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Kyoji Sassa

The Kyoto Landslide Commitment 2020: launched

The Kyoto 2020 Commitment for Global Promotion of Understanding and Reducing Landslide Disaster Risk (Kyoto Landslide Commitment 2020: KLC2020): A Commitment to the ISDR-ICL Sendai 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 Climate Agreement was launched on 5 November 2020 by the adoption of 2020 Kyoto Declaration at the end of its launching session. The KLC 2020 secretariat calls for further signatories to be approved by the General Conference of KLC2020 signatories at the Fifth World Landslide Forum on 2–6 November 2021 in Kyoto, Japan. This article reports the session *without honorific titles of participants*.

Figure 1 is the logo of ICL and the logo of KLC2020. KLC2020 was proposed by the ICL based on the 2006 Tokyo Action Plan. The Memorandum of Understanding to promote the Action Plan was exchanged between the ICL and each of the ICL supporting organizations (UNESCO, WMO, FAO, UNDRR, UNU, ISC, and WFEO) in 2006. IPL and KLC2020 will continue to 2030 and beyond—this is symbolized by an arrow.

The launching session of Kyoto Landslide Commitment 2020

Date: 23:00–1:00 PST (4–5 Nov.), 8:00–10:00 CET, 16:00–18:00 JST on 5 November 2020 (Thursday)

1. 8:00–8:25 CET identification and recognition of each participating signatory as a KLC2020 partner

Kyoji Sassa chaired this session as Secretary-General of KLC2020 Secretariat.

Eighty-six persons from 90 signatory organizations attended this session. All participants attending this session briefly introduced themselves through video.

2. 8:30–9:05 CET greeting message from 10 ICL supporting organizations

David Malone delivered the opening remarks of the greeting session as Chair of the General Conference of KLC2020 signatories. Then, Qunli Han (Chair of the Global Promotion

Committee of the International Programme on Landslides) proceeded this session as the co-chair. Ten ICL supporting organizations presented their supporting messages. Pre-recorded video messages from Mami Mizutori (UNDRR) and Petteri Taalas (WMO) were presented while other eight persons directly addressed the attendees through virtual/online platform. All ICL members have appreciated the strong supports from those ten global stakeholders.

Chairs: David Malone (Under-Secretary-General of the United Nations) and Qunli Han (Executive Director of Integrated Research on Disaster Reduction)

Greeting persons:

1. Mami Mizutori (United Nations Special Representative of the Secretary-General for Disaster Risk Reduction) (video message)
2. Petteri Taalas (Secretary General of WMO) (video message)
3. Hiroto Mitsugi (Assistant Director-General of FAO)
4. Miguel Clusener-Godt (Director, Division of Ecological and Earth Sciences of UNESCO)
5. Junichi Kanbara (Sabo Planning Coordinator, Ministry of Land, Infrastructure, Transport and Tourism, Government of Japan)
6. Kaoru Takara (Dean, Graduate School of Advanced Integrated Studies in Human Survivability, Kyoto University)
7. Daya Reddy (President, International Science Council)
8. Gong Ke (President, World Federation of Engineering Organizations)
9. Kathryn Whaler (President, International Union of Geodesy and Geophysics)
10. Qiuming Cheng (Former President, International Union of Geological Sciences)

3. 9:05–9:50 CET: Panel discussion

This session was opened by Matjaž Mikoš as the chair of the session, and the discussion part was moderated by Badaoui Rouhban.

Chair: Matjaž Mikoš (Co-Chair, Global Promotion Committee of IPL/Chair of WLF4, 2017)

Moderator: Badaoui Rouhban (Advisor, the International Programme on Landslides: IPL)



**Kyoto Landslide
 COMMITMENT 2020**

Fig. 1 Logos of the ICL and the Kyoto Landslide Commitment 2020

Keynote speaker: Kyoji Sassa (Secretary General of ICL) presented the outline of KLC2020 and talked about the Landslide Research Frontier.

Panelists:

1. Paola Albrito (Chief of Branch, Intergovernmental processes, Interagency cooperation and Partnerships, UNDRR)
2. Soichiro Yasukawa (Programme Specialist on Disaster Risk Reduction, UNESCO)
3. Peter Bobrowsky (ICL President, Geological Survey of Canada)
4. Dwikorita Karnawati (Head of the Agency for Meteorology, Climatology and Geophysics of the Republic of Indonesia)
5. Beena Ajmera (Assistant Professor, North Dakota State University, the youngest signatory of KLC2020)

Discussion from floor was called by the moderator.

John LaBrecque (Chair of the Commission on Geophysical Risk and Sustainability of IUGG) and Fawu Wang (President, International Consortium on Geo-disaster Reduction) presented their comments.

At the end of this session, Mikoš passed the floor to Sassa for declaring the launching of KLC2020.

4. 9:50–10:00 CET: Adoption of 2020 Kyoto Declaration “Launching of KLC2020”

Kyoji Sassa recalled the 2005 Letter of Intent (1st step), the 2006 Tokyo Action Plan (2nd step), the Sendai Landslide Partnership 2015–2025 (3rd step), and the First Joint signing of KLC2020 by 57 signatories at UNESCO, 2019 (4th step). Then, he called the adoption of the 2020 Kyoto Declaration to all participating signatories.

On your behalf, on behalf of the ICL, and on behalf of all the signatories of the KLC2020, I am pleased and I feel honored to formally declare the Launching today of KLC2020, namely, the Kyoto 2020 Commitment for Global Promotion of Understanding and Reducing Landslide Disaster Risk. KLC2020 strengthens and expands the Sendai Landslide Partnerships 2015–2025, and contributes to the Sendai Framework for Disaster Risk Reduction 2015–2030, to the 2030 Agenda Sustainable Development Goals, and to the Paris Agreement on Climate Change. Furthermore, I am equally pleased and honored to announce, on your behalf as well as on behalf of all the participating signatories, the Establishment today of KLC2020 Secretariat. This Secretariat will be the custodian of the Commitment.

The Secretariat prepared the 2020 Kyoto Declaration “Launching of Kyoto Landslide Commitment 2020” which was approved by KLC2020 First meeting on 7 September 2020 and reported to all participants at the KLC2020 Rehearsal on 3 October 2020.

Dear All participants of KLC2020 Launching Session,

At the end of this session, let us jointly and formally adopt the 2020 Kyoto Declaration “Launching of Kyoto Landslide Commitment 2020”. You can see the document in the screen.

Those who approve the adoption of the 2020 Kyoto Declaration are requested to clap hands by zoom reactions for the launching of KLC2020. Please clap your hand by zoom reaction now.

The 2020 Kyoto Declaration “Launching of Kyoto Landslide Commitment 2020” was unanimously approved by Hand Clapping by all participating signatories. KLC2020 was thus launched.

<The Chair banged the ICL gavel as the declaration decision>

Then, the floor was passed to the incoming ICL President (1 January 2021 to 31 December 2023), Nicola Casagli.

Closing remarks by Nicola Casagli

As president-elect of the International Consortium on Landslides, I would like to thank everyone for participating in this important launching ceremony of the Kyoto 2020 Landslide Commitment (KLC2020).

I think that this is a major milestone for our consortium and for the entire landslide community.

The KLC2020 supports the implementation, follow-up and review of the Sendai Framework, the 2030 UN Agenda for Sustainable Development, the New Urban Agenda and the Paris Climate Agreement as it addresses the adverse effects of climate change.

The KLC2020 will capitalize the activities promoted by the Sendai Landslide Partnerships 2015–2025 for Global Promotion of Understanding and Reducing Landslide Disaster Risk’ that was proposed by International Consortium on Landslides (ICL) during the 3rd World Conference on Disaster Risk Reduction (WCDRR) in Sendai, Japan in 2015. The Sendai partnership was signed by 22 United Nations, global and national stakeholders.

Today I’m pleased to acknowledge the great success of KLC2020 initiative, and I want to thank all the signatory organizations for their support and commitment. Up today, the KLC2020 has been signed by about 90 institutions among governmental and international organizations, ICL supporting organizations, ICL full members, ICL associate members and ICL supporters from 23 countries in 3 continents.

All KLC2020 partners are organizations who strongly contribute to understand and reduce landslide disaster risk and who will share their expertise and knowledge in order to build a common platform for sharing ideas, good practices and policies with key actors and stakeholders concerned with landslide risk at the global level.

The KLC2020 proposes 10 priority actions dealing with research and capacity building activities. KLC 2020 is planned to continue further to 2030, it will be examined by the General Conference of KLC2020 signatory organizations at each World Landslide Forum every 3 years, where priority actions will be updated, and new partners will be invited thus making the KLC2020 as a living and growing and up-to-date initiative.

I’m confident that this initiative will continue the proficient activities and will make benefit of the results of the Sendai Partnership and for this I thank the ICL/IPL community for the its continuous effort.

As ICL incoming president I strongly encourage all the KLC2020 partners to continue this effort, to better understand KLC2020 priority actions and identify which ones to support and to promote and I envisage cooperation among KLC2020 partners in order to define a common platform for landslide risk reduction on a global scale.

2020 Kyoto Declaration “Launching of Kyoto Landslide Commitment 2020”

Landslide disasters are the result of hazardous movement of soils and rocks which claim human lives and destroy natural/cultural heritages, and facilities of high societal values. Landslides are triggered by rainfalls, earthquakes, anthropogenic activities, and hydrological impact by changing climate and global warming. Progress of urbanization and regional development continue to intensify the risk of landslides in many landslide-prone areas. Landslide disaster risk reduction is a globally important objective in all countries/regions where people living near mountains and on slopes are exposed to landslides.

The International Consortium on Landslides (ICL) proposed the “ISDR-ICL Sendai Partnerships 2015–2025 for Global Promotion of Understanding and Reducing Landslide Disaster Risk” during the 3rd World Conference on Disaster Risk Reduction (WCDRR) in Sendai, Japan, 2015. The Sendai Landslide Partnerships 2015–2025 was signed by 22 United Nations, global and national stakeholders. Tangible results and benefits of activities carried out by these stakeholders in 2015–2020 are featured in journal and book publications as well as conference proceedings. In Ljubljana in 2017, the partners agreed to expand the global partnerships to 2030 and beyond. Subsequently, the “Kyoto 2020 Commitment for Global Promotion of Understanding and Reducing Landslide Disaster Risk” (KLC2020) was decided and developed. In Paris, in 2019, the Commitment was signed by a first group of 57 participants.

On 5 November 2020, at the online/virtual 2020 Kyoto meeting, all participants from 90 signatory organizations unanimously agreed on and declared the launching of the Kyoto Landslide Commitment 2020. They also agreed to the following basic principles for the management of KLC2020:

Principles for the management of KLC2020:

1. A Secretariat for the KLC2020 is established within ICL Secretariat, Kyoto, Japan.
2. The composition of fellow partners of KLC2020 and the priority actions are reviewed and updated at the General Conference of KLC2020 signatory organizations at the triennial World Landslide Forum.

3. The co-chairs of the General Conference of KLC2020 are nominated at a KLC2020 session prior to the coming General Conference.

Date: 5 November 2020

Place: Kyoto, Japan

Greeting messages

G1. Greetings from Mami Mizutori, United Nations Special Representative of the Secretary-General for Disaster Risk Reduction

Thank you for the opportunity to speak to you as we launch the Kyoto Landslide Commitment 2020.

Landslides are a serious geological hazard, and, unfortunately, more landslides can be expected as climate change exacerbates rainfall intensity. The long-term trend of the last forty years has seen the number of major recorded extreme weather events almost double, notably floods, storms, landslides and wildfires.

As we are increasingly observing, disaster risk is systemic. Risk is interconnected: a hazard begins in one shape or form and then cascades into another. We see this clearly with landslides: landslides can also generate tsunamis, as Indonesia experienced in 2018.

Globally, landslides cause significant economic loss and many deaths and injuries each year.

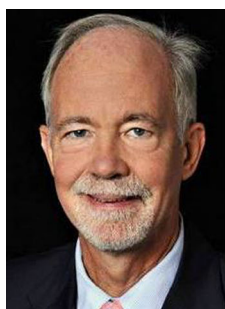
Landslides with high death tolls are often a result of failures in risk governance, poverty, environmental degradation, and failures in land use and the implementation of building codes. Understanding the interrelationships between earth surface processes, ecological systems, and human activity is key to reducing landslide risk.

The Sendai Framework for Disaster Risk Reduction, the global plan to reduce disaster losses adopted in 2015, emphasizes the importance of tackling these risk drivers through improved governance and a better understanding of disaster risk.

One important vehicle for doing that is the Sendai Landslide Partnership 2015–2025 for global promotion of understanding and reduction of landslide risk facilitated by the International Consortium on Landslides.

The Sendai Landslide Partnership helps to provide practical solutions and tools, education and capacity building, to reduce landslide risks.

Photos of the participants from 90 signatories who have adopted 2020 Kyoto Declaration “Launching of Kyoto Landslide Commitment 2020”



Co-chair: David Malone
Under-Secretary-General of the United Nations



Co-chair: Qunli Han
Executive Director of Integrated Research on Disaster Reduction



Secretary-General: Kyoji Sassa KLC2020
Secretariat
Keynote speech

Greeting messages: signatories from ICL supporting organizations



Mami Mizutori
United Nations Special Representative of the Secretary-General for Disaster Risk Reduction



Petteri Taalas Secretary General of WMO



Hiroto Mitsugi
Assistant Director-General of FAO



Miguel Clusener-Godt
Director, Division of Ecological and Earth Sciences of UNESCO



Junichi Kanbara
Sabo Planning Coordinator, Ministry of Land, Infrastructure, Transport and Tourism, Government of Japan



Kaoru Takara
Dean, Graduate School of Advanced Integrated Studies in Human Survivability, Kyoto University



Daya Reddy
President, International Science Council



Gong Ke
President, World Federation of Engineering Organizations



Kathryn Whaler
President, International Union of Geodesy and Geophysics



Qiuming Cheng
Former President, International Union of Geological Sciences

While the 5th World Landslide Forum has been postponed to November 2021 due to COVID-19, it is encouraging that the Kyoto 2020 Commitment for Global Promotion of Understanding and Reducing Landslide Disaster Risk is being launched at this session and has already been signed by a large number of partners.

Successful efforts to reduce disaster losses are a major contribution to achieving the overall 2030 Agenda for Sustainable Development.

UNDRR fully supports the work of the Sendai Landslide Partnerships and ICL. We look forward to meeting you at the 5th World Landslide Forum in November 2021 in Kyoto, Japan.

I wish you a successful time as you gather together today. Thank you for your attention.

G2. Greetings from Petteri Taalas, Secretary-General of World Meteorological Organization

<This message was published in Preface in this issue>

G3. Greeting message from Hiroto Mitsugi, Assistant Director-General, Food and Agriculture Organization of the United Nations

I am honored to contribute my remarks on behalf of the Food and Agriculture Organization of the United Nations (FAO) on the launch of the Kyoto Landslide Commitment 2020.

Building resilient communities and landscapes is an urgent global imperative, never more so than now as the impacts of climate change increase. Communities worldwide, especially those living in watersheds and whose livelihoods depend on these ecosystems, can be particularly vulnerable to hazards of increasing magnitude and frequency.

Landslide management requires a landscape approach, which factors in all aspects of land use and societal needs, from the highest mountains to the coastal plains.

At FAO, we apply a landscape approach, which integrates disaster and climate risk in watershed management and addresses the environmental and socio-economic dimensions of solving the risk. We strive to use local knowledge, integrate physical and social sciences, and analyze the vulnerability and capacities of various stakeholders to build the resilience of communities at risk to landslides.

Panel discussion: chairs, panelists, and closure



Chair :
Matjaž Mikoš Co-Chair,
Global Promotion
Committee of IPL / Chair
of WLF4, 2017



Moderator:
Badaoui Rouhban
Advisor, the International
Programme on
Landslides (IPL)



Paola Albrito
Chief of Branch,
Intergovernmental
processes, Interagency
cooperation and
Partnerships, UNDRR



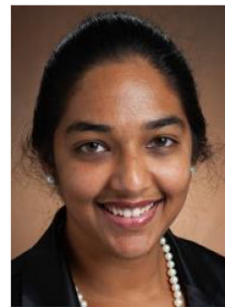
Soichiro Yasukawa
Programme Specialist on
Disaster Risk Reduction,
UNESCO



Peter Bobrowsky
ICL President,
Geological Survey of
Canada



Dwikorita Karnawati
Head of the Agency for
Meteorology,
Climatology and
Geophysics of the
Republic of Indonesia



Beena Ajmera
North Dakota State
University, the youngest
signatory of KLC2020



Nicola Casagli
Closing remark
Incoming ICL President

FAO co-leads with UNEP the implementation of the UN Decade of Ecosystem Restoration 2021-2030. The implementation strategy for the Decade defines ecosystem restoration as “encompassing a wide continuum of practices that contribute to conserving and repairing damaged ecosystems”.

The need for restoration is particularly demonstrated in terrestrial and freshwater ecosystems. Land degradation is costing over 10% of the annual global gross product in loss of ecosystem services. Addressing landslide and other geohazards needs to be considered integral to the ecosystem. In addition, healthy ecosystems are at the heart of a green recovery from the COVID-19 pandemic which we all experienced this year. We need to change our way of interacting with the nature to avoid future pandemics and climate change impacts.

To conclude, I would like to reiterate FAO’s commitment to the achievement of SDGs through these activities.

Thank you very much.

G4. Greetings from Miguel Clusener-Godt, Director, Division of Ecological and Earth Sciences of UNESCO

It gives me great pleasure to address you all at the launching session of Kyoto Landslide Commitment 2020.

I greet all ICL members, with particular recognition of Professor Kyoji Sassa, the founder of ICL. Without Professor Sassa’s long, continuous and dedicated commitment and energy, ICL would not be where they are now.

In shaping contribution to global agendas such as the Sendai Framework, for DRR, the Sustainable Development Goals, the Paris Climate Agreement and the New Urban Agenda, UNESCO commits to greater integration in its approach to support its Member States in risk management, between its different mandates and disciplines and with relevant partners.

The ICL is a key partner for UNESCO in the field of landslide science and knowledge. The ICL- IPL family provides a unique scientific expertise in landslide knowledge and has an important role to play in the shared efforts to assess and reduce landslide risk. The Organization’s support to the Consortium is unwavering. The two organizations have a long history of cooperation and partnership since ICL was established in 2002 by UNESCO’s International Geoscience Programme. Since then, UNESCO has been associated with

Other participants in the KLC2020 launching session on 5 November 2020



Yuki Matsuoka,
UNDRR



Fausto Guzzetti, Italy



Walter J. Ammann,
GRF Davos



Rafiq Azzam,
IAEG



Chungsik Yoo,
IGS



John LaBrecque,
IUGG



Julian Kwan, Hong
Kong SAR, China



Veronica Tofani,
Italy



Young-Suk SONG,
Korea



Sabid Zekan, Bosnia and
Herzegovina



Michael T. Hendry,
Canada



Wei Shan,
China



Changdong Li,
China



Lijun Su,
China



Fawu Wang,
China



Charles W. W. Ng, Hong
Kong SAR, China



Clarence Choi, Hong
Kong SAR, China



Aiguo Xing,
China



Snjezana Mihalić
Arbanas, Croatia



Vít Vilimek, Czech
Republic



Josef Stemberk, Czech
Republic



Hauke Zachert,
Germany



Lidia Torres Bernhard ,
Honduras



Munawar,
Indonesia



Paulus P. Rahardjo,
Indonesia



Francesca Bozzano,
Italy



Giuseppe Mandrone,
Italy



Giovanna Capparelli,
Italy



Paola Reichenbach, Italy



Daniele Spizzichino
Italy



Lorenzo Petronio, Italy



Hiroshi Yagi,
Japan



Irasema Alcántara
-Ayala, Mexico



Biljana Abolmasov,
Serbia



Mateja Jemec Aulfič,
Slovenia



Ray-Shyan Wu, Chinese
Taipei



Peeranan
Towashiraporn, Thailand



Benjaporn Chakranon,
Thailand



Iurii Kaliukh, Ukraine



Binod Tiwari,
USA



Xuanmei Fan,
China



Zdeněk Venera,
Czech Republic



Michele Calvello, Italy



Claudia Meisina, Italy



Netra Prakash Bhandary,
Japan



Michel Jaboyedoff,
Switzerland



Matthias Twardzik, Italy



Shinro ABE,
Japan



Hiroaki Tauchi, Japan



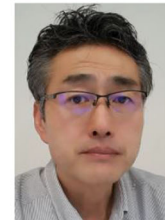
Maki Yano,
Japan



Keisuke Ozone, Japan



Taketoshi Marui, Japan



Takayuki Mayumi,
Japan



Keisuke Takimoto,
Japan



Kyo Fujiwara,
Japan



Salvano Briceno,
ICL



Satoru Nishikawa,
ICL



Kazuo Konagai,
ICL



Željko Arbanas,
ICL



Khang Dang,
ICL

many of ICL activities including hosting the ICL-IPL annual meeting every two years in UNESCO Headquarters in Paris.

Today, we launch the Kyoto 2020 Commitment for global promotion of understanding and reducing landslide disaster risk with the full commitment of the ICL family.

Kyoto 2020 Commitment is the result of the continuous effort of the implementation of the Sendai Partnerships 2015-2025. The latest findings and issues have been added over the Sendai Partnerships in the Kyoto 2020 Commitment such as submarine landslide which was the big lesson from the submarine landslide, that caused sever tsunami in Palu, Indonesia, in 2018.

In my capacity of UNESCO's focal point for Disaster Risk Reduction and Resilience, I look forward to enhance collaboration between UNESCO and ICL in future activities and undertakings.

G5. Greetings from Junichi Kanbara, Coordinator of Ministry of Land Infrastructure, Transport and Tourism, Japan

afternoon, ladies and gentlemen/afternoon, ladies and gentlemen. I am KANBARA Junichi, Director for Sabo Planning Coordination of MLIT.

On behalf of MLIT and Japanese Government, I would like to express my sincere thanks for the ICL, many participants and local organizing committee of this conference, as well as for the launch of KCL2020.

In Japan, national government, including MLIT, prefectural and municipal office, research institutes, consultant and construction companies, local communities and residents are cooperating to mitigate the damage of frequent landslide disasters.

MLIT administrate for constructing structural measures, establishing nationwide early warning dissemination system and promoting residents' evacuation. In addition, we also published technical standards for survey, planning, design, construction, maintenance, and conduct technical research and development by ourselves. As well as all participants of this conference, now MLIT face many difficulties such as climate change, population decline, COVID-19 pandemic and the use of new technologies, for example, digital transformation technology.

Even today, mitigation of landslide disasters is one of the major missions of MLIT for socio-economic sustainable development. As I said, for a long time, we have been accumulating and using experience and technical knowledge against landslide disaster as the responsibility of the government in disaster-prone country. We will continue to share Japan's experience and knowledge for international cooperation.

As you know, global needs to mitigate landslide disasters is really increasing. We hope KCL2020 will have fruitful results for the sake of the peace of people suffering from landslides around the world.

G6. Greetings from Kaoru Takara, Dean of Graduate School of Advanced Studies in Human Survivability, Kyoto University

It is my pleasure and honor to deliver a few words at the occasion of this important event as a representative from Kyoto University. Actually, Kyoto University has been supporting the activities of the International Consortium on Landslides (ICL) for about twenty years since its establishment in Kyoto in 2002.

The main activity in terms of Kyoto University is a UNITWIN (University Twinning and Networking) programme since 2003. The theme of this UNITWIN programme was changed from the

initial Landslide Risk Mitigation to "UNITWIN-UNESCO/KU/ICL Landslide, Earthquake and Water-Related Disaster Risk Management for Society and the Environment" with a broader scope. The Programme has contributed to the global promotion of landslide, earthquake and water-related disaster mitigation studies, as well as graduate school education in the university.

The leader of ICL, Dr. Kyoji Sassa is a Prof. Emeritus of Kyoto University. Prof. Sassa and I have been serving as the two coordinators of the UNITWIN Cooperation Programme. Kyoto University has offered UNITWIN headquarters building in Uji Campus and an UNITWIN laboratory in the Main Campus. With these facilities, the ICL made remarkable achievements in publishing an international journal "Landslides", of which 2019 impact factor IF = 4.708, and in capacity building at the laboratory for educating Japanese and international students, producing a number of Ph.D.'s from Kyoto University.

We are very pleased to join the Sendai Partnerships 2015-2025. Prof. Juichi Yamagiwa, President of Kyoto University signed the Kyoto Landslide Commitment 2020 to create a wider, stable and long-term global alliance as the first signatory in September 2019. The Fifth World Landslide Forum will be organized in Kyoto, Japan in 2021.

Kyoto University and Kyoto City are the cradle of ICL. We are very willing to contribute to the success of the Kyoto Landslide Commitment 2020 through the organization of the Fifth World Landslide Forum in Kyoto, Japan.

G7. Greetings from Daya Reddy, President, International Science Council

It is a pleasure and an honour to participate in the launch ceremony for the Kyoto Landslide Commitment 2020, on behalf of the International Science Council and as one of a set of esteemed partner organizations.

The Council counts among its members academies, science councils and similar bodies from more than 140 countries, as well as over 40 disciplinary international scientific unions covering the range of natural and social sciences. The vision of the ISC is of science as a global public good, and its mission is to act as the global voice for science.

The ISC uses its considerable convening power to mobilize science for policy and public action on issues of global concern. These issues are to a large extent defined through the range of global agendas, including Agenda 2030 (the SDGs), the Sendai Framework for Disaster Risk Reduction, the Paris Climate Agreement, and the New Urban Agenda.

Landslides are a key example of a disaster risk that cuts across these agendas, necessitating highly integrated, transdisciplinary approaches, close scientific cooperation across national and regional boundaries, and effective approaches to policy advice, in order to develop better mitigation interventions. To this end the ISC pursues many of its activities in partnerships with a range of regional and global bodies.

For example, the ISC in partnership with the UN Office for Disaster Risk Reduction (UNDRR) launched an ambitious project on identifying the full scope of all hazards relevant to the Sendai Framework and the scientific definitions of these hazards. This has led to a detailed technical report and key recommendations prepared with the support of Integrated Research on Disaster Risk programme (IRDR), a programme co-sponsored by the ISC and UNDRR.

The International Science Council reaffirms its strong support of collaborative efforts to address the priority actions of the Kyoto Landslide Commitment.

G8. Greetings from Gong Ke, President of the World Federation of Engineering Organizations (WFEO)

Dear colleagues,

I am greatly honored to represent the global community of engineers at the 2020 Session of the Kyoto Landslide Commitment.

The World Federation of Engineering Organizations has been working closely on the urgent issues relating to Disaster Risks Management in general, through its dedicated Committee on Disaster Risk Management (CDRM), hosted by the Science Council of Japan and the Japan Federation of Engineering Societies, from 2009 to 2017, then the Committee has been hosted by the Peruvian Council of Engineers.

The work of this committee is structured in task groups, on

- Water and climate-related Disaster Risk Management led by Japan;
- Earthquake and tsunami-related Disaster Risk Management, led by Peru; and
- Capacity Building for Disaster Risk Management, led by India.

WFEO is committed to helping achieve the UN Sustainable Development Goals through engineering, and through its Disaster Risk Management Committee. We target SDG1 (no poverty), 13 (climate action), 17 (partnerships) and most importantly SDG11 (sustainable cities and communities).

WFEO has also launched an important cooperative project with the World Geospatial International Council and UN-GGIM. We have released a white paper, providing insights and data about the value of Integrated Geospatial and Building Information Modelling (BIM) solutions to advance the SDGs, with a specific focus on resilient infrastructure, along with an overview of the geospatial and BIM technology ecosystem.

The paper includes several case studies on resilient cities and infrastructures management through geospatial 3D modelling, in particular in earthquake contexts such as in Gorkha and Nepal.

The Kyoto Landslide Commitment responds to this challenge very well, WFEO hereby reaffirms our commitment to working with you all together to strive for reducing the damage of landslides and other natural disasters so as to build a safe and resilient community.

Thank you.

G9. Greetings from Kathy Whaler, President of International Union of Geodesy and Geophysics (IUGG)

Greetings at the 5th World Landslide Forum. The International Union of Geodesy and Geophysics (IUGG) values its participation in the series of International World Landslide Fora organized by the International Consortium on Landslides. As a signatory of the Kyoto Landslide Commitment 2020, the IUGG pledges the activities of its eight associations and six commissions to the implementation of the Sendai Framework for disaster risk reduction.

The IUGG encourages activities to improve the observation and understanding of Earth System dynamics essential to the successful implementation of the Sendai Framework. For example, the geophysical community developed seismic and satellite synthetic aperture radar applications for the wide area detection of

precursory deformation, the measurement of debris flows and the estimation of earthquake damage that can guide first responders and recovery efforts. Another example is the ability of regional geodetic networks to estimate finite fault models that provide more accurate predictions of tsunamis. These same GNSS networks can measure the ionosphere's response to land and sea surface deformation, thereby providing a means of detecting the development and propagation of tsunamis and validating the predictions derived from surface deformation. Rapid analysis algorithms, broadband communications, and cloud computing will improve early warning of impending landslides and tsunamis. These advances can provide local communities with a better awareness of changes in disaster risk, and guidance in disaster preparedness and response. Landslides can also be a component within a web of cascading hazards. This places emphasis upon the need for multi- and trans-disciplinary contributions to understanding landslide risk posed by rainfall, earthquakes, volcanic eruptions, tsunami, and climate change that all contribute to the goals of the KLC2020. Such collaboration is essential to achieving the vision of the Sendai Framework and captured within KLC2020, and IUGG will continue to play its part.

G10. Greetings from Qiuming Cheng, Former President of the International Union of Geological Sciences (IUGS)

Good afternoon Ladies and Gentlemen,

I feel honored to participate in today's meeting. On behalf of the International Union of Geological Sciences, I would like to express my warm congratulations on the successful launch of KLC2020.

The development process of human society is not only the history of using the earth's resources to meet the societal needs, but also the process of resisting and fighting various disasters to survive. Human civilization has recorded countless natural disasters such as earthquakes, tsunamis, volcanic eruptions, landslides, floods as well as severe weather. These disasters have caused huge losses in the human lives and the tremendous societal and economic impacts. Disaster Risk Reduction has rapidly become a serious and critical issue concerned with governments of all countries. On the other hand, disaster risk reduction is a complex issue of trans-disciplinary nature which needs a broad international collaboration and cooperation on sharing of data, experiences, knowledge, technology as well as policy and geo-ethnics. Landslides of a wide range of ground movements of geomaterials are triggered by natural processes such as heavy rainfalls and earthquakes and by slope cutting involved in various man-made constructions. Landslides like many other types of natural hazards have the potential to impact many regions of the world. Landslides risk reduction is closely related to the UN 2030 Sustainable Development Goals (SDGs).

International Union of Geological Sciences (IUGS) is an ISC affiliated international UNION which represents 123 national and regional adhering members and 58 Affiliated Members of International Associations. IUGS aims to promote development of the Earth sciences through the support of broad-based scientific studies relevant to the entire Earth system; including preserving Earth's natural environment, using all-natural resources and improving the prosperity of nations and the quality of human life; and to strengthen public awareness of geological sciences and geological education. IUGS covers a complete spectra of solid

earth sciences many of which are associated with Disaster Risk Reduction especially geohazards originated disasters like landslides.

Understanding and reducing landslides disasters poses a big challenge and huge opportunities for international collaboration. We should make full use of relevant earth science and engineering technology as well as modern digital technologies. I believe the successful launch of the KLC2020 will facilitate international scientific cooperation and public participation in reducing landslides risks.

IUGS will continue to promote and to be actively engaged in the KLC2020.

Thank you for your attention!

Keynote speech “Kyoto Landslide Commitment 2020 and Landslide Research Frontier”

Kyoji Sassa, Secretary General of ICL and KLC2020 Secretariat

The five steps of the Kyoto Landslide Commitment 2020 were reviewed from 2005 to 2020 in the first part.

The First Step: The initiative to create a new global and long-term international platform on Landslides started from the Second World Conference on Disaster Reduction in Kobe, Japan in 2005. The ICL organized a thematic session on the International Programme on Landslides (IPL). It was chaired by Hans van Ginkel (UN-Under-Secretary General and Rector of UNU) with opening remarks by Koichiro Matsuura (Director-General of UNESCO), Michel Jarraud (Secretary General of WMO), Salvano Briceno (Director of UN/ISDR) and Director of the Disaster Prevention Research Institute of Kyoto University. In this session, “**2005 Letter of Intent**” which aims to provide a platform in research and learning on ‘Integrated Earth system risk analysis and sustainable disaster management was adopted and signed by UNESCO, WMO, FAO, UNDRR, UNU, ISC and WFE0 within 2005.

The Second step: A Round table discussion toward a dynamic global network of International Programme on Landslides (IPL) was organized at the UNU headquarters in Tokyo in 2006. **2006 Tokyo Action Plan** was jointly adopted. To promote the Plan, MoU was exchanged between ICL and each of global stakeholders (UNESCO, WMO, FAO, UNDRR, UNU, ISC and WFE0) in 2006. This MOU has no time limitation.

The Third step: ISDR-ICL Sendai Landslide Partnerships 2015-2025 (renamed as Sendai Landslide Partnerships) was proposed by ICL and adopted in a session of “Underlying risk factors” of 3rd WCDRR on 16 March 2015. It was signed by Margareta Wahlström (United Nations Special Representative of the Secretary-General for Disaster Risk Reduction) and other leaders of 16 UN, International and national organizations on the day in Sendai, Japan.

The Fourth Step (from WLF4 2017 to the first signing of KLC2020 by 57 Signatories at UNESCO, 2019): The Sendai Landslide Partnerships 2015-2025 is very successful to promote the publication of progress of landslide science and technology by the International journal “*Landslides*” monthly, two volumes of ISDR-ICL Landslide Interactive Teaching tools, and five volumes of full color books “Advancing Culture of Living with Landslides”, and the organization of the Fourth World Landslide Forum (WLF4) in Ljubljana, Slovenia in 2017. ICL community strongly concerned the loss of global framework for landslide disaster risk

reduction after the termination of Sendai Partnerships in 2025. The participants of WLF4 adopted the 2017 Ljubljana Declaration to establish a new long-term global framework “Kyoto 2020 Commitment for global promotion of understanding and reducing landslide disaster risk (KLC2020)” at the Fifth World Landslide Forum in Kyoto in 2020. The KLC2020 was examined and refined until 2019 ICL-IPL Conference. The final draft of KLC2020 was approved and immediately signed by 57 signatories on 18 September 2019 during the Conference held at the UNESCO headquarters in Paris.

The Fifth Step: The Fifth World Landslide Conference on 2-6 November 2020 was postponed to 2-6 November 2021 due to COVID-19. However, 2020 ICL-IPL Conference was organized by online virtual conference including the launching session of Kyoto Landslide Commitment. The ICL called potential KLC2020 organizations to sign KLC2020 by 5 September 2020. 87 organizations signed KLC2020 by the day. The ICL and the GPC/IPL organized the First Session of KLC2020 signatories on 7 September 2020 and decided the following:

- The final version of the 2020 Kyoto Declaration “Launching of Kyoto Landslide Commitment 2020” was agreed and will be declared on 5 November 2020.
- KLC2020 General Conference (Co-Chairs: David M. Malone and Peter Bobrowsky) and KLC2020 Secretariat (Secretary-General: Kyoji Sassa) were established.
- The composition of fellow partners and priority actions of KLC2020 will be reviewed and updated at the General Conference at the triennial World Landslide Forum.

The Declaration of Launching of KLC2020 will be adopted today by the approvals from all participants at the end of this launching session.

As an example of Landslide Research Frontier, the recent progress of hazard assessment technology for the landslide induced tsunamis conducted by the ICL from 2016-2020 was reported.

A new method (LS-Tsunami) to assess the earthquake-induced landslide motion using the measured landslide dynamics parameters, and assess the resulting landslide-tsunami motion. The method was applied for the 1792 landslide and tsunami disaster in the Unzen volcano and Ariake sea killing 15,153 persons (it is the largest well recorded landslide-induced tsunami disaster). The simulation by this method well reproduced the well recorded tsunami disaster around Ariake sea.

Mega earthquake along the Nankai Trough is a pressing risk in Japan. The Nankai Trough extends to the Suruga bay. Within the Suruga bay, a characteristic landslide topography (called as Senoumi-stone flower sea) is found. The ICL tested the volcanic ash layer cored at the bottom of landslide deposit (around 200 m below the sea floor by IODP drilling:COO18). Giving the tested and measured landslide dynamics parameters into LS-Tsunami and seismic wave of 2011 Tohoku earthquake wave, we could estimate the motion of this mega submarine landslides. This mega slide is close to the coastal line of Yaizu city. Because of sharp head scarp topography of the previous landslide, a retrogressive landslide involving the coast is likely occur. Then, the initiation and motion of this retrogressive landslide and this

landslide-induced tsunamis motion was simulated. The simulation result presented the section of landslide and tsunami along the central line, and also the tsunami wave propagation in and around Suruga bay. As the result, a risk of the maximum 30

meter above the ground is estimated in a coastal city around the Suruga bay. The video motion of landslide and tsunami wave along the central section and also tsunami wave propagation around the Suruga bay was presented.

90 Signatories of Kyoto Landslide Commitment 2020

No.	Signatories	Position/organization	Countries/regions/int. org	Date of signature
Management of Kyoto Landslide Commitment 2020				
1	David Malone	Chair, KLC2020 General Conference	UNU	05/09/2020
2	Kyoji Sassa	Secretary-General, KLC2020 Secretariat	ICL	05/09/2020
Host organization				
1	Peter Bobrowsky	President, International Consortium on Landslides	ICL	18/09/2019
ICL supporting organizations and other partners from governmental and international organizations				
1	Petteri Taalas	Secretary-General, WMO	WMO	04/11/2020
2	Miguel Clusener-Godt	Director, Division of Ecological and Earth Sciences, UNESCO	UNESCO	10/09/2019
3	Paola Albrito	Chief of Branch, Intergovernmental processes, Interagency cooperation and Partnerships, UNDRR	UNDRR	07/09/2020
4	Taikan Oki	Senior Vice-Rector, United Nations University	UNU	05/09/2019
5	Jacques de Méreuil	Executive Director, World Federation of Engineering Organizations	WFEO	18/09/2019
6	Qunli Han	Executive Director, Integrated Research on Disaster Risk	IRDR	18/09/2019
7	Qiuming Cheng	President, International Union of Geological Sciences	IUGS	02/02/2020
8	Kathy Whaler	President, International Union of Geodesy and Geophysics	IUGG	18/08/2020
9	Daya Reddy	President, International Science Council	ISC	01/09/2020
10	Juichi Yamagiwa	President, Kyoto University	Japan	18/09/2019
11	Akifumi Nakao	Director, International Cooperation Division, Disaster Management Bureau, Cabinet Office, Government of Japan	Japan	15/01/2020
12	Masaru Kunitomo	Director, Sabo Planning Coordination, Sabo Planning Division, Ministry of Land Infrastructure, Transport and Tourism	Japan	18/09/2019
13	Tomohiro Saeki	Head, Forest Disaster Prevention and Restoration Office, Forestry Agency, Ministry of Agriculture, Forestry and Fisheries	Japan	18/03/2020
14	Kenichiro Saito	Director, Office for Disaster Reduction Research Ministry of Education, Culture, Sports, Science and Technology	Japan	01/08/2020
15	Angelo Borrelli	Head, National Civil Protection Department, Italian Presidency of the Council of Ministers	Italy	18/09/2019
16	Darko But	Director General, the Administration for Civil Protection and Disaster Relief of the Republic of Slovenia	Slovenia	18/09/2019
17	Walter J. Ammann	CEO & President, Global Risk Forum GRF Davos	GRF Davos	18/09/2019
18	Rafiq Azzam		IAEG	01/10/2019

		President, International Association for Engineering Geology and the Environment		
19	Nathalie Touze	Vice-President, International Geosynthetics Society	IGS	18/09/2019
ICL supporting organizations as well as ICL full members				
1	Julian SH Kwan	Geotechnical Engineering Office, Civil Engineering and Development Department, the Government of Hong Kong SAR	Hong Kong SAR, China	18/09/2019
2	Nicola Casagli	UNESCO Chair for the prevention and the sustainable management of geo-hydrological hazards, University of Firenze (UNIFI)	Italy	18/09/2019
3	Young-Suk SONG	Head, Geo-Environmental Hazard Research Center, Korea Institute of Geoscience and Mineral Resources	Korea, Rep.	20/08/2020
4	Matjaž Mikoš	University of Ljubljana, Faculty of Civil and Geodetic Engineering	Slovenia	18/09/2019
ICL full members				
1	Sabid Zekan	Vice-President, Geotechnical Society of Bosnia and Herzegovina	Bosnia and Herzegovina	10/08/2020
2	Renato Eugenio de Lima	Director, Center for Scientific Support on Disasters - Federal University of Paraná - Brazil (CENACID-UFPR)	Brazil	18/09/2019
3	Daniel Lebel	Director General, Geological Survey of Canada	Canada	18/09/2019
4	Michael T. Hendry	Associate Professor, University of Alberta	Canada	18/09/2019
5	Wei Shan	Dean of Cold Regions Science and Engineering, Northeast Forestry University	China	18/09/2019
6	Chang-Dong Li	China University of Geosciences (Wuhan)	China	18/09/2019
7	Lijun Su	Institute of Mountain Hazards & Environment, CAS	China	18/09/2019
8	Charles Wang Wai Ng	Professor of Sustainability, Chair Professor of Civil and Environmental Engineering, The Hong Kong University of Science and Technology	Hong Kong SAR, China	08/07/2020
9	Clarence E. Choi	Assistant Professor, Department of Civil Engineering, The University of Hong Kong	Hong Kong SAR, China	24/08/2020
10	Aiguo Xing	Shanghai Jiao Tong University	China	04/08/2020
11	Snježana Mihalić Arbanas & Željko Arbanas	Croatian Landslide Group	Croatia	18/09/2019
12	Guillermo Ávila	National University of Colombia	Colombia	18/09/2019
13	Vít Vilímek	Charles University	Czech Republic	18/09/2019
14	Josef Stemberk	Director, Institute of Rock Structure and Mechanics, the Czech Academy of Sciences	Czech Republic	18/09/2019
15	Hauke Zachert	Head, Institute and Laboratory of Geotechnics, Technical University Darmstadt	Germany	18/09/2019
16	Andro Aslanishvili	Head of LEPL National Environmental Agency of Georgia, Ministry of Environment Protection and Agriculture	Georgia	18/09/2019
17	Lidia Elizabeth Torres Bernhard	Director, Instituto Hondureño de Ciencias de la Tierra, IHCIT /Universidad Nacional Autónoma de Honduras UNAH	Honduras	02/09/2020
18	Maneesha V Ramesh	Amrita Vishwa Vidyapeetham	India	18/09/2019
19	Dwikorita Karnawati	Head, Agency for Meteorology, Climatology, and Geophysics of the Republic of Indonesia (BMKG Indonesia)	Indonesia	18/09/2019

20	Teuku Faisal Fathani	Director, Center for Disaster Mitigation and Technological Innovation (GAMA-InaTEK), Universitas Gadjah Mada, Indonesia	Indonesia	18/09/2019
22	Paulus P. Rahardjo	Head of Geotechnical Engineering Research Center, Universitas Katolik Parahyangan	Indonesia	10/08/2020
23	Mohammad Shekarchizadeh	President, Building & Housing Research Center	Iran	14/04/2019
24	Daniele Spizzichino	ISPRA-Italian Institute for Environmental Protection and Research	Italy	18/09/2019
25	Carlo Esposito	Centro di Ricerca CERl - Sapienza Università di Roma	Italy	18/09/2019
26	Giuseppe Mandrone	Dept. Earth Science, University of Torino	Italy	18/09/2019
27	Andrea Segalini	University of Parma, Dept. Of Engineering and Architecture	Italy	18/09/2019
28	Giovanna Capparelli	Camilab - Dimes Dept. University of Calabria	Italy	18/09/2019
29	Paola Reichenbach	Senior Researcher, Research Institute for Geo-Hydrological Protection, Italian National Research Council (IRPI-CNR)	Italy	22/06/2020
30	Lorenzo Petronio	Chief Technology Officer, National Institute of Oceanography and Applied Geophysics (OGS)	Italy	24/08/2020
31	Hiroshi Yagi	President, Japan Landslide Society	Japan	18/09/2019
32	Fawu Wang	Director-General, International Consortium on Geo-disaster Reduction	Japan	18/09/2019
33	Irasema Alcántara-Ayala	Institute of Geography, National Autonomous University of Mexico (UNAM)	Mexico	29/07/2020
34	Zoran Gligorić	Dean, Faculty of Mining and Geology, University of Belgrade	Serbia	18/09/2019
35	Tomislav Popit	University of Ljubljana, Faculty of Natural Sciences and Engineering	Slovenia	18/09/2019
36	Miloš Bavec	Director, Geological Survey of Slovenia	Slovenia	18/09/2019
37	A A Virajh Dias	Central Engineering Consultancy Bureau	Sri Lanka	18/09/2019
38	Asiri Karunawardena	Director General, National Building Research Organisation	Sri Lanka	15/06/2020
39	Ray-Shyan Wu	Distinguished Professor, National Central University	Chinese Taipei	12/03/2020
40	Louis Ge	Department of Civil Engineering, National Taiwan University	Chinese Taipei	18/09/2019
41	Hans Guttman	Executive Director, Asian Disaster Preparedness Center	Thailand	18/09/2019
42	Benjaporn Chakranon	Director General, Land Development Department, Ministry of Agriculture and Cooperatives	Thailand	11/08/2020
43	Oleksandr M. Trofymchuk	Institute of Telecommunications and Global Information Space, National Academy of Science of Ukraine	Ukraine	18/09/2019
44	Binod Tiwari	Associate Vice President, Office of Research and Sponsored Projects, Division of Academic Affairs, California State University, Fullerton	USA	18/09/2019
45	Nguyen Xuan Khang	Director General, Institute of Transport Science and Technology	Vietnam	18/09/2019
46	Tran Tan Van	Director, Vietnam Institute of Geosciences and Mineral Resources (VIGMR)	Vietnam	18/09/2019
ICL associate members				
1	Qiang Xu	Executive Deputy Director, State Key Laboratory of Geohazard Prevention	China	18/09/2019

		and Geoenvironment Protection, Chengdu University of Technology		
2	Zdenek Venera	Director, Czech Geological Survey	Czech Republic	30/07/2020
3	Mario Parise	Department of Earth and Environmental Sciences, University Aldo Moro, Bari	Italy	18/09/2019
4	Michele Calvello	Geotechnical Engineering Group (GEG), University of Salerno	Italy	18/09/2019
5	Andrea Stefano Di Giulio	Head, Department of Earth and Environmental Sciences, University of Pavia	Italy	15/07/2020
6	Ryo Moriwaki	Director, Center for Disaster Management Informatics Research, Ehime University	Japan	18/09/2019
7	Michel Jaboyedoff	Directeur ISTE - Institute of Earth Sciences, Risk-group, University of Lausanne	Switzerland	14/08/2020
8	Nejan Huvaj	Middle East Technical University (METU)	Turkey	18/09/2019
9	Beena Ajmera	North Dakota State University	USA	18/09/2019
ICL supporters				
1	Matthias Twardzik	Business Development Manager – Monitoring Organization: IDS GeoRadar	Italy	11/08/2020
2	Shinro Abe	Adviser, Okuyama Boring Co., Ltd	Japan	18/09/2019
3	Nobuyuki Shibasaki	General Manager, Land Conservation Division, Nippon Koei Co., Ltd	Japan	18/09/2019
4	Ryosuke Tsunaki	Executive Engineer, Sabo & Landslide Technical Center	Japan	18/09/2019
5	Maki Yano	President, OSASI Technos, Inc.	Japan	18/09/2019
6	Masaru Narita	President, Oyo Cooperation	Japan	22/04/2020
7	Taketoshi Marui	President, Marui & Co., Ltd	Japan	05/06/2020
8	Yamazaki Tsutomu	Director and General Manager of Technical Headquarters, Japan Conservation Engineer & Co. Ltd	Japan	16/06/2020
9	Yuji Sato	Director and General Manager of Technical Headquarters, Godai Kaihatsu Co., Ltd.	Japan	24/08/2020
10	Satoshi Hijikata	President, Kokusai Kogyo Co., Ltd.	Japan	05/09/2020

Panel talks

P1. Panel discussion by Paola Albrito, Chief of Branch, Intergovernmental processes, Interagency cooperation and Partnerships, UNDRR

Greeting to all the distinguished participants. First of all, I would like to congratulate the International Consortium on Landslides (ICL) for organizing this session. It is critical to continue with our work in building resilience to disasters while facing the COVID-19 pandemic and related challenges.

As Indicated by Ms. Mizutori, we know that due to climate change and intensified rainfall, more landslides can be expected.

We must also recognize that the nature of risk in our society is interconnected and has cascading effects. The COVID-19 pandemic has been a painful eye-opener for many to better understand the cascading and systemic nature of risk. I would like to urge the participants in this session today to apply this notion to their work to further contribute to building a resilient society.

Science-backed evidence is critical for risk-informed investment and decision-making for DRR. Science and Technology partners are critical for UNDRR and to the DRR community to deliver and promote the implementation of the Sendai Framework.

UNDRR's Scientific and Technical Advisory Groups (STAG), fully established at the regional level, together with other partners such as the International Science Council and IRDR are leading and supporting a number of initiatives, to build resilience to disasters, from COVID-19 considerations, to the shaping of Sendai hazard definitions and classifications, the determining of a new risk science mission, as well as links between science and policy makers in the field of DRR.

The Sendai Landslide Partnership strongly contributes to this agenda by providing practical solutions and tools, education, and capacity building, to reduce risks.

Very encouraging also to see that ICL has published its commitment on the Sendai Framework Voluntary Commitment online platform, we need to share our engagements in moving ahead the disaster risk reduction agenda.

The Voluntary Commitment platform is a helpful tool administered by UNDRR for stakeholders to showcase their achievements to the international community and fosters potential collaboration among stakeholders.

I would like to encourage participating entities in this session to submit your concrete initiatives and achievements to the platform, so that the world will know more about your work.

It is encouraging to see today that the Kyoto 2020 Commitment is being launched with a large number of partners. UNDRR supports the work of the Sendai Landslide Partnerships and ICL. We look forward to the 5th World Landslide Forum in November 2021 in Kyoto.

Again, reiterating the interconnected nature of risk and the Indonesia experienced in 2018, I am taking this opportunity to remind you that today, the 5th of November marks the World Tsunami Awareness Day.

Thank you very much.

P2. Panel discussion by Soichiro Yasukawa, Programme Specialist on Disaster Risk Reduction, UNESCO

I would like to congratulate you again for the launch of the Kyoto 2020 Commitment of Global Promotion of Understanding and Reducing Landslide Disaster Risk. It is unfortunate that we need to postpone the 5 WLF to next year but I would like to thank ICL families to continuously work on the landslide disaster risk reduction to launch the Commitment today.

Disaster Risk Reduction is gaining momentum on the agenda of the UN system of organizations including UNESCO. Operating at the interface between natural and social sciences, education, culture, and communication, UNESCO plays a crucial role in building a global culture of resilience by supporting its Member States in the implementation of the Sendai Framework for Disaster Risk.

Working alone or in collaboration with both UN Agencies and other scientific entities, UNESCO supports the Member States based on 8 thematic; 1) early warning system, 2) safe critical infrastructure especially on school, 3) culture and UNESCO designated sites risk prevention, 4) using STI such as AI and big data, 5) built environment, 6) risk governance, 7) nature based solution and 8) post-disaster response.

Out of 8 thematic, landslide disaster risk reduction is related to several themes of our interventions such as early warning system, UNESCO designated sites DRR, STI, risk governance, nature-based solution and post-disaster response. Many methodologies and solutions have been discussed at the ICL-IPL annual meetings and UNESCO would like to collaborate with ICL families more to support the member states to reduce the risk of landslides by both conventional and innovative risk assessment methodologies and engineering solutions. Through the collaboration, I am confident that UNESCO, with 53 Field Offices around the world will be able to work on the 10 priority of actions of the Kyoto 2020 Commitment with you.

P3. Panel discussion by Peter Bobrowsky, President of ICL

As President of the International Consortium of Landslides it gives me great pleasure to speak on behalf of our various national and international member bodies, organizations and individuals who have supported the goals and mission of our consortium since its founding in 2002. Notably, the ICL has always promoted landslide research for the benefit of society and the environment,

in particular for less developed nations through various efforts based on capacity building and education.

Active members of ICL comprise many of the worlds' most competent and specialized professionals involved in the study of slope stability and instability. Moreover, we aim to combine and coordinate expertise in landslide risk identification, assessment and mitigation; especially in the realm of national and international projects that involve multi-lateral and multi-national cooperation.

The fellow dignitaries within this cluster of greetings and panel talks illustrate the incredible diversity of high-level entities with which and whom we the ICL have formalized mutually beneficial memoranda of understanding and agreements.

Consequently, on the occasion of the originally planned implementation of the WLF5, we are collectively here to formalize our launching of the Kyoto 2020 Commitment for Global Promotion of Understanding and Reducing Landslide Disaster Risk Sendai Landslide Partnership 2015-2025, especially as it applies to the Sendai Framework for Disaster Risk Reduction.

No other professional body has devoted so much knowledge, expertise and capacity to address the threat of landslides, specifically within the global plan to reduce landslide related disaster impacts and losses. And importantly, this is where and when we should also reflect on the importance and broader implications of the UN 2030 Sustainable Development Goals (SDGs) as they relate to landslides.

On behalf of the ICL, it is with great honor and pleasure that I formally acknowledge the comments, observations and commitments arising from the agreements and partnerships that we currently share within and between the UN family of entities, partners and supporters. The written attestations presented and published here legitimize the delivery of the KLC2020.

P4. Panel discussion by Dwikorita Karnawati, Head of the Agency for Meteorology, Climatology, and Geophysics of the Republic of Indonesia (BMKG)

It is such a great honour for me to be able to speak in front of you as one of the Panelists in this very important occasion. First of all, on behalf of the Government of the Republic of Indonesia, allow me to join all of you, to also express my warmest congratulations on the successful launching of the KLC2020.

As the tropical islands country with the active tectonic and geological phenomena as well as dynamic climate and extreme weather conditions, Indonesia is very prone to landslides. Such phenomena and conditions lead to rain, earthquake, or volcanic induced landslides. All those types of landslides may also be superimposed to create catastrophic multiple landslide disasters as well as tsunami.

Being the government authoritative voice, Indonesian Agency for Meteorology, Climatology, and Geophysics of the Republic of Indonesia (BMKG), is continuously and intensively monitor the natural triggering drivers of landslide, such as the rain intensity and earthquake parameters. Prediction on Extreme Rainfall events by using 40 Weather Radars installed across Indonesia region and also monitoring of earthquake events by integrating network of seismographs into Internet of Things (IoT), Artificial Intelligent (AI) and mathematical modelling are conducted intensively to support Landslide Early Warning System as well as Tsunami Warning System. However, inter-disciplinary research to drive the development of innovative knowledge and technology is very crucial to provide appropriate landslide mitigation and warning

system. That is why BMKG is eager to actively involved in the Global Partnership Initiative on Landslide Disaster Risk Reduction, which is a strategic and urgent step to protect the human life and environment.

This Partnership is an ideal vehicle to drive and facilitate interdisciplinary research, data exchange, and joint observation. Public education and community outreach is also very important to be further driven and facilitated to magnify the effort of landslide disaster risk reduction and prevention.

P5. Panel discussion by Beena Ajmera, Assistant Professor, North Dakota State University

I have had the opportunity to contribute with my colleagues to several activities that have been identified as priorities in the 2020 Kyoto Landslide Commitment (KLC2020). Specifically, the collaborative research projects that I am involved with are contributing towards an understanding and the reduction of landslide disaster risk. Through laboratory experimentation, we are developing methods to easily estimate shear strength parameters that are crucial towards evaluating the stability of landslides. Our other research efforts have focused on physical models related to rainfall-induced and earthquake-induced slope failures. More recently, we have used these models to study post-wildfire debris flow events. I am also involved in several pertinent ICL initiatives.

The importance and timeliness of KLC2020 is unquestionable, but its value increases significantly for young researchers, like myself. In particular, through this commitment, I have the privilege to be involved in a global partnership that provides me with opportunities to strength the work that I am engaged in, to collaborate with government agencies, practitioners, and other researchers and to voice my suggestions for the actions and policies that the landslide community implements to reduce landslide disaster risk globally. Furthermore, it allows me to be surrounded by a community of like-minded individuals who are all striving towards a common goal and rooting for our collective success. As a young researcher, this community is crucial as it allows me to build my expertise and leadership towards having a meaningful and impactful career.

I plan to continue to contribute towards the priorities outlined in KLC2020. In particular, I will collaboratively study research frontiers that help to understand and reduce landslide disaster risks and to remain an active member of the ICL and support its initiatives. I will also continue to educate and train the next generation of engineers on strategies that will positively impact landslide science and risk.

Invitation to partner of the Kyoto Landslide Commitment 2020

KLC2020 aims to promote understanding and reducing landslide disaster risk. The KLC2020 invites organizations who are involved in activities related to understanding and reducing landslide disaster risk as their intrinsic missions. The implementation of their intrinsic mission shall contribute to KLC2020, then, the Sendai

Framework for DRR, the Sustainable Development Goals, and the New Urban Agenda and the Paris Climate Agreement. Integration and interaction of activities of all KLC2020 partners will be intensified by the publication of the Journal *Landslides* and the organization of the World Landslide Forum.

Ninety organizations have signed KLC2020 by 5 November 2020. Further applications will be received by the end of July 2021. New organizations and current partners will gather at the General Conference of KLC2020 signatories during the Fifth World Landslide Forum. Then, all new partners will join the ongoing partners and priority actions of KLC2020 and examine its way forward in the high-level panel discussion on 3 November 2021. Those who are willing to join the partnerships are requested to access the background articles published in *Landslides*: Sassa (2006): Tokyo Action Plan, Sassa (2015): ISDR-ICL Sendai Landslide Partnerships 2015–2025, Sassa (2019a): Final draft of KLC2020, Sassa (2019b): Approval of final draft and signing by the 57 first signatories. In case of further inquiries or application, please email the KLC2020 Secretariat klc2020@iclhq.org.

Eligible organizations to be partners of the KLC2020:

1. ICL member organizations (full members, associate members, and supporters)
2. ICL supporting organization from UN and international or national organizations and programs
3. Government ministries and offices in countries having more than 2 ICL on-going members
4. International associations/societies which contribute to the organization of WLF5 in 2021 and WLF6 in 2023
5. Other organizations having some aspects of activities related to understanding and reducing landslide disaster risk as their intrinsic missions>

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K. Sassa (✉)

138-1 Tanaka-Asukai-cho, Sakyo-ku, 606-8226, Kyoto, Japan
Email: klc2020@iclhq.org; kyoji.sassa@gmail.com