5.1.2. Partners and Collaborators

The University of Tokyo is the technical partner of ADRC for this project. In its implementation, the project engages HP-SDMA of India and collaborating with the following organizations: (i) Department of Telecommunications, Government of Himachal Pradesh; (ii) Mobile Network Operators; (iii) Telecommunications Regulatory Authority of India (TRAI); (iv) Resilience Innovation Knowledge Academy (RIKA-India); (v) IIT-Hyderabad; and (vi) Asian Disaster Preparedness Center (ADPC). The collaboration is focused on implementing the following core activities: setting-up the data pipeline, setting-up the analytical pipeline, assessing the Mobipack enhancement that is tailored to the needs HPSDMA, and organizing lessons learned workshop.
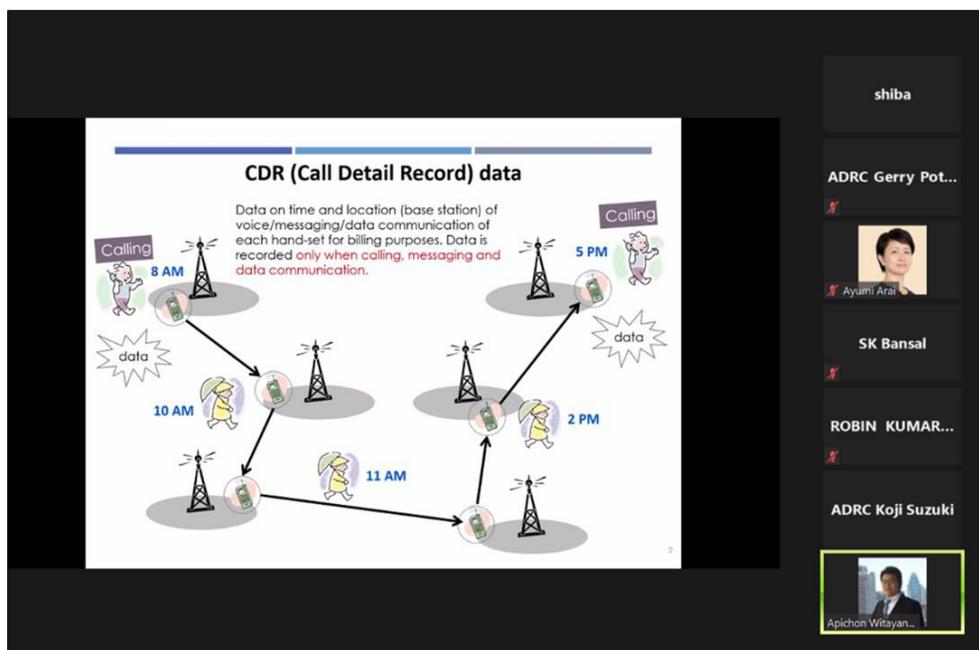

Figure 5.2. Virtual Meeting Among Partners

5.2. Networking and Engagement

Most of ADRC engagements during FY 2020 were conducted virtually due to COVID-19 pandemic.

5.2.1. APEC-EPWG

On 21 July 2020, ADRC virtually participated in the 16th Meeting of APEC Emergency Preparedness Working Group (EPWG). ADRC Project Director Mr. SUZUKI Koji, co-chair of the EPWG, moderated one of the sessions. Mr. NAKAGAWA Masaaki (Executive Director)

Mr. Gerald Potutan (Senior Researcher) and Ms. SHIOMI Yumi (Senior Researcher) also participated. Agenda included reporting from APEC economies on DRR measures during COVID-19 pandemic, ongoing projects, and future plans of EPWG. Mr. SUZUKI presented an "Update on EPWG initiative on sharing of information in responding to COVID-19". Mr. Potutan presented the report on DRR Measures during the Pandemic on behalf of Japan economy. In the meeting, EPWG agreed to continue to address the issues related to the COVID-19 pandemic in cooperation with other APEC fora.

Figure 5.3. Screenshot of EPWG-16 Meeting

5.2.2. ASEAN

Engagements with the ASEAN included:

- **High-Level Symposium** on Disaster Management 2020 held at ASEAN Secretariat in Jakarta, Indonesia on 26-27 February 2020. The symposium was organized by ASEAN Secretariat and supported by China with the objective of providing a platform for discussions on disaster management in a cooperative framework by involving relevant experts from various background by complementing the existing ASEAN mechanisms. More than 100 participants from DRR and other fields like social and financial sectors attended from ASEAN member countries, academic institutions, international organizations and NGOs. ADRC shared information on disaster data development and methodologies in ASEAN countries. Panelists regarded accuracy and coverage of disaster data as challenging regardless of disaster phase or activity field throughout the symposium. Also, the application of GLIDE to their work was suggested for future solution.

- **Discussions on use of QZSS** for disaster management with AHA Centre in Jakarta, Indonesia on 3 March 2020. Together with partners from Asia Air Survey and CTI Engineering International, ADRC met with Mr. Siva Balan (Director for Operations) and other AHA Centre officials in Jakarta. The meeting explored the possibility of applying a constellation of Japanese Satellites' positioning service (QZSS) as emergency information platform. The key feature of this platform is that it can send text and voice messages to a receiver. By using an application to decode the sent messages, communities can receive the information even in the absence of telecommunication infrastructure, telephone networks, or Wi-Fi. This platform is valuable to communities in mountainous areas, island communities, or areas where telecommunication infrastructure is limited. AHA Centre officials recognized the added value of this emergency information platform, especially for Cambodia, Lao PDR, Myanmar, and Vietnam (CLMV), as these ASEAN member countries have limited capacities in disaster forecasting and early warning.
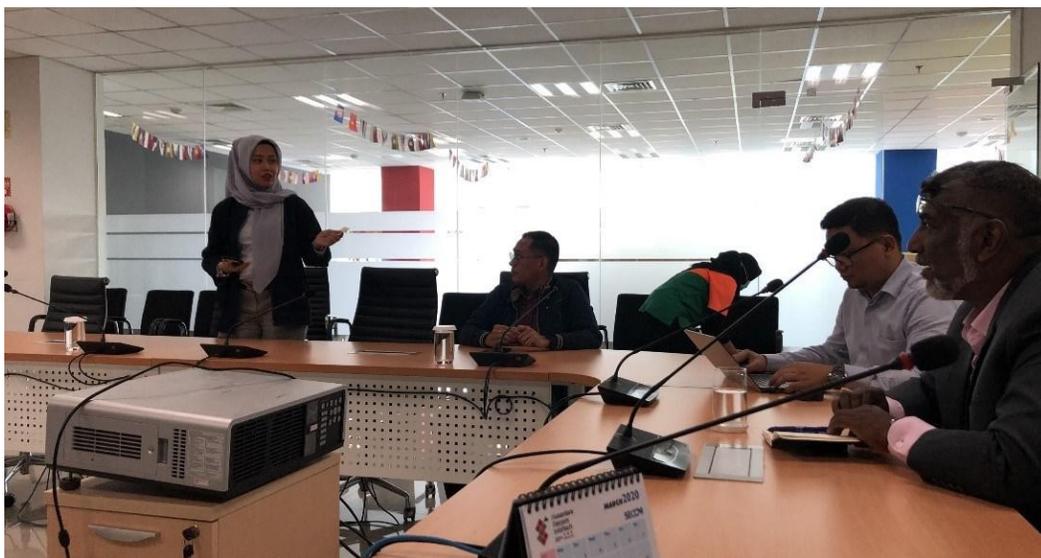
Figure 5.4. Meeting at AHA Centre, Jakarta

5.2.3. SAARC/Nepal

On 25-29 February 2020, ADRC engaged in three different activities during the visit to Nepal. Firstly, ADRC Executive Director, along with researchers from JICA Tohoku Center and University of Hyogo, met with Mr. Sushil Gyewali, CEO of National Reconstruction Authority (NRA) and other officials. The meeting discussed the joint research project on Modeling Disaster Recovery Governance in Asia. Mr. Gyewali explained the process as well as the progress of recovery from the 2015 Gorkha Earthquake. He reported that as of

December 2019, 85% of all projects were completed. During the field visits, the team learned that NRA utilizes 'User Committees' to reconstruct completely damaged heritage sites (e.g., Ranipokhari). NRA also promotes 'Integrated Settlements' in reconstructing private houses (e.g., Ward 12 in Melamchi). Since NRA will be dissolved in the end of 2020, its functions will be transferred to the National Disaster Risk Reduction and Management Authority (NDRRMA) - a newly established agency. Secondly, ADRC, in collaboration with experts from Asian Institute of Technology (AIT) and GeoThings, organized a workshop on the 'Utilization of ICT to Strengthen Disaster Resilience'. In this workshop, GeoThings demonstrated the functions of 'geoBingAn' - a social media Apps that functions to report personal safety and simple assessments (e.g., building damage) following a disaster. Thirdly, ADRC coordinated other separate meetings with SAARC Secretariat, NDRRMA, Planning Ministry, and JICA Nepal.

Figure 5.5. Meeting at SAARC Headquarters in Kathmandu

5.2.4. Sentinel Asia

As member, ADRC participated in the regularly monthly meeting of the Sentinel Asia in FY 2020. At the meeting, ADRC mainly reported the latest Emergency Observation Requests it received and provided details (Fig 5.1). ADRC also participated in the following events:

- *International Disaster Charter Board Meeting*, 11 November 2020, which was organized online. In this meeting, space agencies from the IDC member countries provided updates on the latest DRR activity. ADRC functions as a Regional Support Office (RSO) in the

IDC framework. When ADRC receives an emergency observation request for Sentinel Asia, ADRC escalates that request to IDC if asked to do so by the agency making the request. Sentinel Asia targets Asian countries, but the IDC provides worldwide support in case of a more catastrophic disaster. ADRC has escalated 49 cases to IDC since 2011. At this conference, ADRC proposed that a more robust network be developed.

UTC 11:00		Start of Meeting	
11:00	1) 1a) 1b) 1c)	Welcome Note by JAXA Current Lead Agency Previous Lead Agency Next Lead Agency	JAXA JAXA CNSA ISRO
11:10	2)	Approval of Agenda	All
11:15	3)	Approval of the 43rd Board Minutes	CNSA, CSA, All
11:20	4)	Review of Board Action Items	JAXA
11:40	5)	Activity Report Status of annual report 2019	CNSA CNES
12:10	6)	Sentinel Asia Report	JAXA, ADRC
12:25	7)	Universal Access Update	CNSA, All
12:35	8)	The 20th Charter Anniversary Meeting and Events	CNSA, JAXA, INPE, All
12:45	9)	Discussion on UNITAR's new request – status update other issues on collaboration with UNOOSA and UNITAR – Their Annual Report	JAXA, ESA, CNSA, CNES, All
13:00	10)	Charter Processing Environment – Operations Concept Note (Report from ES)	ESA, ISRO, All
13:20	11)	Charter Membership and Integration Status 11a) Discussion on Belarus, Kazakhstan Application 11b) Acceptance Procedure Update	ESA, CSA All
13:35	12)	GEO engagement – status update	JAXA, CNSA, ROSCOSMOS, UKSA, All
13:50	13)	AOB	CNES
13:55	13)	Lead Agency Turn and Further Planning	CNSA
14:05	14)	Review of 2020 – 2021 Work Plan	JAXA, All
14:15	15)	15a) Date of mid-term Board Teleconference 15b) Next Lead Agency and Date/Time of the Next Meeting	JAXA, All ISRO
14:25		Closure of Charter Online Meeting	

Figure 5.6. IDC Board Meeting Agenda

- *UN International Conference on Space-based Technologies for Disaster Risk Reduction*: *Lessons Learned during an Unprecedented Pandemic*, 24-25 November 2020, which was held online. This conference was organized by the Beijing office of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER), a UNOOSA programme. At this conference, ADRC Project Director Mr. SUZUKI Koji gave a presentation entitled "Sentinel Asia Activation for a Flood Disaster in Japan during the COVID-19 Outbreak." This presentation mentioned how space-based technologies were effectively employed to better mitigate this disaster under the challenging conditions posed by the pandemic.

Day 1, 24 November 2020	
09:00-11:00 (Central Europe), 15:00-17:00 (Bangkok), 02:00-04:00 (Chicago, USA)	
Opening session	
Simonetta Di Pippo Director of the UN Office for Outer Space Affairs (UNOOSA)	
Shirish Ravan Head UN-SPIDER Beijing Office	Context setting
Session 1: Lessons learned during an unprecedented pandemic situation	
Chair	Shirish Ravan, UNOOSA
Sanjay Srivastava Chief, Disaster Risk Reduction, United Nations Social and Economic Commission for Asia and the Pacific, Thailand	Disaster risk reduction and Covid-19 situation – changing policy perspective
Koji Suzuki Executive Director, Asian Disaster Reduction Center (ADRC) Japan	Critical support of Sentinel Asia during the flooding in the southern Japanese island of Kyushu in the midst of Covid-19 outbreak
Titus A. Kuuyuor (Ph.D.) Senior Resilience Advisor, United Nations Development Programm, Ethiopia	--------
[name] NDRCC/MEM - China	Contribution from space to tackle major disasters in China during the challenging time of Covid-19 outbreak
Krishna Vatsa Member, National Disaster Management Authority, India	Efforts to mitigate impact of floods and cyclones in India during the 2020 pandemic

Figure 5.7. Conference Agenda

5.2.5. UNDRR

On 1-2 December 2020, ADRC participated in the United Nations Office for Disaster Risk Reduction (UNDRR) *Asia-Pacific Partnership for Disaster Risk Reduction Forum*, which was held online. More than 150 representatives of government organizations and related organizations from Asian countries participated the Forum.
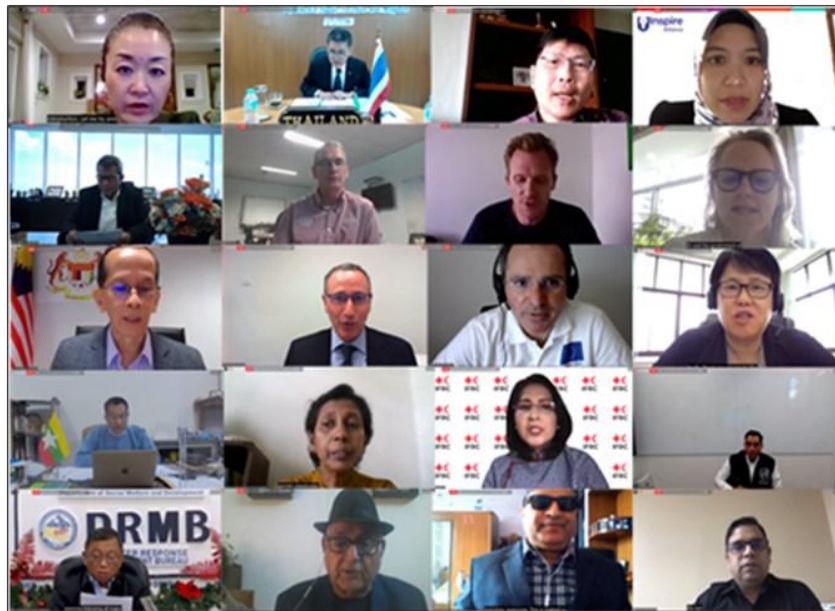
Figure 5.8. Screenshot of UNDRR Virtual Forum

5.2.6. ESCAP/WMO: Typhoon Committee

With regard ESCAP/WMO Typhoon Committee activities, ADRC engaged in the following:

- 52nd Session of the ESCAP/WMO Typhoon Committee

On 10 June 2020, ADRC participated in the session as observer. The Session constituted of reports from Typhoon Committee Secretariat, Working Group on Meteorology (WGM), Working Group on Hydrology (WGH), and Working Group on DRR (WGDRR). Japan Meteorological Agency made a report on the activities of Regional Specialized Meteorological Center (RSMC). In particular, the 2019 Typhoon Season summary was reviewed. It was reported that out of 29 named tropical cyclones (TCs) formed, 18 reached typhoon (TY) intensity. In the Session, the Typhoon Committee agreed to retire the names of the seven typhoons among them which brought about serious damages and to replace new ones.
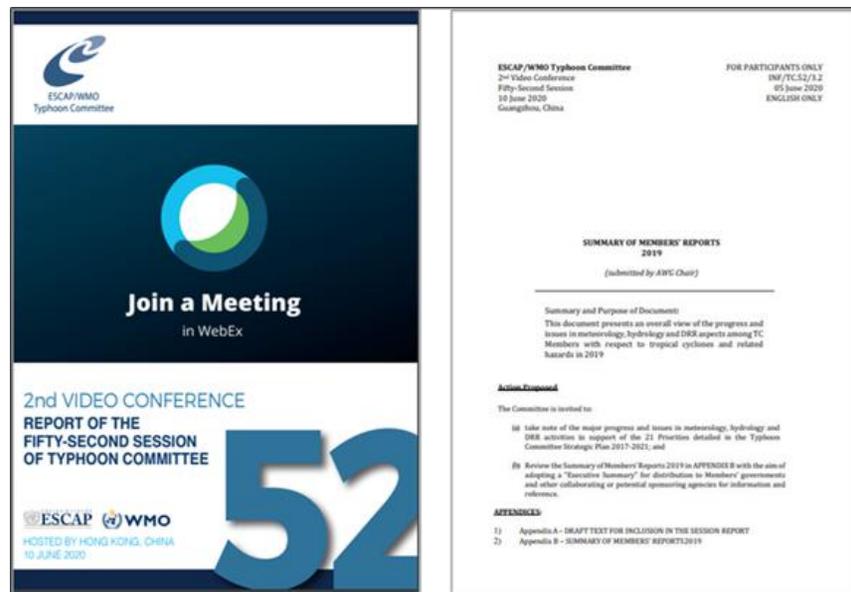

Figure 5.9. Screenshot of Session Materials

- 15th Integrated Workshops of the Typhoon Committee

On 1-2 December 2020, Vietnam hosted the Fifteenth Integration Workshop (IWS) of ESCAP/WMO Typhoon Committee. ADRC Senior Researcher Mr. Gerald Potutan delivered a keynote speech titled "Disaster Response Amidst COVID-19: Lessons from recent typhoons in three ADRC member countries." The presentation highlighted the respective activities of the Disaster Risk Management (DRM) agencies in the Philippines, India, and the Republic of Korea in responding to recent typhoon disasters on top of COVID-19 pandemic. In addition to restrictions of people's movement, health protocol requirements of social

distancing and face coverings, DRM agencies introduced various new response measures such as taking measures at evacuation centers.


Figure 5.10. Participants of 15th IWS

- 53rd Session of the ESCAP/WMO Typhoon Committee

On 23-25 February 2021, Japan Meteorological Agency (JMA) hosted the Fifty-Third Session was hosted, and ADRC participated as observer. The Session began with JMA's 2020 Typhoon Summary report and constituted of reports from Typhoon Committee Secretariat, Working Group on Meteorology (WGM), Working Group on Hydrology (WGH), and Working Group on DRR (WGDRR). Members and participants actively discussed the activities, plans and schedules. During this session, PR China's proposal for the establishment of TC Collaborative Research Center was approved.

Figure 5.11. Participants of the 53rd Session