



ADRC Highlights

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Asian Disaster Reduction Center

Higashikan 5F, 1-5-2
Wakinohamakaigan-dori,
Chuo-ku, Kobe
651-0073 Japan

Tel: 078-262-5540
Fax: 078-262-5546
editor@adrc.asia
https://www.adrc.asia

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● Announcement

ACDR2021 "Time for Change and Transformation: The Road to a Resilient Asia"

As noted in the August issue of ADRC Highlights, the Asian Conference on Disaster Reduction 2021 (ACDR2021) will provide a platform for member countries to share updates and to discuss future actions focusing on three themes: (1) Developing DRR Technologies that Meet Local Needs to Create a Safe, Secure, and Livable Society, (2) Strengthening Disaster Preparedness: Education and Awareness Raising for Promoting Proactive Disaster Risk Reduction Actions, and (3) Investing in Disaster Risk Reduction for a Resilient Society. ACDR2021 will be held on 14-16 December 2021 using Zoom, and a tentative agenda of the conference is as follows;

Day1: 14 December 2021 (Tue) 15:00-17:00 (GMT+9)
- Opening & Keynote Session
- High Level Round Table

Day2: 15 December 2021 (Wed) 15:00-17:00 (GMT+9)
- Session 1
- Session 2

Day3: 16 December 2021 (Thu) 15:00-17:00 (GMT+9)
- Session 3
- Closing Session

The website for ACDR2021 (<https://acdr.adrc.asia/home/acdr2021>) will be launched on 15 November, when pre-registration will be open to the public. Please register to access the website, as well as to attend the online conference on 14-16 December.



ACDR2021 website
<https://acdr.adrc.asia/home/acdr2021>

The website will be updated with speaker details and other information as it becomes available. We are looking forward to your active participation in ACDR2021!

Publication: A Holistic Case-Study Approach to Applying Satellite Remote Sensing to Disaster Management

ADRC has been supporting the effort to collect good practices for applying satellite remote sensing technologies to disaster management. ADRC Highlights Vol. 325 (published in April 2020) included an article entitled "Call for Chapters on Applying Satellite Remote Sensing to Disaster Management." As a result, a book entitled "A Holistic Case-Study Approach to Applying Satellite Remote Sensing to Disaster Management" was released by the Cambridge Scholars Publishing in September 2021. It was edited by Dr. KAKU Kazuya, Visiting Researcher of ADRC.

This book provides case and holistic studies on applying satellite remote sensing to disaster management by various organizations, institutes, or universities in each country/region. Satellite remote sensing is one of the primary support tools for disaster management. However, it is not easy for people involved in this field, such as emergency responders, policy makers, administrative officials, researchers, and students, to actually use it. They have been actively seeking good practices and lessons learned that can be used as practical reference materials to support their activities.

From a methodological point of view, in such applied science research areas as applying satellite remote sensing to disaster management, where practical implications are often required for their research results, case studies are useful. Furthermore, each individual case study of a particular complex social event is considered to be an entity that constitutes one "whole," allowing a holistic approach to the event. This book can be expected to contribute to the active application of a holistic case-study approach to both practical operations and research.

For more information, see: <https://www.cambridgescholars.com/product/978-1-5275-7148-8>

● Promoting Cooperation with Affiliated Institutions

Fourth ADRC Online DRR Seminar: GLOF Impact to the Local Economy and Measures

Recognizing that sudden Glacial Lake Outburst Floods (GLOF) would cause enormous damage to settlements and infrastructure located downstream of the Hindu Kush Himalaya (HKH) region, ADRC invited two experts from the International Centre for Integrated Mountain Development (ICIMOD) to share their knowledge, experience, and information on GLOF programs to the 88 participants of the 4th DRR Seminar Series held on 28 September 2021.



The fourth DRR seminar resource persons

Continued

At the opening, Mr. ARAKIDA Masaru (Director of Research Department at ADRC, and moderator of the session) offered three focus questions that would be covered in the discussions: Is the number of GLOF events increasing due to climate change? How do GLOFs impact the local economy? What are the disaster risk reduction measures for GLOFs?

Giving an overview of GLOFs and the efforts to understand their risks, Ms. Finu Shrestha (Analyst, Remote Sensing and Geo-information Geospatial Solutions, ICIMOD) presented some research findings using remote sensing techniques: (1) Based on its 2018 inventory, ICIMOD recorded a total of 25,614 glacial lakes in five major river basins of HKH; (2) A study in 2020 identified 47 potentially dangerous glacial lakes in the three major river basins of Nepal, TAR, China and India; (3) Mass movement and glacier calving are the main factors for dam failure in the Eastern and Central Himalaya; (4) Subglacial and supraglacial drainage are the main factors behind dam failure in the Karakoram and Hindu Kush; and (5) The frequency distribution of GLOF events in each region varies, making them difficult to predict. However, there has been no significant increase in GLOF events in the Eastern Himalaya since 2010. Based on these findings, the presenter indicated that, as a pre-disaster mitigation measure, it is essential to identify the potentially dangerous glacial lakes and conduct regular monitoring either by remote sensing or by field investigation. If the lake is high risk, installation of ground-based radar sensors to measure water levels close to the lake should be installed along with the early warning systems near the river valley to give timely warning signal to communities downstream.

In the next presentation, Dr. Mandira Singh Shrestha (Programme Coordinator, Climate Services, Mountain Environment Regional Information System, ICIMOD) explained why it is essential to develop a comprehensive risk reduction strategy for GLOFs, which includes structural and non-structural measures. She began by citing recent examples of GLOFs and their impacts, including: the June 2021 GLOF in Melamchi, Nepal; the July 2015 GLOF in Lemthang Tsho, Bhutan; and the May 2020 GLOF in Hunza Valley, Pakistan. Each of these events damaged bridges, roads, and settlements, and also impacted livelihoods and the local economy. Based on the lessons from these GLOF experiences, Dr. Shrestha stressed the importance of integrating risk assessment, risk analysis, and risk mitigation in the risk reduction strategy. For instance, using Earth Observation for hazard assessment and monitoring could improve understanding of the risk of GLOF and inform appropriate structural measures (e.g., lowering of the lake level to reduce the threat of GLOFs like those implemented in Nepal and Bhutan) and non-structural measures (e.g., establishment of early warning systems and systematic monitoring of the lakes to provide timely warning to the infrastructure monitors and the communities living downstream). In responding to the question why GLOFs cannot be predicted, Dr. Shrestha said that there are many dynamic factors that could trigger GLOFs, such as earthquakes, avalanches, and global warming. Additionally, they occur in the high-altitude areas. While it is difficult to predict GLOFs, systematic and continuous monitoring of mountainous environments could offer robust knowledge and could strengthen the capacity for early warnings. Given, there is a growing need to integrate GLOF risk reduction strategies into national policies and programs to save lives and property as well as build climate resilience.

Finally, Mr. NAKAGAWA Masaaki (Executive Director, ADRC) mentioned in his closing remarks that based on the recent IPCC report, the pace of climate change has been progressing faster than expected. This means that risks from climate-related hazards such as GLOFs could be further intensified. Therefore, in addition to developing a comprehensive risk reduction strategy, it is important to reframe the disaster risk management (DRM) approach by focusing not just on one hazard at a time but on multi-hazards. In other words, there is a need to review the entire DRM system vis-à-vis climate change projections.

GLIDE System Updates

At the first GLIDE Steering Committee (SC) meeting held in June 2021, the SC members identified several issues to address for GLIDE development and promotion, resulting in the establishment of three subcommittees for SOP, API, and Product Development. The first subcommittee meetings took place in October 2021, where participants reviewed and discussed the current situation and future activities.

● Participation in International Conferences

Inter-Regional Dialogue on Regional Cooperation -Application of Cutting-Edge Technology for Disaster Risk Reduction in China, Japan, and Korea

On 13 October 2021, ADRC participated in an Inter-Regional Dialogue on Regional Cooperation -Application of Cutting-Edge Technology for Disaster Risk Reduction in China, Japan, and Korea, which was organized by the Trilateral Cooperation Secretariat (TCS) and the UNDRR Office for Northeast Asia (UNDRR ONEA). This webinar was held in an online format, and reported on the latest DRR technology transfers among Asian countries. ADRC gave a presentation that included the following case studies: (i) a new mapping technology known as "Red Relief Image Map (RRIM)," (ii) a new communication technology called "Relay-by-Smartphone," and (iii) the environmentally friendly disaster resilience technology known as "Gabion."



Participants of the Webinar

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