic materials in a river environment
  Candidate: Agati Rebecca
  Tutors: Paoli Paola, Solari Luca

- Title: Use of open data for quantitative zoning of landslide susceptibility
  Candidate: Betti Diletta
  Tutors: Uzielli Marco, Facciorusso Johann Antonio

- Title: Probabilistic analysis of geotechnical stability of landfills: modeling aspects and application to the San Martino a Maiano (FI) landfill.
  Candidate: Martino Tommaso Francesco Maria
  Tutors: Uzielli Marco, Renzi Stefano

- Title: Adaptation of an analytical model for predicting geotechnical settlements of a closed landfill Candidate: Alinari Lorenzo
  Tutors: Uzielli Marco, Renzi Stefano

- Title: Numerical modeling of the local seismic response of alluvial basins for the quantitative evaluation of two-dimensional severity phenomena.
  Candidate: Sforzi Carlotta
  Tutors: Madiai Claudia, Uzielli Marco

- Title: Multilayer geotechnical susceptibility zonation at a territorial scale and modeling of the mitigation effects of rooted soils
  Candidate: Ferretti Irene
  Tutor: Uzielli Marco

Master Theses in Geoengineering

- Title: Modellazione Geologica 3-D per la Depressione della Dancalia (area di Dallol) e Modellazione del Potenziale Minerale di Bischofite
  Candidate: Yoruk Baris Can
  Tutors: Keir Derek Boswell, Caporali Enrica

- Title: Performance of Residential Rain Gardens in treating urban runoff using EPA-SWMM
  Candidate: Ferrara Lorenzo
  Tutors: Lompi Marco, Caporali Enrica

- Title: Machine learning methods to estimate soil erosion in areas affected by wildfires
  Candidate: Chouksey Bhushan
  Tutor: Confuorto Pierluigi
  Co-tutor: Tofani Veronica

University of Ljubljana, Ljubljana, Slovenia (11 Masters):

Oriol Barbosa I Llauet – MEng
School: Faculty of Civil and Geodetic Engineering, University of Ljubljana, Slovenia
Title: Flood risk and damage analysis of the 2023 floods in Meža River catchment, Slovenia.
Date of Certification: 2024

Hannah Claire Graham – MEng
School: Faculty of Civil and Geodetic Engineering, University of Ljubljana, Slovenia
Title: Modelling different flood mitigation measures using SWAT model and comparison of hydrological results with public perception.
Date of Certification: 2024

Tilen Pinter – MEng
School: Faculty of Civil and Geodetic Engineering, University of Ljubljana, Slovenia
Title: Use of a stohastic precipitation model for determing design discharges in savinja river basin.
Date of Certification: 2024.

Lea Šturbej – MEng
School: Faculty of Civil and Geodetic Engineering, University of Ljubljana, Slovenia
Title: Design of the check dam in the Savinja river basin.
Date of Certification: 2024

Matej Lahne – MEng
School: Faculty of Civil and Geodetic Engineering, University of Ljubljana, Slovenia
Title: Analysis of climate change on hydrological processes in the Sava River catchment up to

	the gauging station Litija. Date of Certification: 2023 Nika Ferjan – MEng School: Faculty of Civil and Geodetic Engineering, University of Ljubljana, Slovenia Title: Analysis of possible improvements of hydromorphological conditions at a section of Kamniška Bistrica river. Date of Certification: 2023 Manca Alič – MEng School: Faculty of Civil and Geodetic Engineering, University of Ljubljana, Slovenia Title: River flow trends in Slovenia by the end of the 21st century. Date of Certification: 2023 Simon Savić – MEng School: Faculty of Civil and Geodetic Engineering, University of Ljubljana, Slovenia Title: Structural safety evaluation of an embankment dam. Date of Certification: 2023 Livia Beatriz Machado de Almeida – MEng School: Faculty of Civil and Geodetic Engineering, University of Ljubljana, Slovenia Title: Flood risk and damage investigation in areas of high cultural heritage value. Date of Certification: 2023 Kristina Unger – MEng School: Faculty of Civil and Geodetic Engineering, University of Ljubljana, Slovenia Title: Evaluation of flood protection measures under climate change scenarios. Date of Certification: 2023 Luka Prezelj – MEng School: Faculty of Civil and Geodetic Engineering, University of Ljubljana, Slovenia Title: Sediment transport modelling in the Sava Dolinka River. Date of Certification: 2023 ***National Central University, Chinese Taipei (19 Master):*** Andhy Setyo Raharjo - Master's degree: TDR Centrifuge Permeameter Development for Hydraulic Characteristics Measurement of Unsaturated Soils Umar Zada- Master's degree: Utilizing BOTDR-Based Distributed Optical Fiber Strain Sensing for Land Subsidence Monitoring Yi-Chun Liao - Master's degree: Preliminary Evaluation of Shallow Landslide Displacement Monitoring Using Single Frequency NSS Integrated with Arduino System Te-Wei Tseng- Master's degree: The evaluation of slope monitoring using optical and thermal images fusion through machine learning Wei-Jie Wang- Master's degree: Exploring the Uncertainty of Geological Model and Material Parameters for Slope Stability Analysis Hong-Ting Tang - Master's degree: Examination of influence factors for hysteresis between soil water content and electrical conductivity measured by TDR LE HOAI HAN- Master's degree: Scale effect on the determination of spatial correlation factor used in Markov random field

Kai-Ting Shen- Master's degree: Establishing a logistic regression model for earthquake-induced landslide susceptibility based on the Modified Mercalli Intensity (MMI) zoning and near-real-time analysis of landslide susceptibility after an earthquake

Yi-Cian Lin - Master's degree: Considering the impact of geological model and parameter uncertainty on the Vs30 distribution map—A case study of the Taipei Basin test area.

NGUYEN THI MAI LINH- Master's degree: VS30 Mapping Based on Effective Stress and Void Ratio: Using new Transformation Functions and Adding Data from Boreholes Less Than 30 Meters

Bo-Yan Jiang- Master's degree: The Practice of Anisotropic Rock Engineering Behavior: An Example of Orientation Rating Adjustment

Jing-Min Zhang- Master's degree: The impact of tunnel excavation direction on the stability of fractured rock mass.

Qing-Xiu Huang- Master's degree: Influence of Boundary Conditions on Collapse Behavior of Rock Slopes with Different Oblique Angles

Yi-Rui Liang - Master's degree: Exploring the Impact of Trend Surface Method and Kriging Method on the Automated Interpretation Results of Hazardous Dip Slopes

Hsiang-Chiao Liao- Master's degree: Exploration of remediation strategies for high-angle forward slopes using centrifuge models and the separation element method.

Chen-Wei Wu- Master's degree: The mechanism of large-scale forward slope sliding is affected by the distribution of weak planes in the rock layers and their mechanical properties .

Bo-Hong Hsiao- Master's degree: Exploring the impact of weak surface properties on the mitigation strategies of wedge-shaped rock slopes through centrifuge tests and numerical models.

Chih-Chen Yeh- Master's degree: Exploring the Impact of Geological Parameter Uncertainty on Slope Sliding Risk - A Case Study of the Basketball Court Slope at National Yang Ming Chiao Tung University, Yang Ming Campus

Zi-Wen Chen- Master's degree: Centrifuge modeling on deformation behaviors of low relative density submerged gentle slope

Northeast Forestry University, China (12Master):

- Jiawei Wu – MEng
  School: Faculty of Transportation, Northeast Forestry University, China
  Title:Analysis on the influence of rainfall on the stability of the embankment of section K177+550 of Beihei Highway
  Date of Certification: 2022

- Wanying Wei – MEng
  School: Faculty of Transportation, Northeast Forestry University, China
  Title:Analysis on the influence of rainfall on the stability of the embankment of section K177+550 of Beihei Highway
  Date of Certification: 2022

- Shengtang Jiang – MEng
  School: Faculty of Transportation, Northeast Forestry University, China
  Title:Study on seismic behavior of simply supported continuous box girder bridge in cold regions during construction
  Date of Certification: 2022

- Yongkang Wu - MEng
  School: School of Civil Engineering, Northeast Forestry University, Harbin, China
  Title: Analysis of landslide movement process under complex environmental conditions in cold regions
  Date of Certification: 2022
- Yongfei Qi - MEng
  School: School of Civil Engineering, Northeast Forestry University, Harbin, China
  Title: Monitoring and test analysis of salivary ice formation process on highway cutting slope in cold regions
  Date of Certification: 2022

- Jiawei Wu – MEng
  School: School of Civil Engineering, Northeast Forestry University, Harbin, China
  Title: Impact of Rainfall Intensity on the Stability of K177+550 Old Landslide Mass of Beihei Highway
  Date of Certification: 2022

- Guangjun Liu - MEng
  School: School of Civil Engineering, Northeast Forestry University, Harbin, China
  Title: Study on Unfrozen Water and Hydrothermal Coupling Change Characteristics of Northeast Clay
  Date of Certification: 2022

- Kai Wang– MEng
  School: School of Civil Engineering, Northeast Forestry University, Harbin, China
  Title: Deformation monitoring analysis and application of Beihei Highway based on time-series InSAR technology
  Date of Certification: 2023

- Jin Song- MEng
  School: School of Civil Engineering, Northeast Forestry University, Harbin, China
  Title: Analysis of high density electrical forward and inverse imaging of highway frozen soil foundation
  Date of Certification: 2023

- Xiyi Yang - MEng
  School: School of Civil Engineering, Northeast Forestry University, Harbin, China
  Title: Study on hydrothermal characteristics and soil particle migration of sand filling subgrade under freeze-thaw cycle
  Date of Certification: 2023

- Xianzhao Li– MEng
  School: School of Civil Engineering, Northeast Forestry University, Harbin, China
  Title: Research on temperature variation and disease prevention technology of permafrost subgrade of G331 Line
  Date of Certification: 2023

- Weiqi Wang - MEng
  School: School of Civil Engineering, Northeast Forestry University, Harbin, China
  Title: Permafrost change characteristics and stability analysis of highway subgrade in the Great and lesser Khinggan Mountains
  Title: Study on Unfrozen Water and Hydrothermal Coupling Change Characteristics of Northeast Clay
  Date of Certification: 2023

Tongji University, China (4 Master):

Jie Gao – MEng
School: College of Civil Engineering, Tongji University, China
Title: Study on the Triggers and Morphological Characteristics of High-altitude and Longrunout Landslides in the Lower Yarlung Zangbo River
Date of Certification: 2024

Song Li – MEng
School: College of Surveying and Geo-Informatics, Tongji University, China
Title: Surface Deformation Monitoring in Typical Permafrost Regions in the Northern Hemisphere
Date of Certification: 2024

Chaoying Lin – MEng
School: College of Surveying and Geo-Informatics, Tongji University, China
Title: Resilience Assessment Method for Mountain Cities based on High-precision Earth Observation
Date of Certification: 2024

Zhixuan Xiong – MEng
School: College of Surveying and Geo-Informatics, Tongji University, China
Title: Analysis of Aerosol Concentration Anomalies in Shallow Strong Earthquakes Based on Multi-Source Remote Sensing Data
Date of Certification: 2024

China University of Geosciences, Wuhan (7 Master)

Wang Xuyang – MEng
School: Hubei Badong National Field Scientific Observation and Research Station of Geological Disasters, China University of Geosciences (Wuhan),China
Title: Study on Swelling-Shrinkage Behavior and Mechanism of Different Cation-Based Bentonites under Wetting-Drying Paths
Date of Certification: 2024

Zhao Xinhai – MEng
School: Hubei Badong National Field Scientific Observation and Research Station of Geological Disasters, China University of Geosciences (Wuhan),China
Title: The Creep Mechanism of Shear Zone Soil and Landslide Deformation Characteristics under Different Gravel Content Conditions
Date of Certification: 2024

Tao Yu– MEng
School: Hubei Badong National Field Scientific Observation and Research Station of Geological Disasters, China University of Geosciences (Wuhan),China
Title: Study on the Transfixion Mechanism and Stability Evaluation of the Sliced Step-path Sliding Surface of Outang Landslide
Date of Certification: 2024

Zhang Yang– MEng
School: Hubei Badong National Field Scientific Observation and Research Station of Geological Disasters, China University of Geosciences (Wuhan),China
Title: Evolution Mechanism and Stability Assessment of Multi-Layer Sliding Zone Reservoir Landslide Reinforced with Anti-Slide Piles -A Case Study of Majiagou Landslide in the Three Gorges Reservoir Area
Date of Certification: 2024

Zhao Wei– MEng
School: Hubei Badong National Field Scientific Observation and Research Station of Geological Disasters, China University of Geosciences (Wuhan),China
Title: Study on the Effect of Underground Drainage Project and Optimization Scheme of Lotus Root Pond Landslide in Three Gorges Reservoir Area
Date of Certification: 2024

Li Shuwen– MEng
School: Hubei Badong National Field Scientific Observation and Research Station of Geological Disasters, China University of Geosciences (Wuhan),China
Title: Research on Landslide Failure Time Prediction and Forecasting Considering Uncertainty
Date of Certification: 2024

Lai Jiawei– MEng
School: Hubei Badong National Field Scientific Observation and Research Station of Geological Disasters, China University of Geosciences (Wuhan),China
Title: Deformation Characteristics and Zonin Stability Evaluation of Multiple Landslides in the Outang Landslide in the Three Gorges Reseryoir Area
Date of Certification: 2024

ii) Training (short term)	***ICL Headquaters.*** Two members from Sri Lanka (Suminda Rathnayake, Channa Rodrigo) were invited in March 2023 to the Tokyo Institute of Technology to learn and practice MSSG, the tool for weather forecasting. Three members from Sri Lanka (Amali Palliyaguruge, Rasike Maduranga, Ranjan Weerasinghe) were invited in March 2023 to ICL to learn and practice the ICL-2 ring shear apparatus, LS-Rapid landslide simulation software, Seismic monitoring and dynamic triaxial test. The following five members from National Building Research Organisation, Sri Lanka were invited from 21 January to 4 February 2024 for landslide mapping training. Imaya Ariyarathne, Hasali Hemasinghe, Selvarajah Jayaprakash, Chaturi Subasinghe, and Chanchala De Silva One member from Tsinghua University (Yifei Cui), together with 14 undergruaduate students were invited in August, 2024. ***Unesco Chair on Prevention and Sustainable Management of Geo-Hydrological Hazards of the University of Florence:*** • Seminar: "Educating for sustainability: the experience of the UNESCO Chair in Prevention and Sustainable Management of Hydrogeological Risk", organized by the UNESCO Chair in Water Resources Management and Culture of the University for Foreigners of Perugia, with the participation of the network "Dialogues of the UNESCO Chairs: a laboratory of ideas for the world to come", Perugia, Italy, January 24, 2023. • Seminar: "Use of data remotely sensed from ground and satellite in the creation of sinkhole hazard and risk maps: the case studies of Camaiore and Guidonia. Sinkholes and underground cavities: perspectives of scientific research towards the drafting of Guidelines", organized together with ISPRA, University of Naples Federico II, and the Italian Geographical Society, Rome, Italy, February 2, 2023. • Webinar: "Monitoring using interferometric radar measurements from ground and satellite. Monitoring using Doppler systems. Technical characteristics, use of reference costs", organized by ISPRA within the "Higher education course on landslide monitoring", second edition, October 10, 2023. • Webinar: "Floods and Cultural Heritage", PHD Course for the students of the PHD program in Heritage Science, curriculum "Advanced materials and methodologies for safeguarding cultural heritage: ecological and digital transition for mitigation of anthropogenic and natural hazards", Rome, Italy. • 1st Summer school Copernicus for Cultural Heritage - Action 2020-2-21: Parco Regionale Dell'appia Antica Rome, Italy, June 13-16, 2023. • LARAM (LAndslide Risk Assessment and Mitigation) International School 2023, September 4- 15, 2023, Salerno, Italy. • LARAM (LAndslide Risk Assessment and Mitigation) International School 2024. September 9- 20, 2024, Salerno, Italy. ***UNESCO CHAIR on Water-related Disaster Risk Reduction at University of Ljubljana*** • Unesco Chair Summer School HydRoData 2024 on data in hydrology, University of Ljubljana, 2 – 6 September 2024, 24 participants from 16 countries. • International Seminar: From Barriers to Bridges: Strategies for Reconnecting the Danube River Basin, Ljubljana, Slovenia, September 2024. • Course on "R Program use in hydrology" for Flood Risk Management students (Erasmus plus Joint degree master programme) at UL FGG, Ljubljana, Slovenia, January 2024.

- Unesco Chair Summer School HydRoData 2023 on data in hydrology, University of Ljubljana, 4 – 8 September 2023, 26 participants from 21 countries.
- Workshop in R in the scope of the Conference of the Danubian Countries on Hydrological Forecasting and Hydrological Bases of Water Management at Vienna, Austria, August 2023.
- GWP CEE/OPTAIN Summer School: Healthy and Resilient Catchments – From Science to Action, Prague, Czech Republic, 2 – 8 July 2023.
- Flood Hazard Assessment for the Coastal Urban Floodplain (INCOLD, ICOLD YPF), July 2023

National Central University, Chinese Taipei:

- Course: A course on Natural Hazard of Himalaya -landslide and fault activityis started during the academic year 2024. This course is designed based on overview of the geological background of the Himalaya, exploring factors that contribute to landslide vulnerabilities. Investigation with laboratory test and field monitoring will be included. Moreover, the institute will introduce participants to InSAR

iii) Research

The main and common research activities of this network are the projects of the International Programme on Landslides (IPL) and also activities of ICL World Cenres of Excellence (WCoEs). The list of the ongoing IPL projects and WCoEs in this reporting period are presented here.

IPL-106-2	International Summer School on Rockslides and Related Phenomena in the Kokomeren River Valley, Tien Shan, Kyrgyzstan	Russia	Alexander Strom	2008 -
IPL-158	Development of Community-based Landslide Early Warning System	Indonesia	Teuku Faisal Fathani	2009 -
IPL-167	The effect of freezing-thawing on the stability of ancient landslide of North-Black highway	China	Wei Shan	2009 -
IPL-197	Low frequency, high damaging potential landslide events in “low risk” regions – challenges for hazard and risk management	Czech Republic	Jan Klimeš	2015-
IPL-202	Ripley landslide monitoring project (Ashcroft, BC, Canada)	Canada	Peter Bobrowsky	2016-
IPL-203	Analysis and identify of landslides based on species distribution and surface temperature difference	China	Ying Guo	2016-
IPL-210	Massive landsliding in Serbia following Cyclone Tamara in May 2014	Serbia	Biljana Abolmasov	2016-

	IPL-212	The construction of a global database of giant landslides on oceanic island volcanoes	Czech Republic	Matt Rowberry	2016-
	IPL-219	Rockfall hazard identification and rockfall protection in the coastal zone of Croatia	Croatia	Zeljko Arbanas	2017-
	IPL-220	Kos njek landslide monitoring project (Zagreb, Croatia)	Croatia	Martin Krkac	2017-
	IPL-221	PS continuous streaming for landsli e monitoring and mapping	Italy	Federico Raspini	2017-
	IPL-230	Evolution-based key technology of landslide pre ntion in Three Gorges Reservoir region, China	China	Huiming Tang	2018-
	IPL-237	The role of time-dependent rock mass deformations and landscape evolution rates as predisposing factors for massive rock slope failures	Italy	Carlo Esposito	2018-
	IPL-238	Landslides Threatening Russian Cultural Heritage Sites	Russia	D.N. Gobotsov	2018-
	IPL-242	Studies of disasters related to natural and anthropogenic landslides in Brazil – Characterization of landslides triggers and impacts as a tool to rapid risk analysis	Brazil	Renato Eugenio de Lima	2019-
	IPL-244	Evolution mechanism and control of landslides induced by sudden rainstorm	China	Huiming Tang	2019-
	IPL-248	Innovation in slow-moving landslide risk assessment of roads and urban sites by combining multi-sensor multi-source monitoring data	Italy	Dario Peduto	2019-
	IPL-249	Development of early warning technology of rain-induced rapid and long-travelling landslides in Sri Lanka	Japan, Sri Lanka	Kazuo Konagai & Asiri Karunawardena	2019-
	IPL-253	Integrated Landslide Disaster Risk Research in Mexico	Mexico	Irasema Alcantara-Ayala	2020-
	IPL-254	Ukraine cultural heritage objects within landslide hazardous sites	Ukraine	Oleksandr M. Trofymchuk	2020-

	IPL-202 extension	Slow-moving landslide monitoring project (Ashcroft, BC, and Russell, MN, Canada) – extension of IPL-202	Canada	David Huntley	2022-
	IPL-255	Monitoring rock glaciers kinematic process using SAR interferometry and offset-tracking in Alpine environment	China and Italy	Quingkai Meng and Federico Raspini	2022-
	IPL-256	Investigation of landslide initiation caused by rainfall infiltration using small-scale	Croatia	Josip Peranic	2022-
	IPL-257	Optimisation of landslide susceptibility assessment for land-use planning in Croatia: from national to local scale	Croatia	Sanja Bernat Gazibara	2022-
	IPL-258	Slope stability in vineyards with different management practices (Acronym: WINESLIDES)	Italy	Filippo Catani	2022-
	IPL-259	Landslide Risk assessment in AlUla Archaeological sites – Kingdom of Saudi Arabia	Italy	Claudio Margottini	2022-
	IPL-260	Landslide Risk assessment in the High City of Antananarivo	Italy	William Frodella	2022-
	IPL-261	World-wide-web-based Landslide Observatory (W3bLO)	Slovenia	Matjaž Mikoš	2022-
	IPL-262	Deciphering the sensitivity of rock faces to climatic changes and freeze-thaw cycles in permafrost-free regions	Slovenia	Mateja Jemec Auflič	2022-
	IPL-263	Societal and Environmental Determinants of Landslide Risk Perception towards Landslide Disaster Risk Reduction; Case Study of Athwelthota Landslide, Baduraliya, Kaluthara, Sri Lanka.	Sri Lanka	N. N. Katuwala	2022-
	IPL-264	Study on Suitable Tools for Modeling and Analysing Rain Induced Slope failure in Sri Lankan Residual Soil	Sri Lanka	S S I Kodagoda	2022-
	IPL-265	Review of Rockfall Trajectories of Cut Slopes of Roads Using a Distribution Model Approach	Sri Lanka	Nimani Kulathilake	2022-

	IPL-266	Climate Change-Induced Landslide Hazard Assessment – for Aiding Climate Resilient Planning for Road Infrastructure.	Thailand	Peeranan Towashiraporn	2022-
	IPL-267	The Collaboration of debris flow early warning system between Vietnam and Taiwan	Vietnam and Chinese Taipei	Nguyen Quoc Dinh and Chih-Chung Chung	2022-
	IPL-268	Initiation mechanism and criteria for hydrodynamic pressure-driven landslides	China	Changdong Li	2022-
	IPL-269	Landslide Initiation, Evolution and Remediation: Physical and Numerical Modeling (LIEREM)	Croatia	Željko Arbanas	2022-
	IPL-270	Slope monitoring of a San Eduardo landslide in Colombia using multiple techniques	Colombia	Guillermo Ávila	2022-
	IPL-271	Tree-ring microscopic anatomy as landslide deformation data source for optimization of landslide hazard assessment in forested regions	Czech Republic	Jan Klimeš	2022-
	IPL-272	Study on catastrophic dynamics and affected area prediction of high altitude and long runoutlandslides in southeast Tibet	China	Fawu Wang	2022-
	IPL-273	International Panel of Experts on Landslide Risk for Cultural Heritage Sites (NICHE)	Egypt	Yasser Elshayeb	2022-
	IPL-274	Understanding the seismic response of large-scale geological hazards for developing early warning methods	China	Yifei Cui	2023-
	IPL-275	Development of the Landslide Risk Reduction Strategies for protection and safety of Heritage Sites	India	Surya Parkash	2023-
	IPL-276	Landslide risk management on the road network in climate changing conditions	Serbia	Biljana Abolmasov	2023-
	List of ongoing the Word Centre of Excellence on Landslide Disaster Reduction (WCOE)for 2020-2023				

1	Slow moving translational landslides in argillaceous soils and weak rocks	Michael T. Hendry	Canada	University of A berta
2	Formation mechanism research, disaster warning, and universal education of Cold Regions Landslide	Wei Shan	China	Research Center of Cold Regions Landslide
3	Landslide Modeling: From Physical to Phenomenological Models	Zeljko Arbanas, Snjezana M. Arbanas	Croatia	Croatian Landslide Group
4	Community centered landslide disaster risk reduction in changing climate, continuation	Josef STEMBERK	Czech Republic	Institute of Rock Structure and Mechanics Czech Academy of Sciences & Charles University, Facu ty of Science
5	Documentation, Training and Capacity Enhancement on Landslides Risk Reduction and Resilience	Surya Parkash	India	National Institute of Disaster Management (NIDM), Ministry of Home Affairs, Government of India, New Delhi
6	Internet of Things (IoT) for landslide disaster risk reduction	Maneesha V Ramesh	India	Amrita Vishwa Vidyapeetham, Amritapuri campus
7	Development of risk reduction strategy and technological innovation for landslide mitigation	Teuku Faisal Fathani	Indonesia	Universitas Gadjah Mada
8	Development of multidisciplinary and integrated methodologies for mitigating geological Risks	Francesca Bozzano	Italy	CERI - Centro di Ricerca Previsione, Prevenzione e Controllo dei Rischi Geologici (Research Centre on Geological
9	Advanced Technologies for LandSlides (ATLaS)	Nicola Casagli	Italy	UNESCO Chair for the prevention and the sustainable management of geo-hydrological hazards, University of Firenze (UNIFI)
10	Integrated research on landslide disaster risk	Irasema Alcántara-Ayala	Mexico	Institute of Geography, National Autonomous University of Mexico (UNAM)
11	Landslides in Weathered Heterogeneous Sedimentary Rock Masses such as Flysch	Matjaz Mikos	Slovenia	Universi y of Ljubljana, Faculty of ivil and Geodetic Engineering (UL FGG)

12	International Training Course on Slope Land disaster Reduction	Louis Ge	Chinese Taipei	Department of Civil Engineering, National Taiwan University
13	National Slope Master Plan, method of certification heritage objects in hazardous landslide sites	Oleksandr Trofymchuk	Ukraine	The Institute of Telecommunication and Global Information Space (ITIGS) of the National Academy of Science of Ukraine (NASU), Research Institute of Building Constructions (RIBC)
14	Developing Model Policy Frameworks, Standards, and Guidelines on Landslide Disaster Reduction	S. S. I. Kodagoda	Sri Lanka	Central Engineering Consultancy Bureau
15	Research on landslide initiation mechanism based on physical model	Katsuo Sasahara & Asiri Karunawardena	Japan & Sri Lanka	The Japan Landslide Society & National Building Research Organisation
16	Bridging Science, Policies, and Partnership for Landslide Risk Management	Hans Guttman	Thailand	Asian Disaster Preparedness Center (ADPC)
17	Central Asia Rockslide Inventory. Compilation, Analysis and Training	Alexander Strom	Russia	JSC "Hydroproject Institute"
18	Harmonization of Landslides Data and National Authorities Capacity Building for Landslide Risk Reduction	Biljana Abolmasov	Serbia	University of Belgrade, Faculty of Mining and Geology
19	Landslide Susceptibility Map Assessment Base on Climatological Changes Using Geographic Information Systems	Ir. Hj. Zulkifly Bin A. Ghani	Malaysia	Slope Engineering Branch, Public Work Department Malaysia

List of ongoing the Word Centre of Excellence on Landslide Disaster Reduction (WCOE)for 2023-2026

1	Monitoring analysis and numerical simulation of permafrost thawing and landslides movement process in Northeast China	Ying Guo	China	Institute of Cold Regions Science and Engineering, Northeast Forestry University
2	Croatian Center for Applied Landslide Research	Snježana Mihalić Arbanas	Croatia	Croatian Landslide Group
3	Effects of precipitation, moisture and temperature changes on landslides in the process chains.	Vít Vilímek	Czech Republic	Charles University
4	Capacity Development for Landslide Disaster Risk Reduction and Resilience in India	Surya Parkash	India	National Institute of Disaster Management (NIDM)
5	Enhancing community resilience for landslide disaster risk reduction	Maneesha Vinodini Ramesh	India	Amrita Vishwa Vidyapeetham, Amritapuri campus
6	Risk Management and Technological Innovation for Landslide Mitigation	Teuku Faisal Fathani	Indonesia	Universitas Gadjah Mada
7	Risk assessment and modelling for mitigation strategies and for early warning systems	Giovanna Capparelli	Italy	University of Calabria (Unical)
8	Advanced Technologies for LandSlides (ATLaS)	Nicola Casagli	Italy	UNESCO Chair on Prevention and Sustainable Management of Geo-Hydrological Hazards, University of Florence
9	From learning on case studies to forecasting scenarios of ground instabilities	Gabriele Scarascia Mugnozza	Italy	CERI - Centre for Research on Prediction, Prevention, and Mitigation of Geological Risks
10	Integrated research on landslide disaster risk	Irasema Alcántara-Ayala	Mexico	Institute of Geography, National Autonomous University of Mexico (UNAM)
11	Central Asian Rockslides. Study and training	Alexander Strom	Russia	JSC "Hydroproject Institute"
12	Center for Comprehensive Study of Landslides of Faculty of Geology MSU	Viktor T. Trofimov Oleg V. Zerkal	Russia	Laboratory of Engineering Geodynamics, Department of Engineering and Ecological Geology, Faculty of Geology, Moscow State University

13	Integrated approach to landslide risk management in climate changing conditions – (continuation of WCoE 2017-2020, 2020-2023)	Biljana Abolmasov	Serbia	University of Belgrade, Faculty of Mining and Geology
14	Capacity Building for Landslide Risk Reduction Using Open Educational Resources and New Educational Technologies	Matjaž Mikoš	Slovenia	University of Ljubljana – Faculty of Civil and Geodetic Engineering (UL FGG) and International Research Centre on Artificial Intelligence
15	Establishment of an innovative research group on landslides in Sri Lanka	Jagath Gunatilake	Sri Lanka	Engineering Geology Research Group (EGRG), Department of Geology, University of Peradeniya
16	Integrated geophysical-geotechnical monitoring technologies for local scale landslide early warning	Jonathan Chambers	UK	British Geological Survey

Unesco Chair on Prevention and Sustainable Management of Geo-Hydrological Hazards of the University of Florence:

The research activity of the Chair is in line with its mission that is the prevention and management of geo-hydrological hazards with special emphasis to landslides, subsidence, and floods. The activity of the Chair has been carried out in the framework of several national and international projects.

The Chair has also been involved in the following European Erasmus+ projects:

- Re-HeED - Reframing Heritage Education in Egypt. Erasmus+ KA2 Cooperation for innovation and the exchange of good practices (project leader: Veronica Tofani).

- Erasmus + KA 107 - Scientific-cultural collaboration with Ilia State University (Georgia), with the contribution of ISPRA (Higher Institute for Environmental Protection and Research) (project leader: Prof. Giovanni Gigli).

Moreover, we report a list of the European funded projects in which the Chair has took part as partner during the period of activity:

- Horizon 2020 funded projects:

  -LINKS (Strengthening Links between Technologies and Society for European Disaster Resilience; http://links-project.eu);

  -PassPORT- Operational Platform managing a fleet of semi-autonomous drones exploiting GNSS high Accuracy and Authentication to improve Security & Safety in port areas; https://www.euspa.europa.eu/operational-platform-managing-fleet-semi-autonomous-drones-exploiting-gnss-high-accuracy-and).

- Next Generation EU projects (within the Italian framework of PNRR, Piano di Ripresa e Resilienza), currently ongoing:

-RETURN (Multi-risk science for resilient communities under a changing climate).

-ITINERIS (ITalian INtegrated Environmental Research Infrastructures System).

- ROMERO (Robots for Extreme Environments; https://www.romero-esmera.it/), an ESMERA (Boosting Robotics Innovation) European Consortium-funded projects.
- EUSATfinder, a European SME Robotics Application-funded project.
- EGMS RASTOOL (European ground motion risk assessment tool), an ECHO EU-funded project.
- Copernicus European Ground Motion (EGMS; https://land.copernicus.eu/pan-european/european-ground-motion-service), funded by the European Environment Agency (EEA).
- IRIDE SERVICE SEGMENT – Lot 2 (S3 - Ground Motion) an ESA-funded project for the new satellite EO Italian programme.
- IRIDE SERVICE SEGMENT – Lot 4 (S7 – Emergency e S8 Security) an ESA-funded project for the new satellite EO Italian programme.
- European Space Agency (ESA)-funded projects:

  - PATHFINDER (PNT as A TecHnology to support drones' BVLOS scenarios for preventive monitoring and FIrst respoNDER missions);

  -G-Class Hydroterra (an Earth Explorer mission for Water Cycle Science***).***

- Other relevant projects:

-NEXUS-NESS: NEXUS Nature Ecosystem Society Solution Fair and Sustainable Resource Allocation Demonstrator of the Multiple WEFE Nexus Economic, Social and Environmental Benefits for Mediterranean Regions", program PRIMA - Partnership for Research and Innovation in the Mediterranean Area - Section 1 (06/2021-05/2024).

- World Bank funded project (SFRARR) "Strengthening Financial Resilience and Accelerating Risk Reduction in Central Asia". The Chair participated as leader of Task 7 "Landslide Scenario assessment".

UNESCO Chair at University of Ljubljana:

- ResiliEnhance program, lead by University of Udine, Italy: ResiliEnhance Catalysts (https://resilienhance.uniud.it/resilience-catalysts) ResiliEnhance platform (https://resilienhance.uniud.it/platform).
- Activities within framework of EUTOPIA Connected Community on digitalization for Hydro-Climatic Risk Reduction (https://eutopia-university.eu/english-version/integrated-connected-communities/digitization-for-hydro-climatic-risk-reduction).
- IPL Project "World-wide-web-based Landslide Observatory (W3bLO)".
- NATURE DEMO – Nature-Based Solutions for Demonstrating Climate-Resilient Critical Infrastructure (2024 – 2028). EU HORIZON-MISS-2023-CLIMA project.
- Study of sediment transport in Ljubljanica River (2024 – 2026). Applid research project.
- DANUBE4all: Danube river basin lighthouse – restoration of fresh and transitional

water ecosystems (2023 – 2028). EU HORIZON-MISS-2021-OCEAN Innovation Actions project.
- SPONGESCAPES: Evidence and Solutions for improving SPONGE Functioning at LandSCAPE Scale in European Catchments for increased Resilience of Communities against Hydrometeorological Extreme Events (2023 – 2027). EU HORIZON-MISS-2022-CLIMA project.
- TORRENT: Common practices to reduce the risk of watercourse management (2024 – 2026). Interreg VI-A Italy-Slovenia 2021 – 2027 programme project.
- Hydro-ecologically based operation of run-of-river reservoirs for effective sediment management and energy production (2023 – 2026). National applied research project.
- SAFETY4TMF: Coordinated prevention and disaster management activities on Tailings Management Facilities by authorities, municipalities and other stakeholders for solutions reducing transnational risks and (2024 – 2026). INTERREG Danube Region Programme project.
- Evaluation of the impact of rainfall interception on soil erosion (2023 – 2026). National research project.
- BORIS 2: Cross BOrder RISk assessment for increased prevention and preparedness in Europe: way forward (2024 – 2025). EU project.
- Development of a methodology for assessing the extent of erosion processes and mapping the fluvial erosion hazard in areas of inland water and sea flooding (2023 – 2025). National targeted research project.
- Development of the MethODology to identify potEntial modes of dam failuRe aNd to estImate Structural hEalth of water management Dams (MODERNISED) (2023 – 2025). National targeted research project.
- Development of a method for the assessment of the extent of sea flooding and the assessment of flood damage to cultural and built heritage sites in the area of Slovenian Istria (2023 – 2025). National targeted research project.
- Microscale influence on runoff (2023 – 2025). Bilateral project Slovenia – Hungary.
- Evaluation of hazard-mitigating hybrid infrastructure under climate change scenarios (2022 – 2025). National research project.
- NextGeneration EU Pilot project Sustainable Society (2022 – 2025). Slovenia‘s National Recovery and Resilience Plan.
- Upgrading and tests on the physical rain simulator (2023 – 2024). University of Ljubljana Development Fund student project.
- Deciphering the sensitivity of rock faces to climate change and freeze-thaw cycles in permafrost-free regions (2021 – 2024) National research project.
- Design and construction of a physical rain simulator (2022 – 2023). University of Ljubljana Development Fund student project.
- Rainfall interception experimentation and modelling for enhanced impact analysis of nature-based solutions (2021 – 2023) CELSA project.
- Development of the methodology for the flood hydrograph calculation using extreme precipitation events (2021 – 2023) National targeted research project.
- Erosional processes on coastal flysch cliffs and their risk assessment (2020 – 2023) National research project.
- BORIS: Cross border risk assessment for increased prevention and preparedness in Europe (2021 – 2022) EU project.
- Climate change assessment for Slovenia by the end of the 21st Century (2021 – 2022). Applied project.

Croatian Landslide Group, UNIRI-GF, UNIZG-RGNF:
- Physical Modelling of Landslide Remediation Constructions Behaviour Under Static and Seismic Actions, Croatian Science Foundation-funded project (2018-2022)
- Research of Rockfall Processes and Rockfall Hazard Assessment, University of Rijeka-funded project (2019-2021)

- Methodology Development for Landslide Susceptibility Assessment for Land-Use Planning Based on LiDAR Technology, Croatian Science Foundation-funded project (2020-2024)
- Applied Landslide Research for Development of Risk Mitigation and Prevention Meassures, EU-funded project (2020-2023)
- RESONANCE, impRoving landslidE riSk preventiOn aNd mAnagement iN Coastal arEas, Interreg project Italy-Croatia, EU-funded project (2024-2026)

Charles University:

- Research of GLOFs (Glacial Lake Outburst Floods) with respect to landslides – case studies, hazard and risk evaluation
- Case studies in landslide risk areas and rainfall threshold analysis
- Influence of thermo-hydro-mechanical coupling on slope stability under climate change

Landslide group in National Central University, Chinese Taipei:

- The Collaboration of debris flow early warning system between Vietnam and Taiwan
- Develop of Geology and Geotehcnical Uncerntity in Landslide Assessment
- Preliminary Evaluation of Optical Fiber Sensors for Distributed Strain Measurement through Landslide Physical Modelling
- Development and validation of multi spatial-temporal scale monitoring and data fusion for rock slope early warning.

Institute of Geography, National Autonomous University of Mexico (UNAM):

- UNDERSTAND-LA: Communities of practice for understanding landslide disasters and risk.
- MILADERA, National Strategy for Reducing Risk due to Instability of Slopes, CENAPRED.
- Landslide disaster risk perception and communication.

Community participation and communication to understand and reduce landslide disaster risk

b) Conferences/Meetings
(key conferences and meetings organized by the Chair or to which its Chairholder contributed)

i) Key conferences and workshops hosted by the Chair

1. ICL 20th Anniversary and 2022 ICL-KLC Hybrid Conference on 22-25 November 2022 in Kyoto, Japan
   22 November 2022: Review of the programme of BOR, GPC/IPL-KLC and IPL-KLC Symposium; Strategy of ICL and KLC2020
   23 November 2022: Progress Report and Programme of the 6th World Landslide Forum in 2023 and Proposal of the 7th World Landslide Forum in 2026
   24 November 2022: IPL-KLC Symposium 1: New IPL project and Ongoing IPL projects and WCoEs
   25 November 2022: IPL-KLC Symposium 2: Authors of Open Access Book P-LRT

2. 2023 IPL-KLC Symposium on the proposed WCoE 2023-2026 was held online crossing three time zones 9:30-12:00 PM (PDT) , 6:30-9:00 (CET) , 1:30-4:00 PM (JST)
   22 June 2023: 8 proposals of World Center of Excellence 2023-2026 were presented and discussed. Chairs were the Chair of the GPC/IPL-KLC: Matjaž Mikoš and Chair of the IPL Evaluation Committee: Irasema Alcántara-Ayala
   23 June 2023: 8 proposals of World Center of Excellence 2023-2026 were presented and discussed. Chairs were ICL President: Nicola Casagli and ICL incoming President: Zeljko Arbanas

3. The Sixth World Landslide Forum (WLF6) was held from November 14 to 17, 2023, in Florence at the Palazzo dei Congressi. Organizers are International Consortium on Landslides (ICL), UNESCO Chair on Prevention and Sustainable Management of Geo-Hydrological Hazards, University of Florence, Italy, and the Global Promotion, Committee of International Programme on Landslides and KLC 2020 (GPC/IPL-KLC). The main theme of the WLF6 was Landslide Science for Sustainable Development. WLF6 was opened by greetings from the ICL President Nicola Casagli and 9 ICL supporting organizations (Tshilidzi Marwala – Under-Secretary-General of the United Nations / Rector of the United Nations University, Mami Mizutori – UN Special Representative of the Secretary-General for Disaster Risk Reduction, Qu Dongyu – Director-General of the Food and Agriculture Organization FAO, Elena Manaenkova – Deputy Secretary-General of the World Meteorological Organization WMO, Lidia Brito – Assistant Director-General for Natural Sciences of United Nations Educational, Scientific and Cultural Organization UNESCO, Motoko Kotani – Vice-President for Science and Society of the International Science Council ISC, Mustafa B. Shehu – President of the World Federation of Engineering Organizations WFEO ,John Ludden – President of the International Union of Geological Sciences IUGS Chris Rizos – President of the International Union of Geodesy and Geophysics IUGG).

   High-Level Panel discussion “KLC2020 Review and way forward” was held on 14 November 2023. At the end of this panel discussion, Florence Declaration on Landslide Risk Reduction was agreed and adopted by all panelists and participants.

   The number of participants was 1,202 from 61 countries. 643 oral presentations in 48 parallel sessions, 210 E-posters were presented in the venue.

4 IUGS, INQUA, and ICL organized the IRDR (Integrated Research on Disaster Risk) parallel session 4 “Landslides-induced Tsunami and their Disaster Risk Reduction” from 16:00-17:30 on 22 October 2024, Venue: Room 714 The Aerospace Information Research Institute (AIR), Beijing, China

5 The IRDR side event, “ICL-Kyoto Landslide Commitment Workshop,” was held online during 13:00-17:30 (CST), 14:00-18:30 (JST), and 7:00-11:30 (CEST) on 23 October 2024 (Wednesday)

Unesco Chair on Prevention and Sustainable Management of Geo-Hydrological Hazards of the University of Florence

- 1st Italy-Croatia joint workshop "Landslide monitoring, prediction and risk assessment", organized by the UNESCO Chair on Prevention and Sustainable Management of Geohydrological Hazards at the University of Florence, February 15, 2023.
- 1st Conference of the Italian UNESCO Chairs Network (ReCUI): "Reimagining the Future Together - The Challenge of Education and Higher Education", Florence (Italy), March 24, 2023.
- 15th International Symposium on River Sedimentation, that was held in Florence, from the 5th to the 8th of September 2023 (www.isrs2022.it).
- 6th World Landslide Forum (WLF6), which was held in Florence from 14th to 17th November 2023. The Forum was entitled "Landslide Science for Sustainable Development" and was jointly organized by the International Consortium on Landslides (Kyoto, Japan), the International Programme on Landslides (IPL) and the UNESCO Chair on Prevention and Sustainable Management of Geohydrological Hazards at the University of Florence.

UNESCO Chair on Water-related Disaster Risk Reduction at University of Ljubljana:

- 2024, 26 September. Ljubljana (Slovenia). International Seminar "From Barriers to Bridges: Strategies for Reconnecting the Danube River Basin". Held at University of Ljubljana, Faculty of Civil and Geodetic Engineering under the DANUBE4All Horizon Europe project.
- 2024, 2 – 6 September. Unesco Chair Summer School HydRoData 2024 on data in hydrology, University of Ljubljana,
- 2024, 27 May. Ljubljana (Slovenia). Seminar: "Laboratory tests of mineral aggregates' properties in fluvial abrasion of coarse sediments". Held by Tamara Kuzmanić – PhD student at UL FGG.
- 2023, 4 – 8 September. Unesco Chair Summer School HydRoData 2023 on data in hydrology, University of Ljubljana.
- 2023, 5 June. Ljubljana (Slovenia). Seminar: "Paleo Streamflow-Precipitation Reconstructions: Po River Basin (Italy) & Sava River Basin (Slovenia)". Held by Dr. Glenn Tootle – Professor at University of Alabama.
- 2023, 19 April. Ljubljana (Slovenia). Seminar: "Optimising the operation of a cascading dams' system of run-of-river hydropower plants using evolutionary algorithms". Held by Luka Javornik – PhD student at UL FGG.
- 2023, 12 January. Ljubljana (Slovenia). Seminar: "Acting for disaster flood risk reduction: problems and challenges". Held by Dr. Stefano Grimaz – University of Udine.
- 2022, 11 November. Ljubljana (Slovenia). Seminar: "Evaluating the impacts of trees on urban stormwater runoff. University of Ljubljana, Ljubljana, Slovenia ". Held by Mark Bryan Alivio – PhD student at UL FGG.

ii) Other conferences/organizational activities undertaken by the Chairholder

UNESCO CHAIR on Prevention and Sustainable Management of Geo-hydrological Hazards of the University of Florence

- Conference "Rethinking interdisciplinary cooperation for Culture in Emergencies", at International Conference "Transforming Knowledge for Just and Sustainable Futures" for the 30th anniversary of the UNITWIN/UNESCO Chairs Programme Paris, UNESCO Headquarters, 3-4 November 2022.
- Workshop "1st Indian Institute of Technology Indore-University of Florence (IITI-UNIFI) Joint Workshop on Landslide hazard forecasting, monitoring and early warning", online, 9-10 February 2023.
- Workshop "1st Italy-Croatia Joint Workshop: Landslides monitoring, prediction and risk assessment, Florence (Italy), February 15, 2023.

- Congress "9th International Conference on Flood Management – River basin disaster resilience and sustainability by all", organized by the ICFM, Tsukuba, February 18-22, 2023
- Congress "EGU European General Assembly 2023", organized by European Geophysical Union (EGU), 23-28 April 2023.
- Workshop "From Rock Genesis to Degradation - Modern Techniques for the Study of Geological Stability on Rock-cut Cultural Heritage Sites", organized as part of the framework of Erasmus+ Ka107 project by Ilia State University, Tbilisi (Georgia), 4-5 May 2023.
- Conference "12th National Conference of Young Researchers in Applied Geology" organized by Italian Association of Engineering and Environmental Geology (AIGAA), Urbino (Italy), 22-24 June 2023.
- Congress "IUGG 28th General Assembly", organized by the International Union of Geodesy and Geophysics (IUGG), Berlin, July 11-14, 2023.
- Congress "IAHR World Congress", organized by the International Association for Hydro-Environment Engineering and Research (IAHR), Vianna, August 21-25, 2023.
- Workshop "Emerging and disruptive technologies to enhance natural disaster resilience", organized by the Science for Peace and Security (SPS) program, Adana (Turky) October 23-24, 2023

UNESCO Chair on Water-related Disaster Risk Reduction at University of Ljubljana:

- Unesco Chair Summer School HydRoData 2024 on data in hydrology, University of Ljubljana, 2 – 6 September 2024.
- INTERPRAEVENT 2024 Congress, Vienna, Austria, 10 – 13 June, 2024.
- 26th Session of the Intergovernmental Council of the Intergovernmental Hydrological Programme (IHP) UNESCO, Paris, France, 3 – 7 June, 2024.
- International Sediment Initiative (ISI), Intergovernmental Hydrological Program (IHP) UNESCO, 1st Advisory Board meeting, Paris, France, 22 – 23 April, 2024.
- International conference Climate change and water supply in Istra, Pula, Croatia, 18 – 19 March, 2024.
- Unesco Chair Summer School HydRoData 2023 on data in hydrology, University of Ljubljana, 4 – 8 September 2023.

iii) A selection of conference presentations by the Chairholder and other colleagues

UNESCO CHAIR on Prevention and Sustainable Management of Geo-hydrological Hazards of the University of Florence

- Webinar "Emergency Management" organized by DSU Toscana (Regional Agency for the Right to University Education) in collaboration with the Civil Protection Service of the Municipality of Florence, Florence (Italy), December 12, 2022.
- Webinar "The Space for territorial governance in Tuscany" organized by Tuscany Region, Florence, December 16, 2022.
- Conference "River Dynamics. Knowledge of the River for the planning and protection of the Territory - Study Day in memory of Paolo Tacconi)", promoted by Italian Association of Engineering and Environmental Geology (AIGA), Perugia (Italy), May 26, 2023.
- Conference GEOdaysIT 2023 - 11th Congress of the Italian Society for Remote Sensing organized by the Italian Association of Remote Sensing (AIT), Bari (Italy), 12-17 June 2023.
- Conference ICFM 2023 "Modelling resilience to floods in art cities", Tsukuba (Japan) February 2023.

UNESCO WRDRR Chair at University of Ljubljana:

- Matjaž Mikoš: Extreme august 2023 floods in Slovenia – reconstruction efforts explained (Mikoš Matjaž, Sodnik, Jošt), NTERPRAEVENT 2024, Vienna, Austria, June 2024.
- Tamara Kuzmanić: Sediment transport and deposition processes under various hydrological and

hydraulic conditions – HEORES project (Mateja Klun, Tamara Kuzmanić, Klaudija Lebar, Gašper Rak, Andrej Kryžanowski, Matjaž Mikoš, Andrej Vidmar, Simon Rusjan), IAHR Europe Congress, Lisabon, June 2024.

- Mateja Klun: Role of dams and reservoirs in a successful energy transition (Klun, Mateja, Kryžanowski, Andrej, Vidmar, Andrej, Rusjan, Simon, Hribar, Andraž), 12th ICOLD European Club Symposium 2023, Interlaken, Switzerland, September, 2023.
- Katarina Zabret: Monitoring of soil moisture response as part of the ecohydrological cycle (Zabret, Katarina, Lebar, Klaudija, Mark Bryan, Alivio, Bezak, Nejc, Šraj, Mojca), EGU General Assembly 2023, Vienna, Austria, April 2023.

Landslide group in National Central University, Chinese Taipei:

- Yeh, J. H., Y. C. Lu, C. H. Juang, J. J. Dong, The LiDAR-based 3D stratigraphic model calibrated with limited borehole data, 2023/7/21-29, Geo-Risk Conference 2023: Advances in Modeling Uncertainty and Variability, Arlington, USA.
- Yanuardian, A. R., J. J. Dong, Rainfall-Pore Pressure Response of a Dip Slope: Insights from a Tank Model Based on 3-D Geological Model, 2023/7/30-8/4, 2023 Asia Oceania Geosciences Society 20th Annual General Meeting, Singapore.
- Tu, C. H., J. J. Dong, C. Y. Liu, The effects of the inherent distribution of discontinuities and stress-induced anisotropy on pore water pressure distribution of rock slopes, 2023/11/14-17, World Landslide Forum 6, Florence, Italy.
- Dong, J. J., Predicting river blockage, early identifying the dam forming, rapidly evaluating the hazards of landslide dam - A review, 2023/11/14-17, World Landslide Forum 6, Florence, Italy.
- Nguyen, T. T., I. Baron, J. J. Dong, R. Melichar, F. Hartvich, J. Klimes, J. Cerny, M. Sutjak, L. Kocianova, V. Dusek, M. Rowberry, R. Braucher, T. Goslar, C. H. Tseng, Y. C. Chen, C. H. Lin, J. C. Gao, Studying the possible mechanisms of under-dip toppling in the Outer Western Carpathian Flysch Belt, 2024/9/10-14, 5th Conference on Slope Tectonics Chateau Křtiny, Czech Republic.
- Dong, J. J., C. M. Yang, Earthquake-triggered deep-seated landslides and rate dependent strength along sliding surfaces, 2024/9/10-14, 5th Conference on Slope Tectonics Chateau Křtiny, Czech Republic.
- Dong, J. J., Y. W. Pan., J. J. Liao, Emergency management of landslide dam hazards – A review, 2024/10/8-12, 4th European Regional Conference of IAEG, Dubrovnik, Croatia.
- Chao, Hung-Ching, Tso-Ren Wu, "Reconstructing the 1867 Keelung tsunami event based on new evidence," 45th Ocean Engineering Conference, October 5-6 2023, Keelung, Taiwan.
- Wu, Tso-Ren, Yi-Xuan Huang, Pi-Chun Huang, Shu-Kun Hsu, "Reconstructing the Tsunami Event induced by Guishan Island Massive Landslides," APAN57, January 29 – February 2 2024, Bangkok, Thailand
- Huang, Yi-Xuan, Tso-Ren Wu, Pi-Chun Huang, Shu-Kun Hsu, "Numerical Simulations of Landslide-Induced Tsunami Event of Guishan Island," International Symposium on Grids & Clouds (ISGC) 2024, March 24-29 202, Taipei, Taiwan.
- Huang, Yi-Xuan, Tso-Ren Wu, Pi-Chun Huang, Shu-Kun Hsu, "Three Dimensional Simulations of Guishan Island Landslide Event," the 21th Annual Meeting of the Asia Oceania Geosciences Society (AOGS2024), June 23 - 28 2024, Gangwon-do, South Korea.
- Huang, Yi-Xuan, Tso-Ren Wu, Pi-Chun Huang, Shu-Kun Hsu, "Numerical Modeling of Landslide-induced Tsunami," International Conference on Earth Observations and Societal Impacts 2024, JUNE 29-30 2024, Taoyuan, Taiwan.
- Chih-Chung Chung, Umar Zada (2024) Strain Monitoring Using Distributed Fiber Optics during Rainfall Induced Landslides. 14th International Symposium on Landslide, 8 ~12 Jul. France.
- Chih-Chung Chung (2024) TDR as the Versatile Landslide Monitoring Technique. 14th International Symposium on Landslide, 8 ~12 Jul. France.
- Chih-Chung Chung, Bo-Chi Chen, Cheng-Chun Lin, Yu-Zhi Qiu, Te-Wei Tseng (2024) Development of multi-spatial-temporal fusion technologies for landslide monitoring. Asia Oceania Geosciences Society, 24 Jun.~ 28 Jun., South Korea.

- Chih-Chung Chung, Umar Zada (2024) Utilizing Distributed Optical Fiber-Based BOTDR for Studying Land Subsidence and Physical Shear Modeling. Fibre Optica Sensing in Geoscience, Catania, Italy, 16-20 June, 2024.
- Chih-Chung Chung, Umar Zada (2024) Applications of Distributed Optical Fiber-Based BOTDR for Revealing Land Subsidence and Physical Shear Modeling, 2024 Korean Society of Engineering Geology Spring Conference.
- Chih-Chung Chung, Umar Zada (2023) TDR multi-function monitoring technique for Geotechnical and Hydrology Applications. Global Webinar on Civil, Architectural, and Environmental Engineering (WEBCIVIL-2023). (Keynote Speaker).
- Chung, C.-C., Wu, R.-S., Dong, J.-J., Tien, Y.-M., Wang. T.-T., Huang, W.-C., Wang, K.-L., Hung, W.-Y., Weng, M.-C. (2023) "Introduction and Promotion of WLF 7 in Taiwan 2026," 6th World Landslide Forum, Florence, Italy.
- Azhar, M., Chung, C.-C., Zada, U. (2023) "Dielectric spectrum analysis of soils due to drying-wetting rate and environment influences using TDR pressure plate," 6th World Landslide Forum, Florence, Italy.
- Chung, C.-C., Zada, U. (2023) Comparatively study of slope displacements using distributed fiber optic sensing technology and Inclinometer. 17th Asian Regional Conference on Soil Mechanics and Geotechnical Engineering, 14-18 August, Astana, Kazakhstan
- Chung, C.-C., Zada, U., Li, Z.-Y., Saqlain, M. (2023) Experimental Investigation of Stratum Subsidence Based on Distributed Fiber Optic Sensing, Tenth International Symposium of Land Subsidence, 17-21 April, Delft–Gouda, Netherlands.
- Chung, C.-C. Lin, C.-C. (2023) Development and Testing of Small Array Corner Reflectors and Synthetic Aperture Radar for Slope Monitoring, Asia Oceania Geosciences Society,30 Jul.~4 Aug., Singapore.

Institute of Geography, National Autonomous University of Mexico (UNAM):

- Alcántara-Ayala, I. 2023, "It Is Never Too Late to Find the Way: Key Challenges for Disaster Risk Reduction in Latin America," X International Congress of Geography of Latin America. Latin America Facing (New) Challenges of Social and Environmental Justice, Santiago de Compostela, Spain, January 26, 2023 (Keynote Address).
- Alcántara-Ayala, I. 2023, "Integrated Disaster Risk Management in the Americas and the Caribbean: Insights for a New Scientific and Technological-Based Regional Agenda," UNDRR Regional Platform, Punta del Este, Uruguay, February 28 - March 2, 2023.
- Alcántara-Ayala, I. 2023, "Progress on the Implementation of the Sendai Framework: Challenges for the Science and Technology Community in the Americas and the Caribbean," Sendai Midterm Review – MTR-SF Viewpoints and Discussion for the Next Seven Years of the Sendai Framework, DPRI, Kyoto University, Kyoto, Japan, March 14, 2023.
- Alcántara-Ayala, I. 2023, "Integrated Disaster Risk Management in the Americas and the Caribbean: Reflections and Challenges for a Regional Agenda Based on Science and Technological Development," Workshop on Disaster Science - Past, Present, and Future: The Contribution of CEMADEN, National Center for Monitoring and Alerts for Natural Disasters, São José dos Campos, Brazil, May 17, 2023 (Keynote Address).
- Alcántara-Ayala, I. 2023, "Integrated Disaster Risk Management in the Americas and the Caribbean: Perspectives and Challenges from Academia," Panel Discussion on the Academic Perspective of the Midterm of the Sendai Action Framework, 5th International Congress on Integrated Risk Management and Resilience in Cities, Mexico City, October 11-13, 2023.
- Garnica-Peña, R.J., Alcántara-Ayala, I. 2023, "Landslide Recognition in a Mexican Mountain Local Context: Building Community Interactions Using Unmanned Aerial Vehicles," 6th World Landslide Forum "Landslides Science for Sustainable Development," Florence, Italy, November 14-17, 2023.
- Alcántara-Ayala, I. 2024, "Experiences on Risk and Disasters in Latin America: Reducing Risk Associated with Volcanic Hazards," Cities on Volcanoes 12, Antigua Guatemala, Guatemala,
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- February 11-17, 2024.
- Alcántara-Ayala, I. 2024, "Disaster Risk Reduction and Resilience: A Contribution from Geography," 5th Open Discussion Forum of GADRI Contributions to the Political Declaration of the SFDRR: An Academic and Science Perspective, Global Alliance of Disaster Research Institutes, GADRI, DPRI, Kyoto University, March 12, 2024.
- Alcántara-Ayala, I. 2024, "Forensic Investigations of Disasters: Unveiling Enablers and Barriers to Disaster Risk Management and Resilience Building," Humanitarian Networks and Partnerships Weeks HNPW 2024, Session: Applied Disaster Forensics: Learn from the Past to Build a Resilient Future, Geneva, Switzerland, May 8, 2024 (online).
- Alcántara-Ayala, I. 2024, "Landslide Disaster Risk Reduction in Mountains: Challenges for Transdisciplinary Research," 35th International Geographical Congress, Dublin City University, Ireland, August 24-29, 2024.
- Marín Cambranis, R.H., Benavides Rosales, A., Mungaray Lagarda, A., Reyna N., Alcántara-Ayala, I. 2024, "Mexico Earthquake / 2017," UNDRR Global Assessment Report, GAR Special Report 2024, Forensic Insights for Future Resilience: Learning from Past Disasters, September 18, 2024.

- Alcántara-Ayala, I. 2024, "Disaster Mapping: A Forensic-Geographical Perspective on the Underlying Causes and Drivers of Disaster Risk," Finisterra Annual Lecture, 2024 edition, Center for Geographical Studies, Lisbon, Portugal, October 17, 2024.

Charles University

- Burda J., Mrlina J., Vilimek V. (2022): Geodynamic phenomena in hazardous fault zones affected by extensive surface mining in Central Europe. Bulletin of Engineering Geology and the Environment, 81, 153, https://doi.org/10.1007/s10064-022-02650-x
- Tomková M., Potůčková M., Lysák J., Jančovič M., Holman L., Vilímek V. (2022): Improvements to Airborne Laser Scanning Data Filtering in Sandstone Landscapes. Geomorphology, 414, 108377.
- Baťka J., Azzoni R., Vilímek V. (2024, in print): Application of Schmidt hammer in relative dating of rockfall deposits in Belvedere Glacier valley. AUC Geographica, 59, 2.

Croatian Landslide Group

- Zeljko Arbanas, Snjezana Mihalić Arbanas, Josip Peranić: Analysis of an old rock avalanche using different remote sensing methods. Eurock 2024, Alicante, Spain, 15-19 July 2024.

Tongji University

Wang F (2024) Typical Geo-disasters Caused by Heavy Rainfall in Zhejiang Province, China in Recent Years. The 22nd International Symposium on Geo-disaster Reduction, Salerno, Italy, 22 - 25 July 2024

Feng Y, Wang F (2024) Initiation and long-runout motion mechanism of an earthquake induced loess landslide. The 22nd International Symposium on Geo-disaster Reduction, Salerno, Italy, 22 - 25 July 2024

Wang F, Chen Y, Zhang B (2023) Liquefaction of granite debris caused by undrained shearing

contributing to the long-runout Luanshibao landslide in southeast Tibet. Florence, Italy, 6th World Landslide Forum, 14-17 November 2023

Chen Y, Wang F (2023) Impact of greening irrigation on potential slope instability surrounding urban areas: a case study on a mudstone landslide in September 2022, Qinghai, China. Florence, Italy, 6th World Landslide Forum, 14-17 November 2023

Zhang B, Wang F (2023) Mechanism study of sliding zone formation and fluidization in fine

grained soil layers of a rainfall-induced landslide based on ring shear test. Florence, Italy, 6th World Landslide Forum, 14-17 November 2023

Lu P (2023) Dynamic permafrost disturbances on the Tibetan Plateau hinterland as revealed by InSAR. Cairo, Egypt, ISPRS Geospatial Week 2023, 2-7 September 2023

c) Interuniversity Exchanges/Partnerships

(principal exchanges/partnerships between the Chair and other institutions including UNESCO Chairs/UNITWIN Networks)

UNITIWN network includes Kyoto University, ICL headquarters, and 61 ICL full member organizations and 21 ICL associates, 12 supporters and 20 KLC2020 official promoters.

The network publishes a monthly Journal ***Landslides***: Journal of the International Consortium on Landslides. A total number of pages of the Journal is around 4,000 pages. 2023 Impact Factor is 5.8. Papers are contributed by all over the world as well the UNITWIN network members, and the latest infromation are distiributed world wide.The ICL has published 5 issues of the open access book series "Progress in Landslide Research and Technology." This book series can be accessed and downloaded by any person free of charge. The information exchange effects are very high especially for developing countries, practitioners, residents in landslide prone areas. The joint edition and publication and information dissemination through the Journal and books by the network have contributed to the Interuniversity Exchanges/Partnerships in the global scale.

Progress in Landslide Research and Technology, Volume 1 Issue 1, 2022	474 pages
Progress in Landslide Research and Technology, Volume 1 Issue 2, 2022	475 pages
Progress in Landslide Research and Technology, Volume 2 Issue 1, 2023	482 pages
Progress in Landslide Research and Technology, Volume 2 Issue 2, 2023	503 pages
Progress in Landslide Research and Technology, Volume 3 Issue 1, 2024	474 pages

ICL Adriatic-Balkan Network (ICL ABN) - regional scientific network of landslide scientists. The Network activities include joint activities related to landslide risk reduction with the scientific and academic institutions from Croatia, Slovenia and Serbia, scientific institutions from Albania and Slovenia, professional association from Bosnia and Herzegovina and local government from Croatia.

Unesco Chair on Prevention and Sustainable Management of Geo-Hydrological Hazards of the University of Florence

Some important institutions competent in the matter of Geo-Hydrological Hazard currently represent the Chair partners involved in a joint action of research and dissemination, as follows:

1) International non-governmental organizations:

- International Consortium on Landslides (ICL);
- International Consortium on Geo-disasters Reduction (ICGdR);
- Global Alliance of Disaster Research Institutes (GADRI);
- Copernicus Academy Network.

2) Other Chairs and networks:

- UNESCO Chair on Water Resources Management and Culture at the University for Foreigners in Perugia, Italy;
- UNITWIN-UNESCO/KU/ICL Landslide, Earthquake and Water-related Disaster Risk Management for Society and the Environment Cooperation Programme at Kyoto University;
- UNESCO FRIEND-Water initiative (Flow Regimes from International Experimental and Network Data), international research program of a worldwide network for analyzing hydrological data;
- UNESCO Chair on Geoenvironmental Disaster Reduction", Shimane University;
- UNESCO Chair on Sustainable Water Security, Florida International University;
- UNESCO Chair on Intersectoral Safety for Disaster risk reduction and Resilience, University of Udine, Italy;
- UNESCO Chair on Water-related Disaster Risk Reduction, University of Ljubljana, Slovenia;
- UNESCO Chair on Experiential Learning for Sustainable Innovation and Development, Amrita University, India

3) National governmental organizations

- Italian Government - Presidency of the Council of Ministers Civil Protection Department (DPC);
- Institute for Environmental Protection and Research (ISPRA);
- National Alpine Cliff and and Speleological Rescue Corp;
- European Centre for Training and Research in Earthquake Engineering (EUCENTRE).

4) Bilateral agreements with other Universities:

- Ilia State University, Tblisi (Georgia);
- Indian Institute of Technology Indore (India);
- Universidade Estadual Paulista "Julio de Mesquita Filho" – UNESP (Brasil);
- China University of Geosciences, Beijing (China);
- Universidad Mayor de San Simón (Bolivia);
- Sibstrin University (Russia);
- Southwest Jaotong University, Chengdu (China);
- Shimane University (Japan);
- Sejong University (Korea);
- Tongji University, Shanghai (China);
- Universidad Michoacana de San Nicolas De Hidalgo, Morelia (Mexico);
- Jiangxi University of Science and Technology (China);
- Université Omnia Omnibus (Democratic Republic of Congo);
- Delhi Technological University (India).

UNESCO WRDRR Chair at University of Ljubljana:

University of Ljubljana is a member of the EUTOPIA European University (https://eutopia-university.eu/), alliance of 10 European universities (EU funded for 2022-2026).

University of Ljubljana is also a member of other university alliances, such as CELSA – Central European Leuven Strategic Alliance (https://celsalliance.eu/), The Guild of European Research-Intensive Universities (https://www.the-guild.eu/) or CE7 – seven Central European Universities (), and has signed the LERU (the League of European Research Universities) – CE7 partnership agreement in September 2022.

University of Ljubljana, Faculty of Civil and Geodetic Engineering has exchanged Memorandums of Understanding with:

- University of Calabria, Cosenza, Italy
- ZAHW Zurich University of Applied Sciences, Winterthur, Switzerland

leading to master double-degrees in Water Science & Technology and Environmental Engineering and with 50+ ERASMUS+ partner institutions in 20 European countries and in Turkey for international student exchange.

Institute of Geography, National Autonomous University of Mexico (UNAM):

- GADRI, Global Alliance of Disaster Research Institutes.
- National Center for Disaster Prevention (CENAPRED).
- Secretariat of Integrated Risk Management and Civil Protection of Mexico City.
- UNDRR Latin America and the Caribbean.
- Integrated Research on Disaster Risk Programme (IRDR)

Croatian Landslide Group:

- Bilateral agreement with University of Salerno, Italy
- Bilateral agreement with TU Wien, Austria

Landslide group in National Central University, Chinese Taipei:

- University of Transport and Communication, Hanoi, Vietnam
- University of Transport Technology (UTT)
- Hanoi University of Mining and Geology (HUMG), Hanoi, Vietnam
- Mien Tay Construction University, Vietnam
- Can Tho University, Vietnam
- Department of Plants, Soils and Climate, Utah State University

d) Publications/Multimedia Materials
(major publications and teaching/learning materials)

Please tick relevant fields of output and indicate volume of output:	[tick]	[no.]
Books	■	
Books (edited)	☐	
Books (chapters)	☐	
Monographs	☐	
Research Reports	■	
Journal Articles (refereed)	■	
Conference Proceedings	■	
Occasional Papers	☐	
Teaching/Learning Materials	■	
Multimedia Materials (CD-Rom)	☐	
Multimedia Materials (Video)	☐	
Multimedia Materials (Other)	☐	

Give details of major publications and materials including full citations.

i) Theses

Ph. D theses

Kyoto University

- Doan Huy Loi (2023) Physical and Numerical Modelling of Co-seismic Coastal Landslides-Generated Tsunamis, Kyoto University, Japan
- Sanchitha Hema Sharendra Jayakody (2023) Hydro-Mechanical Analysis of Unsaturated Slopes Subjected to Rainfall and Groundwater Flow, Kyoto University, Japan
- Chao Huang (2024): Variable effects of non–plastic fines on the initiation and mobility of fluidized landslides: An experimental study. Kyoto University, Japan

Unesco Chair on Prevention and Sustainable Management of Geo-Hydrological Hazards of the University of Florence

Master Thesis in Geological sciences and technologies:

- Title: Integration and validation of direct and undirect measurements of soil water content
  Candidate: Pettinelli Tommaso
  Tutor: Fanti Riccardo
- Title: Site-scale conceptual models for hydrogeological characterization in the construction of open-circuit geothermal plants
  Candidate: Maestrelli Laura
  Tutor: Fanti Riccardo
- Title: Analysis of monitoring data and geotechnical modelling of the Ancona landslide
  Candidate: Sestini Lorenzo
  Tutor: Tofani Veronica
- Title: Influence of atmospheric conditions on the GB-InSAR data quality aimed at improving the Quincinetto landslide alerting capabilities
  Candidate: Butti Matteo
  Tutor: Gigli Giovanni
- Title: Landslide risk mitigation along paths in the Monti Sibillini Park through the integrated use of advanced surveying and monitoring technologies
  Candidate: Brogi Daniele

Tutor: Gigli Giovanni

- Title: Experimentation of ground displacement monitoring techniques using optical tag recognition
  Candidate: Corazzi Sofia
  Tutor: Gigli Giovanni
- Title: Caratterizzazione da remoto di ammassi rocciosi per la mitigazione del rischio in corrispondenza di pareti rocciose artificiali
  Candidate: Spanò Sara
  Tutor: Gigli Giovanni
- Title: Identificazione e caratterizzazione semi-automatica dei processi deformativi del terreno, mediante l'utilizzo di dati radar satellitari interferometrici e sistemi di alberi decisionali
  Candidate: Pan Zihao
  Tutor: Bianchini Silvia
- Title: Assessment of the stability of built-up areas in Tuscany through the integrated analysis of interferometric data and geomorphological survey
  Candidate: Belli Stefano
  Tutor: Bianchini Silvia
- Title: Automatic detection of deformation patterns from satellite InSAR time series: an application at national scale in United Kingdom
  Candidate: Becattini Francesco
  Tutor: Raspini Federico
- Title: Optical and radar satellite monitoring of the Southern Patagonia Icefield
  Candidate: Musiari Juriy
  Tutor: Raspini Federico
- Title: Combinazione di dati InSAR e dati geotecnici per l'analisi delle deformazioni di aree portuali
  Candidate: Rami Giacomo
  Tutor: Del Soldato Matteo
- Title: Analysis of the ground effects of the flood event of 15 September 2022 in the basin of the Misa River (Marche) using satellite data
  Candidate: Scarpitta Luciano
  Tutor: Confuorto Pierluigi
- Title: Analysis of the Impacts of Hydro-geomorphological Phenomena on the Italian Real Estate Heritage
  Candidate: Panariello Andrea
  Tutor: Segoni Samuele
- Title: Analisi dei dati telerilevati per lo studio delle deformazioni del terreno indotte dalle attività di Underground Gas Storage
  Candidate: Landini Neri
  Tutor: Intrieri Emanuele
- Title: Application of semi-empirical methods on InSAR satellite data for the prediction of structural collapses of tailings dams
  Candidate: Scerbo Martina
  Tutor: Intrieri Emanuele
- Title: Instability phenomena in the La Fossa Cone (island of Vulcano)
  Candidate: Giorgio Maria
  Tutor: Intrieri Emanuele

Master Theses in Civil Engineering and in Environmental Engineering:

- Title: The role of road-related variables and climatic conditions in the accident rate in the Tuscany Region
  Candidate: Bartolozzi Chiara
  Tutors: Meocci Monica, Arrighi Chiara
- Title: Evaluation of the effectiveness of new hydraulic works for risk reduction in the Florentine

plain
Candidate: Stefani Elena
Tutors: Castelli Fabio, Arrighi Chiara

- Title: Analysis of extreme precipitation in Tuscany in the context of climate change
  Candidate: Lombardi Elisa
  Tutors: Forzieri Giovanni, Castelli Fabio
- Title: Flotation processes of plastic particles in the water: determination of optimal sperimental set up
  Candidate: Cossa Camilla
  Tutors: Francalanci Simona, Solari Luca
- Title: Study of sedimentary dynamics and solid transport in the Ombrone Grossetano river basin.
  Candidate: Giovanchelli Giacomo
  Tutors: Solari Luca, Francalanci Simona
- Title: Characterization and diffusion of microplastics in the river environment and influence of the San Colombano (FI) purification plant
  Candidate: La Rosa Serena
  Tutors: Francalanci Simona, Gori Riccardo
- Title: Solid transport modeling and identification of altimetric evolutionary trends at the stretch scale of the Magra river
  Candidate: Marchiani Nicola
  Tutors: Solari Luca, Francalanci Simona
- Title: Intervention proposals to overcome hydraulic problems in the municipality of Castelsardo.
  Candidate: Megale Giulia
  Tutors: Francalanci Simona, Caporali Enrica
- Title: Study of the evolutionary dynamics of the Arno river in the Casentino section
  Candidate: Pittelli Anna Maria
  Tutors: Solari Luca, Francalanci Simona
- Title: Semi-distributed hydrologic modelling of the Orcia River basin for frequent discharges characterisation
  Candidate: Giuliano Alessandro
  Tutors: Lompi Marco, Caporali Enrica
- Title: Investigation of a reservoir sedimentation: the Astrone dam
  Candidate: Bernardini Virginia
  Tutors: Solari Luca, Caporali Enrica
- Title: Modelling with HEC-HMS of the effect of land use change on sediment accumulation in hilly reservoirs
  Candidate: Degli Innocenti Elia
  Tutors: Castelli Giulio, Caporali Enrica
- Title: Performance of spectral indices for the identification of small agricultural reservoirs in Tuscany via Google Earth Engine
  Candidate: Marjouee Shirin
  Tutors: Lompi Marco, Caporali Enrica
- Title: Geomorphic effects of the extreme Coldwater River flood of 2021
  Candidate: Fabiani Enrico
  Tutors: Solari Luca, Rinaldi Massimo
- Title: Experimental investigations to estimate the removal efficiency of microplastics in purification plants
  Candidate: Vannini Elena
  Tutors: Solari Luca, Gori Riccardo
- Title: Experimental study on transport processes of plastic materials in a river environment
  Candidate: Agati Rebecca
  Tutors: Paoli Paola, Solari Luca
- Title: Use of open data for quantitative zoning of landslide susceptibility
  Candidate: Betti Diletta
  Tutors: Uzielli Marco, Facciorusso Johann Antonio

- Title: Probabilistic analysis of geotechnical stability of landfills: modeling aspects and application to the San Martino a Maiano (FI) landfill.
  Candidate: Martino Tommaso Francesco Maria
  Tutors: Uzielli Marco, Renzi Stefano
- Title: Adaptation of an analytical model for predicting geotechnical settlements of a closed landfill Candidate: Alinari Lorenzo
  Tutors: Uzielli Marco, Renzi Stefano
- Title: Numerical modeling of the local seismic response of alluvial basins for the quantitative evaluation of two-dimensional severity phenomena.
  Candidate: Sforzi Carlotta
  Tutors: Madiai Claudia, Uzielli Marco
- Title: Multilayer geotechnical susceptibility zonation at a territorial scale and modeling of the mitigation effects of rooted soils
  Candidate: Ferretti Irene
  Tutor: Uzielli Marco

Master Theses in Geoengineering

- Title: Modellazione Geologica 3-D per la Depressione della Dancalia (area di Dallol) e Modellazione del Potenziale Minerale di Bischofite
  Candidate: Yoruk Baris Can
  Tutors: Keir Derek Boswell, Caporali Enrica
- Title: Performance of Residential Rain Gardens in treating urban runoff using EPA-SWMM
  Candidate: Ferrara Lorenzo
  Tutors: Lompi Marco, Caporali Enrica
- Title: Machine learning methods to estimate soil erosion in areas affected by wildfires
  Candidate: Chouksey Bhushan
  Tutor: Confuorto Pierluigi
  Co-tutor: Tofani Veronica

University of Ljubljana:

- Gafhoor Yasser (PhD Thesis Defence in January 2023): Optimization of Early Seepage Detection in Embankments using a distributed temperature system based on fiber optic sensing. University of Ljubljana, Ljubljana, Slovenia. Tutor: Dr. Andrej Kryzanowski
- Kuzmanić Tamara (PhD Thesis Defence in September 2024): Laboratory tests of mineral aggregates' properties in fluvial abrasion of coarse sediments. University of Ljubljana, Ljubljana, Slovenia. Tutor: Prof. Matjaz Mikos
- Jurček Timotej (4th year PhD candidate): Dynamic properties of soft sediments of the Ljubljana Marshes. University of Ljubljana, Ljubljana, Slovenia. Tutor: Dr. Matej Macek
- Mark Bryan Alivio (3rd year PhD candidate): Evaluating the impacts of trees on urban stormwater runoff. University of Ljubljana, Ljubljana, Slovenia. Tutor: Dr Nejc Bezak and Dr. Mojca Šraj
- Yusuf Ogunfolaji (1st year PhD candidate): University of Ljubljana, Ljubljana, Slovenia. Tutor: Dr Nejc Bezak
- Luka Javornik (3rd year PhD candidate): Optimising the operation of a cascading dams' system of run-of-river hydropower plants using evolutionary algorithms. University of Ljubljana, Ljubljana, Slovenia. Tutor: Dr Matjaž Mikoš and Dr. Andrej Kryzanowski
- Matjaž Nekrep Perc (3rd year PhD candidate): University of Maribor, Maribor, Slovenia. Tutor: Dr Matjaž Mikoš

Northeast Forestry University, China (3PhD, 12Master):
3PhD

- Zhichao Xu (2022) Study on the Influence of Geologic Methane Emission on Wildfire and Surface Deformation in Xiaoxing'anling Permafrost Region. Northeast Forestry University, China. Adviser: Prof. Wei Shan.
- Min Ma (2023) The process, mechanism, and countermeasures of geological disasters in the road area caused by the permafrost thawing in Northeast China. Northeast Forestry University, China. Adviser: Prof. Wei Shan.
- Chengcheng Zhang (2023) Spatiotemporal evolution and linear engineering response of permafrost in Northeast China.Northeast Forestry University, China. Northeast Forestry University, China. Adviser: Prof. Wei Shan.

12 Master

- Jiawei Wu (2022) Analysis on the influence of rainfall on the stability of the embankment of section K177+550 of Beihei Highway.Northeast Forestry University, China
- Wanying Wei (2022) Analysis on the influence of rainfall on the stability of the embankment of section K177+550 of Beihei Highway.Northeast Forestry University, China
- Shengtang Jiang (2022)Study on seismic behavior of simply supported continuous box girder bridge in cold regions during construction.Northeast Forestry University, China
- Yongkang Wu (2022)Analysis of landslide movement process under complex environmental conditions in cold regions.Northeast Forestry University, China
- Yongfei Qi (2022)Monitoring and test analysis of salivary ice formation process on highway cutting slope in cold regions.Northeast Forestry University, China
- Jiawei Wu (2022) Impact of Rainfall Intensity on the Stability of K177+550 Old Landslide Mass of Beihei Highway.Northeast Forestry University, China
- Guangjun Liu(2022)Study on Unfrozen Water and Hydrothermal Coupling Change Characteristics of Northeast Clay.Northeast Forestry University, China
- Kai Wang (2022) Deformation monitoring analysis and application of Beihei Highway based on time-series InSAR technology.Northeast Forestry University, China
- Jin Song (2023) Analysis of high density electrical forward and inverse imaging of highway frozen soil foundation.Northeast Forestry University, China
- Xiyi Yang (2023)Study on hydrothermal characteristics and soil particle migration of sand filling subgrade under freeze-thaw cycle.Northeast Forestry University, China
- Xianzhao Li (2023) Research on temperature variation and disease prevention technology of permafrost subgrade of G331 Line.Northeast Forestry University, China
- Weiqi Wang(2023) Permafrost change characteristics and stability analysis of highway subgrade in the Great and lesser Khinggan Mountains.Northeast Forestry University, China

Croatian Landslide Group
University of Rijeka:

- Monika Brajdić (2024): Analysis of landslide development caused by rainfall in small scale physical model. Supervisor: Professor Zeljko Arbanas, Co-Supervisor: Professor Josip Peranic.
- Marijan Pil (2024): Analysis of ground water rising in small scale landslide model. Supervisor: Professor Zeljko Arbanas, Co-Supervisor: Professor Josip Peranic.

ii) Publications

ICL headquarters

- Kyoji Sassa, Matjaž Mikoš (2022) Introduction: Aim and Outline of the Book Series "Progress in Landslide Research and Technology" . In: Sassa, K., Konagai, K., Tiwari, B., Arbanas, Ž., Sassa, S. (eds) Progress in Landslide Research and Technology, Volume 1 Issue 1, pp 1–8.
- Kyoji Sassa, Paolo Canuti, Peter Bobrowsky & Nicola Casagli (2022) International Consortium on Landslides: From IDNDR, IGCP, UNITWIN, WCDRR 2 & 3 to Kyoto Landslide Commitment 2020. In: Sassa, K., Konagai, K., Tiwari, B., Arbanas, Ž., Sassa, S. (eds) Progress in Landslide Research and Technology, Volume 1 Issue 1, pp 11–43.
- Matjaž Mikoš, Kyoji Sassa & Qunli Han (2022) International Programme on Landslides—A Short Overview of Its Historical Development. In: Sassa, K., Konagai, K., Tiwari, B., Arbanas, Ž., Sassa, S. (eds) Progress in Landslide Research and Technology, Volume 1 Issue 1, pp 45–62.
- Kazuo Konagai, Asiri Karunawardena, Kithsiri N. Bandara, Kyoji Sassa, Ryo Onishi, Ryosuke Uzuoka, Shiho Asano, Katsuo Sasahara, Sanchitha Jayakody & Imaya Ariyarathna (2022) Early Warning System Against Rainfall-Induced Landslide in Sri Lanka. In: Sassa, K., Konagai, K., Tiwari, B., Arbanas, Ž., Sassa, S. (eds) Progress in Landslide Research and Technology, Volume 1 Issue 1, pp 217–235.
- Beena Ajmera, Hossein Emami Ahari, Doan Huy Loi, Hendy Setiawan, Khang Dang, and Kyoji Sassa (2022), LS-RAPID Manual with Video Tutorials. In: Sassa, K., Konagai, K., Tiwari, B., Arbanas, Ž., Sassa, S. (eds) Progress in Landslide Research and Technology, Volume 1 Issue 1, pp 343–406.
- Shinji Sassa, Stephan T. Grilli, David R. Tappin, Kyoji Sassa, Dwikorita Karnawati, Viacheslav K. Gusiakov & Finn Løvholt (2022) Understanding and Reducing the Disaster Risk of Landslide-Induced Tsunamis: Outcome of the Panel Discussion and the World Tsunami Awareness Day Special Event of the Fifth World Landslide Forum In: Sassa, K., Konagai, K., Tiwari, B., Arbanas, Ž., Sassa, S. (eds) Progress in Landslide Research and Technology, Volume 1 Issue 1, pp 65–81.
- Kyoji Sassa (2022) Editorial of the New Open Access Book Series "Progress in Landslide Research and Technology". In: Alcántara-Ayala, I., et al. Progress in Landslide Research and Technology, Volume 1 Issue 2, pp 1–8
- Shinji Sassa (2022) Review of the Founding Issue of P-LRT: Progress in Landslide Research and Technology. In: Alcántara-Ayala, I., et al. Progress in Landslide Research and Technology, Volume 1 Issue 2, pp 179-193
- Doan Huy Loi, S.H.S Jayakody, and Kyoji Sassa, (2022) Teaching Tool "Undrained dynamic loading ring shear testing with video". In: Alcántara-Ayala, I., et al. Progress in Landslide Research and Technology, Volume 1 Issue 2, pp 325–359
- Daisuke Higaki, Kiyoharu Hirota, Khang Dang, Shinji Nakai, Masahiro Kaibori, Satoshi Matsumoto, Masataka Yamada, Satoshi Tsuchiya (2022), Landslides and Countermeasures in Western Japan: Historical Largest Landslide in Unzen and Earthquake-induced Landslides in Aso, and Rain-induced Landslides in Hiroshima. In: Alcántara-Ayala, I., et al. Progress in Landslide Research and Technology, Volume 1 Issue 2, pp 287–307
- Kazuo Konagai, Takashi Kiyota, Ryoichi Furuta, Masataka Shiga, Rama Mohan Pokhrel, Takaaki Ikeda (2023) Long-lasting post-quake deformation buildups in the grounds that spread laterally in recent earthquakes. In: Alcántara-Ayala, I., et al. Progress in Landslide Research and Technology, Volume 1 Issue 2, pp 213-222
- Kazuo Konagai (2023) Coseismic stress changes, landslides in the 2004 mid-Niigata prefecture earthquake, and their impact on post-quake rehabilitations. In: Alcántara-Ayala, I., et al. Progress in Landslide Research and Technology, Volume 1 Issue 2, pp 235-246
- Yu Zhao, Zeng Huang, Zhenlei Wei, Jun Zheng, Kazuo Konagai (2023) Assessment of earthquake-triggered landslide susceptibility considering coseismic ground deformation.

Frontiers in Earth Science 10: 993-975

- Nicola Casagli, Paolo Canuti, Kyoji Sassa & Veronica Tofani (2023) The sixth world landslide forum (WLF6): call for abstracts. Lansldies 20: 707-716
- Shinji Sassa (2023) Landslides and Tsunamis: Multi-Geohazards. Landslides 20: 1335-1341
- Luciano Picarelli, Zeljko Arbanas & Kyoji Sassa (2023) The "landslides best paper award" 2004–2020. Lansldies 20: 1769-1770
- Irasema Alcántara-Ayala & Kyoji Sassa (2023) Landslide risk management: from hazard to disaster risk reduction. Lansldies 20: 2031-2037
- Kyoji Sassa (2023) The Second-Year Publication of the Open Access Book Series "Progress in Landslide Research and Technology" In: Alcántara-Ayala, I., et al. Progress in Landslide Research and Technology, Volume 2 Issue 1, 2023. Progress in Landslide Research and Technology. Springer, Cham. ,pp1-7
- Kyoji Sassa, Loi Doan, Khang Dang, Pham Tien (2023). Sliding-Surface Liquefaction and Undrained Steady-State Shear-Strength. In: Alcántara-Ayala, I., et al. Progress in Landslide Research and Technology, Volume 2 Issue 1, 2023. Progress in Landslide Research and Technology. Springer, Cham. ,pp11-95
- Dinh Van Tien, Nguyen Kim Thanh, Lam Huu Quang, Do Ngoc Ha, Kyoji Sassa, Toyohiko Miyagi & Shinro Abe (2023) Landslide Risk Assessment in the Tropical Zone of Vietnam as a Contribution to the Mitigation of Natural Disaster Vulnerability. In: Alcántara-Ayala, I., et al. Progress in Landslide Research and Technology, Volume 2 Issue 1, 2023. Progress in Landslide Research and Technology. Springer, Cham. ,pp275-305
- Khang Dang, Kyoji Sassa & Doan Huy Loi (2023) Teaching Tool for LS-Tsunami. In: Alcántara-Ayala, I., et al. Progress in Landslide Research and Technology, Volume 2 Issue 2, 2023. Progress in Landslide Research and Technology. Springer, Cham.
- Kyoji Sassa, Loi Doan, Khang Dang, and Pham Tien (2023) Sliding-Surface Liquefaction and Undrained Steady-State Shear-Strength. In: Alcántara-Ayala, I., et al. Progress in Landslide Research and Technology, Volume 2 Issue 1, 2023. Progress in Landslide Research and Technology. Springer, Cham.
- Kyoji Sassa, Koji Matsunami, Loi Doan, Toyohiko Miyagi, Nilmini Thaldena, Ranjan Weerasinghe, Kazuo Konagai, Asiri Karunawardena (2023 The 2023.4. 24 Hambantota-offshore earthquake and microearthquakes in Sri Lanka and the landslide risk evaluation in a nearby slope by post-rainfall earthquakes. Landslides, Vol. 20, 1771-1779.
- Ahsan Sattar, Kazuo Konagai (2023) Post-formation Behavior of Hattian Landslide Dam and Post-breaching Situation. In: Alcántara-Ayala, I., et al. Progress in Landslide Research and Technology, Volume 2 Issue 2, pp 299-309
- Dhanushka Jayathilake, Takashi Kiyota, Kazuo Konagai, Masataka Shiga, Mohamed Nihaaj (2023) Evaluation of One-dimensional Particle Crushing Strength of Pumice with Intra-particle Saturation Ratio. SEISAN KENKYU 75(4):293-297
- Kyoji Sassa (2024) The Third-Year Publication of the Open Access Book Series "Progress in Landslide Research and Technology". In: Abolmasov, B., et al. Progress in Landslide Research and Technology, Volume 3 Issue 1, pp 1-12
- Alessandra M Nakata, Kazuo Konagai, Ryo Onishi (2024) Multiple Landslides in an Area Draped in Volcanic Matters: The Dual Impacts of Rains and Earthquakes. In: Abolmasov, B., et al. Progress in Landslide Research and Technology, Volume 3 Issue 1, pp 105-114
- Kumiko Fujita (2024), "Introducing Japanese Landslide Warning and Evacuation System to Sri Lanka: Field Survey of Social Aspect in the Arayanake Area" . In: Abolmasov, B., et al. Progress in Landslide Research and Technology, Volume 3 Issue 1, pp 223-232
- Toyohiko Miyagi, Koji Ikeda, Haruna Ishikawa, Loi Doan, Nguyen Kim Thanh, Pham Van Tien, Yuxin Li, and Feng Zhang (2024) Interpretation and Mapping for the Prediction of Sites at Risk of Landslide Disasters: From Aerial Photography to Detection by DTMs. In: Abolmasov, B., et al. Progress in Landslide Research and Technology, Volume 3 Issue 1, pp 15-61
- Koji Matsunami, Kyoji Sassa, Loi Doan, Ranjan Weerasinghe, and Tania Munasinghe (2024) Observation of Seismic Ground Motion and Pore Water Pressure in Lineated Valley Fill of

Wakayama, Southwest Japan. In: Abolmasov, B., et al. Progress in Landslide Research and Technology, Volume 3 Issue 1, pp 65-81

- Dhanushka Jayathilake, Takashi Kiyota, Kazuo Konagai, Masataka Shiga, Mohammad Nihaaj (2024) Influence of Intra-Particle Saturation Ratio on Strength Degradation of Pumice Soil. In: Abolmasov, B., et al. Progress in Landslide Research and Technology, Volume 3 Issue 1, pp 205-212
- Shinji Sassa (2024) Global Promotion of Understanding and Reducing Landslide Disaster Risk: Two Years on P-LRT. In: Abolmasov, B., et al. Progress in Landslide Research and Technology, Volume 3 Issue 1, pp 247-277
- Fumihiko Nomura, Kazuo Konagai, Md Aftabur Rahman, Yoshimitsu Tajima (2024) Mud-Mark-Based Estimations of Mass-Wasting Processes Caused by the 2008 Iwate-Miyagi Nairiku Earthquake, Japan. In: Abolmasov, B., et al. Progress in Landslide Research and Technology, Volume 3 Issue 1, pp 293-306
- ARP Weerasinghe, SHS Jayakody, NPG Amali, HR Maduranga, Doan Huy Loi (2024) Assessing the Potential Rapid and Long Travelling Landslides in Sri Lanka: A Case Study of Athwelthota Landslide. In: Abolmasov, B., et al. Progress in Landslide Research and Technology, Volume 3 Issue 1, pp 379-385
- Nicola Casagli, Paolo Canuti, Kyoji Sassa & Veronica Tofani (2024) The Sixth World Landslide Forum (WLF6), Florence, 2023. Landslides (21): 1161-1172
- Doan Huy Loi, Sanchitha Jayakody, Kyoji Sassa, Kazuo Konagai, Kiyoharu Hirota, Atsutoshi Ono, Takashi Takanaka, Tomonori Oki, Taichi Minamitani (2024) Landslides triggered by the 2024 Noto Peninsula earthquake. Landslides (21): 2583-2590
- Ngoc Ha Do, Satoshi Goto, Hirotaka Ochiai, Shiho Asano, Huy Loi Doan, Thanh Binh Huynh, Junji Yoshida (2024) Mechanism of a rainfall-induced landslide in a large-scale flume experiment on a weathered granite sand, Geoenvironmental Disasters 11(1): 1-18

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- S.H.S. Jayakody, Ryosuke Uzuoka, Kyohei Ueda (2024) Effect of groundwater dynamics in rain-induced landslides: centrifuge and numerical study. Soils and Foundations 64(4) 101482-101482.
- Jiawei Xu, Ryosuke Uzuoka, Kyohei Ueda (2024) Coupled finite element analysis of the dynamics of poroelastic media considering the relative fluid acceleration, International Journal for Numerical and Analytical Methods in Geomechanics.
- Gowtham Padmanabhan, Kyohei Ueda, Bal Krishna Maheshwari, Ryosuke Uzuoka (2024) Reliquefaction behavior of sand and response of pile group subjected to repeated shaking sequence using centrifuge model experiments. Soil Dynamics and Earthquake Engineering 182 108741-108741.
- Tetsuo Tobita, Koji Ichii, Kyohei Ueda, Ryosuke Uzuoka, Ruben R. Vargas, Mitsu Okamura, Asri Nurani Sjafruddin, Jiro Takemura, Lyu Hang, Susumu Iai (2024) LEAP-ASIA-2019: Summary of Centrifuge Experiments on Liquefaction-Induced Lateral Spreading – Application of the Generalized Scaling Law. Model Tests and Numerical Simulations of Liquefaction and Lateral Spreading II 3-34.
- Gowtham Padmanabhan, Kyohei Ueda, Ryosuke Uzuoka, Bal Krishna Maheshwari (2024) Influence of Foreshock and Aftershock Events on Reliquefaction Potential of Saturated Sand Specimen using Centrifuge Modelling Experiments. Japanese Geotechnical Society Special Publication 10(37) 1401-1406.
- Ryosuke Uzuoka, Jiawei Xu, Shogo Yamada, Kyohei Ueda (2024) Centrifuge modeling of slope and embankment subjected to post-shaking rainfall. Japanese Geotechnical Society Special Publication 10(6) 122-127.
- Yusong Han, Ryosuke Uzuoka, Kyohei Ueda, Manta Nakamura (2024) Microscopic Study of Factors Affecting Liquefaction Strength under Anisotropic Conditions. Japanese Geotechnical Society Special Publication 10(46) 1717-1722.
- Matthew Turner, Majid Ghayoomi, Kyohei Ueda, Ryosuke Uzuoka (2024) Centrifuge tests

to assess the impact of unsaturated soils on seismic bridge performance. Japanese Geotechnical Society Special Publication 10(49) 1825-1830.

- Zhiyuan Tang, Kyohei Ueda, Ryosuke Uzuoka (2024) Dynamic Centrifuge Modeling of Liquefaction-Induced Buckling Instability in Pile During Earthquake. Japanese Geotechnical Society Special Publication 10(59) 2251-2256.
- Sanchitha Hema Sharendra Jayakody, Ryosuke Uzuoka, Kyohei Ueda, Jiawei Xu (2023) Unsaturated slopes behavior under antecedent intermittent rainfall patterns: centrifuge and numerical study. Acta Geotechnica 18(11) 5773-5790.
- S.H.S. Jayakody, Ryosuke Uzuoka, Kyohei Ueda (2023) Centrifuge modelling of unsaturated slopes subjected to the integrated effect of groundwater and rainfall infiltration. E3S Web of Conferences, 8th International Conference on Unsaturated Soils (UNSAT 2023) 382 10003-10003.
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- Ning Bao, Jianfeng Chen, Gonghui Wang, Rui Sun, Kongming Yan (2024): Analytical prediction of displacement-dependent lateral earth pressure against stabilizing piles in sandy slopes considering arching effect. Computers and Geotechnics 176 106776-106776
- Zhaowei Ding, Wei Hu, Chingshung Chang, Yan Li, Gonghui Wang (2024): Shear behaviors of confined flow: Insights for understanding the influences of fractal particle size distribution on high mobility of granular flows. Geophysical Research Letters, 51, e2024GL108956.
- Shengshan Wu, Gonghui Wang (2024): Mechanical effects of nanomaterials on the residual shear strength of dry sandy mixtures: Implication for the high mobility of rock avalanches. Engineering Geology, 336: 107569
- Chao Huang, Gonghui Wang (2024): On the undrained shear behavior of sand mixtures with non-plastic fines subjected to large shear displacement. Engineering Geology 335: 107540
- Chao Huang, Gonghui Wang (2024): Assessing the influence of non-plastic fines on rainfall-induced landslide initiation and propagation: Flume test findings. Geomorphology 445:108960
- Haibo Miao, Gonghui Wang (2023): Prediction of landslide velocity and displacement from groundwater level changes considering the shear rate-dependent friction of sliding zone soil. Engineering Geology 327 107361-107361
- Arata, Y., Gomi, T., Sidle, R. C., Saito, H., & Wang, G. (2023). Soil-water response in a volcanic ash hillslope affected by fissures and microtopographic changes caused by the Kumamoto earthquake, in Japan. Hydrological Processes, 37(8), e14947.
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- Gonghui Wang, Naoki Watanabe, Keisuke Hoshikawa, Gen Furuya, Fei Cai, Shengshan Wu (2022): Diverse shear behaviors of clayey materials: Implications for differing landsliding behaviors within the same area in Niigata, Japan. Engineering Geology 312: 106932.
- Hu, W., Xu, Q., McSaveney, M., Scaringi, G., Huang, R., Wang, G., Gou, H.X., Zheng, Y.S. (2022). Fluid-like behavior of crushed rock flows. Journal of Geophysical Research: Earth Surface, 127, e2021JF006523.
- Haibo Miao, Gonghui Wang (2022): Shear rate effect on the residual strength of saturated clayey and granular soils under low- to high-rate continuous shearing. Engineering Geology 308: 106821.
- Fanyu Zhang, Gonghui Wang, Mark Allen, Yueren Xu, 2022. Editorial: Multidisciplinary Loess Geohazard Investigations. Front. Earth Sci. 10:884610.
- Fanyu Zhang, Gonghui Wang, Jianbing Peng (2022): Initiation and mobility of recurring loess flowslides on the Heifangtai irrigated terrace in China: Insights from hydrogeological conditions and liquefaction criteria. Engineering Geology 302, 106619.
- Chengrui Chang, Gonghui Wang (2022): Creep of clayey soil induced by elevated pore-water pressure: Implication for forecasting the time of failure of rainfall-triggered landslides. Engineering Geology 296: 106461.

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e) Cooperation with UNESCO Headquarters, Field Offices

Cooperation between the ICL and the preparation stage of the ICL with UNESCO started from the UNESCO programme IGCP-425 "Landslide Hazard Assessment and Mitigation for Cultural Heritage Sites and Other Locations of High Societal Value (1998-2002)" which was proposed by Kyoji Sassa, Disaster Prevention Research Institute, Kyoto University).

The initial formal agreement between the ICL including the preparation stage of the ICL (its mother body is the Disaster Prevention Research Institute (DPRI), Kyoto University) was signed by Koïchiro Matsuura (UNESCO Director General) and Shuichi Ikebuchi (DPRI Director) on November 26 and 3 December 1999, The title of the agreement is " Memorandum of Understanding between the United Nations Educational, Scientific and Cultural Organization and the Disaster Prevention Research Institute, Kyoto University, Japan concerning cooperation in Research for Landslide Risk Mitigation and Protection of the Cultural and Natural Heritage as a Key Contribution to Environmental Protection and Sustainable Development in the first quarters of the Twenty-First Century.

The ICL was founded by the UNESCO-Kyoto University Joint symposium (UNESCO-International Geoscience Programme (IGCP) No.425 Landslide Hazard Assessment and Cultural Heritage) in 2002. IPL (International Programme on Landslides) was proposed and agreed to establish in the ICL foundation meeting. Total 6 officials from landslide related divisions of Earth Sciences, Water Sciences, Cultural Heritage of UNESCO joined this session, and proposed that the IPL should be included in one of UNESCO Programme, and suggested to apply for UNITWIN cooperation programme. Then, Kyoto University(KU) and the new International Consortium on Landslides (ICL) applied to establish UNITWIN-UNESCO/KU/ICL to UNESCO. It was accepted by UNESCO. In March 2003, Koïchiro Matsuura, Director-General of UNESCO, Makoto Nagao, President of Kyoto University, Kyoji Sassa, President of the ICL signed the agreement for the UNTWIN network.

The IPL: A Programme of the ICL for Landslide Disaster Risk Reduction is an activity of the UNITWIN-UNESCO/KU/ICL Cooperation Programme. The first IPL was IPL-C100 ***Landslides***: Journal of the International Consortium on Landslides adopted in 2002. Based on IPL-C100, the founding issue of Landslides was published in April 2004. ***Landslides*** significantly developed from 2004 (Quarterly, 300 pages/year) to 2022 (Monthly, 4,000 pages/year). The 2023 Journal Impact Factor was 5.8.

The ICL and the UNITWIN Network organized a Round Table Discussion at the United Nations University, Tokyo, Japan to promote the IPL in January 2006, and adopted "**2006 Tokyo Action Plan"** Strengthening Research and Learning on Landslides and Related Earth System Disasters for Global Risk. The Action Plan was well evaluated, and the ICL exchanged a Memorandum of Understanding with each UNESCO, WMO, FAO, UNU, UN/ISDR (UNDRR), ICSU (ISC) and WFEO. The Tokyo Action Plan established a new International Programme on Landsides with the Global Promotion Committee of IPL. The current logo of IPL was made based on the Tokyo Action Plan.

Irina Bokova, Director General of UNESCO attended the Third World Landslide Forum and handed over the certificates to the leaders of World Centre on Excellence in 2014, and wrote a Foreword to the five volumes of books of WLF4 "Advancing Culture of Living with Landslides."

ISDR-ICL Sendai Partnerships 2015-2025 for global promotion of understanding and reducing landslide disaster risk was proposed by the ICL under the strong support from UNESCO during the 3rd World Conference on Disaster Risk Reduction in Sendai, Japan. It was established with signing by the ICL, UNESCO, Kyoto University, UNISDR, WMO, FAO, UNU, ICSU, WFEO, IUGS, IUGG, Government of Japan, Italy and Croatia. UNESCO took major role to create the Sendai Partnerships 2015-2025.

Sendai Landside partnership 2015-2025 must be terminated at 2025. However, a global cooperation to promote landslide disaster risk reduction is important after 2025. The ICL and the network

planned to establish a new global and long-standing framework continuing after the Sendai Partnerships. Thus, the Kyoto Landslide Commitment 2020 for global promotion of understanding and reducing landslide disaster risk (KLC2020) was proposed by the ICL and the Network and launched on 5 November 2020 during the 2020 ICL-IPL Online/virtual conference in Kyoto, Japan. Representatives from 90 organizations including David Malone, UN Under-Secretary-General, Miguel Clusener-Godt, Director, Division of Ecological and Earth Sciences, UNESCO, Juichi Yamagiwa, President of Kyoto University signed it.

The Fifth World Landslide Forum (WLF5) was organized in the hybrid mode with onsite, online, pre-recoded presentations from 2 to 6 November 2021 in Kyoto, Japan. A total of 525 persons from 46 countries/regions, five United Nations Organizations and three global scientific organizations joined WLF5. A High-level panel discussion "Review of KLC2020 and the way forward" was organized on 3 November 2021. As the result of the high-level panel discussion, Launching Declaration of the ICL Open Access Book Series "Progress in Landslide Research and Technology" for the Kyoto Landslide Commitment 2020 was adopted by the panelists and participants of WLF5.
Ms. Shamila Nair-Bedouelle, Assistant Director-General for Natural Sciences of UNESCO presented the opening greeting of WLF5 and Soichiro Yasukawa (Chief of Disaster Risk Reduction Unit of UNESCO) as a panelist of the high-level panel stressed the significance of the open access book series to successfully promote the Kyoto Landslide Commitment. He has published his paper "Establishment of the Disaster Risk Reduction Unit in UNESCO and UNESCO's contribution to Global Resilience" in the founding issue (Vol.1, issue.1) of ***Progress in Landslide Research and Technology (P-LRT).***

P-LRT is the core activity of KLC2020, Vol.1, the founding issues (Vol.1, No.1 and Vol.1, No.2) were published in 2022, Vol.2, Issue 1 and Issue 2 were published in 2023 and Vol.3, Issue 1 was published in 2024. The access to P-LRT is 153,000 for Vol.1-1, 141,000 for Vol.1-2, 31,000 for Vol.2-1. 56,000 for Vol.2-2 and 26,000 for Vol.3-1.

Advisory members for KLC2020 include Abou Amani**,** Director, Division of Water Sciences, Secretary, Intergovernmental Hydrological Programme (IHP), UNESCO and Soichiro Yasukawa, Programme specialist, Coordinator for Disaster Risk Reduction and Resilience, UNESCO.

Recent cooperation with the ICL and UNESCO-IHP (Intergovernmental Hydrological Programme) for IHP-IX (2022-2028)
The ICL was invited to the International Sediment Initiative (ISI) Advisory Board Meeting on 22nd – 23rd April 2024.
From the ICL, Nicola Casagli (ICL President 2021-2023) and Matjaž Mikoš (Chair of the GPC/IPL-KLC2020)., both are UNESCO chairs in Florence and Ljubljana and Vit Vilimek (former ICL Vice President, and expert of the glacial lake outburst flood (GLOF) attended its meeting. Then, they attended the following two ISI meeting in Paris and Beijing in 2024.
Three of them proposed a set of ISI activities on landslides and glacial lake outbursts in synergy with IPL projects. How to promote this cooperation will be discussed in the coming ICL-KLC conference on 4-7 November 2024 at Kyoto University by three of them and Soichiro Yasukawa (UNESCO).

UNESCO CHAIR on Prevention and Sustainable Management of Geo-hydrological Hazards of the University of Florence

- The Chair is contributing to International Programme on Landslides (IPL) of the ICL with several scientific projects.
- The Chair, as a member of ICL, has been signatory of the Kyoto Landslide Commitment 2020 (KLC2020), which is devoted to promoting global landslide disaster risk reduction, as contribution to the International Strategy for Disaster Reduction, the Sendai Partnership 2015-2025, the 2030 Agenda for Sustainable Development, the New Urban Agenda and the Paris Climate Agreement. The KLC2020 for global promotion of understanding and reducing landslide disaster risk is signed by more than 100 signatories (including UNESCO, UNU, WMO, UNDRR WFEO and many others).

- The Chair participates to several national and international missions, in collaboration with UNESCO and official partners, to promote the protection of the World's cultural heritage threatened by geo-hydrological hazards, some of which part of the UNESCO World Heritage list, especially in developing countries:
  - 17-22/10/2023: Hydrogeological invistigations for the safeguard of the UNESCO heritage site of Dambulla (Sri Lanka) from water infiltration, under the coordination of UNESCO New Delhi and in cooperation with the Sri Lanka Ministry of Culture.
  - 27-2/11/2023; engineering geology for the valorization and consolidation of Western Buddha niche in Bamiyan valley (Afghanistan). The mission was also visiting the site of Shar-e-Zohak, to evaluate the current work for soil erosion mitigation.
- The UNESCO Chair organized an online course for the UNESCO Regional Office for Southern Africa (ROSA) as part of the implementation of the project "Biosphere Reserves as Observatories for Climate Change Adaptation in Southern Africa (Be-Resilient)". The course was aimed at all those involved in the study and management of landslides in African countries, particularly in Zimbabwe, where severe landslides occurred in 2019 due to Cyclone Idai. The course was entitled "Landslide risk assessment, monitoring, and forecasting" and provided an overview of the main topics related to landslide disaster risk reduction, including an introduction to the main landslide typologies and their characteristics, an overview of the data required and the techniques most commonly used for landslide risk assessment, the most cost-effective methods for investigating and monitoring the different landslide typologies and the best options for hazard management, including the implementation of mitigation measures and early warning systems. Aimed at both experts and non-experts, the course is divided into 5 modules and provides advanced but easy-to-understand keys about landslide disasters and the main methods used to analyze and manage the associated risks. The course addresses practical aspects and case studies that provide useful links to land use planning, risk reduction/adaptation in vulnerable areas and integrated management of exposed sites.
- The UNESCO Chair has participated to International Conference "Transforming Knowledge for Just and Sustainable Futures" for the 30th anniversary of the UNITWIN/UNESCO Chairs Programme at the UNESCO Headquarters in Paris November 3-4, 2022; 850 university chairs and UNITWIN research networks from over 110 countries participated to plenary sessions, workshops and side events on their strategic role in strengthening connections between knowledge, research, education, and public policies.
- The UNESCO Chair has organized together with the International Consortium on Landslides (ICL) the 6th World Landslide Forum (WLF6, wlf6.org). The Assistant Director-General for Natural Sciences of UNESCO has provided the greeting written message during the Opening ceremony of the WLF6 on November 14, 2023.
  - The UNESCO Chair - prof. Nicola Casagli and prof. Silvia Bianchini - have joined the Scientific Advisory Board of the International Sediment Initiative (ISI) Flagship Initiative of the IHP (Intergovernmental Hydrological Programme) within Phase IX (2022-2028). They attended (in person) the 1st Advisory Board Meeting of ISI Strategy for IHP-IX on 22- 23 April 2024 in Paris, France at UNESCO Headquarter, and (online) the 2nd Advisory Board Meeting of ISI Strategy for IHP-IX on 24th September 2024, Beijing, China.

Institute of Geography, National Autonomous University, UNAM (ICL World Centre of Excellence, UNITWIN Partner Institution):

- Prof. Irasema Alcántara-Ayala is member of the Geo-Hazards Scientific Committee of the International Earth Sciences Program of UNESCO.

f) Other

(any other activities to report)

UNESCO CHAIR on Prevention and Sustainable Management of Geo-hydrological Hazards of the University of Florence:

The UNESCO Chair, as member of International Consortium on Landslides (ICL), is contributing to the Open Access book series "Progress in Landslide Research and Technology" published by Springer. The series provides a common platform for the publication of recent progress in landslide research and technology for practical applications and the benefit for the society contributing to the Kyoto Landslide Commitment 2020, which is expected to continue up to 2030 and even beyond to globally promote the understanding and reduction of landslide disaster risk, as well as to address the 2030 Agenda Sustainable Development Goals. The series is published one volume per year, including two issues. The contributions include original and review articles, case studies, activity reports and teaching tools for the promotion of understanding and reducing landslide disaster risks.

3. Future Plans and Development Prospects:
Outline of action plan for the next biennium and short/medium and long-term development prospects. Please do not hesitate to refer to difficulties that the Chair has experienced
(Not exceeding 300 words)

ICL headquaters.

The ICL headquarters will publish a new open access book series "Progress in Landslide Research and Technology" to promote the Kyoto Landslide Commitment 2020

- Volume 3 Issue 2 will be published in 2024. Volume 4 Issue 1 and Issue 2 will be published in 2025.
- The World Landslide Forum (WLF7) will be organized on November 23-27th, 2026, at the Faridabad Campus of Amrita University, India.

Themes and sessions of WLF7

- The general theme:Landslide Science and Practice for Safe and Resilient Communities
- High-level Panel Discussion Title: Review and wayforward of the Kyoto Landslide Commitment 2020
- Six Scientific themes:

Theme 1: Kyoto Landslide Commitment for sustainable development (IPL, WCOE, Network, Multi-hazards, Cascading hazard, Climate change et al.)
Coordinators: Shinji Sassa, Irasema Alcántara-Ayala
Theme 2: Remote sensing, site investigation, monitoring and early warning
Coordinators: Veronica Tofani, Maneesha Vinodini Ramesh
Theme 3: Testing, modeling and mitigation technique
Coordinators: Binod Tiwari, Sabatino Cuomo
Theme 4: Mapping, hazard, risk assessment and management
Coordinators: Paola Reichenbach, Snježana-Mihalić Arbanas
Theme 5: Progress in landslide science and applications
Coordinators: Željko Arbanas, Hemalatha Thirugnanam
Theme 6: Regional landslide case studies
Coordinators: Chih-Chung Chung, Xuanmei Fan

UNESCO CHAIR on Prevention and Sustainable Management of Geo-hydrological Hazards of the University of Florence

The activities foreseen for the next biennium and in the short/medium and long-term will be in line with the UN 2030 Agenda for sustainable development and Sustainable Development Goals and with the UNDRR Sendai Framework. These will include:

- To promote the development of innovative technologies for the prevention and mitigation of geo-hydrological hazards with special emphasis to research and technological development and transfer of knowledge through the organization of stakeholders workshop on geo-hydrological hazards assessment.
- To develop tools and procedures for supporting risk reduction policies and emergency management for the safety of human life through the development of early warning systems and toolkit for disaster response preparedness. Both these objectives will be achieved by managing and developing the current projects and partnerships with scientific institutions, research centers, public administrations and technical stakeholders for research and innovation.
- To promote the protection of cultural heritage threatened by geo-hydrological hazards trough scientific mission in less developed countries and capacity building thanks to short-term training and practical filed training. This activity will include the update, check, management, and implementation of the mitigation measures for geo-hydrological hazard reduction in all the Cultural Heritage sites under investigation.

- To promote research and training at international level by hosting more workshops, conferences, and seminars, as well as by offering scientific facilities to post-graduate students and visiting researchers through scientific networking and professional training and continuous risk reduction.
- To continue the contribution to the Kyoto Landslide Commitment 2020 (KLC2020);
- To contribute to the networking activity by helping the organization of the 7th World Landslide Forum (WLF7), to be held in Amrita Vishwa Vidyapeetham (University), Faridabab, India in 2026. The Chair members will be part of the scientific committee and will also participate through the submission of scientific works to be presented at the congress.

University of Ljubljana, Ljubljana, Slovenia:

Supporting organisation of the 7th World Landslide Forum in Faridabad, India in November 2026, and the 7th Regional Symposium on Landslides in the Adriatic-Balkan Region to be held in 2026.
Chair's efforts will also be focused on the Kyoto 2020 Landslide Committment, specifically to its further implementation and development in the sense of supporting Sendai Frame for DRR 2015-2030 & UN Agenda 2030 Sustainable Development Goals Nr. 13 & 17, being also related to SDGs 6 & 9.
We will support the activities of the Global Promotion Committee of the International Program on Landslides and the 2020 Kyoto Landslide Commitment (GPC/IPL-KLC) by chairing this body.
We will support the open-access publishing policy, also by contributing articles to the ICL journal Landslides and ICL new book series Progress in Landslide Research and Technology, both published by Springer Nature, and by executing editorial duties for both.

UNESCO Chair will continue to participate in ResiliEnhance program activities and Eutopia Connected Communities.

UNESCO Chair at University of Ljubljana will be further supporting also activities of the UNESCO IHP Programme:

- Supporting the activities of the Slovenian National Committee for IHP UNESCO (since December 2019, UNESCO WRDRR Chairholder is also chairing the NC IHP UNESCO in Slovenia and is a member of the Slovenian National Commission for UNESCO, and two more members of the UNESCO WRDRR Chair are members of the Slovenian NC IHP UNESCO).
- We will support the work of IHP Council in Paris. We will support the IHP project International Sediment Initiative (ISI).
- We will further on develop and intensify our research activities in experimental basins and cooperation in the Euro-Mediterranean Network of Experimental and Representative Basins (ERB, https://erb-network.simdif.com/).
- UNESCO Chair in WRDRR will contribute to the implementation of the UNESCO IHP-IX Programme by contributing to the declared outputs, and continue to support activities of other UNESCO chairs within the existing network, especially through the ICL community in the field of landslide risk reduction, and through already established cooperation within the international hydrology community.
- Maintenance and development of the existing experimental river basins in Slovenia.
- We will organise summer school on data in hydrology in year 2025.
- We will further be supporting publishing of the SCOPUS journal Acta hydrotechnica.
- We will further support all kind of national and international University of Ljubljana educational efforts and activities in the field of hydrological sciences and integrated water management, as well as in flood risk management and community (society) capacity building and development through risk dialogue with diverse stakeholders.
- UNESCO WRDRR Chair will continue to lead an internal project to establish a Concept for Sustainable Development of the University of Ljubljana.
- We will continue to publish open access educational and teaching resources and material on Chair's web-page.
- We will futher contribute do development of web-based landslide observatory jointly developed with IRCAI (International Research Centre on Artificial Intelligence) with using AI tools.
- We will continue to support international students coming from outside Slovenia and EU, including PhD students.

Northeast Forestry University:
The Geological environment risk research plan for permafrost degraded areas in Northeast China(GERRP) was launched. Through cooperation with IRDR (Integrated Research on Disaster Risk), as well as IPL-WCoE ICL-CRLN (International Consortium on Landslides – Cold Regions Landslide Network), ICGdR(International Consortium on Geo-disaster Reduction)academic activities and the regular academic symposium, shared a case study on geological and environmental changes in the permafrost region of Northeast China. The main goal of establishing a platform for researchers and decision makers is to work together to find actionable policies to promote research on disaster risk and mitigation in permafrost areas in the context of climate change.
Collaborating with network members to apply for international projects.

China University of Geosciences, Wuhan
China University of Geosciences, Wuhan, will continue to engage in international collaboration and exchanges. In 2025, it will host the sixth Badong International Geohazards Symposium (BIGS 2025) to conduct academic exchanges with partners from several nations and organizations worldwide. We will actively support international catastrophe prevention and reduction efforts and offer helpful recommendations in the pertinent UN initiatives and conferences.

Landslide group in National Central University from Graduate Institute of Applied Geology, Department of Civil Engineering, Center for Environmental Studies. Chinese Taipei:
- Supporting the activities of the Global Promotion Committee of the International Program on Landslides and the 2020 Kyoto Landslide Commitment (GPC/IPL-KLC) by chairing this body.
- Supporting organisation of the 6th World Landslide Forum in Florence, Italy in September 2023,
- Will be participating in the 2022 ICL-IPL Kyoto Conference
- To promote research and training at international level by hosting more workshops, conferences and seminars, as well as by offering scientific facilities to post-graduated students and visiting researchers through scientific networking and professional training and continuous risk reduction.

Institute of Geography, National Autonomous University, UNAM (ICL World Centre of Excellence, UNITWIN Partner Institution):
-Will contribute to advance investigations on landslide risk perception
-Will continue to research strategies for landslide disaster risk communication
-Will collaborate with the Latin America and Caribbean Office of UNDRR
- Will collaborate with UNDRR, Geneva and the UNDRR Global Platform, June 2025
- Will collaborate with the World Meteorological Organization through the World Weather Research Programme (WWRP),
- Will continue collaborating with the Global Alliance for Disaster Research Institutes (GADRI)
-Will support training for young scholars on landslide-integrated disaster risk research from inter and transdisciplinary perspectives

Appendix:

1) Human Resources

Disaster Prevention Research Institute, Kyoto University (host institution)
Ryosuke Uzuoka: Professor of the Disaster Prevention Research Institute, Kyoto University.
Gonghui Wang: Professor of the Disaster Prevention Research Institute, Kyoto University.
Kaoru Takara: Specially appointed professor, Disaster Prevention Research Institute, Kyoto University

International Consortium on Landslides (ICL)

ICL consists of ICL headquarters and 61 ICL full member organizations and 21 ICL associates, 12 supporters and 20 KLC2020 official promoters.

ICL Headquarters (host institution)
Kyoji Sassa: Professor Emeritus, Director General (Landslide Dynamics)
Kaoru Takara: Professor Emeritus, Managing Director (Hydrology and Hydrogeology)
Kazuo Konagai: Professor Emeritus, Scientific Director (Civil Engineering)
Shinji Sassa: Head of Soil Dynamics Group, Port and Airport Research Institute, National Institute of Maritime, Port and Aviation Technology, Japan. Publication Director (Soil Dynamics)
Satoru Nishikawa: Auditor
Binod Tiwari: Auditor
Zeljko Arbanas: Journal Publication
Khang Dang: Research Promotion Officer (Landslide Dynamics), University of Science, Vietnam National University,
Loi Doan: Researcher (Landslide dynamics)
Kiyoharu Hirota: Information officer (Geology)
Salvano Briceno: ICL Senior advisor
Badaoui Rouhban: IPL advisor
Nicola Casagli: KLC2020 advisor
Giuseppe Arduino: KLC2020 advisor
Jagath Guntilake: Sri Lanka-Japan Research Center, Peradeniya University, ICL Advisor
Ikuo Towhata: ICL-Japan advisor
Hirotaka Ochiai: ICL advisor (Mountain Disaster)
Satoshi Tsuchiya: ICL advisor (Sabo Engineering)
Mie Ueda: Secretary (Accountant)
Kumiko Fujita : Secretary (General affairs)

UNESCO Chair on Prevention and Sustainable Management of Geo-Hydrological Hazards of University of Florence (ICL World Centre of Excellence, UNITWIN Partner Institution)

UNESCO Chairholder: Nicola Casagli (Engineering Geology)
Deputy Chairholder: Veronica Tofani (Engineering Geology)
Deputy Chairholders: Fabio Castelli (Hydrology)
Program Coordinator: Prof. Silvia Bianchini (Engineering Geology)
Program Coordinator: Chiara Arrighi (Hydrology)
Program Coordinator: Enrica Caporali (Hydrology)
UNESCO Chair associates:
Full Professors
- Carlo Alberto Garzonio (Engineering Geology)
- Sandro Moretti (Geomorphology)
- Luca Solari (Hydraulic Engineering)

Associate professors:
- Riccardo Fanti (Engineering Geology)
- Johann Facciorusso (Geotechnical Engineering)

Giovanni Gigli (Engineering Geology)
Massimo Rinaldi (Engineering Geology)
Federico Raspini (Geomorphology)
Samuele Segoni (Engineering Geology)
Marco Uzielli (Geotechnical Engineering)

Assintant professors

Tommaso Carlà (Engineering Geology)
Pierluigi Confuorto (Geomorphology)
Matteo Del Soldato (Geomorphology)
Mario Di Bacco (Hydrology)
Giovanni Forzieri (Hydrology)
Simona Francalanci (Hydraulic Engineering)
Teresa Gracchi (Engineering Geology)
Emanuele Intrieri (Engineering Geology)
Marco Lompi (Hydrology)
Matteo Mura (Hydrology)
Carlo Tacconi Stefanelli (Geomorphology)

Adjunct Professors

Paolo Canuti
Enio Paris
Ignazio Becchi
Giorgio Valentino Federici
Claudio Margottini
Daniele Spizzichino

The Academic collaborators who participate and actively collaborate in the activities of the Chair are constituted by the staff of the geohazard group, which is established at DST-UNIFI, and of flood-risk group and the geotechnics group which are both established at DICEA-UNIFI.
Besides the professors mentioned above, the two groups count at present:

- 13 technicians
- 9 post-doc fellows
- 21 PhD students

UNESCO WRDRR Chair University of Ljubljana (ICL World Centre of Excellence, UNITWIN Partner Institution)

Matjaž Mikoš: Professor – Chair holder (Hydrology, Hydraulic Engineering)
Mitja Brilly: Professor Emeritus (Hydrology)
Janko Logar: Professor (Geotechnical Engineering)
Mojca Šraj: Professor (Hydrology)
Andrej Kryžanowski: Associate Professor (Hydraulic Engineering)
Simon Rusjan: Associate Professor (Hydraulic Engineering)
Dusan Petrovič: Assistant Professor (Geodetic Engineering)
Matej Maček: Assistant Professor (Geotechnical Engineering)
Nejc Bezak: Associate Professor Dr. (Hydrology)
Dejan Grigillo: Assistant Professor (Geodetic Engineering)
Jasna Smolar: Assistant Dr. (Geotechnical Engineering)
Mateja Klun: Assistant Dr. (Hydraulic Engineering)
Andrej Vidmar: Research Associate (Hydrology)
Klaudija Lebar: Researcher Dr. (Hydrology)
Katarina Zabret: Researcher Dr. (Hydrology)
Matej Radinja: Researcher Dr. (Urban Hydrology)
Tamara Kuzmanić: Researcher Dr. (Hydraulic Engineering)
Alma Zavodnik Lamovšek: Assistant Professor Dr. (Spatial Planning)
~~Matjaž Uršič: Associate Professor Dr. (Urban Sociology)~~
Aleksandar Kešeljvić: Associate Professor Dr. (Water Economy)

Vesna Zupanc: Assistant Professor Dr. (Soil Hydrology)
Jošt Sodnik: Senior Lecturer Dr. (Hydraulic Engineering)
Aleš Golja: Senior Lecturer Dr. (Tourism and sport activities on water)
Sašo Petan: Researcher Dr. (Hydrology)
Nina Humar: Researcher (Hydraulic Engineering)
Timotej Jurček: PhD Student (Geotechnical Engineering)
Mark Bryan Alivio: PhD Student (Hydrology)
Luka Javornik: PhD Student (Hydraulic Engineering)
Yusuf Ogunfolaji: PhD Student (Hydraulic Engineering)

Northeast Forestry University (ICL World Centre of Excellence, UNITWIN Partner Institution)
Wei Shan: Professor Dr. (Hydrogeology and Engineering Geology)
Ying Guo: Associate Professor Dr. (Soil physics and soil mechanics)
Yanqiu Xing: Professor Dr. (Remote Sensing Geology)
Chengcheng Zhang: Engineer Dr. (Geophysics)

Czech Landslide Group (ICL World centre of Excellence, UNITWIN Partner Institution)
Josef Stemberk (Engineering Geology)
Vit Vilimek (Geomorphology)
Jana Smolikova (Geomorphology)
Jan Klimeš (Engineering Geomorphology)
Jan Blahut (Engineering Geomorphology)
Jan Balek (Engineering Geomorphology)

China University of Geosciences, Wuhan
Huiming Tang: Professor (Head professor on Geological Engineering of China University of Geosciences)
Changdong Li: Professor (Head of Badong National Observation and Research Station of Geohazards)
Jie Dou: Professor (Remoter sensing)
Qinwen Tan: Associate Professor (Deforming mechanism)
Yongquan Zhang: Associate Professor (Monirtoring)
Xiao Liu: Associate Professor (Dynamical bebavior)
Junwei Ma: Associate Professor (Machine learning)
Shu Zhang: Lecture (Landslide evolution)

Croatian Landslide Group (ICL World Centre of Excellence, UNITWIN Partner Institution)
Zeljko Arbanas: Professor (Soil Mechanics and Geotechnical Engineering)
Snjezana Mihalic Arbanas: Professor (Engineering Geology)
Vedran Jagodnik, Assistant Professor (Soil Mechanics and Geotechnical Engineering)
Sanja Dugonjic Jovancevic, Assistant Professor (Soil Mechanics and Geotechnical Engineering)
Martin Krkac, Associate Professor (Engineering Geology)
Martina Vivoda Prodan, Assistant Professor (Soil Mechanics and Geotechnical Engineering)
Sanja Bernat Gazibara, Postdoc Researcher (Engineering Geology)
Petra Jagodnik, Lecturer (Engineering Geology)
Josip Peranic, Postdoc Researcher (Soil Mechanics and Geotechnical Engineering) Sara Pajalic, Researcher (Soil Mechanics and Geotechnical Engineering)
Hrvoje Lukacic, Researcher (Engineering Geology)
Marko Sincic, Researcher (Engineering Geology)

Landslide group in National Central University from Graduate Institute of Applied Geology, Department of Civil Engineering, Center for Environmental Studies, Chinese Taipei

Yong-Ming Tien Professor (Geotechnical Engineering) Ray-Shyan Wu Professor (Water Resource Engineering) Jia-Jyun Dong Professor (Engineering Geology)
Chuen-Fa Ni Professor (Engineering Geology)
Chung-Pai Chang (Remote Sensing)
Tso-Ren Wu Professor (Water Resource Engineering) Wen-Chao Huang Professor (Geotechnical Engineering) Wen-Yi Hung Professor (Geotechnical Engineering)
Chih-Chung Chung Professor (Geotechnical Engineering)

Institute of Geography, National Autonomous University, UNAM (ICL World Centre of Excellence, UNITWIN Partner Institution):
Irasema Alcántara-Ayala: Professor Dr. (Geography and geomorphology)
Ana Rosa Moreno: Prof. (Medicine and disaster risk communication)
Javier Urbina: Prof. (Risk perception, psychology)
Gabriel Legorreta: Associate Professor Dr. (Geography and geomorphology)
Ricardo J. Garnica-Peña: Dr. (Geomorphology and Remote Sensing)
Leobardo Dominguez-Morales: MSc. (Engineering and geology)
Gema Velásquez-Espinoza: MSc. (Geology)
Cesar Garcia: MSc. (Geography)
Karla Hernández Cadena: Miss (Risk perception, psychology)
Adán Montes de Jesús (Institutional vulnerability)
Brenda Arleth Neri Ruiz (Landslide exposure)

2) Financial Resources

Please tick sources of financial contribution and specify the amount in U.S. dollars

	[tick]	Amount ($)
Host Institution	☑	367,300
Partner Institution	☑	
Government Body	☑	10,123,683
Other Public Institution/Body (incl. Research Councils)	☑	4,020,000
UNESCO	☑	20,000
Other UN Agency	☐	
IGO	☑	3,000,000
NGO	☑	20,000
Industry	☑	2,741,069
Other Private	☑	200,000

Give details of financial contributions, material resources and space.

A: Financial resources of ICL headquarters and major organizations within UNITWIN **members for the current two years**

ICL headquarters
Host Institution (367,300 USD)
Government Body (1,273,683 USD)
NGO (20,000 USD)
Industry (161,069 USD)

UNESCO Chair on Prevention and Sustainable Management of Geo-Hydrological Hazards of the Florence University
Government Body (650,000 USD)
National Service of Civil Protection (800,000 USD)
Industry (80,000 USD)
Private companies (200,000 USD)

UNESCO Chair University of Ljubljana
Direct financial resources for UNESCO Chair are available as a part of the UL FGG research activities financed by the Slovenian National UNESCO Commission (20,000 USD) and specifically for the Chair's teaching activities through the Development Fund of the University of Ljubljana (200,000 USD).
Research activities of the Chair are partially supported by the Slovenian Research Agency through Grant P2-0180 (20,000 USD)
Government Body (UL FGG overall budget for teaching 8.2 million USD)
European Union (UL FGG for projects 3 million USD)
R&D Projects, mainly through Slovenian Research Agency (UL FGG for research projects and early-stage researchers 3 million USD)
Industry (UL FGG roughly 2.5 million USD)

B1: Material resources and space of the above organizations selected from 65 member organizations.

ICL headquarters

Major facilities provided by ICL to UNITWIN Programme are:

1) Undrained dynamic loading ring shear apparatus for large-scale landslides which was developed by UNITWIN programme (400,000 USD) for landslide hazard assessment with support of SATREPS (Science and Technology Research Partnerships for Sustainable Development) programme with Vietnam.

2) Transportable undrained dynamic loading ring shear apparatus for smaller landslides landslides which was developed by UNITWIN programme (350,000 USD) for landslide hazard assessment with support of SATREPS (Science and Technology Research Partnerships for Sustainable Development) programme with Vietnam. It was developed by UNITWIN programme (300,000 USD) for landslide hazard assessment with support of SATREPS (Science and Technology Research Partnerships for Sustainable Development) programme with Croatia.

Major facilities provided by DPRI, Kyoto University to UNITWIN Programme is:

Dynamic geotechnical centrifuge at DPRI, Kyoto University, has been in operation since 1988. The geotechnical research group in Kyoto University has been supporting the centrifuge facility. Every year, from undergraduates, masters and doctoral students to post doctoral researchers from all over the world are working and sharing knowledge in the laboratory.
A series of almighty intelligent ring shear apparatuses had been developed in Disaster Prevention Research Institute, Kyoto University, for the study of different types of landslides under different loadings. Research Center for Landslide Risk Cognition and Reduction has been supporting the operation of these facilities and conducting national and international joint research.

Major Facilities at UNESCO Chair in Florence:

Laboratories:

- GIS and thematic mapping laboratory
- Remote Sensing laboratory specialized on SAR interferometry, optical and hyperspectral remote sensing
- Rock and Soil mechanics laboratory

Equipment:

- GBInSAR monitoring systems
- UAV (Unmanned Aerial Vehicle, SATURN)
- Compact submarine remotely controlled (NEMO-ROV)
- Rock and soil mechanics field and laboratory equipment
- Advanced geotechnical and hydrogeological modelling software
- GPS and topographical survey instrumentation
- 3D laser scanner
- Access to real-time meteorological services
- Fieldspec spectroradiometer
- Infrared thermal Camera and UAV sensor
- Robotized total stations
- Electrical resistivity, electromagnetic and seismic surveying instrumentation
- Portable laser scanner

UAV Ground Penetrating Radar (GPR)

Facilities at Institute of Cold Regions Science and Engineering (ICRSE) in Northeast Forestry University, China:
ICRSE has two parts, ICRSE research center (ICRSE-RC) and ICRSE field observation stations(ICRSE-FOS).The facilities in ICRSE-RC mainly are low-temperature laboratory(20m^2),automatic monitoring systems of soil temperature and moisture, triaxial and

consolidation instruments and other indoor test equipment, ground penetrating radar, high-density electrical instrument, small rig, light touch detector, unmanned aerial vehicles. The facilities in ICRSE-R are automatic weather stations, automatic monitoring and transmission systems of soil temperature and moisture.

Facilities at Croatian Landslide Group (UNIRI-GF, UNIZG-RGNF):
Laboratories and Observatories:
Geotechnical Laboratory at the Faculty of Civil Engineering University of Rijeka:
Ring shear apparatus
Set of triaxial apparatus (static and dynamic)
Set of direct shear apparatus
Set of oedometers
Resonant column
Unsaturated direct shear apparatus
Triaxial apparatus for rock sample testing
Dynamic and static platforms for small scale landslide modelling
Observatory at the Konstanjek Landslide in Zagreb
Observatory at the Grohovo Landslide near Rijeka

B2: Space provided to UNITWIN Programme.

Spaces at UNITWIN Headquarters in Kyoto, Japan

1) UNITWIN Headquarters Building which was jointly constructed by ICL and Kyoto University in the Kyoto University Uji campus and donated to Kyoto University in 2004. The building was used for "Research Center for Landslides (RCL)". On April 1st of 2023, RCL was changed to the "Research Center for Landslide Disaster Risk Cognition and Reduction" (LCR). Thereafter, UNITWIN headquarters was moved to ICL headquarters.
2) ICL headquarters which is located in a side of the Kyoto University North campus. A room for UNITWIN Coordinator and the research promotion officer and two secretaries who promote and manage the International Programme on Landslides.
3) A new SATREPS Project from 2019-2025 has launched for the development of early warning technology of rain-induced long-travelling landslides (RRLL) in Sri Lanka. A new ICL-SATREPS office (2 stories house was purchased and reformed for a laboratory for two ring shear apparatuses (1F), a research room and a meeting room (2F)) has launched from 14 December 2020 in 90 m apart from ICL headquarters.

Spaces at UNESCO Chair in Florence:
1) UNESCO Chair Headquarters Building in the University of Florence Campus of Arcetri with offices for 25 researchers and meeting room for 20 persons
2) Civil Protection Laboratories in the University of Florence Campus of Arcetri with 400 sqm of labs and a conference room for 40 persons
3) Engineering Geology Group in the University of Florence main Campus of Arcetri with offices and labs for 25 researchers

Spaces at UNESCO Chair in Ljubljana: 1) UNESCO Chair is hosted by the Faculty of Civil and Geodetic Engineering of the University of Ljubljana (UL FGG) – the Chair is in the building of the UL FGG Department of Environmental Civil Engineering at Hajdrihova ulica 28 in Ljubljana – the main UL FGG building is at Jamova cesta 2, Ljubljana. 2) UNESCO Chair also uses experimental river basins around Slovenia for applied hydrology research, established by the Chair of Hydrology

and Hydraulic Engineering at UL FGG and plenty of field hydrologic and hydraulic equipment, as well as hydraulic and geotechnical (soil mechanics) laboratory available at the UL FGG, and its computer facilities. 3) Furthermore, remote sensing equipment such as TLS or UAV from the UL FGG Department of Geodesy is also available for the UNESCO Chair. 4) The Research Institute on Geo- and Hydro Threats at UL FGG established a Laboratory on Aggregates that is available to UNESCO Chair for research purposes.

Spaces at Institute of Cold Regions Science and Engineering in Northeast Forestry University, China: ICRSE has two parts, ICRSE research center (ICRSE-RC) has laboratories and conference rooms, a total of 400 m2. Another is ICRSE field observation stations.

End of the Form