



INTERNATIONAL
COUNCIL FOR SCIENCE
REGIONAL OFFICE FOR
ASIA AND THE PACIFIC



2018 Advanced Institute -Landslide Risk Reduction Training School (AI-LRRTS)

-- Landslide hazards: From Site Specific to Regional Assessment

August 27 – September 1, 2018
National Central University, Taoyuan, Taiwan

Call for Participation

Deadline for submission of applications: 1 AUG, 2018

Organized by

- Integrated Research on Disaster Risk, International Centre of Excellence-Taipei (IRDR ICoE-Taipei)
- International Council for Science Regional Office for Asia and the Pacific (ICSU ROAP)
- Landslide Research Team of Academia Sinica (LRT-AS)
- Landslide Research Team of National Central University (LRT-NCU)
- Earthquake-Disaster & Risk Evaluation and Management, E-DREaM Center, National Central University

Background of the Landslide Risk Reduction Training School

According to the Sendai Framework for Disaster Risk Reduction 2015-2030 (SFDRR), in order to reduce disaster risk, there is a need to address existing challenges and prepare for future ones by focusing on monitoring, assessing and understanding disaster risk and sharing such information and on how it is created. Landslide, as one of the common natural disasters around the world, lead to a huge amount of lives lost and economic loss. Understanding the landslide hazards is urgent and should be the Priority 1 action. However, variety of human activities, different geological/geomorphological settings, and different driving forces (such as rainfall and earthquake) yield quite different kinds of landslide hazards. Fundamentally understanding of the slope stability analysis theory and critical mechanical parameters will be essential, especially for the site specific landslides.

Monitoring and modeling of landslides via multi-disciplinary technologies is enlisted the priority for the decision making support on countermeasures. Remote sensing, surface and subsurface sensors, to detect any possible movement of slopes in fields, have been mutually developed. Various numerical models were also proved as powerful tools to evaluate the landslide initiation, transportation, and deposition. Accordingly, the impact of landslides can be quantitatively described. These achievements can provide an integrated solution in landslide hazard mitigation.

Regarding to the regional landslide hazards, successful predictions of the landslide susceptibility statistically/analytically from different countries have been well reported. The researchers now face the challenges to prove the proposed models can be used practically for landslide hazards mitigation purpose. Propose a nation-wise prediction model for land use regulation or early warning is one of the difficult tasks.

As one of the most active region tectonically, Southeast Asian countries suffered from landslide hazards in the past long history. Build a platform to share and discuss the experiences regarding to landslide hazard evaluation is necessary. Landslide Risk Reduction Training School, which is supported by ICoE-Taipei, Landslide Research teams in National Central University and Academia Sinica (LRT-NCU and LRT-AS), intend to provide a short training course which comprises a series of comprehensive lectures, practices and field trip, related to landslide hazard evaluation.

Site specific and regional landslides are both included. The slope stability analysis methods, including infinite and finite slopes, will be introduced. The importance of drainage condition on the strength of sliding surface will be highlighted in the training course. How to select the proper parameters reflecting the causative and triggering factors will also be illustrated. For site specific landslides, the monitoring system installation, data collection, and analysis are the most important measures for hazard reduction. The influence zone of landsliding should also be determined for hazard regulation. Numerical approach will be presented to illustrate how the influence zone can be evaluated. The strength of the sliding plane(s) is a dominating factor affects the simulation results. New outcomes from low to rapid laboratory rotary shear tests will be illustrated. The velocity/displacement dependency of the strength on sliding surface should be considered for influence zone evaluation of large landslide. For regional landslides induced by rainfall and earthquake, the probabilistic approach for hazard mapping will be introduced based on the experiences gained from Taiwan's practice.

Objectives

Landslide Risk Reduction Training School invites experts as well as young scientists from Southeast Asian countries to participant a two-way training course on the aspect of landslide hazard mitigation. The participants will be asked to present the experiences in their countries. Discussions are also planned to facilitate the communications among the participants. The objective of this course is to enhance understanding, skills and practical knowledge to landslide analysis, laboratory testing, monitoring, modeling, and landslide hazard evaluation.

To strengthen the outcomes of the training courses, "call-for-proposal" will be announced no later than 3-6 months after this training course. The trainees will be invited to submit landslide research proposals followed by a competitive reviewing process. Only limited numbers of proposals will be granted for one year. IRDR ICoE-Taipei and ICSU ROAP will review and announce results no later than 3 months after closing of the proposal submission. The grantees will be required to submit a report to IRDR ICoE-Taipei and ICSU ROAP no later than 3 months after the end of the executive period.

Location

The Landslide Risk Reduction Training School is mainly organized by Integrated Research on Disaster Risk International Centre of Excellence, Taipei

(IRDR ICoE-Taipei), of the Academia Sinica in Taiwan in partnership with ICSU ROAP. The Instructors are support by the LRT-AS, LRT-NCU, and E-DREaM. The training course will be delivered at National Central University in Taoyuan city. For more information about National Central University, please visit <http://www.ncu.edu.tw/en>.

Target Audience

Approximately 20-30 young to mid-career candidates from academia, practitioner, and policy communities from the Southeast Asian countries are expected. Participants are encouraged to bring specific issues or research ideas about site specific or regional landslides study.

Training Course Agenda

This training course includes the following topics and each slot contains lectures and/or discussion, plus one-day field trip to Tsaoling landslide site in the foothills of Central Western Taiwan.

Landslide hazards: From Site Specific to Regional Assessment		
	Morning	Afternoon
Day 0 26 August	Arrival	
Day 1 27 August	1. Slope stability analysis	
	Opening and Introduction of Landslides hazards	Slope stability analysis – Infinite slopes and finite slopes
Day 2 28 August	2. Determining strength parameters for slope stability analysis	
	Drain/Undra in conditions	Laboratory tests and back analysis
Day 3 29 August	3. Incorporating environmental factors into slope stability analysis	
	Rainfall and pore pressure	Earthquake and seismic forces
Day 4 30 August	4. Modeling and Monitoring of site specific landslides	
	Numerical/Physical modeling	Slope instability monitoring

Day 5 31 August	5. Landslide hazard mapping for regional landslides	
	Overview of landslide hazard analysis and regional landslide mapping	Landslide hazard model for rain- and earthquake-induced landslides
Day 6 1 September	6. Field trip to Tsaoling in Central Western Taiwan	
Day 7 2 September	Departure	

Applying to Participate

Young to mid-career candidates from academia, practitioner, and policy communities from Southeast Asia are expected. Individuals who are interested to participate in the Landslide Risk Reduction Training School should complete the following items no later than August 1st, 2018.

- a) On-line application sheet
- b) Letter of application; see attached
- c) An updated full Curriculum Vitae with publication list

The documents (items b and c) should be submitted by email to ICSU ROAP at secretariat@icsu-asia-pacific.org no later than August 1, 2018.

Applications that are not received, in full or in part, by the deadline stipulated above will NOT be considered for participation.

Successful applicants will receive the following:

- Letter of Invitation: A formal letter of invitation from the host organization to participants to help obtain visas to attend the workshop. (The host organization will be NOT responsible for participants' visa acquirement. For Taiwan's Visa, please see <http://www.boca.gov.tw/np.asp?ctNode=776&mp=2>);
- Costs for 1) A round-trip economy class flight/ equivalent by the most direct route of applicants' work address 2) Accommodation 3) Breakfast/ Lunch and

transportation during the AI period will be covered. Accommodation & transportation (airport pick-ups and field trip) will be arranged by National Central University and ICoE-Taipei. Other costs not mentioned above will not be covered by the organizers.

For More Information

Questions about the workshop or this Call for Participations may be directed to ICSU ROAP at secretariat@icsu-asia-pacific.org or visit the website: <http://www.icsu.org/asia-pacific>

ORGANIZERS

	<p>Integrated Research on Disaster Risk (IRDR) Programme</p>
	<p>IRDR International Centre of Excellence-Taipei (ICoE-Taipei)</p>
	<p>Academia Sinica</p>
	<p>International Council for Science Regional Office for Asia and the Pacific (ICSU ROAP)</p>
	<p>National Central University</p>
	<p>Earthquake-Disaster & Risk Evaluation and Management, E-DREaM Center, National Central University</p>