3. Information Sharing on DRR

ADRC collects and disseminates disaster risk reduction (DRR) information, primarily on its website (https://www.adrc.asia), to provide member countries and the general public of documented experiences, lessons, tools, and practices that maybe useful for preparedness, mitigation, response, and recovery activities.

3.1 Information Collection

Supported by its 31-member countries, ADRC collects information on DRR systems, plans, and policy measures based on each country's disaster risk situations. Additionally, ADRC collects information from other countries and organizations in collaboration with the Visiting Researchers (VRs) and the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA). The basic DRR information that ADRC collects are:

- Disaster risk management systems (e.g., legal and institutional frameworks, disaster management plans, and manuals)
- Disaster response and recovery activities (e.g., emergency response activities in affected area/country)
- Disaster events due to natural hazards (e.g., descriptions of natural disasters such as earthquakes, floods, cyclones, and so on, and the damages)

3.1.1 Country Reports on DRR

Member countries regularly provide reports and information on DRR to ADRC Secretariat, which manages the database. To facilitate sharing, ADRC disseminates DRR related website links and other relevant information among member countries and partner organizations. The updated record of country reports for FY 2021 is shown in Table 3.1.

Table 3.1. Years Country Reports Updated as of FY2021

Country	Year Prepared (Information frequently updated by VRs)
Armenia	2001, 2002, 2003, 2005, 2006, 2010, 2012, 2015 2016, 2017
Azerbaijan	2011, 2014
Bangladesh	1998, 1999, 2001, 2003, 2005, 2006, 2010, 2011 2013, 2020
Bhutan	2008, 2013, 2014, 2017, 2019
Cambodia	1998, 1999, 2002, 2003, 2005, 2006, 2013
China	1998, 1999, 2005, 2006, 2012
India	1998, 1999, 2002, 2005, 2006, 2008, 2012, 2015 2018
Indonesia	1998, 1999, 2002, 2003, 2004, 2005, 2006, 2012 2016
Iran	2013
Japan	1998, 1999, 2002, 2005, 2006, 2012, 2015, 2016, 2017, 2018, 2019
Kazakhstan	1998, 1999, 2002, 2005, 2006

Country	Year Prepared (Information frequently updated by VRs)
Korea	1998, 1999, 2001, 2002, 2005, 2006, 2008
Kyrgyzstan	2005, 2006, 2012
Laos	1998, 1999, 2003, 2005, 2006
Malaysia	1998, 1999, 2003, 2005, 2006, 2008, 2009, 2011 2018
Maldives	2013, 2014, 2015, 2018
Mongolia	1998, 1999, 2002, 2005, 2010, 2011, 2013
Myanmar	2002, 2005, 2006, 2013, 2018, 2020
Nepal	1998, 1999, 2005, 2006, 2009, 2010, 2011, 2014 2019
Pakistan	2005, 2006, 2009, 2015, 2016, 2017
Papua New Guinea	1998, 1999, 2005, 2006
Philippines	1998, 1999, 2002, 2003, 2005, 2006, 2009, 2010, 2011, 2012, 2014, 2016, 2017, 2018
Russia	1998, 1999, 2003, 2005, 2006
Singapore	1998, 1999, 2001, 2002, 2003, 2005, 2006
Sri Lanka	1998, 1999, 2003, 2005, 2006, 2009, 2010, 2011, 2014, 2015, 2016, 2019
Tajikistan	1998, 1999, 2003, 2005, 2006
Thailand	1998, 1999, 2003, 2004, 2005, 2006, 2008, 2010, 2011, 2012, 2016, 2017, 2018, 2019, 2020
Turkey	2019
Uzbekistan	1998, 1999, 2005, 2006, 2013, 2015
Vietnam	1998, 1999, 2005, 2006, 2017
Yemen	2009, 2012, 2014

In FY 2021, the reports from member countries continued to put emphasis on DRR activities during COVID-19 pandemic. Some of the reports were written as thematic papers, which were submitted and presented at the Asian Conference on Disaster Reduction (ACDR) 2021.

3.1.2 Latest Disaster Information

Information on latest disaster and its updates are regularly posted on ADRC website (Figure 3.1). In particular, the date of occurrence, location, impacts, and links to reports, articles, maps, relief efforts, and satellite images are among the basic information that are included in the updates. The sources of these information are from ADRC counterparts, partner organizations, and networks (e.g., media, governments, international organizations, research institutions and civil societies). For instance, ADRC updates the information based on the materials provided by the ReliefWeb (operated by UNOCHA), United States Geological Survey (USGS), and other media information, including government agencies.

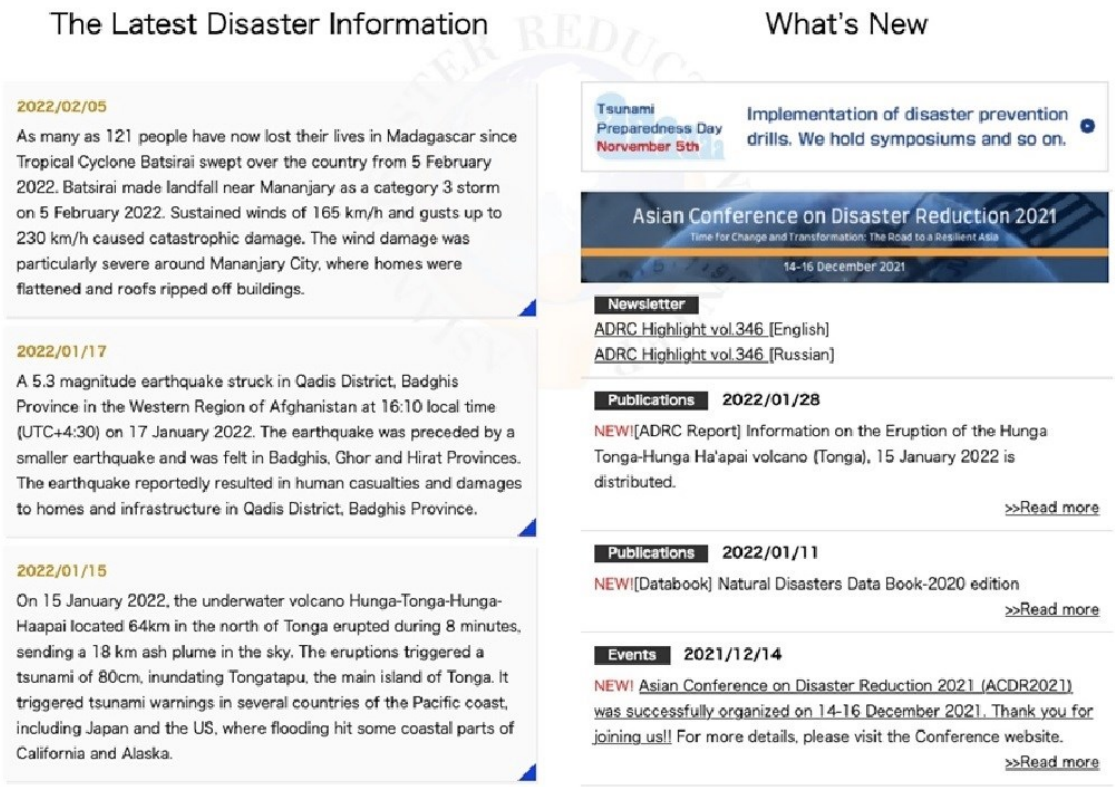

Figure 3.1 Latest Disaster Information on ADRC Website

The five most notable disasters in FY2021, as shown on the ADRC website, included:

- **Floods in India, June to September**

In Western India, severe flooding and landslides was experienced in Maharashtra State starting in June 2021. As of 28 July, the death toll increased to 209, according to the National Emergency Response Centre. About 8 people were missing, 52 injured, 434,150 displaced (over 251,300 to 308 temporary relief centres), and more than 382,650 people were affected across ten districts. Heavy rain continued until September 2022 over northern and coastal Maharashtra. https://bit.ly/indiaLF2021

- **Henan Flood in China, July**

More than 144,660 residents were affected by torrential rains in Henan Province of Central China, 16-20 July 2021. It was reported that 10,152 people were relocated to safe places. https://bit.ly/HenanFL2021

- **Nuristan Flood in Afghanistan, July**

On 28 July 2021, massive flash floods, triggered by heavy rain, occurred in Mirdesh village in Kamdesh district in Nuristan province – eastern part of Afghanistan. Around 150 were reported missing and 113 people were found dead. Around 300 residential houses were impacted with 200 houses fully damaged. One public bridge and four small bridges were also damaged. The flood swept away cattle and livestock, destroyed agricultural lands, and demolished a large part of a road in Kamdesh district. https://bit.ly/AfghanFL2021

- **Typhoon Rai in the Philippines, December**

Typhoon Rai (Local name: Odette) slammed southeastern part of the Philippines on 16 December 2021, bringing heavy rains and flooding that displaced thousands over a large area. It rapidly intensified to a Category 5 storm before making landfall. It killed 405, injured 1,371, missing 52, affected 7.8 million, and evacuated 114,943 people. Over 2 million houses were totally/partially destroyed and about 1,734 infrastructures were damaged. https://bit.ly/PHILFL2021

- **Volcanic Eruption and Tsunami in Tonga, January**

The Hunga Tonga Hunga Ha'apai (HTHH) Volcanic Eruption and the induced tsunami waves which hit Tonga in the evening of 15 January 2022 resulted in the displacement of about 2,390 people and 465 households. About 54.41% of affected households were in Tongatapu, 30.54% in Ha'apai Islands, and 15.05% in 'Eua.

https://bit.ly/TongaVL2022

The set of disaster information provided on the ADRC website is comprehensive due to wide range of reliable ADRC partners that provided the data.

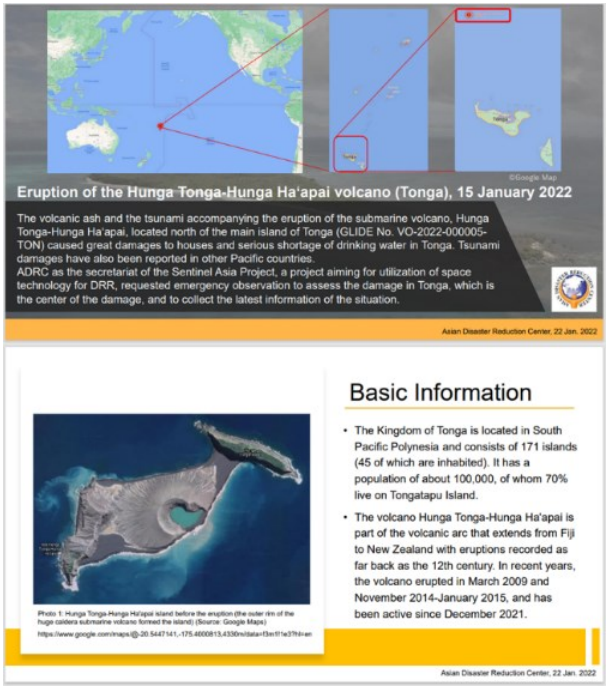

Figure 3.2 ADRC presentation on HTHH Volcanic Eruption of 15 January 2022

3.1.3 Natural Disaster Databook

ADRC obtained data from EM-DAT and analyzed it to show the occurrence, death tolls, people affected, and economic impact of disasters during the year 2020 (but reported and published in FY2021). In addition, the analysis also included two other sets of data. One pertains to data on climate-related disasters, and the another pertains to data COVID-19 situations. In general, the Natural Disaster Databook 2020 presented three data perspectives:

- Natural disaster data of 2020 is compared with the annual average of disaster data of the past three decades (i.e.,1990-2019) at the global level and at the Asian level

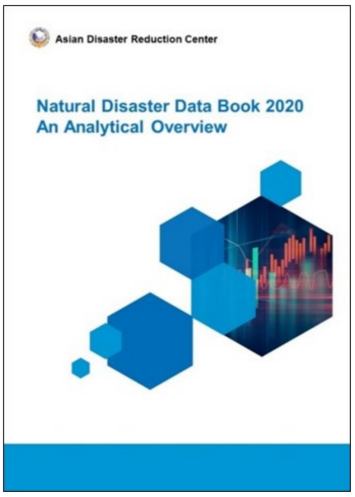

Figure 3.3 Cover of Natural Disaster Databook 2020

- Climate-related disasters of 2020 is compared with the annual average of the past three decades (i.e., 1990-2019) at the global level and at the Asian level
- COVID-19 situation (i.e., using cumulative data of confirmed cases and deaths) is presented at global level as well as in the ADRC member countries

The analysis of disaster data was presented in a form of infographic. For instance, in 2020, the economic losses from disasters (excluding losses from COVID-19) was USD173.1 billion. This number was higher compared to the annual average of USD108.5 billion of economic losses from disasters in the last three decades (Figure 3.4).

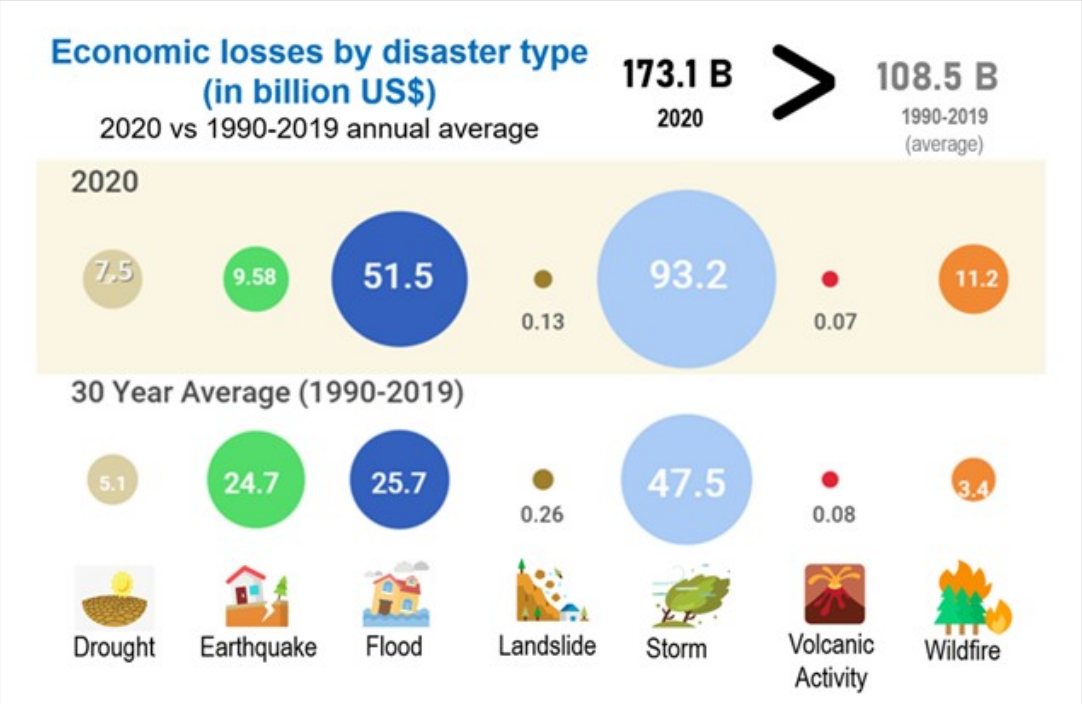

Figure 3.4 Economic losses by disaster type 2020 vs 1990-2019 annual average

Some highlights of the Natural Disaster Databook 2020 could be mentioned here. Firstly, flood and storm had been the most frequent causes of disasters in 2020 as well as during the last 30 years. These two disaster types also account for the highest number of people affected and the highest economic losses in 2020 and in the last 30 years. This observation indicates that disaster risk reduction and management actions for flood and storm need further improvements. Secondly, flood and storm (unlike earthquake) are climate-related disaster types that show the tendency of frequently occurring, as observed in 2020 and during the last 30 years. This observation is notable not only globally, but also, in Asia. Thirdly, as of 21 September 2021, the number of confirmed cases and deaths from COVID-19 had peaked in several occasions since the World Health Organization (WHO) declared the pandemic on 11 March 2020. The highest peak so far was on 26 April 2021, recording a total of 5,695,585 COVID-19 confirmed cases globally on that day. Although some western countries rolled out vaccines, there emerged some COVID-19 variants (e.g., delta variant) that might had contributed to the increasing number of confirmed cases. In ADRC

member countries, cumulative data shows that COVID-19 situation was varied, reflecting the differences in policies as well as socioeconomic conditions of Asian countries.

3.2 Information Dissemination

ADRC disseminates DRR information using a range of channels, including: a) regular issuance of ADRC Highlights, a monthly newsletter, b) dissemination via GLIDE, c) dissemination through Sentinel Asia and space-based platforms, and d) sharing of information at conferences and learning events.

3.2.1 ADRC Highlights

Since 1 June 1999, ADRC has been issuing the ADRC Highlights for information dissemination. For eight years (until FY 2007), the ADRC Highlights had been issued twice a month. However, following the renewal of its design in the beginning 2008, it has been issued monthly and published in three languages: English, Japanese, and Russian.

Figure 3.5 ADRC Highlights issued in three different languages

As of 28 February 2022, there are 2,329 subscribers for English edition, 915 for Japanese edition, and 229 for Russian edition. The newsletters are available on ADRC website and also disseminated by email in English, Russian, and Japanese languages to ADRC counterparts, former visiting researchers, former GLIDE visiting researchers, participants in the past ADRC annual meetings, visitors to ADRC, trainees in JICA's training courses which ADRC conducted, and participants of international conferences which ADRC is engaged. The contents include articles on the latest ADRC activities, reports on participation in international conferences, and other events in which ADRC staff members attended and gave presentations. Reports by ADRC Visiting Researchers from member countries and interns are also covered in the newsletter.

3.2.2 Data Sharing through GLIDE Number System

As of FY 2021, over 7,300 GLIDE numbers have been issued. GLIDE (operated by ADRC and other partners including the United Nations, international partner organizations, and researcher institutions) is a disaster identifier system that is commonly formatted but has unique numbers to disasters to support the integration of disaster risk reduction (DRR) data as well as improve the efficiency of retrieving historical and on-going disaster information from various databases across different countries and organizations. Figure 3.6 shows a list of GLIDE numbers with the disaster and geographic information. Once a GLIDE number is issued, it is shared to some 2,000 registered users in the world and applied to their databases and products.

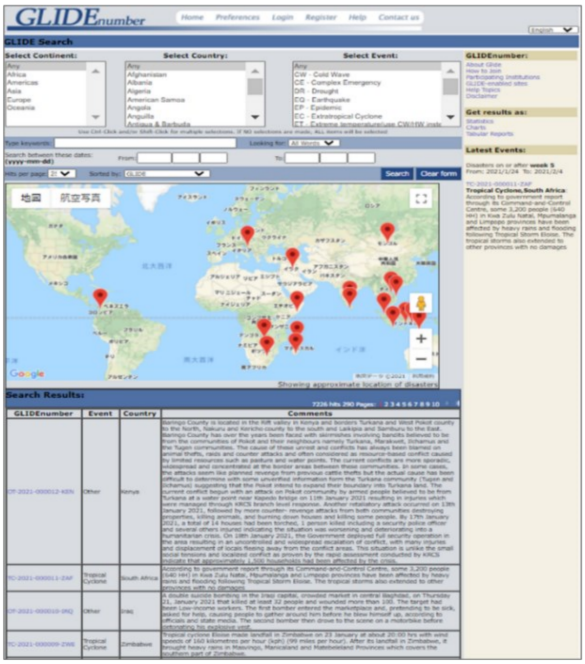

Figure 3.6 GLIDE Information on its Website

3.2.3 Data Sharing through Sentinel Asia

As of January 2022, a total of 111 organizations from 28 countries and region join the Sentinel Asia. In accordance with the Cooperation Agreement between the United Nations Office for Outer Space Affairs (UNOOSA) and ADRC signed on 4 June 2009, ADRC has been established as a UN-SPIDER Regional Support Office (RSO) operated by its staff members as coordinators. In spite of year-to-year changes in the number of requests, the ratio of activated numbers remains stable at around 80%.

In 2021, Sentinel Asia received 34 requests from JPT members and 34 were activated in 2021. Looking at the breakdown of the number of disaster observations by country and region from 2007 to 2021 (Figure 3.8), Indonesia requested the most at 60. This is followed by 56 requests from Vietnam and 50 requests from the Philippines, indicating that Southeast Asian countries occupy the top positions. Floods represent the largest number of disasters with 212 requests (50.1%), followed by earthquakes at 54 (12.8%), typhoons at 36

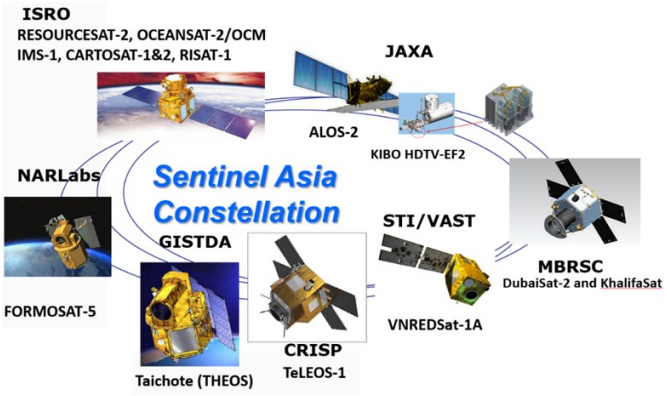

Figure 3.7 Data Provider Nodes of Sentinel Asia

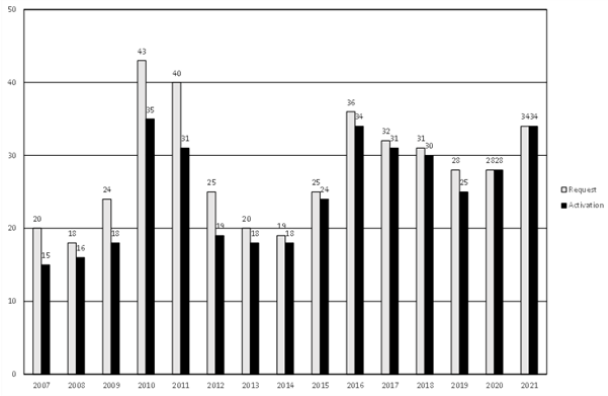

Figure 3.8 Emergency Observations 2007-2021