Date of Submission	3 April 2012

IPL Project Annual Report Form 2012

1. Project Title : Development of landslide risk assessment technology along transportation arteries in Vietnam.

2. Main Project Fields

(1) Technology Development

A. Monitoring and Early Warning, B. Hazard Mapping, Vulnerability and Risk Assessment

(2) Capacity Building

A) Enhancing Human and Institutional Capacities

B) Collating and Disseminating Information/ Knowledge

(3) Mitigation, Preparedness and Recovery

Preparedness, B. Mitigation, C. Recovery

3. Name of Project leader: Kyoji SASSA and Doan Minh TAM

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Core members of the Project:

Japan: Hirotaka Ochiai (Forestry and Forest Product Research Institute), Toyohiko Miyagi (The Japan Landslide Society), Bin He (Disaster Prevention Research Institute, Kyoto University) and Osamu Nagai (IPL World Centre),

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4. Objectives: (5 lines maximum)

The objective is to contribute to landslide disaster reduction along main transport arteries and on residential areas through study on effective application of new technology on forecast,

monitoring and treatment of landslides in Vietnam and other areas in the Greater Mekong Sub-region in close cooperation with Japanese universities and also ICL. The following targets are expected: a) Development of Landslide risk assessment technology suitable for the targeted areas in Vietnam. b) Capacity Development for research on landslide risk identification and hazard mapping. c) Social application over the regions.

5. Study Area: (2 lines maximum)
   Viet Nam , Japan , Countries in the Greater Mekong Sub-region (e.g. Laos and Myanmar)

6. Project Duration (1 line maximum)
   5 years from March 2012 to March 2017

7. Report

1) Progress in the project: (30 lines maximum)

   Japanese group visited Viet Nam in June, July, November 2011 and March 2012. Governments of Japan and Viet Nam has formally agreed and singed the agreement of this project on 7 November 2011. Based on the field visits, the group selected two landslides in Son La Province of Viet Nam, one is a large scale reactivated landslide in Chen Pass along the Route No.37, and one is an active landslide threatening densely residential area of Capital city of Son La Province along Route No.6. The monitoring equipment to be installed in both landslides are decided including extensometers, long-span extensometers, total station, rain gauge, and the inclinometer and vertical extensometers and pore water pressure gauges to be installed in 70-100 m drilling hole in Cheng Pass landslide and also 20-30 m deep drilling in Son La city. 3 Vietnamese members were invited to the ICL tenth anniversary meeting held in Kyoto. Dr. Tam and others of ITST presented a paper in the IPL symposium held in the final day of meeting.

2) Planned future activities or Statement of completion of the Project (15 lines maximum)

   7 Vietnamese young and senior members will be invited to Japanese joint research institutes; ICL headquarters, Kyoto University, Forestry and Forest Product Research Institute in Tsukuba, Tohoku Gakuin University in Sendai, Shimane University in Matsue, Shizuoka University.

   ICL Headquarters are developing a very high stress undrained ring shear apparatus by the budget of JST (Japan Science and Technology Agency), targeted normal stress and undrain capability is 3 MPa. It is enough to test more than 100 m deep landslides. It is planned to be developed within 2012. After improving the apparatus suitable in use of Vietnam by Vietnamese engineers, another high stress ring shear apparatus will be produced and donated to Viet Nam by the budget of JICA (Japan International Cooperation Agency).

   Initial monitoring instrument is planned to purchase and install in Son La Province in 2012-2013. Young engineers will be invited to Japanese post-graduate course either using the Japanese

Government Scholarship or the JICA's budget allocated to this project.

3) Beneficiaries of Project for Science, Education and/or Society (15 lines maximum)

The subjects directly benefiting from the project's achievements include:

In Vietnam: people in 10 provinces frequently affected and the impact of the phenomenon of landslides and a team of young engineers in the research institutes, universities and in technical management agencies in local conditions better awareness in order to prevent landslides as housing, farming and irrigation in mountainous conditions and applying appropriate technology to actively prevent, mitigate consequences natural disasters caused by landslides. In Laos and Myanmar: people in some mountainous locals and a division engineers in the agency and management consulting. Results can be disseminated to other developing countries in the region and the world to study and apply.

4) Results: (15 line maximum, e.g. publications)

Minh TamDoan, Van Tien Dinh (2012) .Landslide situation in Vietnam and Cooperation with the International Consortium on Landslides in enhancement of research and treatment for landslides on road network. Proceedings of IPL Symposium, Kyoto, 2012, pp.136-140.

Kyoji Sassa (2011). Landslide risk assessment technology and early warning. Proceedings of Science and Technology Seminar on the spread of new technology on landslide survey, early warning and treatment of road network, Son La, Viet Nam, pp.21-53.

Huynh Dang Vinh (2011). Overview of landslide situation at Chen Pass in Son La Province along the national highway No.37. Proceedings of Science and Technology Seminar on the spread of new technology on landslide survey, early warning and treatment of road network, Son La, Viet Nam, pp.54-98.