



Asian Disaster Reduction Center

# Natural Disaster Databook 2022

## An Analytical Overview



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## Annex 1: Notes on the Sources of Data

## 1. Introduction

ADRC publishes the Natural Disaster Databook annually to provide statistical and analytical perspectives of disaster data. For its 2022 issue, ADRC used the data from the Emergency Event Database (EM-DAT) downloaded on 16 May 2023 to analyze the number of occurrences, deaths, people affected, and economic losses from disaster events – focusing only on eight disaster types: drought, earthquake, extreme temperature, flood, landslide, storm, wildfire, and volcanic activity (Annex 1: Notes on the Sources of Data). The analysis compares the following:

- Comparison of natural disasters in 2022 with natural disasters in the last 30 years (1992-2021)
- Comparison of climate-related disasters in 2022 with climate-related disasters in the last 30 years (1992-2021)
- Comparison of the COVID-19 situations between global level and regional level (highlighting the situations in ADRC member countries)

Here are some of the observations. First, although there was an increasing trend of disaster occurrence globally, a decreasing trend of disaster occurrence was observed in Asian region in 2022. Likewise, the number of deaths, people affected, and the economic losses from natural disasters in Asia in 2022 were lower compared to the annual averages for the past 30 years (1992-2021). Secondly, flood and storm remain to be the frequently occurring disaster types globally and in the Asian region in 2022 and during the past 30 years. Moreover, climate-related disasters, particularly from flood, storm, and drought, account for the highest number of people affected and economic losses in 2022 and during the past 30 years. Thirdly, towards the end of 2022, both the number of confirmed cases and deaths from COVID-19 had declined drastically following a huge surge around the globe and at ADRC member countries. This drastic decline resulted in the lifting of COVID-19 restrictions and opening of borders in over 100 countries in the beginning of 2023.

In 2022, a total of 388 disasters occurred globally. This is higher compared to the annual average for the past 30 years (1992-2021), which is 340. Among the most devastating disasters in 2022 were floods in Pakistan (June to September), droughts in Africa (e.g., Congo, Ethiopia, Nigeria, Sudan, China, Burkina Faso, Malawi, Cameroon, Central African Republic, Chad, Niger, and Mali), typhoons in the Philippines (e.g., Megi in April and Nalgae in October), and hurricanes (e.g., Hurricane Ian in Cuba and Hurricane Fiona in Dominican Republic). While flood was the most frequent disaster in 2022, extreme temperature caused the most deaths (16,416 deaths) accounting to more than half of all

disaster-related deaths. However, during the last 30 years (1992 to 2021), earthquakes remained to cause the most deaths from at an average of 990 deaths per disaster event compared to only 52 per disaster event in 2022. The damage caused by disasters in 2022 (USD 223.84 million) is higher than the annual average disaster damage for the past 30 years (annual average of USD 121.46 million).

The situation in Asia is different, where there is a decreasing trend of disaster impacts in 2022 compared to the last 30 years (1992-2021). Occurrence of disasters in 2022 is 137, lower compared to the annual average of 141 for the past 30 years. The number of deaths is also lower in 2022 at 7,750 compared to 30,909 annual average for the past 30 years. Disaster affected people in 2022 is 64.23 million, less than half of the average number of affected persons per year for the past 30 years, which is 168.81 million. The same is true for the amount of disaster damage. It's USD 48.75 million in 2022, relatively lower than the average annual damage for the past 30 years, which is USD 52.88 million.

Climate-related disasters (e.g., drought, flood, and storm) have been increasing globally, particularly since the 1940s. In 2022, a total of 308 climate-related disasters was recorded worldwide, higher than those from the last 30 years (1992 to 2021) that showed an annual average of 16 droughts, 147 floods, and 100 storms. Except for drought, the number of people affected by 2022 climate-related disasters was less compared to the average number of people affected per year by the same type of disasters during the past 30 years. Meanwhile, the number of people affected by drought is 80 percent more compared to the annual average of the past 30 years. In Asia, a total of 98 climate-related disaster events occurred in 2022, which were mostly floods.

Regarding COVID-19 situation, the highest number of confirmed cases for 2022 was reported on 19 December with a total of 44.20 million confirmed cases reported on a single day. A notable increase was observed in China in December due to an Omicron subvariant with at least eight other Omicron subvariants were identified. Among the ADRC member countries, China showed the greatest cumulative number of confirmed COVID-19 cases at 84.93 million by the end of 2022. This was followed by India with 44.68 million, Japan with 29.11 million, and the Republic of Korea with 29.06 million. Several ADRC member countries started to relax COVID-19 restrictions in 2022, allowing more lenient policies on movement domestically. India, Republic of Korea, and Japan are among the countries that lifted their domestic restrictions. Vaccination also became a priority in ADRC member countries following the relaxation of restrictions with all countries reporting to have had at least two vaccines administered by 2022.

## 2. Natural Disaster Data

Using EM-DAT’s 2022 data, this section presents the trends of natural disaster analyzed in terms of occurrence, death tolls, people affected, and economic losses.

### 2.1 Global Disaster Data

As shown in Figure 1, there has been an increasing trend of disaster occurrence from 1900 to 2022. From an average of 56 disasters per year in the 1960s (with its peak of 81 in 1966), the average disaster occurrence in the most recent decade (2012-2022) has reached 363 events per year. Furthermore, 388 disasters occurred in 2022, more than thrice the average number of disaster events from 1990 to 2021 (119 disaster events). During the entire period of 1900-2022, flood (39%) and storm (31%) were the most frequent types of disaster (Figure 1).

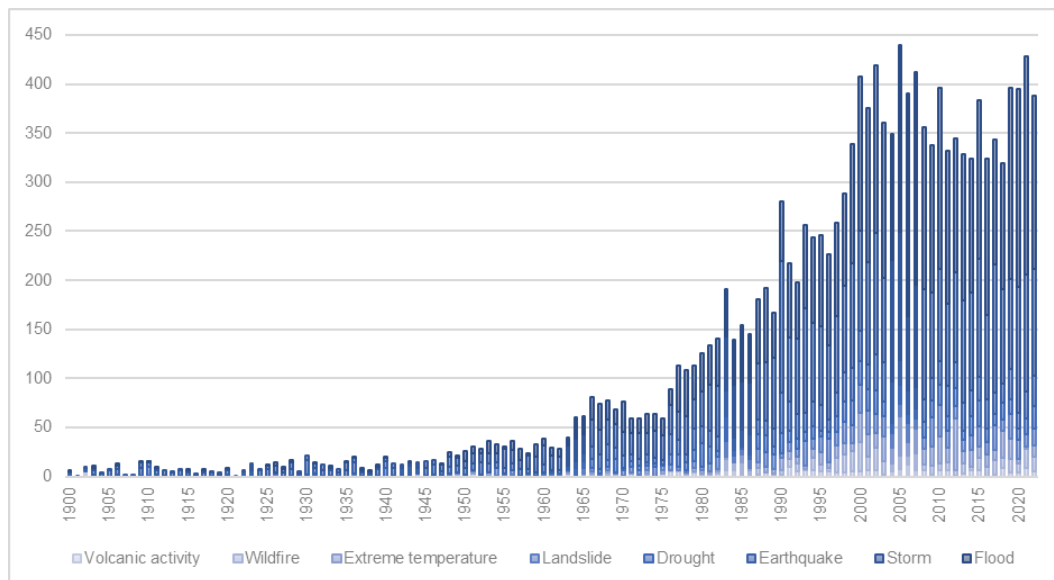


Figure 1 Trend of natural disaster occurrence 1900-2022 (EM-DAT/CRED, 2023)

#### 2.1.1 Occurrence (global)

Globally, a total of 388 disasters occurred in 2022. Flood (177 events, 46 percent), storm (105 events, 28 percent), and earthquake (31 events, 8 percent) were the three most frequent disasters (Figure 2). Several incidences of drought, landslide, wildfire, and extreme temperature and one volcanic activity were also recorded.

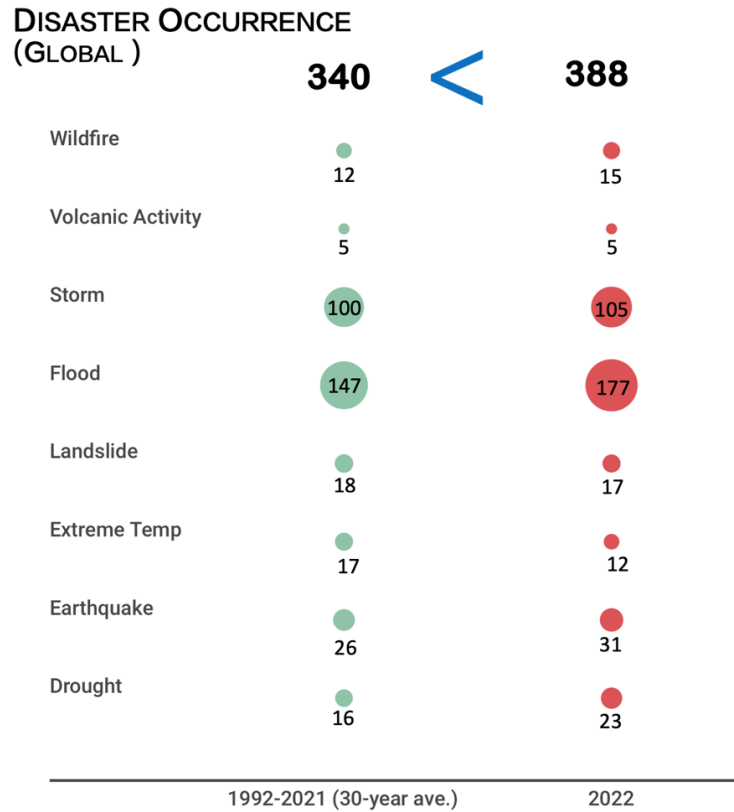


Figure 2 Global disaster occurrence by disaster type 1992-2021 vs 2022 (EM-DAT/CRED, 2023)

Among the most devastating disasters in 2022 include the floods in Pakistan (June to September), Bangladesh (May to September), Guatemala (May), Nigeria (July), India (May), Chad (June), and South Sudan (August). There were droughts in Congo, Ethiopia, Nigeria, Sudan, China, Burkina Faso, Malawi, Cameroon, Central African Republic, Chad, Niger, and Mali. In the Philippines, typhoons Megi (local name: Agaton) in April and Nalgae (local name: Paeng) in October made tremendous impacts. In September, Cuba was impacted by hurricane Ian and the Dominican Republic was impacted by hurricane Fiona. Tropical Storm Sitrang impacted Bangladesh in October while Indonesia was impacted by 5.6-magnitude earthquake in November.

Overall, Southeast Asia was struck with the most disasters in 2022 (flood, storm, earthquake, volcanic activity, and landslide) followed by South America (flood, landslide, earthquake, and wildfire), South Asia (flood, storm, earthquake), East Africa (flood, storm, and drought), and Northern America (storm, flood, and wildfire).

The number of disasters in 2022 is higher by 14 percent compared to the annual average for the past 30 years (1992-2021), which is 340. However, it was noted that the number of extreme temperature events was less in 2022. Most of the extreme temperature events in 2022 were due to extreme heat. Only Mongolia had recorded an extreme cold

temperature. Moreover, the temperature recorded in countries affected was relatively higher compared to the average extreme temperature recorded for the same country for the past 30 years.

**2.1.2 Deaths (global)**

In 2022, a total of 30,748 deaths caused by disasters (e.g., extreme temperature, flood, storm, drought, wildfire, landslide, earthquake, extreme temperature, and volcanic activity) was recorded (Figure 3). It is fewer than the annual average between 1992 and 2021, which is 49,414. Except for drought, the average number of deaths per disaster in 2022 (79 deaths per disaster event) is also lower than the average from 1992 to 2021 (145 deaths per disaster). While flood was the most frequent disaster in 2022, extreme temperature caused the most deaths. Extreme temperatures caused 16,416 deaths, which accounted for more than half of all disaster-related deaths in 2022. About 99 percent of them were recorded in Europe (Northern, Southern, and Western) while one percent were in Asia (East, South, and West). The recorded death in 2022 for extreme temperature was nearly three times the 6,040 average number of deaths for the past 30 years. Extreme temperature also had the highest number of deaths per disaster event at 1,368 per disaster event in 2022.

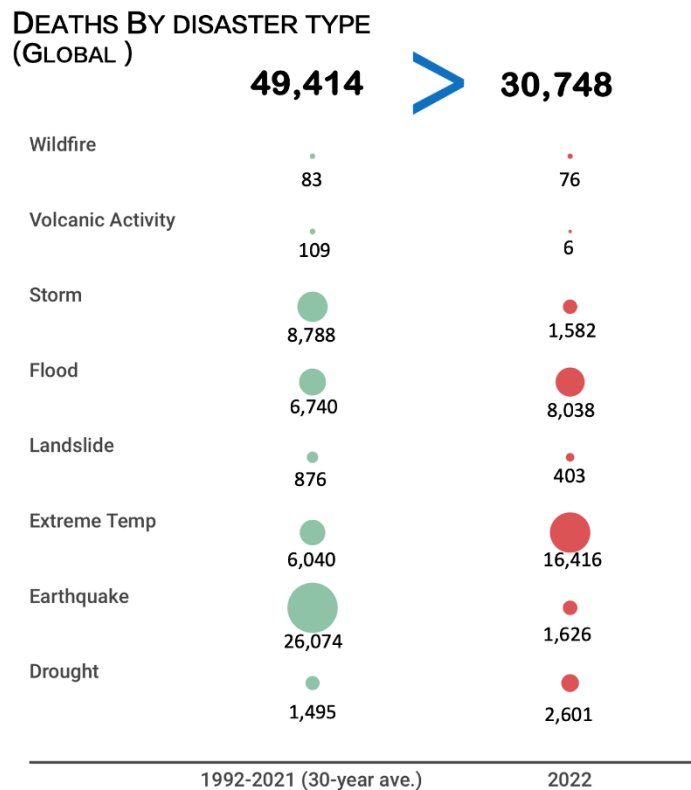


Figure 3 Number of people killed by disaster type 1992-2021 vs 2022 (EM-DAT/CRED, 2023)

Other disasters that recorded the most deaths are flood (26 percent), drought (8 percent), earthquake (5 percent), and storm (5 percent). Floods caused 8,038 deaths in 2022, which is higher than the 30-year average of 6,740. This can be attributed to the recent major floods that happened in Pakistan and Bangladesh to name a few.

Due to major earthquake events that happened over the last 30 years (e.g., Haiti, Indonesia, and Japan), earthquakes remained to cause the most mortality from 1992 to 2021 at an average of 990 deaths per disaster event. Comparatively, death per earthquake event for 2022 is significantly lower at 52 per event – the deadliest of these were the 6-magnitude earthquake that hit Afghanistan, the 6-magnitude earthquake in Indonesia, and the 7-magnitude in China. Meanwhile, death per drought incidence in 2022 reached 113, more than twice the average from 1992-2021, which is just 47. It was noted that among the 23 drought incidences in 2022, a total of 2,601 deaths accounted for only two incidences: Uganda and the USA.

Globally, the total number of deaths also showed an increasing trend from 1992-2021. In terms of the total number of deaths per year, earthquake caused the most deaths per year at 26,074. This was followed by storm (8,788 per year), flood (6,740), extreme temperature (6,040), drought (1,495), landslide (876), volcanic activity (109), and wildfire (83).

### **2.1.3 People Affected (global)**

An estimated of 186 million people were affected in 2022. There are 34.56 million affected people in Middle Africa, 32.26 million in West Africa, 30.55 million in East Africa, 13.20 million in North Africa, and 12.72 million in Southeast Asia. More than half of the affected people in 2022 (107.35 million) were affected by drought. Meanwhile, floods affected 57.52 million (31 percent) storms affected 16.93 million (nine percent), while earthquakes affected 3.6 million (2 percent).



PEOPLE AFFECTED BY DISASTER TYPE (IN MILLION)  
(GLOBAL )

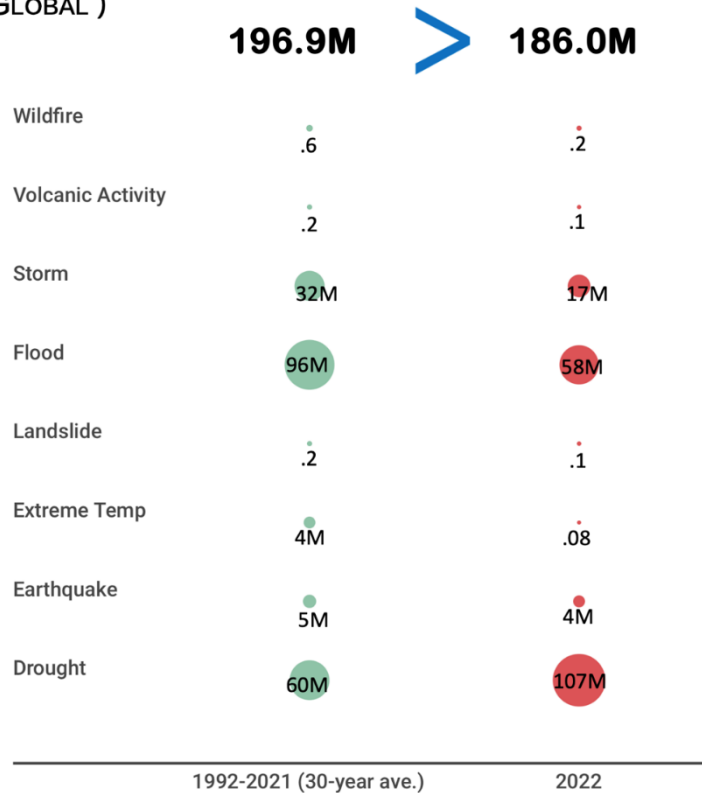


Figure 4 Number of people affected by disaster type 1992-2021 vs 2022  
(EM-DAT/CRED, 2023)

The total disaster-affected population in 2022 is fewer compared to the annual average of the affected population for the past three decades (1992-2021), which is 196.85 million. However, drought affected more people in 2022 compared with the annual average from 1992-2021. Drought-affected population in 2022 (107.35 million) is 80 percent more compared to the 1992-2021 average (59.61 million). Meanwhile, with reference to 1992-2021 data, Asia has the most affected population, wherein almost 84 percent of the affected population was located. About 10 percent were in Africa while five percent were in America.

South Asia and African regions had the greatest number of people affected by disasters in 2022. Disaster affected population in South Asia reached 44.46 million, 34.55 million in Middle Africa, 32.24 million in West Africa, 30.42 million in East Africa, and 13.20 million in North Africa.

**2.1.4 Economic Losses (global)**

Based on available data, 2022 disasters caused damage amounting to USD 223.84 billion. About 59 percent of the said amount (USD 130.98 billion) was accounted for damage by storms and 20 percent (USD 44.93 billion) for flood. The EM-DAT data also shows that

the damage from 2022 disasters cost more than the annual average damage for the past 30 years, which is USD 121.46 billion. Similarly, storm also caused the most damage from 1992-2021, at approximately USD 53.71 billion or 44 percent of the yearly damage caused by disasters. Flood, earthquake, drought, and extreme temperature also causes millions of dollars' worth of damage between 1992 and 2021.

**ECONOMIC LOSSES BY DISASTER TYPE (IN BILLION USD)  
(GLOBAL )**

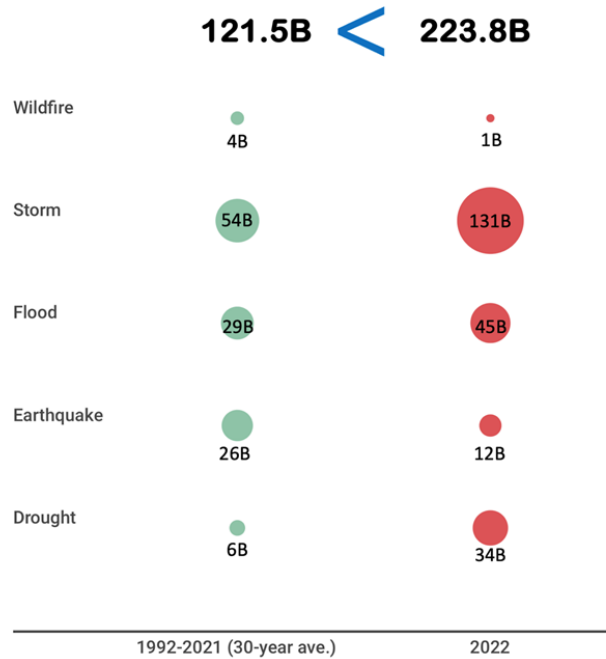


Figure 5 Economic losses by disaster type 1992-2021 vs 2022 (EM-DAT/CRED, 2023)

The available data also indicate that for the past 30 years, a huge part of the damage from disasters was concentrated in high-income countries (i.e., USA, Japan, China, Germany, Italy, Australia, etc.). About 97 percent of the recorded annual average damage was accounted for seven high-income countries. Some references pointed out that most of the losses from disasters were higher in high-income countries due to the valuation of infrastructure and houses, higher costs of living, and damage and losses are easily calculated since most of them are insured.<sup>1</sup>

**2.2 Asian Disaster Data**

Historically, there were an average of 90 disasters per year in Asia between 1900 and 2021. During this period, China experienced the most disasters. Other countries with the

<sup>1</sup> ChristianAid, Counting the Cost 2022: A year of climate breakdown, <https://www.christianaid.org.uk/sites/default/files/2022-12/counting-the-cost-2022.pdf>

greatest number of disasters include India, Philippines, Indonesia, Bangladesh, Vietnam, Japan, Pakistan, Afghanistan, and Iran.

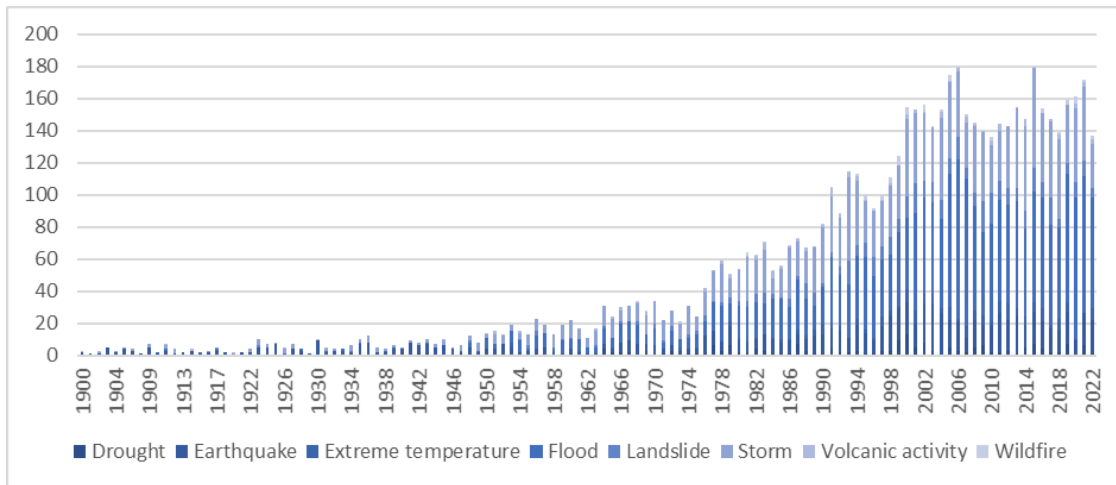


Figure 6 Trend of natural disaster occurrence in Asia 1900-2022 (EM-DAT/CRED, 2023)

The top 10 countries with the highest number of disaster occurrences in 2022 include Indonesia (20 events), Philippines (12), China (12), Thailand (11), Viet Nam (8), Afghanistan (8), India (7), Japan (7), Malaysia (6), and Nepal (6).

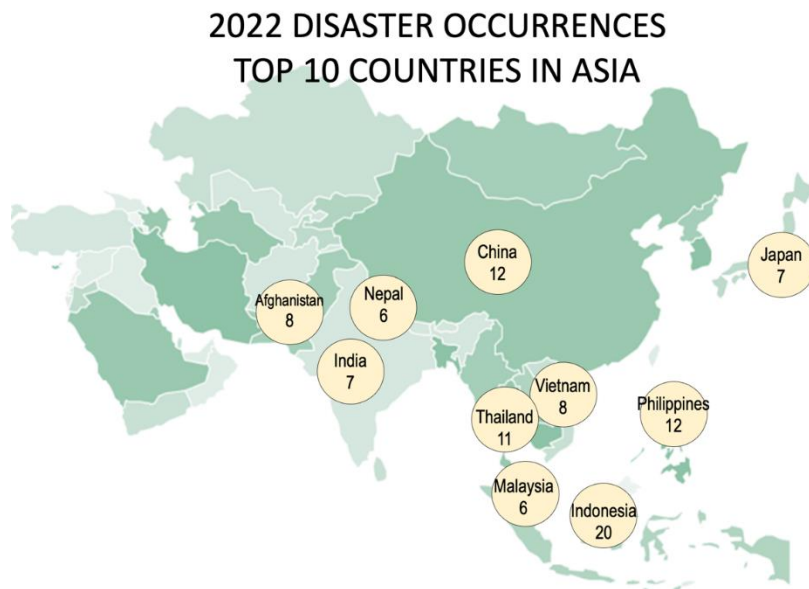


Figure 7 Top 10 countries in Asia with high occurrence of disasters in 2022 (EM-DAT/CRED, 2023)

Some of the major disasters that occurred in 2022 include the 5.6-magnitude West Java earthquake in November, the 7.3-magnitude earthquake in West Sumatra in February, and the floods in Pakistan in January and October. Several tropical cyclones and earthquakes also struck the Philippines. Meanwhile, China had a major drought and

several instances of earthquakes. Floods and storms also occurred in several areas of Thailand, Vietnam, Afghanistan, Malaysia, India, Japan, and Nepal.

While there were only five disaster events in Pakistan, the 3-month flood and flash flood that happened from June to September is considered one of the worst disasters in Asia in 2022. The disaster affected a total of 33 million and caused 1,739 deaths. Similarly, in terms of the number of people affected, the flood in Bangladesh in October also affected about 8.2 million while Typhoon Nalgae affected 7.9 million. China also experienced drought in September which affected 6.1 million. India’s flood in May also affected 1.3 million.

**2.2.1 Occurrence (Asia)**

A total of 137 disasters occurred in Asia in 2022, which is lower compared to the annual average of 141 between 1992 and 2021 (Figure 8). Most types of disasters showed an increasing trend for the past 30 years, except for wildfire which has a decreasing linear trend. Similar to the global trend, flood, storm, and earthquake are the most frequent disasters in Asia from 1992-2021. Disaster occurrence per Asian region in 2022 also followed the trend for the past 30 years. Most of the disasters occurred in Southeast Asia, followed by South, East, West, and Central Asia.

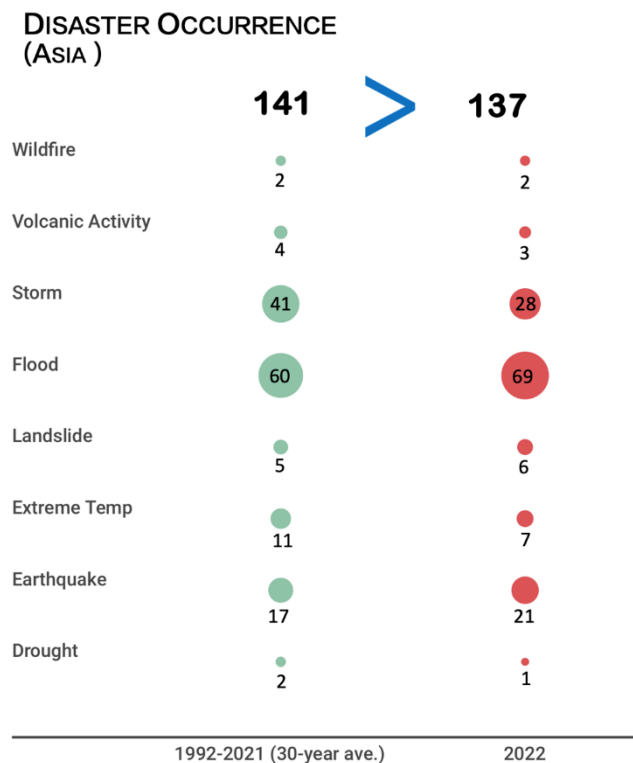


Figure 8 Disaster occurrence in Asia by disaster type 1992-2021 vs 2022 (EM-DAT/CRED, 2023)

2.2.2 Deaths (Asia)

A total of 927,278 disaster-related deaths occurred in Asia between 1992 and 2021, with an annual average of 30,909. About 58 percent of these numbers were caused by earthquake. Among other disasters that caused a high number of deaths for the past 30 years are storm (23 percent), flood (14 percent), extreme temperature (2 percent), and landslide (2 percent). Most of the disaster-related deaths in Asia were from Southeast Asia, South, and Eastern Asia, particularly Indonesia, Myanmar, China, India, Pakistan, and Sri Lanka. Comparatively, the 2022 figures were significantly lower at 7,550 deaths.

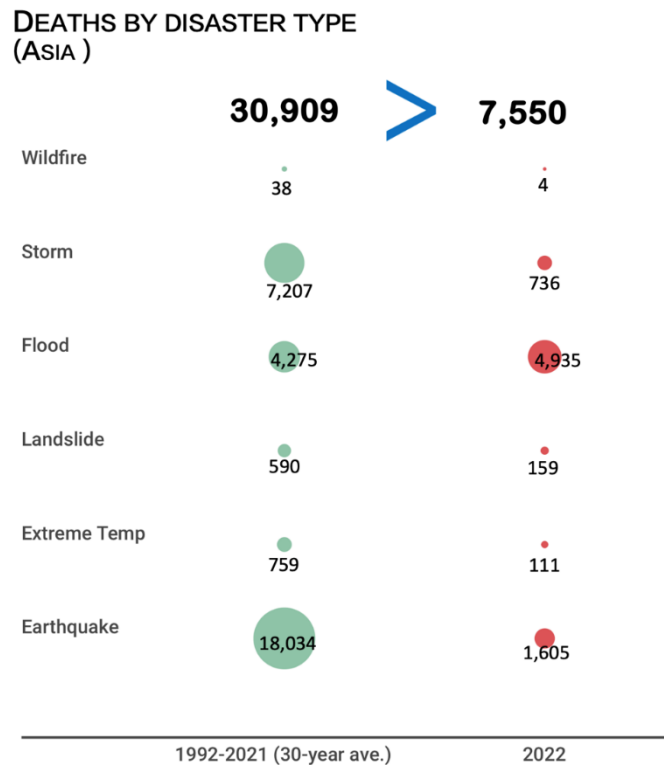


Figure 9 Number of people killed by disaster type in Asia 1992-2021 vs 2022 (EM-DAT/CRED, 2023)

The causes of most disaster-related deaths in Asia are different from the global trend. In Asia, disasters that caused most deaths in 2022 include flood, earthquake, storm, landslide, and extreme temperature. Regions that have the most disaster-related deaths in Asia was also slightly different from the 1992-2021 trend. Majority of death due to disasters came from South Asia, accounting for the effect of the massive flood in Pakistan and several disasters in India and Afghanistan. High death incidences were also recorded in Southeast Asia (1,176), particularly Indonesia and Philippines, and East Asia due to several disasters in China.

In terms of death per disaster event, earthquake still has the most both for 2022, which is 76 per event and in the past 30 years, which is 1,055.

### 2.2.3 People Affected (Asia)

The 137 disasters which occurred in 2022 affected a total of 64.23 million Asians. South Asia has the greatest number of disaster-affected, considering the effects of the disasters in Pakistan, India, and Afghanistan. In terms of disaster types, flood affected the most in Asia in 2022 (45.82 million). Meanwhile, storm, drought, and earthquake also had affected a relatively large number of Asian populations.

Comparatively, the affected population in 2022 is less than half of the average number of affected persons per year for the past 30 years, which is 168.81 million. Meanwhile, East, South, and Southeast Asia had the most affected population during this period. Similarly, flood, drought, storm, earthquake, and extreme temperature also has the most effects in Asia for the past 30 years.

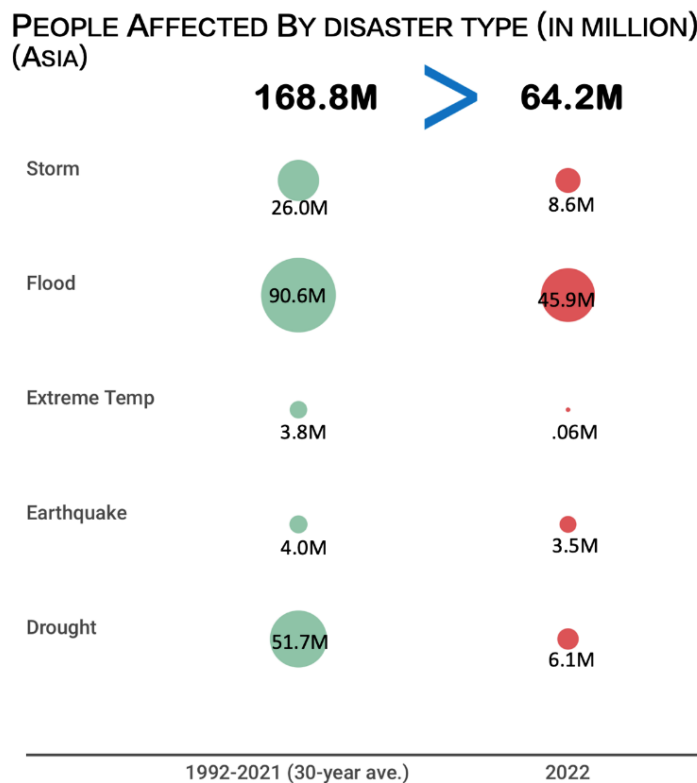


Figure 10 Number of people affected by disaster type in Asia 1992-2021 vs 2022 (EM-DAT/CRED, 2023)

### 2.2.4 Economic Losses (Asia)

Based on EM-DAT data, 2022 disasters in Asia caused about USD 48.75 billion in damages. Flood caused the most damage at USD 25.53 billion, followed by earthquake (USD 12.19 billion), drought (USD 7.6 billion), and storm (USD 3.42 billion). The total amount of damage in Asia in 2022 is relatively lower than the average annual damage for the past 30 years, which is USD 52.88 billion. Similar to the global trend, high-income

nations, China and Japan, showed the largest amount of damages incurred for the past 30 years, at 36 and 34 percent of the total damage from 1992 to 2021.

For 2022 on the other hand, due to the extent of damage brought by the flood, Pakistan was second to have the most amount of damages, at USD 15 billion. It was next to China whose disasters in 2022 caused USD 16 billion worth of damage.

ECONOMIC LOSSES BY DISASTER TYPE (IN BILLION USD)  
(ASIA )

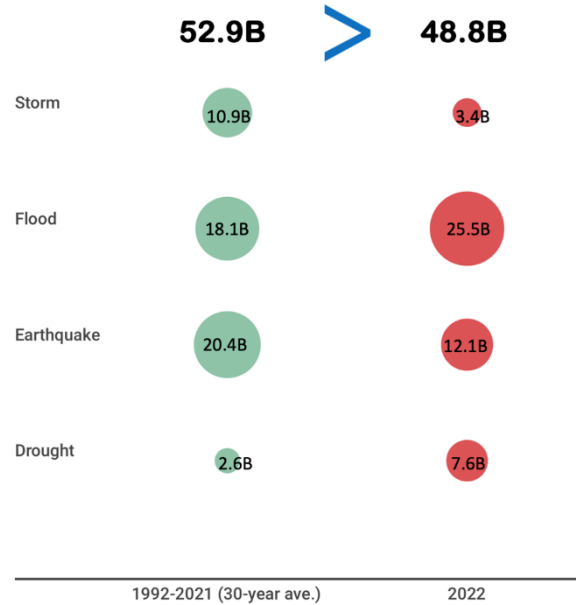


Figure 11 Economic losses by disaster type in Asia 1992-2021 vs 2022 (EM-DAT/CRED, 2023)

### 3. Climate Related Disasters

This section provides an overview of climate-related disasters, particularly those triggered by drought, extreme temperatures, storms, floods, and wildfire events.

In the Sixth Assessment Report (AR6) of the IPCC, extremes (e.g., temperature extremes, heavy precipitation, pluvial floods, river floods, droughts, and storms) are highlighted as main Climatic Impact Drivers (CIDs) that affect an element of society or ecosystems.<sup>2</sup> As indicated in the same report, the global greenhouse gas emissions have continued to increase, rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred. These climatic changes are exacerbated by unsustainable energy use, land-use change, lifestyles, and patterns of consumption/production across regions, between countries, and among individuals contributing to climate extremes. Since extremes led to widespread adverse impacts and related losses/damages to nature and people, it helps to know the trend of climate-related disasters.

#### 3.1 Global trend in climate-related disasters

Based on the EM-DAT data, climate-related disasters (drought, flood, and storm) have been increasing globally. Floods were the most prevalent among the three with an average occurrence of 93 per year, globally, from 1992 until 2021 (Figure 12). There was also an annual average of 70 storms and 13 droughts. From 8 disasters per year in the 1940s, the average number of climate-related disasters per year increased to 290 in the recent decade.

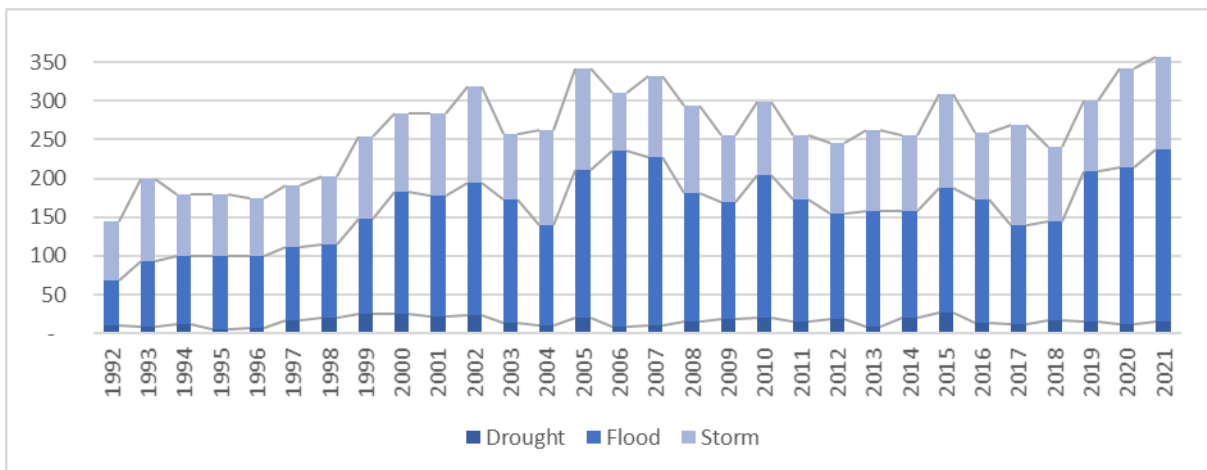


Figure 12 Global trend of climate-related disasters (drought, flood, and storm) 1992-2021 (EM-DAT/CRED, 2023)

As shown in earlier figures, climate-related disasters (i.e., drought, flood, and storm) account for the highest number of people affected (see Figure 4) and economic losses

<sup>2</sup> IPCC, Climate Change 2023 Synthesis Report Summary for Policymakers, [https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC\\_AR6\\_SYR\\_SPM.pdf](https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf)



(see Figure 5) in 2022. Of the 388 disaster occurrences recorded globally in 2022, 308 are climate-related disasters. This includes disasters triggered by drought (23 events), floods (177), and storms (108). Based on EM-DAT, 2022 disaster figures were generally higher than those from the last 30 years. From 1992 to 2021, there is an average of 16 droughts, 147 floods, and 100 storms annually. Meanwhile, except for drought, the number of people affected by 2022 climate-related disasters was less compared to the average number of people affected per year by the same type of disasters between 1992 and 2021. The number of people affected by drought is 80 percent more compared to the annual average from 1992-2021 while people affected by floods and storms were less than 40 and 48 percent, respectively.

### 3.2 Asian trend in climate-related disasters

Similar to the global trend, the number of climate-related disasters in Asian countries from 1900 to 2022 is also increasing (Figure 13). A total of 98 climate-related disaster events occurred in 25 countries in 2022, almost 32 percent of the total climate-related disaster events globally. This is composed of the massive drought in China, 69 floods, including those in Pakistan and Indonesia, and 28 storms. Relative to past trends, disasters triggered by droughts and storms occurred less in 2022. However, there were more floods in 2022 compared to the average number of floods per year from 1992 to 2021. On average, there were about four droughts, 60 floods, and 41 storms per year in Asia between 1992 and 2021. Yet, fewer were affected by these disasters in 2022 compared to the average number of affected populations per year between 1992 and 2021.

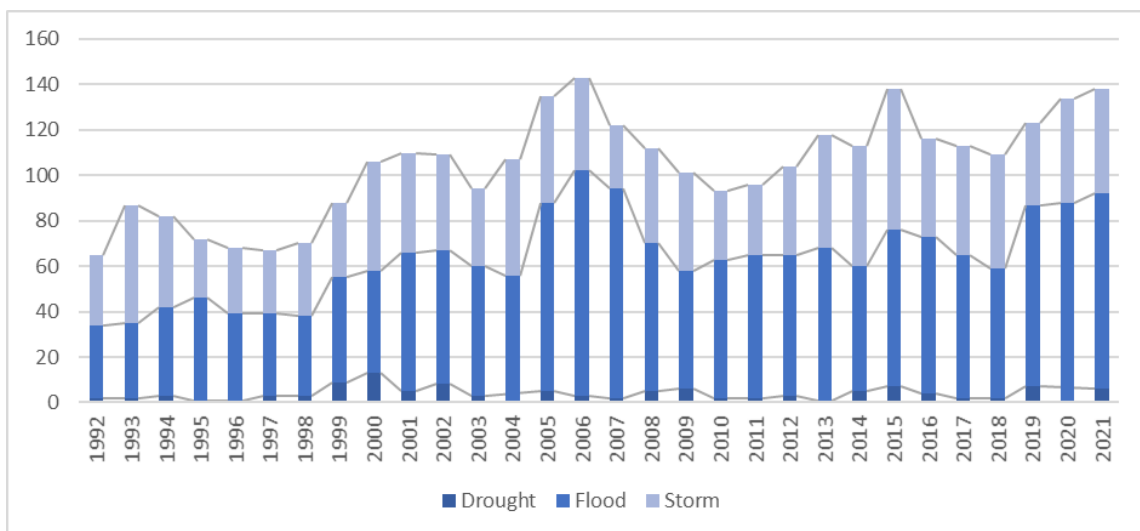


Figure 13 Trend of climate-related disasters (drought, flood, and storm) in Asia 1992-2021 (EM-DAT/CRED, 2023)

Based on records, there were also fewer deaths and displaced populations in 2022 compared to the annual average for the past 30 years. Flood remains to be the most devastating disaster as it affected and displaced the most population compared to drought and storms. Meanwhile, storms have the greatest number of average deaths per year compared to floods and droughts. 2022 figures are almost similar to the 30-year trend. Of all the disaster the occurred in Asia in 2022, flood is the most frequent (see Figure 8) with the most devastating impacts showing the highest number of people killed (see Figure 9), affecting more people (see Figure 10), and causing severe economic losses (see Figure 11).

## 4. COVID-19 Data

Using data from the World Health Organization (WHO) COVID-19 Dashboard<sup>3</sup>, this section presents an overview of the cumulative data on the confirmed number of cases and deaths since WHO’s declaration of the pandemic on 11 March 2020. It also shows the situation globally and in ADRC member countries.

### 4.1 Global Situation

While there have been multiple occurrences of upward trends in the number of confirmed cases since the start of the pandemic, the major upward trends in 2022 were recorded in

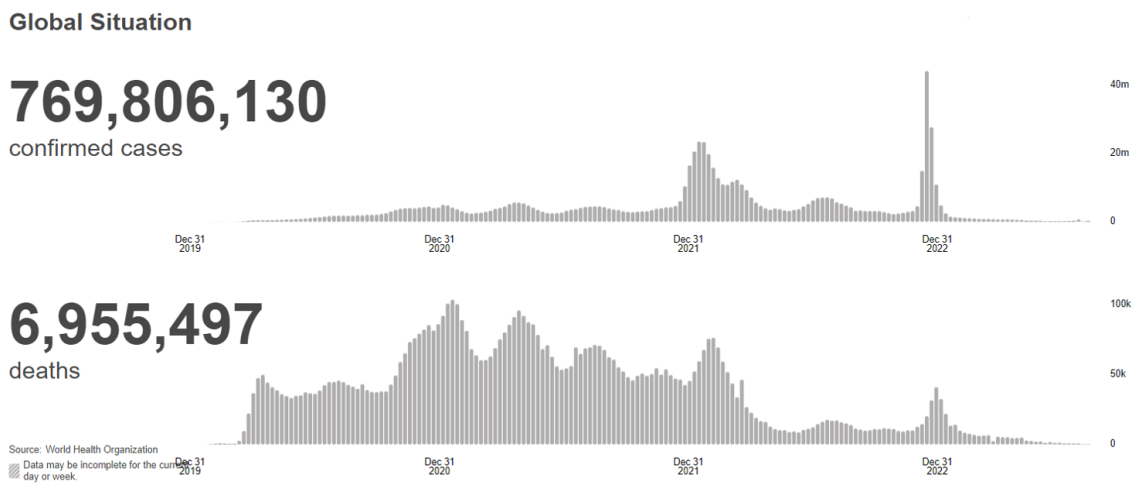


Figure 14 Global situation of COVID-19 as of July 2023 (WHO, 2023)

January, March, July, and December. The highest number of confirmed cases for 2022 was reported on 19 December wherein a total of 44.20 million confirmed cases were reported on a single day (Figure 14). Ninety percent of the drastic increase in the number was from the Western Pacific region and four percent came from Europe (2 percent) and the Americas (2 percent). A notable increase was also observed in China in December due to an Omicron subvariant. At least eight other Omicron subvariants have been identified in 2022. Omicron subvariants are recognized to be transmitted more rapidly compared to other variants. However, the huge surge of cases in December 2022 was immediately followed by a drastic decline of cases. So, in the first quarter of 2023 many countries started lifting COVID-19 restrictions and slowly opened their borders.

### 4.2 COVID-19 Situation in ADRC Member Countries

By the end of 2022, China has the greatest cumulative number of confirmed COVID-19 cases at 84.93 million. This was followed by India with 44.68 million, Japan with 29.11

<sup>3</sup> WHO, COVID-19 Dashboard, <https://covid19.who.int/>

million, the Republic of Korea with 29.06 million, and the Russian Federation with 21.80 million (Figure 15). Several ADRC member countries have more than doubled the number of confirmed cases from 2021 figures. The highest jump in the number of confirmed cases was from China whose cumulative number of confirmed cases ballooned from 132,071 as of 31 December 2021 to 84.93 million as of 31 December 2022. Other increasing cases included the Republic of Korea (from 635,250 to 29.06 million), Bhutan (2,660 to 62,531), Japan (from 1.73 million to 29.11 million), Singapore (279,405 to 2.21 million), Vietnam (1.73 to 11.53 million), and Thailand (2.22 million to 4.72 million).

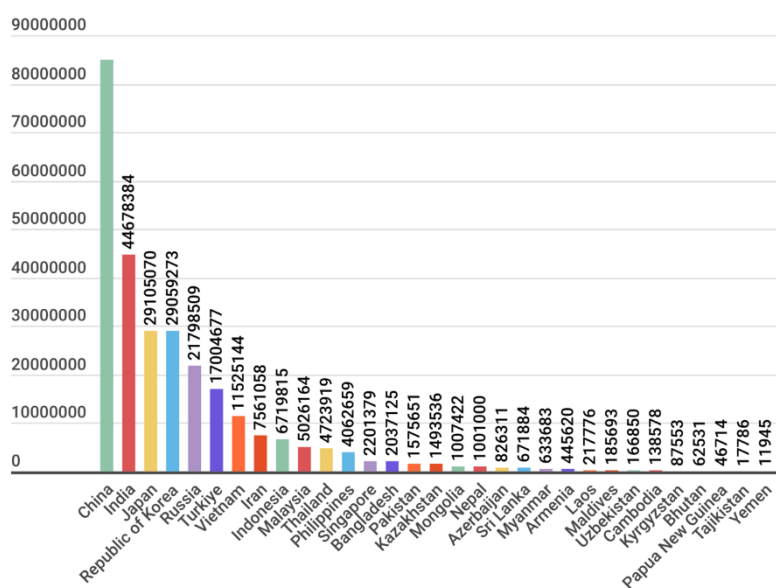


Figure 15 COVID-19 cases in ADRC member countries as of 31 December 2022 (WHO, 2023)

Meanwhile, India remained to have the highest number of COVID-related deaths among ADRC member countries at 530,702 as of 31 December 2022. This was followed by the Russian Federation (393,712 deaths), Indonesia (160,612), Iran (144,682), Türkiye (101,419), and Philippines (65,397). In terms of the increased number of deaths from 2021, China also had the largest increase in the cumulative number of deaths due to COVID-19 among ADRC member countries. It increased from 5,699 to 52,544. COVID-related deaths in Bhutan, Republic of Korea, Japan, and Singapore also increased drastically by more than 100 percent. Meanwhile, Myanmar, Cambodia, Nepal, Kazakhstan, and Bangladesh’s number of deaths for 2022 is less than 5 percent of 2021’s. However, it should be noted that the mentioned figures depend on the policies and the number of COVID-19 tests conducted in each country.

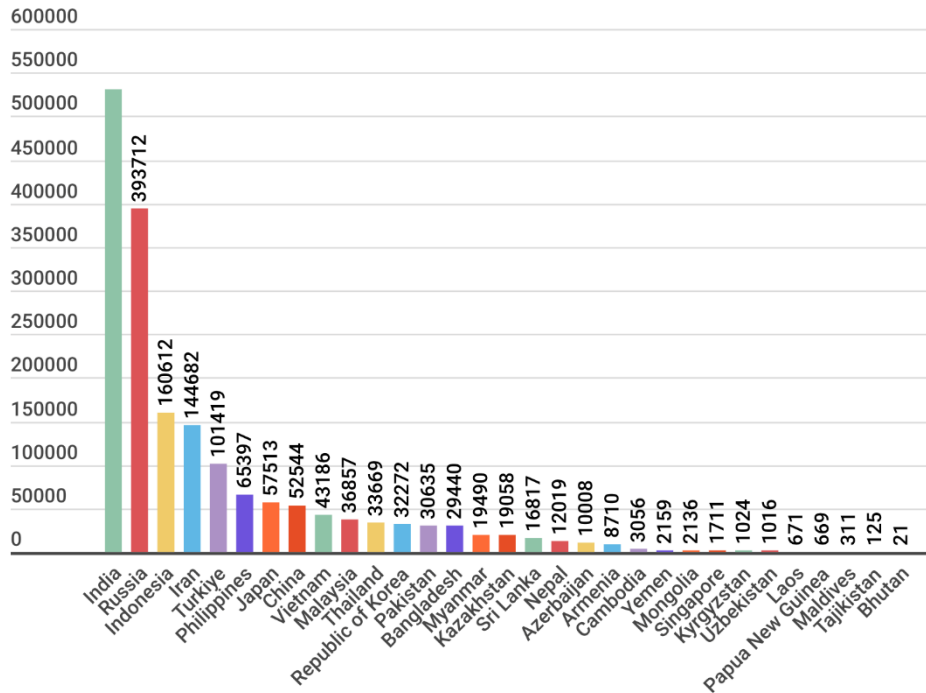


Figure 16 ADRC member countries with the highest increase in the number of deaths by 2022

Considering the situation as of December 2022 (Figure 14), COVID-19 restrictions have been relaxed in several ADRC member countries, allowing more lenient policies on movement domestically. As early as 2nd quarter, India and South Korea have already lifted some of their domestic restrictions. South Korea also resumed its visa-free travels as early as March 2022.<sup>4</sup> Japan also removed its cap on foreign travelers and also resumed its visa-free travels during the last quarter of 2022.<sup>5</sup> Towards mid-2023, almost all countries in Asia opened their borders.

<sup>4</sup> Choi, S (2022, April 15). South Korea to lift most COVID curbs next week as Omicron wanes. <https://www.reuters.com/world/asia-pacific/skorea-lift-most-covid-curbs-next-week-yonhap-2022-04-14/>

<sup>5</sup> Akiyama, H. (2022, September 14). Japan set to announce restart of visa-free tourist travel. Nikkei Asia. <https://asia.nikkei.com/Spotlight/Coronavirus/Japan-set-to-announce-restart-of-visa-free-tourist-travel>

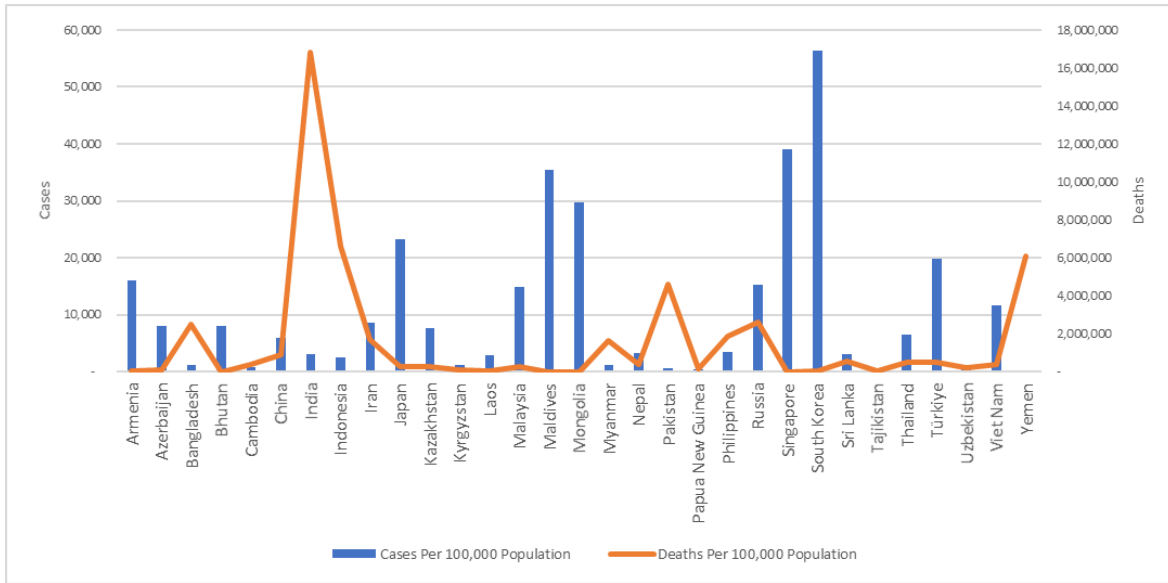


Figure 17 COVID-19 Situation in ADRC member countries as of December 2022.

Moreover, with the relaxation of the COVID-19 restrictions, vaccination became a priority in ADRC member countries. All ADRC member countries already had at least two vaccines administered by 2022. However, only three countries provided data on the cumulative number of vaccine doses administered in 2022 – Bhutan, Sri Lanka, and Tajikistan. Based on reported data, there are about 3.85 trillion doses of vaccines administered in four ADRC member countries as of the 1<sup>st</sup> quarter of 2023 – China, Mongolia, Philippines, and Türkiye.

## Annex 1

### Notes on the Sources of Data

#### Natural Disaster Data

All disaster data are based on EM-DAT: The Emergency Events Database - Université Catholique de Louvain (UCL) - CRED, [www.emdat.be](http://www.emdat.be), Brussels, Belgium. Data set was obtained on 16 May 2023, unless otherwise stated. The presentation of data in Databook 2022 focused only on eight disaster types: drought, earthquake, extreme temperature, flood, landslide, storm, wildfire, and volcanic activity.

#### *EM-DAT Criteria:*

For a disaster to be entered into the database, at least one of the following criteria must be fulfilled:

- Ten (10) or more people reported killed
- Hundred (100) or more people reported affected
- Declaration of a state of emergency
- Call for international assistance

Databook 2022 follows the EM-DAT definitions of “people killed” as persons confirmed as dead and persons missing and presumed dead; “people affected” as the sum of injured, homeless, and affected requiring immediate assistance during the period of emergency and requiring basic survival needs such as food, water, shelter, sanitation and immediate medical assistance.

#### *Disaster Terms:*

**Drought** includes an extended period of unusually low precipitation that produces a shortage of water for people, animals and plants.

**Earthquake** includes ground shaking and tsunami.

**Epidemic** includes bacterial and viral infectious diseases.

**Extreme Temperature** includes heat wave, cold wave, and extreme winter conditions.

**Flood** includes general flood, and flash flood.

**Insect Infection** is pervasive influx and development of insects or parasites affecting humans, animals, crops and materials.

**Landslide** includes avalanche, debris, and rockfall.

**Storm** includes local storm, tropical cyclone, and winter storm.

**Volcanic activity** means volcanic eruption.

**Wildfire** includes bush/brush fire, forest fire, and scrub/grassland fire.

### *Classification of EM-DAT:*

EM-DAT distinguishes between two generic categories for disasters: **natural** and **technological**. The natural disaster category is divided into 5 sub-groups, which in turn cover 15 disaster types and more than 30 sub-types. The technological disaster category is divided into 3 sub-groups which in turn cover 15 disaster types, <https://www.emdat.be/classification>

### **COVID-19 Data**

All COVID-19 data used in the Databook 2022 is based from the World Health Organization Coronavirus (COVID-19) Dashboard, <https://covid19.who.int/> accessed on 14 July 2023.

Data from the WHO COVID-19 Dashboard are from the official reporting to WHO through regional offices and also from public websites, not official reported to WHO. Member States select the reporting system they prefer to use and data from different reporting systems. Individual countries, area and territories may decline to allow country-level disaggregation.

Some ADRC member-countries have limited records of COVID-19-related data in the WHO COVID-19 Dashboard.





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