

# Proposal of ICL Network

1. Name of Network: Landslides in Cold Regions Network

2. Name of Proposer: Wei SHAN

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Core members of the activities

Names/Affiliations

Baolin WANG / Geological Survey of Canada

Fawu WANG / Shimane University, Japan

3. ICL member organizations (representatives) involved in the Network.

Nicola Casagli / Dept of Earth Science, University of Florence

Alexander Strom / Inst. of Geospheres Dynamics of Russian Academy of Sciences

4. Objectives for the initial 3 years :

To establish specialized agency under ICL. Relying on financial support from both IPL project and government, corporate project, to convene regular meetings, to organize on-site visits, to exchange research results, and to train relevant persons. To establish more landslide project in cold regions, and to enrich the cold regions landslide research results further.

5. Background Justification: (10 lines maximum)

Cold regions of the world, occurring at high altitudes and high latitudes, are experiencing greater warming impact than other regions of the globe. Glaciers and ice sheets are shrinking and permafrost is thawing. Glaciers play an important role in conditioning landscapes for mass movement. Glaciers rearrange and override sediments, only to expose them to elements when the glaciers recede. The exposed and often steep soils are rapidly modified by erosion and debris slides and flows. Glacial debuitressing can result in rock fall, slow deep seated slope deformation, and under the right circumstances, rock avalanches. The distribution of permafrost is also decreasing. Permafrost thaw results directly from increased temperatures but also indirectly from disturbance agents. Wildfire, for example, reduces the thickness of insulating mosses and accelerates permafrost thaw. Permafrost thaw is associated with increased flow activity in soils and rock falls and slides from alpine rock faces. As glaciers continue to thin and permafrost continues to thaw in the 21st century, we can expect continued associated landslide activity.

6. Resources available for Network activities

There are two projects (IPL132, IPL167) in ICL, and project funding is \$ 400,000. On the research of landslide in cold regions, both Northeast Forestry University and Geological

Survey of Canada are engaged in, and had got some research results. On other hand, the University of Florence has advanced land remote sensing technology, and could provide the condition of further collaborative.

7. Description of past activities related to proposed network (30 lines maximum).

In the north of some countries, there are many geological disaster caused by melting permafrost problem, for example, in Russian railway construction of Baikal to Amur, in Canada oil pipeline construction of northern, in USA Alaska road construction, in China Qinghai-Tibet Railway and road construction , Khingan Railway and road construction and so on. But, most of them just limited to settlement causing by melting, little is about slope stability and landslide causing by thawing.

8. Planned future activities /Expected Results: (20 lines maximum)

Under the network activities, we expected to get result in identification and distribution of landslide landscape in cold regions, landslide mechanism, disaster early warning, and impact assessment and so on. Through communication and discussion, the attention and support of the government and relevant international bodies will be given. All of these will provide a reference for resource development and environmental protection under the global warming environment in cold regions.