"2006 Tokyo Action Plan"

Strengthening Research and Learning on Landslides and Related Earth System Disasters for Global Risk Preparedness

(A joint photo of the participants to the Round Table Discussion)

Adopted in the
Round Table Discussion
Strengthening Research and Learning on Earth System Risk Analysis and Sustainable Disaster Management within UN-ISDR as Regards "Landslides"
- Towards a dynamic global network of International Programme on Landslides (IPL) -
on 18-20 January 2006 at United Nations University, Tokyo, Japan

Organized by

International Consortium on Landslides (ICL), United Nations Educational, Scientific and Cultural Organization (UNESCO), World Meteorological Organization (WMO), Food and Agriculture Organization of the United Nations (FAO), United Nations International Strategy for Disaster Risk Reduction (UN/ISDR), United Nations Environment Programme（UNEP), United Nations University (UNU), Kyoto University (KU)

Cosponsored by

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"2006 Tokyo Action Plan"
Strengthening Research and Learning on Landslides and Related Earth System Disasters for Global Risk Preparedness

Adopted in the Round Table Discussion on 20 January 2006
in Elizabeth Rose Hall of the United Nations University, Tokyo

The 2006 Tokyo Round Table Discussion "Strengthening Research and Learning on Earth System Risk Analysis and Sustainable Disaster Management within UN-ISDR as Regards Landslides" -towards a dynamic global network of the International Programme on Landslides (IPL) was held at the United Nations University, Tokyo, from 18th to 20th January, 2006 to formulate a framework for cooperation and to identify focus areas to reduce landslide risk worldwide. The following action plan was adopted as a summary of the meeting, to be implemented within the scope of the Hyogo Framework for Action 2005-2015, "Building the Resilience of Nations and Communities to Disasters", declared at the United Nations World Conference on Disaster Reduction held in Kobe, Japan in 2005.

Preamble

Large and small landslides occur almost every year in nearly all regions of the world. Figure 1 shows the example for casualties in Japan for 1967-2004. Landslide disasters in Japan have occurred every year; the total number of deaths due to landslides is about one half of those caused by earthquakes, including the catastrophic 1995 Kobe earthquake.

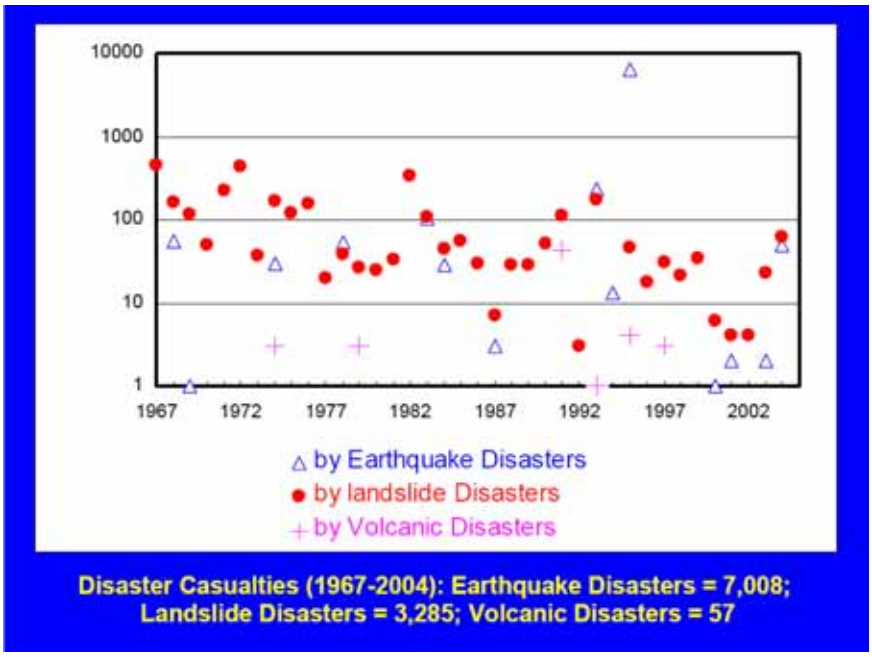

Figure 1 Comparison of the numbers of victims in Japan from 1967-2004 due to landslide disasters,

earthquake disasters including deaths by earthquake-induced-landslides, and volcanic disasters including deaths due to volcanic gas (The statistic of victims by landslide disasters since 1967 was published by the Sabo Technical Center).

"Landslides" are a complex-disaster phenomenon that can be caused by earthquakes, volcanic eruptions, heavy rainfall (typhoons, hurricanes), sustained rainfall, heavy snowmelt, unregulated anthropogenic developments, mining, and others (Fig. 2a). Large-scale coastal or marine landslides are known to cause tsunami waves that kill many people; an example was the 1792 UNZEN-Mayuyama landslide, which caused a devastating tsunami that resulted in 16,000 fatalities from the landslides and the tsunami in Japan. Also large-scale landslides on volcanoes can dislocate the mountain tops and trigger volcanic eruptions; such was the case for the 1980 eruption of Mount St. Helens in the USA and presumably for Mt. Bandai in Japan. Landslides also may occur without earthquakes, heavy rains, volcanic eruptions, or human activities due to progress of natural weathering; therefore, they occur almost everywhere in the world. Landslides most commonly impact residents living on and around slopes.

Landslides are a natural phenomenon which can only be effectively studied in an integrated, multi-disciplinary fashion, including contribution from different natural and engineering sciences (earth and water sciences), and different social sciences. This is also the case because landslides are strongly related to cultural heritage and the environment (Fig. 2b). Landslides should be jointly managed by cooperation of different ministries and departments of government including some representing education, science and technology, construction and transportation, agriculture, forestry, and the environment, culture and vulnerable groups (the poor, aged, handicapped, or children). As landslides are highly localized phenomena it is crucial to seek the contribution of local governments or autonomous communities (Fig. 2c).

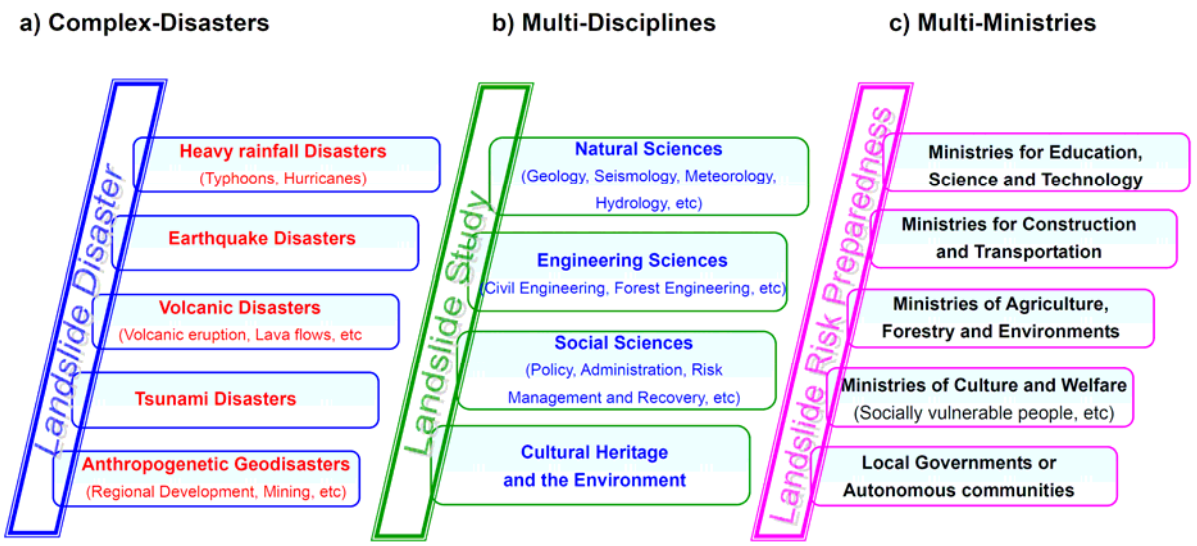

Figure 2 Characteristics of landslide disasters.

The disasters caused by landslides are of very complex nature wherever they occur around the world. Research on landslides should be integrated into a new multi-disciplinary science field of landslide study. Landslide risk preparedness is to be managed by multi-ministries.

Action Plan

Global cooperation in landslide-risk reduction research and learning will be carried out encompassing related disasters affecting the earth-system, such as heavy rainfall, earthquakes, volcanic eruptions, tsunamis, and disasters of anthropogenic origin. Establishment of a 'Dynamic Global Network of the International Programme on Landslides" and its operation will effectively function for landslide and related risk reduction through the implementation of the following Action Items adopting a multi-hazard, multi-sectoral approach;

Actions

1. Establishment of the IPL Framework

1) Establishment of the IPL Global Promotion Committee

The IPL Global Promotion Committee shall be established by ICL members and ICL supporting organizations, as illustrated in Figure 3. The committee will meet annually, on the occasion of ICL Board of Representative meetings, or possibly at other occasions and locations. The committee will conceive a strategy to promote the 2006 Tokyo Action Plan, and will discuss the management of IPL global cooperation fields, and their possible modification, selection, and termination.

2) Establishment of IPL World Centre

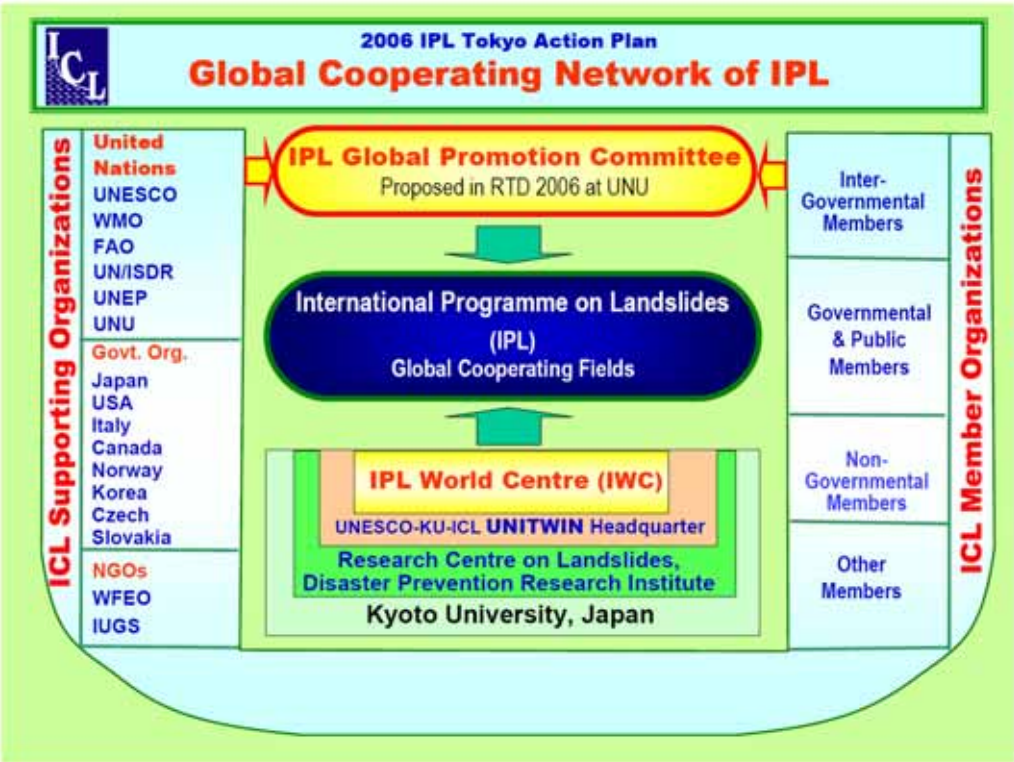

Figure 3 Structure of the IPL global-cooperation framework.

The IPL World Centre will be established to coordinate and support implementation of the global cooperating fields of the International Programme on Landslides (IPL), which works as the secretariat of the IPL Global Promotion Committee and the International Programme on Landslides (IPL). The Centre will be hosted by the Headquarter of the UNESCO-KU-ICL UNITWIN Cooperation Programme "Landslide Risk Mitigation for Society and the Environment" in the Research Centre on Landslides, Disaster Prevention Research Institute, Kyoto University, Kyoto, Japan, where the secretariat of the International Programme on Landslides has been located since its foundation in 2002.

2. Promotion of the Global Cooperating Fields of the International Programme on Landslides (IPL)

The global cooperating fields of IPL are identified as follows for the initial phase:

(1) Technology Development

A. Monitoring and Early Warning

- Use of various on-site, in-situ technologies, as well as satellite observations in monitoring landslide effects and contributing factors for early-warning purposes
- Development of automated monitoring methods covering large spatial extent and real-time data communication, as well as low-cost monitoring devices
- Development of early-warning methodologies, in particular for rain-induced landslides
- Applications linking meteorological, hydrological and landslide models

B. Hazard Mapping, Vulnerability and Risk Assessment

- Hazard Mapping at local and global scales
- Vulnerability assessment, considering human life, land resources, structures, infrastructure, and cultural heritage
- Risk assessment and communicating risk in an easily understood manner

(2) Targeted Landslides: Mechanisms and Impacts

A. Catastrophic Landslides

- Catastrophic landslides induced by natural and anthropogenic factors such as rainfall, earthquakes, volcanic activity, river erosion, and human activities, and their combinations
- Landslides threatening human lives and high societal values
- Gigantic coastal landslides and marine landslides causing tsunamis

B. Landslides Threatening Heritage Sites

- Studies for protection of cultural heritage, cultural landscape, and the natural heritage from landslides using non-invasive technologies and appropriate mitigation strategies (e.g. Machu Picchu, Bamiyan, Lishan, Cordillera Blanca)

(3) Capacity Building

A. Enhancing Human and Institutional Capacities

- Building human capacities and expertise in landslide management
- Institution building at national and local levels through Centers of Excellence
- Enhancing implementation and action at local level

B. Collating and Disseminating Information/ Knowledge

- Developing a culture of awareness on landslide risks
- Developing model policy frameworks, standards, guidelines/checklists, and training modules.

(4) Mitigation, Preparedness and Recovery

A. Preparedness

- Strengthening disaster preparedness of all stakeholders
- Strengthening capacities of communities and local institutions to cope with landslide hazards
- Forecasting and providing early warning of adverse conditions likely to lead to landslide activity
- Preparing contingency recovery plans, including pre-positioning of technical and material resources for likely landslide events

B. Mitigation

- Development of innovative, low-cost, and ecologically appropriate landslide mitigation techniques.
- Mountain conservation methods, including soil conservation, forest and watershed management, and appropriate land-use techniques
- Appropriate civil engineering works, including construction and urban and coastal development;
- Restricting inappropriate development in landslide prone areas
- Development of appropriate policy and planning mechanisms, such as land-use management (including zoning)
- Promotion and strengthening of monitoring and warning systems

C. Recovery

- Post-landslide recovery and rebuilding efforts should integrate landslide mitigation measures
- Prevention of secondary risks of landslides resulting from inappropriate re-building efforts in response to any disaster (for example, earthquakes, volcanic eruptions, extreme weather events, etc.)
- Implementation of landslide recovery efforts and programmes (including psycho-social and health aspects) with the participation of affected communities and local authorities
- Providing long-term support to ensure sustainable recovery

3. Promotional Activities

(a) World Landslides Forum

Capitalizing on the competence, international experience and established organizational network of ICL-IPL, it is proposed to create a global information platform for future joint activities of the world-wide landslide community, named the 'World Landslide Forum' that shall be convened every 3 years.

The first World Landslides Forum – organized by the ICL – can be planned to take place in January 2009, bringing together academics, practitioners, politicians, et al. to a global, multidisciplinary, problem-focused platform. This forum will provide an opportunity for the first identification of a WCoE. Linkages to ISDR activities, as well as other global events, including the World Water Forum, the International Year of Planet Earth, etc., will be established.

(b) Identification and Promotion of World Centres of Excellence on Landslide Risk Reduction

The IPL Global Promotion Committee will identify and promote World Centres of Excellence (WCoE) every 3 years within eligible organizations, such as universities, institutes, NGOs, government ministries and local governments, contributing to "Risk Reduction for Landslides and Related Earth System Disasters". Linkages to CoE at the national level will be used to promote cooperation with the ICL and dissemination of knowledge and information. An independent Panel of Experts, set up by the Global Promotion Committee of IPL, may be appointed to endorse the CoEs.

(c) Contributions to Global Landslide Issues

The IPL will mobilize global cooperation for strengthening research and learning on risk reduction for landslides and related earth system disasters at sites identified as of great concern to the global community, such as Macchu-Picchu, the Kashmir, Central Asia high mountainous area, and Bamiyan.

(d) Partnerships

Mutually beneficial partnerships with other global initiatives, such as the International Hydrological Program (IHP), the International Geoscience Program (IGCP), and The Mountain Partnership will be developed.

LETTER OF INTENT

"United Nations World Conference on Disaster Reduction (WCDR)", Kobe, Japan, 18-22 January 2005

This 'Letter of intent' aims to provide a platform for a holistic approach in research and learning on 'Integrated Earth system risk analysis and sustainable disaster management'.

Rationale

- Understanding that any discussion about global sustainable development without addressing the issue of Disaster Risk Reduction is incomplete;
- Acknowledging that risk-prevention policies including warning systems related to Natural Hazards must be improved or established;
- Underlining that disasters affect poor people and developing countries disproportionately;
- Stressing that after years of under-investment in preventive scientific, technical and communicational infrastructure activities it is time to change course and develop all activities needed to better understand natural hazards and to reduce the vulnerability notably of developing countries to natural hazards, and
- Acknowledging that a harmful deficiency in coordination and communication measurements related to Disaster Risk Reduction exists.

Proposal

Representatives of United Nations Organisations, as well as the Scientific (ICSU) and Engineering (WFEO) Communities propose to promote further joint global activities in disaster reduction and risk prevention through

Strengthening research and learning on 'Earth System Risk Analysis and Sustainable Disaster Management' within the framework of the 'United Nations International Strategy for Disaster Risk Reduction' (ISDR).

More specifically it is proposed,

based on the existing structural framework of the ISDR and plan of action of the UN-WCDR, as well as other relevant networks and institutional and international expertise,

to establish specific, goal-oriented 'Memoranda of Understanding' (MoUs) between international stakeholders targeting Disaster Risk Reduction, for example focusing on landslide risk reduction, and other natural hazards.

Invitation

Global, regional and national competent institutions are invited to support this initiative by joining any of the specific MoUs following this letter through participation in clearly defined projects related to the issues and objectives of any of the MoUs.

Signatories:

Mr. Koïchiro Matsuura
Director-General
United Nations Educational, Scientific and Cultural Organization

4 MAR 2005
Date

Mr. Michel Jarraud
Secretary-General
World Meteorological Organization

22. 3. 2005
Date

Mr. Jacques Diouf
Director-General
Food and Agriculture Organization of the United Nations

21 VI 2005
Date

Mr. Sálvano Briceño
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19.01.05
Date

Mr. Hans van Ginkel
Rector
United Nations University

19.01.05.
Date

Ms. Jane Lubchenco
President
International Council for Science

21. 04. 05
Date

Ms Françoise Come
Executive Director
World Federation of Engineering Organizations

24/ 2/ 2005
Date

The International Consortium on Landslides (ICL) proposed the "Letter of Intent" at the thematic session 3.8 "**New International Initiatives for Research and Risk Mitigation of Floods (IFI) and Landslides (IPL)**" of the United Nations World Conference on Disaster Reduction held on 19 January 2005 in Kobe, Japan. This is the Letter of Intent, which was electronically combined based on the original Letters of Intent, formally approved and signed by all parties. All of the original Letters of Intent with signatures are deposited in the secretariat of the International Consortium on Landslides which is located in the Research Centre on Landslides of the Disaster Prevention Research Institute, Kyoto University.

International Consortium on Landslides

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