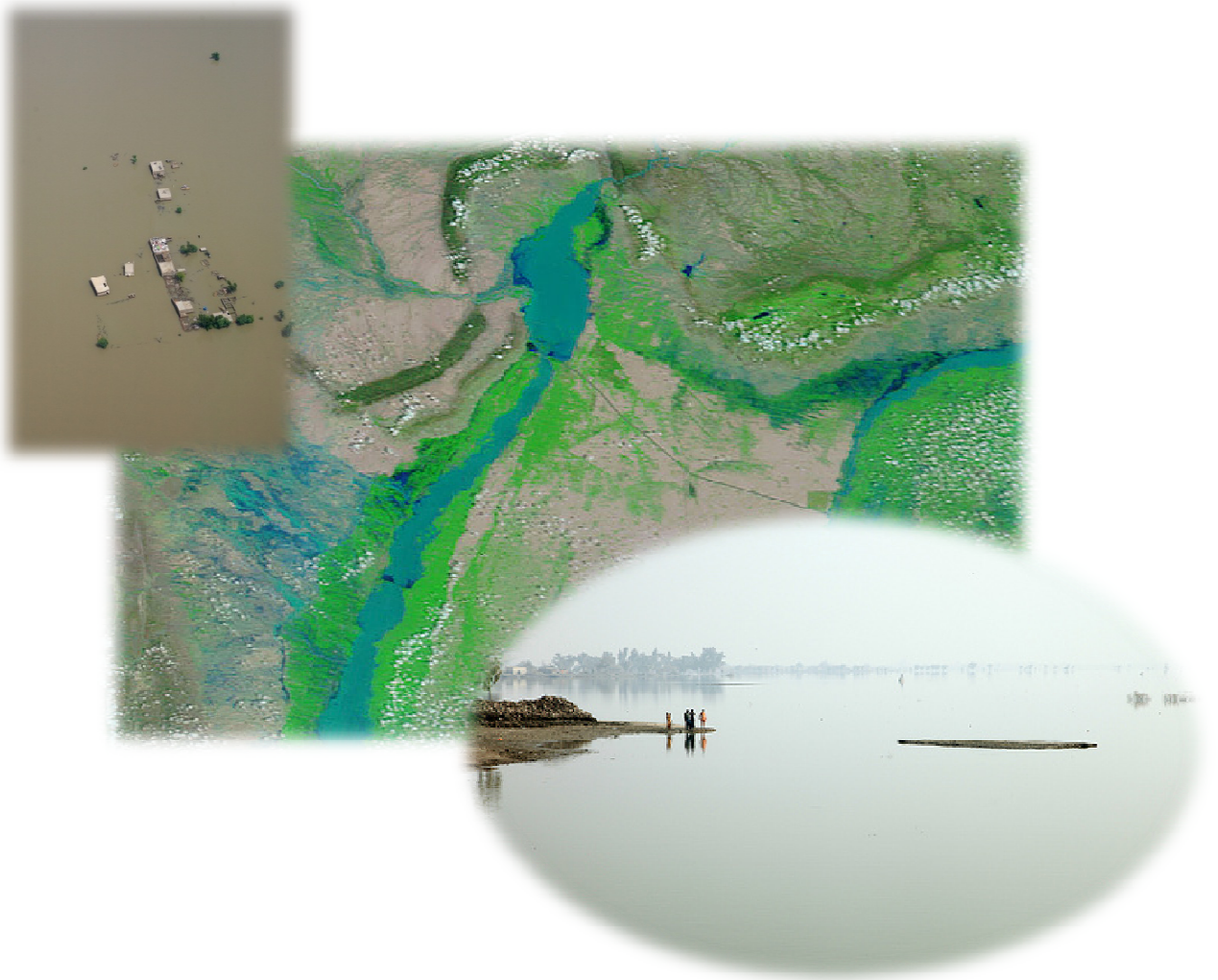


Natural Disaster Data Book 2010 (An Analytical Overview)



Asian Disaster Reduction Center

Overview

The Asian Disaster Reduction Center (ADRC) Natural Disasters Data Book 2010 provides the statistical perspectives in figures and tables for 2010 as well as for the period 1975-2010 based on data obtained by EM-DAT.

According to EM-DAT, 438 natural disasters occurred in 2010 worldwide, killing almost 306,700 people and affecting over 308 million people. The estimated amount of economic damage came close to US\$130 billion.

By region, Asia is the highest in the indices of disaster occurrences and number of people affected, Asia accounts for 32.9 percent; number of people killed, 4.9 percent; total number of affected people, 83.3 percent; and amount of economic damage, 30.7 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, 73.9 percent of total number of people killed; flood, 61.1 percent of total affected people; and earthquake, 36.3 percent of total amount of economic damage. This trend is largely due to the great impact of the Haiti Earthquake occurred in January 2010.

Within Asia, the indices show different trends from the world trend in 2010, and similar trend in Asia in the past trend. In all categories, hydro meteorological disasters such as flood, landslides, and drought make up a substantial portion of the total. Especially in 2010, many parts of Asia experienced severe flood disasters, as represented by the flood in Pakistan from July to August which killed approximately two thousand people, affected nearly 10% of population, and caused economic damage of close to 6% of its GDP. Frequent flood in China also wreaked considerable damage, killing 1,911 people, affecting 140 million people, and costing about US\$18 billion in economic damage in total in 2010. In Thailand, flood, which occurred from October to December, killed 258 people, affected about 9 million of people, and gave US\$332 million economic damage. India and Philippines destructed several times by flood disasters in a year, and nearly 4 million and 3 million of population were affected respectively.

Data Book 2010 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 2010 disasters in ADRC member and other Asian countries sorted by country and disaster type.

[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), 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:

“Total affected people” are the sum of injured, homeless, and affected. 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 2010 online,
log onto: <http://www.adrc.asia/publications/databook/DB2010.html>

For inquiries, please contact rep@adrc.asia.

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Sources of Images on the Front Page

- ✧ NASA's Earth Observatory (<http://earthobservatory.nasa.gov/IOTD/view.php?id=44991>)
- ✧ Rob Holden / Department for International Development
(<http://www.flickr.com/photos/dfid/4973656825/>)
- ✧ Department for International Development (<http://www.flickr.com/photos/dfid/5330445429/>)

1. Impacts of Natural Disasters by Region, 2010

This section covers the impacts of natural disasters—occurrence, number of deaths, total number of affected people, and economic damage—that took place in different regions across the world in 2010. As shown in Figure 1, Asia ranks first in both occurrence and total affected of the impact categories, most significantly in total number of affected people (close to 90%). Although Americas has the most number of people killed (mainly due to the Haiti Earthquake) and bear the most economic loss, the number of total affected people still cannot compare with Asia. Also, the tiny share of economic damage in Africa is mainly because the lack of recorded data of economic damage found in CRED EM-DAT.

Though Asia records the largest total affected people number, it ranks second in economic damage loss and third in death toll. Following the general trend from previous years, natural disasters have the least impacts Oceania. However, Europe suffers a higher than usual people death mainly due to the extreme temperature in 2010.

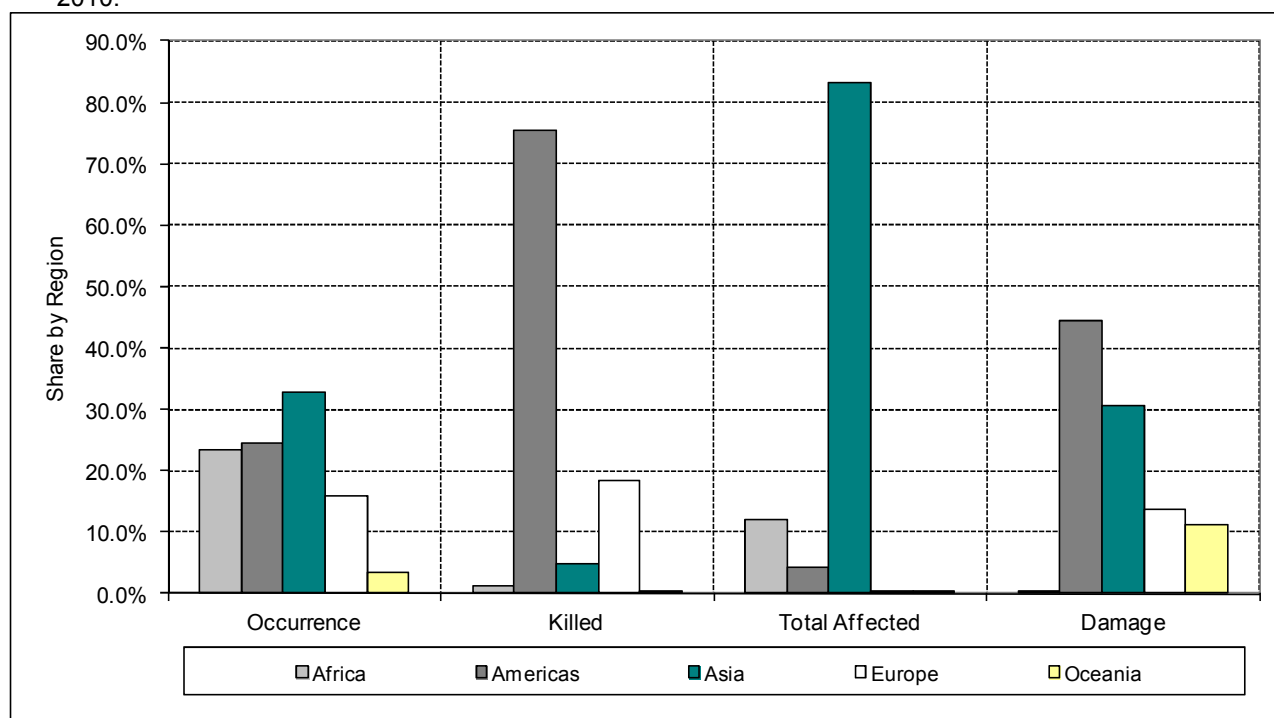


Figure 1: Impacts of Natural Disasters by Region, 2010

Table 1: Impacts of Natural Disasters by Region, 2010

Region	Impact			
	Occurrence (share in %)	Killed (share in %)	Total Affected (share in %)	Damage (US\$ Million) (share in %)
Africa	102 (23.3)	3,801 (1.2)	37,034,702 (12.0)	59 (0.0)
Americas	107 (24.4)	231,393 (75.4)	13,073,617 (4.2)	57,765 (44.4)
Asia	144 (32.9)	15,078 (4.9)	256,843,587 (83.3)	39,917 (30.7)
Europe	70 (16.0)	56,472 (18.4)	815,179 (0.3)	17,893 (13.7)
Oceania	15 (3.4)	22 (0.0)	573,449 (0.2)	14,509 (11.1)
Total	438 (100.0)	306,766 (100.0)	308,340,534 (100.0)	130,144 (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, 2010

This section provides the breakdown of impacts of disasters sorted by disaster type. As Figure 2 shows, although the same dominant disaster type cannot be witnessed in all impact categories, flood and storm are generally prevalent by consistently being in the top three places. Flood (41.8%), earthquake (73.9%), flood (61.1%) and earthquake (36.3%) rank number one in impact categories of occurrence, killed, total affected and damage, respectively.

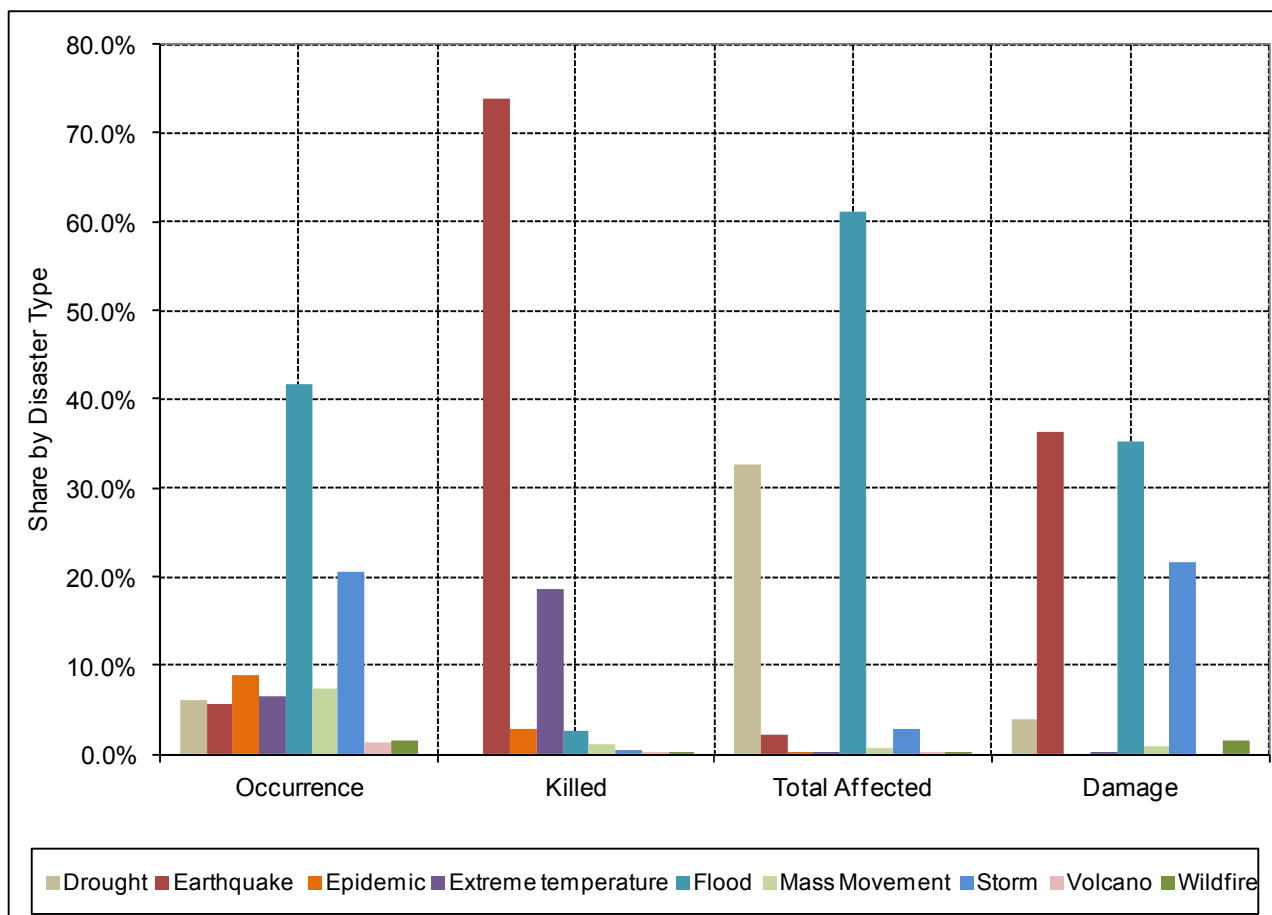


Figure 2: Impacts of Natural Disasters by Disaster Type, 2010

Table 2: Impacts of Natural Disasters by Disaster Type, 2010

Disaster Type	Impact			
	Occurrence (share in %)	Killed (share in %)	Total Affected (share in %)	Damage (US\$ Million) (share in %)
Drought	27 (6.2)	0 (0.0)	100,719,451 (32.7)	5,116 (3.9)
Earthquake	25 (5.7)	226,735 (73.9)	6,937,023 (2.2)	47,301 (36.3)
Epidemic	39 (8.9)	9,087 (3.0)	705,199 (0.2)	0 (0.0)
Extreme Temperature	29 (6.6)	57,188 (18.6)	72,761 (0.0)	400 (0.3)
Flood	183 (41.8)	8,406 (2.7)	188,495,906 (61.1)	45,856 (35.2)
Insect Infestation	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Mass Movement	32 (7.3)	3,402 (1.1)	2,459,905 (0.8)	1,277 (1.0)
Storm	90 (20.5)	1,490 (0.5)	8,749,137 (2.8)	28,124 (21.6)
Volcano	6 (1.4)	323 (0.1)	170,661 (0.1)	0 (0.0)
Wildfire	7 (1.6)	135 (0.0)	30,491 (0.0)	2,070 (1.6)
Total	438 (100.0)	306,766 (100.0)	308,340,534 (100.0)	130,144 (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, 2010

This section provides the overview of impacts of disasters sorted by disaster type in Asia. As depicted in Figure 3, the most predominant disaster type in general is flood. Flood ranks first in all of the impact categories, most significantly in total number of affected people (69.8%) and damage (78.5%). The share of deaths caused by flood in Asia (42.1%) is high compared to that in the world (2.8%).

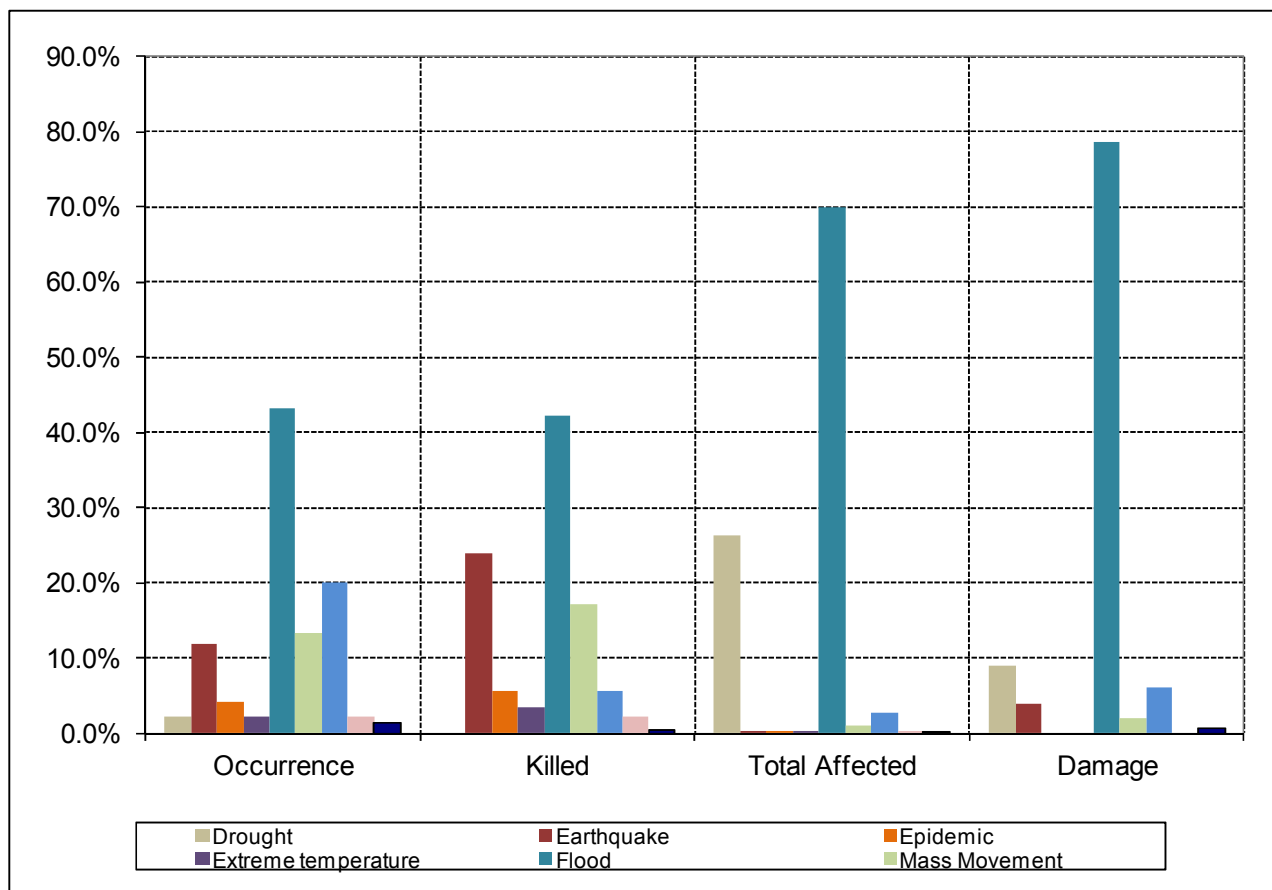


Figure 3: Impacts of Natural Disasters by Disaster Type in Asia, 2010

Table 3: Impacts of Natural Disasters by Disaster Type in Asia, 2010

Disaster Type	Impact			
	Occurrence (share in %)	Killed (share in %)	Total Affected (share in %)	Damage (US\$ Million) (share in %)
Drought	3 (2.1)	0 (0.0)	67,782,602 (26.4)	3,600 (9.0)
Earthquake	17 (11.8)	3,597 (23.9)	211,404 (0.1)	1,506 (3.8)
Epidemic	6 (4.2)	833 (5.5)	130,788 (0.1)	0 (0.0)
Extreme Temperature	3 (2.1)	520 (3.4)	15,000 (0.0)	0 (0.0)
Flood	62 (43.1)	6,344 (42.1)	179,236,982 (69.8)	31,354 (78.5)
Mass Movement	19 (13.2)	2,567 (17.0)	2,388,101 (0.9)	777 (1.9)
Storm	29 (20.1)	828 (5.5)	6,892,324 (2.7)	2,410 (6.0)
Volcano	3 (2.1)	323 (2.1)	166,361 (0.1)	0 (0.0)
Wildfire	2 (1.4)	66 (0.4)	20,025 (0.0)	270 (0.7)
Total	144 (100.0)	15,078 (100.0)	256,843,587 (100.0)	39,917 (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, 1975-2010

4-1 Number of Disasters in the World (1975-2010)

In terms of number of disasters, the year 2010 keeps increase trend from the previous year 2009. The upward shift of disaster occurrence's trend continues from the end of the 1990s, which is clearly depicted in the collective 5-year period representation of data in Figure 4-2.

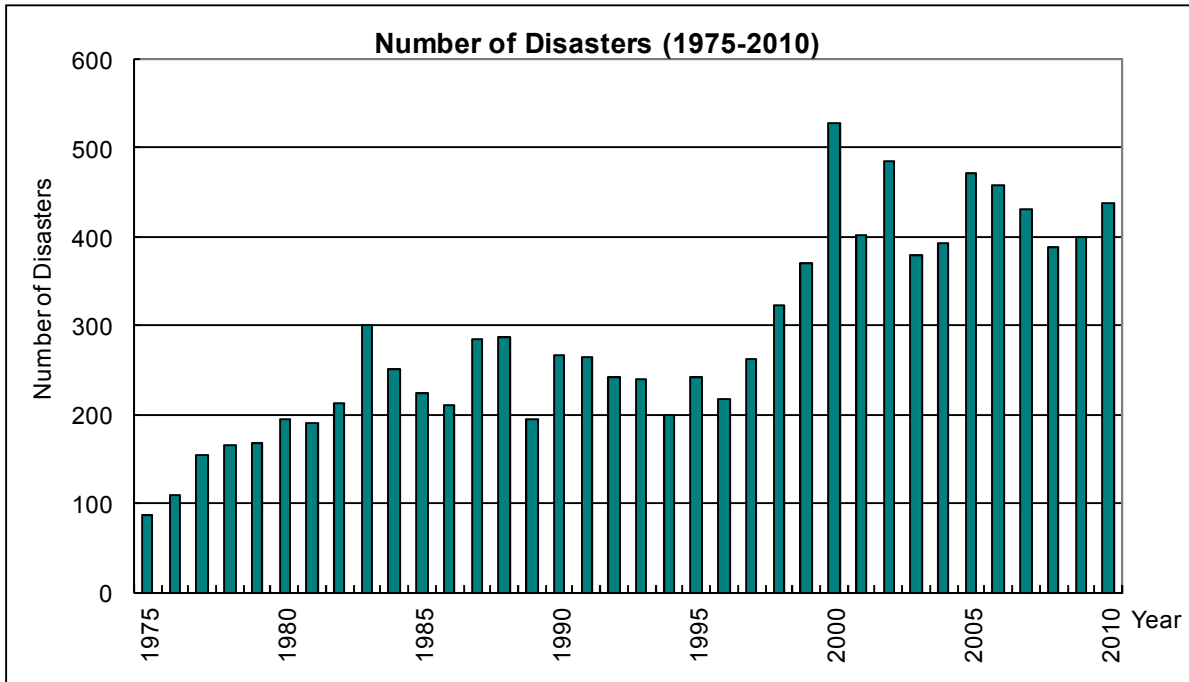


Figure 4-1: Disaster Occurrence, 1975-2010

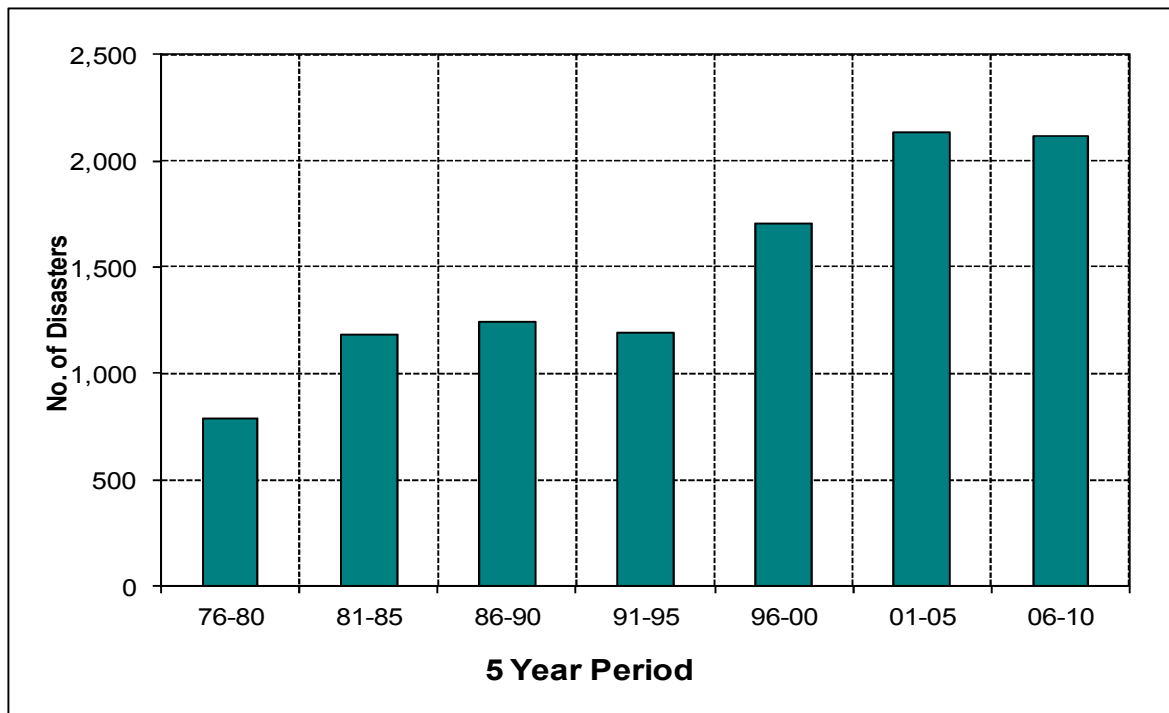


Figure 4-2: Disaster Occurrence (5-year period), 1976-2010

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 (1975-2010)

The year 2010 hits the second place of death toll caused by natural disasters during the period 1975-2010. In comparison to 2009, 2010 witnesses a drastic increase in the impact category of number of people killed. For the 5-year period analysis, the number of people killed in the first half of the first decade in the 21st century and the second half exceed 400,000 in each period and shows increased trend in the 21st century.

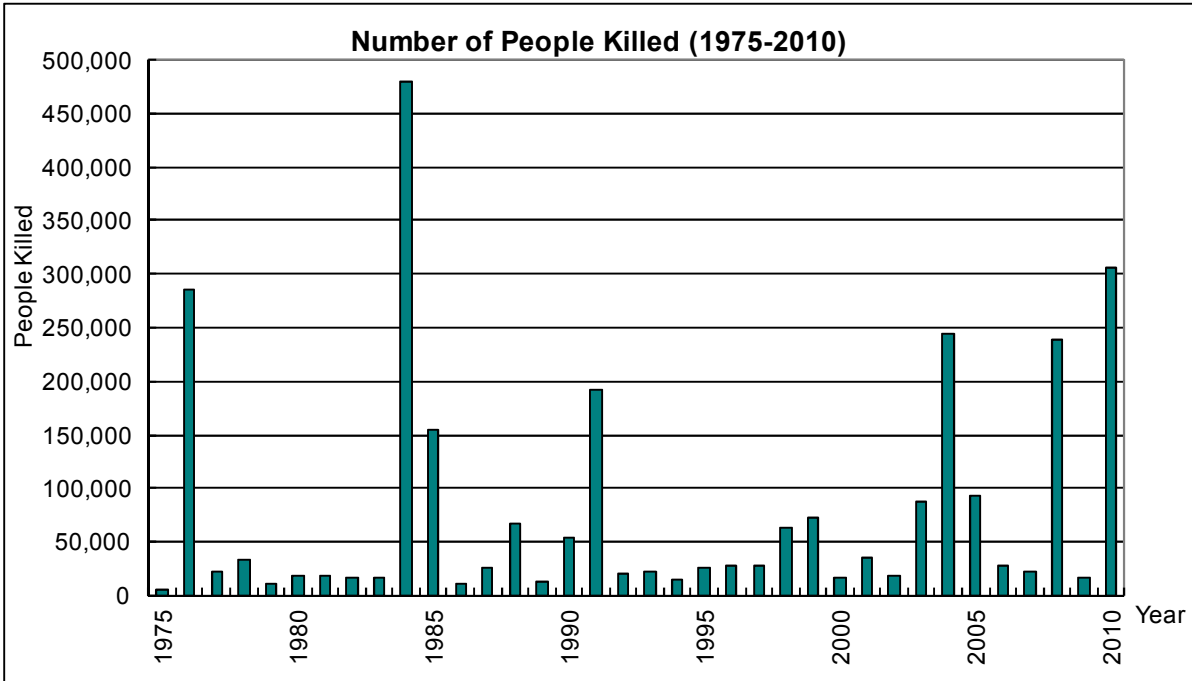


Figure 4-3: Number of People Killed, 1975-2010

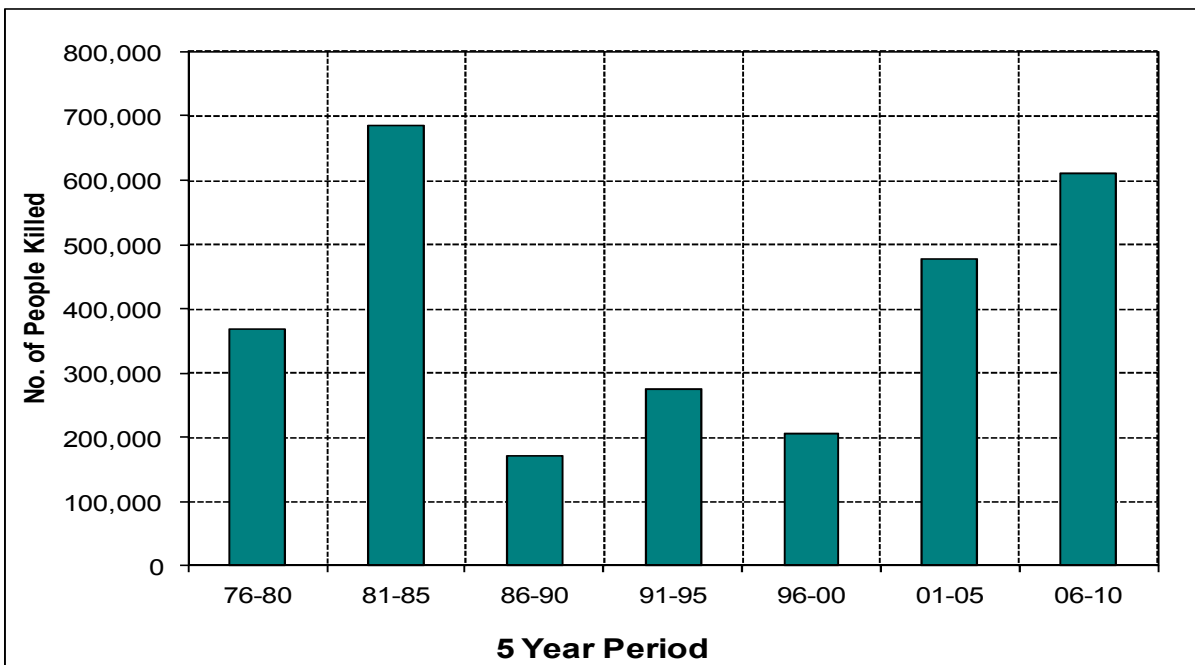


Figure 4-4: Number of People Killed (5-year period), 1976-2010

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 (1975-2010)

In terms of total number of affected people, 2010 sees a somewhat higher figure compared with 2009. For the 5 year period representation of data, it is evident that the total number of affected people in the second half of the first decade in 21st century is noticeably lower than the first half. The total number of affected people for the period 2001-2005 is the highest during the extended period of 1976-2010. As shown in Figure 4-6, there is a general upward trend from 1975 to 2005.

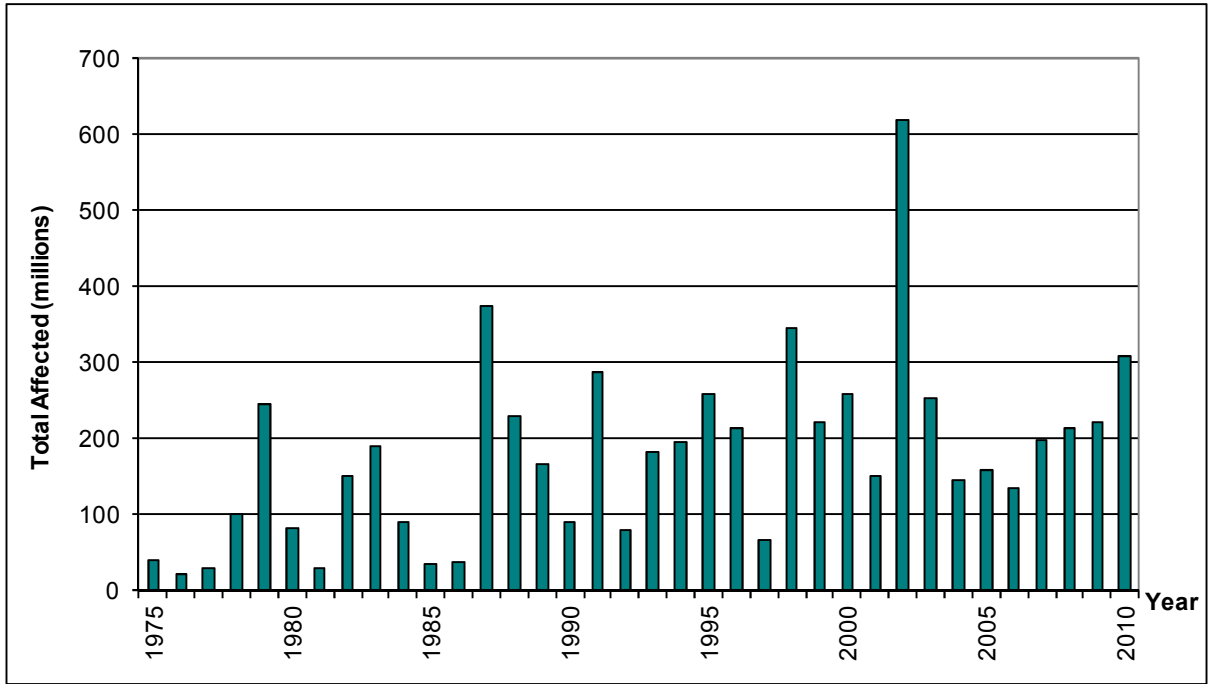


Figure 4-5: Total Number of Affected People, 1975-2010

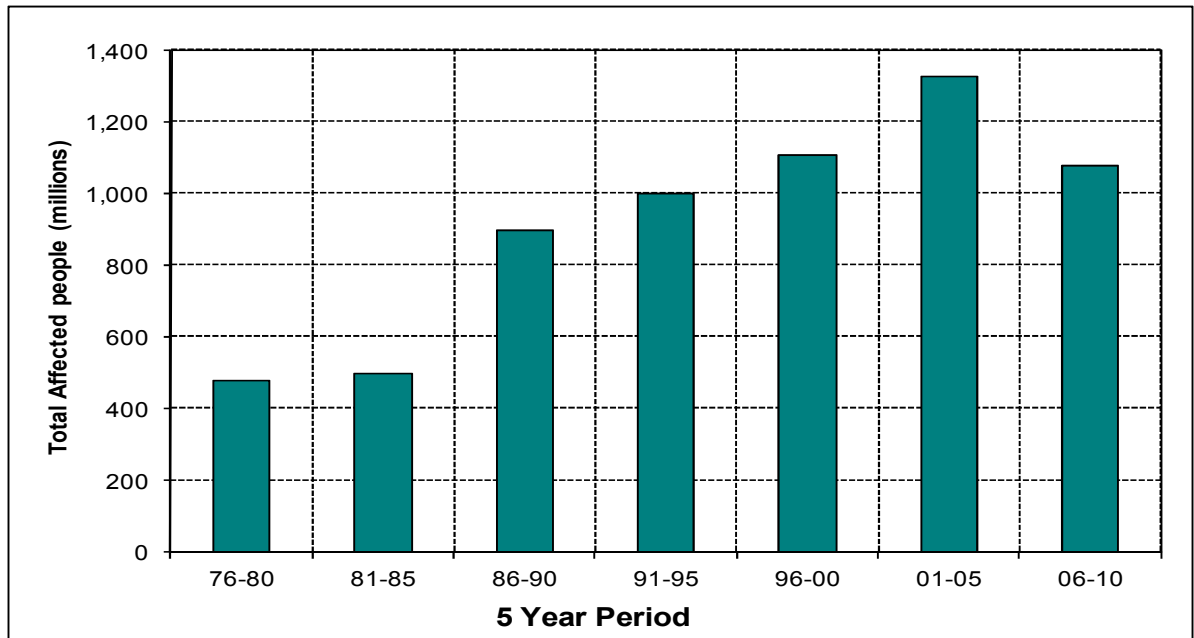


Figure 4-6: Total Number of Affected People (5 year period), 1976-2010

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 (1975-2010)

Economic damage caused by natural disasters in 2010 (approximately US\$130 billion) is significantly higher than that in 2009. Four of the worst five years in the period of interest, 1975-2010, can be found in the 21st century (2004, 2005, 2008, and 2010). For the 5-year period analysis, the second half of the first decade in the 21st century records the largest amount of damage in the period 1976-2010.

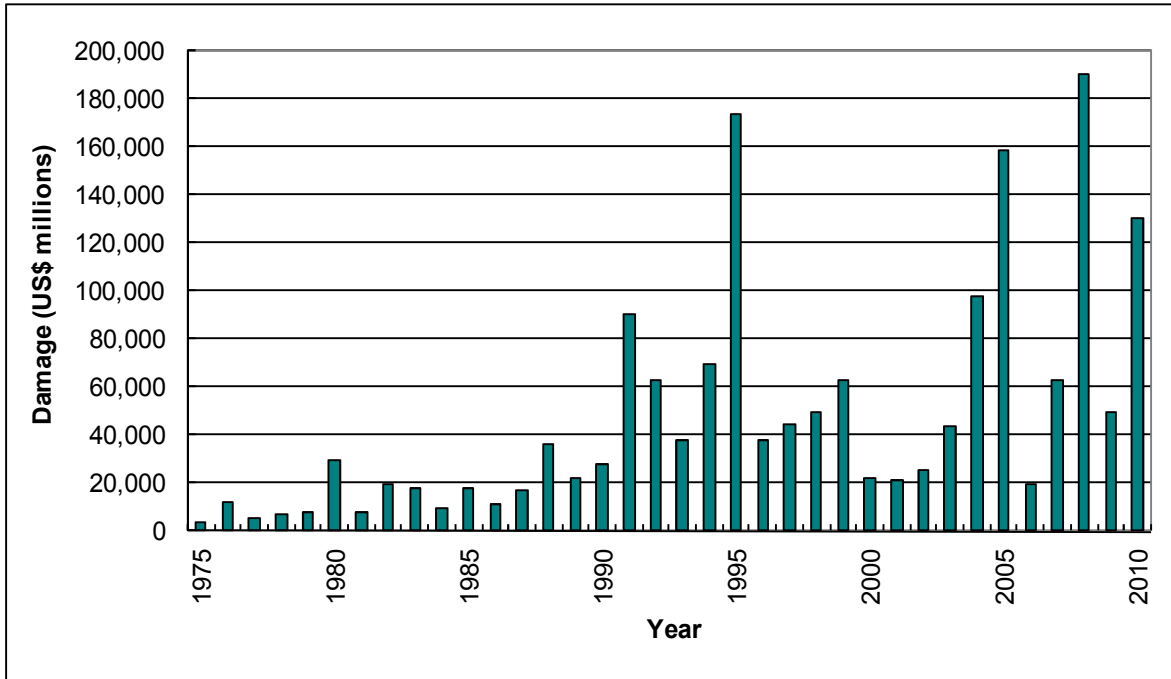


Figure 4-7: Amount of Damage, 1975-2010

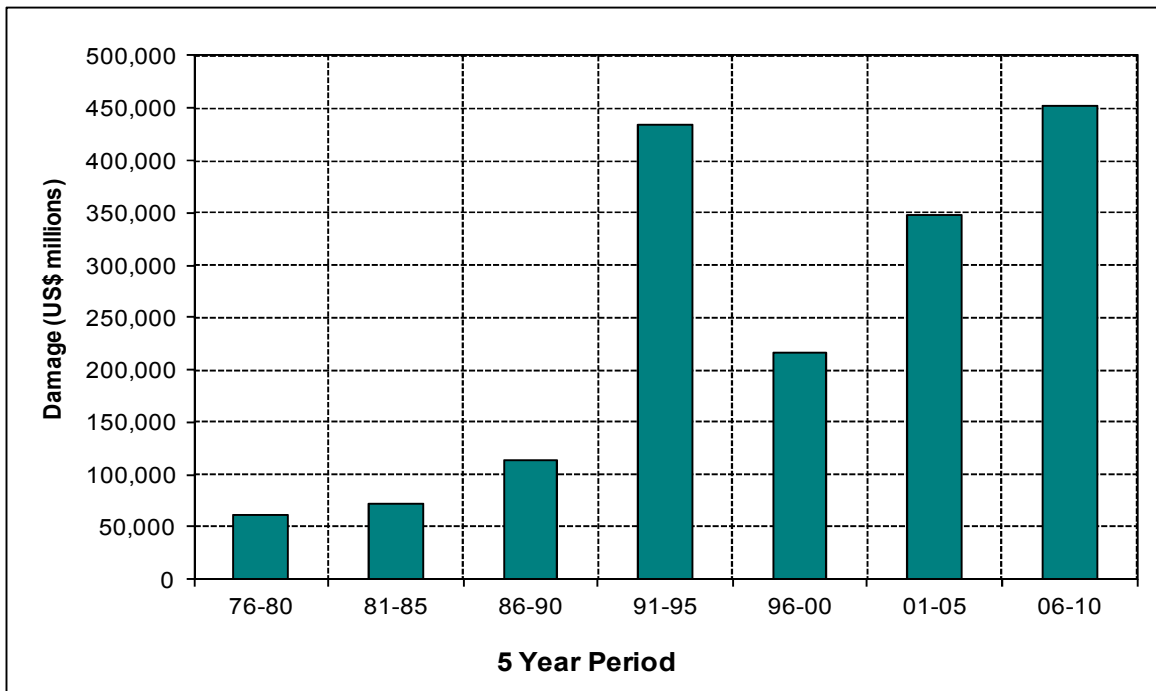


Figure 4-8: Amount of Damage (5-year period), 1976-2010

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, 1975-2010

For the period 1975-2010, Asia dominates and ranks first in all natural disaster's impact categories across regions of the world.

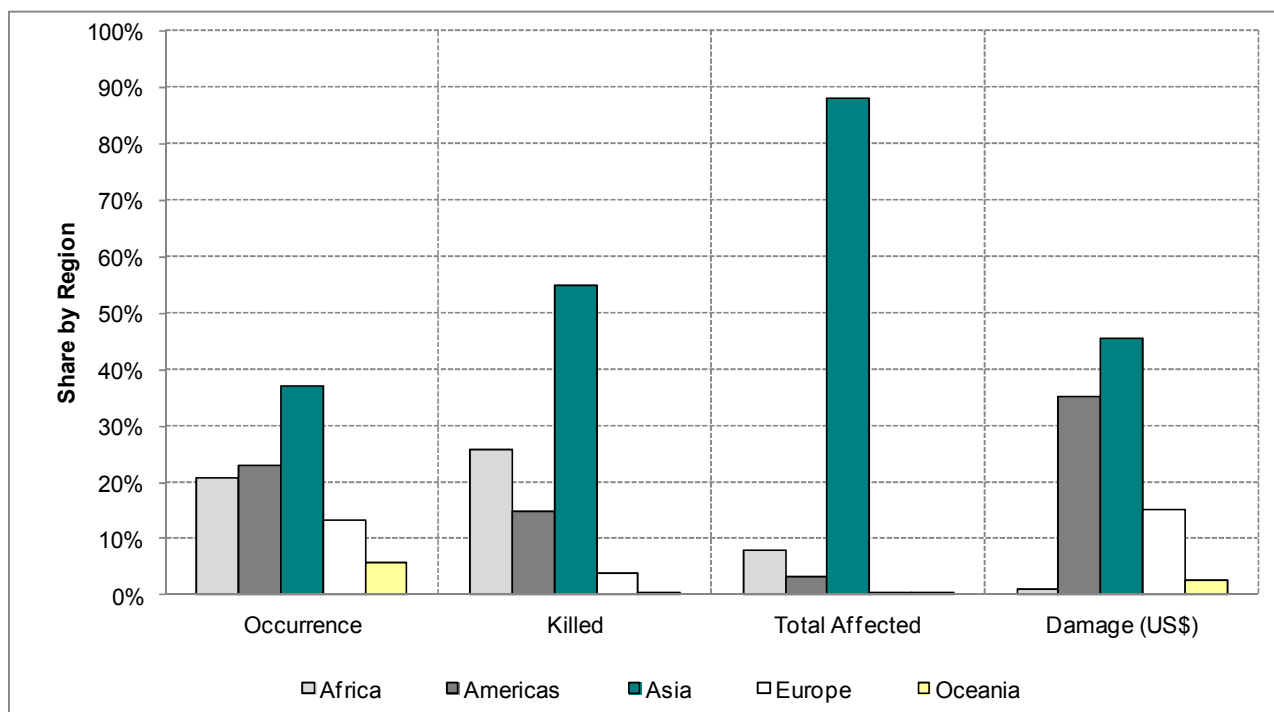


Figure 5: Impacts of World Natural Disasters by Region, 1975-2010

Table 5: Impacts of Natural Disasters by Region, 1975-2010

Region	Impact			
	Occurrence (share in %)	Killed ('000) (share in %)	Total Affected ('000) (share in %)	Damage (US\$ Million) (share in %)
Africa	2,164 (25.9)	726 (25.9)	505 (7.9)	20,630 (1.2)
Americas	2,384 (22.9)	418 (14.9)	205 (3.2)	601,274 (35.3)
Asia	3,871 (37.1)	1,537 (54.9)	5,656 (88.1)	774,587 (0.5)
Europe	1,398 (13.4)	113 (4.0)	33 (0.5)	260,101 (0.2)
Oceania	616 (5.9)	6 (0.2)	21 (0.3)	46,498 (2.7)
Total	10,433 (100.0)	2,800 (100.0)	6,421 (100.0)	1,703,090 (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 2010

6-1 The 25 Worst Disasters in Asia by Number of People Killed, 2010

The world experienced many earthquake disasters in 2010, including Haiti Earthquake and earthquakes in Chile and New Zealand. In Asia, the earthquake that occurred in Qinghai, China on 14 April 2010 tops the list of number of people killed, with 2,968 deaths reported.

Further, in Gansu Province in China, massive landslides led to large number of fatalities, taking the rank of 3. And the fourth place is also occupied by flood occurred in the central and southern China.

Table 6-1: The 25 Worst Disasters in Asia by Number of People Killed, 2010

	Disaster Type	Country	Date	Killed	Total Affected	Economic Damage (US\$ million)
1	Earthquake	China	14 Apr.	2,968	112,000	500
2	Flood	Pakistan	Jul.-Aug.	1,985	20,359,496	9,500
3	Mass Movement	China	7-8 Aug.	1,765	47,200	759
4	Flood	China	May-Aug	1,691	134,000,000	18,000
5	Epidemic	Philippines	1 Jan.	737	123,939	N.A.
6	Earthquake	Indonesia	24 Oct.	530	11,864	N.A.
7	Volcano	Indonesia	24 Oct.	322	137,140	N.A.
8	Flood	Indonesia	2-6 Oct.	291	12,428	78
9	Flood	Thailand	Oct.-Dec.	258	8,970,653	332
10	Extreme Temperature	India	Mar.-May	250	N.A.	N.A.
11	Flood	India	Nov.-Dec.	203	N.A.	22
12	Flood	India	18-30 Sep.	200	3,267,183	1,680
13	Flood	India	6-8 Aug.	196	405	N.A.
14	Extreme Temperature	Japan	19-25 Jul.	170	15,000	N.A.
15	Mass Movement	Afghanistan	6-9 Feb.	169	130	N.A.
16	Flood	China	Jun.-Aug.	152	6,000,000	N.A.
17	Storm	Philippines	12-15 Jul.	146	585,474	9
18	Flood	Nepal	8/21~24	138	8,000	N.A.
19	Storm	India	4/13~14	114	500,000	N.A.
20	Flood	Philippines	Dec.'10-Jan.'11	110	1,972,446	47
21	Extreme Temperature	India	1/2~13	100	N.A.	N.A.
22	Mass Movement	China	6/28	99	N.A.	N.A.
23	Flood	India	5-15 Jul.	98	523,000	N.A.
24	Mass Movement	China	18 Aug.	92	N.A.	N.A.
25	Flood	Viet Nam	1-6 Oct.	84	679,825	143

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, 2010

Using the index of the ratio of the number of people killed to total country population, Flood which hit wide area of Pakistan from July to August takes the first place. In addition, flood dominates the list with 11 incidences in 10 different countries. The flood gave great impact to the countries in many parts of Asia in 2010.

Table 6-2: The 25 Worst Disasters in Asia by Number of People Killed per Million Population, 2010

Disaster Type	Country	Date	Killed (per million)	Killed	*Population ('000s)
1 Flood	Pakistan	Jul.-Aug.	11.64	1,985	170,494
2 Flood	Tajikistan	6-10 May	10.76	73	6,783
3 Epidemic	Philippines	1 Jan.	8.04	737	91,703
4 Storm	Oman	6 Jun.	5.90	16	2,712
5 Wildfire	Israel	2-5 Dec.	5.88	44	7,486
6 Mass Movement	Afghanistan	6-9 Feb.	5.05	169	33,438
7 Flood	Nepal	21-24 Aug.	4.69	138	29,433
8 Flood	Thailand	Oct.-Dec.	3.76	258	68,706
9 Epidemic	Tajikistan	Jan.-Aug.	3.10	21	6,783
10 Flood	Kazakhstan	Feb.-Mar.	2.76	44	15,925
11 Earthquake	Indonesia	24 Oct.	2.23	530	237,414
12 Earthquake	China	14 Apr.	2.23	2,968	1,331,380
13 Epidemic	Nepal	Apr.-Dec.	2.21	65	29,433
14 Flood	Afghanistan	5-8 May	2.09	70	33,438
15 Flood	Afghanistan	27 Jul.-3 Aug.	1.94	65	33,438
16 Storm	Philippines	12-15 Jul.	1.59	146	91,703
17 Mass Movement	Myanmar	17 Jun.	1.43	68	47,601
18 Volcano	Indonesia	24 Oct.	1.36	322	237,414
19 Extreme Temperature	Japan	19-25 Jul.	1.33	170	127,558
20 Mass Movement	China	7-8 Aug.	1.33	1,765	1,331,380
21 Flood	China	May-Aug	1.27	1,691	1,331,380
22 Flood	Indonesia	2-6 Oct.	1.23	291	237,414
23 Flood	Philippines	Dec.2010-Jan.2011	1.20	110	91,703
24 Mass Movement	Afghanistan	2 Mar.	1.05	35	33,438
25 Flood	Viet Nam	1-6 Oct.	0.98	84	86,025

Source:

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

*Data from World Bank 2009

6-3 The 25 Worst Disasters in Asia by Total Number of People Affected, 2010

In terms of total number of people affected, the flood in China that occurred from May to August ranks first with 134 million affected people. The continued drought in China since 2009 also takes the second place. The flood in Pakistan which affected approximately 10% of population came in the third. Flood and storm are the most dominant in terms of incidence in the list, affecting China, Pakistan, Thailand, India, Philippines, Bangladesh, and Viet Nam.

Table 6-3: The 25 Worst Disasters in Asia by Total Number of People Affected, 2010

Disaster Type	Country	Date	Killed	Total Affected	Economic Damage (US\$ million)
1 Flood	China	May-Aug	1,691	134,000,000	18,000
2 Drought	China	Oct. 2009 - May 2010	N.A.	60,000,000	3,600
3 Flood	Pakistan	Jul.-Aug.	1,985	20,359,496	9,500
4 Flood	Thailand	Oct.-Dec.	258	8,970,653	332
5 Drought	Thailand	Mar.'10-Mar.'11	N.A.	6,482,602	N.A.
6 Flood	China	Jun.-Aug.	152	6,000,000	N.A.
7 Flood	India	18-30 Sep.	200	3,267,183	1,680
8 Mass Movement	China	30 May-3 Jun.	52	2,100,000	N.A.
9 Storm	Philippines	18 Oct.	35	2,009,026	276
10 Flood	Philippines	Dec.2010-Jan.2011	110	1,972,446	47
11 Storm	China	1-27 Jan.	30	1,881,100	90
12 Drought	Syrian Arab Rep	2008-2010	N.A.	1,300,000	N.A.
13 Storm	China	20 Sep.	75	1,000,000	298
14 Flood	Viet Nam	14-18 Oct.	21	761,000	154
15 Flood	Viet Nam	1-6 Oct.	84	679,825	143
16 Storm	Philippines	12-15 Jul.	146	585,474	9
17 Flood	India	5-15 Jul.	98	523,000	N.A.
18 Flood	Bangladesh	1-12 Oct.	15	500,000	N.A.
19 Storm	India	13-14 Apr.	114	500,000	N.A.
20 Flood	Philippines	1-10 Nov.	16	450,673	N.A.
21 Flood	India	5-15 Jul.	53	400,000	447
22 Storm	Myanmar	22 Oct.	45	260,049	57
23 Storm	Bangladesh	13-14 Apr.	8	247,110	N.A.
24 Flood	Philippines	1 Jun.	N.A.	200,000	N.A.
25 Storm	China	9 Sep.	3	186,000	N.A.

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, 2010

Using the index of total affected people per thousand population, top 3 were occupied by flood disasters. Flood in Thailand comes first with approximately 130 people affected for every 1,000 people in the country, and flood in Pakistan takes the second place with approximately 120 affected for every 1,000 people, followed by flood in China affected approximately 100 people per 1,000. And three drought disasters in Thailand, Syria, and China ranked in the 4th to 6th places.

Table 6-4: The 25 Worst Disasters in Asia by Total Number of People Affected per Thousand Population, 2010

Disaster Type	Country	Date	Total Affected (per '000)	Total Affected	Population ('000s)
1 Flood	Thailand	Oct.-Dec.	130.57	8,970,653	68,706
2 Flood	Pakistan	Jul.-Aug.	119.41	20,359,496	170,494
3 Flood	China	May-Aug	100.65	134,000,000	1,331,380
4 Drought	Thailand	Mar.'10-Mar.'11	94.35	6,482,602	68,706
5 Drought	Syrian Arab Rep	2008-2010	64.88	1,300,000	20,038
6 Drought	China	Oct. 2009 - May 2010	45.07	60,000,000	1,331,380
7 Storm	Philippines	18 Oct.	21.91	2,009,026	91,703
8 Flood	Philippines	Dec.2010-Jan.2011	21.51	1,972,446	91,703
9 Flood	Viet Nam	14-18 Oct.	8.85	761,000	86,025
10 Flood	Sri Lanka	10 Nov.-11 Dec.	7.94	164,193	20,669
11 Flood	Viet Nam	1-6 Oct.	7.90	679,825	86,025
12 Flood	Azerbaijan	4-13 May.	7.82	70,000	8,947
13 Storm	Philippines	12-15 Jul.	6.38	585,474	91,703
14 Storm	Myanmar	22 Oct.	5.46	260,049	47,601
15 Flood	Philippines	1-10 Nov.	4.91	450,673	91,703
16 Flood	China	Jun.-Aug.	4.51	6,000,000	1,331,380
17 Flood	Sri Lanka	14-20 May	3.63	75,000	20,669
18 Flood	Bangladesh	1-12 Oct.	3.40	500,000	147,030
19 Mass Movement Wet	Myanmar	17 Jun.	3.05	145,000	47,601
20 Flood	India	18-30 Sep.	2.83	3,267,183	1,155,348
21 Wildfire	Israel	2-5 Dec.	2.67	20,022	7,486
22 Flood	Philippines	1 Jun.	2.18	200,000	91,703
23 Storm	Hong Kong (China)	21-23 Jul.	2.14	15,000	7,004
24 Storm	Bangladesh	13-14 Apr.	1.68	247,110	147,030
25 Storm	Korea Dem P Rep	2 Sep.	1.65	40,000	24,238

Source:

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

*Data from World Bank 2009

6-5 The 25 Worst Disasters in Asia by Economic Damage, 2010

In the category of economic damage, flood in China from May to August tops the list with damage amounting to approximately US\$18 billion. Following the result of 2009, China, with 8 incidences on the list, is the worst affected country in this impact category of economic damage.

The flood in Pakistan came in the 2nd place with the economic loss of US\$9.5 billion. Continued drought in China since 2009 also gave huge impact to the economy ranking in the top 3.

Table 6-5: The 25 Worst Disasters in Asia by Economic Damage, 2010

Disaster Type	Country	Date	People Killed	People Affected	Economic Damage (US\$ million)
1 Flood	China	May-Aug	1,691	134,000,000	18,000
2 Flood	Pakistan	Jul.-Aug.	1,985	20,359,496	9,500
3 Drought	China	Oct. 2009 - May 2010	N.A.	60,000,000	3,600
4 Flood	India	18-30 Sep.	200	3,267,183	1,680
5 Earthquake	Taiwan (China)	4 Mar.	N.A.	96	1,000
6 Storm	Oman	6 Jun.	16	N.A.	1,000
7 Mass Movement	China	7-8 Aug.	1,765	47,200	759
8 Earthquake	China	14 Apr.	2,968	112,000	500
9 Flood	India	5-15 Jul.	53	400,000	447
10 Storm	China	22 Oct.	N.A.	N.A.	420
11 Flood	Thailand	Oct.-Dec.	258	8,970,653	332
12 Storm	China	20 Sep.	75	1,000,000	298
13 Storm	Philippines	18 Oct.	35	2,009,026	276
14 Wildfire	Israel	2-5 Dec.	44	20,022	270
15 Flood	Viet Nam	12-17 Nov.	50	10,000	256
16 Flood	Tajikistan	6-10 May	73	6,708	204
17 Flood	China	6 Oct.	4	130,000	171
18 Flood	Viet Nam	14-18 Oct.	21	761,000	154
19 Flood	Viet Nam	1-6 Oct.	84	679,825	143
20 Flood	Viet Nam	29 Oct.-10 Nov.	31	39,008	108
21 Flood	Sri Lanka	14-20 May	20	75,000	105
22 Storm	China	1-27 Jan.	30	1,881,100	90
23 Storm	Pakistan	6-7 Jun.	23	4,000	80
24 Flood	Indonesia	2-6 Oct.	291	12,428	78
25 Flood	Cambodia	20 Oct. -9 Nov.	8	N.A.	70

Source:

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

*Data from World Bank 2008; **Data from IMF World Economy Outlook Database

6-6 The 25 Worst Disasters in Asia by Ratio of Economic Damage to GDP, 2010

In terms of economic damage incurred relative to gross domestic product (GDP), flood in Pakistan, resulted in damage worth approximately 5.9 percent of its GDP, tops the list. In the second place, the flood in Tajikistan gave great impact to its economy accounting for damage cost more than 4 percent of its GDP. Storm in Oman came in the third with the economic damage of more than 2 percent of its GDP.

Table 6-6: The 25 Worst Disasters in Asia by Ratio of Economic Damage to GDP, 2010

Disaster Type	Country	Date	Damage (as % of GDP)	Damage (US\$ millions)	*GDP2009 (US\$ billions)
1 Flood	Pakistan	Jul.-Aug.	5.871	9,500	161.82
2 Flood	Tajikistan	6-10 May	4.095	204	4.98
3 Storm	Oman	6 Jun.	2.134	1,000	46.86
4 Flood	Cambodia	20 Oct. -9 Nov.	0.673	70	10.40
5 Flood	China	May-Aug	0.361	18,000	4,991.26
6 Earthquake	Taiwan (China)	4 Mar.	0.265	1,000	377.45
7 Flood	Viet Nam	12-17 Nov.	0.263	256	97.18
8 Flood	Sri Lanka	14-20 May	0.250	105	42.07
9 Storm	Philippines	18 Oct.	0.164	276	168.33
10 Storm	Myanmar	22 Oct.	0.162	57	35.23
11 Flood	Viet Nam	14-18 Oct.	0.158	154	97.18
12 Flood	Viet Nam	1-6 Oct.	0.147	143	97.18
13 Wildfire	Israel	2-5 Dec.	0.138	270	195.39
14 Flood	Thailand	Oct.-Dec.	0.126	332	263.51
15 Flood	India	18-30 Sep.	0.122	1,680	1,377.26
16 Flood	Viet Nam	29 Oct.-10 Nov.	0.111	108	97.18
17 Drought	China	Oct. 2009 - May 2010	0.072	3,600	4,991.26
18 Storm	Pakistan	6-7 Jun.	0.049	80	161.82
19 Storm	Viet Nam	24-25 Aug.	0.045	44	97.18
20 Flood	India	5-15 Jul.	0.032	447	1,377.26
21 Flood	Kazakhstan	Feb.-Mar.	0.030	35	115.31
22 Earthquake	Tajikistan	2 Jan.	0.030	2	4.98
23 Flood	Philippines	Dec.2010- Jan.2011	0.028	47	168.33
24 Mass Movement	China	7-8 Aug.	0.015	759	4,991.26
25 Mass Movement	Pakistan	4 Jan.	0.011	18	161.82

Source:

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

*Data from World Bank 2008; **Data from IMF World Economy Outlook Database

7. Disasters in Asia by Country, 2010

Country	Disaster Type	Occurrence	Killed	Total Affected	Damage (US\$millions)
Afghanistan	Earthquake	1	11	1,070	
	Flood	2	135	45,000	
	Mass Movement	2	204	130	
Azerbaijan	Flood	1	3	70,000	
Bangladesh	Flood	2	15	575,000	
	Mass Movement	1	66	55,230	
	Storm	3	26	257,160	
Cambodia	Flood	1	8		70
China P Rep	Drought	1		60,000,000	3,600
	Earthquake	5	2,977	177,549	504
	Flood	5	1,911	140,194,000	18,171
	Mass Movement	8	2,137	2,147,835	759
	Storm	6	139	3,137,290	871
	Wildfire	1	22	3	
Hong Kong (China)	Storm	1	1	15,000	
India	Extreme temperature	2	350		
	Flood	9	788	4,283,088	2,149
	Mass Movement	1	14		
	Storm	6	265	507,080	
Indonesia	Earthquake	2	547	16,464	
	Flood	7	411	56,590	78
	Mass Movement	1	13	18	
	Volcano	2	323	152,200	
Iran Islam Rep	Earthquake	6	11	4,785	
Israel	Flood	1	2		
	Wildfire	1	44	20,022	270
Japan	Extreme temperature	1	170	15,000	
	Flood	1	10		
Kazakhstan	Flood	2	44	29,200	35
Korea Dem P Rep	Flood	2		55,785	
	Storm	1	20	40,000	
Korea Rep	Storm	1	12	41,500	
Kyrgyzstan	Epidemic	1		141	
	Mass Movement	1		8,350	
Myanmar	Mass Movement	1	68	145,000	
	Storm	1	45	260,049	57
Nepal	Epidemic	2	73	5,372	
	Flood	2	150	8,000	
Oman	Storm	1	16		1,000
Pakistan	Flood	4	2,113	20,363,496	9,500
	Mass Movement	2	50	30,405	18
	Storm	1	23	4,000	80
Palestine (West Bank)	Flood	1		500	
Philippines	Epidemic	1	737	123,939	
	Flood	9	162	2,846,935	51
	Mass Movement	1	2	927	0
	Storm	3	212	2,595,545	284
	Volcano	1		14,161	
Saudi Arabia	Flood	2	24	85	
Sri Lanka	Flood	2	27	239,193	105
Syrian Arab Rep	Drought	1		1,300,000	
Taiwan (China)	Earthquake	1		96	1,000
	Storm	2	34	100	73
Tajikistan	Earthquake	1		7,840	2
	Epidemic	1	21	456	
	Flood	2	75	8,622	204
Thailand	Drought	1		6,482,602	
	Epidemic	1	2	880	
	Flood	1	258	8,970,653	332
Turkey	Earthquake	1	51	3,600	
	Mass Movement	1	13	206	
Viet Nam	Flood	4	186	1,489,833	660
	Storm	3	35	34,600	45
Yemen	Flood	2	22	1,002	
Grand Total		144	15,078	256,843,587	39,917

Source:

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

In 2010, China accounts for 18 percent (26 occurrences) of the total number of disasters that hit Asia. The India logged 18 disasters (13%), Philippines 15 disasters (10%), and Indonesia 12 (8%). Vietnam and Pakistan each had 7 disasters (5%).

In other indices, China recorded the most number of disaster-related deaths (7,186 or 48% of the total), followed by Pakistan with 2,186 deaths (14%) and the Indonesia with 1,294 (9%).

China leads both the lists of countries with the most number of affected people (80%) and with most economic damage (60%). In the list of affected people, the Pakistan came second (8%), followed by Thailand (6%). Next to China in the economic damage is Pakistan (24%), followed by India (5%).

8. Disasters in Asia by Disaster Type, 2010

Disaster Type	Country	Occurrence	Killed	Total Affected	Damage (US\$millions)
Drought	China P Rep	1		60,000,000	3,600
	Syrian Arab Rep	1		1,300,000	
	Thailand	1		6,482,602	
Earthquake	Afghanistan	1	11	1,070	
	China P Rep	5	2,977	177,549	504
	Indonesia	2	547	16,464	
	Iran Islam Rep	6	11	4,785	
	Taiwan (China)	1		96	1,000
	Tajikistan	1		7,840	2
Epidemic	Turkey	1	51	3,600	
	Kyrgyzstan	1		141	
Epidemic	Nepal	2	73	5,372	
	Philippines	1	737	123,939	
	Tajikistan	1	21	456	
	Thailand	1	2	880	
Extreme temperature	India	2	350		
	Japan	1	170	15,000	
Flood	Afghanistan	2	135	45,000	
	Azerbaijan	1	3	70,000	
	Bangladesh	2	15	575,000	
	Cambodia	1	8		70
	China P Rep	5	1,911	140,194,000	18,171
	India	9	788	4,283,088	2,149
	Indonesia	7	411	56,590	78
	Israel	1	2		
	Japan	1	10		
	Kazakhstan	2	44	29,200	35
	Korea Dem P Rep	2		55,785	
	Nepal	2	150	8,000	
	Pakistan	4	2,113	20,363,496	9,500
	Palestine (West Bank)	1		500	
	Philippines	9	162	2,846,935	51
	Saudi Arabia	2	24	85	
	Sri Lanka	2	27	239,193	105
	Tajikistan	2	75	8,622	204
	Thailand	1	258	8,970,653	332
	Viet Nam	4	186	1,489,833	660
Yemen	2	22	1,002		
Mass Movement	Afghanistan	2	204	130	
	Bangladesh	1	66	55,230	
	China P Rep	8	2,137	2,147,835	759
	India	1	14		
	Indonesia	1	13	18	
	Kyrgyzstan	1		8,350	
	Myanmar	1	68	145,000	
	Pakistan	2	50	30,405	18
	Philippines	1	2	927	0
Turkey	1	13	206		
Storm	Bangladesh	3	26	257,160	
	China P Rep	6	139	3,137,290	871
	Hong Kong (China)	1	1	15,000	
	India	6	265	507,080	
	Korea Dem P Rep	1	20	40,000	
	Korea Rep	1	12	41,500	
	Myanmar	1	45	260,049	57
	Oman	1	16		1,000
	Pakistan	1	23	4,000	80
	Philippines	3	212	2,595,545	284
	Taiwan (China)	2	34	100	73
	Viet Nam	3	35	34,600	45
Volcano	Indonesia	2	323	152,200	
	Philippines	1		14,161	
Wildfire	China P Rep	1	22	3	
	Israel	1	44	20,022	270
Grand Total		144	15,078	256,843,587	39,917

Source:

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

In 2010, flood accounts for 43 percent (62 incidences) of the total number of disasters in Asia, while storm accounts for 20 percent (29 incidences). Floods ravaged India and the Philippines 9 times, Indonesia 7 and China 5, while storms hit China and India 6 times, respectively. Mass movement (19) and earthquake (17) account for 13 and 12 percent of the total disasters, respectively, with Iran (6) and China (8) receiving the most disasters respectively.

Flood account for 42 percent of all disaster-related deaths in Asia in 2010. Pakistan and China reported the most number of deaths in these disasters, respectively.

Flood and drought are the most pervasive disasters in terms of total affected population (accounting for 70 and 26 percent respectively), with China being the most affected country in total of these categories.

Flood (34%) is the most destructive disaster in terms of economic damage, followed by drought (9%) and storm (8%). In this index, China was the most affected country in the categories of flood, followed by Pakistan where nearly 10% of population was affected by flood.

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