



International Programme on Landslides (IPL): Objectives, History and List of World Centres of Excellence and IPL Projects

Qunli Han, Kyoji Sassa, Feng Min Kan, and Claudio Margottini

Abstract

The initial stage of IPL project which was managed by ICL started in 2002 at the same time of ICL foundation. The first IPL project was publication of International Journal of Landslides at this stage. The current second stage of IPL was defined by 2006 Tokyo Action Programme on Landslides as an international programme managed by IPL Global Promotion Committee consisting of ICL and ICL supporting organizations (UNESCO, UNISDR and others). IPL includes IPL Projects conducted by ICL member organizations, the triannual World Landslide Forum and the World Centres of Excellence on Landslide Risk Reduction (WCoE). This paper describes those activities and the list of WCoE since 2008 and the list of IPL projects both in the initial stage of IPL projects (2002–2008) and the second stage of IPL projects (2008–present).

Keywords

International programme on landslides (IPL) • World centres of excellence on landslide risk reduction (WCoE) • International consortium on landslides (ICL) • International strategy for disaster risk reduction (ISDR)

Objectives and Management

The objectives of the International Programme on Landslides (IPL) are to provide international authorization and advice to the projects proposed and implemented by ICL members. ICL was initially planned to create an International Programme on Landslides, namely a version focusing on the study on landslides of the UNESCO-IUGS joint project, International Geological Correlation Programme (IGCP).

The implementation of IGCP-425 “Landslide Hazard Assessment and Mitigation for Cultural Heritage Sites and Other Locations of High Societal Value” provided a higher evaluation and greater fund raising for most of the thirty-one subproject members. They are very active in research, but suffer from lower evaluations and funding because landslide research is a minor or a very marginal study within the organizations they belong to, and also within established scientific fields in funding programmes. The IGCP project will terminate within 5 years. Continuation is not easy, and a

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number of landslide projects will not be adopted in IGCP (a very wide Geoscience Programme). The funding of IGCP425 was around 4000 USD per year, which was shared among 31 subproject leaders as partial travel support fees. The aim of the International Programme on Landslides (IPL) is not to support research funding itself, but provide partial travel fees for members to attend ICL-IPL meetings, propose projects, evaluate projects, report project results, and terminate or continue the projects. The membership fee funds the sustainable and basic financial resources. All management of projects, including proposal, evaluation, and decision on ongoing status is implemented by the IPL Global Promotion Committee of ICL (IPL-GPC). The committee consists of all ICL member organizations and IPL partner organizations (UNESCO, UNISDR, WMO, FAO, UNU, ICSU, WFEO and IUGS). During the first phase from 2008 to 2013, the Chair of IPL-GPC was Salvano Briceno (Former Director of UNISDR for 2001–2011), and the Deputy Chairs were Badaoui Rouhban (Former Director of Section for Disaster Reduction, UNESCO) and Kyoji Sassa (Executive Director of ICL). For the current phase from 2014 to the present, the Chair of the Committee is Qunli Han, Director of Ecological and Earth Sciences, UNESCO, and Deputy chairs are Feng Min Kan, Chief of UNISDR Asia-Pacific Office in Bangkok and Claudio Margottini (Vice President of ICL).

Development of International Programme on Landslides (IPL)

The initial stage of IPL was from the First Board of Representatives (BOR) meeting in 2002 to the First World Landslide Forum in 2008. When the initial thirty-three ICL members gathered in this first BOR meeting, IPL projects were classified in two categories. One category is coordinating projects which are planned by ICL multiple members, e.g., the whole ICL project to found a new landslide journal: IPL C100: Landslides: Journal of the International Consortium on Landslides, and the project succeeding the IGCP-412: C101: Landslide risk evaluation and mitigation in cultural and natural heritage sites. One subproject of C101 was C101-1: Landslide investigation and capacity building in Machu Pichu—Aguas Calientes area. Another category is member projects proposed by a single member organization together with its partners.

Initially the ICL board decided to allocate 2000 USD for IPL projects proposed by developing countries, funded by membership fees from developed countries. However, the research result was not cost-effective for the initial three years' experiences. In the Steering Committee meeting in Kyoto just before the UN World Conference on Disaster

Reduction in Kobe, 2005, how to use the limited funds effectively was initially examined. The concept was to provide research funds, but to give authorization to each project, and ICL-IPL will evaluate each project at each World Landslide Forum and give an IPL Award for Success in one to three projects. The Award (3000 USD) for one project will be given to its leader. The IPL Award for Success is not an award for the best IPL project, as funding, research facilities and research infrastructure differ in various countries. The award will be given to those projects with success within the given social, technical and financial conditions.

This award was approved in Tokyo, 2008 and applied in the Second World Landslide Forum in Rome, 2011.

The IPL Awards for Success were given at the Second World Landslide Forum at FAO Headquarters, Rome, October 2011, to:

- (1) Lynn Highland: U.S. Geological Survey, and Peter Bobrowsky: Geological Survey of Canada (Publication)
IPL 106 Best Practice handbook for landslide hazard mitigation (2002–2007)
- (2) Farrokh Nadim and Bjørn Kalsnes: International Centre for Geohazards, Norway (Research)
IPL 102 Assessment of global high-risk landslide disaster hotspots (2002–2004)
IPL 144 Changing pattern of landslide risk and strategies for its management (2009–present)
- (3) Dwikorita Karnawati and Faisal Fathani: Universitas Gadjah Mada, Indonesia (Capacity Building)
IPL 158 Development of Community-based Landslide Early Warning System (2009–present)
IPL 159 Development of Education Program for Sustainable Development in Landslide Vulnerable Area through Student Community Service (2009–present).

The IPL Awards for Success were given at the Third World Landslide Forum at China National Convention Center, Beijing, China, 2014, to:

- (1) Wei Shan: Research Center of Cold Regions Landslide, China
IPL-132 Research on vegetation protection system for highway soil slope in seasonal frozen regions (2008–present)
IPL-167 The effect of freezing-thawing on the stability of ancient landslide of North-Black highway (2009–present)
- (2) Ogbonnaya Igwe: Department of Geology, University of Nigeria, Nsukka, Nigeria
IPL-150 Capacity building and the impact of

climate-driven changes on regional landslide distribution, frequency and scale of catastrophe (2010–present)
IPL-183 Landslides in West Africa: impacts, mechanism and management (2012–present).

The Second Stage of the International Programme on Landslides (IPL)

The Round Table Discussion, Strengthening Research and Learning on Earth System Risk Analysis and Sustainable Disaster Management within UN-ISDR as Regards “Landslides”, was co-organized by ICL, UNESCO, WMO, FAO, UNISDR, UNEP, UNU and Kyoto University at United Nations University, Tokyo, Japan on 18–20 January 2006. This discussion aimed to implement the 2005 Letter of Intent agreed at thematic session 3.8 New International Initiatives for Research and Risk Mitigation of Foods (IFI) International programme on Landslides (IPL) at the 2nd United Nations World Conference on Disaster Reduction in 2005. During this Round Table Discussion, the 2006 Tokyo Action Plan on Landslides was adopted. This plan defined the International Programme on Landslides (IPL) as a programme of ICL for the International Strategy for Disaster Reduction (ISDR), which is managed by the IPL Global Promotion Committee consisting of ICL and ICL partners. To promote the 2006 Tokyo Action Plan and to implement the International Programme on Landslides, ICL exchanged Memorandums of Understanding with UNESCO, WMO, FAO, UNISDR, UNU, ICSU and WFEO in 2006. The IPL logo then included those organizations.



New initiatives under the Tokyo Action Plan were to identify the World Centre of Excellence on Landslide Risk Mitigation and to organize a triannual World Landslide Forum. In addition, two categories of IPL (Coordinating Project and Member project) were combined and it was termed as IPL-101, 150, and 200.

World Landslide Forum

In order to report and disseminate the activities and achievements of ICL, a World Landslide Forum (WLF) shall be convened once every three years by inviting ICL Members and ICL Supporting organizations, individual members within those organizations, and all levels of co-operating organizations and individual researchers, engineers and administrators. The World Landslide Forum will receive reports on ICL's activities and provide a forum for open discussion and new initiatives from all participants. This role of the meeting was defined as a General Assembly. The first General Assembly was organized at Keck Center of the National Academy of Sciences in Washington DC on 12–14 October 2005. The second General Assembly was organized as the First World Landslide Forum.

World Centres of Excellence

The World Centres of Excellence on Landslide Risk Reduction were established by the 2006 Tokyo Action Plan; the Global Promotion Committee (GPC) of the International Programme on Landslides (IPL) will identify at the World Landslide Forum, organized every 3 years, eligible organizations such as universities, institutes, NGOs, government ministries and local governments, contributing to “Risk Reduction for Landslides and Related Earth System Disasters”. An independent Panel of Experts, set up by the Global Promotion Committee of International Programme on Landslides (IPL-GPC), endorses the WCoEs. Twelve World Centres of Excellence (WCoEs) 2008–2011 were identified at the First World Landslide Forum in November 2008 at UNU in Tokyo, Japan. Fifteen WCoEs for 2011–2014 were identified at the Second World Landslide Forum in October 2011 at FAO, Rome, Italy. Fifteen WCoEs for 2014–2017 were identified at the Third World Landslide Forum in June 2014 at Beijing, China. Certificates of WCoEs were awarded in Beijing to each leader of the WCoEs by Ms. Irina Bokova, UNESCO Director General.

Objectives of WCoE

To strengthen the International Programme on Landslides (IPL) and IPL Global Promotion Committee;

To create “A Global Network of entities contributing to landslide risk reduction”;

To implement the ISDR-ICL Sendai Partnerships 2015–2025 for global promotion of understanding and reducing landslide disaster risk; and

To improve the global recognition of “Landslide Risk Reduction” and its social-economic relevance, and entities contributing to this field.

Criteria for WCoE Candidates

Governmental and non-governmental entities such as universities, agencies, and other institutions, and their subsidiary entities (faculties, departments, centres, divisions or others) which meet the following two conditions:

- Contributing to “Landslide Disaster Risk Reduction”; and
- Willing to support IPL intellectually, practically and financially by either joining ICL or/and contributing to IPL-GPC and promote “landslide research and disaster risk reduction” on a regional and/or global scale in a mutually beneficial manner.

Guidelines for WCoE

- (1) Candidates of WCoEs must submit the application form to the Secretariat of the IPL Global Promotion Committee.
- (2) Candidates will be evaluated from their achievements and current activities (scientific, technical and educational capacity, training courses, publications, dissemination of knowledge and information) and planned activities contributing to IPL.
- (3) WCoEs will be identified at every World Landslide Forum (held every 3 years). The status as a WCoE will be given for 3 years until the next Forum.
- (4) Each WCoE must submit an annual activity report each year which is uploaded in the IPL web and also report its activities in *Landslides: Journal of the International Consortium on Landslides* or/and a World Landslide Forum.
- (5) The status as a WCoE may be extended for another 3 years in the same topics or in a revised topic by the

IPL Global Promotion Committee, based on the activities carried out as a WCoE.

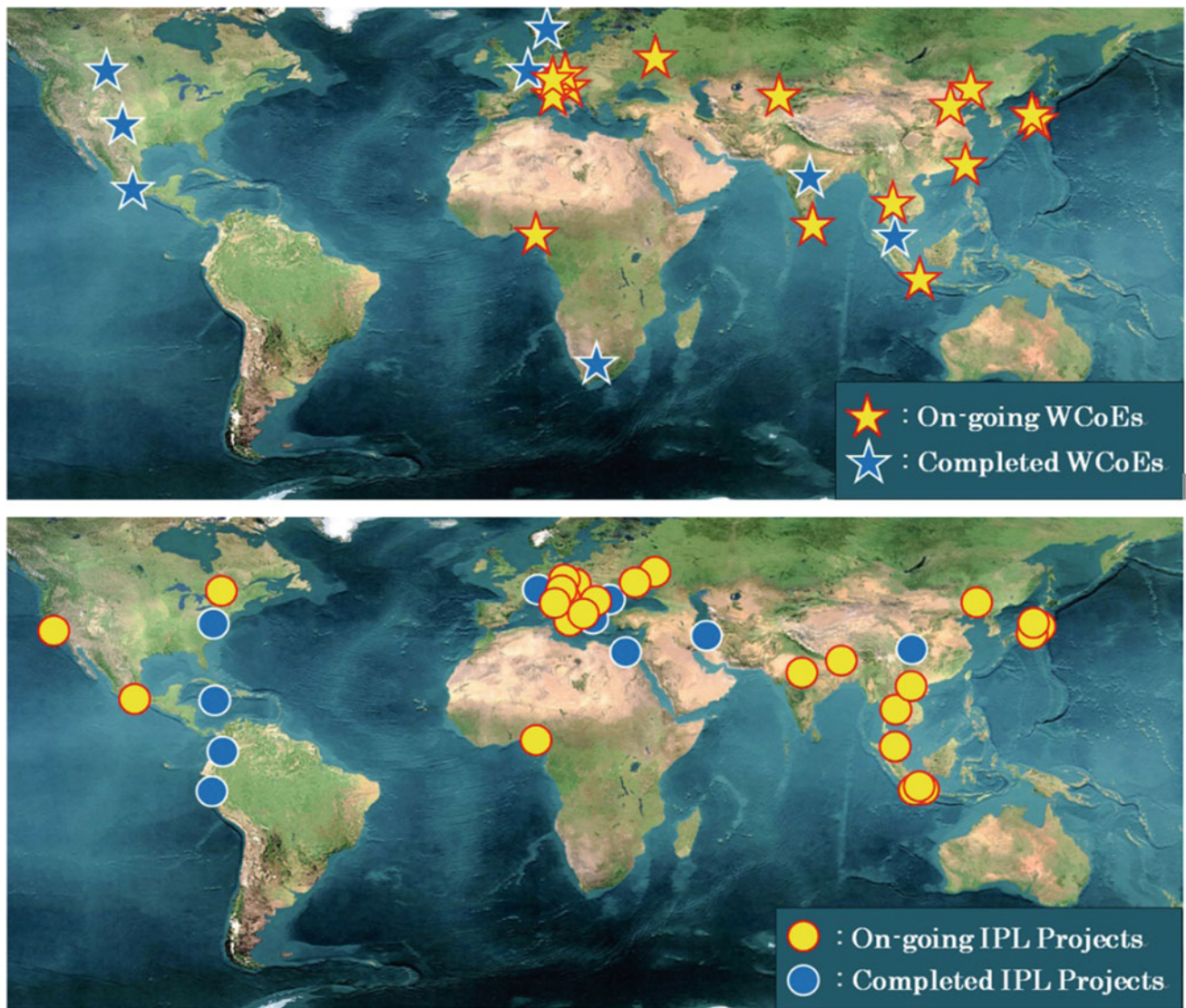
Procedure for Identification of WCoEs

- (1) The application form from an eligible entity will be submitted to the Secretariat of the IPL-GPC (IPL World Centre).
- (2) Preliminary screening of received applications will be conducted according to the Criteria by the secretariat of IPL World Centre. Feasible applications will be passed on for in-depth evaluation.
- (3) Candidates of WCoEs passing to in-depth evaluation will be invited to orally present their proposals in the IPL Global Promotion Committee. Revision of application may be advised by the committee to avoid duplication of activities with other proposals or to improve the proposals when necessary.
- (4) Final application forms will be evaluated by the technical evaluation committee of the IPL World Centre.
- (5) Summarizing all evaluation values, appropriate candidates will be selected, and a list of recommendations will be submitted to the Independent Panel of Experts which consists of experts outside of ICL.
- (6) The Independent Panel of Experts will review the recommendation, and endorse appropriate WCoEs.
- (7) The Endorsement of WCoEs by the Independent Panel of Experts will be reported to the IPL Global Promotion Committee. WCoEs endorsed by the Panel must be approved by the vote of more than half of the participating members of the IPL Global Promotion Committee.
- (8) The WCoE for the next 3 years will be announced at the World Landslide Forum.

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Appendix

Figure 1 and Tables 1, 2.



<http://con-news.com/picals/world-map-earth-view>

Fig. 1 The geographical distribution of World Centres of Excellence and IPL projects

Table 1 The chronological order of all World Centres of Excellence, including both past and ongoing WCOEs

List of World Centres of Excellence					
No.	Title	Leader	Country	Organization	Status
<i>World Centre of Excellence 2008–2011</i>					
1.	Scientific research for mitigation, preparedness and risk assessment of landslides	Yuepin Yin	China	China Geological Survey	Completed
2.	Landslide field research and capacity building through international collaboration	Vit Vlímek	Czech Republic	Faculty of Science, Charles University in Prague	Completed
3.	Earth observation advanced technologies for landslide monitoring, management and mitigation	Nicola Casagli	Italy	Department of Earth Science, University of Florence	Completed
4.	Research and development of advanced technology for landslide hazard analysis	Alberto Presitininzi/Gabriele Scarascia-Mugnozza	Italy	Research Centre on Prediction Prevention and Control of Georisks of Rome University “La Sapienza”	Completed
5.	Development of methodology for risk assessment of the earthquake-induced landslides	Hideaki Marui	Japan	The Japan Landslide Society	Completed
6.	Implementation of National Slope Master Plan	Ashaari Mohamad/Che Hassandi bin Abdullah	Malaysia	Slope Engineering Branch, Public Works Department of Malaysia	Completed
7.	Research on mitigation of landslide risk and training of specialists.	Farrokh Nadim	Norway	International Centre for Geohazards (ICG) at NGI,	Completed
8.	International Summer School on Rockslides and Related Phenomena in the Kokomerén River basin, Kyrgyzstan	Alexandar Strom	Russia and Kyrgyz	Institute of Geospheres Dynamics of Russian Academy of Science (IDG RAS) & Kyrgyz Institute of Seismology (KIS)	Completed
9.	Mechanisms of landslides in over-consolidated clays and flysch	Bojan Majes/Matjaž Mikoš	Slovenia	University of Ljubljana, Faculty of Civil and Geodetic Engineering (UL FGG)	Completed
10.	Landslide inventorization and susceptibility mapping in South Africa	S. Diop/SG Chiliza	South Africa	Engineering Geoscience Unit, Council for Geoscience	Completed
11.	Promoting Knowledge sharing, Innovations and Institutions with South-South focus network on Landslide Risk Reduction in Asia	N.S.M.I. Arambepola	Thailand	Asian Disaster Preparedness Center	Completed
12.	Conduct landslide hazard assessments and develop early warning systems	Peter Lytle	USA	U.S. Geological Survey	Completed
<i>World Centre of Excellence 2011–2014</i>					
13.	Canadian Landslide Loss Risk Reduction Strategy and Implementation	Peter Bobrowsky	Canada	Geological Survey of Canada	Completed
14.	Risk Assessment and Disaster Mitigation Code for Long Run-out Landslides	Yueping Yin	China	China Geological Survey	Completed
15.	Scientific research for landslide risk analysis and international education for mitigation and preparedness	Vit Vilímek	Czech Republic	Charles University, Faculty of Science	Completed
16.	Research on landslide risk management harmonisation in	Javier Hervás	European Commission	Joint Research Centre, European Commission	Completed

(continued)

Table 1 (continued)

List of World Centres of Excellence					
No.	Title	Leader	Country	Organization	Status
	support to European Union policy making				
17.	Training, Research and Documentation on Landslides Risk Management	Surya Parkash	India	National Institute of Disaster Management	Completed
18.	Development of Community-based and Most Adaptive Technology for Landslide Risk Reduction	Dwikorita Karnawati	Indonesia	Universitas Gadjah Mada	Completed
19.	Advanced Technologies for Landslides	N. Casagli, F. Catani	Italy	Department of Earth Science, University of Florence, Italy	Completed
20.	Development of a methodology for risk reduction of earthquake-induced landslides	Daisuke Higaki	Japan	The Japan Landslide Society, Japan	Completed
21.	Risk identification and land-use planning for disaster mitigation of landslides	Hideaki Marui	Japan	Niigata University, Institute for Natural Hazards and Disaster Recovery	Completed
22.	Landslide monitoring and community based early warning systems	Irasema Alcántara-Ayala	Mexico	National Autonomous University of Mexico	Completed
23.	Research on mitigation of landslide risk and training of specialists	Farrokh Nadim	Norway	International Centre for Geohazards	Completed
24.	Annual Summer School on Rockslides and Related Phenomena in Kyrgyzstan	Alexander Strom	Russia and Kyrgyz	Inst. of Geospheres Dynamics of Russian Academy of Sciences & Kyrgyz Institute of Seismology	Completed
25.	Mechanisms of landslides in over-consolidated clays and flysch	Bojan Majes	Slovenia	University of Ljubljana, Faculty of Civil and Geodetic Engineering	Completed
26.	Promoting Knowledge, Innovations and Institutions with South-South focus through a Regional network of Landslide Risk Reduction	N.S.M.I. Arambepola	Thailand	Asian Disaster Preparedness Center	Completed
27.	Scientific Research for Landslide Hazard Analysis, U.S. Geological survey	Peter Lytle	USA	U.S. Geological Survey Landslide Programme	Completed
<i>World Centre of Excellence 2014–2017</i>					
28.	Formation Mechanism Research, Disaster Warning and Universal Education of Cold Regions Landslide	Wei Shan	China	Research Center of Cold Regions Landslide, China	On-going
29.	Scientific Research for Mitigation, Preparedness and Risk Assessment of Landslides	Wang Min	China	China Geological Survey, China	On-going
30.	Scientific Research for Landslide Risk Analysis, Modeling, Mitigation and Education	Liang-Jenq Leu	Taiwan	Department of Civil Engineering, National Taiwan University, China, Taiwan	On-going
31.	Landslide Risk Reduction in the Adriatic-Balkan Region through the Regional Cooperation	Željko Arbanas/Snježana Mihalić Arbanas	Croatia	Croatian Landslide Group, Croatia	On-going
32.	Landslide Risk Assessment and Development Guidelines for Effective Risk Reduction	Josef Stemberk	Czech Republic	Institute of Rock Structure and Mechanics Czech Academy of Sciences & Charles University, Faculty of Science	On-going

(continued)

Table 1 (continued)

List of World Centres of Excellence					
No.	Title	Leader	Country	Organization	Status
33.	Development of Community-based and Most Adaptive Technology for Landslide Risk Reduction	Dwikorita Karnawati	Indonesia	Universitas Gadjah Mada, Yogyakarta, Indonesia	On-going
34.	Advanced Technologies for LandSlides (ATLaS)	Nicola Casagli	Italy	Department of Earth Science, University of Florence, Italy	On-going
35.	Emergency Response Support System for Large-scale Landslide Disasters	Satoshi Tsuchiya	Japan	The Japan Landslide Society (JLS), Japan	On-going
36.	Risk Identification and Land-use Planning for Disaster Mitigation of Landslides	Hiroshi Fukuoka	Japan	Niigata University, Institute for Natural Hazards and Disaster Recovery, Japan	On-going
37.	Implementation of National Slope Master Plan	Che Hassandi Abdullah	Malaysia	Slopes Engineering Branch, Public Works Department of Malaysia, Malaysia	On-going
38.	Building Human Capacities and Expertise in Landslide Disaster Risk Managements	Ogbonnaya Igwe	Nigeria	Department of Geology, University of Nigeria, Nsukka, Nigeria	On-going
39.	International Summer School on Rockslides and Related Phenomena in the Kokomeren River Valley, Tien Shan, Kyrgyzstan	Alexander Strom	Russia and Kyrgyz	Geodynamics Research Center—branch of JSC “Hydroproject Institute” & Institute of Seismology of National Academy of Sciences of Kyrgyz Republic	On-going
40.	Mechanisms of Landslides and Creep in Over-consolidated Clays and Flysch	Ana Petkovšek	Slovenia	University of Ljubljana, Faculty of Civil and Geodetic Engineering (UL FGG), Ljubljana, Slovenia	On-going
41.	Developing Model Policy Frameworks, Standards and Guidelines	Nihal Rupasinghe A A Virajh Dias	Sri Lanka	Central Engineering Consultancy Bureau, Colombo, Sri Lanka	On-going
42.	Promoting Knowledge, Innovations and Institutions with South-South focus through a Regional network of Landslide Risk Reduction in Changing Climate Scenario in Asia	N.M.S.I. Arambepola	Thailand	Asian Disaster Preparedness Center (ADPC), Thailand	On-going

Table 2 The chronological order of all IPL Projects, including past and ongoing projects

IPL Projects (2002–2016)						
No.	Title	Organization	Country	Leader	Year	Status
The initial stage of the International Programme on Landslides (IPL: 2002–2008) under support from UNESCO Coordinating projects (C by multiple members) and Member projects (M by a single member)						
C100	Landslides: Journal of the International Consortium on Landslides	Kyoto University, DPRI, RCL/ICL	Japan	Kyoji Sassa	2002/2008–2010	Completed
C101	Landslide risk evaluation and mitigation in cultural and natural heritage sites	Kyoto University, DPRI, RCL/ICL	Japan	Kyoji Sassa and Paolo Canuti	2002/2008–2010	Completed
C101-1	Landslide investigation and capacity building in Machu Pichu-Aguas Calientes area	Kyoto University, DPRI, RCL/ICL	Japan	Kyoji Sassa	2002/2008–2011	Completed
C101-1-1	Low environmental impact technologies for slope monitoring by radar interferometry: application to Machu Picchu site	CIVITA Consortium/ENEA	Italy	Claudio Margottini	2002–2006	Completed
C101-1-2	Expressions of risky geomorphologic processes as well as paleogeographical evolution of the area of Machu Picchu	Charles University, Research Center of Earth Dynamic	Czech Republic	Vit Vilimek, Jiri Zvelebil	2002–2007	Completed
C101-1-3	Shallow geophysics and terrain stability mapping techniques applied to the Urubamba Valley, Peru: Landslide hazard evaluation	Instituto Geologico Minero y Metalurgico	Peru	Romulo Mucho, Peter Bobrowsky	2004–2006	Completed
C101-1-4	A proposal for an integrated geophysical study of the Cuzco region	Instituto Nazionale Di Oceanografia E Di Geofisica Sperimentale-OGS	Italy	Daniel Nieto Yabar	2004–2006	Completed
C101-1-5	UNESCO-Italian-ESA Satellite monitoring of Machu Picchu	University of Firenze, Earth Sciences Department	Italy	Paolo Canuti, Claudio Margottini,	2004–2006	Completed
C101-3	The geomorphological instability of the Buddha niches and surrounding cliff in Bamiyan valley (Central Afghanistan)	CIVITA Consortium/ENEA/ISPRA	Italy	Claudio Margottini	2002/2008–2015	Completed
C101-4	Stability assessment and prevention measurement of Lishan Landslide, Xian, China	Lishan Landslide Observatory, Xian Municipal Government	China	Qing Jin Yang	2002–2007	Completed
C101-5	Environment protection and disaster mitigation of rock avalanches landslides and debris flow in Tianchi Lake region and natural preservation area of Changbai Mountains, Northeast China	Jilin University, Environmental Geological Disaster Research Institute	China	Binglan Cao	2002–2007	Completed
C101-6	Conservation of Masouleh Town	Building and Housing Research Center	Iran	S. H. Tabatabaei	2002–2007	Completed
C101-7	Cultural and natural heritage threatened by landslides in the region of Iassy, Romania	Proexrom S.R.L., Technical University, Civil Engineering Faculty	Romania	Nicolae Botu	2005–2007	Completed

(continued)

Table 2 (continued)

IPL Projects (2002–2016)						
No.	Title	Organization	Country	Leader	Year	Status
The initial stage of the International Programme on Landslides (IPL: 2002–2008) under support from UNESCO Coordinating projects (C by multiple members) and Member projects (M by a single member)						
C102	Assessment of global high-risk landslide disaster hotspots	International Centre for Geohazards, (ICG) in Oslo	Norway	Farrokh Nadim	2002–2004	Completed
C103	Global landslide observation strategy	Kyoto University, DPRI, Flood Section	Japan/Italy	Kaoru Takara, Nicola Casagli	2004/2008–2012	Completed
C104	World Landslide Database	Kyoto University, DPRI, RCL	Japan/Italy	Hiroshi Fukuoka, Nicola Casagli	2006/2008–2012	Completed
C105	Early Warning of Landslides	Kyoto University, DPRI, RCL/ICL	Japan	Kyoji Sassa	2007–2013	Completed
C106	Capacity building and outreach	ISPRA-Italian Institute for Environmental Protection and Research	Italy/Russia	Claudio Margottini, Alexander Strom	2008–2012	Completed
C106-1	Landslide museum in Civita di Bagnoregio	ENEA/ISPRA	Italy	Claudio Margottini	2006/2008–2012	Completed
M101	Areal prediction of earthquake and rain induced rapid and long-travelling flow phenomena (APERITIF)	Kyoto University, DPRI, RCL	Japan	Hiroshi Fukuoka	2002/2008–2012	Completed
M102	Disaster evaluation and mitigation of the giant Jinnosuke-dani Landslide in the Tedor water reservoir area, Japan	Kanazawa University	Japan	Tatsunori Matsumoto	2002–2004	Completed
M103	Capacity building on management of risks caused by landslides in Central American countries	International Centre for Geohazards, (ICG) in Oslo	Norway	Farrokh Nadim	2002–2007	Completed
M104	A global literature study on the use of critical rainfall intensity for warning against landslide disasters	International Centre for Geohazards, (ICG) in Oslo	Norway	Haakon Heyerdal	2002–2004	Completed
M105	Hurricane-flood-landslide continuum: a forecast system	U. S. Geological Survey	USA	Randall Updike	2002–2006	Completed
M106	A best practices handbook for landslide hazard mitigation	Geological Survey of Canada	Canada	Lynn Highland, Peter Bobrowsky	2002–2007	Completed
M107	Landslide risk assessment in landslide prone regions of Slovakia—modelling of climatic changes impact	Comenius University, Faculty of Natural Sciences	Slovakia	Rudolf Hozer	2002–2006	Completed
M108	Disaster evaluation and mitigation of landslides in the Three-Gorge water reservoir area, China	Chongqing Seismological Bureau	China	Renjie Ding	2002–2005	Completed
M109	Recognition, mitigation and control of landslides of flow type in Greater Kingston and adjoining parishes in Eastern Jamaica, including public education on landslide hazard	University of the West Indies	Jamaica	Rafi Ahmad	2002–2006	Completed
M110	Capacity Building in Landslide Hazard Management and Control for Mountainous Developing Countries in Asia	Niigata University, Research Institute for Hazards in Snowy Areas	Japan	Hideaki Marui	2002–2007	Completed

(continued)

Table 2 (continued)

IPL Projects (2002–2016)						
No.	Title	Organization	Country	Leader	Year	Status
The initial stage of the International Programme on Landslides (IPL: 2002–2008) under support from UNESCO Coordinating projects (C by multiple members) and Member projects (M by a single member)						
M111	Detail study of the internal structure of large rockslide dams in the Tien Shan and international field mission	“Institute hydroproject”/ Institute of the Geospheres Dynamics, Russian Academy of Sciences	Russia	Alexander Strom	2002–2006	Completed
M113	Zone risk map: Towards harmonized, intercomparable landslide risk assessment and risk maps	Cairo University, Faculty of Engineering	Egypt	Yasser Elshayeb	2002–2005	Completed
M114	Landslide hazard assessment along Tehran-Caspian seaside corridors	Soil Conservation and Watershed Mangement Research Institute/Agri. Research and Education Organization	Iran	Zieaoddin Shoaai	2002–2007	Completed
M115	Establishment of a regional network for disaster mitigation, disaster education, and disaster database system in Asia	Ehime University, Faculty of Engineering	Japan	Ryuichi Yatabe	2003–2007	Completed
M116	Standardization of terminology, integration of information and the development of decision support software in the area of landslide hazards	Geological Survey of Canada	Canada	Catherine Hickson	2003–2006	Completed
M117	Geomorphic Hazards from landslide dams	Swiss Federal Institute for Snow and Avalanche Research SLF	Switzerland	Oliver Korup	2003–2006	Completed
M118	Development of an expert DSS for assessing landscape impact mitigation works for cultural heritage at risk	ENEA(Italian Agency for New technologies Energy and Environment)	Italy	Giuseppe Delmonaco	2003–2007	Completed
M119	Slope instability phenomena in Korinthos county	Institute of Geology and Mineral Exploration (IGME)	Greece	Nikos Nikolaou	2002–2005	Completed
M120	Landslide hazard zonation in Garwal using GIS and geological attributes	Indian Institute of Technology	India	Ashok Kumar Pachauri	2003–2004	Completed
M121	Integrated system of a new generation for monitoring of dynamics of unstable rock slopes and rock fall early warning	Charles University, Research Center of Earth Dynamic	Czech Republic	Jiri Zvelebil, Vit Vilimek	2003–2007	Completed
M122	Inka cultural heritage and landslides: detailed studies in Cusco and Sacred Valleys, Peru	Grudec Ayar	Peru	Raul Carreno	2004–2007	Completed
M123	Cusco regional landslide hazard mapping and preliminary assessment	Grudec Ayar	Peru	Raul Carreno	2004–2007	Completed
M124	The influence of clay mineralogy and ground water chemistry on the mechanism of landslides	Russian Academy of Sciences, Institute of Environmental Geoscience	Russia	Viktor Osipov	2004–2007	Completed
M125	Landslide mechanisms on volcanic soils	Universidad Nacional de Colombia	Colombia	Carlos Edusrdo Rodriguez	2004–2007	Completed

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Table 2 (continued)

IPL Projects (2002–2016)						
No.	Title	Organization	Country	Leader	Year	Status
The initial stage of the International Programme on Landslides (IPL: 2002–2008) under support from UNESCO Coordinating projects (C by multiple members) and Member projects (M by a single member)						
M126	Compilation of landslide/rockslide inventory of the Tien Shan mountain system	Institute of the Geospheres Dynamics, Russian Academy of Sciences	Russia	Alexander Strom	2004–2007	Completed
M127	Development of low-cost detector of slope instability for individual use	University of Tokyo, Geotechnical Engineering Group, Civil engineering	Japan	Ikuo Towhata	2004–2007	Completed
M128	Development of sounding methodology for a root-reinforced landslide mass	University of Tokyo, Inst. Industrial Science	Japan	Kazuo Konagai	2004–2007	Completed
M129	Evaluation of natural hazards associated with rapid glacial retreat in Cordillera Blanca (Peru)	Charles University, Research Center of Earth Dynamic	Czech Republic	Vit Vilimek	2005–2007	Completed
M131	Technology development for landslide monitoring in China	China Geological Survey/Geological Survey of Canada	China/Canada	Yueping Yin and Peter Bobrowsky	2006–2007	Completed
M132	Research on vegetation protection system for highway soil slope in seasonal frozen regions	Northeast Forestry University	China	Wei Shan, Fawu Wang	2006/2008–2015	Completed
M133	Establishment of rainfall-soil chart for erosion induced landslide prediction	Mara University of Technology	Malaysia	Roslan Abidin	2006–2007	Completed
M134	Large-scale rockslides in coarse-bedded carbonate rocks in the Apennines (Italy), Caucasus (Russia) and Zagros (Iran): evaluation of possible triggers and hazard assessment	Institute of the Geospheres Dynamics, Russian Academy of Sciences	Russia	Alexander Strom	2007–2011	Completed
M135	Landslide hazard assessment in Changunarayan hill of Kathmandu, Nepal—Geotechnical investigation and preventive plan-	Ehime University, Faculty of Engineering	Japan	Ryuichi Yatabe	2008–2011	Completed
M136	Shear behaviour and mechanics of Megaslides and their nearby faults in Hittian Balla, Pakistan and Shaolin, Taiwan	University of Tokyo, Inst. Industrial Science	Japan	Kazuo Konagai, Kyoji Sassa	2008–2012	Completed
M137	Italian Landslide Inventory (IFFI Project)	Italian Agency for New technologies Energy and Environment (ENEA)	Italy	Alessandro Triglia	2008–2011	Completed
M138	Long run out and Catastrophic Landslides study: Yigong Landslide, Tibet China.	China Geological Survey	China	Yin Yueping	2008–2011	Completed
M140	Landslide and multi geohazards mapping for community empowerment in Indonesia	Gadjah Mada University	Indonesia	Dwikorita Karnawati	2008–2011	Completed
M141	Geo-Risks Management for Third World Countries—Mapping and Assessment of Risky Geo-factors for Land Use (e.g. in Ethiopia)	Charles University, Research Center of Earth Dynamic	Czech Republic	Jiří Zvelebil	2008–2012	Completed

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Table 2 (continued)

IPL Projects (2002–2016)						
No.	Title	Organization	Country	Leader	Year	Status
The initial stage of the International Programme on Landslides (IPL: 2002–2008) under support from UNESCO Coordinating projects (C by multiple members) and Member projects (M by a single member)						
International Programme on Landslides (IPL)-A programme of ICL for ISDR (2008–Present)—MoUs with UNESCO, WMO, FAO, UNISDR, UNU, ICSU and WFE0						
IPL-101-2	Landslides monitoring and slope stability at selected historic sites in Slovakia	Comenius University, Faculty of Natural Sciences	Slovakia	Jan Vlcko	2008	On-going
IPL-106-2	International Summer School on Rockslides and Related Phenomena in the Kokomeren River Valley, Tien Shan, Kyrgyzstan	Institute of the Geospheres Dynamics, Russian Academy of Sciences/JSC “Hydroproject Institute”	Russia	Alexander Strom	2008	On-going
IPL-112	Landslide mapping and risk mitigation planning in Thailand	Ministry of Agriculture and Cooperatives, Land Development Department	Thailand	Saowanee Prachansri	2008	On-going
IPL-139	Development of low-cost early warning system of slope instability for civilian use	University of Tokyo, Geotechnical Engineering Group	Japan	Ikuo Towhata/Taro Uchimura	2008	On-going
IPL-142	Seismic landslide hazards mapping in Sichuan	China Geological Survey	China	Yuepin Yin	2009–2011	Completed
IPL-143	Evaluation of sensitivity of the combined hydrological model (dynamic) for landslide susceptibility risk mapping in Sri Lanka	Central Engineering Consultancy Bureau (CECB)	Sri Lanka	A.A. Virajh Dias	2008–2012	Completed
IPL-144	SafeLand—Living with landslide risk in Europe: Assessment, effects of global change, and risk management strategies	International Centre for Geohazards, (ICG) in Oslo	Norway	Bjørn Kalsnes	2009–2012	Completed
IPL-145	Preparation of landslide risk map in Taleghan Area—Iran	Building and Housing Research Center	Iran	S.H. Tabatabaei	2009–2011	Completed
IPL-146	Spatial monitoring of joint influence of an atmospheric precipitation and seismic motions on formation of landslides in Uzbekistan (Central Asia)	Institute Hydroingeo, State Committee of Geology of Uzbekistan	Uzbekistan	Rustam Niyazov	2010–2012	Completed
IPL-147	Study on Debris Flow Controlling Factors and Triggering Mechanism in Peninsular Malaysia	Slope Engineering Branch, Public Works Department of Malaysia	Malaysia	Che Hassandi Abdullah	2010–2011	Completed
IPL-148	Geo-evaluation of the stability of slopes around crater lakes in Cameroon: The cases of lakes Nyos, Barombi, Mbo and Awing	University of Buea	Cameroon	Ntasin Edwin Bongsiysi	2010–2011	Completed
IPL-149	Canadian Landslide Best Practice Manual	Geological Survey of Canada	Canada	Peter Bobrowsky	2009–2015	Completed
IPL-150	Capacity building and the impact of climate-driven changes on regional landslide distribution, frequency and scale of catastrophe	Department of Geology, University of Nigeria, Nsukka	Nigeria	Ogbonnaya Igwe	2009	On-going

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Table 2 (continued)

IPL Projects (2002–2016)						
No.	Title	Organization	Country	Leader	Year	Status
The initial stage of the International Programme on Landslides (IPL: 2002–2008) under support from UNESCO Coordinating projects (C by multiple members) and Member projects (M by a single member)						
IPL-151	Soil matrix suction in active landslides in flysch—the Slano Blato landslide case	University of Ljubljana, Faculty of Civil and Geodetic Engineering	Slovenia	Bojan Majes	2010–2012	Completed
IPL-152	Assessment of coastal landslides risk by innovative remote sensing techniques.	University of Roma “La Sapienza”	Italy	Gabriele Scarascia Mugnozza	2010–2011	Completed
IPL-153	Landslide hazard zonation in Kharkov region of Ukraine using GIS	Institute of Telecommunication and Global Information Space	Ukraine	Oleksandr M. Trofymchuk	2010–2011 2012–2014	Completed
IPL-154	Development of a methodology for risk assessment of the earthquake-induced landslides	Japan Landslide Society	Japan	Satoshi Tsuchiya	2009	On-going
IPL-155	Determination of soil parameters of subsurface to be used in slope stability analysis in two different precipitation zones of Sri Lanka	Central Engineering Consultancy Bureau	Sri Lanka	A.A. Virajh Dias	2009	On-going
IPL-156	Best practices for early warning of landslides in a changing climate scenarios	Asian Disaster Preparedness Center (ADPC)	Thailand	N.M.S.I. Arambepola	2009–2012	Completed
IPL-157	Dynamics of subaerial and submarine megaslides	ICL	Japan	Kyoji Sassa	2009	On-going
IPL-158	Development of Community-based Landslide Early Warning System	Gadjah Mada University	Indonesia	Teuku Faisal Fathani	2009	On-going
IPL-159	Development of Education Program for Sustainable Development in Landslide Vulnerable Area through Student Community Service.	Gadjah Mada University	Indonesia	Dwikorita Karnawati	2009	On-going
IPL-160	Landslides and floods under extreme weather condition and resilient society	Kyoto University, DPRI, RCL	Japan	Hiroshi Fukuoka	2009–2012	Completed
IPL-161	Risk identification and land-use planning for disaster mitigation of landslides and floods in Croatia	Kyoto University, DPRI/Niigata University, R. Institute for Natural Hazards and Disaster Recovery	Japan	Hiroshi Fukuoka/Hideaki Marui	2009	On-going
IPL-163	Mechanical-mathematical modeling and monitoring for landslide processes	Russian Academy of Sciences, Institute of Environmental Geoscience	Russia	Svalova Valentina	2009	On-going
IPL-165	Development of community-based landslide hazard mapping for landslide risk reduction at the village scale in Java, Indonesia	Gadjah Mada University	Indonesia	Dwikorita Karnawati	2010	On-going
IPL-167	Landslides Mechanism and the Subgrade Stability Controlling Measures in Island Permafrost Area	Northeast Forestry University	China	Wei Shan	2010	On-going
IPL-168	Engaging U.S. citizens in Landslide Science through the website, “Did You See It? Report a Landslide”	U. S. Geological Survey	USA	Rex Baum	2010–2013	Completed

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Table 2 (continued)

IPL Projects (2002–2016)						
No.	Title	Organization	Country	Leader	Year	Status
The initial stage of the International Programme on Landslides (IPL: 2002–2008) under support from UNESCO Coordinating projects (C by multiple members) and Member projects (M by a single member)						
IPL-169	Landslide hazard and risk assessment in Geyser Valley (Kamchatka)	Laboratory of Engineering Geodynamics, Geological Faculty, Moscow State University	Russia	Oleg V. Zerkal	2010–2012	Completed
IPL-170	Landslide susceptibility and landslide hazard zonation in volcanic terrains using Geographic Information System (GIS): A case study in the Río Chiquito-barranca Del Muerto watershed	Institute of Geography, UNAM	Mexico	Gabriel Legorreta Paulín	2010–2013	Completed
IPL-171	Study of the geotechnical characteristics of an unstable urban area of Barranquilla (Colombia) severely affected for slope instabilities and soil volume changes	Universidad Nacional de Colombia	Colombia	Guillermo Ávila	2010–2015	Completed
IPL-172	Documentation, Training and Capacity Building for Landslides Risk Management	National Institute of Disaster Management, New Delhi	India	Surya Parkash	2011–2014	Completed
IPL-173	Croatian virtual landslide data center	Faculty of Mining, Geology and Petroleum University of Zagreb	Croatia	Snjezana Mihalic	2011	On-going
IPL-175	Development of landslide risk assessment technology and education in Vietnam and other areas in the Greater Mekong Sub-region	ICL/Institute of Transport Science and Technology	Japan, Vietnam	Kyoji Sassa/Nguen Xuan Khang	2011	On-going
IPL-176	Slope Data Acquisition along Highways in Sabah State for hazard assessment and mapping	Slope Engineering Branch, Public Works Department of Malaysia	Malaysia	Che Hassandi Abdullah	2012–2013	Completed
IPL-177	Study on geological disasters focusing on landslides in and around Tegucigalpa City, Honduras	Universidad Politécnica de Ingeniería, UPI	Honduras	Aníbal Godoy	2012–2013	Completed
IPL-179	Database of Glacial Lake Outburst Floods (GLOFs)	Charles University, Research Center of Earth Dynamic	Czech Republic	Adam EMMER/Vit Vilimek	2012	On-going
IPL-180	Introducing Community-based Early Warning System for Landslide Hazard Management in Cox's Bazaar Municipality, Bangladesh	Asian Disaster Preparedness Center (ADPC)	Thailand	N.M.S.I. Arambepola	2011–2013	Completed
IPL-181	Study of slow moving landslide Umka near Belgrade, Serbia	University of Belgrade, Faculty of Mining and Geology	Serbia	Biljana Abolmasov	2012	On-going
IPL-182	Characterization of landslides mechanisms and impacts as a tool to fast risk analysis of landslides related disasters in Brazil	CENACID—UFPR (Center for Scientific Support in Disasters—Federal University of Parana)	Brazil	Renato Eugenio de Lima	2012–2014	Completed

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Table 2 (continued)

IPL Projects (2002–2016)						
No.	Title	Organization	Country	Leader	Year	Status
The initial stage of the International Programme on Landslides (IPL: 2002–2008) under support from UNESCO Coordinating projects (C by multiple members) and Member projects (M by a single member)						
IPL-183	Landslides in West Africa: impacts, mechanism and management	Department of Geology, University of Nigeria, Nsukka	Nigeria	Igwe Ogbonnaya	2012	On-going
IPL-184	Study of landslides in flysch deposits of North Istria, Croatia: sliding mechanisms, geotechnical properties, landslide modeling and landslide susceptibility	Faculty of Civil Engineering University of Rijeka	Croatia	Željko Arbanas	2012	On-going
IPL-185	Design and Validation of an Early Warning System for Landslides—DeVEL	Technische Universität Darmstadt, Institute and Laboratory of Geotechnics	Germany	Rolf Katzenbach	2013	Completed
IPL-186	Rock-fall hazard assessment and monitoring in the archaeological site of Petra, Jordan	ISPRA-Italian Institute for Environmental Protection and Research	Italy	Claudio Margottini	2013	On-going
IPL-187	Landslide hazards assessment and modeling and sediment yield	Institute of Geography, UNAM	Mexico	Gabriel L. Paulin	2013	On-going
IPL-188	Study of slow moving landslide Potoška Planina (Karavanke Mountain, NW Slovenia)	Geological Survey of Slovenia	Slovenia	Marko Komac	2013	On-going
IPL-190	Landslide risk identification and resilience study in tectonically active mountains and sea floors	Niigata University, Research Institute for Natural Hazards and Disaster Recovery	Japan	Hiroshi Fukuoka	2015	On-going
IPL-191	Landslide hazard zonation in Carpathian region of Ukraine using GIS	Institute of Telecommunication and Global Information Space	Ukraine	Yakovliev Yevhenii/Oleksandr Trofymchuk	2015	On-going
IPL-192	Development of post-earthquake rainfall induced landslide (PERIL) hazard mitigation framework	California State University, Fullerton	USA and Nepal	Binod Tiwari	2015	On-going
IPL-193	Integrated systems for landslides monitoring, early warning and risk mitigation along motorways	University of Calabria, DIMES, CAMILAB	Italy	Pasquale Versace	2015	On-going
IPL-194	Public awareness and education programme for landslides management in Malaysia	Slope Engineering Branch, Public Works Department of Malaysia	Malaysia	Che Hassandi Abdullah	2015	On-going
IPL-195	Study for mitigation and recovery of mud eruption disaster in East Java and modeling for risk reduction mudflow hazards	Parahyangan Catholic University	Indonesia	Paulus P. Rahardjo	2015	On-going
IPL-196	Development and applications of a multi-sensors drone for geohazards monitoring and mapping	University of Firenze, Earth Sciences Department	Italy	Veronica Tofani	2015	On-going
IPL-197	Low frequency, high damaging potential landslide events in “low risk” regions—challenges for hazard and risk management	Institute of Rock Structure and Mechanics Academy of Sciences	Czech Republic	Jan Klimeš	2015	On-going

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Table 2 (continued)

IPL Projects (2002–2016)						
No.	Title	Organization	Country	Leader	Year	Status
The initial stage of the International Programme on Landslides (IPL: 2002–2008) under support from UNESCO Coordinating projects (C by multiple members) and Member projects (M by a single member)						
IPL-198	Multi-scale rainfall triggering models for Early Warning of Landslides (MUSE)	University of Firenze, Earth Sciences Department	Italy	Filippo Catani	2015	On-going
IPL-199	The effect of root systems in natural slope erosion protection in the hill country of Sri Lanka	Central Engineering Consultancy Bureau	Sri Lanka	Pvip Perera	2015	On-going
IPL-200	An assessment of the rock fall susceptibility based on cut slopes adjacent to highways and railways	Central Engineering Consultancy Bureau	Sri Lanka	H.M.J.M.K. Herath	2015	On-going
IPL-201	Landslide inventory and Susceptibility map in Durres and Kavaja region	Albanian Geological Survey	Albania	Hasan Kulici	2016	On-going
IPL-202	Ripley landslide monitoring project (Ashcroft, BC, Canada)	Geological Survey of Canada	Canada	Peter Bobrowsky/Claudio Margottini	2016	On-going
IPL-203	Analysis and identify of landslides based on species distribution and surface temperature difference	Institute of Cold Regions Science and Engineering, Northeast Forestry University	China	Ying Guo	2016	On-going
IPL-204	A study on socio-economic and environmental impacts of landslides	National Institute of Disaster Management, New Delhi	India	Surya Prakash	2016	On-going
IPL-205	Integrated systems for landslides monitoring, early warning and risk mitigation along motorways	University of Calabria, DIMES, CAMILAB	Italy	Pasquale Versace/Giovanna Capparelli	2016	On-going
IPL-206	Towards improved landslide mapping and forecasting	Istituto di Ricerca per la Protezione Idrogeologica of the Italian National Research Council	Italy	Fausto Guzzetti/Mario Parise	2016	On-going
IPL-207	Evaluation on social research approach In determining “acceptable risk” and “tolerable risk” in landslide risk areas in Malaysia	Slope Engineering Branch, Public Works Department of Malaysia	Malaysia	Che Hassandi Bin Abdullah	2016	On-going
IPL-208	Landslide disaster risk communication in mountain areas	Institute of Geography, UNAM	Mexico	Irasema Alcántara Ayala	2016	On-going
IPL-209	Landslides and related sediment disaster project covering the entire South-East Nigeria, West Africa	Department of Geology, University of Nigeria, Nsukka	Nigeria	Igwe Ogonnaya	2016	On-going
IPL-210	Massive landsliding in Serbia following Cyclone Tamara in May 2014	University of Belgrade, Faculty of Mining and Geology	Serbia	Biljana Abolmasov	2016	On-going
IPL-211	Development of wireless sensor network for monitoring and earlier warning of shallow and deep landslides (WISE-LAND)	Research Center for Geotechnology, Indonesian Institute of Sciences	Indonesia	Adrin Tohari	2016	On-going

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