# 2. Highlights of FY 2021

In the second year of the COVID-19 pandemic, much of ADRC activities, including the Asian Conference on Disaster Reduction (ACDR), were still held online.

# 2.1 Activities in Figures

Figure 2.1 below shows some of ADRC milestones in FY 2021 at a glance.



Figure 2.1 Highlights of ADRC Activities on FY 2021

#### 2.2 Asian Conference on Disaster Reduction 2021

Last year, the Asian Conference on Disaster Reduction (ACDR) was held online on 14-16 December 2021 with the theme, "Time for Change and Transformation: The Road to a Resilient Asia". ACDR2021 was an occasion for general assembly among ADRC member countries, and it also served as venue for discussions of policies, programmes, projects, activities, and approaches that could facilitate change and transformation towards a more resilient Asia. ACDR2021 included keynote speeches, high-level round table, thematic sessions, and side event.

#### 2.2.1 Opening and Keynote Speeches

At the opening, HE Mr NINOYU Satoshi (Minister of State for Disaster Management, Government of Japan) stressed that strategic DRR actions, such as investing in mitigation and awareness raising, are essential to achieve transformation towards greater resilience. HE Mr Rustam Nazarzoda (Chairman, Committee of Emergency Situations and Civil Defense, Tajikistan) emphasized the role of regional cooperation (e.g., knowledge exchange) in addressing recent DRR issues while Prof HAMADA Masanori (Chairman, Asian



Figure 2.2 Speakers who provided remarks at the Opening Session

Disaster Reduction Center) told the participants that the ACDR itself was a forum to facilitate DRR actions that could lead to better transformation.

Three different perspectives were presented during the keynote speeches. Firstly, Ms Mami Mizutori (Special Representative of the United Nations Secretary-General for Disaster Risk Reduction, Head of the United Nations Office for Disaster Risk Reduction) encouraged the governments to pursue actions that will improve climate risk data, inclusive DRR approaches, localization of DRR efforts, and financing DRR as all these contribute to the implementation of the new Asia Pacific Action Plan 2021-2024 of the Sendai Framework. Secondly, HE Dr Basuki Hadimuljono (Minister for Public Works and Housing of Indonesia) pointed that in hazard-prone countries like Indonesia, strategies that could help overcome the disaster risk management (DRM) challenges (e.g., investing in DRR, build back better approach in recovery, pre-disaster investment, early warning system, and cooperation in promoting resilient infrastructure) exist and must be scaled-up. Finally, Ms Sandra Wu Wen-Hsiu (Chairperson and CEO, Kokusai Kogyo Co., Ltd.) built the case for the private sector's role in DRR, emphasizing the sector's rich experience, skills, and resources. She stated that Emergency Agreements (EA) with national government agencies – a mechanism pioneered in Japan – is now adopted in many Asian countries and around the world.



Figure 2.3 Keynote speakers of the Asian Conference on Disaster Reduction 2021

#### 2.2.2 High-Level Round Table

High-level officials who delivered statements, include: HE Mr Rustam Nazarzoda (Tajikistan), Assistant Commissioner Yazid Abdullah (Singapore), Mr Md Mohsin (Bangladesh), Dr Syamsul Maarif (Indonesia), MG G Ariunbuyan (Mongolia), Mr Muhamad Idrees (Pakistan), Secretary Delfin N. Lorenzana (Philippines), Major General Sudantha Ranasinghe (Sri Lanka), Mr Boontham Lertsukekasem (Thailand), and Mr Pham Duc Luan (Vietnam). The statements generally highlighted the following: (1) investing in DRR and climate change adaptation, (2) applying multi-hazard early warning system, (3) promoting all-of-society, inclusive, and proactive DRR approaches to ensure that no one is left behind, (4) enhancing capacity building in DRR, and (5) promoting disaster-resilient infrastructures.



Figure 2.4 Officials who delivered statements at the High Level Round Table

#### 2.2.3 TS1: DRR Technologies that Meet Local Needs

Thematic Session 1 (TS1) was about developing DRR technologies that meet local needs to create safe, secure, and livable society. Dr Mandira Singh Shrestha (Programme Coordinator, Climate Services, Mountain Environment Regional Information System, ICIMOD) moderated this session, drawing insights on how technologies could contribute in transformation towards a more resilient society. Dr Hendro



Figure 2.5 Speakers of Technical Session 1 of ACDR2021

Wardhono (Director of the Board Managers, PUSPPITA, Indonesia) described how the new technologies at BNPB (e.g., InaRisk) contributed in managing a recent disaster caused by Mt. Semeru Eruption of 4 December 2021. Dr Seong Sam Kim (Team Leader, Disaster Scientific Investigation Division, Ministry of the Interior and Safety, Republic of Korea) demonstrated the use of artificial intelligence (AI) and drone mapping in detecting disaster damage and assessing the impacts of affected areas. Among the experts, Dr Hasi Bateer (General Manager, Global Business Development Division, Asia Air Survey Co., Ltd.) demonstrated the utilization of geospatial data for DRR. He cited the Red Relief Image Map (RRIM) as one example of visualising and interpreting digital imagery from satellites. Mr SUZUKI Koji (Project Director, Asian Disaster Reduction Center) showed how the Quasi-Zenith Satellite System (QZSS) early warning service could contribute towards transmitting a clear, timely, and actionable warning message directly to the communities, especially in areas where ground telecommunication systems are limited. Dr David Nguyen (Associate

Professor, International Research Institute of Disaster Science, Tohoku University) argued the need of developing an international standard (ISO) for smart community infrastructure to keep the methods simple and avoid useless operations as well as reduce costs and spread of technologies, especially in Asia.

#### 2.2.4 TS2: Education and Awareness Raising for DRR Actions

Thematic Session 2 (TS2) dealt with strengthening disaster preparedness through education and awarenessraising for promoting proactive DRR actions. Dr SAKAMOTO Mayumi (Professor, Graduate School of Disaster Resilience and Governance, University of moderated this Hyogo) session. She said that in DRR education Japan, is covered in all subjects, aiming to enhance "knowledge and



Figure 2.6 Speakers of Technical Session 2 of ACDR2021

skills", "humanities", and "abilities to think, judge and express", which are considered as the three pillars of education. Dr Le Quang Tuan (Deputy Director, Department of Science Technology and International Cooperation, Vietnam Disaster Management Authority, Vietnam) introduced the CBDRM (2009-2020) activities, which included training on DRM knowledge and enhancing communication capacity of reporters, editors, and district radio/television staffers who are in-charge at the grassroots level. Ms Syuzanna Kakoyan (Head of the Department of Education, Administration of Activities with Public, Regional Survey for Seismic Protection, Ministry of Emergency Situations, Armenia) shared the "Code of Conduct on Earthquake Protection" in Armenia. The Department of Education implements the code of conduct through games, drills, and quizzes, and also works closely with mass media and private sector. In his commentary of the session, Mr FUKASAWA Yoshinobu (Secretary, TeLL-Net/Specially Appointed Professor, Kyushu Sangyo University) highlighted the importance of preserving and passing on the "live" experiences and lessons from disasters to other areas and generations. He said that sharing live lessons through oral storytelling, photographs, audiovisual materials, museums, monuments, and music are powerful means of transmitting lessons that complements the formal DRR education in schools.

#### 2.2.5 TS3: Investing in DRR for a Resilient Society

Thematic Session 3 (TS3) discussed investing in disaster risk reduction for a resilient society, where officials from ADRC member countries shared recent knowledge, perspectives, and approaches to accelerate risk-informed investments. Mr TAKEYA Kimio (Distinguished Technical Advisor on Disaster Risk Reduction, Japan International Cooperation Agency; and Visiting Professor at International Research Institute of Disaster Science, Tohoku University) moderated this session, providing an overview of practical methods of investing in DRR. Dr Renato Solidum, Jr (Undersecretary, Department of Science and Technology; and

Officer-in-Charge, Philippine Institute of Volcanology and Seismology, Philippines) reported about the "GeoRisk Philippines" as an investment in DRR to achieve greater understanding of hazards and risks. Dr Le Minh Nhat (Deputy Director of Emergency Response and Disaster Recovery Department, Vietnam Disaster Management Authority, Vietnam) presented



Figure 2.7 Speakers of Technical Session 3 of ACDR2021

the investment priorities under the National DRR Plan 2021-2025 of Vietnam. Investments include the construction of hydrological monitoring equipment for river water levels, dams, and rainfall as well as investments in water disaster prevention information system. Mr Abdul Malik Sadat Idris (Director of Water Resources and Irrigation, Ministry of National Development Planning, Indonesia) reported the Indonesia's investment in strengthening of critical infrastructures for flood resilience in 50 high-risk cities, which is integrated in the National Medium-Term Development Plan. Mr Jerry A. Fano (Assistance Core Head at Office of the Project Director, Unified Project Management Office, Department of Public Works and Highways, Philippines) shared the pre-disaster investments in flood mitigation in the Philippines. These investments include the construction and strengthening of flood control structures (e.g., flood gates, flood walls, and spillways) that reduced flood inundation and economic damage by 85%.

#### 2.2.6 Closing Messages

At the closing, Mr MURAKAMI Takeo (Director, International Cooperation Division, Disaster Management Bureau, Cabinet Office, Government of Japan) pointed that Cabinet Office Japan organized a side event titled. "Public and Private Seminar for Disaster Risk Reduction", at the ACDR2021 to promote DRR technologies of Japanese companies. He also encouraged ADRC member-



Figure 2.8 Speakers at the Closing of ACDR2021

countries to strengthen investments in DRR along with COVID-19 recovery as integral part of National DRR Strategy and in support of the Mid-Term Review of the Sendai Framework in 2022. Dr OGAWA Yujiro

(Executive Secretary, ADRC) formally closed the conference with message that member-countries must strive to accelerate efforts on implementing the Sendai Framework for Disaster Risk Reduction to help overcome intensifying disaster risks.

#### 2.3 Online DRR Seminar Series

To support the thematic discussions leading to the Asian Conference on Disaster Reduction (ACDR2021), ADRC organized a series of Online DRR Seminars.

#### 2.3.1 Seminar 1: Investing in DRR for a Resilient Society

#### Date: 15 June 2021

<u>Theme</u>: Investing in Disaster Risk for a Resilient Society <u>Number of Participants</u>: 300 from 20 countries

#### Key Messages:

Dr Jun Rentschler, Senior Economist at the World Bank. said that "investing in resilience is sound, profitable, and urgent." He supported this claim with evidence-based case studies and statistics showing that every \$1 invested in infrastructure resilience results in \$4 in net benefit. He argued that investing in resilience is urgent concern and delaying such action is causing an estimated loss of \$100 billion in one year.



Figure 2.9 Speakers of Seminar 1 on 15 June 2021

- Mr Ronald Jackson, Head of DRR and Recovery for Building Resilience Team at UNDP-Geneva, presented UNDP's "Signature Solutions", a Programme that implements six cross-cutting approaches to development: poverty, governance, resilience, environment, energy, and gender. Mr Jackson cited examples of disaster risk mitigation projects under this Programme, such as in Pakistan (water conservation), Belize (gender and livelihoods), Ukraine (community-based disaster risk mitigation), Iran (climate change adaptation planning), and Rwanda (awareness raising).
- Prof NISHIKAWA Satoru at the Disaster Mitigation Research Center of Nagoya University stressed the importance of "pre-disaster" actions or investments in DRR based on the outcomes of empirical studies and lessons from past disasters in Japan. He said that after World War 2, Japan was in ashes and infrastructure recovery was impeded and even further damaged by the impacts of typhoons. In order to prevent future typhoon damage, Japan invested in flood control using funds borrowed from the World Bank. Since then, Japan has strengthened investments in DRR by regularly evaluating what went wrong and went right with pre-disaster countermeasures.

Mr NAKAGAWA Masaaki, Executive Director of ADRC, moderated the discussions and offered two key takeaways at the closing. First, funds for DRR should not be seen as an expense but as an investment. It was clear from the presentations, and affirmed during the discussions, that \$1 in DRR investment would render \$4 in benefits. Moreover, DRR investments are not always infrastructure investments. Stakeholders can also invest in planning, policies, regulations, databases, and nature-based solutions. Second, DRR investments must be people-centered. As observed in the past, investments focused on economic growth could expand income inequality, such that poor people remain disproportionately affected by disasters or global pandemics.

# Section 2

#### 2.3.2 Seminar 2: Education and Awareness Raising for DRR Actions

#### Date: 13 July 2021

# <u>Theme</u>: DRR Education and Awareness Raising through the Passing Down of Lessons from Past Disasters

## Number of Participants: 281 from 18 countries

#### Key Messages:

 Prof MURAMOTO Toshiaki (IRIDeS, Tohoku University) introduced an innovative educational method that could provide an opportunity for students to perceive disasters as "their own business". This method involves: (1) interdisciplinary lectures at school; (2) visits to disasteraffected areas and opportunities to hear the stories from 'kataribe'/ storytellers and interacting with victims; (3) group work to identify challenges for earthquake recovery



Figure 2.10 Speakers of Seminar 2 on 13 July 2021

and to explore ways to solve those challenges; and (4) planning and execution of lectures on DRR for other students based on their learning.

- Ms Vanda Lengkong (Plan International Asia Pacific Regional Office) reported the ASEAN Safe School Initiative (ASSI) in partnership with the civil society organizations (CSOs). The initiative creates space to discuss and share school safety technical resources, approaches, and sound practices to minimize the impacts of disasters on children and the education sector. This initiative is unique in that the elements included in the formal educational system are supplemented with DRR educational activities for children and parents in the community (e.g., puppet show).
- Dr Sébastien Boret (IRIDeS, Tohoku University) pointed to the importance of museums and monuments as methods of DRR education, particularly in promoting "collective memory." He cited the example of Aceh Tsunami Museum in Indonesia, which functions not only as a center for education and learning but

also as a memorial, an evacuation building, and an activity space where the community can gather and interact.

 Mr NAKAGAWA Masaaki, ADRC's Executive Director, concluded the event by noting that the methodologies of DRR education are most effective at encouraging proactive learning and action when they are appropriate for a given context and aligned with a community's culture and practices.

#### 2.3.3 Seminar 3: Technologies that Meet Local Needs

#### Date: 14 September 2021

<u>Theme</u>: Developing DRR Technologies that Meet Local Needs to Build a Safe, Secure, and Lively Society

#### Number of Participants: 116 participants from 23 countries

#### Key Messages:

- Dr ONO Takahiro (Director, Mitsubishi Corporation Insurance) said that standardization is important to keep methods simple, avoid useless operations, and facilitate smooth communication.
- Mr Sanjaya Bhatia (Head of Office, UNDRR-GETI) discussed how UNDRR-GETI is engaged in developing the ISO standards for the sustainable development of communities to make cities resilient (MCR). He highlighted the following



Figure 2.11 Speakers of Seminar 3 on 14 September 2021

ISO standards: Indicators for City Services and Quality of Life (ISO 37120); Indicators for Smart Cities (ISO 37122);and Indicators for Resilient Cities (ISO 37123).

- Dr David N. Nguyen (Associate Professor, Tohoku University and Researcher at NIED) reported on the progress of the work of the ISO Technical Committee in identifying and planning for smart community infrastructures that enhance DRR. He highlighted the community infrastructures from Australia, Chile, Colombia, Germany, Greece, Japan, and Turkey.
- Mr HIRUMA Yoshiki (Vice President, Sustainability Management at the Development Bank of Japan, DBJ) discussed the application of financing methodologies to design a resilient future. One example is the utilization of pre-disaster mitigation in business continuity management (BCM) among small and medium enterprises (SMEs) to enhance safety.
- Mr Pradeep Kumara Kodippili (Deputy Director, Disaster Management Centre in Sri Lanka) gave a
  presentation on the disaster early warning systems in Sri Lanka. He described the capacity of his office,
  the Disaster Management Centre (DMC), as having 77 early warning towers, High Frequency (HF) and
  Very High Frequency (VHF) communication, intra-government network (IGN), and disaster early
  warning network (DEWN) system that could send text messages.

#### 2.3.4 Seminar 4: GLOF Impact to the Local Economy and Measures

#### Date: 28 September 2021

<u>Theme</u>: GLOF Impact to the Local Economy and Countermeasures <u>Number of Participants</u>: 88 participants from 14 countries

#### Key Messages:

- Mr ARAKIDA Masaru (Director of Research Department at ADRC) moderator of the session by focusing on three questions: Is the number of GLOF events increasing due to climate change? How does GLOF impact the local economy? What are the disaster risk reduction measures for GLOF?
- Ms Finu Shrestha (Analyst, Remote Sensing and Geo-information Geospatial Solutions, ICIMOD) presented some research findings



Figure 2.12 Speakers of Seminar 4 on 28 September 2021

using remote sensing techniques: (1) a total of 25,614 glacial lakes, in five major river basins of HKH, as recorded as of 2018; (2) of this total, 47 are potentially dangerous glacial lakes (PDGLs); (3) mass movement are the main factors for dam failure in the Eastern and Central Himalaya; (4) temperature and extreme rainfall cause GLOF in the region; and (5) the frequency distribution of GLOF events in the last 4 decades varies every decade, making it difficult to predict its occurrence.

- Dr Mandira Singh Shrestha (Programme Coordinator, Climate Services, Mountain Environment Regional Information System, ICIMOD) stressed the importance of integrating risk assessment, risk analysis, and risk mitigation in the risk reduction strategy for GLOF (e.g., using Earth Observation to assess, monitor, and understand the risk of GLOF). While it is difficult to predict the occurrence of GLOF, systematic and continuous monitoring of mountainous environments could offer robust knowledge, and could strengthen the capacity for early warning.
- Mr NAKAGAWA Masaaki (Executive Director, ADRC) mentioned that the risks from climate-related hazards such as GLOF could further intensify. Therefore, it is important to reframe the disaster risk management (DRM) approach by focusing not just on single hazard at a time but by adopting a multihazards approach.

### 2.3.5 Seminar 5: Promoting Disaster Mitigation Strategies

#### Date: 18 October 2021

# <u>Theme</u>: Promoting Disaster Mitigation Strategies for Urban Resilience <u>Number of Participants</u>: 127 from 14 countries

Key Messages:

Mr KORESAWA Atsushi (Regional Representative for Asia and the Pacific, UN-Habitat) introduced the Cities and Climate Change Initiative (CCCI) that supports cities in responding to the negative impact of climate change by putting emphasis on participatory processes, sound analysis, sustainable urban planning, dood governance, responsive leadership, and practical initiatives at all levels.



Figure 2.13 Speakers of Seminar 5 on 18 October 2021

• Ms Pragya PRADHAN (Country

Programme Manager, UN-Habitat Nepal) highlighted the recovery and mitigation strategies of preserving the heritage settlements, which were damaged during the 2015 Nepal Earthquake. Ms Pradhan pointed out two key lessons. First, development efforts must be complemented with disaster risk reduction (DRR) efforts to safeguard lives and properties through risk informed spatial development planning, infrastructure investments, and economic activities that caters to the need of all. Second, urban resilience is multi-dimensional that entails strengthening of social, economic, institutional, and spatial aspects.

- Mr Ibani PADAO (Chief, Monitoring and Evaluation Division DHSUD, Philippines) reported that since the local governments are at the frontline in the implementation process, the national government of the Philippines has provided relevant tools and guidelines to resiliency planning. These include: Mainstreaming Guidelines for Local Land Use and Shelter Plans; Climate and Disaster Risk Assessment (CDRA) Tool; and National Guide for Climate Resilient Urban Plans and Designs.
- Mr Christopher ROLLO (Country Programme Manager, UN-Habitat Philippines) presented the case of Legazpi City in developing and implementing the adaptation strategy for flood hazard. Legazpi city utilized the government's resiliency tools/guidelines to come up with systematic and evidence-based structuring (e.g., designing sites and buildings that promotes structural resilience, safety of people and facilitates evacuation and rescue).
- Ms PANNAPA Na Nan (Director, International Cooperation Section, DDPM Thailand) reported that the Department of Disaster Prevention and Mitigation (DDPM) has been constantly improving its disaster mitigation efforts following the 2011 floods that greatly impacted the country. For instance, DDPM leverages international cooperation support, particularly through the ASEAN Committee on Disaster

Management (ACDM) and AHA Centre in implementing urban resilience projects (e.g., communitybased flood management project).

 Mr NAKAGAWA Masaaki (Executive Director, ADRC), who moderated the event, mentioned that building disaster resilient society is the overarching theme of the upcoming Asian Conference on Disaster Reduction (ACDR) that would further provide an opportunity to discuss other initiatives and actions to promote disaster resilience.

#### 2.4 Tsunami Seminar 2021

On 9 March 2022, ADRC held an Online Tsunami Seminar FY2021, and invited Assistant Professor Mauricio Reyes Gallardo from the University of Valparaiso in Chile. He gave a lecture entitled "Experience with Tsunami Risk Reduction in Chile." In terms of disaster risks, he noted that Chile is a multihazard country, with earthquakes and tsunamis being the most notable hazards as experienced in 1960, 2007, 2010, and 2015. Tsunami experiences in Chile offered opportunities to improve and



Figure 2.14 Prof Mauricio Gallardo of the University of Valparaiso in Chile

strengthen tsunami risk management through: 1) technological improvements in early warning systems 2) the development and adoption of the National Building Code as well as the Reinforcement Code; and 3) the application of "Sistema Nacional de Alerta de Maremotos" (SNAM) and "Sistema Integrado de Prediccion y Alarma de Tsunamis" (SIPAT) to keep people informed about tsunami risks and help provide guidance relating to evacuation and safety measures. Despite improvements in tsunami risk management, Prof Gallardo said that Chile remains vulnerable to tsunamis due to the following factors: lack of urban planning; societal, ecological, economical, and cultural complexities; lack of education; poor use of technology; and poorly maintained infrastructure. He concluded that good risk governance is needed for establishing systems that can bring order to the complexities of tsunami risk. Mr NAKAGAWA Masaaki, Executive Director of ADRC, concluded the seminar by saying that ADRC would promote tsunami disaster risk reduction through sharing of experiences and lessons in Japan and other countries.

#### 2.5 Innovation of the GLIDE Number System

The GLIDE number system, which gives common but unique numbers to disasters all over the world, does not only support the integration of DRR data in each country, but it also improves the efficiency of retrieval of information on historical and on-going disasters from various databases across different countries and organizations. This system is continually improving through further studies and institutional arrangements.

#### 2.5.1 Study on Promoting GLIDE

Once a disaster occurs, an operator of a GLIDE member organization issues a GLIDE number by inputting disaster information such as location, time, disaster type, initial damage. The GLIDE number being issued

appears on the GLIDE website, and is also emailed automatically to over 2,000 subscribers. So far, over 7,300 GLIDE numbers have been issued. ADRC continues to conduct study on addressing technical and practical issues to efficiently promote the utilization of GLIDE, including its Standard Operating Procedures (SOP).

# Key Results

- 100% of guidance is accepted and approved by GLIDE Secretariat
- 100% of guidance is available through the GLIDE website
- 100% of new/existing GLIDE operators understand where to find documentation
- 75% of new/existing operators surveyed indicate that the Glide operator guidance is easy to understand (visual) and use
- Video tutorials are completed and available for five key topics

Figure 2.15 Slide on Study of Promoting GLIDE

#### 2.5.2 Establishment of the Steering Committee

The GLIDE Steering Committee (SC) was established on 30 June 2021 to facilitate sustainable operation, and during its establishment, the first SC Meeting was held online. A total of 17 participants from 9 founding and new partner organizations participated in the meeting. Prof ONO Yuichi was selected as the first chair

and ADRC as Secretariat. The main outcome of the first meeting was the establishment of three subcommittees: Standard Procedure (SOP), Operating Application Programming Interface (API), and Product Development. The Second SC Meeting took place on 8 December 2021 with participation of 13 people from 6 organizations. In that meeting, the subcommittees reported their activities and proposals.

Activities 2021	
<u>1st Steering Committee</u> 30 June 2021 Online	Establishment of Subcommittees to engage in thematic and technical issues - API Subcommittee (Mr Julio Serje, IFRC/ARC, ADRC)
18 participants (17 SC members, 1 observer)	<ul> <li>SOP Subcommittee (OCHA, ADRC)</li> <li>New Product Development Subcommittee (Mr Julio Serje, EU/JRC, IFRC, Tohoku Univ)</li> </ul>
Confirmed the basic role of SC Chair, Secretariat, Members and Observers	
Tohoku Univ Prof Ono nominated and selected as SC Chair	

Figure 2.16 Slide presented during the SC Meeting on 30 June 2021