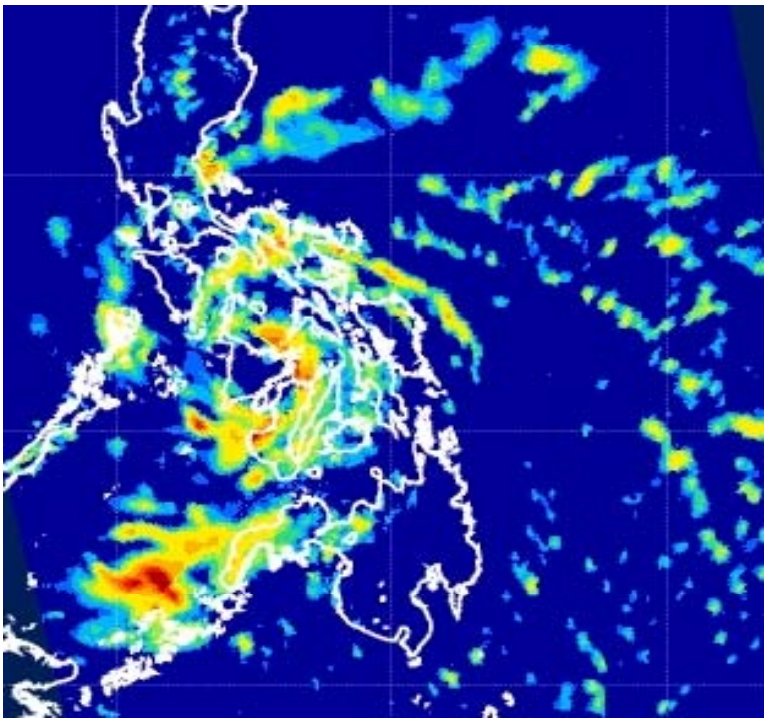
Natural Disaster Data Book 2013
An Analytical Overview



Asian Disaster Reduction Center

Overview

The Asian Disaster Reduction Center (ADRC) Natural Disasters Data Book 2013 provides the statistical perspectives in figures and tables for 2013 as well as for the period 1984-2013 based on data obtained by EM-DAT.

According to EM-DAT, 361 natural disasters occurred in 2013 worldwide, killing 23,538 people and affecting over 99.9 million people. The estimated amount of economic damage came close to US$119 billion.

In 2013 again, Typhoon Haiyan, which hit the Philippines in November, brought about serious damages to the country. The disaster killed 7,986 people and affecting over 16 million, which are ranked highest in the world in 2013.

As for economic damage, Typhoon Haiyan at 10 billion USD is ranked first in Asia and second in the world, following flooding in Germany, 12.9 billion USD.

By region, Asia is ranked the highest in all the indices of disaster occurrences, the number of people killed and affected and economic damage. Asia accounts for 44.6 percent in occurrences; number of people killed, 84.6 percent; number of affected people, 87.1 percent; and amount of economic damage, 49.0 percent.

By disaster types, flood and storm are dominant among all in terms of occurrence, the numbers of people killed and affected and economic damage. While flood exceeds storm in occurrence at 41.3 percent, the number of people killed, 41.7 percent and economic damage 44.5 percent, respectively while storm shares largest in the number of people affected at 49.2 percent.

Data Book 2013 also contains tables of the 25 worst disasters by number of people killed and total affected people, economic damage, and their respective ratios to population and gross domestic product. It also includes tables of 2013 disasters in ADRC member and other Asian countries sorted by country and disaster type.

[Notes]

Source:
All disaster data are based on EM-DAT:
The OFDA/CRED International Disaster Database -
www.emdat.be, Université Catholique de Louvain, Brussels (Belgium), data version v12.07 on 1 May 2014, 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 2013 “killed people” are defined as persons confirmed as dead and persons missing and presumed dead. “Affected people” are the sum of injured, homeless, and affected in EM-DAT. EM-DAT defines affected people as people requiring immediate assistance during a period of emergency; it can also include displaced or evacuated people.

Disaster Terms:
“Earthquake or seismic activity” 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.
“Mass Movement” includes avalanche, landslide, and rockfall.
“Storm” includes local storm, tropical cyclone, and winter storm.
“Volcano” means volcanic eruption.
“Wildfire” includes bush/brush fire, forest fire, and scrub/grassland fire.

Disclaimer:
Country and region classification used in this book are based on EM-DAT criteria.

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Japan Aerospace Exploration Agency (JAXA) Super Typhoon HAIYAN(31W)

1. IMPACTS OF NATURAL DISASTERS BY REGION, 2013

This section covers the impacts of natural disasters—occurrence, number of deaths, number of affected people, and economic damage—that took place in different regions across the world in 2013. As shown in Figure 1, Asia ranks first among all regions in all the categories of disaster occurrence, the number of killed and affected people and economic damage, accounting for 44.6 percent, 84.6 percent 87.1 percent and 49.0 percent respectively. While Africa ranks the second in the number of killed and affected, its share in economic damages accounts for 0.2 percent, the lowest share.

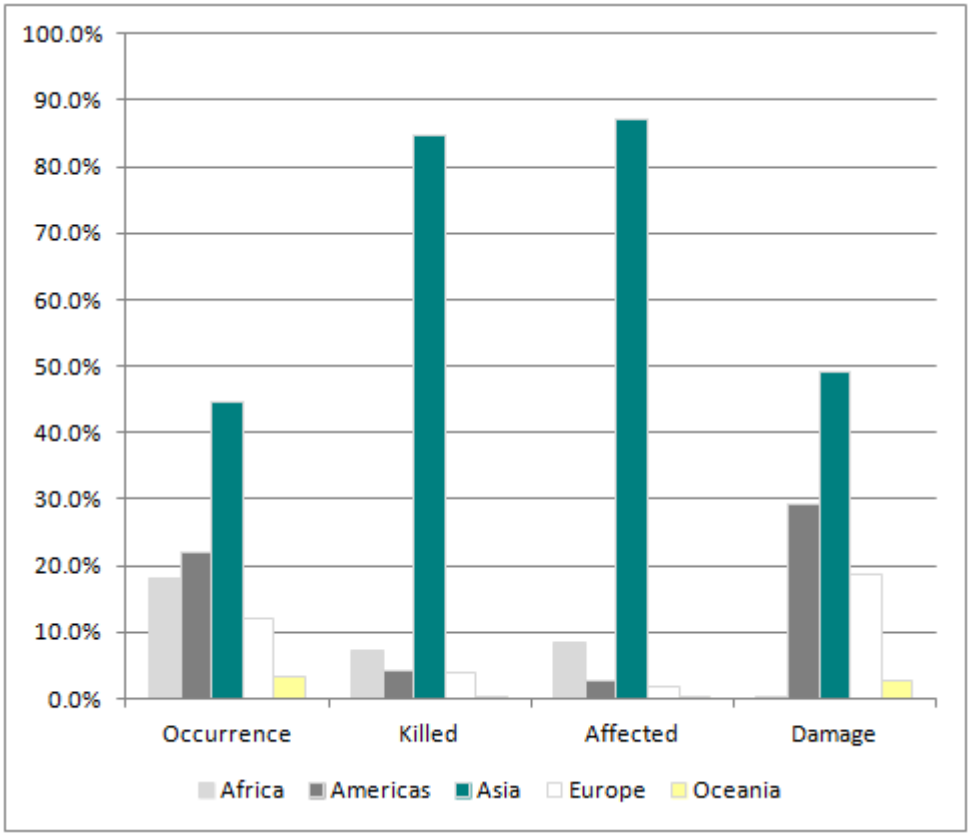


Figure 1: Impacts of Natural Disasters by Region, 2013

Table 1: Impacts of Natural Disasters by Region, 2013

Region	*Impact*							
	Occurrence (share in %)		Killed (share in %)		Affected (share in %)		Damage (US$ million) (share in %)	
Africa	65	(18.0%)	1,685	(7.2%)	8,281,798	(8.3%)	241	(0.2%)
Americas	79	(21.9%)	1,026	(4.4%)	2,752,169	(2.8%)	35,060	(29.4%)
Asia	161	(44.6%)	19,910	(84.6%)	87,045,468	(87.1%)	58,521	(49.0%)
Europe	44	(12.2%)	895	(3.8%)	1,749,143	(1.8%)	22,289	(18.7%)
Oceania	12	(3.3%)	22	(0.1%)	79,690	(0.1%)	3,259	(2.7%)
Total	361	(100.0%)	23,538	(100.0%)	99,908,268	(100.0%)	119,369	(100.0%)

Source:
EM-DAT: The OFDA/CRED International Disaster Database – www.emdat.be,
Université Catholique de Louvain, Brussels (Belgium)

2. IMPACTS OF NATURAL DISASTERS BY DISASTER TYPE, 2013

This section provides the breakdown of impacts of disasters sorted by disaster type. As Figure 2 shows, two disasters, flood and storm, are dominant in all categories. While flood tops in occurrence, the number of people killed and damage, storm has highest the share of 49.2 percent in the number of people affected.

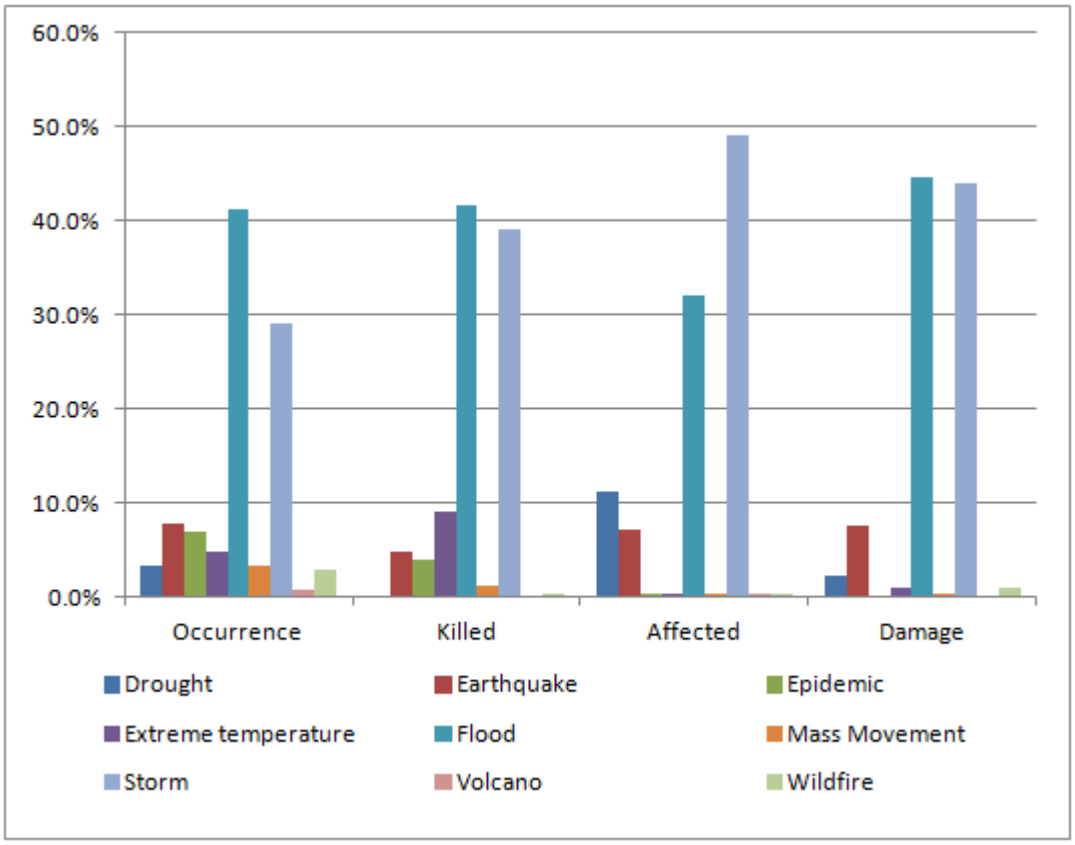


Figure 2: Impacts of Natural Disasters by Disaster Type, 2013

Table 2: Impacts of Natural Disasters by Disaster Type, 2013

Disaster Type	*Impact*							
	Occurrence	(share in %)	Killed	(share in %)	Affected	(share in %)	Damage (US$ million)	(share in %)
Drought	12	(3.3%)		(0.0%)	11,223,522	(11.2%)	2,547	(2.1%)
Earthquake	28	(7.8%)	1,120	(4.8%)	7,031,162	(7.0%)	9,075	(7.6%)
Epidemic	25	(6.9%)	922	(3.9%)	93,438	(0.1%)		(0.0%)
Extreme temperature	17	(4.7%)	2,142	(9.1%)	270,016	(0.3%)	1,000	(0.8%)
Flood	149	(41.3%)	9,823	(41.7%)	32,050,807	(32.1%)	53,175	(44.5%)
Mass movement	12	(3.3%)	281	(1.2%)	1,033	(0.0%)	8	(0.0%)
Storm	105	(29.1%)	9,215	(39.1%)	49,124,353	(49.2%)	52,492	(44.0%)
Volcano	3	(0.8%)		(0.0%)	105,106	(0.1%)		(0.0%)
Wildfire	10	(2.8%)	35	(0.1%)	8,831	(0.0%)	1,072	(0.9%)
Total	361	(100.0%)	23,538	(100.0%)	99,908,268	(100.0%)	119,369	(100.0%)

Source:
EM-DAT: The OFDA/CRED International Disaster Database – www.emdat.be,
Université Catholique de Louvain, Brussels (Belgium)

3. IMPACTS OF NATURAL DISASTERS IN ASIA BY DISASTER TYPE, 2013

This section provides the overview of impacts of disasters sorted by disaster type in Asia. The share of flood and storm are dominant in all indices, occurrence, the number of people killed are and people affected and economic damage. Storm tops in the number of people affected at 55.3 while flood is ranked higher or similar to storm. This is largely attributed to Typhoon Haiyan of Philippines and flood in India, which affected over 16 million and 13 million respectively.

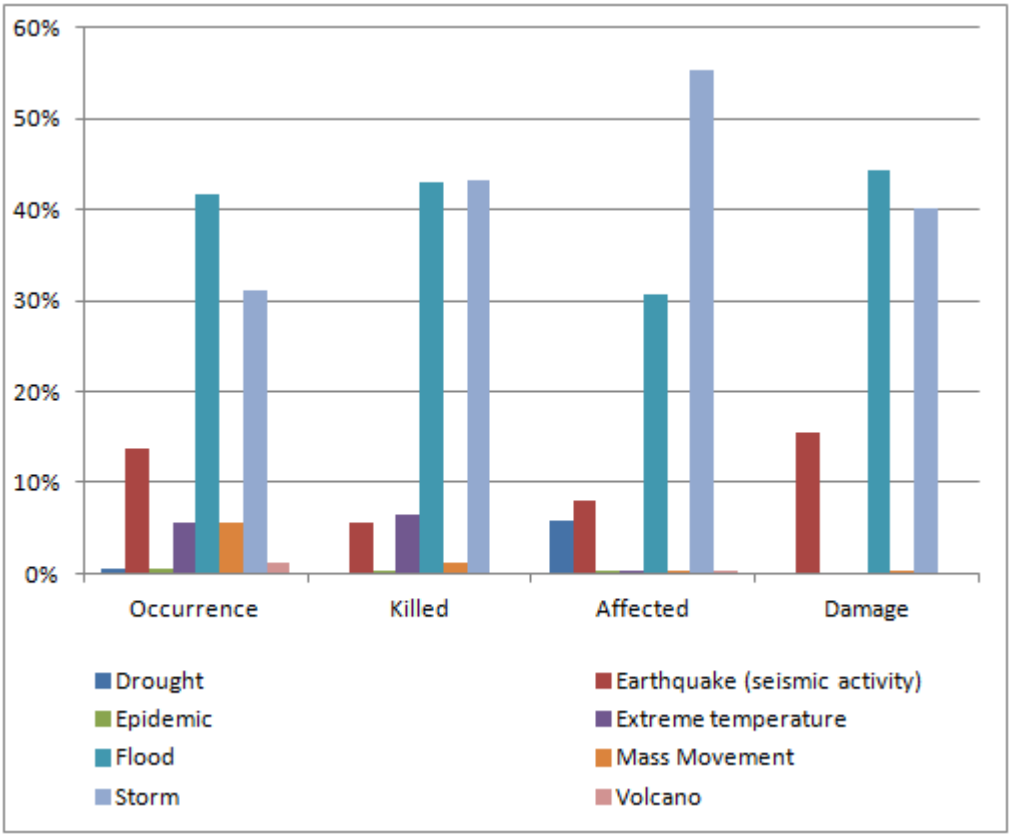


Figure 3: Impacts of Natural Disasters by Disaster Type in Asia, 2013

Table 3: Impacts of Natural Disasters by Disaster Type in Asia, 2013

Disaster Type	*Impact*							
	Occurrence (share in %)		Killed (share in %)		Affected (share in %)		Damage (US$ million) (share in %)	
Drought	1	(0.6%)		(0.0%)	5,000,000	(5.7%)		(0.0%)
Earthquake	22	(13.7%)	1,109	(5.6%)	7,000,580	(8.0%)	9,020.86	(15.4%)
Epidemic	1	(0.6%)	77	(0.4%)	36,000	(0.0%)		(0.0%)
Extreme temperature	9	(5.6%)	1,305	(6.6%)	148,500	(0.2%)		(0.0%)
Flood	67	(41.6%)	8,580	(43.1%)	26,639,524	(30.6%)	25,971.89	(44.4%)
Mass Movement	9	(5.6%)	238	(1.2%)	1,004	(0.0%)	8.00	(0.0%)
Storm	50	(31.1%)	8,601	(43.2%)	48,177,833	(55.3%)	23,520.06	(40.2%)
Volcano	2	(1.2%)		(0.0%)	42,027	(0.0%)		(0.0%)
Total	161	(100.0%)	19,910	(100.0%)	87,045,468	(100.0%)	58,520.81	(100.0%)

Source:
EM-DAT: The OFDA/CRED International Disaster Database – www.emdat.be,
Université Catholique de Louvain, Brussels (Belgium)

4. TRENDS OF WORLD NATURAL DISASTERS, 1984-2013

4-1 NUMBER OF DISASTERS IN THE WORLD (1984-2013)

In terms of number of disasters, the year 2013 sees slight decline from the previous year. In the long run, the upward shift of disaster occurrence's trend continues from the early1980s through early 2000s. In the collective 5-year period representation of data in Figure 4-2, downward trend is observed in the last 15 years starting from 1999-2003 period.

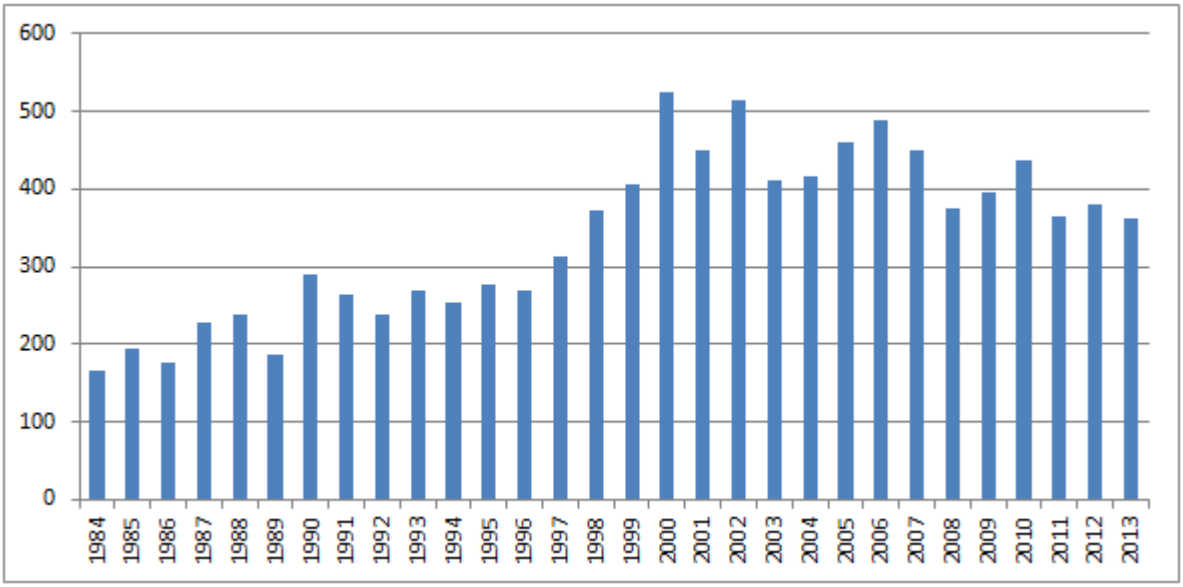


Figure 4-1: Disaster Occurrence, 1984-2013

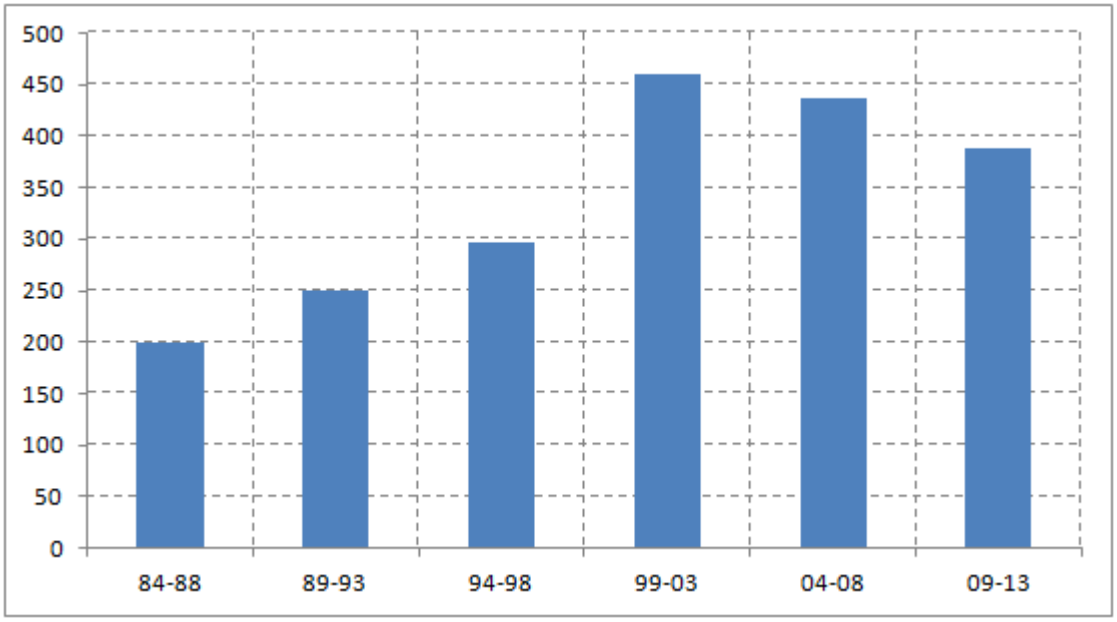


Figure 4-2: Disaster Occurrence (Average of 5-year period), 1984-2013

Source:
EM-DAT: The OFDA/CRED International Disaster Database – www.emdat.be,
Université Catholique de Louvain, Brussels (Belgium)

4-2 NUMBER OF PEOPLE KILLED IN THE WORLD (1984-2013)

The death toll in 2013, standing at 23,538 is doubled from the figure of previous year's 10,783. As seen in Figure4-4, for the trend of the 5-year period average, the number of people killed for the period 2009-2013 declines by around 40,000 people from the previous period 2004-2008.

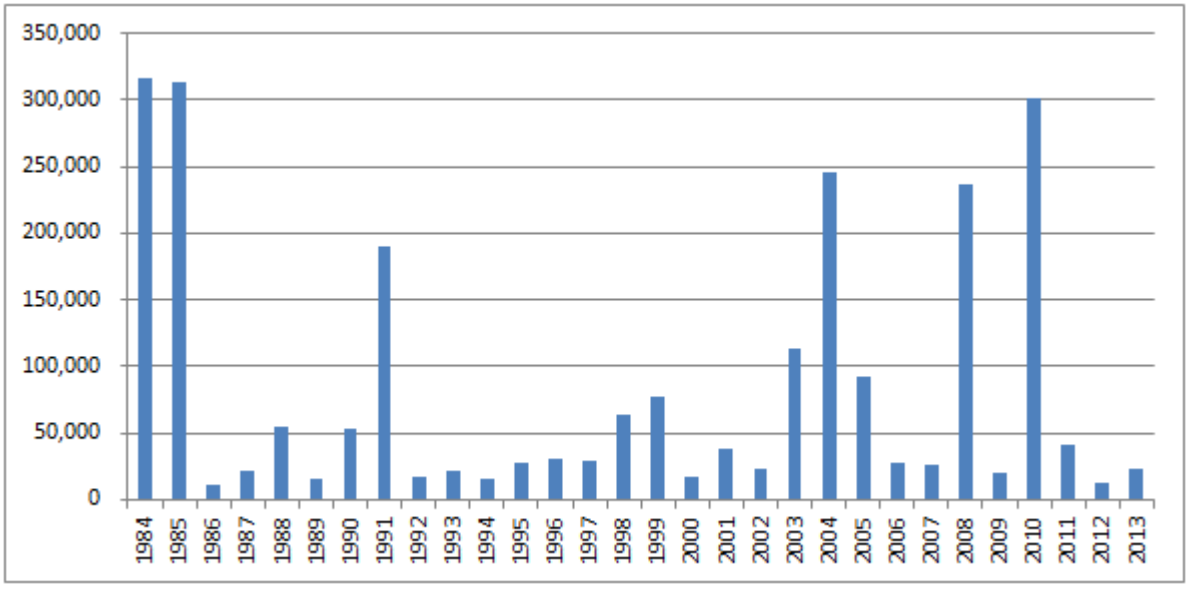


Figure 4-3: Number of People Killed, 1984-2013

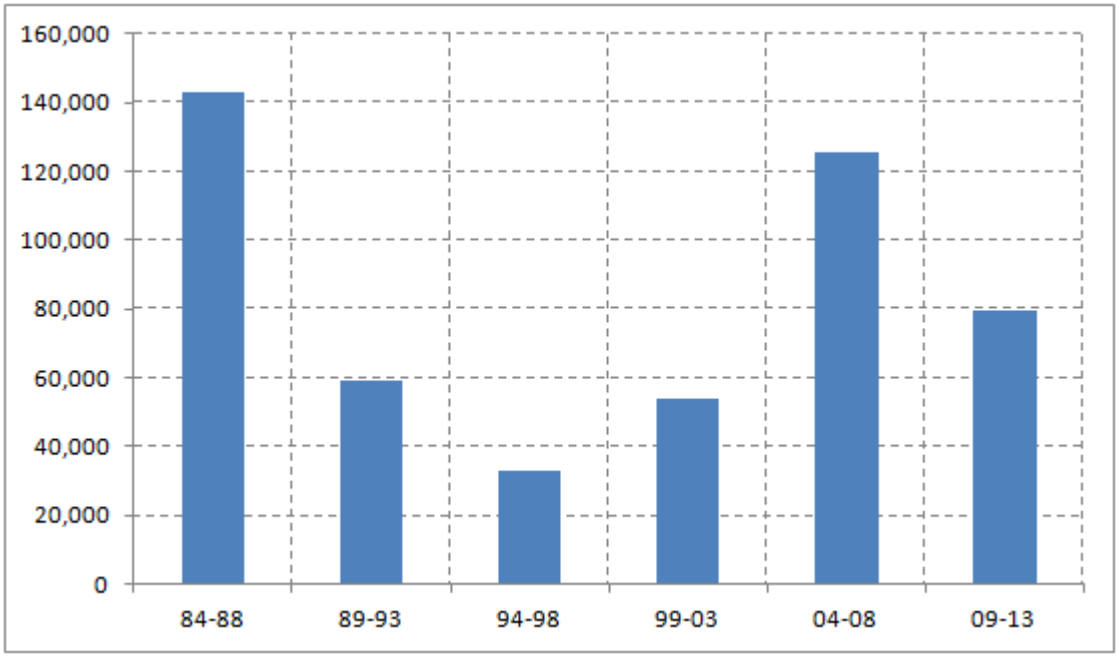


Figure 4-4: Number of People Killed (Average of 5-year period), 1984-2013

Source:
EM-DAT: The OFDA/CRED International Disaster Database – www.emdat.be,
Université Catholique de Louvain, Brussels (Belgium)

4-3 NUMBER OF PEOPLE AFFECTED IN THE WORLD (1984-2013)

In terms of number of affected people, 2013 sees lowest in the past 16 years. For the 5 year period average representation of data, the number of affected people in the last five-year slightly increases with nearly 180 million people affected.

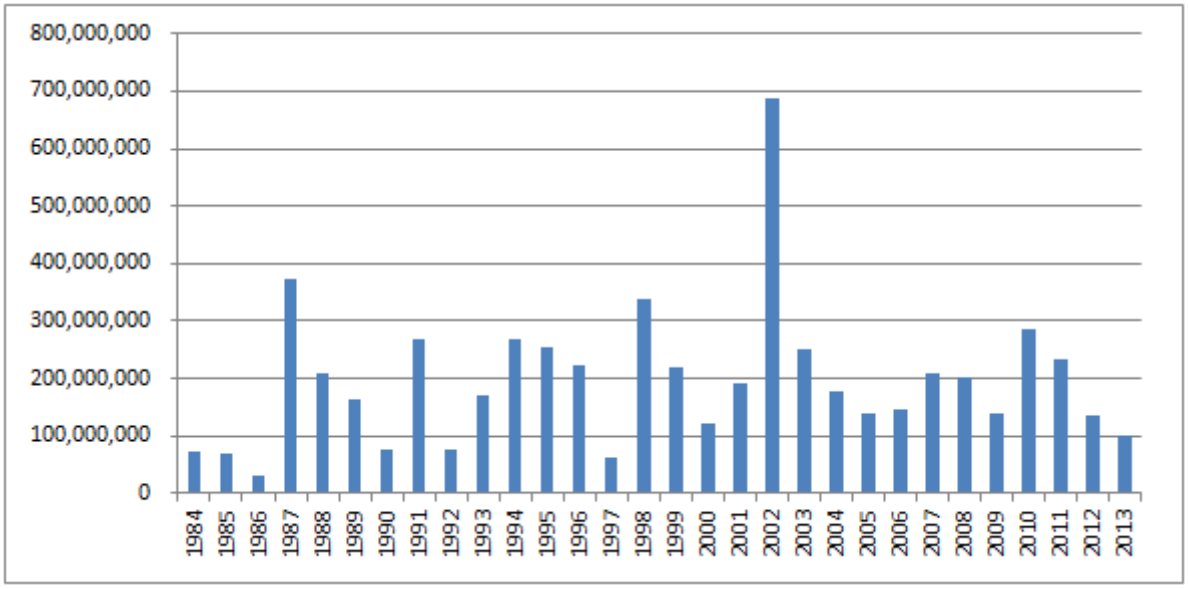


Figure 4-5: Total Number of Affected People, 1984-2013

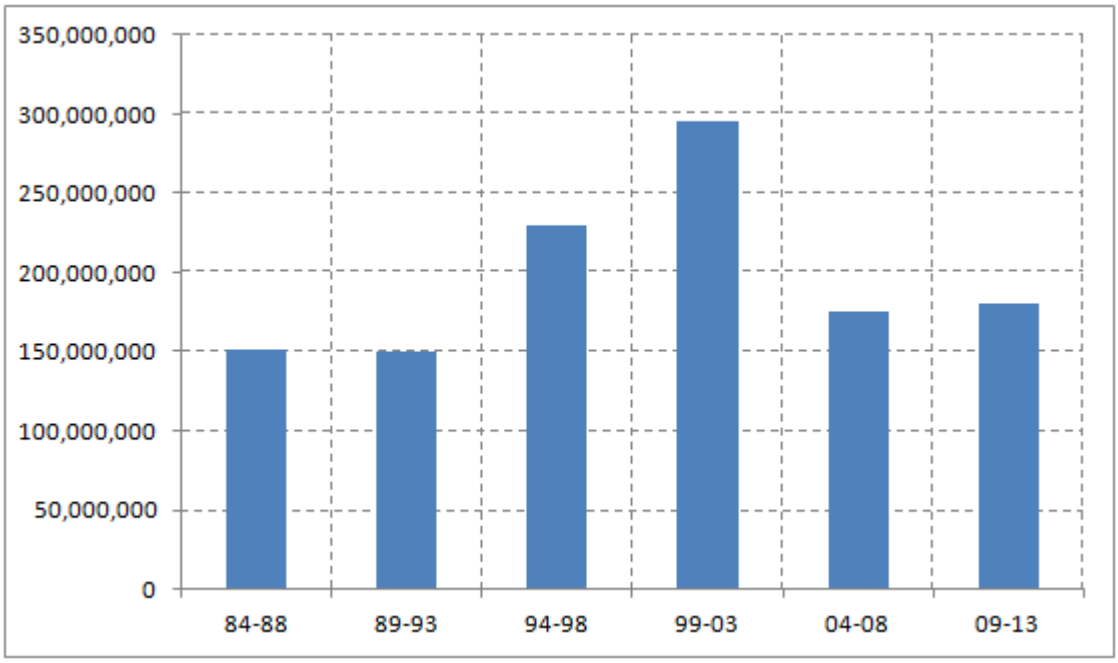


Figure 4-6: Number of Affected People (Average of 5 year period), 1984-2013

Source:
EM-DAT: The OFDA/CRED International Disaster Database – www.emdat.be,
Université catholique de Louvain, Brussels (Belgium)

4-4 ECONOMIC DAMAGE IN THE WORLD (1984-2013)

Economic damage caused by natural disasters in 2013 (approximately US$119 billion) shows sharp decline from the previous year but it still ranks rather high in the period 1984-2013. For the 5-year period average analysis, the 2009-2013 average has reached record high level, which is largely attributed to large-scale disasters that hit the Asia region.

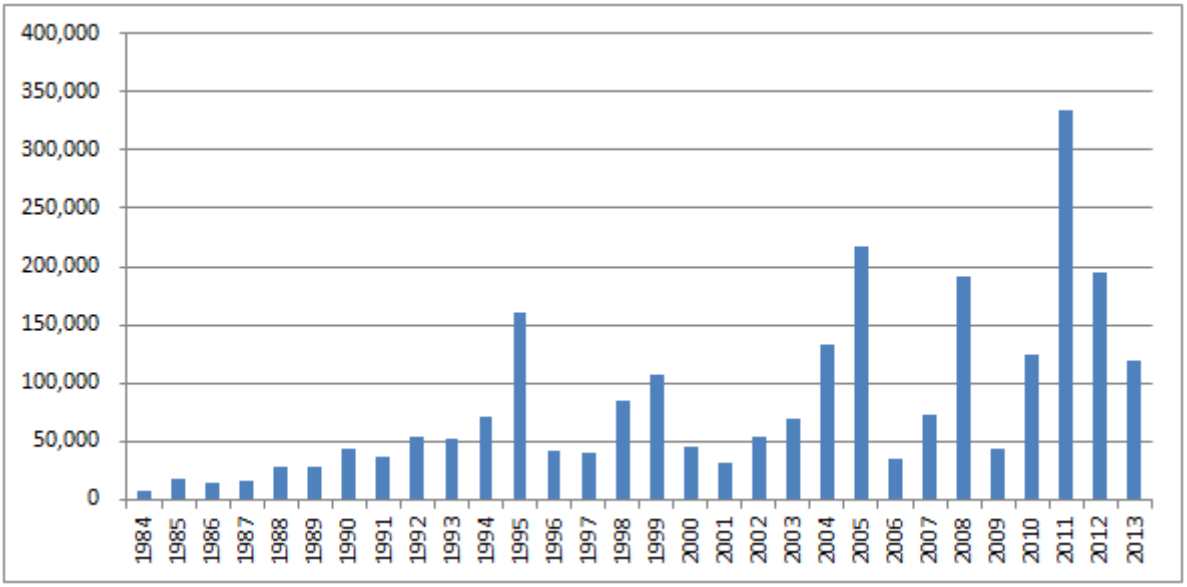


Figure 4-7: Amount of Damage, 1984-2013

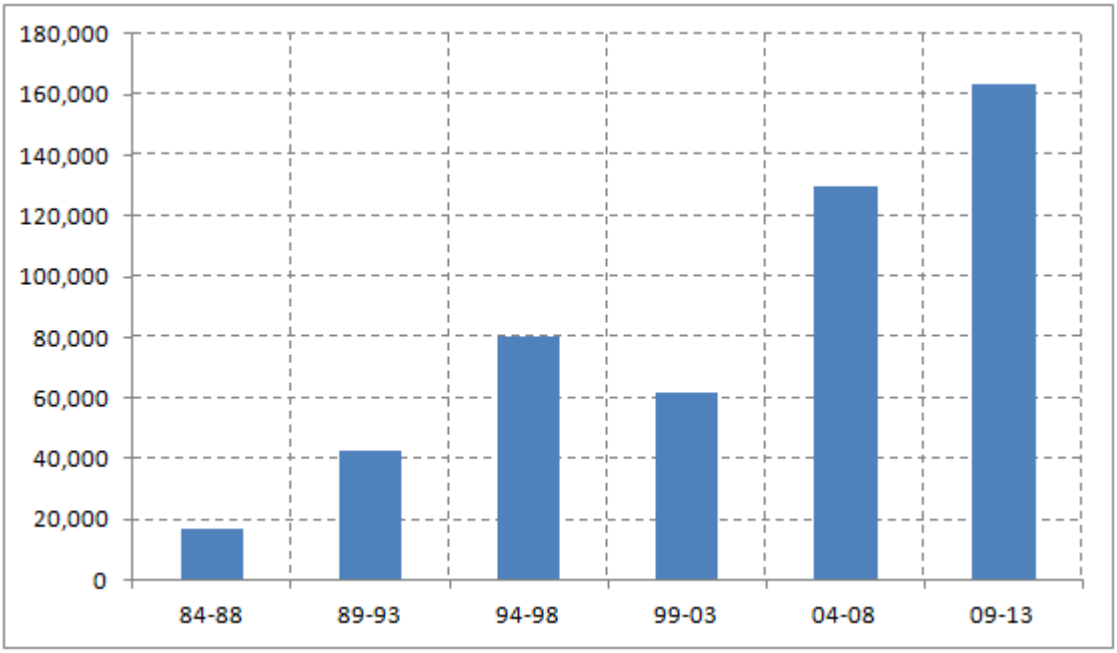


Figure 4-8: Economic Damage (Average of 5-year period), 1984-2013

Source:
EM-DAT: The OFDA/CRED International Disaster Database – www.emdat.be,
Université Catholique de Louvain, Brussels (Belgium)

5. IMPACTS OF WORLD NATURAL DISASTERS BY REGION, 1984-2013

For the period 1984-2013, Asia dominates and ranks first in all natural disaster's impact categories across regions of the world, especially in terms of the number of killed and affected.

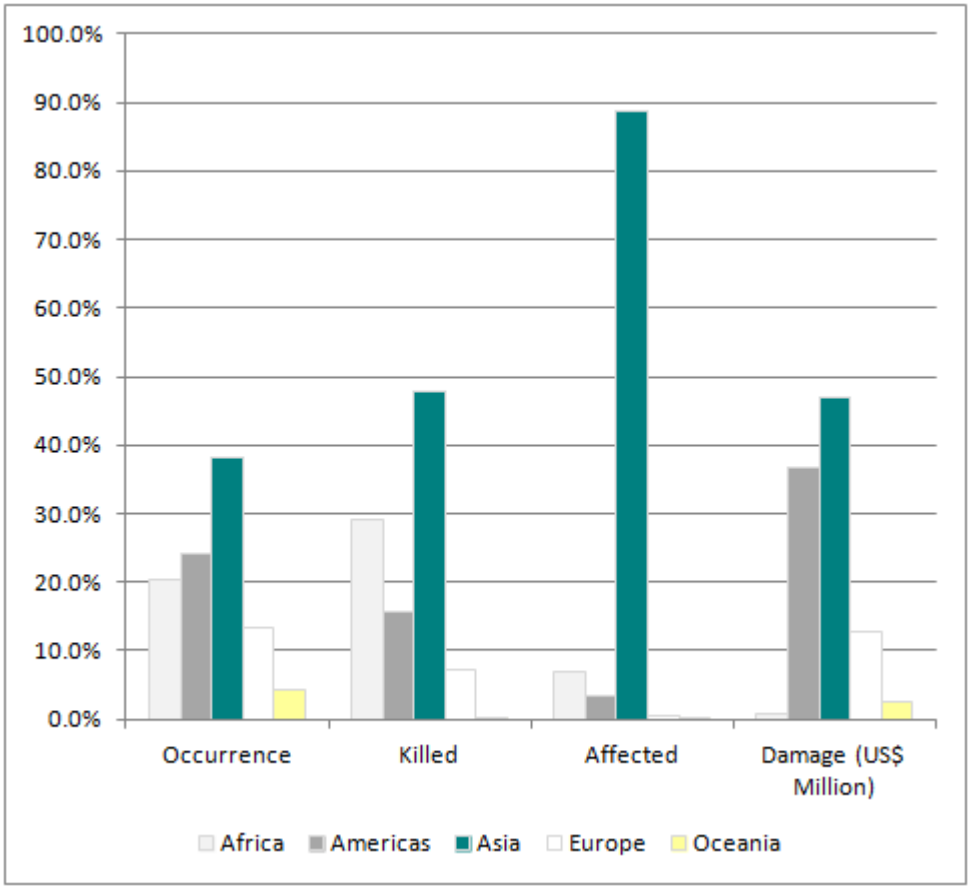


Figure 5: Impacts of World Natural Disasters by Region, 1984-2013

Table 5: Impacts of Natural Disasters by Region, 1984-2013

Region	*Impact*							
	Occurrence	(share in %)	Killed	(share in %)	Affected	(share in %)	Damage (US$ million)	(share in %)
Africa	2,099	(20.2%)	726,996	(29.3%)	423,894,194	(7.0%)	19,064	(0.8%)
Americas	2,495	(24.0%)	389,148	(15.7%)	204,811,734	(3.4%)	916,177	(36.8%)
Asia	3,952	(38.1%)	1,186,437	(47.7%)	5,396,306,705	(88.7%)	1,169,341	(47.0%)
Europe	1,398	(13.5%)	176,505	(7.1%)	35,344,415	(0.6%)	320,256	(12.9%)
Oceania	432	(4.2%)	5,753	(0.2%)	20,431,165	(0.3%)	64,662	(2.6%)
Total	10,376	(100.0%)	2,484,839	(100.0%)	6,080,788,213	(100.0%)	2,489,499	(100.0%)

Source:
EM-DAT: The OFDA/CRED International Disaster Database – www.emdat.be,
Université Catholique de Louvain, Brussels (Belgium)

6. THE 25 WORST DISASTERS IN ASIA 2013

6-1 THE 25 WORST DISASTERS IN ASIA BY NUMBER OF PEOPLE KILLED, 2013

The death toll by Typhoon Haiyan that hit the Philippines in November tops in Asia, and the world in 2013 followed by 6,054 by flood in India. There are 14 disaster events in Asia found in the list which claimed more than 100 lives. China and India occupy eight and seven ranks in the list respectively.

Table 6-1: The 25 Worst Disasters in Asia by Number of People Killed, 2013

	Disaster Type	Country	Date	Killed	Affected	Economic Damage (US$ Million)
1	Storm	Philippines	08/11/2013	7,986	16,106,807	10,000.00
2	Flood	India	12/06/2013	6,054	504,473	1,100.00
3	Extreme temperature	India	--/04/2013	557		
4	Earthquake	Pakistan	24/09/2013	399	185,749	100.00
5	Extreme temperature	Japan	--/05/2013	338	54,000	
6	Extreme temperature	India	22/12/2012	249		
7	Flood	Pakistan	07/08/2013	234	1,497,725	1,500.00
8	Flood	China P Rep	07/07/2013	233	3,500,000	4,621.60
9	Earthquake	Philippines	15/10/2013	230	3,222,224	51.46
10	Flood	Cambodia	24/09/2013	200	1,500,000	500.00
11	Earthquake	China P Rep	20/04/2013	198	2,198,785	6,800.00
12	Flood	India	09/07/2013	174	500,000	
13	Flood	Nepal	10/07/2013	119	4,320	
14	Flood	China P Rep	12/08/2013	118	1,075,000	4,960.00
15	Earthquake	China P Rep	22/07/2013	95	123,887	1,000.00
16	Storm	China P Rep	15/08/2013	88	8,000,000	2,120.00
17	Mass Movement	China P Rep	29/03/2013	83		
18	Flood	India	23/06/2013	80	2,000,000	
19	Epidemic	Lao P Dem Rep	--/01/2013	77	36,000	
20	Flood	Nepal	25/05/2013	76	12,503	
21	Storm	China P Rep	30/09/2013	74		
22	Flood	India	22/08/2013	73	40,000	
23	Extreme temperature	Bangladesh	--/12/2012	72	75,000	
24	Flood	India	21/10/2013	72	375,000	260.00
25	Flood	Thailand	30/09/2013	61	3,500,000	482.00

Source:
EM-DAT: The OFDA/CRED International Disaster Database – www.emdat.be,
Université Catholique de Louvain, Brussels (Belgium)

6-2 THE 25 WORST DISASTERS IN ASIA BY NUMBER OF PEOPLE KILLED PER MILLION POPULATION, 2013

Using the index of the ratio of the number of people killed to total country population, Typhoon Haiyan in the Philippines takes the first place with 82 persons killed per one million. By disaster type, floods have most shares in the 25 Worst Disasters in Asia by number of people killed per population in 2013 with 17 disaster events listed in the list.

Table 6-2: The 25 Worst Disasters in Asia by Number of People Killed per Million Population, 2013

	Disaster Type	Country	Date	Killed per million	Killed	Population*
1	Storm	Philippines	08/11/2013	82.58	7,986	96,706,764
2	Flood	Cambodia	24/09/2013	13.45	200	14,864,646
3	Epidemic	Lao P Dem Rep	--/01/2013	11.59	77	6,645,827
4	Flood	India	12/06/2013	4.90	6,054	1,236,686,732
5	Flood	Nepal	10/07/2013	4.33	119	27,474,377
6	Flood	Lao P Dem Rep	--/06/2013	3.01	20	6,645,827
7	Flood	Sri Lanka	08/06/2013	2.85	58	20,328,000
8	Flood	Nepal	25/05/2013	2.77	76	27,474,377
9	Extreme temperature	Japan	--/05/2013	2.65	338	127,561,489
10	Flood	Sri Lanka	08/01/2013	2.56	52	20,328,000
11	Earthquake	Philippines	15/10/2013	2.38	230	96,706,764
12	Earthquake	Pakistan	24/09/2013	2.23	399	179,160,111
13	Flood	Korea Dem P Rep	12/07/2013	2.06	51	24,763,188
14	Extreme temperature	Nepal	01/01/2013	1.78	49	27,474,377
15	Flood	Afghanistan	01/08/2013	1.74	52	29,824,536
16	Flood	Yemen	16/08/2013	1.68	40	23,852,409
17	Flood	Pakistan	07/08/2013	1.31	234	179,160,111
18	Flood	Palestine (West Bank)	08/01/2013	1.24	5	4,046,901
19	Flood	Afghanistan	10/08/2013	1.04	31	29,824,536
20	Flood	Thailand	30/09/2013	0.91	61	66,785,001
21	Flood	Saudi Arabia	02/05/2013	0.85	24	28,287,855
22	Mass Movement	Afghanistan	10/09/2013	0.80	24	29,824,536
23	Flood	Afghanistan	25/04/2013	0.67	20	29,824,536
24	Earthquake	Afghanistan	24/04/2013	0.60	18	29,824,536
25	Flood	Saudi Arabia	16/11/2013	0.53	15	28,287,855

Source:
EM-DAT: The OFDA/CRED International Disaster Database – www.emdat.be,
Université Catholique de Louvain, Brussels (Belgium)
**Data from World Bank 2012*

6-3 THE 25 WORST DISASTERS IN ASIA BY NUMBER OF PEOPLE AFFECTED, 2013

In terms of the number of people affected too, Typhoon Haiyan in the Philippines ranks first with over 16 million people affected. In 2013, 18 disaster events have more than one million affected people. By country, China consists of 9 ranks followed by 6 of the Philippines. By disaster type, flood and storm occupy as many as 13 and 8 ranks.

Table 6-3: The 25 Worst Disasters in Asia by Total Number of People Affected, 2013

	Disaster Type	Country	Date	Killed	Affected	Economic Damage (US$ Million)
1	Storm	Philippines	08/11/2013	7,986	16,106,807	10,000
2	Storm	India	12/10/2013	47	13,230,000	633
3	Storm	China P Rep	15/08/2013	88	8,000,000	2,120
4	Drought	China P Rep	--/01/2013		5,000,000	
5	Flood	Thailand	30/09/2013	61	3,500,000	482
6	Flood	China P Rep	07/07/2013	233	3,500,000	4,622
7	Earthquake	Philippines	15/10/2013	230	3,222,224	51
8	Flood	Philippines	13/08/2013	31	3,096,422	2,190
9	Earthquake	China P Rep	20/04/2013	198	2,198,785	6,800
10	Flood	Viet Nam	14/11/2013	47	2,130,001	72
11	Storm	Israel	02/12/2013	4	2,003,000	
12	Flood	India	23/06/2013	80	2,000,000	
13	Storm	Viet Nam	30/09/2013	16	1,840,349	734
14	Flood	Cambodia	24/09/2013	200	1,500,000	500
15	Storm	Bangladesh	16/05/2013	17	1,498,644	
16	Flood	Pakistan	07/08/2013	234	1,497,725	1,500
17	Storm	China P Rep	18/03/2013	25	1,398,324	259
18	Flood	China P Rep	12/08/2013	118	1,075,000	4,960
19	Storm	Philippines	12/10/2013	20	871,755	97
20	Flood	Korea Dem P Rep	12/07/2013	51	848,690	
21	Flood	China P Rep	21/07/2013	36	718,500	1,400
22	Flood	China P Rep	29/06/2013	55	625,000	1,400
23	Flood	Philippines	23/09/2013	33	588,155	4
24	Earthquake	China P Rep	31/08/2013	3	538,050	155
25	Flood	Philippines	15/01/2013	10	507,769	3

Source:
EM-DAT: The OFDA/CRED International Disaster Database – www.emdat.be,
Université Catholique de Louvain, Brussels (Belgium)

6-4 THE 25 WORST DISASTERS IN ASIA BY AFFECTED PEOPLE PER THOUSAND POPULATION, 2013

Using the index of affected people per thousand population, storm in Israel in December results in 253 affected person per thousand population followed by 166 of the Philippines' Typhoon Haiyan. Among top 25 countries, Flood and storm disasters occupy 11 and 10 ranks in the list respectively.

Table 6-4: The 25 Worst Disasters in Asia by Total Number of People Affected per Thousand Population, 2013

	Disaster Type	Country	Date	Affected per thousand	Affected	Population
1	Storm	Israel	02/12/2013	253.21	2,003,000	7,910,500
2	Storm	Philippines	08/11/2013	166.55	16,106,807	96,706,764
3	Flood	Cambodia	24/09/2013	100.91	1,500,000	14,864,646
4	Flood	Lao P Dem Rep	--/06/2013	52.68	350,077	6,645,827
5	Flood	Thailand	30/09/2013	52.41	3,500,000	66,785,001
6	Flood	Korea Dem P Rep	12/07/2013	34.27	848,690	24,763,188
7	Flood	Lao P Dem Rep	16/09/2013	33.73	224,176	6,645,827
8	Earthquake	Philippines	15/10/2013	33.32	3,222,224	96,706,764
9	Flood	Philippines	13/08/2013	32.02	3,096,422	96,706,764
10	Flood	Viet Nam	14/11/2013	23.99	2,130,001	88,772,900
11	Storm	Armenia	12/05/2013	21.56	64,000	2,969,081
12	Storm	Viet Nam	30/09/2013	20.73	1,840,349	88,772,900
13	Storm	India	12/10/2013	10.70	13,230,000	1,236,686,732
14	Storm	Bangladesh	16/05/2013	9.69	1,498,644	154,695,368
15	Storm	Philippines	12/10/2013	9.01	871,755	96,706,764
16	Flood	Pakistan	07/08/2013	8.36	1,497,725	179,160,111
17	Flood	Philippines	23/09/2013	6.08	588,155	96,706,764
18	Storm	China P Rep	15/08/2013	5.92	8,000,000	1,350,695,000
19	Epidemic	Lao P Dem Rep	--/01/2013	5.42	36,000	6,645,827
20	Flood	Georgia	19/07/2013	5.34	24,000	4,490,700
21	Flood	Philippines	15/01/2013	5.25	507,769	96,706,764
22	Storm	Palestine (West Bank)	10/12/2013	4.97	20,100	4,046,901
23	Storm	Philippines	12/08/2013	4.09	395,730	96,706,764
24	Extreme temperature	Armenia	--/12/2013	4.04	12,000	2,969,081
25	Drought	China P Rep	--/01/2013	3.70	5,000,000	1,350,695,000

Source:
EM-DAT: The OFDA/CRED International Disaster Database – www.emdat.be,
Université Catholique de Louvain, Brussels (Belgium)
**Data from World Bank 2012*

6-5 THE 25 WORST DISASTERS IN ASIA BY ECONOMIC DAMAGE, 2013

According to the EM-DAT database, flood, storm and earthquake are the three disaster types that occupy 25 ranks of the worst economic damage in Asia in 2013, by 15, 7 and 3 ranks respectively. Typhoon Haiyan in the Philippines tops at 10 billion USD. By country, China has 14 disaster events that are ranked in the worst 25 disasters in Asia by economic damage.

Table 6-5: The 25 Worst Disasters in Asia by Economic Damage, 2013

	Disaster Type	Country	Date	Killed	Affected	Economic Damage (US$ Million)
1	Storm	Philippines	08/11/2013	7,986	16,106,807	10,000
2	Earthquake	China P Rep	20/04/2013	198	2,198,785	6,800
3	Storm	China P Rep	07/10/2013	8	475,000	6,700
4	Flood	China P Rep	12/08/2013	118	1,075,000	4,960
5	Flood	China P Rep	07/07/2013	233	3,500,000	4,622
6	Flood	Indonesia	17/01/2013	34	248,846	3,000
7	Flood	Philippines	13/08/2013	31	3,096,422	2,190
8	Storm	China P Rep	15/08/2013	88	8,000,000	2,120
9	Flood	Pakistan	07/08/2013	234	1,497,725	1,500
10	Flood	China P Rep	21/07/2013	36	718,500	1,400
11	Flood	China P Rep	29/06/2013	55	625,000	1,400
12	Flood	India	12/06/2013	6,054	504,473	1,100
13	Earthquake	China P Rep	22/07/2013	95	123,887	1,000
14	Storm	Viet Nam	30/09/2013	16	1,840,349	734
15	Storm	Viet Nam	11/11/2013	16	13,094	734
16	Flood	China P Rep	12/05/2013	55	300,000	661
17	Storm	India	12/10/2013	47	13,230,000	633
18	Earthquake	Iran Islam Rep	09/04/2013	37	4,350	600
19	Flood	China P Rep	25/07/2013	10	125,000	571
20	Flood	China P Rep	14/06/2013	11	280,500	555
21	Flood	Cambodia	24/09/2013	200	1,500,000	500
22	Flood	Thailand	30/09/2013	61	3,500,000	482
23	Storm	China P Rep	14/07/2013	9	390,150	460
24	Flood	China P Rep	18/08/2013	43	255,000	457
25	Flood	China P Rep	19/05/2013	12	100,000	445

Source:
EM-DAT: The OFDA/CRED International Disaster Database – www.emdat.be,
Université Catholique de Louvain, Brussels (Belgium)

6-6 THE 25 WORST DISASTERS IN ASIA BY RATIO OF ECONOMIC DAMAGE TO GDP, 2013

In terms of economic damage incurred relative to gross domestic product (GDP), the two disasters, Typhoon Haiyan in the Philippines and flood in Cambodia result in highest damage with 3.997 percent and 3.562 percent of its GDP while the remaining figures are below one percent. Eleven countries and regions are listed in highest ratios of economic damages to their economies.

Table 6-6: The 25 Worst Disasters in Asia by Ratio of Economic Damage to GDP, 2013

	Disaster Type	Country	Date	Economic Damage (as per cent)	Economic Damage (US$ Million)	GDP* (US$ Million)
1	Storm	Philippines	08/11/2013	3.9971%	10,000	250,182
2	Flood	Cambodia	24/09/2013	3.5617%	500	14,038
3	Flood	Philippines	13/08/2013	0.8754%	2,190	250,182
4	Flood	Pakistan	07/08/2013	0.6662%	1,500	225,143
5	Flood	Lao P Dem Rep	16/09/2013	0.6477%	61	9,418
6	Flood	Lao P Dem Rep	--/06/2013	0.6371%	60	9,418
7	Storm	Armenia	12/05/2013	0.6030%	60	9,951
8	Storm	Viet Nam	30/09/2013	0.4712%	734	155,820
9	Storm	Viet Nam	11/11/2013	0.4711%	734	155,820
10	Flood	Indonesia	17/01/2013	0.3417%	3,000	878,043
11	Flood	Thailand	30/09/2013	0.1317%	482	365,966
12	Earthquake	Iran Islam Rep	09/04/2013	0.1086%	600	552,397
13	Earthquake	China P Rep	20/04/2013	0.0827%	6,800	8,227,103
14	Storm	China P Rep	07/10/2013	0.0814%	6,700	8,227,103
15	Flood	China P Rep	12/08/2013	0.0603%	4,960	8,227,103
16	Flood	India	12/06/2013	0.0592%	1,100	1,858,740
17	Flood	China P Rep	07/07/2013	0.0562%	4,622	8,227,103
18	Storm	Viet Nam	10/10/2013	0.0488%	76	155,820
19	Flood	Viet Nam	14/11/2013	0.0462%	72	155,820
20	Earthquake	Pakistan	24/09/2013	0.0444%	100	225,143
21	Storm	Philippines	12/10/2013	0.0387%	97	250,182
22	Storm	India	12/10/2013	0.0341%	633	1,858,740
23	Flood	Thailand	25/07/2013	0.0265%	97	365,966
24	Storm	China P Rep	15/08/2013	0.0258%	2,120	8,227,103
25	Earthquake	Philippines	15/10/2013	0.0206%	51	250,182

Source:
EM-DAT: The OFDA/CRED International Disaster Database – www.emdat.be,
Université Catholique de Louvain, Brussels (Belgium)
**Data from World Bank 2012*

7. DISASTERS IN ASIA BY COUNTRY, 2013

Country	Disaster Type	Occurrence	Killed	Affected	Damage (US$ Million)
Afghanistan	Earthquake	1	18	3,531	
	Flood	4	113	17,097	
	Mass Movement	1	24	1,000	
Armenia	Extreme temperature	1		12,000	
	Storm	1		64,000	60
Bangladesh	Extreme temperature	1	72	75,000	
	Storm	3	50	1,532,207	20
Cambodia	Flood	1	200	1,500,000	500
China P Rep	Drought	1		5,000,000	
	Earthquake	7	296	3,439,262	8,017
	Extreme temperature	1	40		
	Flood	14	637	7,684,030	16,599
	Mass Movement	4	157	4	8
	Storm	15	265	11,345,574	10,787
Georgia	Flood	2		25,000	
	Storm	1		1,750	
India	Earthquake	1	3	59,350	120
	Extreme temperature	2	806		
	Flood	5	6,453	3,419,473	1,360
	Storm	5	106	13,230,004	895
Indonesia	Earthquake	3	50	59,188	130
	Flood	10	89	591,276	3,000
	Mass Movement	2	34		
	Volcano	2		42,027	
Iran Islam Rep	Earthquake	3	45	5,997	600
Iraq	Flood	1	11		
Israel	Storm	1	4	2,003,000	
Japan	Earthquake	1		8,438	
	Extreme temperature	1	338	54,000	
	Flood	1	5	3,633	
	Storm	7	57	61,089	14
Kazakhstan	Extreme temperature	1		5,000	
Korea Dem P Rep	Flood	1	51	848,690	
Lao P Dem Rep	Epidemic	1	77	36,000	
	Flood	2	23	574,253	121
Malaysia	Flood	1	4	75,000	
Myanmar	Flood	1	7	73,300	
	Mass Movement	1	16		
Nepal	Extreme temperature	1	49		
	Flood	2	195	16,823	
Pakistan	Earthquake	3	462	200,974	100
	Flood	2	268	1,497,782	1,500
Palestine (West Bank)	Flood	1	5	12,500	
	Storm	1	1	20,100	

Country	Disaster Type	Occurrence	Killed	Affected	Damage (US$ Million)
Philippines	Earthquake	1	230	3,222,224	51
	Flood	5	105	4,500,338	2,235
	Storm	8	8,047	17,944,508	10,137
Saudi Arabia	Flood	2	39	1,021	
Sri Lanka	Flood	2	110	73,961	
	Storm	1	7	7,339	
Taiwan (China)	Earthquake	2	5	1,616	2
	Storm	3	5	54	62
Tajikistan	Extreme temperature	1		2,500	
Thailand	Flood	3	84	3,515,254	579
Turkey	Mass Movement	1	7		
Viet Nam	Flood	6	141	2,161,001	79
	Storm	4	59	1,968,208	1,545
Yemen	Flood	1	40	49,092	
Total		161	19,910	87,045,468	58,521

Source:
EM-DAT: The OFDA/CRED International Disaster Database – www.emdat.be,
Université Catholique de Louvain, Brussels (Belgium)

In 2013, China accounts for 42 occurrences, 26 percent of the total number of disasters that hit Asia, followed by Indonesia' 17 events, 11 percent.

The Philippines has the largest number of people killed, 8,382, equivalent to 42 percent in Asia, due mainly to storms, an earthquake and floods.

With regards to number of people affected, China ranks first with more than 27.5 million people, 32 percent, followed by Philippines 25.7 million, 29 percent.

Similarly, economic damage is made up of China 35.4 billion USD, 61 percent and the Philippines 12.4 billion USD, 21 percent.

8. DISASTERS IN ASIA BY DISASTER TYPE, 2013

Disaster Type	Country	Occurrence	Killed	Affected	Damage (US$ Million)
Drought	China P Rep	1		5000000	
Earthquake	Afghanistan	1	18	3531	
	China P Rep	7	296	3439262	8017.3
	India	1	3	59350	120
	Indonesia	3	50	59188	130
	Iran Islam Rep	3	45	5997	600
	Japan	1		8438	
	Pakistan	3	462	200974	100
	Philippines	1	230	3222224	51.459
	Taiwan (China)	2	5	1616	2.1
	Epidemic				
	Lao P Dem Rep	1	77	36000	
Extreme temperature	Armenia	1		12000	
	Bangladesh	1	72	75000	
	China P Rep	1	40		
	India	2	806		
	Japan	1	338	54000	
	Kazakhstan	1		5000	
	Nepal	1	49		
	Tajikistan	1		2500	
Flood	Afghanistan	4	113	17097	
	Cambodia	1	200	1500000	500
	China P Rep	14	637	7684030	16598.6
	Georgia	2		25000	
	India	5	6453	3419473	1360
	Indonesia	10	89	591276	3000
	Iraq	1	11		
	Japan	1	5	3633	
	Korea Dem P Rep	1	51	848690	
	Lao P Dem Rep	2	23	574253	121
	Malaysia	1	4	75000	
	Myanmar	1	7	73300	
	Nepal	2	195	16823	
	Pakistan	2	268	1497782	1500
	Palestine (West Bank)	1	5	12500	
	Philippines	5	105	4500338	2234.788
	Saudi Arabia	2	39	1021	
	Sri Lanka	2	110	73961	
	Thailand	3	84	3515254	579
	Viet Nam	6	141	2161001	78.5
	Yemen	1	40	49092	

Disaster Type	Country	Occurrence	Killed	Affected	Damage (US$ Million)
Mass Movement	Afghanistan	1	24	1000	
	China P Rep	4	157	4	8
	Indonesia	2	34		
	Myanmar	1	16		
	Turkey	1	7		
Storm	Armenia	1		64000	60
	Bangladesh	3	50	1532207	20
	China P Rep	15	265	11345574	10787
	Georgia	1		1750	
	India	5	106	13230004	895.471
	Israel	1	4	2003000	
	Japan	7	57	61089	14.2
	Palestine (West Bank)	1	1	20100	
	Philippines	8	8047	17944508	10136.563
	Sri Lanka	1	7	7339	
	Taiwan (China)	3	5	54	61.6
	Viet Nam	4	59	1968208	1545.23
Volcano	Indonesia	2		42027	
Total		161	19910	87045468	58520.811

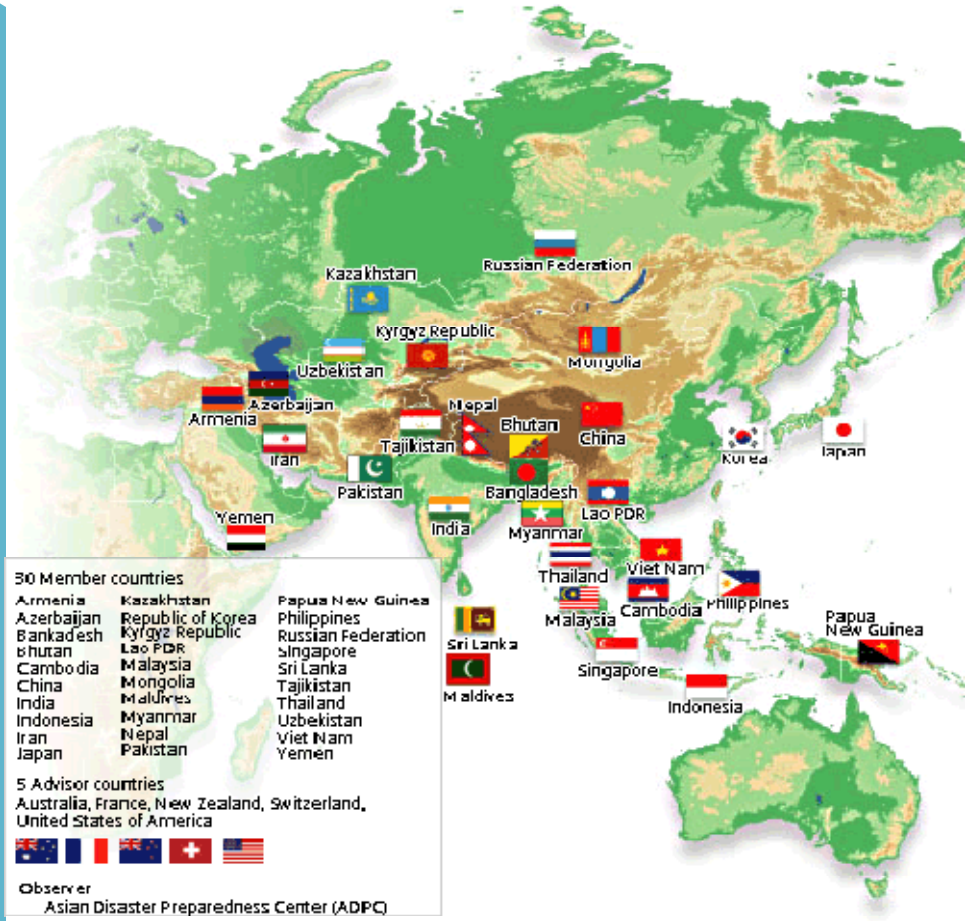
Source:
EM-DAT: The OFDA/CRED International Disaster Database – www.emdat.be,
Université Catholique de Louvain, Brussels (Belgium)

This table shows disasters in Asia in 2013 by disaster type.

Flood and storm make up for the largest shares in all indices of occurrence, the number of people killed, the number of people affected and economic damage.

While flood tops in occurrence at 67, which is equivalent to 42 percent and in economic damage by 26 billion USD, 44 percent, storm outnumbers it in the number of people killed as 8,580, 43 percent and in the number of people affected, 48 million as 55 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