The 2017 Ljubljana Declaration on Landslide Risk Reduction

Contributing to the Sendai Framework for Disaster Risk Reduction

- 1. The World Landslide Forum IV was convened and organized in Ljubljana, Slovenia, from 29 May to 2 June 2017 by the International Consortium on Landslides (ICL), International Programme on Landslides (IPL), University of Ljubljana and Geological Survey of Slovenia. The event was coorganized by the Ministry of Defence, Ministry of the Environment and Spatial Planning, Ministry of Infrastructure, National Platform for Disaster Risk Reduction and Chamber of Engineers of the Republic of Slovenia. The Forum was sponsored by several other entities. 608 participants* including scientists, engineers, researchers, policy makers, public officials as well as other stakeholders came from 49 countries/regions, 4 United Nations Organizations, and 5 other international organizations.
- 2. The participants appreciate the hospitality and welcome that was accorded to the Forum by the authorities and relevant institutions of Slovenia.
- 3. The participants addressed the challenges of landslide disaster risk. They examined how landslide knowledge and technology, and landslide investigation can be further enhanced and applied to contribute to the reduction of vulnerability and exposure and to building the resilience of persons, communities and countries to landslide disasters which, like other disasters triggered by natural hazards, undermine efforts to achieve the Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development.
- **4.** The participants note that landslides are a complex natural phenomenon of many types and varieties that can be triggered by earthquakes, volcanic eruptions, heavy and recurrent rainfall, typhoons, hurricanes, wildfires, snowmelt, sometimes exacerbated by anthropogenic activities and developments such as construction of roads, waterworks and mining. They recall that submarine landslides are able to generate tsunamis and represent a major hazard to coastal areas.
- 5. The participants underline that landslides, occurring on land and at sea, continue to pose considerable risks to humankind, to human settlements and to livelihoods and economies in mountains, cities, along coasts and islands. They underline further that people most exposed to, and affected by landslide disasters are disproportionately the poor, marginalized and vulnerable, including women and children.
- **6.** The participants caution that climate change and variability are expected to increasingly affect the frequency and extent of heavy rainfall and wildfires at local and regional levels with an enhanced potential for landslide occurrence. They recognize that the combined effects of natural phenomena and human adverse activities, associated with a rise in the vulnerability and exposure of urban and rural settlements and agglomerations, are increasing landslide risk around the world.
- 7. The participants reiterate that understanding landslides, their associated risks and the vulnerability of societies, requires an integrated and multi-disciplinary approach including contributions from natural, social and engineering sciences as well as local and traditional knowledge.
- **8.** The participants value the mobilization generated and the significant impact of activities developed and implemented throughout the processes of previous World Landslide Forums, namely WLF 1 held in Tokyo in November 2008, WLF 2 held in Rome in October 2011, and WLF 3 held in Beijing in June 2014.
- **9.** The participants recognize and welcome, in particular, the *ISDR-ICL Sendai Partnerships 2015-2025* for Global Promotion of Understanding and Reducing Landslide Disaster Risk which was adopted as a voluntary commitment to the United Nations World Conference on Disaster Risk Reduction, held in Sendai, Japan, 14-18 March 2015. They affirm that this Partnership is a supporting tool for

the implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030. They greet and commend the numerous Partners who adhered to this Partnership. They recognize, with great satisfaction, the progress made by the Partnerships during the first biennium of its life. They commit to pursue and support its further implementation, including through building on the 2012 ICL Strategic Plan 2012-2021.

- 10. The participants recognize the concrete actions and co-operative activities carried out by the ICL family including through ICL Members, the IPL and IPL Projects, ICL Supporting Organizations, ICL Regional and Thematic Networks, ICL World Centres of Excellence on Landslide Risk Reduction, ICL UNITWIN Cooperation Programme in the framework of the UNITWIN/UNESCO Chairs Programme, Landslide School Network, Landslide Journal and other ICL publications. They value the most recent output which is illustrated by the ISDR-ICL Landslide Interactive Teaching Tools.
- 11. The participants reiterate their call upon related governmental, non-governmental and international programmes, and initiatives from natural, engineering, human, social and economic sciences, public and private, to continue promoting science and technology and their applications for landslide disaster risk mitigation including by supporting and joining the ISDR-ICL Sendai Partnerships.
- **12.** The participants look forward to the initiation and furthering of the process leading to the organization of the Fifth World Landslide Forum (WLF 5) in 2020.
- 13. The participants are of the view that, in the perspective of, and during the WLF 5, an opportunity must be found to mobilize in the medium and long term a global alliance which will accelerate and incentivize action for landslide risk reduction. They therefore urge to put in place a mechanism to that effect and call for a commitment, the Kyoto 2020 Commitment for Global Promotion of Understanding and Reducing Landslide Disaster Risk, to be finalized during the preparatory activities for WLF 5 and adopted during WLF 5 in order to serve this purpose.
- **14.** The participants express gratitude to Governmental authorities and specialized organizations and entities worldwide, and in particular authorities and organizations from Japan, for the valuable support which they provide to ICL-IPL. They express sincere appreciation to the leadership and management of ICL for their dedication to the functioning of the Consortium and to the continuation of its initiatives and activities.
- **15.** The participants submit the 2017 Ljubljana Declaration on Landslide Risk Reduction to UNISDR for endorsement as a further commitment on the part of the global landslide community to the Sendai Framework for Disaster Risk Reduction 2015-2030.

Adopted in Ljubljana on 31 May 2017

ANNEX to the 2017 Ljubljana Declaration on Landslide Risk Reduction List of Participants

United Nations Educational, Scientific and Cultural Organization (UNESCO)

World Meteorological Organization (WMO)

Food and Agriculture Organization of the United Nations (FAO)

United Nations University (UNU) International Council for Science (ICSU)

Integrated Research on Disaster Risk (IRDR)

International Union of Geological Sciences (IUGS)

International Union of Geodesy and Geophysics (IUGG)

International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE)

Albanian Geological Survey, **ALBANIA**

Centre National de Recherche Appliquée en Génie Parasismique (CGS), ALGERIA

Universidad Nacional de Cuyo, **ARGENTINA**

Gecko Geotechnics Pty Ltd, **AUSTRALIA**

Prime Geotechnics Pty Ltd, **AUSTRALIA**

University of Wollongong,

AUSTRALIA AIT Austrian Institute of

Technology GmbH, AUSTRIA

Amt der Kärntner

Landesregierung, AUSTRIA

Austrian Service for Torrent and Avalanche Control (BMLFUW), **AUSTRIA**

DORFTV, AUSTRIA

Geological Survey of Austria, **AUSTRIA**

IBTP Koschuch, AUSTRIA Institute für Geotechnik, **AUSTRIA**

ÖBB Infrastruktur AG, AUSTRIA Trumer Schutzbaten GmbH. **AUSTRIA**

University of Natural Resources and Life Sciences, Vienna, **AUSTRIA**

University of Salzburg, AUSTRIA University of Vienna, AUSTRIA EuroGeoSurveys, BELGIUM KU Leuven, BELGIUM

Royal Museum for Central Africa, **BELGIUM**

University of Liège, BELGIUM Vrije Universiteit Brussel, **BELGIUM**

Geological Survey of the

Republic of Srpska, BOSNIA AND HERZEGOVINA

State University of Campinas, BRAZII.

Geological Institute, BAS, **BULGARIA**

Geological Survey of Canada, **CANADA**

University of Alberta, CANADA University of British Columbia,

CANADA University of Saskatchewan,

CANADA University of Waterloo, CANADA

Beijing Normal University, **CHINA**

Chengdu University of Technology, CHINA China Earthquake

Administration, CHINA

China Geological Survey, CHINA

China Institute of Geo-Environment Monitoring, CGS, CHINA

China University of Geosciences, **CHINA**

Hong Kong Polytechnic University, CHINA

Hong Kong University of Science and Technology, CHINA

IMDE, CAS, CHINA

Institute of Geographic Sciences and Natural Resources Research,

CAS CHINA

Institute of Geology, China Earthquake Administration, **CHINA**

Institute of Mountain Hazards and Environment, CAS, CHINA

Ministry of Land and Resources, **CHINA**

Nanjing Tech University, CHINA

Nanjing University, CHINA Northeast Forestry University, **CHINA**

Sichuan University, CHINA

Southwest Jiaotong University, **CHINA**

State Key Laboratory of Geohazard Prevention and Geoenviroment Protection.

University of Hong Kong, CHINA

University of Medellin. COLOMBIA

Universidad Nacional de Colombia, COLOMBIA GeoDa Consulting d.o.o.,

CROATIA Geokon-Zagreb, CROATIA

University of Rijeka, CROATIA University of Zagreb, CROATIA

CDV - Transport Research Centre, CZECH REPUBLIC

Charles University, CZECH REPUBLIC

Czech Technical University, CZECH REPUBLIC

GEODRILL s.r.o., CZECH REPUBLIC

Institute of Rock Structure and Mechanics, CAS, CZECH REPUBLIC

Sohag University, Egypt

BRGM, FRANCE

CNRS - EOST UMS 830, FRANCE

IRIS Instuments, FRANCE Terre Armee, FRANCE TP GEO, FRANCE

Bundesanstalt für Geowissenschaften und Rohstoffe, GERMANY

Federal Highway Research Institute, GERMANY

Federal Institute for Geosciences and Natural Resources,

GERMANY

Friedrich Schiller University Jena, **GERMANY**

GFZ Potsdam German Research Centre for Geosciences, GERMANY

HUESKER Synthetic GmbH,

GERMANY

RWTH Aachen University, **GERMANY** Springer-Verlag, GERMANY University of Vechta, GERMANY University of Würzburg, **GERMANY Greendev Associates** International Limited, GHANA MTA CSFK GGI, HUNGARY Amrita University, INDIA **CSIR-Central Building Research** Institute (CBRI), INDIA Gautam Buddha University, INDIA National Institute of Hydrology, INDIA VIT University, INDIA Universitas Gadjah Mada, **INDONESIA** Indonesian Nasional Agency for Disaster Management, **INDONESIA** Research Center for Geotechnology, Indonesian Institute of Sciences, INDONESIA Universitas Katolik Parahyangan, **INDONESIA** CNR IRPI. ITALY EURAC. ITALY Fondazione CMCC, ITALY GEODATA Engineering S.p.A, ITALY HUESKER SRL, ITALY INGV (Istituto Nazionale di Geofisica e Vulcanologia), ITALY ISPRA, ITALY Joint Research Centre, ITALY Maccaferri Innovation Center Srl, **ITALY** NHAZCA S.r.l., ITALY Politecnico di Milano, ITALY Politecnico di Torino, ITALY Protezione Civile, ITALY RFI S.p.A, ITALY S.G.A. Studio Geologi Associati, ITALY Sapienza University of Rome, ITALY Scientific and Technological Attaché, ITALY

TRE ALTAMIRA, ITALY

Basilicata, ITALY

Universita degli Studi della

Universita degli Studi della Campania Luigi Vanvitelli, ITALY Universita degli Studi di Modena e Reggio Emilia, ITALY Universitàdegli Studi di Napoli Federico II, ITALY Universita degli Studi di Padova, ITALY Universita degli Studi di Parma, **ITALY** Universita degli Studi di Udine, **ITALY** Universita della Calabria, ITALY University Enna Kore, ITALY University of Brescia, ITALY University of Florence, ITALY University of Milano, ITALY University of Milano - Bicocca, ITALY University of Molise, ITALY University of Pavia, ITALY University of Perugia, ITALY University of Pisa, ITALY University of Salerno, ITALY University of Sannio, ITALY University of Trieste, ITALY Advantechnology Co., Ltd., **JAPAN** Cabinet Office of Japan, JAPAN **Chuden Engineering Consultants** Co., Ltd., JAPAN Chuo Kaihatsu Corporation, JAPAN Embassy of Japan in Slovenia, **JAPAN** Gunma University, JAPAN Hirosaki University, JAPAN International Consortium on Landslides, JAPAN Japan Center for Area Development Research, JAPAN Japan Landslide Society, JAPAN Kochi University, JAPAN Kyoto University, JAPAN National Institute for Land and Infrastructure Management, **JAPAN** National Institute of Occupational Safety and Health, **JAPAN** National Research Institute of

Fire and Disaster, JAPAN

Osaka University, JAPAN

Shimane University, JAPAN Shizuoka University, JAPAN Tokyo University of Agriculture and Technology, JAPAN Toyama Prefectural University, **JAPAN** Yokohama National University, **JAPAN** Korea Institute of Geoscience and Mineral Resources, REPUBLIC OF KOREA National Institute of Forest Science, REPUBLIC OF KOREA Pukyong National University, REPUBLIC OF KOREA Sejong University, REPUBLIC OF **KOREA** Seoul National University, REPUBLIC OF KOREA Gangneung-Wonju National University, REPUBLIC OF KOREA Central Asian Institute of Applied Geosciences (CAIAG), KYRGYZ REPUBLIC Institute of Geomechanics and Mining, KAS, KYRGYZ REPUBLIC Lithuanian Geological Survey, LITHUANIA Faculty of Civil Engineering Skopje, REPUBLIC OF MACEDONIA Slope Engineering Branch, MALAYSIA National Autonomous University of Mexico, MEXICO Potosino Institute of Scientific and Technological Research, MEXICO New Conscious Society Nepal, NEPAL REDD Implementation Centre, NEPAL Tribhuvan University, NEPAL Geoconsulting Ltd NZ, NEW **ZEALAND** GNS SCIENCE, NEW ZEALAND Massey University, NEW **ZEALAND** Geological Survey of Norway, NORWAY Norwegian Geotechnical Institute, NORWAY Norwegian Water Resources and Energy Directorate, NORWAY

COMSATS Institute of Information Technology, Pakistan
Institute of Geodesy and

Institute of Geodesy and Geoinformatics, POLAND

Pedagogical University of Cracow, POLAND

Polish Geological Institute-National Research Institute, POLAND

Poltegor-Institute Institute of Opencast Mining, POLAND

Universidade de Lisboa, PORTUGAL

Universitatea din București, ROMANIA

Earth Cryosphere Institute SB RAS, RUSSIAN FEDERATION

JSC Hydroproject Institute, RUSSIAN FEDERATION

Moscow State University, RUSSIAN FEDERATION

Sergeev Institute of Environmental Geoscience RAS, RUSSIAN FEDERATION

Sukachev Institute of Forest SB RAS, RUSSIAN FEDERATION

Tyumen State University, RUSSIAN FEDERATION

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Saudi Geological Survey, SAUDI ARABIA

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State Geological Institute of Dionýz Štúr, SLOVAKIA

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HIDROTEHNIK D.D., SLOVENIA

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Občina Bovec, SLOVENIA

Občina Črna Na Koroškem,

SLOVENIA

Občina Dobje, SLOVENIA

Občina Dobrna, SLOVENIA

Občina Gornji Grad, SLOVENIA

Občina Hrastnik, SLOVENIA

Občina Jesenice, SLOVENIA

Občina Kobarid, SLOVENIA

Občina Laško, SLOVENIA

Občina Mežica, SLOVENIA

Občina Mislinja, SLOVENIA

Občina Nazarje, SLOVENIA

Občina Podčetrtek, SLOVENIA

Občina Podlehnik, SLOVENIA

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Občina Rečica ob Savinji,

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Občina Sevnica, SLOVENIA

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Občina Šentjur, SLOVENIA

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SLOVENIAObčina Šentjur,

SLOVENIA

Občina Šmarje pri Jelšah,

SLOVENIA

Občina Šmartno ob Paki,

SLOVENIA

Občina Šoštanj, SLOVENIA

Občina Tabor, SLOVENIA

Občina Vojnik, SLOVENIA

Občina Vransko, SLOVENIA

Ohžina Zagaria Oh Carri

Občina Zagorje Ob Savi,

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Občina Zreče, SLOVENIA

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CHINESE TAIPEI

National Central University,

CHINESE TAIPEI

National Cheng Kung University,

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National Chi Nan University,

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National Chung Hsing, CHINESE

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National Science and Technology Center for Disaster Reduction,

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Northumbria University, UNITED KINGDOM

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Transport Research Laboratory (TRL), UNITED KINGDOM

University of Leeds, UNITED KINGDOM

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California State University, Fullerton, USA

Reinforced Earth Co, USA

University of Florida, USA

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