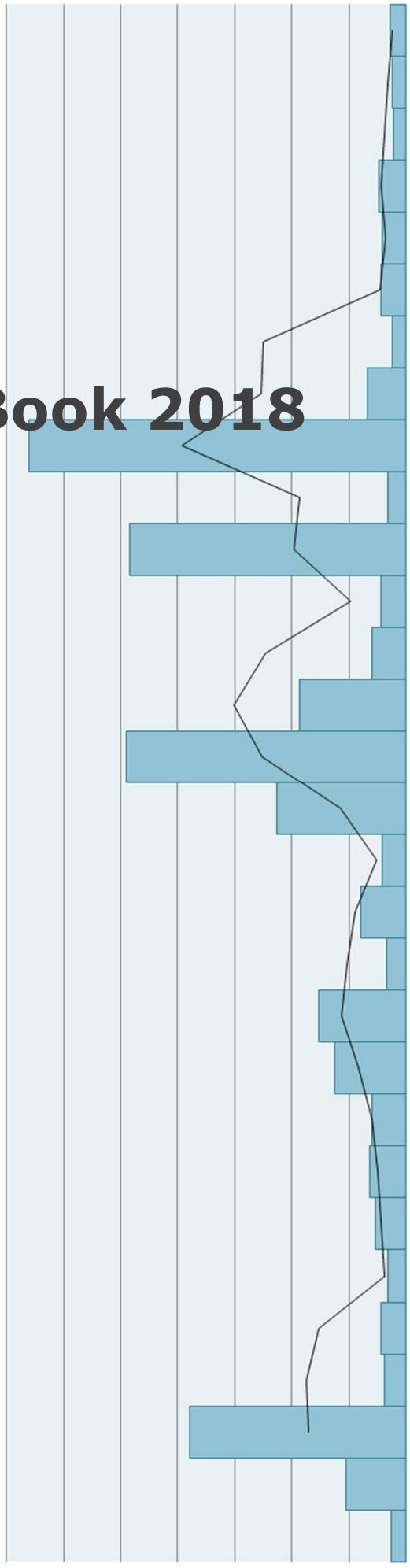
Natural Disaster Data Book 2018
An Analytical Overview



Asian Disaster Reduction Center

Overview

The Asian Disaster Reduction Center (ADRC) Natural Disasters Data Book 2018 provides statistical perspectives in figures and tables for 2018 as well as for the period 1989-2018 based on data obtained by EM-DAT.

According to EM-DAT, 331 natural disasters occurred in 2018 worldwide, killing 14,385 people and affecting approx. 80 million people. The estimated amount of economic damage came over US$130 billion.

In 2018, the earthquake and tsunami that hit Indonesia in September brought about serious damages to the country. The disaster killed 4,340 people and affected over 200,000 people. In addition, Indonesia experiences another catastrophic earthquake event in August causing 564 deaths. These death tolls are the first and third largest in the world. The second largest death toll is recorded in the Democratic Republic of Congo which is hit by epidemic causing 2,210 deaths.

Flood in India and drought in Afghanistan have largest affected people in the world with over 23 million and 10.6 million people, respectively.

By region, Asia is ranked the highest in disaster occurrences, and the numbers of people killed and affected with 43.5 percent in occurrences; number of people killed, 69.1 percent; and number of people affected, 84.2 percent. Americas has the largest share in amount of economic damage with 52.6 percent, and following Asia with 43.3 percent.

By disaster types, flood is dominant in occurrence and number of people affected at 38.7 percent and 42.2 percent, respectively, while earthquake tops in number of people killed by 36.6 percent and so does storm in amount of economic damage with 53.3 percent.

Data Book 2018 also contains tables of the 25 worst disasters by number of people killed and affected, economic damage, and their respective ratios to population and gross domestic product (GDP). It also includes tables of 2018 disasters in Asian countries sorted by country and disaster type.

[Notes]
Source:
All disaster data are based on EM-DAT: The Emergency Events Database - Université catholique de Louvain (UCL) - CRED, D. Guha-Sapir - www.emdat.be, Brussels, Belgium. Data set was obtained on 11 October 2019, unless otherwise stated.

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.

In this Data Book 2018 “people killed” are defined as persons confirmed as dead and persons missing and presumed dead. “People affected” are the sum of injured, homeless, and affected in EM-DAT. EM-DAT defines people affected as people requiring immediate assistance during the period of emergency; requiring basic survival needs such as food, water, shelter, sanitation and immediate medical assistance.

Disaster Terms:
“Animal accident” is that human encounters with dangerous or exotic animals in both urban and rural developments.
“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.
“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:
https://www.emdat.be/classification

Disclaimer:
Country and region classification used in this book is based on EM-DAT criteria. However, the natural disaster subgroup “Extraterrestrial” in EM-DAT was excluded from the data obtained for this Data Book.

Table of Contents

1. IMPACTS OF NATURAL DISASTERS BY REGION, 2018

This section shows the impacts of natural disasters in four indices, occurrence, number of deaths, number of people affected and economic damage that were reported across the world in 2018. As shown in Figure 1, Asia ranks the first among all regions in the categories of disaster occurrence, the number of people killed and affected, accounting for 43.5 percent, 69.1 percent and 84.2 percent respectively. On the other hand, Americas is ranked the highest in the amount of economic damage, which is largely attributed to storms and wildfire occurred in USA in 2018.

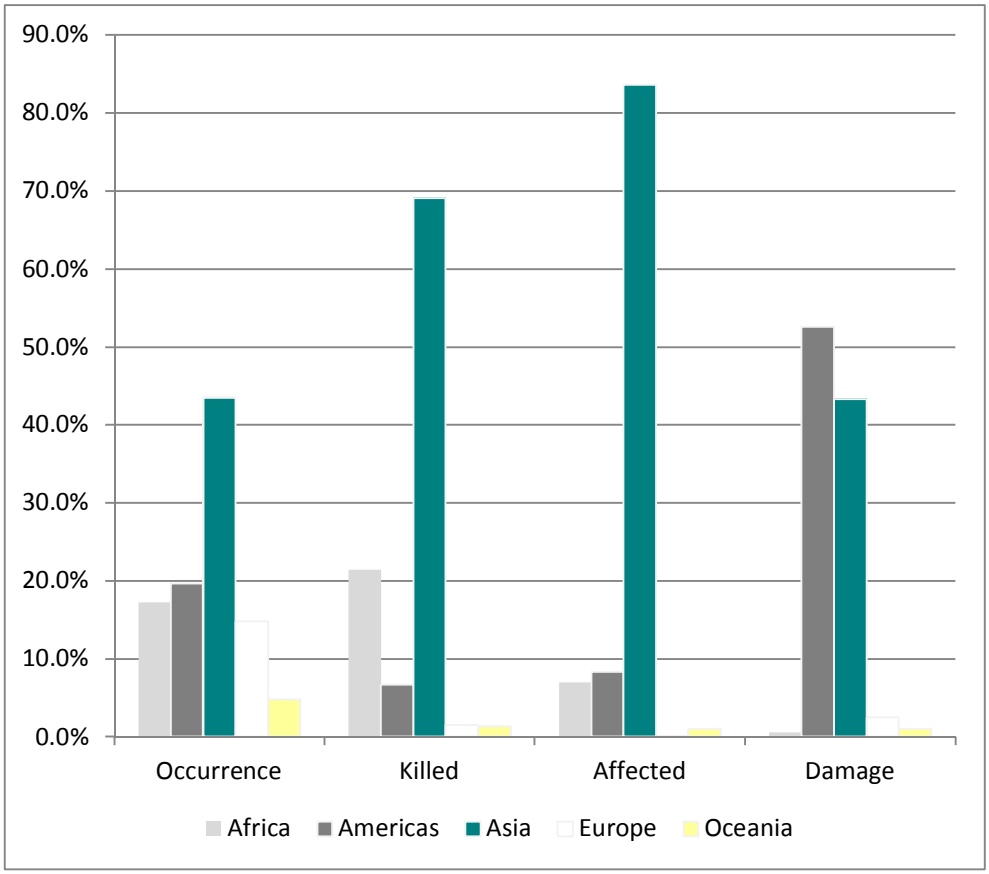


Figure 1: Impacts of Natural Disasters by Region, 2018

Table 1: Impacts of Natural Disasters by Region, 2018

Region	*Impact*							
	Occurrence	(share in %)	Killed	(share in %)	Affected	(share in %)	Damage (US$ million)	(share in %)
Africa	57	(17.2%)	3,083	(21.4%)	5,538,317	(6.9%)	796	(0.6%)
Americas	65	(19.6%)	956	(6.6%)	6,725,208	(8.4%)	68,729	(52.6%)
Asia	144	(43.5%)	9,937	(69.1%)	67,377,893	(84.2%)	56,570	(43.3%)
Europe	49	(14.8%)	219	(1.5%)	81,454	(0.1%)	3,203	(2.5%)
Oceania	16	(4.8%)	190	(1.3%)	275,922	(0.3%)	1,357	(1.0%)
Total	331	(100.0%)	14,385	(100.0%)	79,998,794	(100.0%)	130,655	(100.0%)

Source: EM-DAT: The Emergency Events Database - Universite catholique de Louvain (UCL) - CRED, D. Guha-Sapir - www.emdat.be, Brussels, Belgium

2. IMPACTS OF NATURAL DISASTERS BY DISASTER TYPE, 2018

Regarding the breakdown of impacts of disasters by disaster type, 2018 sees impacts by various natural disasters. Flood tops at 38.7 percent in occurrence and 42.2 percent in the number of people affected. Earthquake shares 36.6 percent in the number of people killed although it shares 6.0% in occurrence. Storm brings the heaviest economic damage by 53.3 percent, followed by wildfire, 17.5 percent.

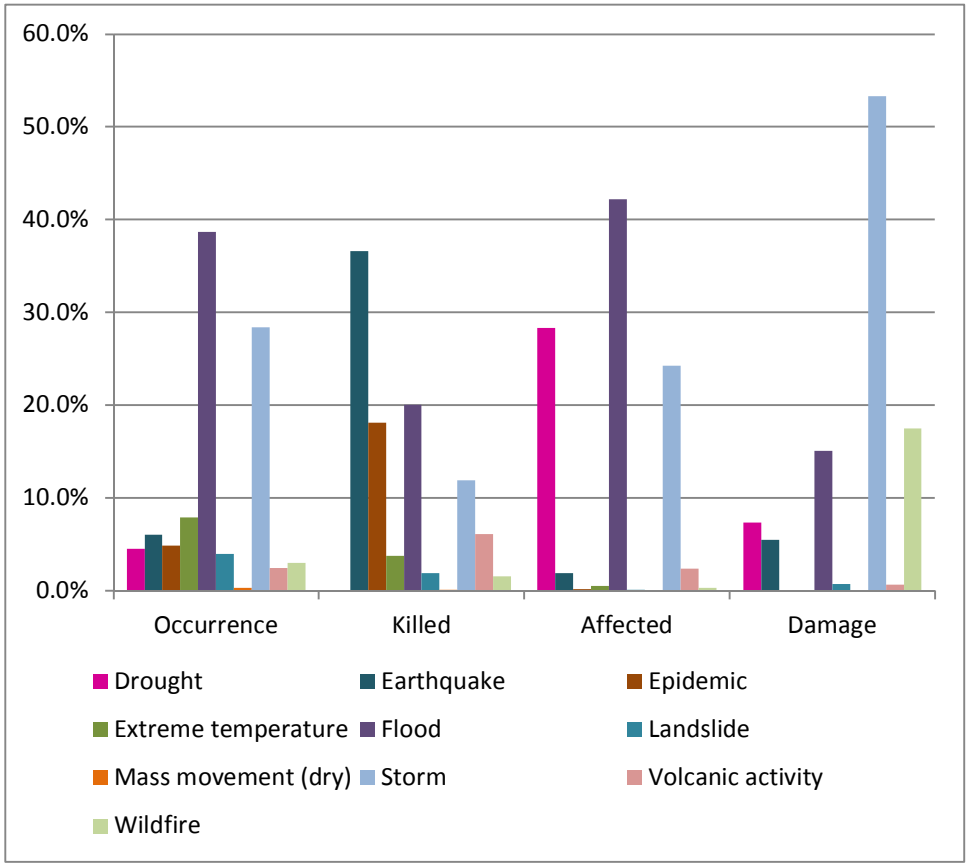


Figure 2: Impacts of Natural Disasters by Disaster Type, 2018

Table 2: Impacts of Natural Disasters by Disaster Type, 2018

Disaster Type	*Impact*							
	Occurrence	(share in %)	Killed	(share in %)	Affected	(share in %)	Damage (US$ million)	(share in %)
Drought	15	(4.5%)	0	(0.0%)	22,968,345	(28.3%)	9,554	(7.3%)
Earthquake	20	(6.0%)	5,264	(36.6%)	1,515,269	(1.9%)	7,114	(5.4%)
Epidemic	16	(4.8%)	2,601	(18.1%)	107,162	(0.1%)	0	(0.0%)
Extreme temperature	26	(7.9%)	536	(3.7%)	396,798	(0.5%)	0	(0.0%)
Flood	128	(38.7%)	2,881	(20.0%)	34,236,433	(42.2%)	19,692	(15.1%)
Landslide	13	(3.9%)	275	(1.9%)	54,908	(0.1%)	928	(0.7%)
Mass movement (dry)	1	(0.3%)	17	(0.1%)	0	(0.0%)	0	(0.0%)
Storm	94	(28.4%)	1,712	(11.9%)	19,693,372	(24.3%)	69,697	(53.3%)
Volcanic activity	8	(2.4%)	878	(6.1%)	1,909,098	(2.4%)	869	(0.7%)
Wildfire	10	(3.0%)	221	(1.5%)	261,287	(0.3%)	22,802	(17.5%)
Total	331	(100.0%)	14,385	(100.0%)	81,142,672	(100.0%)	130,655	(100.0%)

Source: EM-DAT: The Emergency Events Database - Universite catholique de Louvain (UCL) - CRED, D. Guha-Sapir - www.emdat.be, Brussels, Belgium

3. IMPACTS OF NATURAL DISASTERS IN ASIA BY DISASTER TYPE, 2018

Regarding the overview of impacts of disasters by disaster type in Asia, flood tops in occurrence and the number of people affected. Storm is ranked the first in the amount of economic damage with 54.8 percent and the second in occurrence. Earthquake tops in the number of people killed with 51.0% although its occurrence shares only 9.0 percent.

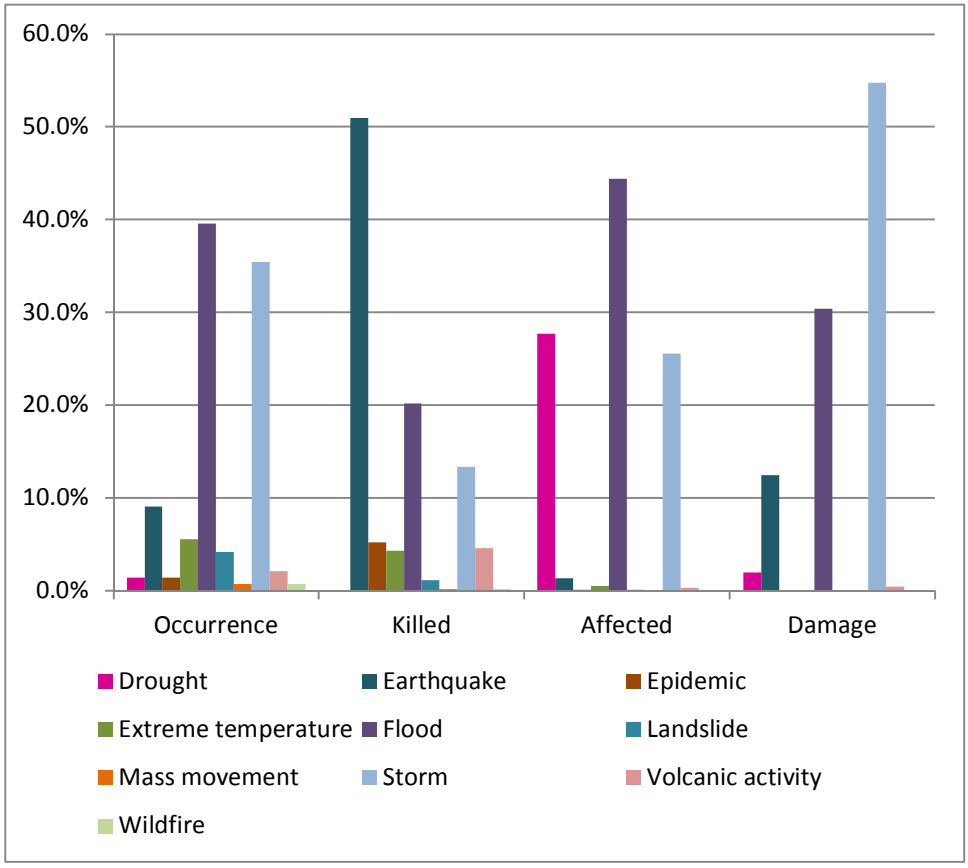


Figure 3: Impacts of Natural Disasters by Disaster Type in Asia, 2018

Table 3: Impacts of Natural Disasters by Disaster Type in Asia, 2018

Disaster Type	*Impact*							
	Occurrence (share in %)		Killed (share in %)		Affected (share in %)		Damage (US$ million) (share in %)	
Drought	2	(1.4%)	0	(0.0%)	18,800,000	(27.7%)	1,100	(1.9%)
Earthquake	13	(9.0%)	5,064	(51.0%)	916,811	(1.4%)	7,053	(12.5%)
Epidemic	2	(1.4%)	519	(5.2%)	79,376	(0.1%)	0	(0.0%)
Extreme temperature	8	(5.6%)	427	(4.3%)	326,798	(0.5%)	0	(0.0%)
Flood	57	(39.6%)	2,007	(20.2%)	30,119,913	(44.4%)	17,184	(30.4%)
Landslide	6	(4.2%)	109	(1.1%)	52,909	(0.1%)	0	(0.0%)
Mass movement	1	(0.7%)	17	(0.2%)	0	(0.0%)	0	(0.0%)
Storm	51	(35.4%)	1,324	(13.3%)	17,350,546	(25.6%)	30,979	(54.8%)
Volcanic activity	3	(2.1%)	453	(4.6%)	183,834	(0.3%)	254	(0.4%)
Wildfire	1	(0.7%)	17	(0.2%)	0	(0.0%)	0	(0.0%)
Total	144	(100.0%)	9,937	(100.0%)	67,830,187	(100.0%)	56,570	(100.0%)

Source: EM-DAT: The Emergency Events Database - Universite catholique de Louvain (UCL) - CRED, D. Guha-Sapir - www.emdat.be, Brussels, Belgium

4. TRENDS OF WORLD NATURAL DISASTERS, 1989-2018

4-1 NUMBER OF DISASTERS IN THE WORLD (1989-2018)

In terms of number of disasters, the year 2018 sees a slight decline from the previous year's 367 to 331. In the long run, the upward trend continues from the late 1980s till 2000 and the downward trend follows. In the collective 5-year period representation of data in Figure 4-2, a downward trend is observed in the last 15 years starting from 2004-2008 period although the numbers are still high compared to 1989-1993 and 1994-1998 periods.

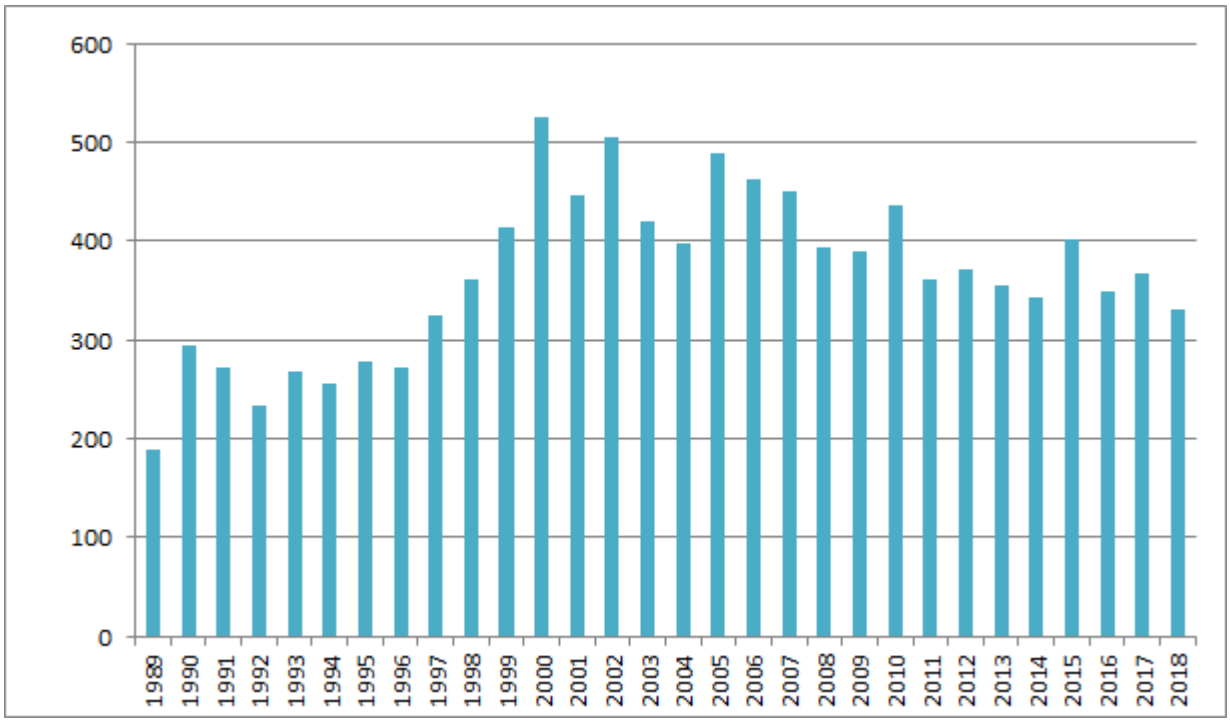


Figure 4-1: Disaster Occurrence, 1989-2018

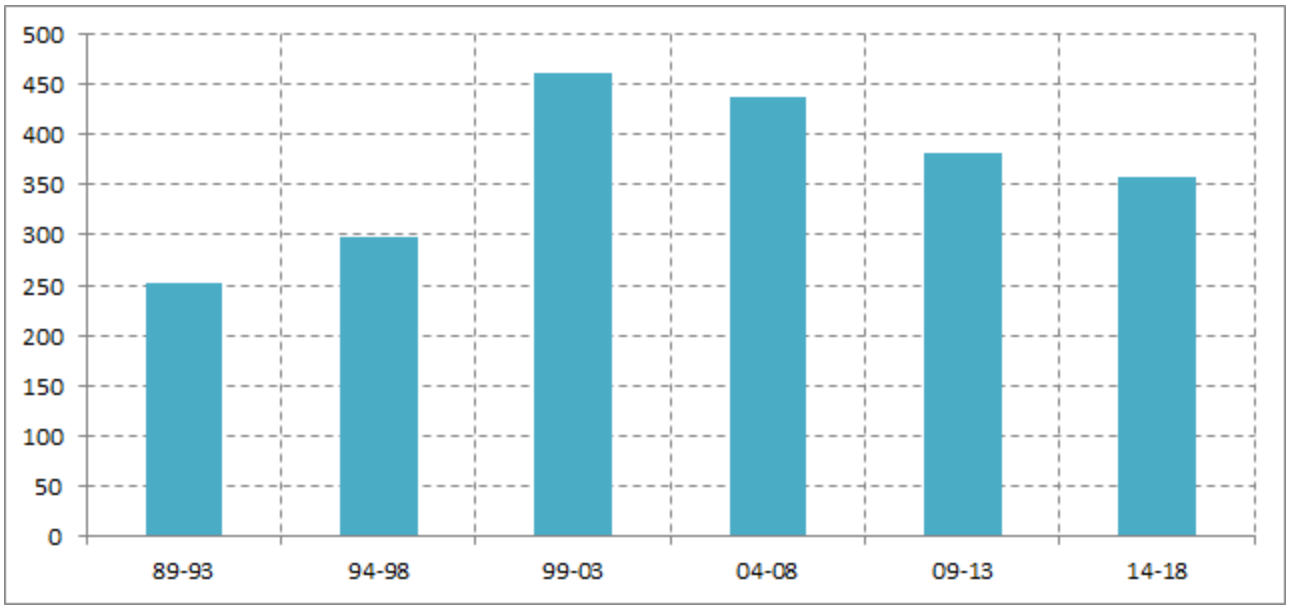


Figure 4-2: Disaster Occurrence (Average of 5-year period), 1989-2018

Source: EM-DAT: The Emergency Events Database - Universite catholique de Louvain (UCL) - CRED, D. Guha-Sapir - www.emdat.be, Brussels, Belgium

4-2 NUMBER OF PEOPLE KILLED IN THE WORLD (1989-2018)

The death toll in 2018 shows an increase from the previous year's 11,843 to 14,385. As seen in Figure 4-4 about the trend of the 5-year period average, the number of people killed for the period 2014-2018 shows drastic decrease from 82,785 to 16,425.

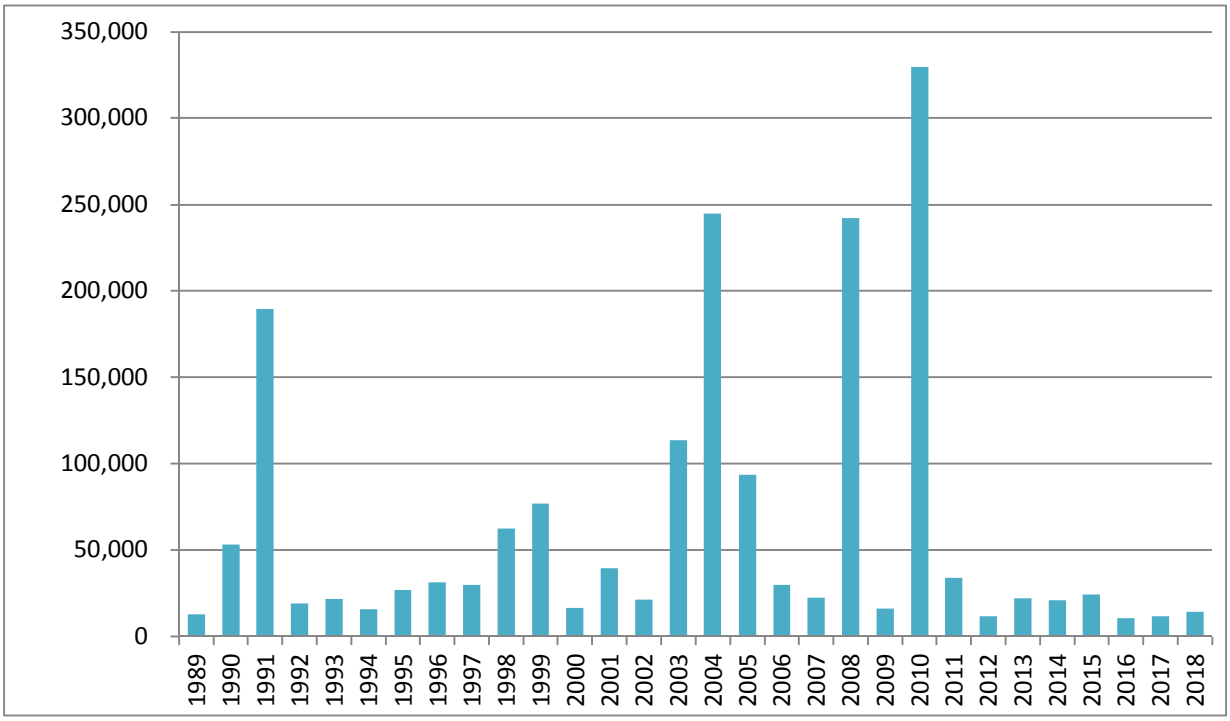


Figure 4-3: Number of People Killed, 1989-2018

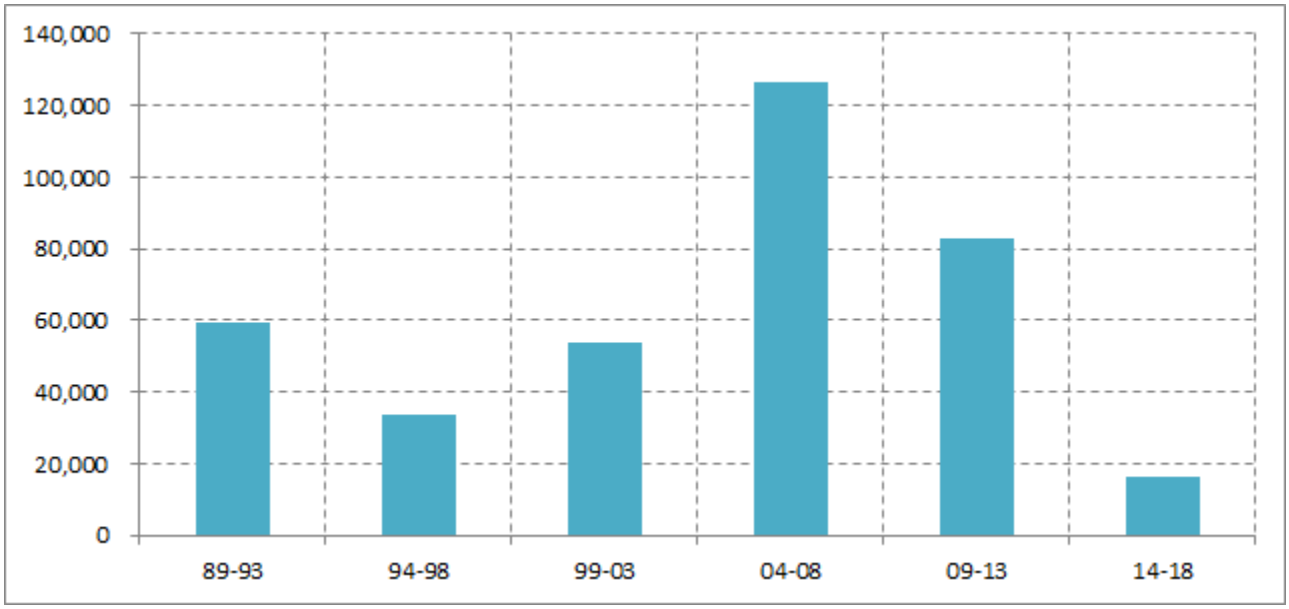


Figure 4-4: Number of People Killed (Average of 5-year period), 1989-2018

Source: EM-DAT: The Emergency Events Database - Universite catholique de Louvain (UCL) - CRED, D. Guha-Sapir - www.emdat.be, Brussels, Belgium

4-3 NUMBER OF PEOPLE AFFECTED IN THE WORLD (1989-2018)

In terms of number of the affected people, 2018 sees a slight decrease from the previous year's 95,957,690 people to 81,142,672. The 5-year period average representation shows that the number of affected people continues to slightly increase in the last 15 years.

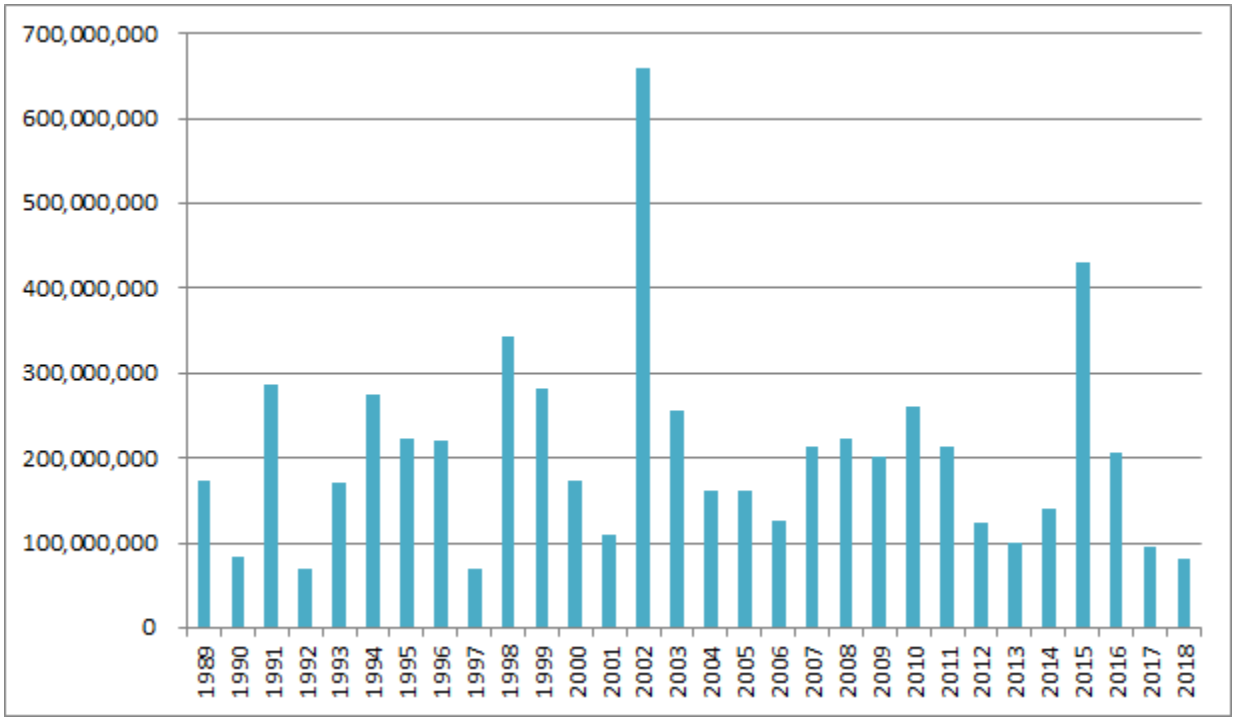


Figure 4-5: Total Number of People Affected, 1989-2018

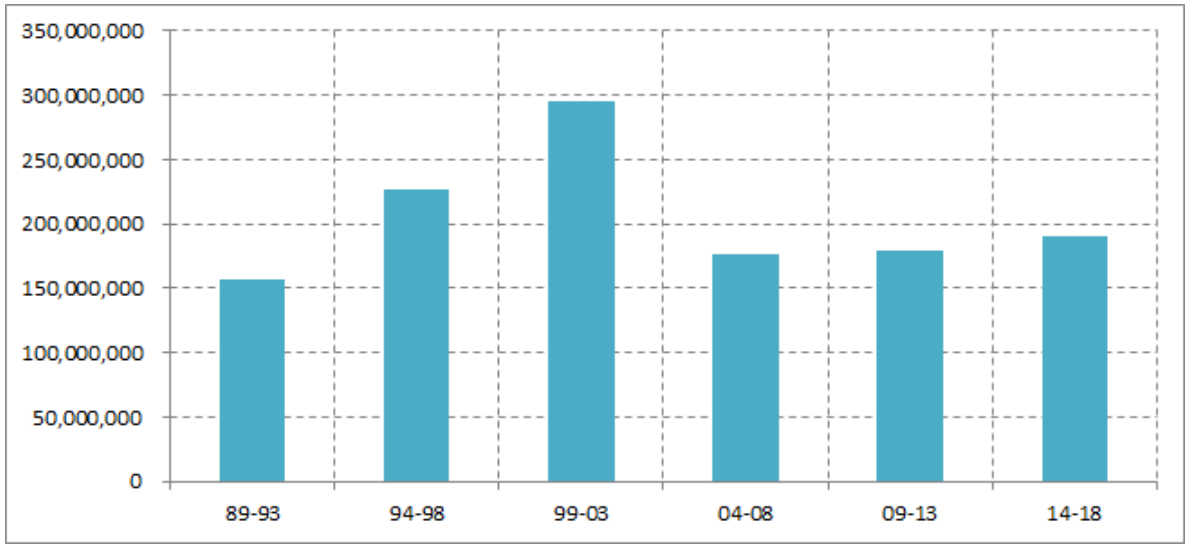


Figure 4-6: Number of People Affected (Average of 5 year period), 1989-2018

Source: EM-DAT: The Emergency Events Database - Universite catholique de Louvain (UCL) - CRED, D. Guha-Sapir - www.emdat.be, Brussels, Belgium

4-4 ECONOMIC DAMAGE IN THE WORLD (1989-2018)

Economic damage caused by natural disasters declines drastically from approx. US$326 billion in 2017 to approx. US$ 131 billion in 2018. However, in the 5-year period average analysis, an upward trend is shown in the last 15 years.

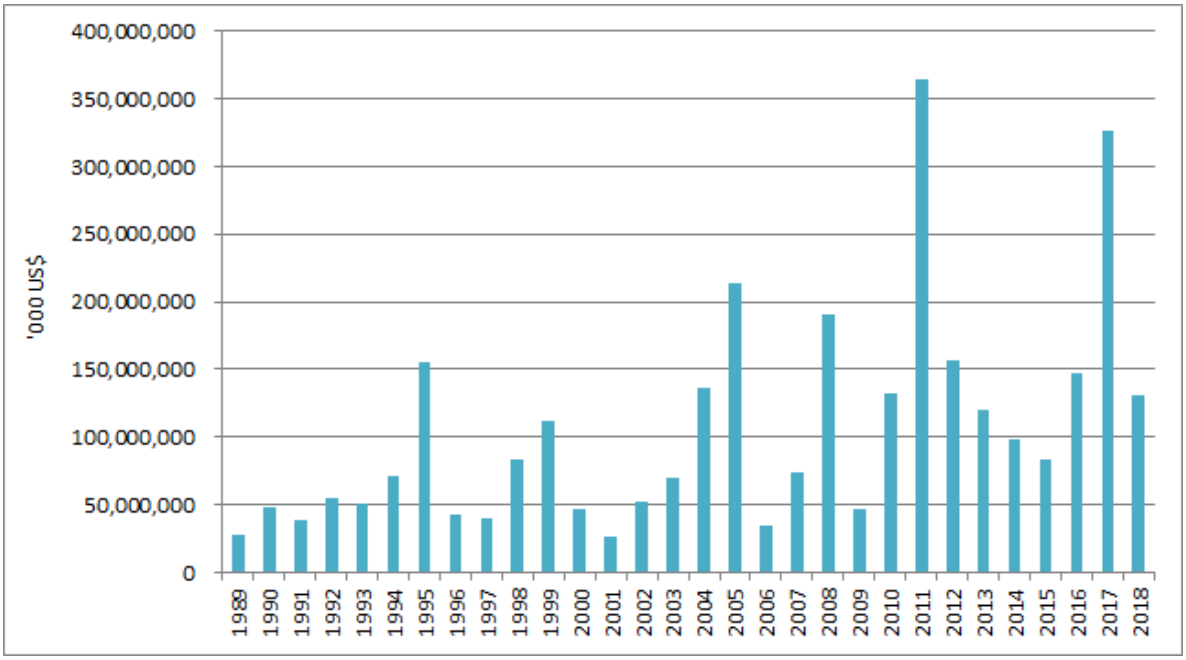


Figure 4-7: Amount of Damage, 1989-2018

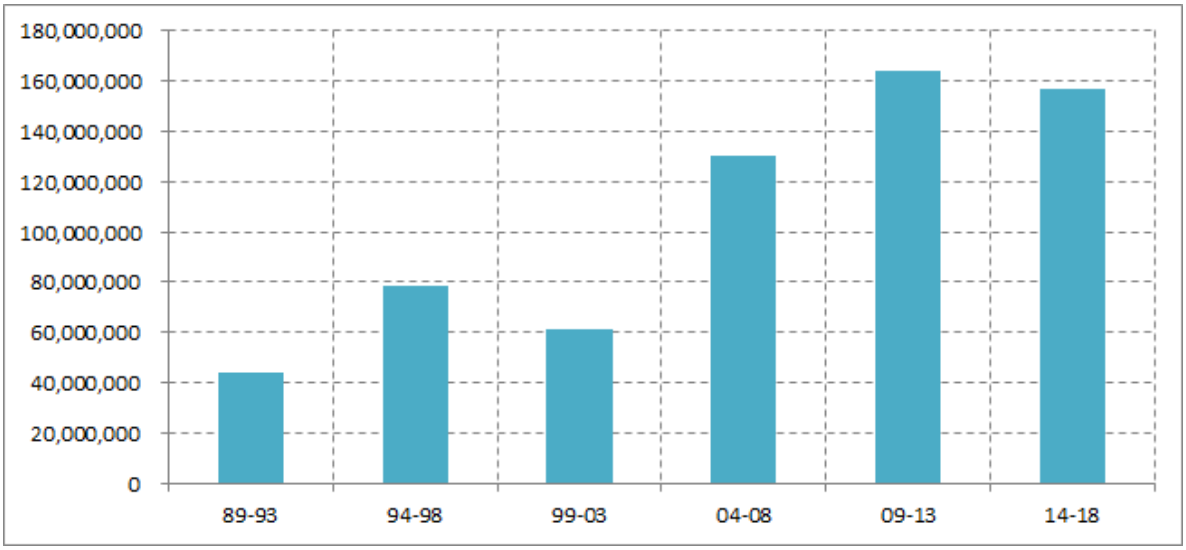


Figure 4-8: Economic Damage (Average of 5-year period), 1989-2018

Source: EM-DAT: The Emergency Events Database - Universite catholique de Louvain (UCL) - CRED, D. Guha-Sapir - www.emdat.be, Brussels, Belgium

5. IMPACTS OF WORLD NATURAL DISASTERS BY REGION, 1989-2018

For the period 1989-2018, Asia dominates and ranks the first in all natural disaster's impact categories across regions of the world. Although Asia shares the larger amount of land and the higher population compared to other continents, some of the shares of Asia dominate still high.

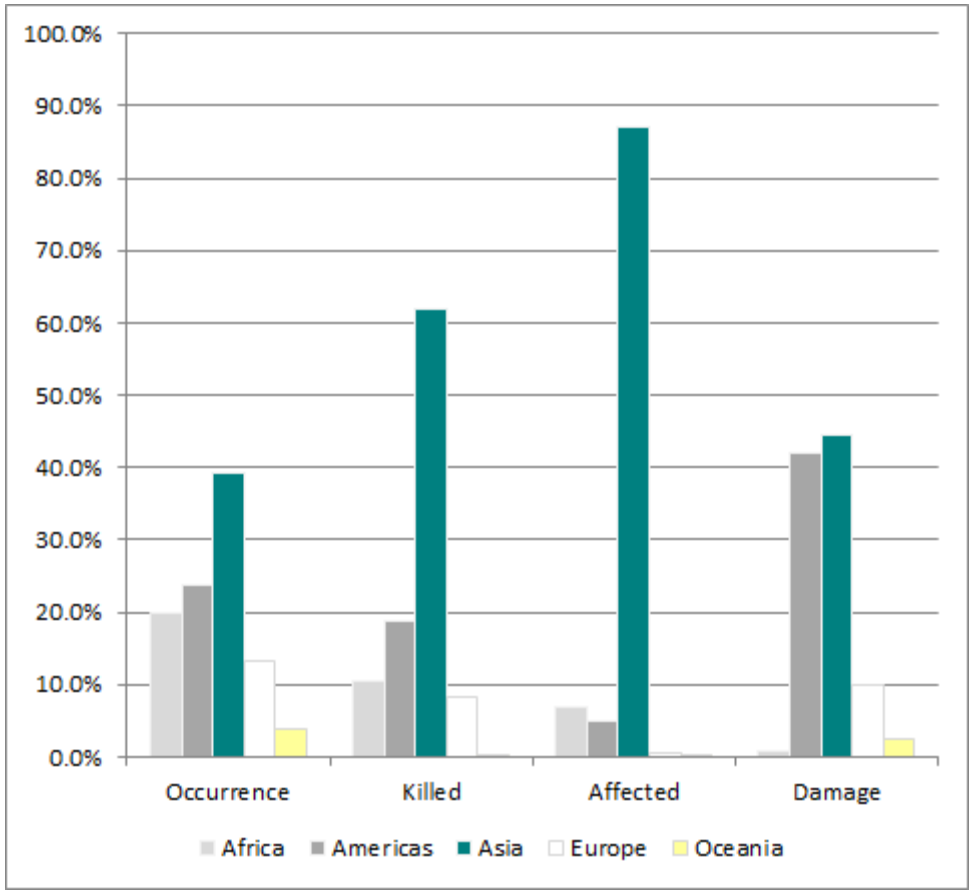


Figure 5: Impacts of World Natural Disasters by Region, 1989-2018

Table 5: Impacts of Natural Disasters by Region, 1989-2018

Region	*Impact*							
	Occurrence (share in %)		Killed (share in %)		Affected (share in %)		Damage (US$ million) (share in %)	
Africa	2,182	(19.9%)	197,928	(10.6%)	422,124,414	(6.9%)	25,090	(0.8%)
Americas	2,604	(23.8%)	348,397	(18.7%)	307,696,854	(5.0%)	1,337,205	(42.1%)
Asia	4,287	(39.1%)	1,153,928	(62.0%)	5,339,446,844	(87.1%)	1,418,678	(44.6%)
Europe	1,440	(13.1%)	154,246	(8.3%)	34,250,442	(0.6%)	320,334	(10.1%)
Oceania	438	(4.0%)	5,710	(0.3%)	24,112,679	(0.4%)	77,437	(2.4%)
Total	10,951	(100.0%)	1,860,209	(100.0%)	6,127,631,233	(100.0%)	3,178,745	(100.0%)

Source: EM-DAT: The Emergency Events Database - Universite catholique de Louvain (UCL) - CRED, D. Guha-Sapir - www.emdat.be, Brussels, Belgium

6. THE 25 WORST DISASTERS IN ASIA 2018

6-1 THE 25 WORST DISASTERS IN ASIA BY NUMBER OF PEOPLE KILLED, 2018

For the number of people killed in Asia in 2018, Indonesia is ranked in the first and second with the earthquake and tsunami occurred in September and the earthquake occurred in August, claiming 4,340 and 564 lives respectively. There are 14 disaster events in Asia found in the list which claimed more than 100 lives. Storm and flood occupies 17 ranks in total in the worst 25 list.

Table 6-1: The 25 Worst Disasters in Asia by Number of People Killed, 2018

	Disaster Type	Country	Date	Killed	Affected	Economic Damage (US$ Million)
1	Earthquake	Indonesia	28/09/2018	4,340	209,025	1,450
2	Earthquake	Indonesia	05/08/2018	564	516,927	790
3	Flood	India	07/08/2018	504	23,220,000	2,852
4	Volcanic activity	Indonesia	22/12/2018	453	47,778	250
5	Epidemic	Philippines	01/01/2018	317	57,564	0
6	Flood	Japan	29/06/2018	246	1,500,102	9,500
7	Epidemic	Philippines	/01/2018	202	21,812	0
8	Storm	Philippines	28/12/2018	182	926,690	170
9	Extreme temperature	Pakistan	18/05/2018	180	0	0
10	Flood	DPR Korea	24/08/2018	148	581,268	25
11	Storm	India	01/05/2018	143	200	24
12	Flood	Lao PDR	23/07/2018	136	13,100	0
13	Extreme temperature	Japan	01/07/2018	119	49,000	0
14	Flood	China	05/05/2018	112	450,000	1,750
15	Storm	India	13/05/2018	95	0	0
16	Storm	DPR Korea	23/08/2018	86	0	5
17	Storm	India	11/10/2018	85	300,200	920
18	Storm	Philippines	16/09/2018	84	3,800,138	32
19	Earthquake	Taiwan (China)	06/02/2018	84	285	100
20	Flood	China	07/05/2018	77	225,000	373
21	Flood	Afghanistan	09/05/2018	72	4,000	0
22	Storm	India	08/06/2018	61	0	50
23	Flood	Pakistan	07/05/2018	60	0	0
24	Storm	India	28/05/2018	54	0	25
25	Storm	China	15/08/2018	53	39,600	5,400

Source: EM-DAT: The Emergency Events Database - Universite catholique de Louvain (UCL) - CRED, D. Guha-Sapir - www.emdat.be, Brussels, Belgium

6-2 THE 25 WORST DISASTERS IN ASIA BY NUMBER OF PEOPLE KILLED PER MILLION POPULATION, 2018

Using the ratio of the number of people killed to total country population, the flood in Lao PDR tops with 19.56 persons killed per one million. By disaster type, floods occupy the largest share in the 25 Worst Disasters in Asia by number of people killed per population in 2018 with ten disaster events listed in the list.

Table 6-2: The 25 Worst Disasters in Asia by Number of People Killed per Million Population, 2018

	Disaster Type	Country	Date	Killed per million	Killed	Population
1	Flood	Lao PDR	23/07/2018	19.56	136	6,953,035
2	Earthquake	Indonesia	28/09/2018	16.40	4,340	264,645,886
3	Flood	DPR Korea	24/08/2018	5.82	148	25,429,985
4	Earthquake	Taiwan (China)	06/02/2018	3.56	84	23,571,000
5	Storm	DPR Korea	23/08/2018	3.38	86	25,429,985
6	Epidemic	Philippines	01/01/2018	3.01	317	105,173,264
7	Storm	Lebanon	19/01/2018	2.20	15	6,811,873
8	Flood	Jordan	25/10/2018	2.15	21	9,779,173
9	Earthquake	Indonesia	05/08/2018	2.13	564	264,645,886
10	Flood	Afghanistan	09/05/2018	1.98	72	36,296,400
11	Flood	Japan	29/06/2018	1.94	246	126,785,797
12	Epidemic	Philippines	/01/2018	1.92	202	105,173,264
13	Extreme temperature	Nepal	01/01/2018	1.81	50	27,627,124
14	Storm	Philippines	28/12/2018	1.73	182	105,173,264
15	Volcanic activity	Indonesia	22/12/2018	1.71	453	264,645,886
16	Flood	Israel	24/04/2018	1.38	12	8,713,300
17	Flood	Jordan	09/11/2018	1.33	13	9,779,173
18	Storm	Oman	23/05/2018	1.29	6	4,665,935
19	Extreme temperature	Japan	01/07/2018	0.94	119	126,785,797
20	Flood	Sri Lanka	19/05/2018	0.93	20	21,444,000
21	Storm	Yemen	14/10/2018	0.90	25	27,834,821
22	Extreme temperature	Pakistan	18/05/2018	0.87	180	207,896,686
23	Storm	Philippines	16/09/2018	0.80	84	105,173,264
24	Flood	Tajikistan	16/05/2018	0.68	6	8,880,268
25	Flood	Sri Lanka	06/10/2018	0.56	12	21,444,000

Source: EM-DAT: The Emergency Events Database - Universite catholique de Louvain (UCL) - CRED, D. Guha-Sapir - www.emdat.be, Brussels, Belgium

Note: Population data is taken from World Bank 2017, with the exception of Taiwan (China) for which the data was extracted from the IMF World Economy Outlook Database 2017.

6-3 THE 25 WORST DISASTERS IN ASIA BY NUMBER OF PEOPLE AFFECTED, 2018

In terms of the number of people affected, the flood in India ranks the first with 23.2 million people affected. In 2018, the number of disaster events that affected more than one million amounts to 12. By country, the Philippines has eight ranks in the list. By disaster type, storm amounts to 12 out of the 25 disasters followed by eight floods.

Table 6-3: The 25 Worst Disasters in Asia by Number of People Affected, 2018

	Disaster Type	Country	Date	Killed	Affected	Economic Damage (US$ Million)
1	Flood	India	07/08/2018	504.00	23,220,000	2,852
2	Drought	Afghanistan	/04/2018	0	10,600,000	0
3	Drought	India	/09/2018	0	8,200,000	1,100
4	Storm	Philippines	16/09/2018	84	3,800,138	32
5	Storm	China	02/01/2018	21	2,503,700	854
6	Storm	Philippines	17/07/2018	16	2,231,101	88
7	Storm	China	27/12/2018	0	1,800,000	119
8	Storm	Philippines	19/09/2018	5	1,709,511	19
9	Storm	Philippines	17/07/2018	0	1,677,993	26
10	Flood	China	10/07/2018	16	1,519,000	531
11	Flood	Japan	29/06/2018	246	1,500,102	9,500
12	Flood	China	07/07/2018	3	1,381,000	781
13	Storm	Philippines	28/12/2018	182	926,690	170
14	Storm	Lao PDR	13/08/2018	0	615,145	225
15	Flood	DPR Korea	24/08/2018	148	581,268	25
16	Earthquake	Indonesia	05/08/2018	564	516,927	790
17	Storm	India	16/11/2018	45	500,000	775
18	Flood	China	05/05/2018	112	450,000	1,750
19	Storm	India	11/10/2018	85	300,200	920
20	Extreme temperature	Mongolia	/01/2018	0	264,000	0
21	Storm	Philippines	12/02/2018	0	254,859	3
22	Storm	Philippines	30/10/2018	12	253,300	305
23	Flood	China	07/05/2018	77	225,000	373
24	Earthquake	Indonesia	28/09/2018	4,340	209,025	1,450
25	Flood	Philippines	13/01/2018	11.00	180,000	0

Source: EM-DAT: The Emergency Events Database - Universite catholique de Louvain (UCL) - CRED, D. Guha-Sapir - www.emdat.be, Brussels, Belgium

6-4 THE 25 WORST DISASTERS IN ASIA BY NUMBER OF PEOPLE AFFECTED PER THOUSAND POPULATION, 2018

Using the index of the affected people per thousand population, the drought in Afghanistan results in 292 affected person per thousand population. Among top 25 countries, storm and flood disasters occupy 11 and 10 ranks in the list, respectively.

Table 6-4: The 25 Worst Disasters in Asia by Number of People Affected per Thousand Population, 2018

	Disaster Type	Country	Date	Affected per thousand	Affected	Population
1	Drought	Afghanistan	/04/2018	292.04	10,600,000	36,296,400
2	Storm	Lao PDR	13/08/2018	88.47	615,145	6,953,035
3	Extreme temperature	Mongolia	/01/2018	84.78	264,000	3,113,779
4	Storm	Philippines	16/09/2018	36.13	3,800,138	105,173,264
5	Flood	DPR Korea	24/08/2018	22.86	581,268	25,429,985
6	Storm	Philippines	17/07/2018	21.21	2,231,101	105,173,264
7	Flood	India	07/08/2018	17.35	23,220,000	1,338,658,835
8	Storm	Lao PDR	18/07/2018	17.26	120,000	6,953,035
9	Storm	Philippines	19/09/2018	16.25	1,709,511	105,173,264
10	Storm	Philippines	17/07/2018	15.95	1,677,993	105,173,264
11	Flood	Japan	29/06/2018	11.83	1,500,102	126,785,797
12	Storm	Philippines	28/12/2018	8.81	926,690	105,173,264
13	Flood	Sri Lanka	19/05/2018	7.17	153,712	21,444,000
14	Drought	India	/09/2018	6.13	8,200,000	1,338,658,835
15	Flood	Sri Lanka	06/10/2018	3.50	75,000	21,444,000
16	Flood	Sri Lanka	22/12/2018	3.50	75,000	21,444,000
17	Storm	Armenia	17/08/2018	3.36	9,900	2,944,809
18	Flood	Mongolia	03/07/2018	2.67	8,301	3,113,779
19	Storm	Philippines	12/02/2018	2.42	254,859	105,173,264
20	Storm	Philippines	30/10/2018	2.41	253,300	105,173,264
21	Flood	Myanmar	15/07/2018	2.05	109,650	53,382,581
22	Earthquake	Indonesia	05/08/2018	1.95	516,927	264,645,886
23	Flood	Lao PDR	23/07/2018	1.88	13,100	6,953,035
24	Storm	China	02/01/2018	1.81	2,503,700	1,386,395,000
25	Flood	Philippines	13/01/2018	1.71	180,000	105,173,264

Source: EM-DAT: The Emergency Events Database - Universite catholique de Louvain (UCL) - CRED, D. Guha-Sapir - www.emdat.be, Brussels, Belgium

Note: Population data is taken from World Bank 2017, with the exception of Taiwan (China) for which the data was extracted from the IMF World Economy Outlook Database 2017.

6-5 THE 25 WORST DISASTERS IN ASIA BY ECONOMIC DAMAGE, 2018

According to the EM-DAT database, storm in Japan tops in the 25 ranks of the worst economic damage in Asia in 2018 with US$ 12.5 billion. By country, Japan occupies 5 out of the top worst 10 ranks and China does 13 out of 25 in the list. By disaster type, storm and flood have the largest shares with 12 and eight ranks respectively.

Table 6-5: The 25 Worst Disasters in Asia by Economic Damage, 2018

	Disaster Type	Country	Date	Total deaths	Total affected	Economic Damage (US$ Million)
1	Storm	Japan	04/09/2018	17	3,900	12,500
2	Flood	Japan	29/06/2018	246	1,500,102	9,500
3	Storm	China	15/08/2018	53	39,600	5,400
4	Storm	Japan	28/09/2018	4	18,200	4,500
5	Earthquake	Japan	18/06/2018	5	20,715	3,250
6	Flood	India	07/08/2018	504	23,220,000	2,852
7	Flood	China	05/05/2018	112	450,000	1,750
8	Earthquake	Indonesia	28/09/2018	4,340	209,025	1,450
9	Storm	China	24/01/2018	2	7,500	1,450
10	Earthquake	Japan	06/09/2018	44	3,380	1,250
11	Drought	India	/09/2018	0	8,200,000	1,100
12	Storm	India	11/10/2018	85	300,200	920
13	Storm	China	02/01/2018	21	2,503,700	854
14	Earthquake	Indonesia	05/08/2018	564	516,927	790
15	Flood	China	29/08/2018	18	11,400	790
16	Flood	China	07/07/2018	3	1,381,000	781
17	Storm	India	16/11/2018	45	500,000	775
18	Storm	China	10/09/2018	0	0	770
19	Storm	China	19/07/2018	14	16,200	570
20	Flood	China	10/07/2018	16	1,519,000	531
21	Storm	China	10/07/2018	0	45,000	490
22	Flood	China	07/05/2018	77	225,000	373
23	Storm	China	12/08/2018	3	2,400	367
24	Storm	Philippines	30/10/2018	12	253,300	305
25	Flood	China	28/06/2018	11	36,000	278

Source: EM-DAT: The Emergency Events Database - Universite catholique de Louvain (UCL) - CRED, D. Guha-Sapir - www.emdat.be, Brussels, Belgium

6-6 THE 25 WORST DISASTERS IN ASIA BY RATIO OF ECONOMIC DAMAGE TO GDP, 2018

In terms of economic damage incurred relative to gross domestic product (GDP), the storm in Lao PDR results in the highest damage with 1.33 percent of the GDP, which scores extremely high compared to other percentages in the list. Storm, flood and earthquake have the highest ranks with 12, 6 and 5 ranks, respectively. Japan shares five ranks in the list.

Table 6-6: The 25 Worst Disasters in Asia by Ratio of Economic Damage to GDP, 2018

	Disaster Type	Country	Date	Economic Damage / GDP (as per cent)	Economic Damage (US$ Million)	GDP (US$ Million)
1	Storm	Lao PDR	13/08/2018	1.3351	225	16,853
2	Storm	Japan	04/09/2018	0.2572	12,500	4,859,951
3	Flood	Japan	29/06/2018	0.1955	9,500	4,859,951
4	Earthquake	Indonesia	28/09/2018	0.1428	1,450	1,015,423
5	Flood	India	07/08/2018	0.1075	2,852	2,652,551
6	Storm	Viet Nam	18/07/2018	0.0983	220	223,780
7	Storm	Philippines	30/10/2018	0.0973	305	313,620
8	Storm	Japan	28/09/2018	0.0926	4,500	4,859,951
9	Earthquake	Indonesia	05/08/2018	0.0778	790	1,015,423
10	Earthquake	Japan	18/06/2018	0.0669	3,250	4,859,951
11	Storm	Philippines	28/12/2018	0.0542	170	313,620
12	Storm	China	15/08/2018	0.0445	5,400	12,143,491
13	Drought	India	/09/2018	0.0415	1,100	2,652,551
14	Flood	Iran	05/10/2018	0.0366	166	454,013
15	Storm	India	11/10/2018	0.0347	920	2,652,551
16	Storm	India	16/11/2018	0.0292	775	2,652,551
17	Storm	Philippines	17/07/2018	0.0281	88	313,620
18	Earthquake	Japan	06/09/2018	0.0257	1,250	4,859,951
19	Volcanic activity	Indonesia	22/12/2018	0.0246	250	1,015,423
20	Earthquake	Taiwan (China)	06/02/2018	0.0174	100	574,895
21	Storm	Armenia	17/08/2018	0.0158	2	11,527
22	Flood	China	05/05/2018	0.0144	1,750	12,143,491
23	Storm	China	24/01/2018	0.0119	1,450	12,143,491
24	Flood	Viet Nam	08/12/2018	0.0112	25	223,780
25	Flood	Viet Nam	23/06/2018	0.0103	23	223,780

Source: EM-DAT: The Emergency Events Database - Universite catholique de Louvain (UCL) - CRED, D. Guha-Sapir - www.emdat.be, Brussels, Belgium

Note: GDP data is taken from World Bank 2017, with the exception of the data for Taiwan (China), which was extracted from the IMF World Economy Outlook Database 2017. In addition, DPR Korea was excluded from the list as data on its GDP is not available either on the World Bank 2017 or the IMF World Economy Outlook Database 2017.

7. DISASTERS IN ASIA BY COUNTRY, 2018

Country	Disaster Type	Occurrence	Total deaths	Total affected	Damage ('000 US$)
Afghanistan	Drought	1		10,600,000	
	Flood	3	101	4,000	
	Landslide	2	22	2,750	
Armenia	Storm	1		9,900	1,822
Bangladesh	Extreme temperature	1	34		
	Flood	2	35	14,000	
	Storm	1	33		
Cambodia	Flood	1		5,817	
China	Earthquake	2		30,024	79,000
	Flood	8	244	3,698,400	4,569,972
	Storm	12	110	4,609,700	10,675,200
Georgia	Flood	1		1,143	
Hong Kong	Storm	1		300	
India	Drought	1		8,200,000	1,100,000
	Extreme temperature	1	44		
	Flood	9	710	23,307,698	2,864,980
	Storm	11	625	853,650	2,144,000
	Wildfire	1	17		
Indonesia	Earthquake	5	4,929	843,394	2,354,000
	Flood	6	80	143,464	
	Landslide	2	48	50,014	
	Volcanic activity	2	453	97,778	250,000
Iran	Earthquake	3	2	19,013	20,000
	Flood	1	9	7,135	166,000
Iraq	Flood	1	21	25,000	
Israel	Flood	1	12		
Japan	Earthquake	2	49	24,095	4,500,000
	Extreme temperature	1	119	49,000	
	Flood	1	246	1,500,102	9,500,000
	Storm	3	24	26,300	17,000,000
Jordan	Flood	2	34	64	
Kazakhstan	Flood	1		400	
DPR Korea	Extreme temperature	1		13,798	
	Flood	1	148	581,268	25,000
	Storm	1	86		4,640
Rep. of Korea	Extreme temperature	1			
Kuwait	Flood	1	1		
Lao PDR	Flood	1	136	13,100	
	Storm	2		735,145	225,000
Lebanon	Storm	1	15		
Malaysia	Flood	2	2	16,900	

Country	Disaster Type	Occurrence	Total deaths	Total affected	Damage ('000 US$)
Mongolia	Extreme temperature	1		264,000	
	Flood	1		8,301	
	Storm	1			
Myanmar	Flood	3	35	173,050	
	Landslide	1	15	45	
	Mass movement (dry)	1	17		
Nepal	Extreme temperature	1	50		
	Flood	1	15	1,406	
Oman	Storm	2	6		
Pakistan	Extreme temperature	1	180		
	Flood	1	60		
Philippines	Epidemic	2	519	79,376	
	Flood	1	11	180,000	
	Storm	8	302	10,937,509	655,253
	Volcanic activity	1		86,056	3,564
Qatar	Flood	1		1,500	10,000
Sri Lanka	Flood	3	34	303,712	
Taiwan (China)	Earthquake	1	84	285	100,000
	Storm	1	7	6,140	34,000
Tajikistan	Flood	1	6	5,725	
Turkey	Landslide	1	24	100	
Viet Nam	Flood	3	67	127,728	48,000
	Storm	4	67	156,028	239,200
Yemen	Storm	2	49	15,874	
Total		144	9,937	67,830,187	56,569,631

Source: EM-DAT: The Emergency Events Database - Universite catholique de Louvain (UCL) - CRED, D. Guha-Sapir – www.emdat.be, Brussels, Belgium

This table shows sum of disaster impacts in Asia in 2018.

In 2018, China, India, Indonesia and the Philippines are recoded over 10 natural disasters. Indonesia accounts for the highest in the number of people killed by 55.5 percent, followed by India with 14 percent. India is ranked for the most number people affected by 47.7 percent, followed by the Philippines and Afghanistan with 16.6 percent and 15.6 percent respectively. For economic damage, Japan has the largest share by 54.8 percent, followed by China with 27.1 percent.

8. DISASTERS IN ASIA BY DISASTER TYPE, 2018

Disaster Type	Country	Occurrence	Total deaths	Total affected	Damage ('000 US$)
Drought	Afghanistan	1		10,600,000	
	India	1		8,200,000	1,100,000
Earthquake	China	2		30,024	79,000
	Indonesia	5	4,929	843,394	2,354,000
	Iran	3	2	19,013	20,000
	Japan	2	49	24,095	4,500,000
	Taiwan (China)	1	84	285	100,000
Epidemic	Philippines	2	519	79,376	
Extreme temperature	Bangladesh	1	34		
	India	1	44		
	Japan	1	119	49,000	
	DPR Korea	1		13,798	
	Rep. of Korea	1			
	Mongolia	1		264,000	
	Nepal	1	50		
	Pakistan	1	180		
Flood	Afghanistan	3	101	4,000	
	Bangladesh	2	35	14,000	
	Cambodia	1		5,817	
	China	8	244	3,698,400	4,569,972
	Georgia	1		1,143	
	India	9	710	23,307,698	2,864,980
	Indonesia	6	80	143,464	
	Iran	1	9	7,135	166,000
	Iraq	1	21	25,000	
	Israel	1	12		
	Japan	1	246	1,500,102	9,500,000
	Jordan	2	34	64	
	Kazakhstan	1		400	
	DPR Korea	1	148	581,268	25,000
	Kuwait	1	1		
	Lao PDR	1	136	13,100	
	Malaysia	2	2	16,900	
	Mongolia	1		8,301	
	Myanmar	3	35	173,050	
	Nepal	1	15	1,406	
	Pakistan	1	60		
	Philippines	1	11	180,000	
	Qatar	1		1,500	10,000
	Sri Lanka	3	34	303,712	
	Tajikistan	1	6	5,725	
	Viet Nam	3	67	127,728	48,000

Disaster Type	Country	Occurrence	Total deaths	Total affected	Damage ('000 US$)
Landslide	Afghanistan	2	22	2,750	
	Indonesia	2	48	50,014	
	Myanmar	1	15	45	
	Turkey	1	24	100	
Mass movement (dry)	Myanmar	1	17		
Storm	Armenia	1		9,900	1,822
	Bangladesh	1	33		
	China	12	110	4,609,700	10,675,200
	Hong Kong	1		300	
	India	11	625	853,650	2,144,000
	Japan	3	24	26,300	17,000,000
	DPR Korea	1	86		4,640
	Lao PDR	2		735,145	225,000
	Lebanon	1	15		
	Mongolia	1			
	Oman	2	6		
	Philippines	8	302	10,937,509	655,253
	Taiwan (China)	1	7	6,140	34,000
	Viet Nam	4	67	156,028	239,200
	Yemen	2	49	15,874	
Volcanic activity	Indonesia	2	453	97,778	250,000
	Philippines	1		86,056	3,564
Wildfire	India	1	17		
Total		144	9,937	67,830,187	56,569,631

Source: EM-DAT: The Emergency Events Database - Universite catholique de Louvain (UCL) - CRED, D. Guha-Sapir – www.emdat.be, Brussels, Belgium

This table shows disasters in Asia in 2018 by disaster type.

In 2018, flood has the largest impact on 26 countries in Asia and also results in the highest number of occurrence and people affected by 39.6 percent and 44.4 percent respectively.

Then storm ranks second in occurrence, affecting 15 countries by 35.4 percent, and ranks the highest amount of economic damage by 54.8 percent.

In number of people killed, earthquake ranks the first at 51.0 percent, followed by storm by 20.2 percent.

Drought ranks the second in the number of people affected by 27.7 percent although its occurrence shares only 1.4 percent.

The Asian Disaster Reduction Center was established in Kobe, Japan in 1998 with the mission to enhance disaster resilience of its member-countries, to build safe communities, and to create a society where sustainable development is possible. The Center works to build disaster resilient communities and to establish networks among countries through many programs including personnel exchanges in this field.

Asian Disaster Reduction Center