

## UNITWIN/UNESCO Chairs Programme Progress report

**Period of Activity:** July 2012-June 2013

**Title of the UNESCO Network:** UNITWIN UNESCO/KU/ICL Landslide and Water-related Disaster Risk Management for Society and the Environment Cooperation Programme

**Institution/Country:** Kyoto University and the International Consortium on Landslides /Japan

**Report established by:** Kyoji SASSA<sup>1)</sup> and Kaoru TAKARA<sup>2)</sup>

**Function / Title:**

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- 2) UNITWIN Coordinator from Kyoto University, Assistant to the Executive Vice-President, Kyoto University and Professor of the Disaster Prevention Research Institute (DPRI)

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## Summary

The UNITWIN Network in Kyoto University and the International Consortium on Landslides was suggested from six participants of UNESCO to promote the International Programme on Landslides (IPL) as the research and capacity development activities of ICL. It was established in 2003. It has developed together with IPL and ICL.

The outcome is to integrate multi-disciplinary and multi-field of research and capacity development activities to reduce landslide and water related disasters and create a strong international network cross the world. One of core activity is publication the first full color scientific journal "Landslides: Journal of International Consortium on

Landslides” (Editor-in-Chief: K. Sassa). It was published 4 issues/year since 2004 to 2012, and it is published 6 issues/year from 2013. UNESCO ADG Gretchen Kalonji contributed “Preface” congratulating the success and significance of this journal in relation to the United Nations, especially UNESCO for Vol.10, No.2 in April, 2013.

Another major outcome of UNITWIN network is the publication of the first version of **ICL Landslide Teaching Tools** in March 2013 by obtaining of UNESCO Activity Supporting Fund in Asia and Pacific Region from the Ministry of Education, Culture, Sports, Science and Technology, Japan (MEXT).

ICL organized 11<sup>th</sup> Session of Board of Representatives of ICL (BOR/ICL) together with 7<sup>th</sup> Session of IPL Global Promotion Committee, IPL Symposium 2012 and ICL Network and WCoE meeting on 20-23 November 2012 at Bonvin Building (Room XVI) in UNESCO Headquarters in Paris.

ICL new regional networks organized their first meetings, ICL Adrian-Balkan Network on 7-9 March 2013 in Croatia, ICL Latin American Network on 19-22 March 2013 in Honduras, ICL North-East Asia on 18-22 June 2013 in Korea.

## I. Address and Contact

Address of the Host Institution	Address of the Coordinators
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<p>International Consortium on Landslides. Association for Disaster Prevention Research. 138-1 Tanaka Asukai-cho, Sakyo-ku, Kyoto 606-8226, Japan</p> <p>Website of UNITWIN/IPL:  <a href="http://www.iplhq.org/">http://www.iplhq.org/</a></p>	<p><b>Name:</b> Kyoji SASSA</p> <p><b>Function/Title:</b> UNITWIN Coordinator of ICL / Executive Director of the International Consortium on Landslides.</p> <p><b>Address:</b> Association for Disaster Prevention Research. 138-1 Tanaka Asukai-cho, Sakyo-ku, Kyoto 606-8226, Japan</p>
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## II. Available Resources

### 1. Human resources

Members related to landslides and water disasters in the DPRI, Kyoto University, all of the Headquarters of ICL and 55 member organizations of ICL over the world are available resources for this network.

Key persons are Kaoru Takara, Hiroshi Fukuoka from DPRI, Kyoto University, Kyoji Sassa, Osamu Nagai, Khang Dangquang, Mie Ueda, from Headquarters of ICL, Salvano Briceno, ICL senior advisor, Badaoui Rouhban, IPL advisor, Wolfgang Eder, ICL Technical advisor.

Other members from ICL are Hideaki Marui of Niigata University and Hirotaka Ochiai of Forestry and Forest Product Research institute, Japan, Yueping Ying from China Geological Survey, Claudio Margottini of Italian Geological Survey, Irasema Alcántara-Ayala of Institute of Geography, UNAM, Mexico, Vít Vilímek from Charles University, Czech Republic, Snjezana Mihalic-Arbanas from Zagreb University in Croatia, NSMI Arambepola, Asian Disaster Preparedness Centre, Alexander Strom of JSC Hydroproject in Russia, Dwikorita Karnawati and Faisal Fathani from Gadjah Mada University in Indonesia, and others.

### 2. Other resources

Financial resources other than ICL membership fee for the activities in July 2012-June 2013 have been obtained from the Ministry of Education, Culture, Sports, Science and Technology, Japan (MEXT), the Japan Science and Technology Agency (JST) and the Japan International Cooperation Agency (JICA) as well as twelve ICL supporters

(companies and centres)from Japan.

### III. Activities

#### 1. Academic activities

We are conducting the International Programme on Landslides which is jointly managed by ICL, UNESCO, WMO, FAO, UNISDR, UNU, ICSU, WFEO and IUGS. Main activities are IPL projects proposed and implemented by 55 member organizations of ICL. All 48 projects and their activities are reported and uploaded in IPL WEB: <http://www.ipl.org/>.

ICL-IPL has identified 15 World Centres of Excellence on Landslide Risk Reduction (WCOEs) for 2011-2014 at the Second World Landslide Forum. WCOEs will be applied under specific targeted activities for 3 years and approved through the evaluation by the Independent Panel of Experts at each World Landslide Forum.

#### 2. Conference / Meeting

- ICL organized 11<sup>th</sup> Session of Board of Representatives of ICL (BOR/ICL) together with 7<sup>th</sup> Session of IPL Global Promotion Committee, IPL Symposium 2012 and ICL Network and WCoE meeting on 20-23 November 2012 at Bonvin Building (Room XVI) in UNESCO Headquarters in Paris. 58 members of ICL attended it. Ms. Gretchen Kalonji, Assistant Director-General Natural Sciences Sector of UNESCO and Mr. David Atchoarena (Director of the Division for Teacher Development and Higher Education of UNESCO) presented supporting greetings to BOR members for promotion of ICL and IPL activities. 91 pages of proceedings of IPL 2012 Symposium including new IPL project proposals and results of IPL projects and WCoEs activities were published in CD.
- ICL Cold Region Landslides Network organized its First Meeting and the First Symposium on Landslides in Cold Region on 23 – 27 July 2012 in Harbin, China. The meeting was organized by Northeast Forestry University, China and supported by Transportation Department of Heilongjiang Province, China and Highways Institution of Heilongjiang Province, China.
- ICL Adriatic-Balkan Network organized its first meeting and the First Regional Symposium on Landslides in Adriatic-Balkan Region in Zagreb, Croatia. It is a part of IPL-161 Risk Identification and Land-Use Planning for Disaster Mitigation of Landslides and Floods in Croatia. The proceedings are in print.
- ICL Latin American Network organized its first meeting and the First Central

American and Caribbean Congress on Landslides on 19-22 March 2013 in Teuchigalpa, MDC, Honduras. It was hosted by the Universidad Politecnica de Ingeieria, UPI, Honduras and supported by the Japan International Cooperation Agency (JICA) and others.

- ICL North-East Asia Network organized its first session and organized the International Symposium on Prediction and Mechanism of Debris Flows at the Hoam Faculty House, Seoul National University in 18-22 June 2013 in Korea. This meeting was hosted by Korea Forest Research Institute and supported by the Korea Forest Service and the Korean Society of Forest Engineering. 314 page proceedings were published.
- ICL International Summer School on Rockslides and Related Phenomena was organized in the Kokomeren River Valley, Tien Shan, Kyrgyzstan from August 15 till August 31 in 2012. This IPL106-2 started as a capacity development project of ICL from 2008 being preceded by ICL M-111 Project (2005-2008).

### **3. Interuniversity Exchange / Partnerships**

- IPL-175 Development of landslide risk assessment technology and education in Vietnam and other areas in the Greater Mekong Sub-region started from 2011. As a part of this project, one from National Vietnam University was invited to Kyoto University and entered into doctor course of Kyoto University while he is working in the ICL headquarters. Two engineers from the Institute of Transport Science and Technology were invited to Japan and entered in to the Master course of Kyoto University. One engineer was invited and entered into the doctor course of Tohoku Gakuin University, and one engineer was invited an entered in to the master course of Shimane University. This IPL Project and those students are funded by SATREPS (Science and Technology Research Partnership for Sustainable Development) project by the Japan International Cooperation Agency (JICA) and the Japan Science and Technology Agency (JST).
- As a part of IPL 161 Risk identification and land-use planning for disaster mitigation of landslides and floods in Croatia, two students are invited and studying in the doctor course of Kyoto University. One researcher from Zagreb University was invited to ICL for one and half month to study computer simulation. Two researchers from Rijeka University and Split University are invited for a few months to study flood risk assessment.
- Japanese researchers visited their countries, Vietnam and Croatia, groups of 5-20 persons for 2 weeks 2-4 times in the period of July 2012-June 2013. One

researcher visited Vietnam for several times (one month for each time) and one researcher visited Croatia for several months (one month for each time)

- As the project to create “Landslide teaching tool box” financed by MEXT, several persons were invited to Kyoto for 1 week from Indonesia, Croatia, Vietnam, Taiwan, New Zealand and Italy in October 2012, in January and February in 2013.
- IPL 159 and Capacity Development Network program - the Student Community Service Program for Landslide Mitigation in Karanganyar, Central Java, has been conducting starting from July 1 - August 31, 2013. This is a regular summer program involving 28-30 students from UGM and one student from San Diego State University, USA, supported by UGM, in cooperation with Pacific Disaster Center and the University of Hawaii at Manoa, USA.
- As a part of **IPL-159** and the ICL Capacity Development Network Activity, a Disaster Response Action has been conducted by Universitas Gadjah Mada in cooperation with Universitas Syahkuala Banda Aceh, due to the Earthquake Induced Landslide Disaster that just occurred on July 2, 2013.
- As a part of **IPL 159**, Partnership Program of UGM Indonesia and GNS New Zealand has been established to facilitate the capacity development program in Disaster Risk Reduction. The program activities has been conducting since 2012 at selected disaster prone areas in Indonesia. Study visit to Auckland and Wellington conducted in June 2012. Series of workshops also has been organized in Palu Central Sulawesi and Padang West Sumatera. This program is designed for 3 years since 2012.
- On 3-5 August 2012, the DPRI organized the International Symposium on Sustainability/Survivability Science for a Resilient Society Adaptable to Extreme Weather Conditions with the support of the Global COE Program (GCOE-ARS). In this symposium, capacity building activities in Kyoto University focusing on risk management of disasters caused by extreme weather and resultant floods and landslides. The DPRI also initiated another educational program “Inter-graduate School Program for Sustainable Development and Survivable Societies” (GSS) under the support of the Program for Leading Graduate Schools. This program includes 38 students from 9 gradate schools in Kyoto University as of 30 July 2013. Amongst the 38 students, a couple of students are dealing with landslides, taking interdisciplinary research and education opportunities for developing their capacity. These GCOE-ARS and

GSS programs could contribute to enhancement of UNITWIN activities.

#### 4. Publication and multimedia materials.

- ICL edited and published Vol.9, No.3, No.4, Vol.10, No.1, No.2 and No.3 of Landslides: Journal of the International Consortium on Landslides in this period. The journal has developed from quarterly journal to bimonthly journal in 2013. The published papers are much referred. The Impact factor of this journal was 2.216 in 2011 and 2.093 in 2012.
- ICL published the Proceedings of the IPL symposium in UNESCO, 2012 (Eds.: K. Sassa, K. Takara and B. He) on line in the IPL WEB (<http://www.iplhq.org/>) and CD (91 pages) ISBN 4-9903382-1-9 C3051
- ICL has established **the ICL Landslide Teaching Tools** as a basic tool of landslide education and capacity development. This was financially supported by the Japan's Official Development Assistance (ODA) fund to support UNESCO activities of the Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan.

The outline of ICL Teaching Tools is as below.

#### The Teaching Tools consist of the following five parts.

- Part 1. Mapping and Site Prediction
- Part 2. Monitoring and Early warning
- Part 3. Testing and Numerical Simulation
- Part 4. Risk Management and Others
- Part 5. Country Practices and Case Studies

#### The Teaching Tools have three forms of tools.

1. Original texts with figures and photos are published as **TXT tools** (full color 405 pages).
2. PDF files of already published reference papers, manuals, guidelines, laws, codes and others saved in CD as **PDF tools**.
3. PPT files made for oral lectures of text tools are saved in CD as **PPT tools**.  
A book for TXT tools includes abstracts of all PDF tools and all PPT tools as Appendix.

#### Identifiers of each tool

Identifier of each tool consists of the following three numbers.

1. Number of Part within 1-5.
2. Country telephone code and number of organization such as 081-1 (Japan-ICL headquarters), 081-3 (Japan- Erosion and Sediment Control Department, Ministry of Land, Infrastructure, Transport and Tourism)

### 3. Number of teaching tool by its organization

#### Example of teaching tool

TXT-tool 1.886-1.1 Landslide Susceptibility Mapping: Part 1, Chinese Taipei (886), National Taiwan University (1). Tool number 1.

PDF-tool 3.081-1.2 Manual of integrated computer simulation programme “LS-RAPID” : Part 3, Japan (081), ICL Headquarters (1), Tool number 2

PPT-tool 4.039-1.1 Definition & Use of Empirical Rainfall Thresholds for Possible Landslide Occurrence: Part 4, Italy (039), National Research Council CNR-IRPI (1) , Tool number 1

#### Planned update of the Teaching Tool (Version 1)

Version No.1 of Teaching Tool will be circulated to ICL members and ICL supporting members as well as all contributing organizations below. ICL will call for modification or update or new contributions from new members. During ICL Board of Representative meetings on 18-22 November 2013, the update of Version 1 will be discussed. Then, Version 2 is planned to be made in 2014 through the World Landslide Forum 3 on 2-6 June 2014 in Beijing, China.

#### List of contributing organizations with identifier number and email of leader

039-1 Istituto di Ricerca per al Protezione Idrogeologica, CNR, Italy

Email: Fausto GUZZETTI <F.Guzzetti@irpi.cnr.it>

062-1 Department of Geological Engineering, Universitas Gadjah Mada, Indonesia

Email: Dwikorita KARNAWATI <dwiko@ugm.ac.id> ,

Faisal FATHANI <[tfathani@gmail.com](mailto:tfathani@gmail.com)>

064-1 GNS Science, New Zealand

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066-1 Asian Disaster Preparedness Center (ADPC), Thailand

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081-1 ICL Headquarters, Japan

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081-2 Tohoku Gakuin University, Japan

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081-3 Erosion and Sediment Control Department, Ministry of Land, Infrastructure, Transport and Tourism (MLIT), Japan

084-1 VNU University of Science, Vietnam

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385-1 Croatian Landslide Group from Faculty of Civil Engineering, Rijeka University and Faculty of Mining, Geology and Petroleum Engineering,



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## 5. Others

Nothing special

## IV. Outcomes

The International Consortium on Landslides was founded during the 2002 UNESCO-Kyoto University Joint Symposium and developed by its UNITWIN Network Programme in 2003. Landslides are important factor of disasters, but they are not studied as an integrated way. Landslide research and researchers are in minor areas of almost all organizations, they do not get major funds and those works are not evaluated. However, the global network of landslide researchers has developed and raised the profile of ICL and members of UNITWIN Networks through the decade. Now members of ICL and Networks may raise competitive funds with increased evaluation and understanding of significance. It has been shown from various sources of funds for ICL and the network activities.

A very success of the Second World Landslide Forum (864 persons from 63 countries), and the high Impact Factor of Landslides: Journal of International Consortium on Landslides reached to be 2.216 for 2011, 2.093 for 2012 are the evidence of the outcome of the activities.

ICL has identified 15 World Centres of Excellence on Landslide Risk Reduction at 7<sup>th</sup> IPL Global Promotion Committee and released it at the Second World Landslide Forum. Three IPL Awards for Success were identified to three groups in USA-CANADA, Norway, Indonesia, and the Best paper award for Landslides 2010 was bestowed to the paper by Christopher I. Massey (New Zealand) et al., Varnes Medal 2010 was awarded Dr Zaiguan Lin (China) in 2011.

ICL has the status of the consultative partnership with UNESCO, the thematic platform on landslides within the Global Platform for Disaster Reduction of the United Nations International Strategy for Disaster Reduction (UNISDR).

The seven volumes of books containing papers submitted to the Second World Landslide

Forum have been edited and formatted. One volume has already published in the digital form. All seven volumes will be published both in printing and in digital form in July-September 2013. The following seven volumes below will be the major outcome of ICL: 1) Landslide inventory and susceptibility and hazard zoning (650 pages); 2) Early warning, instrumentation and monitoring (690 pages); 3) Spatial analysis and modeling (480 pages); 4) Global environmental change (420 pages); 5) Complex environment (520 pages); 6) Risk assessment, management and mitigation (430 pages); 7) Social and Economic Impact and Policies (430 pages)

## V. Forthcoming Activities

- The Third World Landslide Forum will be organized on 2-6 June 2014 in Beijing, China. 480 abstracts have been submitted by 15 June 2013. 8 special sessions, 10 sessions for methods and case studies, 9 sessions for targeted landslide and 5 side events will be organized.
- Landslides: Journal of International Consortium on Landslides will publish Vol.10, No.4-No.6, Vol.11, No.1-No.3 in the coming year (August 2013 to June 2014).
- **ICL-IPL Kyoto Conference 2013** -Strengthening International Network and Partnership in Science and Technology to Create a Safer Geo-Environment- Will be organized from 18-22 November 2013. This conference is financially supported by the strategic funds for the promotion of Science and Technology by the Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan.
- 2013 summer training course for slope land disaster reduction will be held on 4-16 August 2013 at National Taiwan University. 25 persons will be invited free of charge from developing countries in Asia. There will be 8 professor, 10 government officers, 17 PhD students and 5 Master students from 18 countries join the training course. The field trip will visit the famous Xiao-Lin Landslide. Attendants pass the exam at the end will receive a certificate of excellence from ICL.
- ICL International Summer School on Rockslides and Related Phenomena will be organized from August 15 to 31, 2013 in the Kokomeren River Valley (Kyrgyzstan).
- The 4th Workshop of the Croatian-Japanese joint research project 'Risk Identification and Land-Use Planning for Disaster Mitigation of Landslides and Floods in Croatia' will be held in Split, Croatia in 12-17 December 2013.
- Landslide teaching tools have been made in this year. It will be improved and extended through the ICL-IPL conference in Kyoto in November 2013 and the

Third World Landslide Forum in June 2014.

- GCOE-ARS International Symposium will be held in Uji Campus, Kyoto University, on 1-3 December 2013.
- GSS International Advisors' Meeting will be held in Yoshida Campus, Kyoto University on 26-27 February 2014.
- ICL will continue two SATREPS (Science and Technology Research Partnership for Sustainable Development) Projects on Landslides: one in Croatia (Risk Identification and Land-Use Planning for Disaster Mitigation of Landslides and Floods in Croatia) until the end of March 2014, and the other in Vietnam (Development of landslide risk assessment technology along transportation arteries in Viet Nam) in the coming three years.
- As a part of IPL 159 action, UGM landslide expert will be invited to provide the lecture on the Leadership Beyond Disaster Youth Program, that will be conducted by Center for Disaster Reduction-University of Hyogo, in cooperation with Eubios Ethics Institute and American University Sovereign Nations, in Kobe on September 8 - 11, 2013. *Follow-up of this program will be accommodated by the Capacity Development Network, to jointly joint-hosting the annual leadership Beyond Disaster Youth Program in Asia Pacific.*
- As a part of IPL 158, IPL 159 and IPL 165 Programs, UGM and the University of Hawaii at Manoa as well as the Pacific Disaster Center is now developing a program entitled "Resilience from Community Projects to Regional Strategies" which is supported by Asia Pacific Disaster Risk Reduction and Resiliency. A pilot research action on Community-based Landslide Early Warning System has been conducting, and it will be further developed by integrating the Crowd Sourcing and Large Database Management System.

## VI. Development Prospects

Since the foundation of the international Consortium on Landslides in January 2002 and the foundation of UNITWIN Network between UNESCO-Kyoto University-ICL in 2003, the international network activities on landslides and water-related disasters have developed steadily. ICL has established the strategic plan for the second decade and created 4 regional networks and 5 thematic networks based on this strategic plan. This UNESCO-KU-ICL network will further develop mobilizing the initiatives of

current members by two crossing networks of thematic and regional.

**Thematic networks**

1. Capacity Development Network
2. Landslide Risk Management Network
3. Landslide in Cold Regions,
4. Landslide and Cultural & Natural Heritage Network
5. Landslide Monitoring and Warning Network

**Regional networks**

1. Adriatic-Balkan Network
2. North-East Asian Network:
3. Latin American Network
4. South-East Asian Network