

Natural Disaster Data Book 2011 (An Analytical Overview)



Overview

The Asian Disaster Reduction Center (ADRC) Natural Disasters Data Book 2011 provides the statistical perspectives in figures and tables for 2011 as well as for the period 1975-2011 based on data obtained by EM-DAT.

According to EM-DAT, 196 natural disasters occurred in 2011 worldwide, killing about 28,800 people and affecting over 85 million people. The estimated amount of economic damage came close to US\$290 billion.

The year 2011 sees two large-scale disasters in Asia; the Great East Japan Earthquake and subsequent tsunami in Japan and flood in Thailand, which claimed 20,319* and 813 lives, affected over 400,000 and 9,500,000 people while bringing about economic damage worth US\$210 billion and US\$40 billion respectively.

By region, Asia is the highest in the indices of disaster occurrences and number of people affected, and economic damage. Asia accounts for 44.4 percent, occurrences; number of people killed, 82.0 percent; number of affected people, 94.0 percent; and amount of economic damage, 88.7 percent.

Worldwide disaster trends in composition of indices and top shares of impacts vary by disaster type. For instance, flood made up the largest share of 41.8 percent of all disaster occurrences; earthquake, 71.9 percent of number of people killed; flood, 56.7 percent of affected people; and earthquake, 75.9 percent of total amount of economic damage. This trend is largely attributed to the earthquake and tsunami in Japan and flood in Thailand.

The indices show a similar trend within Asia in 2011, and to the past trend except for 2010 in the world in the long term. In all categories, hydro meteorological disasters such as flood, storm, and drought make up a substantial portion of the total occurrences and number of affected people. On the other hand, earthquake and storm bring about largest shares in number of people killed and economic damage.

Data Book 2011 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 2011 disasters in ADRC member and other Asian countries sorted by country and disaster type.

*18,812 as of 26 June 2012 by the Government of Japan
(http://www.adrc.asia/nationframe.php?URL=../view_disaster_en.php?NationCode=&lang=en&KEY=1497)

[Notes]

Source:

All the 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 12 April 2012, 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.

Data:

“Affected people” in this Data Book 2011 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.

To access the ADRC Natural Disaster Data Book 2011 online,
log onto: <http://www.adrc.asia/publications/databook/DB2011.html>

For inquiries, please contact rep@adrc.asia.

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◇Photographed in Sendai, Japan by Mr. Yasuo Kawawaki

1. IMPACTS OF NATURAL DISASTERS BY REGION, 2011

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 2011. As shown in Figure 1, Asia ranks first in all categories among regions. The shares of Africa and Americas are more than 20 percent in occurrences while those of Asia in number of killed, affected and damage exceed over 80 percent. Most in number of killed and damage are attributed to two catastrophic disasters of the year, the Great East Japan Earthquake and flood in Thailand. Regarding number of the killed, affected and damage, the disaster in Japan accounts for 70.5 percent, 0.5 percent and 72.5 percent of the world while that of Thailand 2.8 percent, 11.1 percent and 13.8 percent respectively. On the other hand, as the sum of the two disasters amount to only 11.6 percent in the affected people, the remaining share of more than 80 percent originates from other countries in Asia.

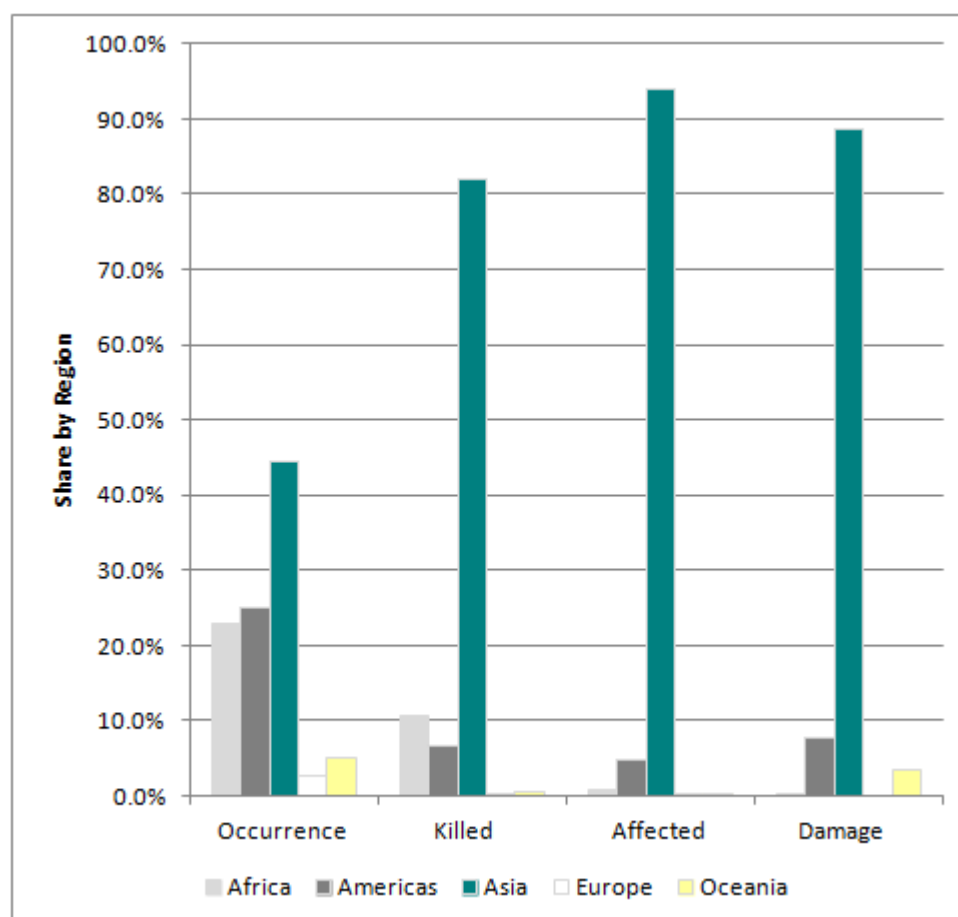


Figure 1: Impacts of Natural Disasters by Region, 2011

Table 1: Impacts of Natural Disasters by Region, 2011

Region	Impact			
	Occurrence (share in %)	Killed (share in %)	Affected (share in %)	Damage (share in %)
Africa	45 (23.0%)	3,104 (10.8%)	740,708 (0.9%)	803 (0.3%)
Americas	49 (25.0%)	1,883 (6.5%)	4,031,124 (4.7%)	22,000 (7.6%)
Asia	87 (44.4%)	23,646 (82.0%)	80,195,914 (94.0%)	256,882 (88.7%)
Europe	5 (2.6%)	22 (0.1%)	25,019 (0.0%)	0 (0.0%)
Oceania	10 (5.1%)	181 (0.6%)	309,362 (0.4%)	10,003 (3.5%)
Total	196 (100.0%)	28,836 (100.0%)	85,302,127 (100.0%)	289,688 (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, 2011

This section provides the breakdown of impacts of disasters sorted by disaster type. As Figure 2 shows, while flood and storm are dominant in the categories of disaster occurrences and number of the affected, earthquake outnumbers other disaster types in number of the killed and economic damage, both amounting to more than 70 percent of all types.

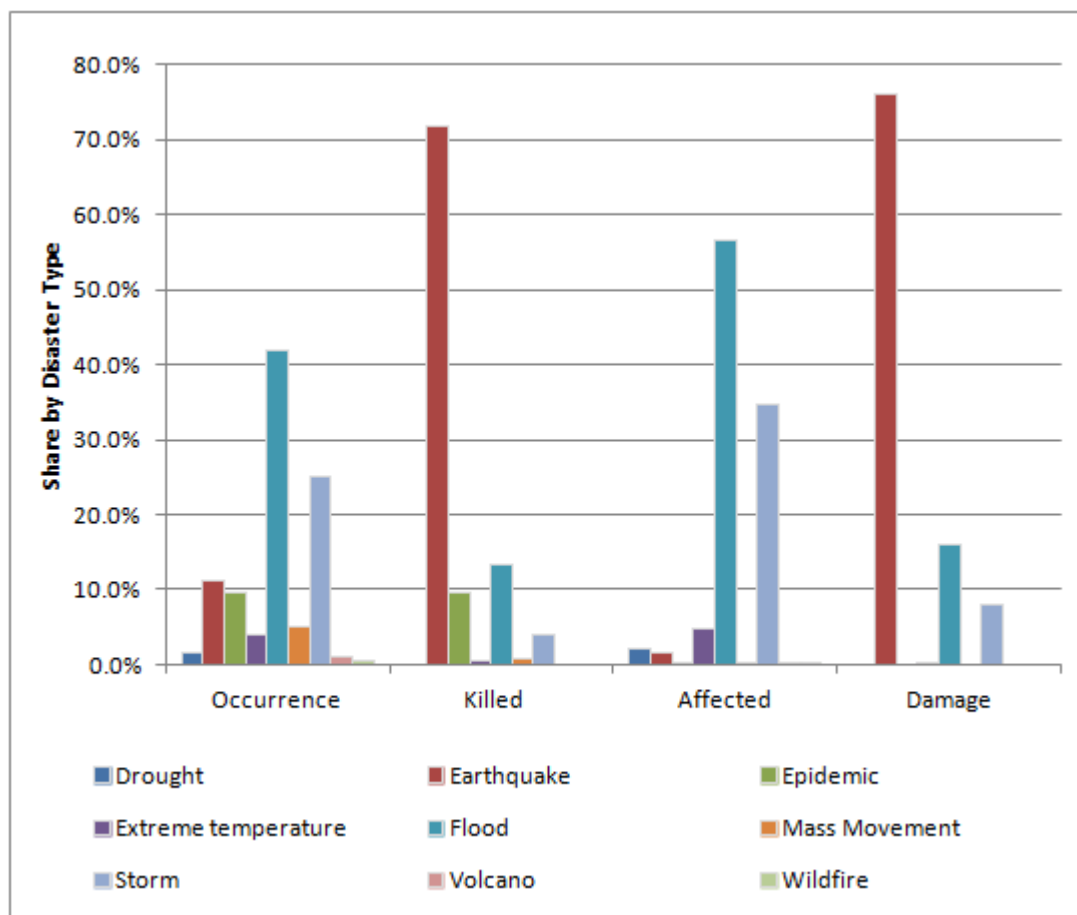


Figure 2: Impacts of Natural Disasters by Disaster Type, 2011

Table 2: Impacts of Natural Disasters by Disaster Type, 2011

Disaster Type	Impact			
	Occurrence (share in %)	Killed (share in %)	Affected (share in %)	Damage (share in %)
Drought	3 (1.5%)	0 (0.0%)	1,750,000 (2.1%)	0 (0.0%)
Earthquake	22 (11.2%)	20,740 (71.9%)	1,372,106 (1.6%)	220,004 (75.9%)
Epidemic	19 (9.7%)	2,786 (9.7%)	114,609 (0.1%)	0 (0.0%)
Extreme Temperature	8 (4.1%)	163 (0.6%)	4,058,875 (4.8%)	205 (0.1%)
Flood	82 (41.8%)	3,815 (13.2%)	48,375,993 (56.7%)	46,322 (16.0%)
Mass Movement	10 (5.1%)	189 (0.7%)	6,477 (0.0%)	0 (0.0%)
Storm	49 (25.0%)	1,143 (4.0%)	29,587,551 (34.7%)	23,158 (8.0%)
Volcano	2 (1.0%)	0 (0.0%)	36,116 (0.0%)	0 (0.0%)
Wildfire	1 (0.5%)	0 (0.0%)	400 (0.0%)	0 (0.0%)
Total	196 (100.0%)	28,836 (100.0%)	85,302,127 (100.0%)	289,688 (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, 2011

This section provides the overview of impacts of disasters sorted by disaster type in Asia. Figure 3 shows a similar pattern to Figure 2. However, there is no record of wildfire in Asia in 2011.

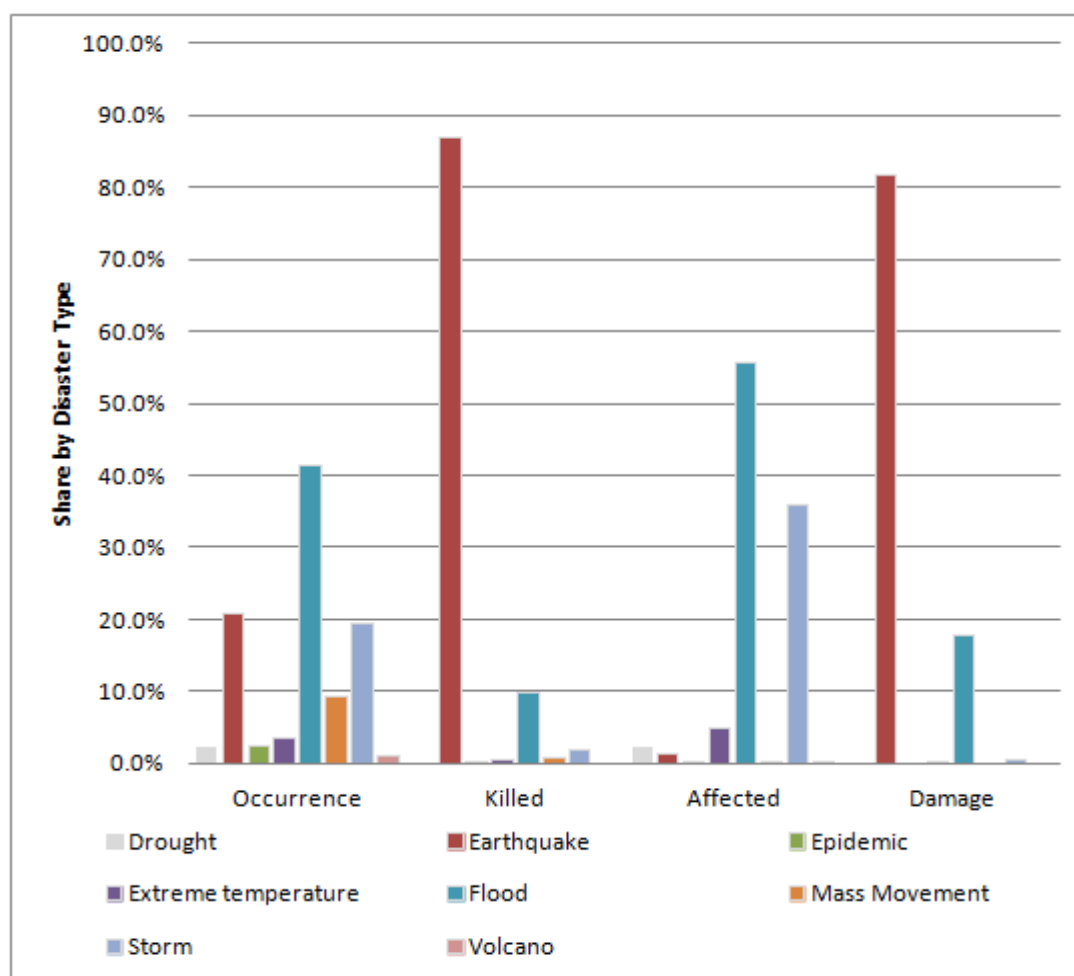


Figure 3: Impacts of Natural Disasters by Disaster Type in Asia, 2011

Table 3: Impacts of Natural Disasters by Disaster Type in Asia, 2011

Disaster Type	Impact							
	Occurrence (share in %)		Killed (share in %)		Affected (share in %)		Damage (share in %)	
Drought	2	(2.3%)	0	(0.0%)	1,750,000	(2.2%)	0	(0.0%)
Earthquake	18	(20.7%)	20,548	(86.9%)	1,054,731	(1.3%)	210,004	(81.8%)
Epidemic	2	(2.3%)	7	(0.0%)	1,543	(0.0%)	0	(0.0%)
Extreme Temperature	3	(3.4%)	131	(0.6%)	3,900,000	(4.9%)	205	(0.1%)
Flood	36	(41.4%)	2,341	(9.9%)	44,578,324	(55.6%)	45,519	(17.7%)
Mass Movement	8	(9.2%)	182	(0.8%)	2,327	(0.0%)	0	(0.0%)
Storm	17	(19.5%)	437	(1.8%)	28,876,373	(36.0%)	1,155	(0.4%)
Volcano	1	(1.1%)	0	(0.0%)	32,616	(0.0%)	0	(0.0%)
Wildfire	0	(0.0%)	0	(0.0%)	0	(0.0%)	0	(0.0%)
Total	87	(100.0%)	23,646	(100.0%)	80,195,914	(100.0%)	256,882	(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, 1975-2011

4-1 NUMBER OF DISASTERS IN THE WORLD (1975-2011)

In terms of number of disasters, the year 2011 sees sharp decline, less than half of the average of last decade. In the long run, the upward shift of disaster occurrence's trend continues from the late 1970s through early 2000s, which is clearly depicted in the collective 5-year period representation of data in Figure 4-2.

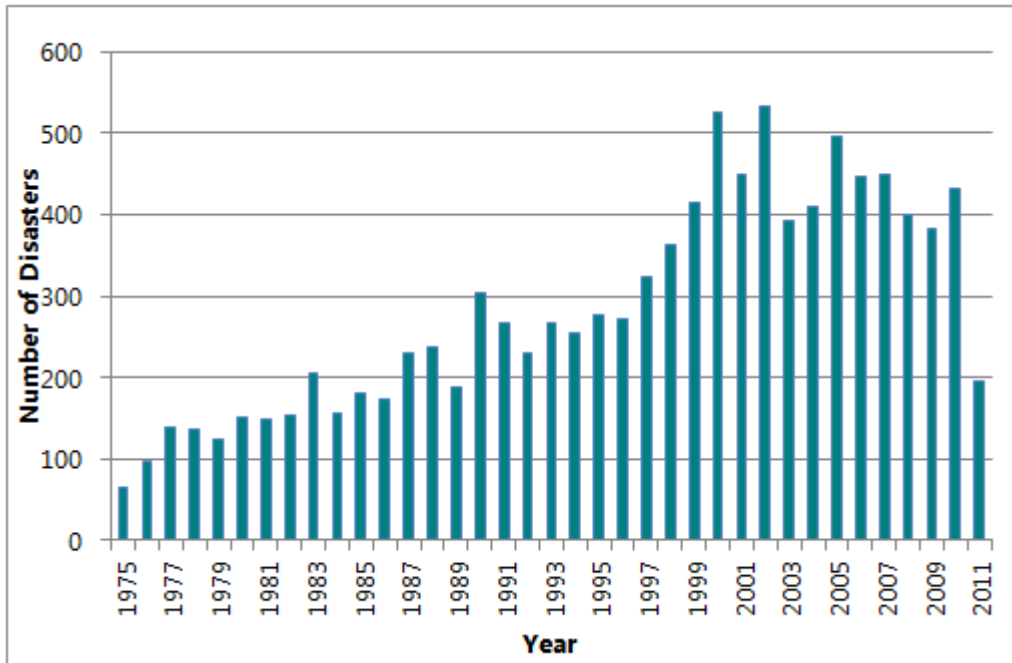


Figure 4-1: Disaster Occurrence, 1975-2011

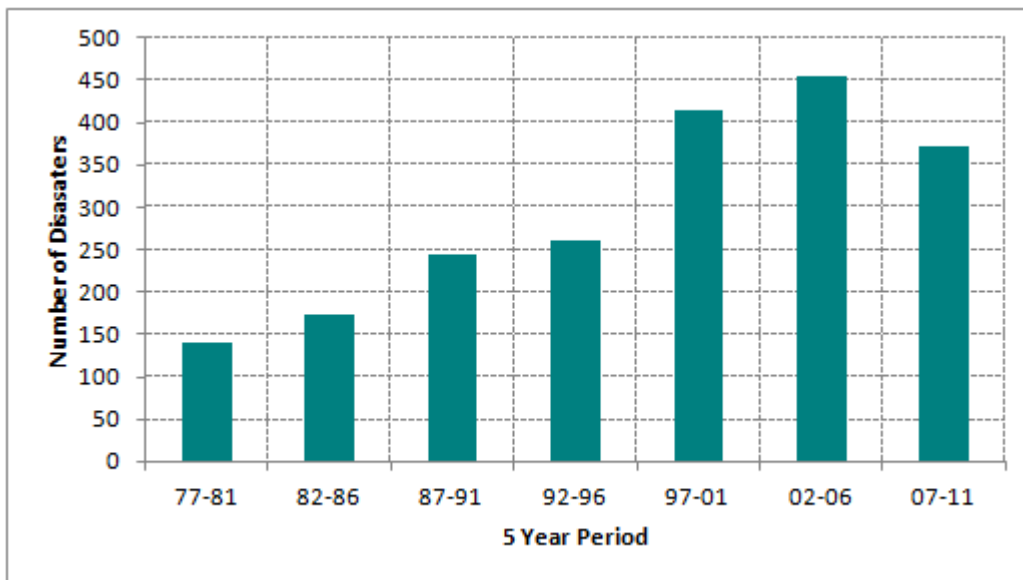


Figure 4-2: Disaster Occurrence (Average of 5-year period), 1977-2011

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 (1975-2011)

The death toll in 2011 stands at around 28,800, indicating lower level compared to recent years which claimed nearly or more than 100,000 lives such as in 2003, 2004, 2005, 2008 and 2010. As seen in Figure4-4, for the trend of the 5-year period average, the number of people killed reaches highest in 1977-2011.

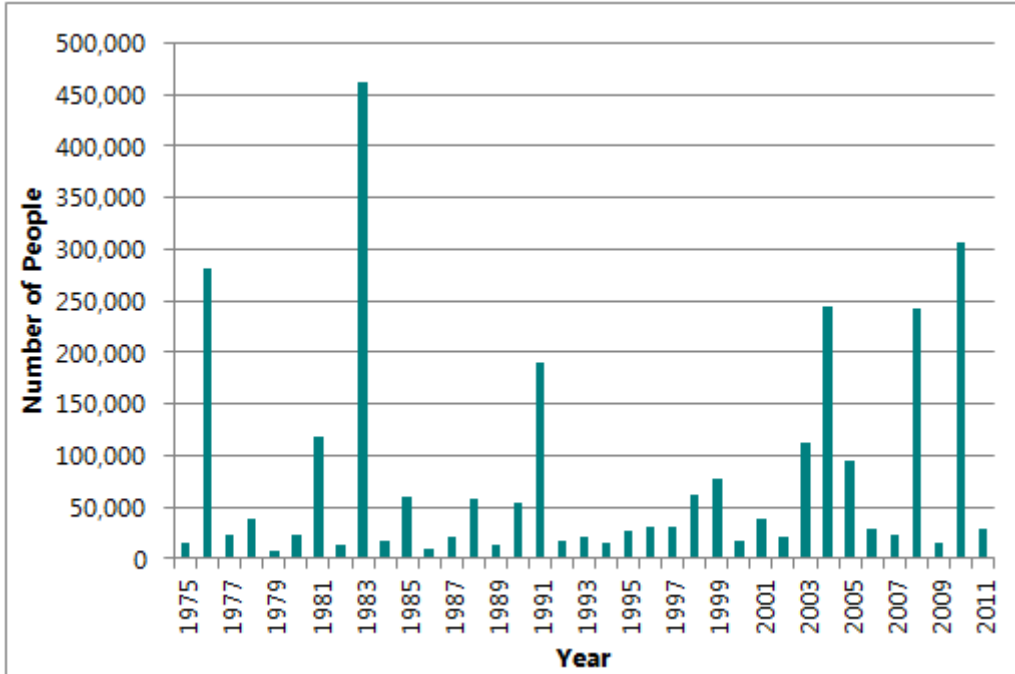


Figure 4-3: Number of People Killed, 1975-2011

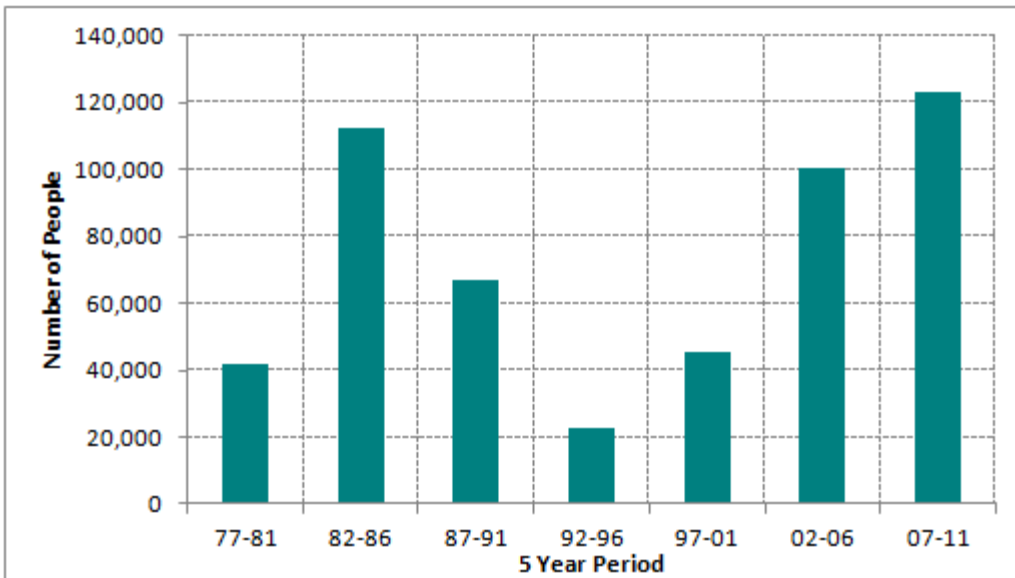


Figure 4-4: Number of People Killed (Average of 5-year period), 1977-2011

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 (1975-2011)

In terms of number of affected people, 2011 sees a significantly low figure compared with the last decade. For the 5 year period average representation of data, number of affected people in the last five-year still remains relatively high, with nearly 190 million people affected, though the figure plunged by about 80 million from 2002-2006 period..

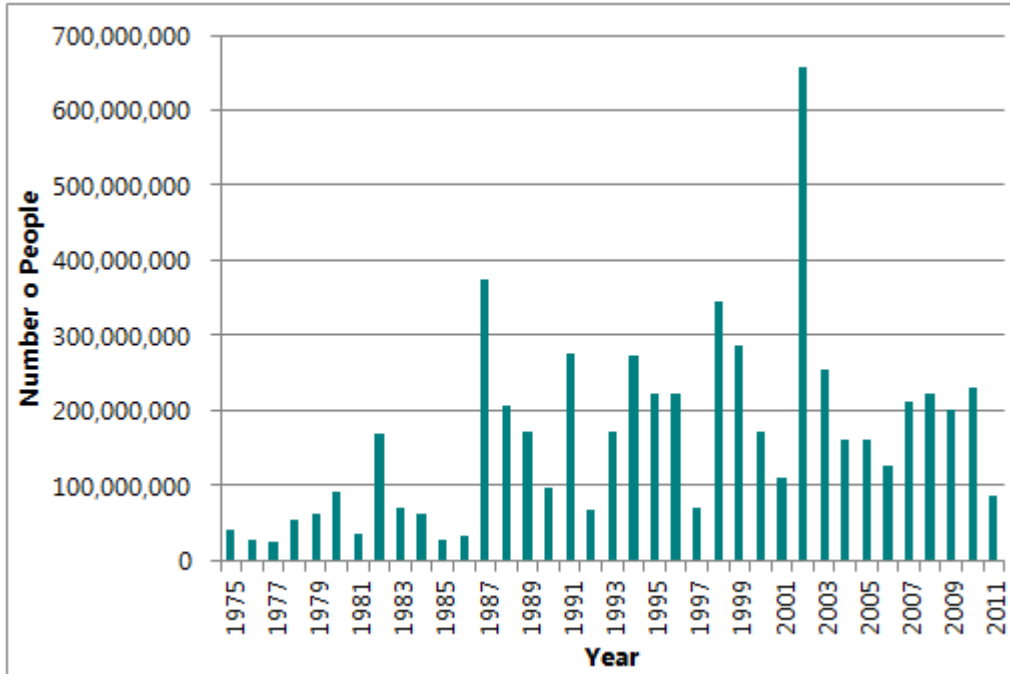


Figure 4-5: Total Number of Affected People, 1975-2011

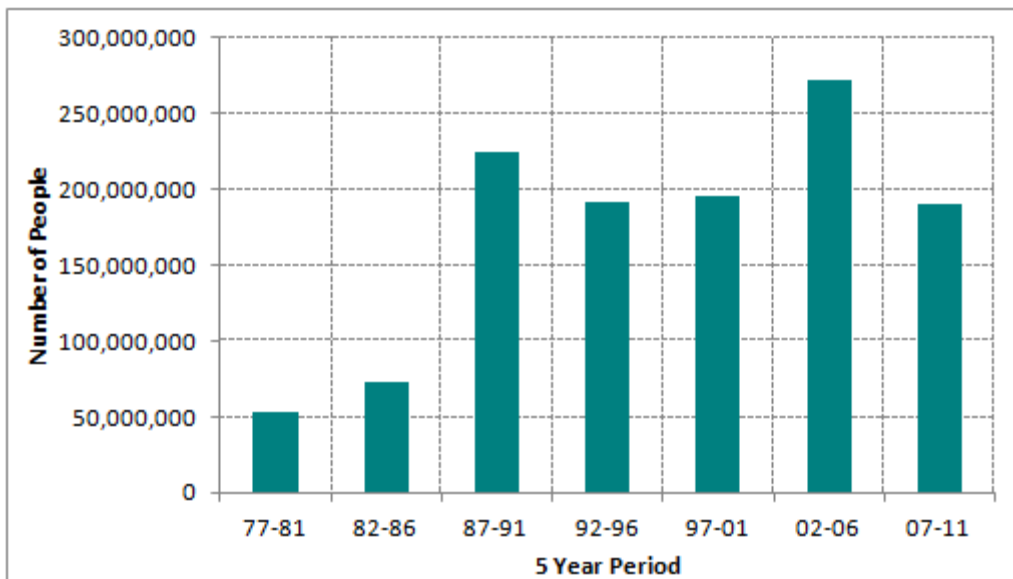


Figure 4-6: Number of Affected People (Average of 5 year period), 1977-2011

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 (1975-2011)

Economic damage caused by natural disasters in 2011 (approximately US\$290 billion) reaches the highest in the 1975-2011 period by rising three straight years. For the 5-year period average analysis too, the 2007-2011 average has reached record high level.

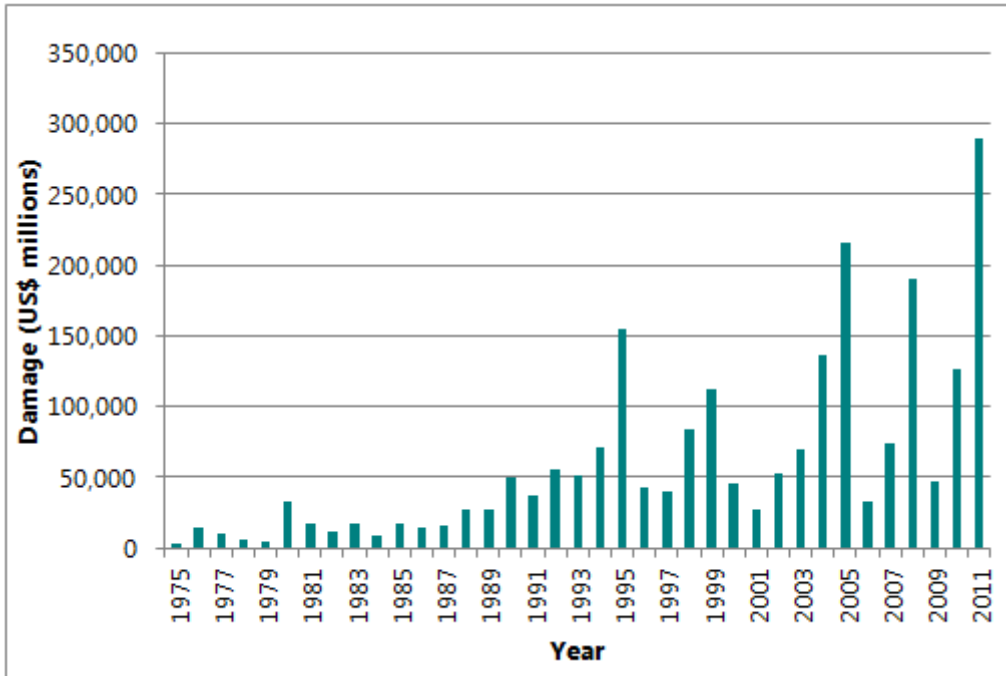


Figure 4-7: Amount of Damage, 1975-2011

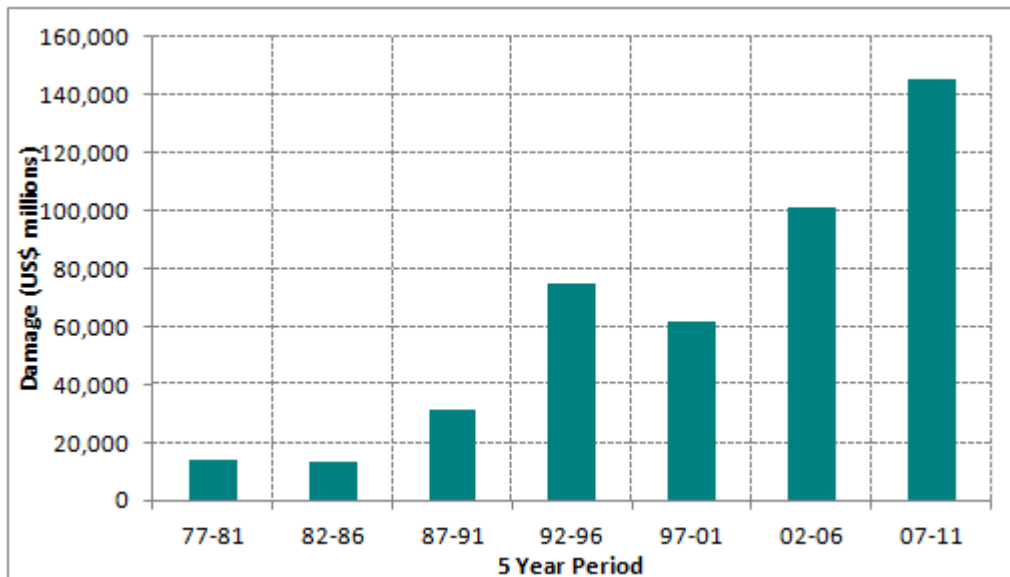


Figure 4-8: Economic Damage (Average of 5-year period), 1977-2011

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, 1975-2011

For the period 1975-2011, Asia dominates and ranks first in all natural disaster's impact categories across regions of the world.

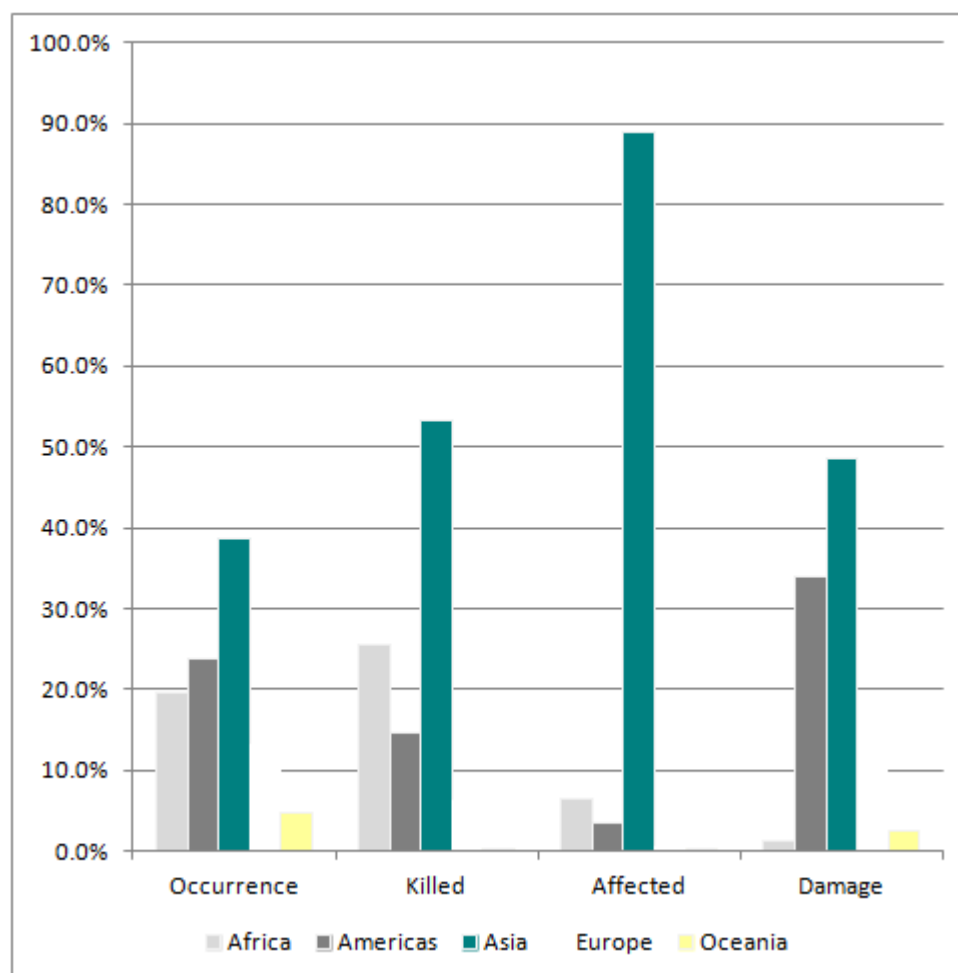


Figure 5: Impacts of World Natural Disasters by Region, 1975-2011

Table 5: Impacts of Natural Disasters by Region, 1975-2011

Region	Impact							
	Occurrence		Killed		Affected		Damage (US\$ million)	
	(share in %)		(share in %)		(share in %)		(share in %)	
Africa	2,057	(19.6%)	728,621	(25.5%)	393,800,705	(6.5%)	27,308	(1.2%)
Americas	2,496	(23.8%)	418,484	(14.6%)	210,406,943	(3.5%)	757,763	(33.9%)
Asia	4,041	(38.6%)	1,521,599	(53.3%)	5,402,771,764	(89.0%)	1,086,756	(48.7%)
Europe	1,390	(13.3%)	182,721	(6.4%)	42,065,797	(0.7%)	306,022	(13.7%)
Oceania	489	(4.7%)	5,999	(0.2%)	20,552,254	(0.3%)	55,801	(2.5%)
Total	10,473	(100.0%)	2,857,424	(100.0%)	6,069,597,463	(100.0%)	2,233,649	(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 2011

6-1 THE 25 WORST DISASTERS IN ASIA BY NUMBER OF PEOPLE KILLED, 2011

The death toll by the earthquake and tsunami in Japan overwhelmingly tops in Asia, and the world in 2011. There are eight disaster events in Asia found in the list which claimed more than 100 lives, compared to 21 disasters in 2010.

Table 6-1: The 25 Worst Disasters in Asia by Number of People Killed, 2011

	Disaster Type	Country	Date	Killed	Affected	Economic Damage (US\$ Million)
1	Earthquake	Japan	11/03/2011	20,319	405,719	210,000
2	Flood	Thailand	05/08/2011	813	9,500,000	40,000
3	Flood	Pakistan	00/08/2011	456	5,800,000	
4	Flood	Cambodia	00/08/2011	207	1,350,000	95
5	Flood	China P Rep	03/06/2011	168		1,143
6	Flood	Myanmar	20/10/2011	106	10,000	2
7	Storm	Philippines	24/09/2011	103	3,030,846	344
8	Flood	China P Rep	00/09/2011	102	21,560,000	4,080
9	Flood	Nepal	00/06/2011	89	1,858	
10	Storm	Philippines	26/07/2011	84	1,108,224	63
11	Earthquake	India	18/09/2011	83	575,200	
12	Extreme Temperature	India	00/01/2011	80		
13	Earthquake	Myanmar	24/03/2011	74	21,277	4
14	Mass Movement	Korea Rep	26/07/2011	59	2,000	
15	Extreme Temperature	Bangladesh	07/01/2011	50	100,000	
16	Storm	Philippines	27/08/2011	43	403,230	34
17	Flood	Sri Lanka	05/01/2011	43	1,000,000	
18	Flood	Viet Nam	00/09/2011	43	292,152	
19	Mass Movement	Philippines	22/04/2011	43	5	
20	Storm	India	20/05/2011	42	50	
21	Flood	India	00/09/2011	34	190,000	
22	Storm	Philippines	08/05/2011	31	70,000	
23	Flood	Korea Dem P Rep	23/06/2011	30	21,160	
24	Storm	Philippines	01/10/2011	25	1,113,775	3
25	Flood	Philippines	28/06/2011	25	75,000	

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, 2011

Using the index of the ratio of the number of people killed to total country population, earthquake and tsunami which hit wide area of Japan on 11 March takes the first place with 159 persons per one million. In addition, flood dominates the list with 13 incidences in 12 different countries. The flood gave great impact to the countries in many parts of Asia in 2011.

Table 6-2: The 25 Worst Disasters in Asia by Number of People Killed per Million Population, 2011

	Type	Country	Date	Killed (per million)	Killed	Population* (2010)
1	Earthquake	Japan	11/03/2011	159.43	20319	127,451,000
2	Flood	Cambodia	00/08/2011	14.64	207	14,139,000
3	Epidemic	Maldives	00/06/2011	12.66	4	316,000
4	Flood	Thailand	05/08/2011	11.76	813	69,122,000
5	Flood	Nepal	00/06/2011	2.97	89	29,959,000
6	Flood	Pakistan	00/08/2011	2.63	456	173,593,000
7	Flood	Lao P Dem Rep	23/06/2011	2.26	14	6,201,000
8	Flood	Myanmar	20/10/2011	2.21	106	47,963,000
9	Flood	Sri Lanka	05/01/2011	2.06	43	20,860,000
10	Flood	Georgia	12/06/2011	1.57	7	4,452,000
11	Earthquake	Myanmar	24/03/2011	1.54	74	47,963,000
12	Earthquake	Bhutan	18/09/2011	1.38	1	726,000
13	Flood	Korea Dem P Rep	23/06/2011	1.23	30	24,346,000
14	Mass Movement	Korea Rep	26/07/2011	1.21	59	48,875,000
15	Storm	Philippines	24/09/2011	1.10	103	93,261,000
16	Storm	Philippines	26/07/2011	0.90	84	93,261,000
17	Flood	Afghanistan	10/02/2011	0.73	25	34,385,000
18	Flood	Sri Lanka	01/02/2011	0.67	14	20,860,000
19	Mass Movement	Malaysia	21/05/2011	0.56	16	28,401,000
20	Flood	Viet Nam	00/09/2011	0.49	43	86,928,000
21	Storm	Philippines	27/08/2011	0.46	43	93,261,000
22	Mass Movement	Philippines	22/04/2011	0.46	43	93,261,000
23	Earthquake	Uzbekistan	20/07/2011	0.46	13	28,228,000
24	Flood	Saudi Arabia	25/01/2011	0.36	10	27,448,000
25	Extreme Temperature	Bangladesh	07/01/2011	0.34	50	148,692,000

Source:

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

*Data from World Bank 2010

6-3 THE 25 WORST DISASTERS IN ASIA BY TOTAL NUMBER OF PEOPLE AFFECTED, 2011

In terms of total number of people affected, the storm in China that occurred in April ranks first with 22 million affected people. China has three disaster events ranked within worst five in the list, totaling more than 47 million affected people. By disaster type, 15 floods rank in the list with over 44 million people affected followed by 6 storms with about 29 million affected people.

Table 6-3: The 25 Worst Disasters in Asia by Total Number of People Affected, 2011

Type	Country	Date	Killed	Affected	Est. Damage (US\$ Million)
1 Storm	China P Rep	17/04/2011	17	22,000,150	8
2 Flood	China P Rep	00/09/2011	102	21,560,000	4,080
3 Flood	Thailand	05/08/2011	813	9,500,000	40,000
4 Flood	Pakistan	00/08/2011	456	5,800,000	
5 Extreme Temperature	China P Rep	00/01/2011	1	3,800,000	205
6 Storm	Philippines	24/09/2011	103	3,030,846	344
7 Drought	Afghanistan	00/08/2011		1,750,000	
8 Flood	Bangladesh	19/07/2011	10	1,570,559	
9 Flood	Cambodia	00/08/2011	207	1,350,000	95
10 Storm	Philippines	01/10/2011	25	1,113,775	3
11 Storm	Philippines	26/07/2011	84	1,108,224	63
12 Flood	Sri Lanka	01/02/2011	14	1,053,000	
13 Flood	Sri Lanka	05/01/2011	43	1,000,000	
14 Storm	Thailand	04/08/2011	18	1,000,000	
15 Flood	Philippines	25/01/2011	23	638,418	12
16 Earthquake	India	18/09/2011	83	575,200	
17 Flood	Viet Nam	21/10/2011	13	461,584	
18 Earthquake	Japan	11/03/2011	20,319	405,719	210,000
19 Storm	Philippines	27/08/2011	43	403,230	34
20 Flood	Viet Nam	14/09/2011	24	300,000	44
21 Flood	Viet Nam	00/09/2011	43	292,152	
22 Flood	Philippines	14/03/2011	16	241,776	0
23 Flood	Thailand	23/03/2011	6	200,000	
24 Flood	India	00/09/2011	34	190,000	
25 Flood	Philippines	31/05/2011	3	173,458	8

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 TOTAL AFFECTED PEOPLE PER THOUSAND POPULATION, 2011

Using the index of total affected people per thousand population, flood in Thailand resulted in 137 affected person per thousand population followed by 95 of Cambodia's flood. Flood disasters in 9 countries occupy 14 ranks in the list.

Table 6-4: The 25 Worst Disasters in Asia by Total Number of People Affected per Thousand Population, 2011

	Disaster Type	Country	Date	Affected (per thousand)	Affected	Population* (2010)
1	Flood	Thailand	05/08/2011	137.44	9,500,000	69,122,000
2	Flood	Cambodia	00/08/2011	95.48	1,350,000	14,139,000
3	Drought	Afghanistan	00/08/2011	50.89	1,750,000	34,385,000
4	Flood	Sri Lanka	01/02/2011	50.48	1,053,000	20,860,000
5	Flood	Sri Lanka	05/01/2011	47.94	1,000,000	20,860,000
6	Flood	Pakistan	00/08/2011	33.41	5,800,000	173,593,000
7	Storm	Philippines	24/09/2011	32.50	3,030,846	93,261,000
8	Earthquake	Bhutan	18/09/2011	27.57	20,016	726,000
9	Storm	China P Rep	17/04/2011	16.44	22,000,150	1,338,300,000
10	Flood	China P Rep	00/09/2011	16.11	21,560,000	1,338,300,000
11	Storm	Thailand	04/08/2011	14.47	1,000,000	69,122,000
12	Storm	Philippines	01/10/2011	11.94	1,113,775	93,261,000
13	Storm	Philippines	26/07/2011	11.88	1,108,224	93,261,000
14	Flood	Bangladesh	19/07/2011	10.56	1,570,559	148,692,000
15	Flood	Philippines	25/01/2011	6.85	638,418	93,261,000
16	Flood	Lao P Dem Rep	23/06/2011	5.97	37,000	6,201,000
17	Flood	Viet Nam	21/10/2011	5.31	461,584	86,928,000
18	Storm	Philippines	27/08/2011	4.32	403,230	93,261,000
19	Epidemic	Maldives	00/06/2011	4.08	1,289	316,000
20	Flood	Viet Nam	14/09/2011	3.45	300,000	86,928,000
21	Flood	Viet Nam	00/09/2011	3.36	292,152	86,928,000
22	Earthquake	Japan	11/03/2011	3.18	405,719	127,451,000
23	Flood	Thailand	23/03/2011	2.89	200,000	69,122,000
24	Extreme Temperature	China P Rep	00/01/2011	2.84	3,800,000	1,338,300,000
25	Flood	Philippines	14/03/2011	2.59	241,776	93,261,000

Source:

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

*Data from World Bank 2010

6-5 THE 25 WORST DISASTERS IN ASIA BY ECONOMIC DAMAGE, 2011

According to the EM-DAT database, 22 natural disasters in Asia incurred economic damage in 2011. In the category of economic damage, earthquake and tsunami in Japan tops the list with damage amounting to approximately US\$210 billion, worth more than five times of the following Thai flood.

Among the disasters, China and Philippines have respective six and nine disaster events, most of which are floods and storms, with economic damage, though total amounts do not exceed the first or second worst disaster as seen in the table 6-5.

Table 6-5: The 25 Worst Disasters in Asia by Economic Damage, 2011

	Disaster Type	Country	Date	Killed	Tot. Affected	Est. Damage (US\$ Million)
1	Earthquake	Japan	11/03/2011	20,319	405,719	210,000.00
2	Flood	Thailand	05/08/2011	813	9,500,000	40,000.00
3	Flood	China P Rep	00/09/2011	102	21,560,000	4,080.00
4	Flood	China P Rep	03/06/2011	168		1,142.89
5	Storm	China P Rep	09/08/2011		27,000	482.59
6	Storm	Philippines	24/09/2011	103	3,030,846	344.17
7	Storm	China P Rep	02/10/2011	3		219.00
8	Extreme Temperature	China P Rep	00/01/2011	1	3,800,000	204.62
9	Flood	Kazakhstan	09/04/2011	2	16,000	135.23
10	Flood	Cambodia	00/08/2011	207	1,350,000	95.00
11	Storm	Philippines	26/07/2011	84	1,108,224	63.26
12	Flood	Viet Nam	14/09/2011	24	300,000	44.00
13	Storm	Philippines	27/08/2011	43	403,230	34.45
14	Flood	Philippines	25/01/2011	23	638,418	12.41
15	Storm	China P Rep	17/04/2011	17	22,000,150	8.47
16	Flood	Philippines	31/05/2011	3	173,458	7.66
17	Earthquake	Myanmar	24/03/2011	74	21,277	3.60
18	Storm	Philippines	01/10/2011	25	1,113,775	2.66
19	Flood	Myanmar	20/10/2011	106	10,000	1.70
20	Flood	Philippines	14/03/2011	16	241,776	0.28
21	Flood	Philippines	19/09/2011		274	0.12
22	Storm	Philippines	02/08/2011	11	8,423	0.06

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, 2011

In terms of economic damage incurred relative to gross domestic product (GDP), flood in Thailand, resulted in damage worth approximately 12.6 percent of its GDP, tops the list. In the second place, the earthquake and tsunami in Japan gave impact to its economy accounting for damage cost 3.8 percent of its GDP. Cambodia's flood stood at 0.8 percent in terms of its impact on the economy.

Table 6-6: The 25 Worst Disasters in Asia by Ratio of Economic Damage to GDP, 2011

Disaster Type	Country	Date	Damage (as percent of GDP)	Est. Damage (US\$ Million)	GDP (2010)* (US\$ Million)
1 Flood	Thailand	05/08/2011	12.55799	40,000.00	318,522.26
2 Earthquake	Japan	11/03/2011	3.84697	210,000.00	5,458,836.66
3 Flood	Cambodia	00/08/2011	0.84503	95.00	11,242.27
4 Storm	Philippines	24/09/2011	0.17244	344.17	199,589.45
5 Flood	Kazakhstan	09/04/2011	0.09072	135.23	149,058.91
6 Flood	China P Rep	00/09/2011	0.06884	4,080.00	5,926,612.01
7 Flood	Viet Nam	14/09/2011	0.04134	44.00	106,426.85
8 Storm	Philippines	26/07/2011	0.03169	63.26	199,589.45
9 Flood	China P Rep	03/06/2011	0.01928	1,142.89	5,926,612.01
10 Storm	Philippines	27/08/2011	0.01726	34.45	199,589.45
11 Storm	China P Rep	09/08/2011	0.00814	482.59	5,926,612.01
12 Earthquake	Myanmar	24/03/2011	0.00793	3.60	45,380.00**
13 Flood	Philippines	25/01/2011	0.00622	12.41	199,589.45
14 Flood	Philippines	31/05/2011	0.00384	7.66	199,589.45
15 Flood	Myanmar	20/10/2011	0.00375	1.70	45,380.00**
16 Storm	China P Rep	02/10/2011	0.00370	219.00	5,926,612.01
17 Extreme Temperature	China P Rep	00/01/2011	0.00345	204.62	5,926,612.01
18 Storm	Philippines	01/10/2011	0.00133	2.66	199,589.45
19 Storm	China P Rep	17/04/2011	0.00014	8.47	5,926,612.01
20 Flood	Philippines	14/03/2011	0.00014	0.28	199,589.45
21 Flood	Philippines	19/09/2011	0.00006	0.12	199,589.45
22 Storm	Philippines	02/08/2011	0.00003	0.06	199,589.45

Source:

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

*Data from World Bank 2010; **Data from IMF World Economy Outlook Database

7. DISASTERS IN ASIA BY COUNTRY, 2011

Country	Disaster Type	Occurrence	Killed	Affected	Damage (US\$ Million)
Afghanistan	Drought	1		1,750,000	
	Flood	1	25	3,000	
Bangladesh	Extreme Temperature	1	50	100,000	
	Flood	1	10	1,570,559	
Bhutan	Earthquake	1	1	20,016	
Cambodia	Flood	1	207	1,350,000	95
China P Rep	Earthquake	5	32	23,744	
	Extreme Temperature	1	1	3,800,000	205
	Flood	3	286	21,620,000	5,223
	Mass Movement	2	40	2	
	Storm	3	20	22,027,150	710
Georgia	Flood	1	7	1,750	
India	Earthquake	1	83	575,200	
	Extreme Temperature	1	80		
	Flood	1	34	190,000	
	Storm	1	42	50	
Indonesia	Earthquake	2	11	95	
	Flood	3	12	13,810	
	Mass Movement	1	19	4	
Iraq	Flood	1	6	2,001	
Japan	Earthquake	2	20,321	405,851	210,000
	Mass Movement	1	5		
	Storm	1	15	100	
Kazakhstan	Flood	1	2	16,000	135
Korea Dem P Rep	Flood	1	30	21,160	
	Storm	1	4	1,255	
Korea Rep	Flood	1	13		
	Mass Movement	1	59	2,000	
Kyrgyzstan	Earthquake	1			
Lao P Dem Rep	Flood	1	14	37,000	
Malaysia	Mass Movement	1	16	6	
Maldives	Epidemic	1	4	1,289	
Myanmar	Earthquake	1	74	21,277	4
	Flood	1	106	10,000	2
Nepal	Earthquake	1	8	7,367	
	Flood	1	89	1,858	
Pakistan	Earthquake	1	2	1,000	
	Flood	1	456	5,800,000	
Philippines	Epidemic	1	3	254	
	Flood	8	78	1,133,171	20
	Mass Movement	2	43	315	
	Storm	9	322	5,847,755	445
	Volcano	1		32,616	
Saudi Arabia	Flood	1	10		
Sri Lanka	Flood	2	57	2,053,000	
Tajikistan	Flood	1		1,279	
Thailand	Drought	1			
	Earthquake	1	1	16	
	Flood	2	819	9,700,000	40,000
	Storm	1	18	1,000,000	
Turkey	Earthquake	1	2	79	
Uzbekistan	Earthquake	1	13	86	
Viet Nam	Flood	3	80	1,053,736	44
	Storm	1	16	63	
Grand Total		87	23,646	80,195,914	256,882

In 2011, Philippines accounts for 24 percent (21 occurrences) of the total number of disasters that hit Asia, followed by China's 14 disasters (16 percent).

Japan suffered largest number of people killed, 20,341, 86 percent in Asia, due mainly to the earthquake and tsunami in March. The toll of Thailand accounts for 4 percent (838) in the region.

With regards to number of the affected, China ranks first with more than 47 million people (59 percent), followed by Thailand's 10.7 million (13 percent) and 7 million (9 percent) of Philippines.

Similarly, economic damage is made up of Japan (82 percent), Thailand (16 percent), and Philippines (2 percent), totaling nearly 100 percent.

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

8. DISASTERS IN ASIA BY DISASTER TYPE, 2011

Disaster Type	Country	Occurrence	Killed	Affected	Damage (US\$ millions)
Drought	Afghanistan	1		1750000	
	Thailand	1			
Earthquake	Bhutan	1	1	20016	
	China P Rep	5	32	23744	
	India	1	83	575200	
	Indonesia	2	11	95	
	Japan	2	20321	405851	210000
	Kyrgyzstan	1			
	Myanmar	1	74	21277	3.6
	Nepal	1	8	7367	
	Pakistan	1	2	1000	
	Thailand	1	1	16	
	Turkey	1	2	79	
Uzbekistan	1	13	86		
Epidemic	Maldives	1	4	1289	
	Philippines	1	3	254	
Extreme Temperature	Bangladesh	1	50	100000	
	China P Rep	1	1	3800000	204.617
	India	1	80		
Flood	Afghanistan	1	25	3000	
	Bangladesh	1	10	1570559	
	Cambodia	1	207	1350000	95
	China P Rep	3	286	21620000	5222.886
	Georgia	1	7	1750	
	India	1	34	190000	
	Indonesia	3	12	13810	
	Iraq	1	6	2001	
	Kazakhstan	1	2	16000	135.227
	Korea Dem P Rep	1	30	21160	
	Korea Rep	1	13		
	Lao P Dem Rep	1	14	37000	
	Myanmar	1	106	10000	1.7
	Nepal	1	89	1858	
	Pakistan	1	456	5800000	
	Philippines	8	78	1133171	20.47
	Saudi Arabia	1	10		
	Sri Lanka	2	57	2053000	
	Tajikistan	1		1279	
Thailand	2	819	9700000	40000	
Viet Nam	3	80	1053736	44	
Mass Movement	China P Rep	2	40	2	
	Indonesia	1	19	4	
	Japan	1	5		
	Korea Rep	1	59	2000	
	Malaysia	1	16	6	
	Philippines	2	43	315	
Storm	China P Rep	3	20	22027150	710.051
	India	1	42	50	
	Japan	1	15	100	
	Korea Dem P Rep	1	4	1255	
	Philippines	9	322	5847755	444.597
	Thailand	1	18	1000000	
	Viet Nam	1	16	63	
Volcano	Philippines	1		32616	
Grand Total		87	23646	80195914	256882.148

This table shows disasters in Asia in 2011 by disaster type.

Flood has largest share in occurrences (41percent) and number of affected people (56percent) in Asia. A total of 21 countries have one or more flood disasters out of 28 disaster-affected countries in Asia in 2011.

Number of the affected by flood disasters in China amounts to 27percent in Asia

For number of people killed and economic damage, earthquake tops other disasters by claiming more than 20,000 lives (87percent) and US\$ 210 billion (82%) in 12 countries in Asia.

Source:

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

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