

5. Cooperation and Partnerships

ADRC forges cooperation and partnerships among member countries and partner organizations to advance disaster resilience. In particular, ADRC engages in research cooperation (e.g., feasibility study on application of new technology) and partnerships with international institutions in organizing learning events.

5.1 Research Cooperation

In FY 2023, much progress was made in the research projects pertaining to QZSS, Climate Change Impact Projection Study (SENTAN4), and Economic Research Institute for ASEAN and East Asia (ERIA).

5.1.1 QZSS DC Report Demonstrations

In collaboration with the National Space Policy Secretariat of the Cabinet Office Japan, NTT Data Corporation, and Asia Air Survey, the ADRC was engaged implementing the demonstration of the prototype receivers for the QZSS DC Report (Figure 5.1) in Malaysia, Indonesia, Bangladesh, Nepal, Philippines, and Cambodia in FY 2023.

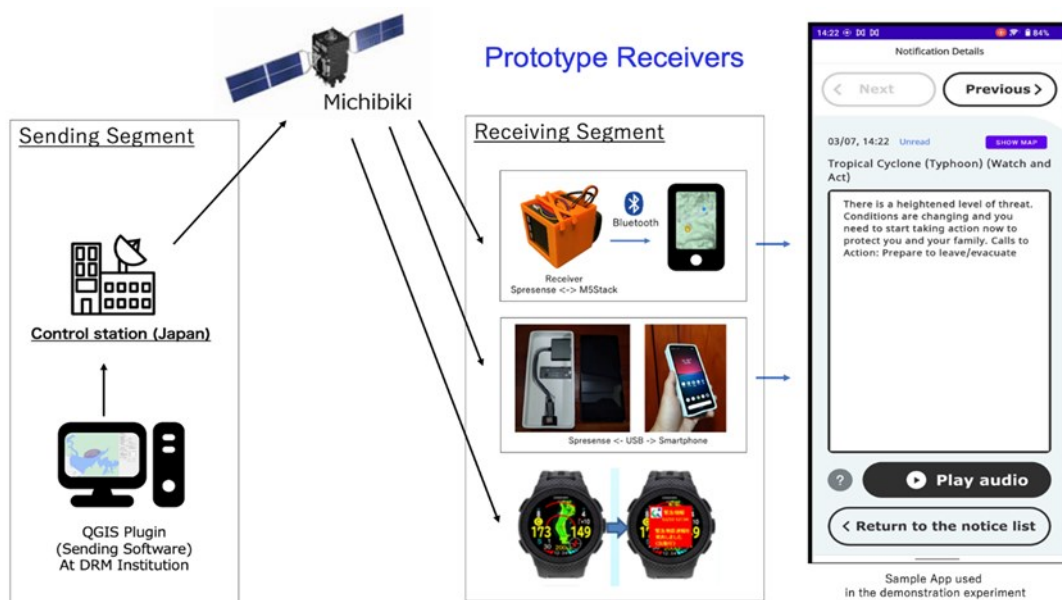


Figure 5.1 Prototype receivers for QZSS DC Report

The disaster and crisis report or “DC Report” is an early warning message dissemination threat service using Japan’s “Michibiki” satellite system, otherwise known as the “Quasi-Zenith Satellites System” (QZSS). Under this service (which covers Asia-Pacific region), communities-at-risk can receive the warning message in near real-time in audio, text, and maps on portable terminals (e.g., smart phone or watch) or in loud speakers, electronic boards, or sirens on stationary terminals (e.g., community broadcasting device) to facilitate evacuation.

To send the warning message to the QZSS, the warning agency (e.g., Japan Meteorological Agency) can use a plugin called QGIS, which is accessible on the web for free. To receive the message from the QZSS, a receiver needs to be integrated in portable terminals (e.g., mobile phone or smart watch) or stationary terminal (e.g., broadcasting device).

The dates and the types of hazards that each country adopted for the QZSS DC Report demonstration are summarized in Figure 5.2. Generally, the most common issues for disseminating early warning message in these countries are: 1) warning message is not targeted to specific at-risk-population, and often sent to population who are not at-risk causing panic; 2) warning message is usually one-way communication, and no feedback whether communities-at-risk successfully evacuated; and 3) warning agencies maintain their own separate databases that needs to be integrated to achieve reliable forecast and warning.



Figure 5.2 Basic Information of QZSS DC Report Demonstration in Six Countries

After the demonstrations, it was found that the QZSS DC Report service can augment the existing early warning systems of the six countries due the following contributions:

- QZSS DC Report service transmits the warning message to communities-at-risk even when the ground communication system is disrupted
- QZSS DC Report service transmits the warning message immediately, without delay and without passing through many channels
- QZSS DC Report service transmits the warning message only to the targeted area or specified communities-at-risk
- QZSS DC Report service can transmit the warning message to areas that have limited network coverage (e.g., no internet or cellular networks) such as mountainous region or island communities

5.1.2 Climate Change Impact Projection Study

ADRC, together with over 120 researchers and 43 cooperating organizations, is engaged in the SENTAN 4 Project, “Development of Hazard Integrated Prediction Model” (i.e., multi-hazard model for storm and flood, <http://www.climate.dpri.kyoto-u.ac.jp/sentan4/?p=224>). Under this project, the researchers aim to assess the future impacts of climate change, particularly, to water-related disasters (e.g., storm and flood), by analyzing historical and current data as well as through climate downscaling techniques and applications. Additionally, social trends and technological innovation information are also analyzed to update policy. ADRC shares the products/outcomes of the study to improve climate change literacy among DRR practitioners, researchers, and engineers as well as inform policy updates.

(1) Webinar Series on Climate Change Impact Projection for DRR with Fiji

In collaboration with the additional members of the Advanced Study of Climate Change Projection (SENTAN) Program, ADRC co-organized the first webinar on “Climate Change Impact Projection for Disaster Risk Reduction in Asia-Pacific Region” on 28 August 2023. The first webinar featured the climate change impact in Fiji with the presentation from Mr Jasneel Chandra, Scientific Officer in Climatology at Fiji Meteorological Service (FMS). Mr Jasneel Chandra reported that the sea level at Lautoka Wharf in Fiji has been on average increasing at 4.3mm/year between 1993 and 2022. As result, some villages (e.g., Veivatuloa and Vunidogoloa) are easily flooded and inundated by sea water causing the relocation of many coastal houses. Since one of the objectives of the webinar was to share the results of climate change projections, the following Japanese experts also made presentations related to climate change in Fiji: 1) Prof. MORI Nobuhito, Research Division of Atmospheric and Hydrospheric Disasters, Disaster Prevention Research Institute, Kyoto University; 2) Dr NAKAEGAWA Toshiyuki, Head of Second Laboratory, Department of Applied Meteorology Research, Meteorological Research Institute (MRI) of Japan Meteorological Agency; 3) Dr MURATA Akihiko, Head First Laboratory, Department of Applied Meteorology Research, Meteorological Research Institute (MRI) of Japan Meteorological Agency; 4) Mr MORI Noriyuki, Deputy Director, International Center for Water Hazard and Risk Management; and 5) Prof. TACHIKAWA Yasuto, Hydrology and Water Resources Research Laboratory, Kyoto University.



Figure 5.3 Screenshot of the 1st Webinar Series

Associate Professor KOBAYASHI Kenichiro (Kobe University) and Dr Gerald Potutan (ADRC) co-facilitated the event.

(2) Webinar Series on Climate Change Impact Projection for DRR with Nepal

The second webinar series on climate change projection for disaster risk reduction in Asia-Pacific region was held on 10 January 2024. This webinar highlighted the results of projection study held in Nepal and the utilization of climate change-related data. The Advanced Study of Climate Change Projection (SENTAN) Project invited two experts from Nepal to the webinar to share their information and experiences. Prof. Binaya Kumar Mishra, School of Engineering at Pokhara University, presented the projected changes in flood frequency at Bagmati River in Nepal. The Bagmati river basin, located at the upstream of Khokana, covers the Kathmandu valley which in recent years has been experiencing devastating flood events. In view of this, Pokhara University set up the Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS) to

assess the change in flood discharge under climate change scenarios. Very high-resolution of Non-Hydrostatic Regional Climate Model (NHRCM) precipitation outputs was used to assess the future flood risks in the Kathmandu valley. The major results found in this study were: 1) greater precipitation extremes were found for the Regional Climate Model (RCM) precipitation output; and 2) the increase in precipitation extremes for future climate condition indicates greater flood risks in Kathmandu valley.

Ms Bibhuti Pokharel, Chief of Climate Section, Department of Hydrology and Meteorology (DHM) of the Government of Nepal, presented the Climate Service Information that DHM provides. She mentioned that DHM monitors the precipitation and temperature in Nepal to inform imminent droughts, heat waves, and extreme events. The climate data, produced by DHM, is utilized for climate projections as well as to inform the national master plan and policy on climate change. Moreover, the climate service information is provided to the following sectors: aviation, agriculture, water, energy, health, and disaster risk reduction (DRR). However, there are limitations and gaps of the climate information service.

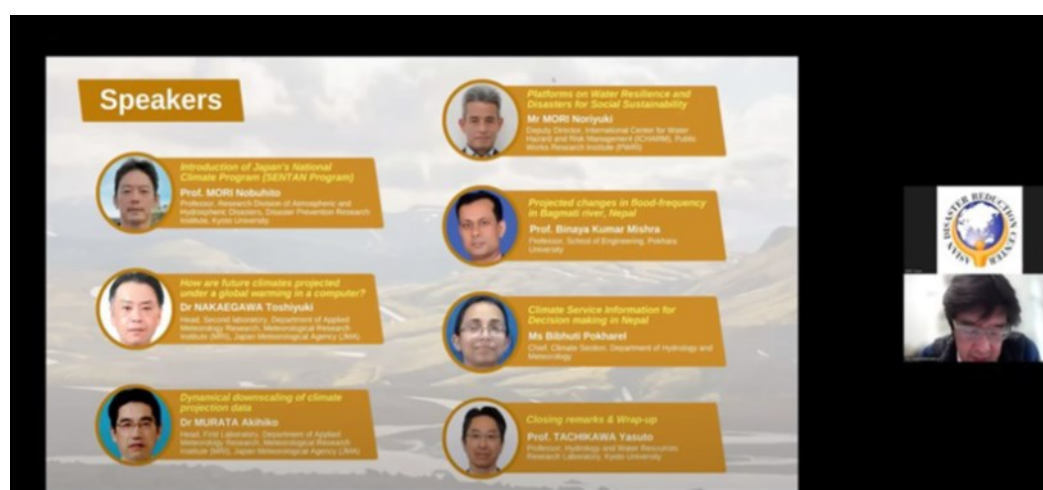


Figure 5.4 Screenshot of the 2nd Webinar Series

Ms Pokharel said that the quality of climate information was not high due to some limitations in research capacity and infrastructure. For instance, while DHM currently utilizes statistical downscaling, it has no capacity to utilize dynamical downscaling. Therefore, the assistance of partners such as SENTAN is believed to augment DHM's capacity.

Other speakers at the webinar were: (1) Prof. MORI Nobuhito, Research Division of Atmospheric and Hydrospheric Disasters, Disaster Prevention Research Institute, Kyoto University, who introduced Japan's National Climate Program or SENTAN; (2) Dr NAKAEGAWA Toshiyuki, Head of Second Laboratory, Department of Applied Meteorology Research, Meteorological Research Institute of Japan Meteorological Agency, who showed how future climates are projected in a computer; (3) Dr MURATA Akihiko, Head First Laboratory, Department of Applied Meteorology Research, Meteorological Research Institute of Japan Meteorological Agency, who presented the dynamical downscaling of climate projection data; (4) Mr MORI Noriyuki, Deputy Director, International Center for Water Hazard and Risk Management, who presented on the Platforms on Water Resilience and Disasters for Social Sustainability; and (5) Prof. TACHIKAWA Yasuto, Hydrology and Water Resources Research Laboratory, Kyoto University, who explained about the key points raised at the webinar and encouraged further collaboration between SENTAN Project and DHM Nepal.

This webinar was co-facilitated by Prof. KOBAYASHI Kenichiro, Associate Professor at the Risk Communication Research Department, Security Research Communication Group, Research Center for Urban Safety and Security in Kobe University and Mr Gerald Potutan, Senior Researcher at Asian Disaster Reduction Center (ADRC).

5.1.3 ASEAN Project

The year 2023 marked the 50th commemorative year of ASEAN-Japan Friendship and Cooperation. Considering this, the following activities were undertaken to promote concrete cooperation with ASEAN in the areas of disaster information and strengthening local disaster management capacity, to give concrete shape to the ASEAN-Japan Work Plan on Disaster Management agreed in October 2022, and to contribute to the deployment of Japanese good practices and utilization of DRR technologies.

Based on information obtained from discussions with stakeholders in Malaysia, the activities in the “Community Disaster Prevention and Response Using ICT Tools” project proposal were finalized. The “Capacity Building on DRR Information through GLIDE” project was also finalized based on input from the AHA Centre and other stakeholders. The concept notes for each project were circulated to ASEAN member states for their approval.

5.1.4 Pilot Project on Utilization of ICT for CBDRM in Malaysia

As a project to promote the “Capacity Building on Community-Based Disaster Risk Reduction (CBDRR)” programme under the ASEAN-JAPAN Work Plan on Disaster Management, ADRC has been conducting since July 2023, the “Pilot Project on Utilization of State-of-the-Art Communication Technologies for CBDRM and Disaster Emergency Management in Malaysia,” commissioned by the Cabinet Office of Japan. The pilot activities were carried out in close cooperation with the National Disaster Management Agency of Malaysia (NADMA).

(1) Test Run of the ICT Tools

After the initial coordination in July 2023 with the relevant stakeholders, such as Ranau District Office, Dumpiring and Mesilou Village Disaster Management Committees in the selected pilot area in Kundasang, Sabah, a test of the ICT tools prepared for this pilot project was conducted on 5 October 2023. The activities were conducted as one of the programmes during the Science and Technology Disaster Risk Reduction and Resilience (STDR3) Week 2023, which was attended by Datuk Armizan Mohd Ali, Minister in the Prime Minister’s Department.

The tools were tested and validated through simulated activities in a controlled disaster scenario involving targeted groups of community members and agencies in the pilot areas, confirming that they can be used effectively for information sharing in the event of a disaster. The results of the simulation were reviewed after the event by the observed agencies, such as NADMA and the Sabah State Disaster Management Committee



Figure 5.5 Explanation of the ICT Tools for CBDRM

(SSDMC). Follow-up activities, including of a seminar for the district officers, will be conducted in December 2023.

(2) Review Meeting

On 4 and 5 December 2023, ADRC organized the review meetings with the target communities, and district and state governments to evaluate the simulation of ICT tools prepared for the pilot project for CBDRM that was held in October. Most stakeholders responded very positively to the tools and agreed to work with us in the future, recognizing that the tools have the potential to revolutionize disaster response and to enhance disaster management capacity at the local level. The meeting to report the outcomes of the project to the ASEAN member states was held in February 2024.



Figure 5.6 Review meeting at Ranau District Office, Sabah State, Malaysia

5.2 International Engagements and Partnerships

In FY 2022, ADRC co-organized and/or engaged in many events, including those with APEC-EPWG, Sentinel Asia, UNDRR, ESCAP/WMO, ASEAN, and other networks and partnerships.

5.2.1 APEC-EPWG

ADRC continues to serve as co-chair of the Asia Pacific Economic Cooperation - Emergency Preparedness Working Group (APEC-EPWG), and in FY 2023, organized and participated in the following activities:

(1) 19th APEC Emergency Preparedness Working Group (EPWG) Meeting,

The Federal Emergency Management Agency (FEMA) hosted the 19th Asia-Pacific Economic Cooperation (APEC) Emergency Preparedness Working Group (EPWG-19) meeting in Seattle, USA on 1 August 2023. ADRC Project Director Mr SUZUKI Koji (Co-chair of EPWG) and Senior Researcher Mr Gerald Potutan (Assistant to the EPWG Co-chair) participated in the meeting.

In this meeting, the member economies together with representatives from the private sector, academia



Figure 5.7 Co-chair PD Suzuki co-facilitated the meeting

and industry leaders discussed the impact of complex emergencies and disaster shocks to APEC region's supply chains and explored ways to promote DRR in supply chain management. The meeting also dwelt into diverse approaches to early warning systems in the APEC region to accelerate the implementation of robust early warning systems that strengthen risk management and advance DRR for all. It was mentioned that the key criterion to an effective early warning system was a communication system including timely and accurate dissemination of warnings that reaches the rural communities

EPWG Co-chair Suzuki, who facilitated the afternoon sessions, announced the following: i) Endorsement of the EPWG Work Plan 2023, ii) Revision of APEC DRR Framework, and iii) Revision of the Plan of Action on APEC DRR Framework. He also stated that the terms of office of the current EPWG co-chairs will end on 31 December 2023. So, the Secretariat will be starting the process for nomination of the next co-chairs.

(2) 16th Senior Disaster Management Officials Forum (SDMOF15)

In the 16th Senior Disaster Management Officials' Forum (SDMOF-16), FEMA Administrator Ms Deanne Criswell served as Chair of the Forum that was held in Seattle on 2 August 2023. This meeting was organized under the backdrop of a string of costly wildfires, floods, hurricanes, typhoons and earthquakes that compelled APEC member economies to heightened collective actions to respond to the increasingly complex disaster landscape.

Kicking off the Forum was a Roundtable on Adaptive Management, where every Minister or Head of Delegation provided a 3-minute remarks. In this roundtable, Mr TANI Koichi (Minister of State for Disaster Management) of the Japan Economy delivered video message. His message touched on incorporating the principles of adaptability, flexibility and meaningful change to build strong and resilient communities. All head of delegations to Forum provided their remarks in persons, including from the following economies: Australia, Canada, Chile, China, Indonesia, ROK, Malaysia, New Zealand, Peru, Philippines, Chinese Taipei, Thailand, USA, and Vietnam.

Emphasizing the significant role of disaster risk managers, the SDMOF tackled four thematic areas to take urgent and decisive action: i) Inclusive and Participatory Disaster Risk Reduction: Fostering Whole Community Integration into Decision-Making Processes; ii) Climate Impacts to Disaster Housing: Prioritizing Pre-Disaster Recovery Planning in Asia-Pacific; iii) Nature-Based Solutions: Strengthening Infrastructure Resilience; and iv) Women's Leadership in Crisis Management: Achieving an Equitable Future for the APEC Region.

Mr Gerald Potutan (Senior Researcher at ADRC), who moderated thematic session 2, stated the following at the wrap-up "As you heard from the speakers, the greatest challenge in disaster housing is logistics e.g., seeking permits where and when to build disaster housing, adhering to protocols in shipping building materials, and complying to government regulations in transferring funds. These logistical challenges make disaster housing complex, and it will take a long time to complete the housing reconstruction. The



Figure 5.8 Mr Potutan of ADRC moderating the session

longer it takes, the greater the losses. However, these logistical issues can be addressed now through pre-agreements and pre-disaster recovery planning. So, when disaster strikes, the pre-agreed logistical arrangements will be activated.”

(3) APEC-USA Disaster Risk Reduction (DRR) Talk

Upon invitation of FEMA, Mr Gerald Potutan (Senior Researcher of ADRC) participated as panelist in the Online DRR Talk on the theme, “APEC in an Increasingly Complex Disaster Landscape: Preparing Asia-Pacific Economies for Extreme Conditions” on the 27 June 2023. The panel tackled concerns of extreme weather events and the widespread impacts of climate change to communities across the Asia-Pacific region. At the outset, all panelists recognized the contributions of the APEC DRR Framework in advancing climate resilience through shared-interventions, such as better risk mapping strategies, expanded regional/global investment in early warning systems, innovation in resilient infrastructure, and nature-based solutions.

ADRC shared related activities, including: the advanced climate change impact projection study, the GLIDE number system, and the training program on “developing local DRR strategies” where information on emerging climate risks are integrated. ADRC also mentioned some initiatives in Japan that the government, the private sector, and the communities are promoting to proactively adapt to climate change risks. Among those mentioned were: 1) Japan International Public-Private Association for Disaster Risk Reduction (JIPAD), where private companies promote their DRR/CCA (Climate Change Adaptation) technologies; 2) National Resilience Promotion, an initiative that contributes in preventing and mitigating disasters; 3) Joint Strategy between the Ministry of State for Disaster Management and Ministry of Environment to mainstream synergy between Climate Action and DRR; 4) Amendments of Basic Countermeasures Act highlighting the importance of the Local Disaster Management Plans to reflect lessons from local conditions in updating the policies related to DRR-CCA; and 5) Public-Private Partnerships in promoting innovative early warning tools (e.g., SPECTEE that utilizes artificial intelligences or “AI”).

All these initiatives are aimed at enhancing synergy (minimizing silos among related agencies) in implementing large-scale disaster countermeasures; providing practical knowledge and skills of people at the community level; and applying new tools and technologies to proactively reduce disaster risks as well as adapt to the emerging climate risks.

5.2.2 APRSAF/Sentinel Asia

Under the framework of the Sentinel Asia – an initiative led by the Asia Pacific Regional Space Agency Forum (APRSAF) to support disaster management with WEB-GIS technology and earth observation satellite data – ADRC functions as the focal point to receive emergency observation requests as well as participate in related activities.

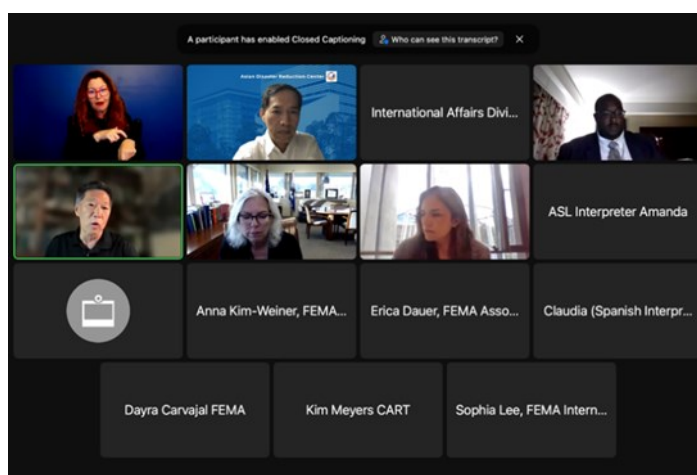


Figure 5.9 Mr Potutan of ADRC serving as resource speaker

(1) Participation in the 22nd Steering Committee Meeting of Sentinel Asia

ADRC attended the meeting of the 22nd Sentinel Asia Steering Committee held at TASA (Taiwan Space Agency) in Taiwan, on 30-31 January 2024. The meeting was attended by Japan Aerospace Exploration Agency (JAXA), which serves as the secretariat of the Sentinel Asia Joint Project Team, other space agencies in Asia, and image analysis organizations. ADRC participated to facilitate between these organizations.

At the meeting, JAXA started out by explaining the purpose of the meeting and the current status of Sentinel Asia operations and issues. In addition, the space agencies reported on their current status of operations. The Asian Institute of Technology (AIT) and Yamaguchi University had a presentation on the topics related to image analysis. ADRC reported on the status of cooperation with the United Nations Office for Disaster Risk Reduction (UNDRR) and other organizations, as well as on the activities of the Sentinel Asia workshops held in Türkiye and Nepal in 2023. Finally, a discussion was held on the revision of the Sentinel Asia Strategic Plan based on the presentations by each organization.



Figure 5.10 Group photo of participants

(2) 8th Joint Project Team Meeting (JPTM) and 29th Session of the Asia-Pacific Regional Space Agency Forum (APRSAF-29)

The 8th Joint Project Team Meeting was held from 17 to 18 September 2023 in Jakarta, Indonesia as well as the 29th Session of the Asia-Pacific Regional Space Agency Forum (APRSAF) held from 19 to 22 September 2023 following JPTM. APRSAF was co-organized by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan, the Japan Aerospace Exploration Agency (JAXA), and the National Research and Innovation Agency (BRIN) of Indonesia.

ADRC participated in both conferences, and reported on Sentinel Asia's activities. On 17 September, ADRC participated in a panel discussion and reported on the situations of Sentinel Asia's emergency observation requests (EOR) and end-user feedbacks on the various data provided to them in time of disaster. On 18 September, ADRC joined the organization reports session and introduced



Figure 5.11 Dr Tatebe of ADRC delivering a presentation

about the Standard Operation Procedure (SOP) which is an EOR manual being developed in member countries and region of Sentinel Asia.

5.2.3 UNDRR/APP-DRR

ADRC continues to engage in the Asia-Pacific Partnership for Disaster Risk Reduction (APP-DRR) to support the implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030, particularly the Asia Regional Plan. In FY 2023, ADRC participated in the in APP-DRR activities.

(1) Asia-Pacific Partnership on Disaster Risk Reduction Forum

On 20 September 2023, the Asia-Pacific Partnership on Disaster Risk Reduction (APP-DRR) Forum was convened to discuss the Asia-Pacific Ministerial Conference on Disaster Risk Reduction (APMCDRR) to be held in Manila, Philippines in October 2024. As the first regional platform since the adoption of the Political Declaration of the Midterm Review of the SFDRR 2015-2030, the APMCDRR 2024 will be organized under the theme: Eyes set on 2030: Asia-Pacific united to accelerate disaster risk reduction. The overall theme of the APMCDRR 2024 will focus on capturing and sharing lessons learned, identifying innovative ideas and practices to reduce systemic risk and cascading impacts, and advancing climate and disaster resilience and risk-inform development and humanitarian response preparedness, including anticipatory action and early warning systems, across the Asia-Pacific region. As Asia-Pacific is the most disaster-prone region in the world, with Sustainable Development Goals achievement under serious threat, the conference provides an important opportunity to share experiences and best practices to accelerate the implementation of the Sendai Framework. Built on the findings and recommendations of the Sendai Framework Midterm Review and the deliberations of the United Nations General Assembly High-level Meeting held on 18-19 May 2023 and the Political Declaration and its policy directives, the APMCDRR 2024 sessions will be organised around three main pillars and four cross-cutting themes, which will inform the content of the conference programme with: 3 Main Pillars and 4 Crosscutting Enablers.

APP-DRR FORUM, 20 SEPTEMBER 2023 PROVISIONAL PROGRAMME	
[The schedule follows the Bangkok time zone: UTC +7]	
Wednesday 20 September 2023, 10:30 to 13:00	
10:30 – 10:40	Welcome Welcome Remarks: <i>Mr. Marco Toscano-Rivalta, Chief, UNDRR Regional Office for Asia-Pacific</i> Opening Remarks: <i>Representative from the Philippines tbc</i>
10:40 – 11:00	Outcomes of the Sendai Framework Midterm Review (10 minutes) Setting the Scene: 2024 APMCDRR objectives, main pillars and cross-cutting enablers (10 minutes)
11:00 – 12:30	Reflections from Governments and Stakeholders (3 mins each) on the focus areas of the three main pillars and taking into account their priorities and ongoing work Main pillars: (i) Enhancing disaster risk reduction financing; (ii) Leaving no one behind: gender transformative and inclusive disaster risk governance; (iii) Localization and urban resilience. Cross-cutting enablers: (i) Science, technology and knowledge; (ii) Multi-stakeholder coordination and collaboration; (iii) Convergence and coherence (iv) Private sector full engagement.
12:30- 12:45	Overview of key issues highlighted and next steps to build the Conference programme (15 minutes)
12:45 – 13:00	Closing Remarks

Figure 5.12 Agenda of APP-DRR Forum

5.2.4 ESCAP/WMO: Typhoon Committee

Under the auspices of the Cabinet Office Government of Japan, ADRC has been engaged in the activities of the ESCAP/WMO Typhoon Committee. ADRC participated in the following Typhoon Committee-related activities in FY 2023.

(1) 56th Session of the Typhoon Committee (TC-56)

Marking the first in-person Session following the global COVID-19 pandemic, the Fifty-Sixth Session of the Typhoon Committee (TC-56) was held in Swiss-Garden Hotel Bukit Bintang, Kuala Lumpur, Malaysia from 27 February to 1 March 2024. The Typhoon Committee, under the auspices of the United Nations Economic and

Social Commission for Asia and the Pacific (UNESCAP) and the World Meteorological Organization (WMO), convened the Session and hosted by the Malaysian Meteorological Department.

In the 56th Session reviewed the progress made in its programme of work in 2023 and planned the activities to be undertaken in 2024 and beyond, together with the support required to implement them. The Session also covered the strategic and development issues such as the implementation of the updated Strategic Plan 2022-2026. ADRC made a presentation to promote the use of the QZSS (Quasi-Zenith Satellite System) for early warning systems in each country and GLIDE numbers for disaster information sharing. Since the Working Group on Disaster Risk Reduction (WGDRR) has included GLIDE in its 2024 Annual Operation Plans (AOPs), many participants showed great interest.



Figure 5.13 Group Photo at TC-56 Session

(2) 18th Integrated Workshops (IWS)

ADRC participated in all three events organized by UNESCAP/WMO TC and jointly hosted by the TC Secretariat (TCS) and UNESCAP on 28 November to 1 December 2023 at the United Nations Conference Centre (UNCC), United Nations Building, Bangkok, Thailand.

The first event was the 4th Training and Research Coordination Group (TRCG) Forum, where specialized topics of research interest (e.g., Artificial Intelligence) and potential operational applications related to tropical cyclone monitoring, forecasting, and warning were presented. The second event was the 18th Integrated Workshop (IWS), which is an annual integrated event of the four working groups: Advisory (AWG), Meteorology (WGM), Hydrology (WGH), Disaster Risk Reduction (WGDRR) to assess the work done in the past year and develop work plans for the next year. The third event was the WGDRR parallel meeting, where



Figure 5.14 ADRC participation in the 18th IWS

its 12-member countries and 2 regions assess the year-end progress of implementing the Annual Operation Plans (AOPs). During the WGDRR meeting, ADRC (participating on behalf of the Cabinet Office Japan, which is the focal point for Japan), presented member's report highlighting the disaster risk reduction activities on: information-sharing, capacity-building, and technology transfer highlighting the Quasi Zenith Satellites System's Disaster and Emergency Crisis Report (QZSS-DC Report) service. Moreover, ADRC also presented

an overview the GLIDE number system. After the presentation, WGDRR members agreed to propose the inclusion of GLIDE in the Annual Operations Plans (AOPs) subject for review of the AWG and the TCS.

(3) 18th Meeting of the WGDRR of the Typhoon Committee

As a member of the Typhoon Committee's Working Group on Disaster Risk Reduction (TC/WGDRR), ADRC participated in the 18th Annual Meeting on 13-16 June 2023 at the Lotte Hotel in Ulsan, ROK. The National Disaster Management Research Institute (NDMI), chair of the WGDRR, hosted the meeting on the theme, "Future of the Disaster Risk Reduction: Leveraging Technology to Adapt Climate Change."

Mr SUZUKI Koji (Project Director at ADRC) delivered a technical presentation entitled, "QZSS technology application to early warning message platform" and Mr Gerald Potutan (Senior Researcher at ADRC) presented the "ADRC Activities in line with TC/WGDRR". Both presentations highlighted ADRC's contributions in achieving the TC/WGDRR objectives to reduce the number of deaths and minimize the economic impacts of typhoon disasters in the Asia-Pacific region.



Figure 5.15 Group Photo of participants to the 18th WGDRR Meeting

One of the recommendations from this meeting is to explore the linkage between the Typhoon Committee's Disaster Information System (TC-DIS) with the ADRC's GLocal unique disaster IDentifier (GLIDE) number system. Under this proposed linkage, ADRC may provide an orientation to the 14-member countries of the TC/WGDRR in inputting disaster information (focusing on tropical cyclone, storm surge, flood, and landslide) to the GLIDE system. The progress of this potential linkage will be reported at the 18th Integrated Workshops (18th IWS) of the Typhoon Committee on 27-30 November 2023 in Bangkok, Thailand.

5.2.5 ASEAN

ADRC participated in the following ASEAN-related events during FY2023.

(1) The 5th ASEAN Committee on Disaster Management (ACDM) + Japan Meeting

On 15-16 June 2023, the 5th ASEAN Committee on Disaster Management (ACDM) + Japan meeting was held in Da Nang, Vietnam. As part of the programme, Mr SASAHARA, Executive Director of the Asian Disaster Reduction Center (ADRC) gave two presentations entitled "Promotion of Database Linkage and Capacity Enhancement through Utilization of GLIDE" and "Pilot Project on Utilization of State-of-the-Art Communication Technologies for CBDRM and Disaster Emergency



Figure 5.16 ED Sasahara and Director Murakami of CAO

Management”. AHA Centre as well as the representative of Malaysia and some others expressed their interest in these projects. Other activities at the meeting included a report on the progress of each activity under the ASEAN-Japan Work Plan on Disaster Management 2021-2025.

ADRC also participated in the site visit held on the last day of the ACDM meeting. In the morning, the participants observed a disaster management drill carried out by the residents of Binh Hai Commune, Quang Nham Province. Based on the scenario that an early warning for an approaching typhoon was given, the exercise included the provision of pre-response funds and equipment and reinforcement of roofs of vulnerable houses conducted by a youth disaster management team. In the afternoon, the delegation visited a site where mangrove conservation and reforestation project are being implemented by the Green Climate Fund in Bau Ca Cai region, Quang Ngai Province.

(2) ASEAN Interregional Dialogue on Disaster Resilience

ADRC participated in the first ASEAN (The Association of Southeast Asian Nations) Interregional Dialogue on Disaster Resilience (AIDRR) held on 21 August 2023 in Singapore. Adopting the theme, “Regional Perspectives on Building Resilience from Transboundary Risks,” AIDRR convened regional organizations in Asia-Pacific region to explore strategies and current approaches to understanding, managing, and reducing transboundary disaster risks and their impacts on other emerging disaster risk issues.



Figure 5.17 Participants of the AIDRR

Speaking on behalf of ADRC, Mr Potutan

mentioned that one of the challenges in managing transboundary disasters is that the disaster risk management (DRM) systems of impacted countries usually have different protocols and logistical approaches. In this regard, ADRC facilitated cooperation among its 31-member countries by providing a common platform for: 1) information-sharing on transboundary risks, such as assigning a universal identification of transboundary disasters using the GLIDE number system; and 2) early warning of transboundary risks using satellites, particularly through the QZSS DC Report and Sentinel Asia.

Based on the discussions at the AIDRR, the ASEAN Secretariat indicated to facilitate the following next steps: 1) continue the inter-regional dialogue among regional organizations to strengthen collaboration; 2) conduct capacity mapping of regional organizations to inform initiatives for greater cooperation and synergy; and 3) pursue proposal for collaboration in the areas of data sharing, early warning, and knowledge exchange.

(3) 6th ASEAN Committee on Disaster Management (ACDM) + Japan Meeting

The 6th ASEAN Committee on Disaster Management (ACDM) + Japan Meeting was held on 11 October 2023 in Ha Long, Vietnam. As a part of the program, Mr SASAHARA Akio, Executive Director of the ADRC, gave presentations on the progress of the two ongoing projects: “Promotion of Database Linkage and Capacity Enhancement through Utilization of GLIDE” and “Pilot Project on Utilization of State-of-Art Communication

Technologies for CBDRM and Disaster Emergency Management.” With regard to the CBDRM activities, the VietNameese delegates in particular showed interest in the activities, as it is effective for use in rural areas remote from urban centres. Other activities at the meeting included reports on the progress of each activity of the ASEAN-Japan Disaster Risk Reduction Action Plan 2021-2025.

On the last day of the meetings, ADRC participated in the site visit organized for the meeting participants. In the morning, the participants observed a disaster awareness event held at a nearby high school in association with the International Day for Disaster Risk Reduction. The delegations deepened exchanges with each other on a cruise in the World Heritage-listed Ha Long Bay.



Figure 5.18 ED Sasahara presenting at the meeting

5.2.6 Other International Engagements

International organizations and partners invited ADRC to participate and share information in many other international events.

(1) Workshop for the Technical Expert Service on Increasing Efficiency of Provincial Disaster Management

Two earthquakes with a magnitude of 7.7 and 7.6 respectively occurred in Türkiye on 6 February 2023, causing great destruction in 10 provinces. Considering this experience, the Turkish Ministry of Internal Affairs and the Denizli Governorship decided to conduct a five-day workshop in Denizli titled “Technical Expert Service on Increasing Efficiency of Provincial Disaster Management,” with the support of the Asian Productivity Organization (APO). Officials from AFAD Denizli also joined the workshop as key experts. One of the most important objectives of this activity is to identify the problems experienced before and after the earthquake disaster, to discuss concrete interventions for solving those problems, and to develop a coordination system in order to establish a policy for addressing potential future disasters.

Dr IKEDA Makoto from ADRC attended the workshop as a speaker and made several presentations. Professor MURATA Masahiko from Kansai University of International Studies also participated and shared his experiences of the Great Hanshin-Awaji Earthquake. The participants also engaged actively in discussion with Professor Murata and Dr Ikeda, and the workshop proved to be useful occasion for considering how to achieve better DRR in Türkiye going forward.



Figure 5.19 Workshop on Technical Expert Service

(2) Third Expert Forum for Producers and Users of Disaster-related Statistics

UNESCAP hosted the Third Expert Forum for Producers and Users of Disaster-related Statistics in Bangkok, Thailand in a hybrid forum on 5-7 June and associated events on 8-9 June 2023, co-organized by the Forum was co-organized by the United Nations Economic Commission for Africa (ECA), the United Nations Economic Commission for Europe (ECE), the United Nations Economic Commission for Latin America and the Caribbean (ECLAC), UNESCAP, the United Nations Economic and Social Commission for Western Asia (ESCWA), UNDRR, and the United Nations Department for Economic and Social Affairs (UNSD). The objectives of the Forum were to advance the production and use of disaster-related statistics for risk-informed development in support of the aim of IAEG-DRS of the United Nations Statistical Commission by facilitating the exchange of country experiences in using disaster related statistics to monitor disaster risk reduction commitments and inform development, as well as in producing such statistics to identify best practices and replication possibilities. The participation included 274 persons including experts from the National Statistical Offices, National Disaster Management Agencies and UN Agencies, participants from academic sector, non-governmental organizations groups and the representatives of intergovernmental organizations, international organizations, and national planning and budgeting offices.



Figure 5.20 Flyer of the 3rd Expert Forum

(3) Workshop on validation of the prototype for the new losses and damages tracking system

On 3-4 May 2023, ADRC attended the “Technical workshop: validation of the prototype for the new losses and damages tracking system” held in Bonn, Germany. The workshop which was organized by UNDRR, UNDP and WMO aimed to gather feedback from practitioners, experts and other losses and damages data stakeholders on the draft prototype of a new tracking system of the losses and damages data that is now in the process of development. During the two-day workshop, over 80 participants actively exchanged opinions in person and virtually about several issues of the new system such as functionalities, data analysis, visualization and administration. It is expected that the new system will ensure the use of data to generate insights for comprehensive disaster



Figure 5.21 UNDRR presentation at the workshop

and climate risk management and for risk-informed sustainable development policy making and investment decisions.

(4) Study Visit to Affected Areas of Türkiye Earthquake (Hyogo Prefecture Türkiye Earthquake Recovery and Reconstruction Support Project)

ADRC visited Türkiye from 24 September to 2 October 2023, staying six days in Türkiye, to study the state of their recovery in field of education in areas affected by the Türkiye-Syria Earthquake that occurred in February 2023. This study was supported by the “Hyogo Prefecture Türkiye Earthquake Recovery and Reconstruction Support Project” and conducted in collaboration with Mr SUWA Seiji, Visiting Professor, University of Hyogo. In addition, Dr Emin Özdamar of the Turkish Japanese Foundation greatly cooperated in this project.

The delegation visited schools that were damaged by the earthquake in the Province of Gaziantep, Kahramanmaraş, and Hatay, and had interviews regarding school education and the situations of teachers and children after the earthquake. Workshops were also conducted with education communities to share the experiences of the Great Hanshin-Awaji Earthquake and the Great East Japan Earthquake, including the response of the actual education sites and the recovery efforts they have made.



Figure 5.22 Discussions during the visits to the Hatay Mustafa Kemal University

The teachers were still in deep grief from the earthquake but they were working hard to reopen schools, continue education, and care for children. The Ministry of National Education (MoNE) has been providing mental health and psychosocial support for teachers and children by dispatching specialists and holding seminars for teachers, however, for a long-term recovery, continuous supports for teachers and children in schools are necessary. Moreover, reconsideration of future disaster education based on the experience of this earthquake is also essential. ADRC will create opportunities to share experiences of disasters between Türkiye and Japan through communication exchanges with teachers and children.