

Natural Disasters in 2006: An Analytical Overview

Chapter 1: Impacts of Natural Disasters

This chapter deals with the overall trends in natural disasters and their impacts for the year 2006. It also addresses regional perspectives on disasters based on disaster types and discusses the vulnerability of natural disasters, especially in the Asian region.

1.1 Trends in Natural Disaster Damage and Characteristics

The following figures (Figures 1, 2, and 3) and summary tables (Tables 1A, 1B, 2A, 2B, 3A, and 3B) indicate an increasing trend in the occurrence of natural disasters. This is due to various factors, such as global climate change, environmental and ecological imbalances, increasing population density, ad-hoc urbanization, deforestation, and desertification. Compounded by these factors, natural disasters are resulting in an increased level of human suffering, loss of life, and economic losses. It is noteworthy to mention that the worldwide *total*¹ affected population in the year 2006 was about 2.1% of the world population (a decrease of about 14.5% over 2005 value) and the total worldwide economic damage in the year 2006 exceeded the GDP (purchasing power parity)² of certain developing countries in the Asia-Pacific and Africa, underscoring the importance of natural disaster mitigation strategies in these regions. For instance, the total amount of damage worldwide caused by natural disasters in the year 2006 was 4 times the annual GDP (PPP, 2006 estimate) of Mongolia, 3 times that of Tajikistan, 2 times that of Laos, and almost equal to the size of the economies of Armenia, Kyrgyz, and Papua New Guinea. This is quite a notable decrease when compared against 2005. When we compare with 2005, there was also a considerable decrease in the number of disasters that occurred (3%), the number of killed people (71%), the number of total affected people (15%), and the amount of economic damage incurred (88%) in 2006. Last year's figures were mainly due to the South Asian Earthquake in Pakistan and India, the event responsible for a significant portion of the human losses in Asia. This year's statistics show that almost 59% of the people killed, 89% of total affected people and 71% of the damage worldwide are in Asia. This clearly underscores the vulnerability of the region. This regional trend is quite alarming and represents a considerable obstacle to any development activities in the affected countries from the perspective of

¹ According to CRED, Belgium, the *total* affected population includes the number of people injured; number of people became homeless and number of people affected by various other means due to disasters.

sustainable development. Human suffering and economic losses undeniably create a development-vacuum that will be hard to fill in the near future.

Table 1A: Summary of Natural Disasters, 1975-2006

	Number of Disasters	Sum of Killed	Sum of Total Affected	Sum of Damage US\$ ('000s)
Asia	3,290	1,268,062	4,867,836,854	564,699,941
	37.49%	57.21%	88.87%	44.44%
World	8,776	2,216,408	5,477,392,009	1,270,630,884

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Table 1B: Summary of Natural Disasters, 2006

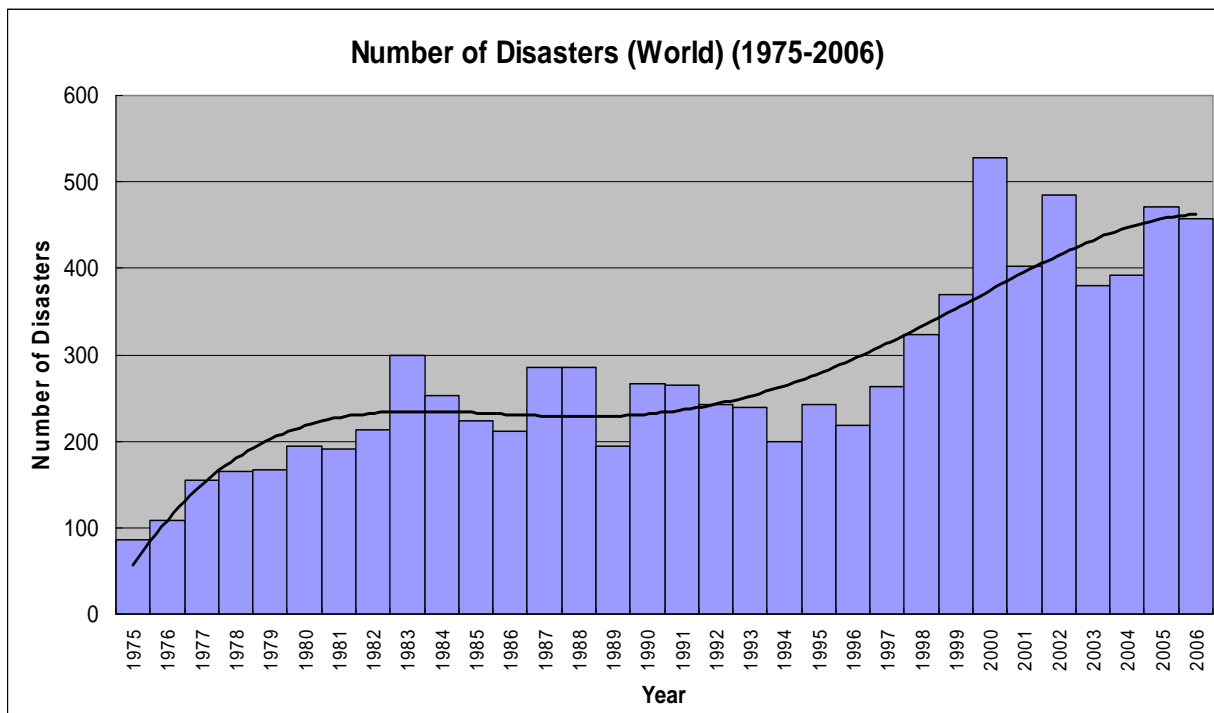
	Number of Disasters	Sum of Killed	Sum of Total Affected	Sum of Damage US\$ ('000s)
Asia	183	16,151	120,011,231	14,069,346
	40.04%	59.18%	88.85%	71.05%
World	457	27,292	135,068,229	19,801,519

Source: CRED-EMDAT, Université Catholique de Louvain , Brussels, Belgium, 2006

The following figures show the increasing trend in natural disasters, the number of total affected people, and the amount of damage from 1975 to 2006.

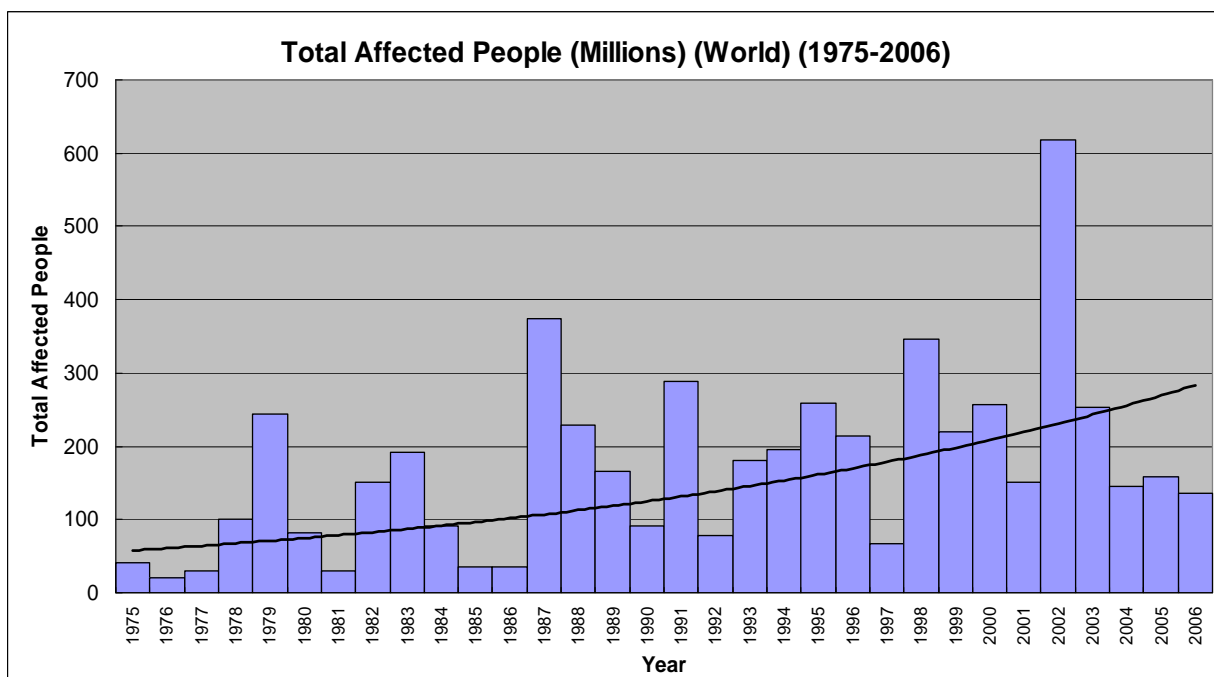
² We used GDP (PPP) 2006 estimate data from the World Fact Book.

Figure 1 Number of Disasters, 1975-2006 (World)

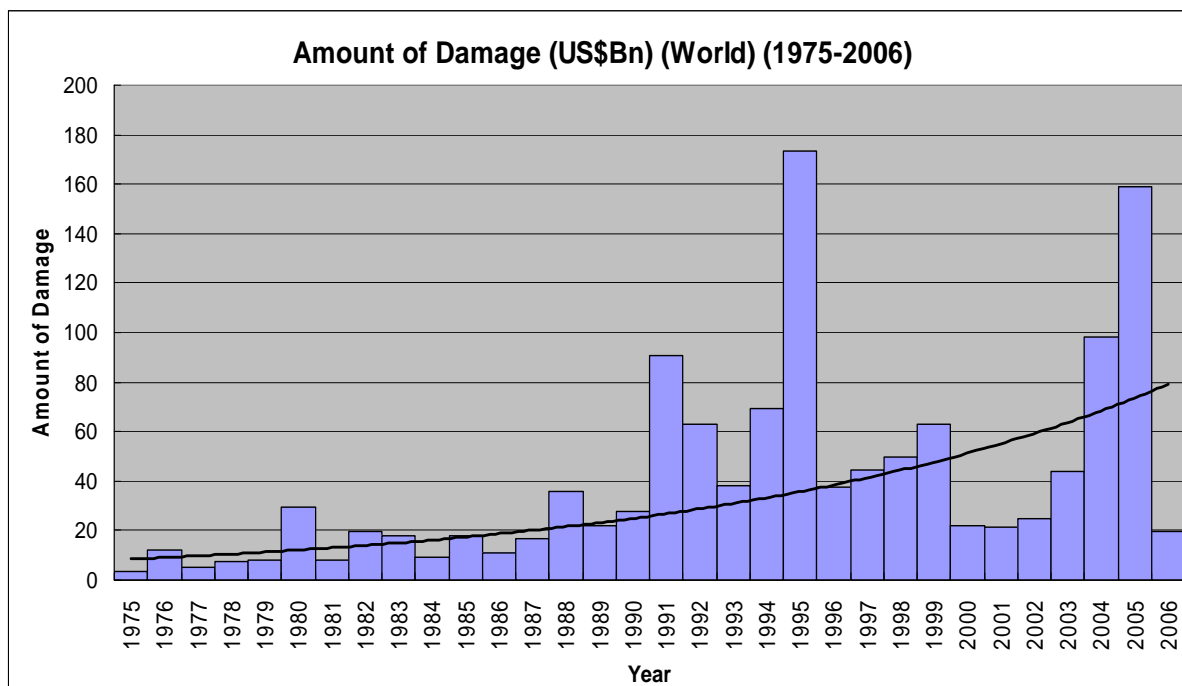


Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Figure 2 Number of Total Affected People (Millions), 1975-2006 (World)



Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Figure 3 Amount of Damage (US\$ Billions), 1975-2006 (World)

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

The following tables show regional disaster characteristics in relation to various types of disaster for the periods 1975-2006. Tables 2A and 3A in particular show this trend for the 32 years from 1975-2006 while Tables 2B and 3B show figures for 2006 only.

Table 2A: Summary of Natural Disasters by Region, 1975-2006

Continent	DisType	Count of DisNo	Sum of Killed	Sum of TotAff	Sum of Damage US\$ ('000s)
Africa	Drought	328	560,640	307,312,049	4,051,193
	Earthquake	55	6,719	1,516,616	8,725,608
	Epidemic	556	112,045	10,632,424	4,730
	Extreme Temperature	10	218	1,000,218	47,809
	Famine (natural)	34	6,087	31,607,592	89,000
	Flood	511	15,650	36,041,806	3,193,075
	Insect infestation	68		446,000	5,200
	Slide	24	552	20,304	
	Volcano	13	2,152	461,160	
	Wave / Surge	4	312	109,913	30,000
	Wild fire	14	120	16,710	3,500
Wind storm	141	3,358	11,198,644	2,796,873	
Africa Total		1,758	707,853	400,363,436	18,946,988
Americas	Drought	97	79	50,069,164	13,057,539
	Earthquake	153	43,311	11,723,093	56,720,010
	Epidemic	72	14,346	1,626,410	
	Extreme Temperature	67	5,403	4,089,468	13,911,250
	Famine (natural)	2		1,003,000	
	Flood	646	50,671	43,937,795	53,861,897
	Insect infestation	3		2,000	104,000
	Slide	112	5,210	1,163,028	1,085,200
	Volcano	54	22,010	1,550,175	2,029,022
	Wave / Surge	5	1,274	8,844	
	Wild fire	101	165	364,312	5,682,700
Wind storm	681	38,758	43,244,418	305,846,361	
Americas Total		1,993	181,227	158,781,707	452,297,979
Asia	Drought	138	3,928	1,425,115,138	14,379,391
	Earthquake	403	557,110	74,468,512	251,269,140
	Epidemic	240	44,929	6,867,563	
	Extreme Temperature	107	19,491	50,712,738	5,042,887
	Famine (natural)	10	760	8,670,000	4,399
	Flood	1,107	134,967	2,656,722,976	162,214,785
	Insect infestation	9		200	925
	Slide	239	16,670	5,869,441	477,034
	Volcano	58	1,424	2,194,663	579,149
	Wave / Surge	23	232,671	2,374,538	7,784,397
	Wild fire	60	450	3,246,085	19,249,500
Wind storm	896	255,662	631,595,000	103,698,334	
Asia Total		3,290	1,268,062	4,867,836,854	564,699,941
Europe	Drought	31		7,062,575	14,416,309
	Earthquake	158	8,704	2,842,309	34,404,776
	Epidemic	28	476	186,089	
	Extreme Temperature	148	38,552	849,428	3,316,088
	Famine (natural)	2		3,210,000	
	Flood	363	3,116	7,533,200	123,474,090
	Insect infestation	1			
	Slide	48	1,177	39,458	1,669,389
	Volcano	16	9	7,024	19,600
	Wave / Surge	1	11	2	
	Wild fire	81	322	132,587	3,118,249
Wind storm	299	1,974	8,642,320	28,557,948	
Europe Total		1,176	54,341	30,504,992	208,976,449
Oceania	Drought	25	98	8,653,635	11,006,000
	Earthquake	86	585	81,287	2,507,400
	Epidemic	7	288	4,850	
	Extreme Temperature	4	23	4,600,784	
	Flood	149	249	533,146	2,111,937
	Insect infestation	1			120,000
	Slide	18	444	10,615	2,466
	Volcano	14	9	227,722	400,000
	Wave / Surge	2	2,382	9,867	
	Wild fire	34	134	76,310	1,182,006
	Wind storm	219	713	5,706,804	8,379,718
Oceania Total		559	4,925	19,905,020	25,709,527
Grand Total		8,776	2,216,408	5,477,392,009	1,270,630,884

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Table 2B: Summary of Natural Disasters by Region, 2006

Continent	DisType	Count of DisNo	Sum of Killed	Sum of TotAff	Sum of Damage US\$ ('000s)
Africa	Drought	6	147	10,807,000	
	Earthquake	2	8	1,795	
	Epidemic	54	5,440	329,819	
	Flood	58	1,488	2,192,127	157,761
	Slide	1	24	2,000	
	Volcano	1			
	Wind storm	5	8	89,622	
Africa Total		127	7,115	13,422,363	157,761
Americas	Drought	1			
	Earthquake	2		12,519	73,000
	Extreme Temperature	5	200		
	Flood	37	305	818,247	1,938,300
	Slide	2	21		
	Volcano	5	5	320,263	150,000
	Wild fire	4	10	1,695	116,000
	Wind storm	12	85	290,800	638,760
Americas Total		68	626	1,443,524	2,916,060
Asia	Drought	2		19,900,000	817,000
	Earthquake	17	5,882	3,788,935	3,171,453
	Epidemic	8	56	153,632	
	Extreme Temperature	4	411	1,100	
	Flood	98	3,444	29,046,546	1,118,832
	Slide	14	1,489	396,290	13,146
	Volcano	2		54,849	
	Wave / Surge	1	802	35,543	2,000
	Wild fire	1		200	14,000
	Wind storm	36	4,067	66,634,136	8,932,915
Asia Total		183	16,151	120,011,231	14,069,346
Europe	Drought	1			225,573
	Earthquake	2		12,567	55,000
	Extreme Temperature	21	3,292	61,654	1,000,000
	Flood	27	51	89,145	161,925
	Slide	1	4	159	
	Wild fire	1	4		
	Wind storm	9	26	1,802	10,000
Europe Total		62	3,377	165,327	1,452,498
Oceania	Drought	1			
	Flood	6	6	15,224	3,500
	Slide	1	13		
	Volcano	2		1,221	
	Wild fire	3	4	141	100,000
Wind storm	4		9,198	1,102,354	
Oceania Total		17	23	25,784	1,205,854
Grand Total		457	27,292	135,068,229	19,801,519

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Table 3A: Summary of Natural Disasters by Disaster Type, 1975-2006

DisType	Continent	Count of DisNo	Sum of Killed	Sum of TotAff	Sum of Damage US\$ ('000s)
Drought	Africa	328	560,640	307,312,049	4,051,193
	Americas	97	79	50,069,164	13,057,539
	Asia	138	3,928	1,425,115,138	14,379,391
	Europe	31		7,062,575	14,416,309
	Oceania	25	98	8,653,635	11,006,000
Drought Total		619	564,745	1,798,212,561	56,910,432
Earthquake	Africa	55	6,719	1,516,616	8,725,608
	Americas	153	43,311	11,723,093	56,720,010
	Asia	403	557,110	74,468,512	251,269,140
	Europe	158	8,704	2,842,309	34,404,776
	Oceania	86	585	81,287	2,507,400
Earthquake Total		855	616,429	90,631,817	353,626,934
Epidemic	Africa	556	112,045	10,632,424	4,730
	Americas	72	14,346	1,626,410	
	Asia	240	44,929	6,867,563	
	Europe	28	476	186,089	
	Oceania	7	288	4,850	
Epidemic Total		903	172,084	19,317,336	4,730
Extreme Temperature	Africa	10	218	1,000,218	47,809
	Americas	67	5,403	4,089,468	13,911,250
	Asia	107	19,491	50,712,738	5,042,887
	Europe	148	38,552	849,428	3,316,088
	Oceania	4	23	4,600,784	
Extreme Temperature Total		336	63,687	61,252,636	22,318,034
Famine (natural)	Africa	34	6,087	31,607,592	89,000
	Americas	2		1,003,000	
	Asia	10	760	8,670,000	4,399
	Europe	2		3,210,000	
Famine (natural) Total		48	6,847	44,490,592	93,399
Flood	Africa	511	15,650	36,041,806	3,193,075
	Americas	646	50,671	43,937,795	53,861,897
	Asia	1,107	134,967	2,656,722,976	162,214,785
	Europe	363	3,116	7,533,200	123,474,090
	Oceania	149	249	533,146	2,111,937
Flood Total		2,776	204,653	2,744,768,923	344,855,784
Insect infestation	Africa	68		446,000	5,200
	Americas	3		2,000	104,000
	Asia	9		200	925
	Europe	1			
	Oceania	1			120,000
Insect infestation Total		82		448,200	230,125
Slide	Africa	24	552	20,304	
	Americas	112	5,210	1,163,028	1,085,200
	Asia	239	16,670	5,869,441	477,034
	Europe	48	1,177	39,458	1,669,389
	Oceania	18	444	10,615	2,466
Slide Total		441	24,053	7,102,846	3,234,089
Volcano	Africa	13	2,152	461,160	
	Americas	54	22,010	1,550,175	2,029,022
	Asia	58	1,424	2,194,663	579,149
	Europe	16	9	7,024	19,600
	Oceania	14	9	227,722	400,000
Volcano Total		155	25,604	4,440,744	3,027,771
Wave / Surge	Africa	4	312	109,913	30,000
	Americas	5	1,274	8,844	
	Asia	23	232,671	2,374,538	7,784,397
	Europe	1	11	2	
	Oceania	2	2,382	9,867	
Wave / Surge Total		35	236,650	2,503,164	7,814,397
Wild fire	Africa	14	120	16,710	3,500
	Americas	101	165	364,312	5,682,700
	Asia	60	450	3,246,085	19,249,500
	Europe	81	322	132,587	3,118,249
	Oceania	34	134	76,310	1,182,006
Wild fire Total		290	1,191	3,836,004	29,235,955
Wind storm	Africa	141	3,358	11,198,644	2,796,873
	Americas	681	38,758	43,244,418	305,846,361
	Asia	896	255,662	631,595,000	103,698,334
	Europe	299	1,974	8,642,320	28,557,948
	Oceania	219	713	5,706,804	8,379,718
Wind storm Total		2,236	300,465	700,387,186	449,279,234
Grand Total		8,776	2,216,408	5,477,392,009	1,270,630,884

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Table 3B: Summary of Natural Disasters by Disaster Type, 2006

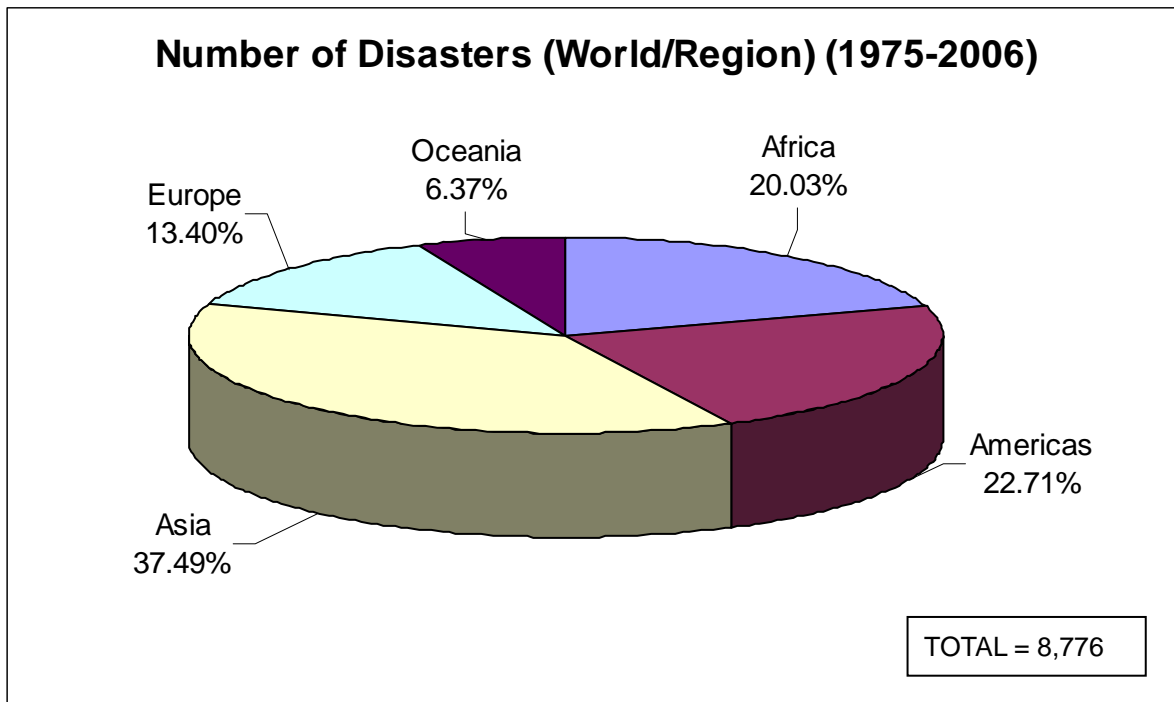
DisType	Continent	Count of DisNo	Sum of Killed	Sum of TotAff	Sum of Damage US\$ ('000s)
Drought	Africa	6	147	10,807,000	
	Americas	1			
	Asia	2		19,900,000	817,000
	Europe	1			225,573
	Oceania	1			
Drought Total		11	147	30,707,000	1,042,573
Earthquake	Africa	2	8	1,795	
	Americas	2		12,519	73,000
	Asia	17	5,882	3,788,935	3,171,453
	Europe	2		12,567	55,000
Earthquake Total		23	5,890	3,815,816	3,299,453
Epidemic	Africa	54	5,440	329,819	
	Asia	8	56	153,632	
Epidemic Total		62	5,496	483,451	
Extreme Temperatu	Americas	5	200		
	Asia	4	411	1,100	
	Europe	21	3,292	61,654	1,000,000
Extreme Temperature Total		30	3,903	62,754	1,000,000
Flood	Africa	58	1,488	2,192,127	157,761
	Americas	37	305	818,247	1,938,300
	Asia	98	3,444	29,046,546	1,118,832
	Europe	27	51	89,145	161,925
	Oceania	6	6	15,224	3,500
Flood Total		226	5,294	32,161,289	3,380,318
Slide	Africa	1	24	2,000	
	Americas	2	21		
	Asia	14	1,489	396,290	13,146
	Europe	1	4	159	
	Oceania	1	13		
Slide Total		19	1,551	398,449	13,146
Volcano	Africa	1			
	Americas	5	5	320,263	150,000
	Asia	2		54,849	
	Oceania	2		1,221	
Volcano Total		10	5	376,333	150,000
Wave / Surge	Asia	1	802	35,543	2,000
Wave / Surge Total		1	802	35,543	2,000
Wild fire	Americas	4	10	1,695	116,000
	Asia	1		200	14,000
	Europe	1	4		
	Oceania	3	4	141	100,000
Wild fire Total		9	18	2,036	230,000
Wind storm	Africa	5	8	89,622	
	Americas	12	85	290,800	638,760
	Asia	36	4,067	66,634,136	8,932,915
	Europe	9	26	1,802	10,000
	Oceania	4		9,198	1,102,354
Wind storm Total		66	4,186	67,025,558	10,684,029
Grand Total		457	27,292	135,068,229	19,801,519

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

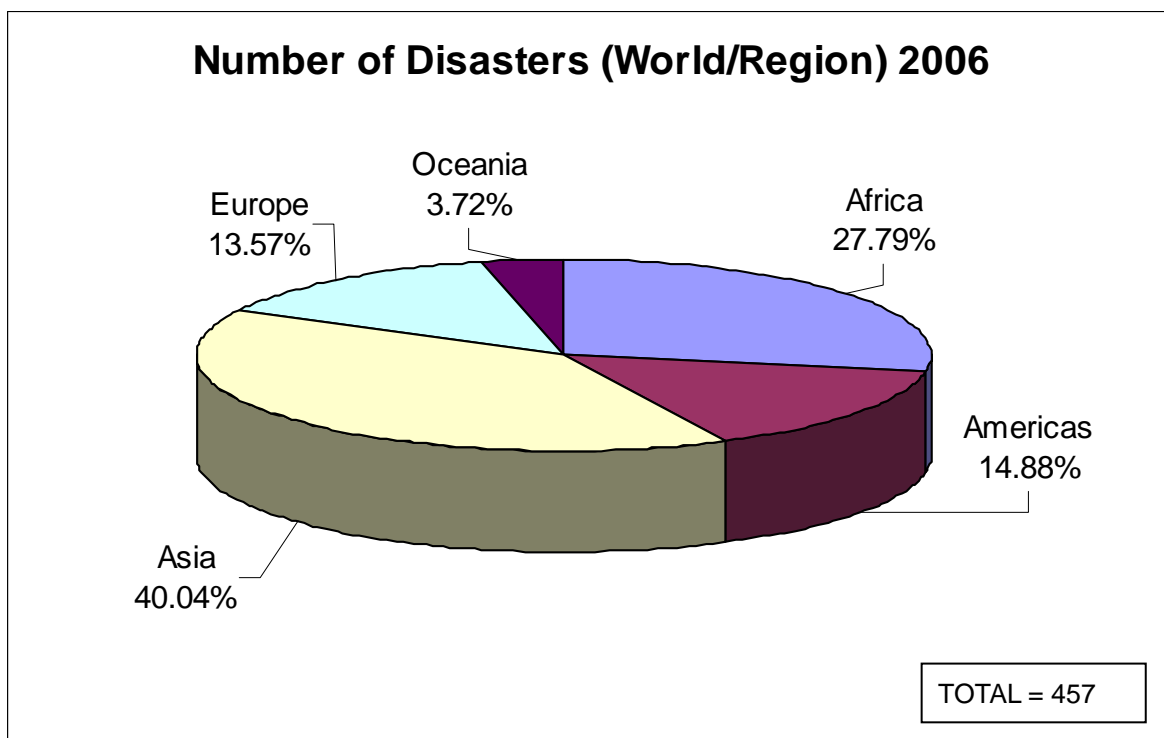
1.2 Regional Vulnerability: Disaster-Prone Asia

The years 2004 and 2005 were particularly disastrous years for Asia due to the Indian Ocean Tsunami, South Asian Earthquake as well as other earthquakes, wind storms, and floods. The year 2006 was likewise disastrous as a result of the earthquake plus tsunami in Indonesia, flood in China and India and typhoon and landslide in the Philippines, which accounted for almost 59% of the disaster-related human losses in the world. The statistics make the region's vulnerability to natural disasters quite evident. The majority of human losses and suffering, and noticeably the majority of economic losses, were reported in this region in 2006, as had been the case in previous years. Specifically, nearly 89% (down 9% from 2005) of the total affected people and 59% (down 81% from 2005) of the human losses were reported in Asia. Further a noticeable 71% of the reported economic damage also came from Asia in 2006 and this is a record 500% increase from 2005.

Furthermore, in 2006, the majority of economic losses caused by disasters happened in the Asia, followed by Americas, Europe, Oceania and Africa. These losses were due to the natural disasters that hit China, Indonesia, the Philippines and India and Pakistan (earthquakes, windstorms and flood). The earthquake and consequent tsunami in Indonesia, floods in China and windstorms that hit the Philippines highlighted for the world the region's vulnerability to such a disaster. Outside of Asia, disaster damages were also reported from the US, and Australia. This year also, Africa was subjected to epidemics, floods, and droughts which affected millions of people in the region. Like last year, Europe again experienced extreme temperatures, floods, and wind storms which caused considerable human and economic losses. The following figures from 4A to 7B show the regional trends for 2006 as well as for the period 1975-2006. Figures 8A to 11C show trends by disaster type for 2006 and for the 1975-2006 period, for the world and the Asian region. We have included figures not only for the year 2006, but also for the 32-year period from 1975 to 2006. This will provide a better understanding of the situation and a useful basis for comparison.

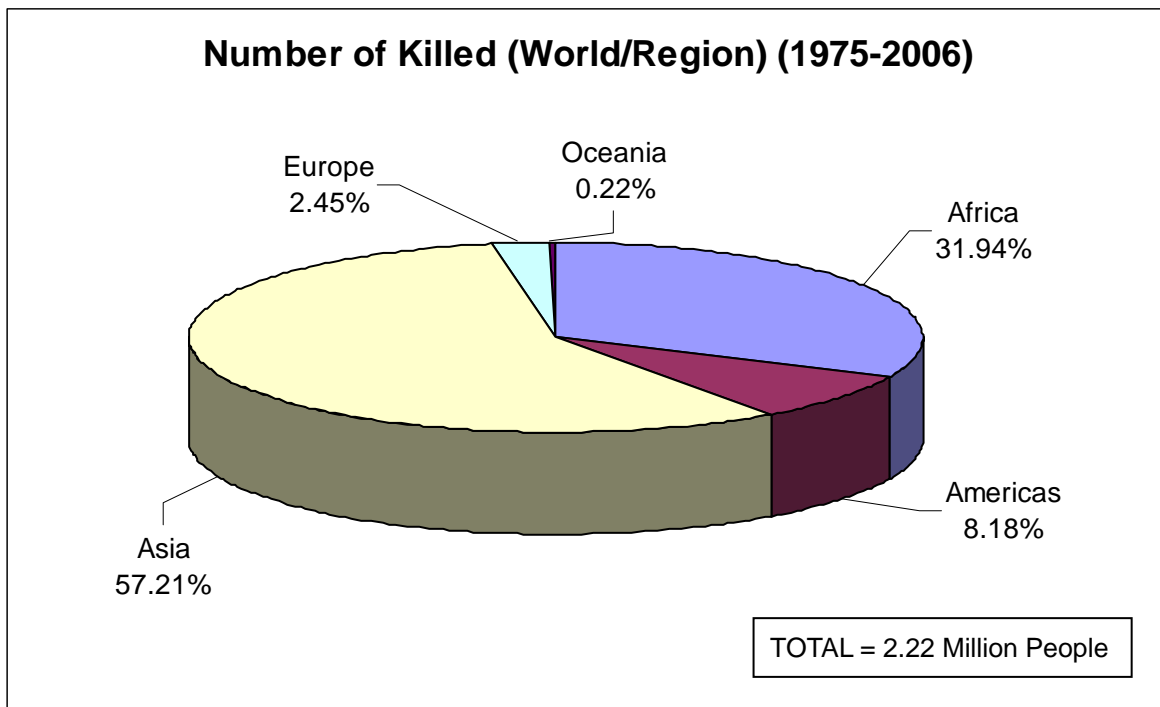
Figure 4A Proportion of Disasters by Region, 1975-2006

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Figure 4B Proportion of Disasters by Region, 2006

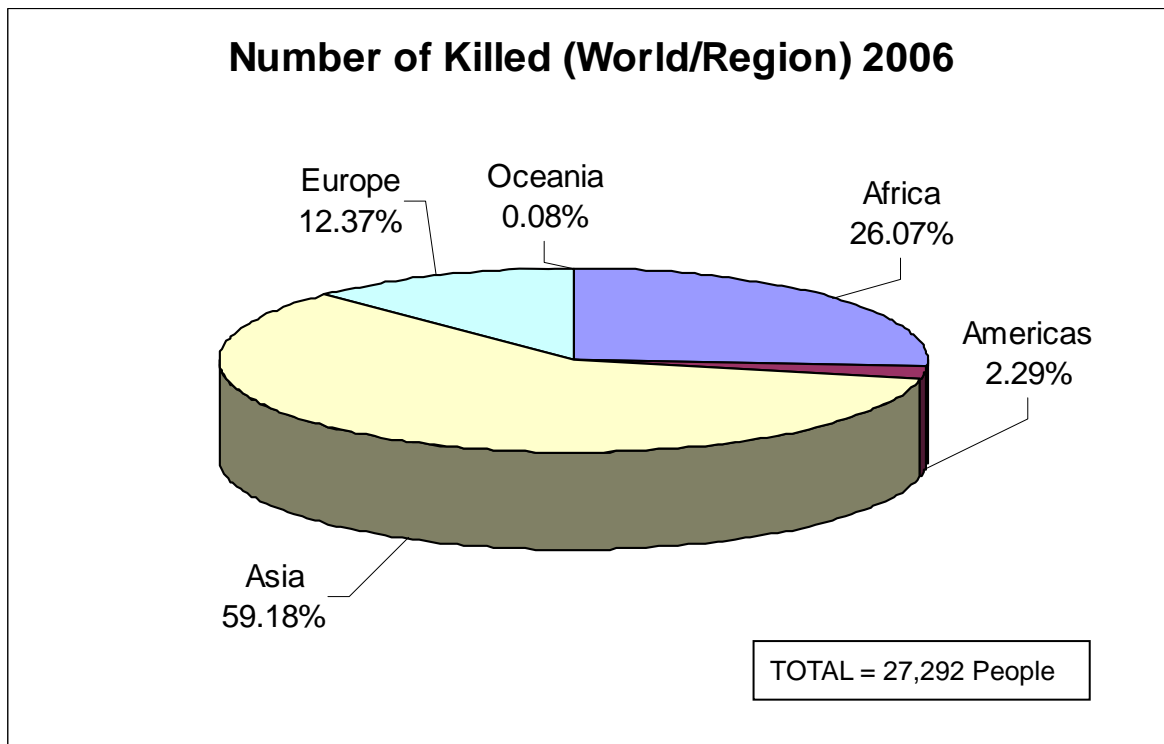
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Figure 5A Proportion of People Killed by Region, 1975-2006



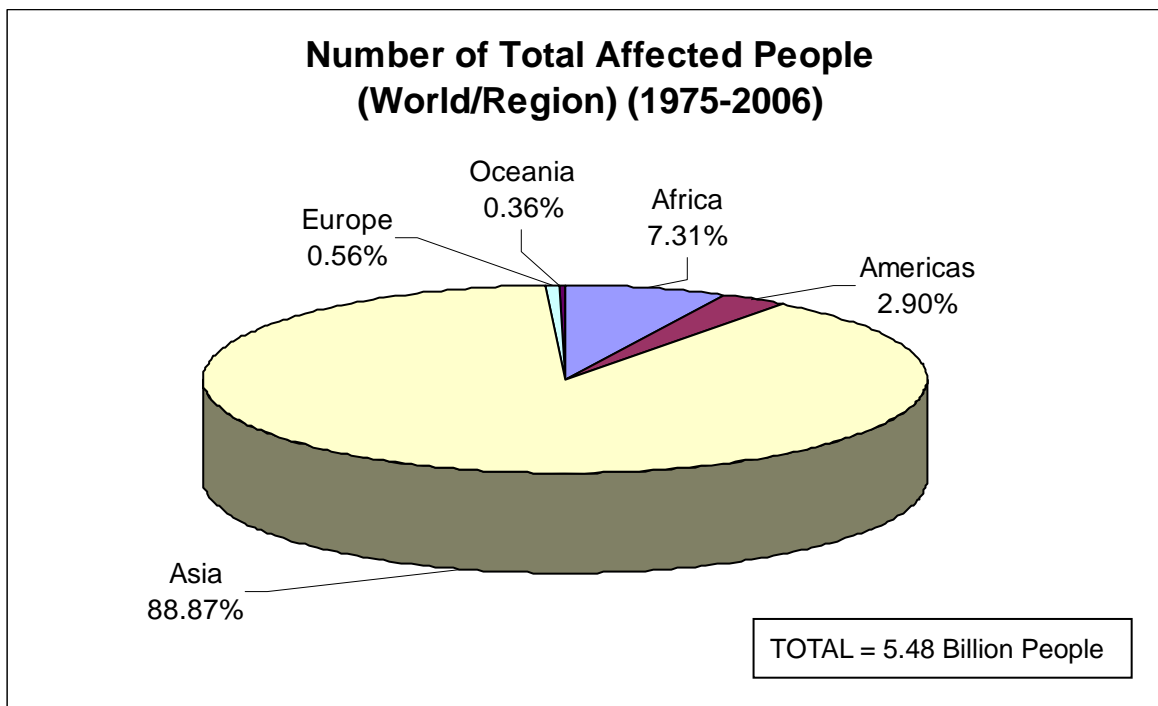
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Figure 5B Proportion of People Killed by Region, 2006



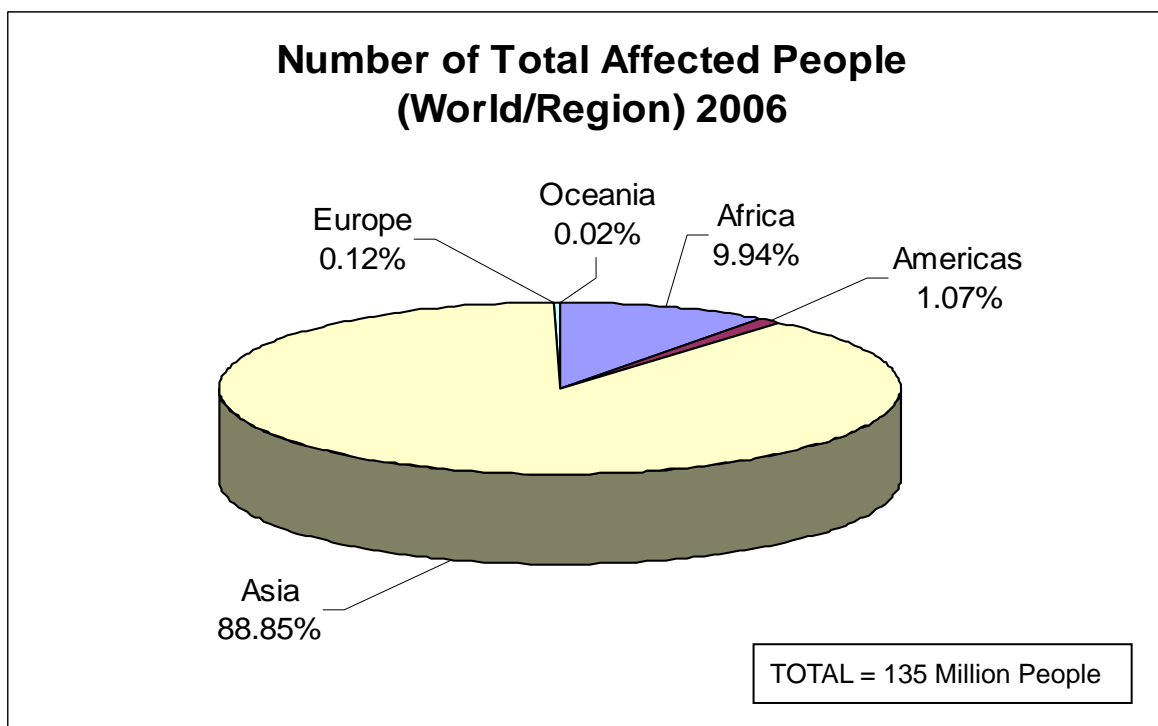
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Figure 6A Proportion of Total Affected People by Region, 1975-2006



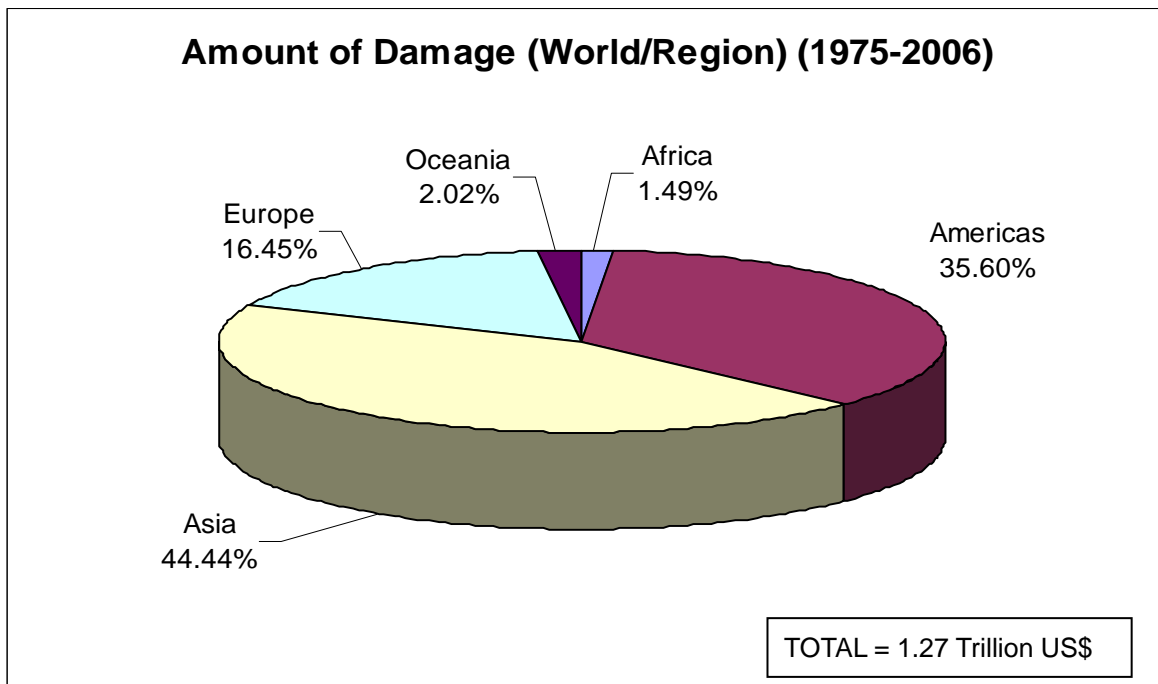
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Figure 6B Proportion of Total Affected People by Region, 2006



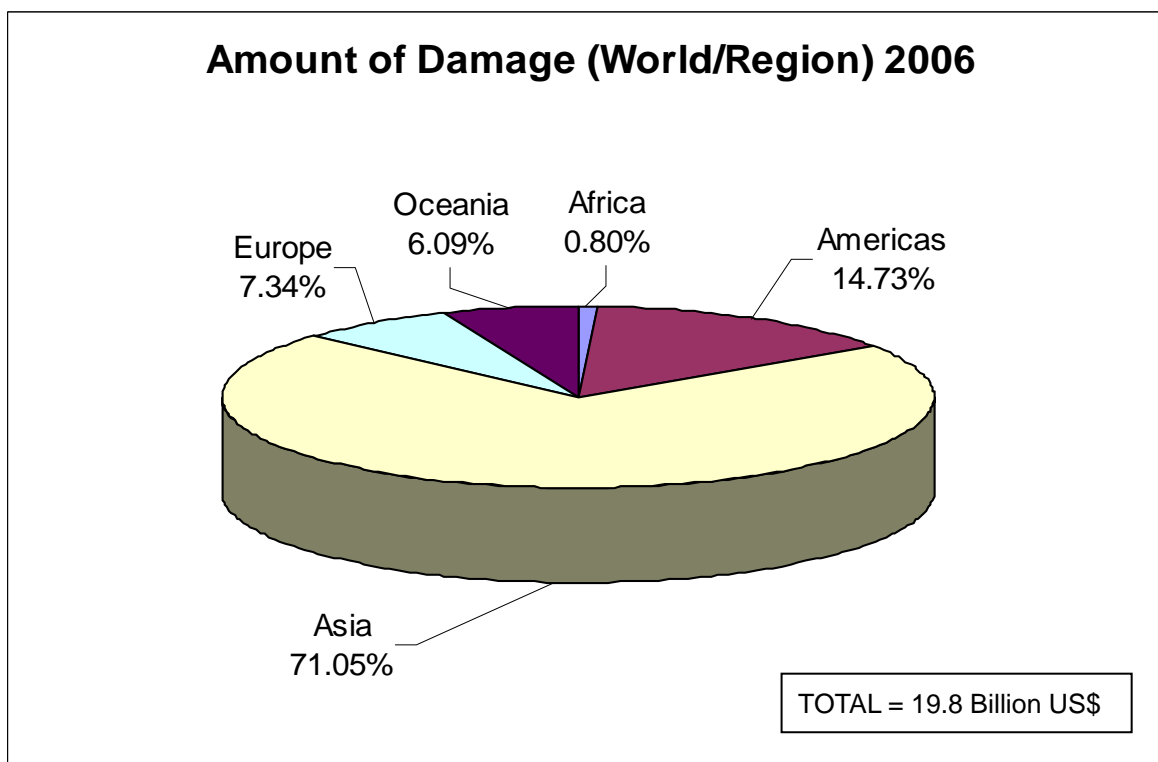
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Figure 7A Proportion of Damage by Region, 1975-2006



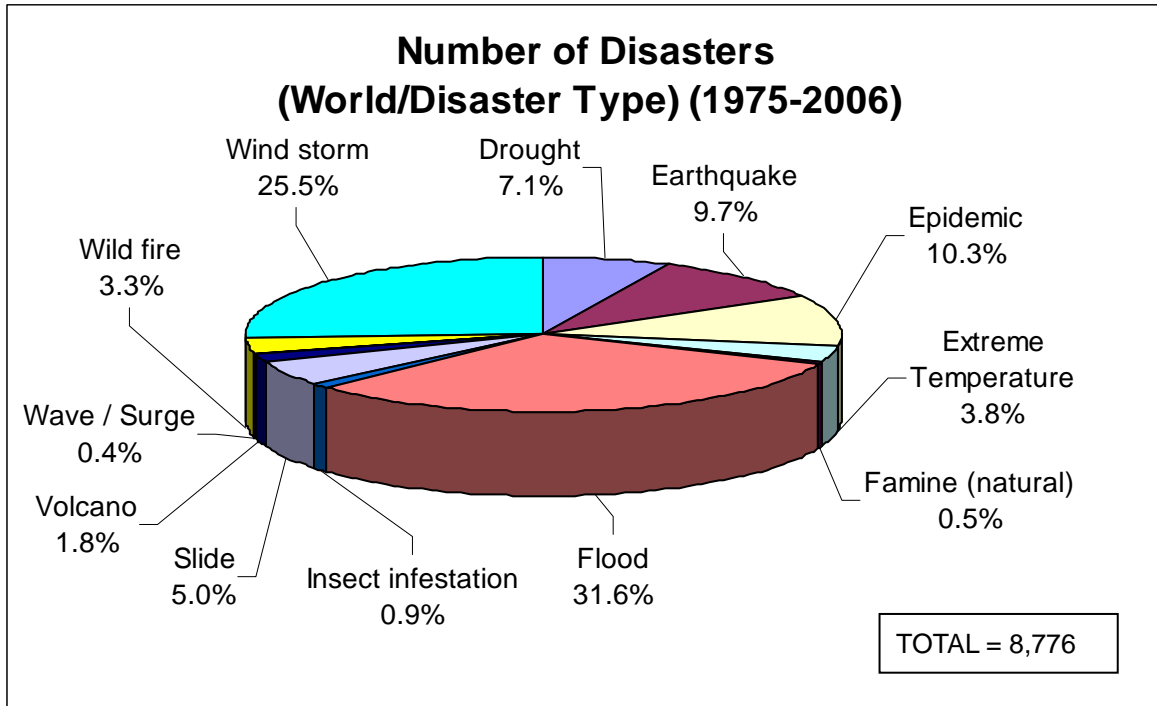
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Figure 7B Proportion of Damage by Region, 2006



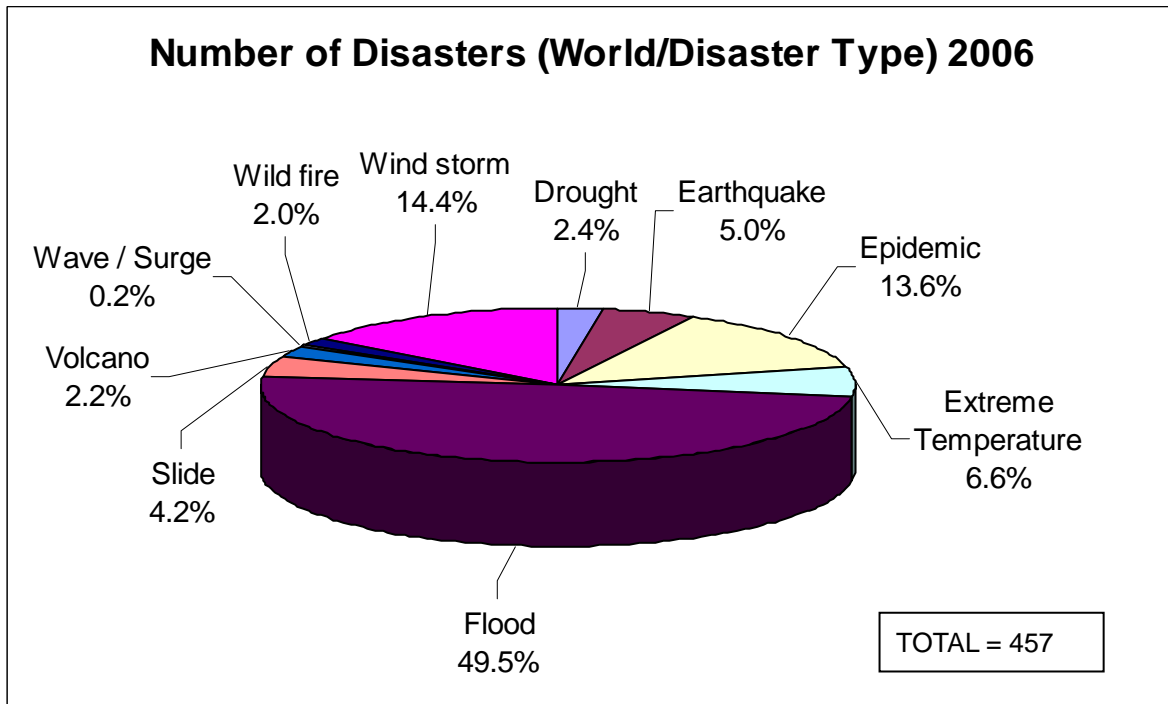
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Figure 8A Proportion of Disasters Worldwide by Type, 1975-2006



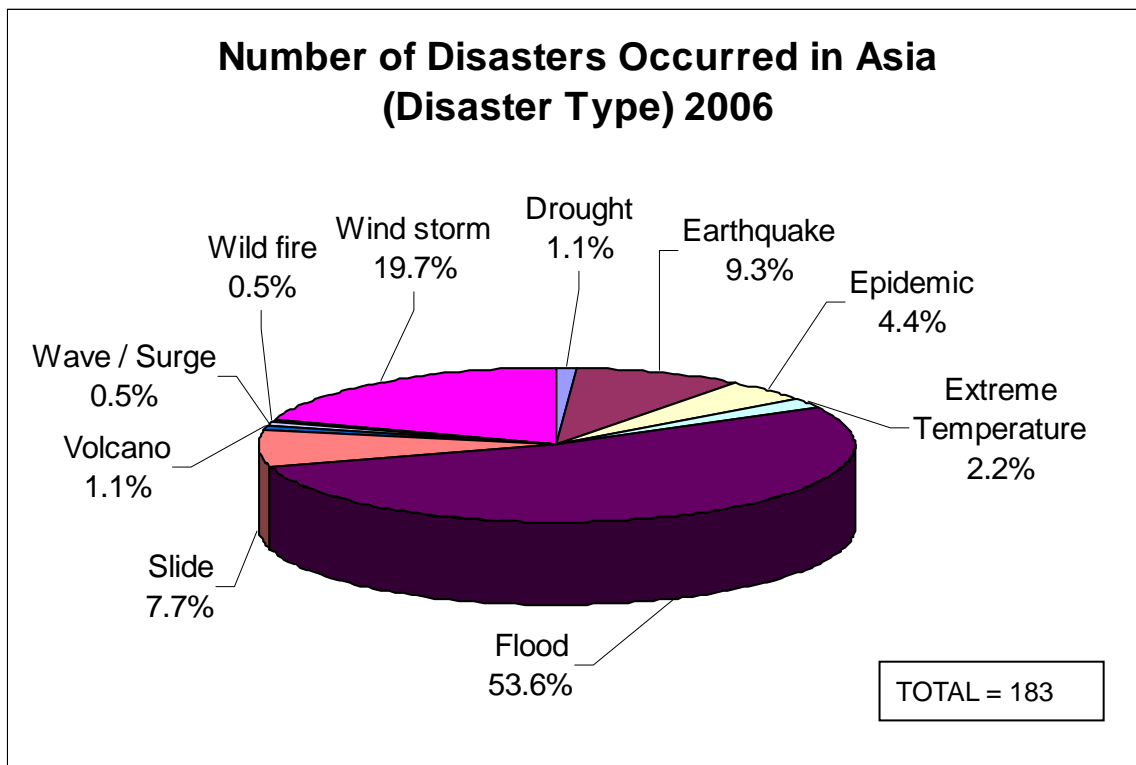
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Figure 8B Proportion of Disasters Worldwide by Type, 2006



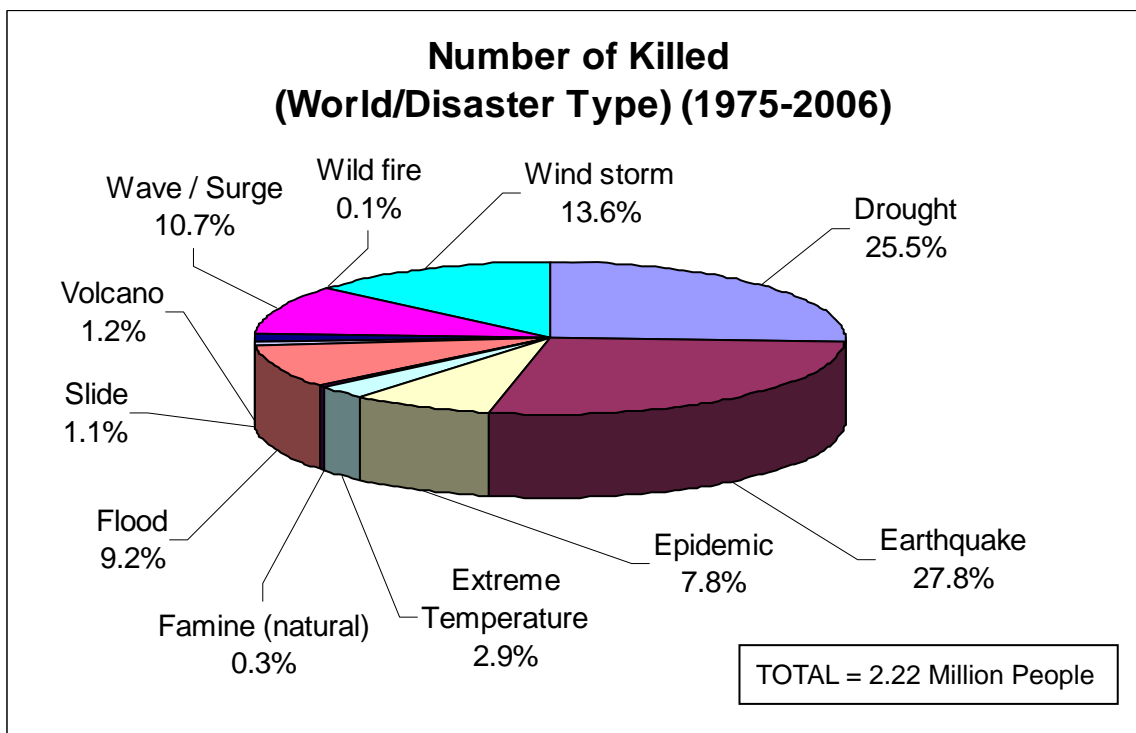
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Figure 8C Proportion of Disasters in Asia by Type, 2006



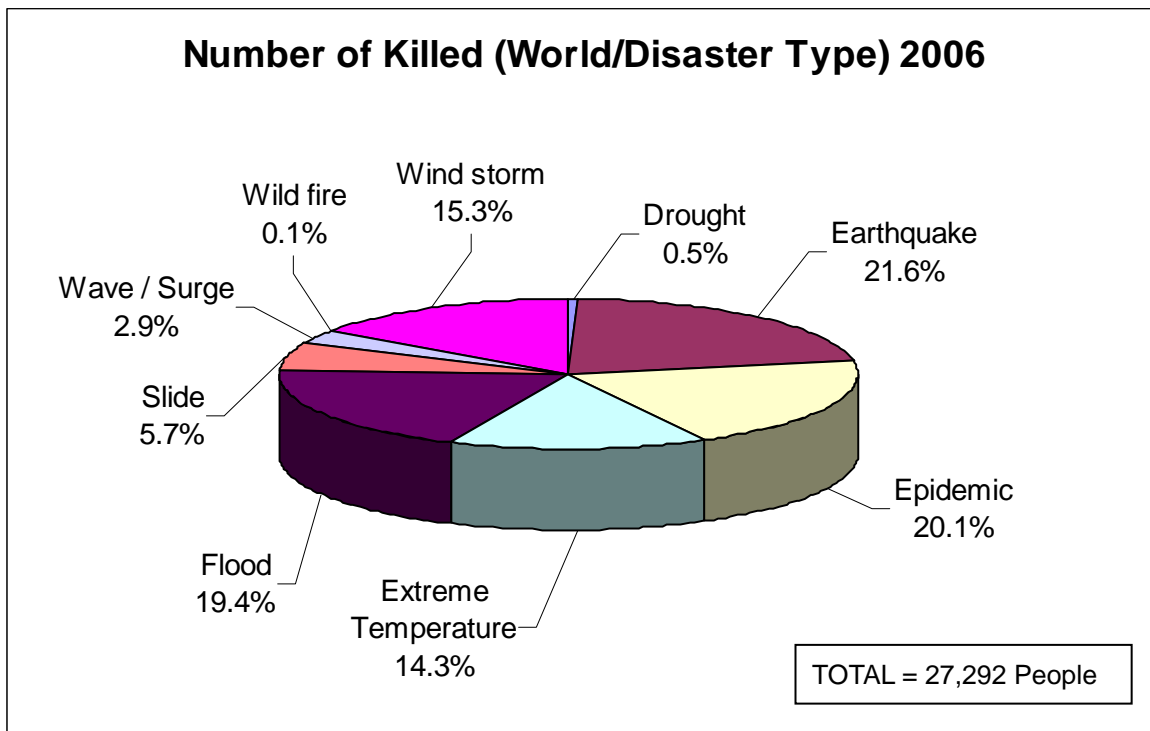
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Figure 9A Proportion of People Killed Worldwide by Type of Disaster, 1975-2006



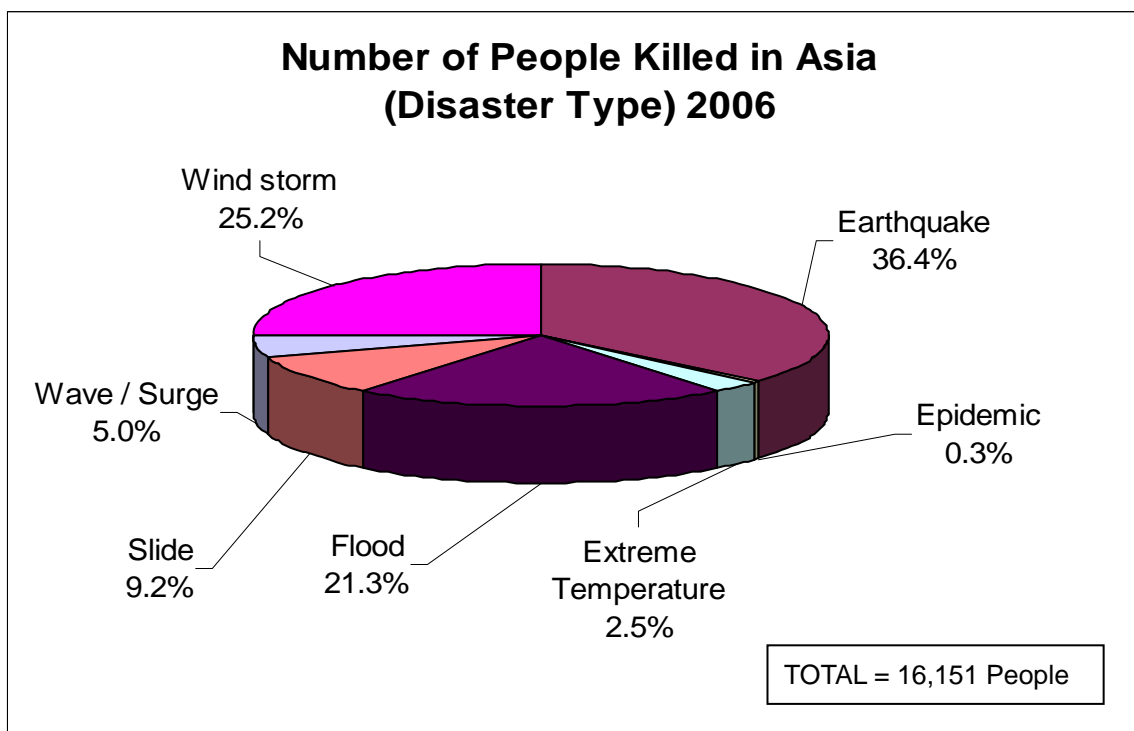
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Figure 9B Proportion of People Killed Worldwide by Type of Disaster, 2006



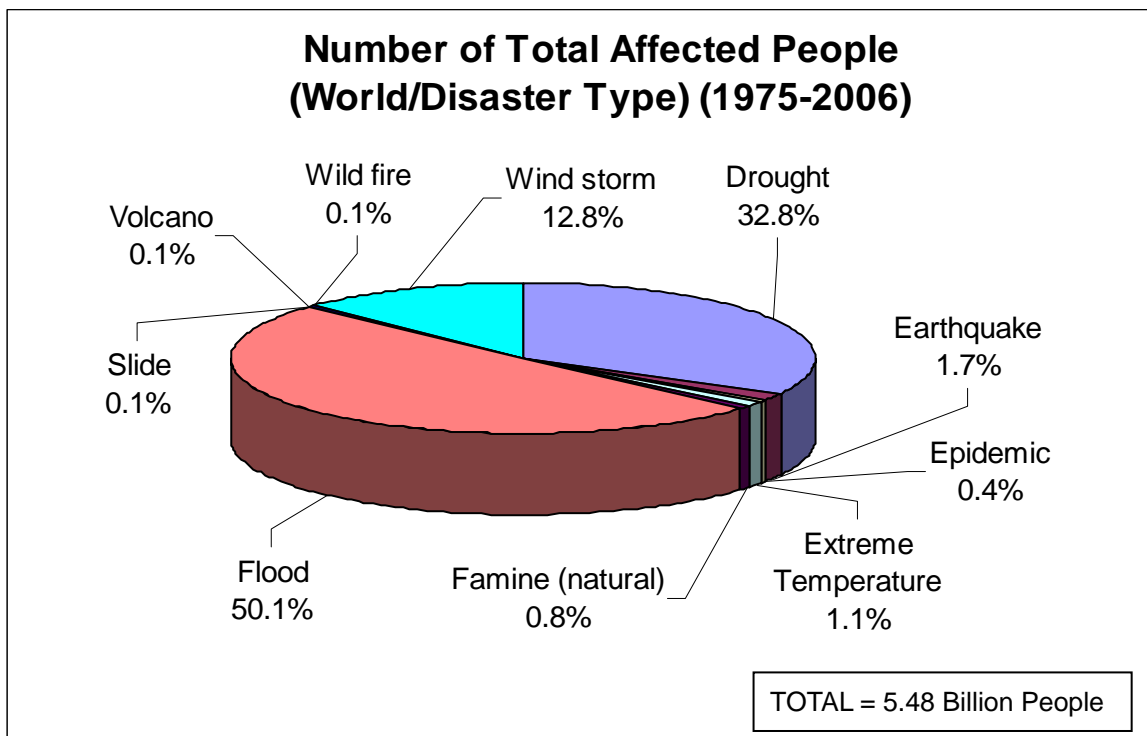
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Figure 9C Proportion of People Killed in Asia by Type of Disaster, 2006



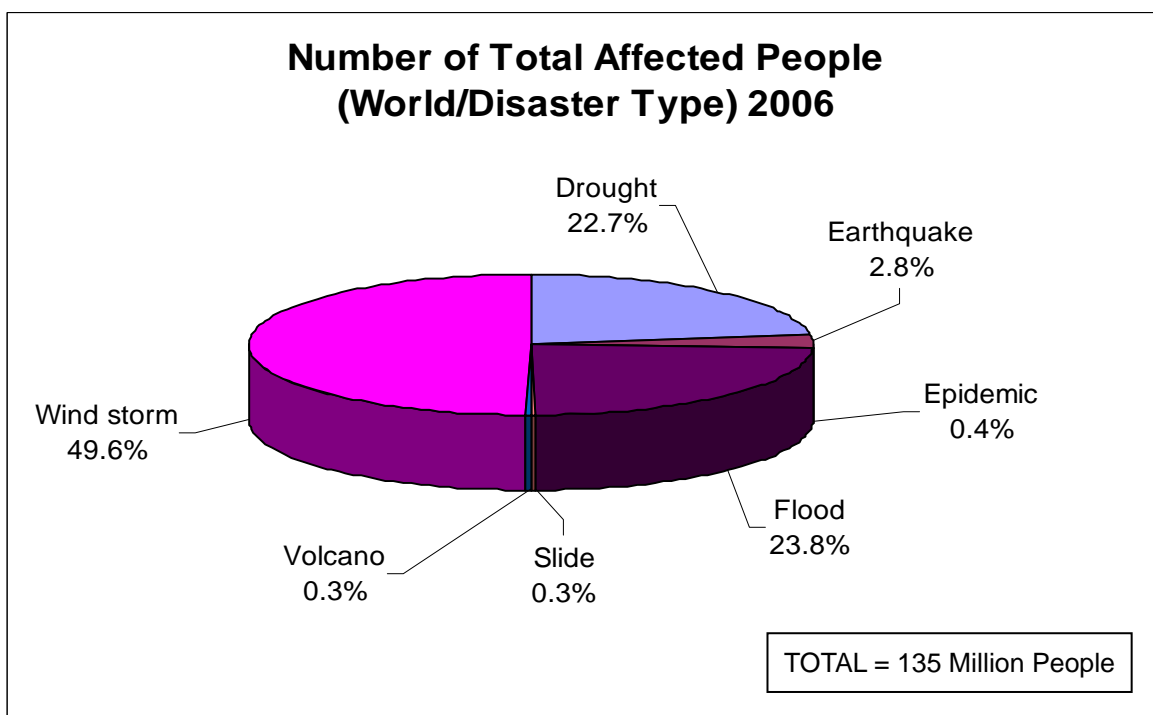
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Figure 10A Proportion of Total Affected People Worldwide by Type of Disaster, 1975-2006



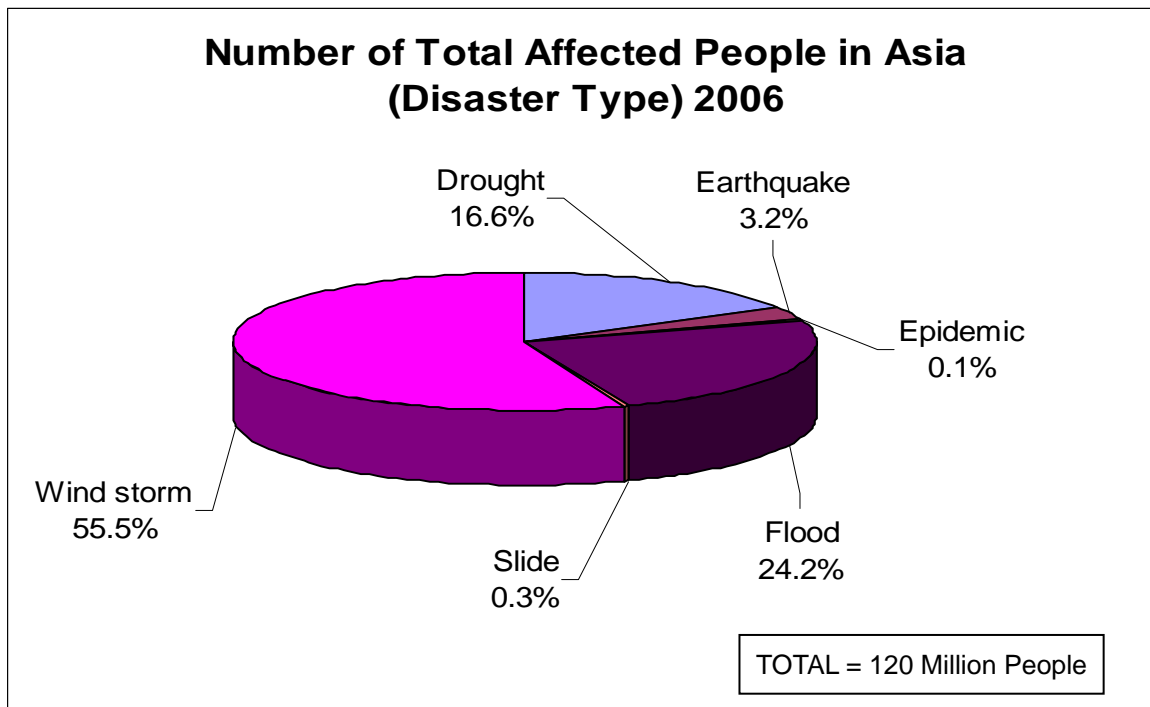
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Figure 10B Proportion of Total Affected People Worldwide by Type of Disaster, 2006



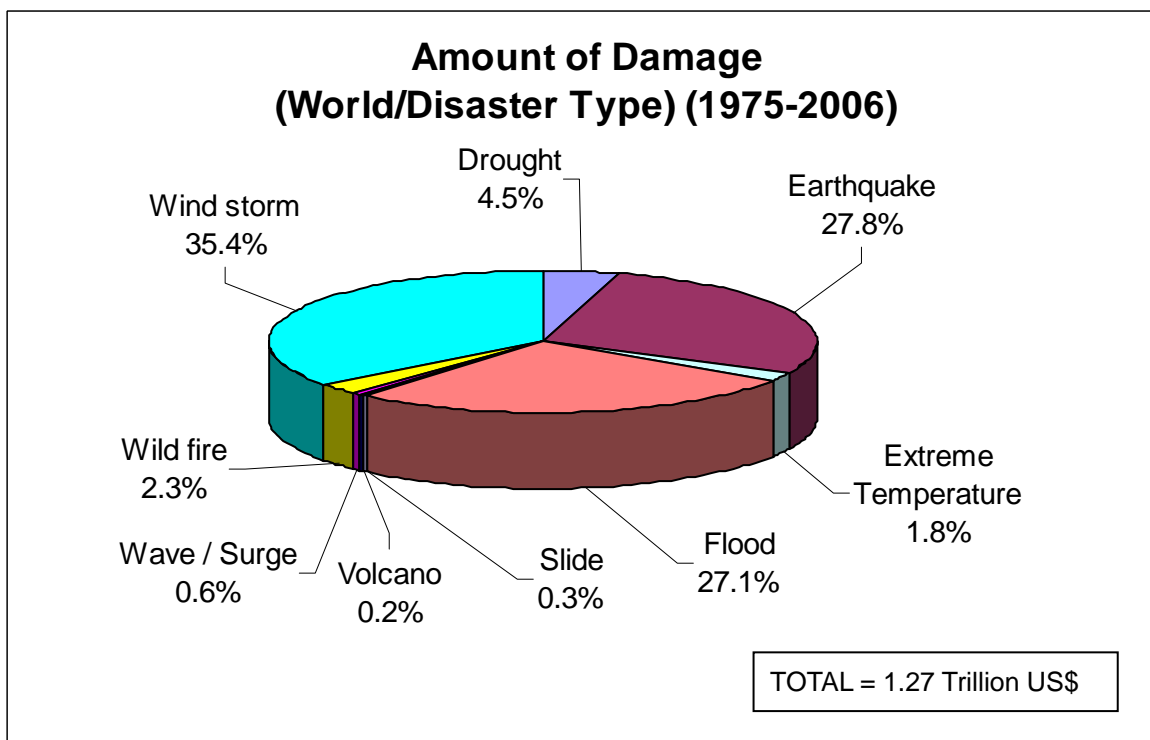
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Figure 10C Proportion of Total Affected People in Asia by Type of Disaster, 2006



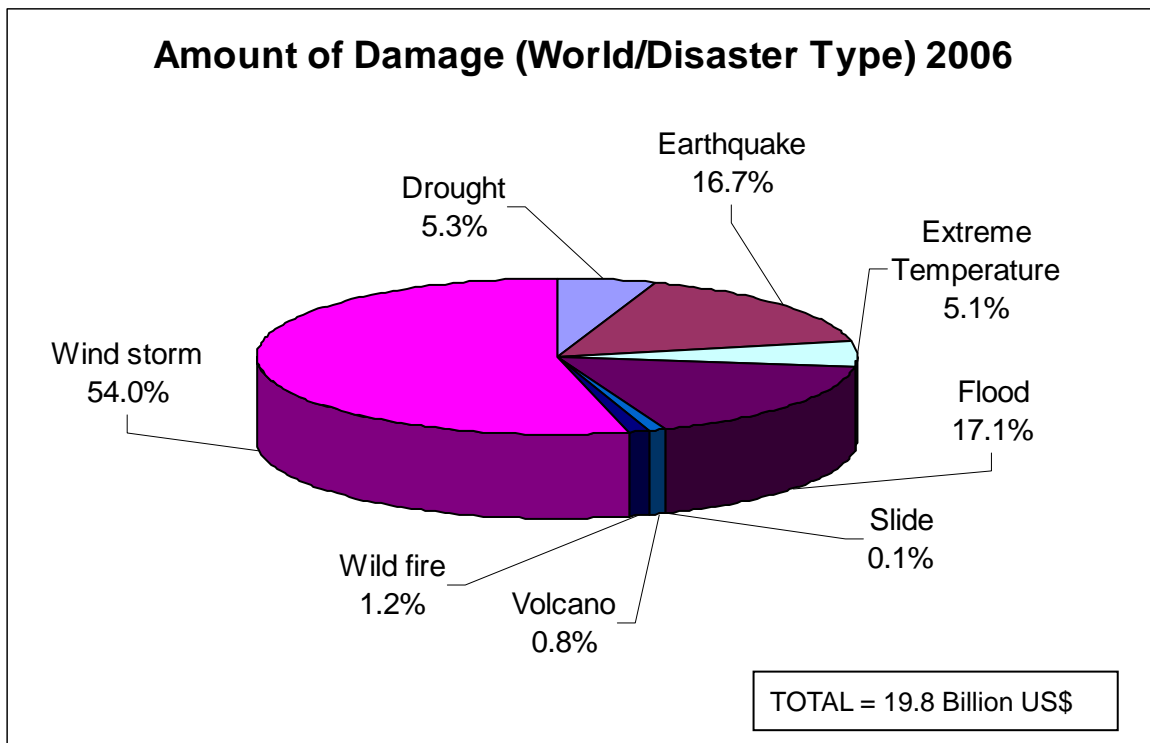
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Figure 11A Proportion of Damage Worldwide by Type of Disaster, 1975-2006



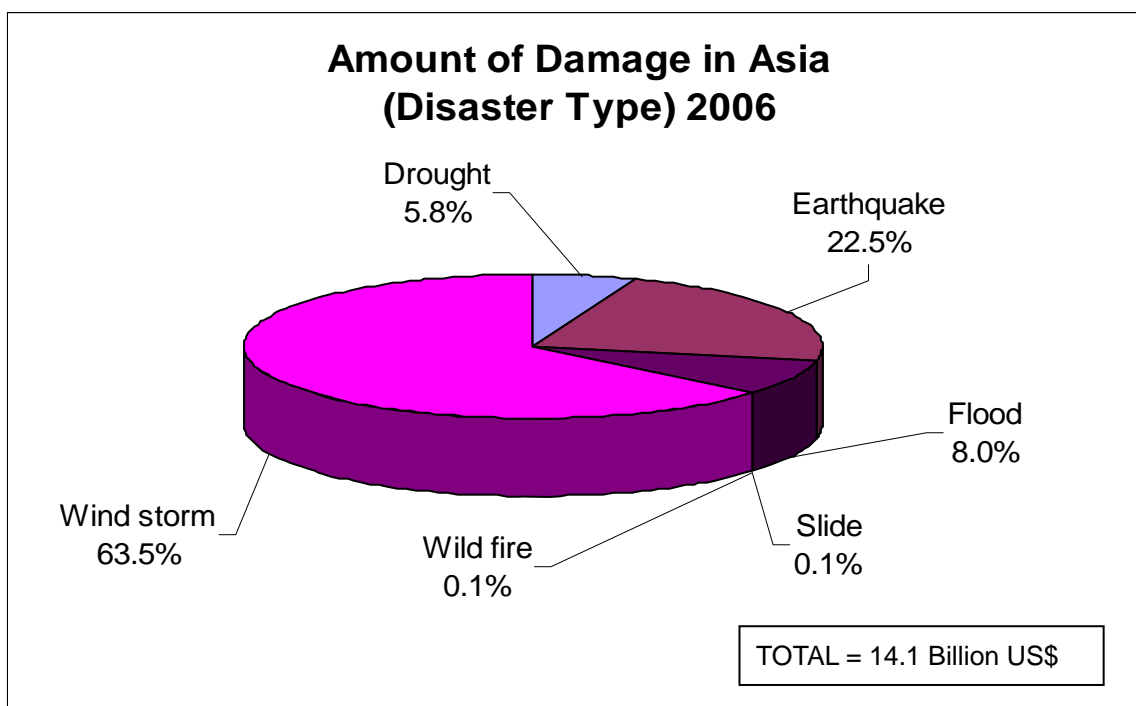
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Figure 11B Proportion of Damage Worldwide by Type of Disaster, 2006



Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Figure 11C Proportion of Damage in Asia by Type of Disaster, 2006



Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Based on data related to disaster types and their impact on societies and economies in 2006, we can conclude that the Asian region has been deeply affected by both geo-physical disasters like earthquakes and tsunamis, as well as hydro-meteorological disasters like floods and wind storms. In contrast to the past years, Asia was not much affected by extreme temperatures and droughts in 2005. In 2006, Asia mainly experienced earthquakes, tsunami, windstorms, floods and slides, and these were really harmful to the development in the region. A comparative analysis can be made from past analytical studies of disasters and the ADRC's "20th Century Asian Natural Disasters Data Book." Socio-economic and cultural dimensions specific to the Asian region provide some explanation of the large number of affected people in spite of a relatively small amount of real economic damage as compared to previous years. But the 2004 Indian Ocean Tsunami, the 2005 South Asian Earthquake and 2006 disasters in China, Indonesia and the Philippines changed this perception and prompted the Asian region to adopt appropriate countermeasures. The great amount of human suffering and related financial losses in this region substantially hinder development activities. The above figures clearly illustrate this trend by disaster type for Asia and the rest of the world. The following chapters will also help us better understand regional differences in the characteristics of various types of disasters.

1.3 Vulnerabilities of Countries with Small Economies and Populations

It is obvious that countries with small economies and populations suffer more, even when only minor disasters occur. The following tables show the ranks of actual disasters in terms of the number of people killed, the number of people affected, and the amount of damage, as well as the change in the actual (real) rank when compared to the population and GNI (Gross National Income-Atlas method).³

Tables 4 to 9 show that while the actual damage in terms of human and economic losses are small, the effects on the population and the country's economy can be large in comparison with the population and GNI of these countries. Accordingly, this comparison reveals that countries with smaller economies and populations can not bear heavy damage in terms of loss share to population and GNI. For example, Table 4 ranks disaster events according to the number of people killed. Table 5 ranks those events according to the ratio of people killed to the total population. In Table 5, we can see African countries with smaller populations account for a larger share of human losses. While the disaster in Namibia ranked at 199, Chad at 68, Somalia at 67, Angola at 55, and the Guinea at 43 in Table 4 (the actual number of people killed), they all were ranked within the top 25 in Table 5, based on the share of their human loss to their respective population. Similar observations can be made from Tables 6, 7, 8, and 9 in terms of affected people and economic damage, underscoring the vulnerability of small states.

³ Here we used the values from World Bank, 2005 GNI data and definition on atlas method GNI calculation.

Table 4: Top 25 Natural Disasters by Number of People Killed, 2006

Rank	Country	Region	DisType	DisSubset	DisName	Month	Day	Killed	Injured	Homeless	Affected	TotAff	Damage US\$ ('000s)	Location
1	Indonesia	South-Eastern Asia	Earthquake	Earthquake		5	27	5778	137883	699295	2340745	3177923	3100000	Yogyakarta, Central Java
2	Angola	Middle Africa	Epidemic	Diarrhoeal/Enteric	Cholera	2	13	2179			50893	50893		Luanda, Bengo, Kwanza Norte, Benguela, Huambo, Malanje, Namibe, Bie, Huila, Kwanza Sul, Uige, Zaire, Lunda-Norte, Cabinda, Namiba, Kuando
3	Philippines	South-Eastern Asia	Wind Storm	Typhoon	Durian (Reming)	11	30	1399	2143		2560374	2562517	66400	Daraga town, Bicol region (Albay province), Catanduanes, Camarines, Sorsogon, Mindoro, Marinduque, Batangas, Laguna
4	Philippines	South-Eastern Asia	Slides	Landslide		2	17	1112	19		3272	3291	2203	Barangay Guinsaugon (St Bernard, Southern Leyte)
5	Netherlands	Western Europe	Extreme Temperature	Heat wave		7	15	1000						
6	Belgium	Western Europe	Extreme Temperature	Heat wave		6		940						
7	China, P Rep	Eastern Asia	Wind Storm	Typhoon	Bilis	7	16	820			29622000	29622000	3325000	Fujian, Hunan, Guangdong, Jiangxi, Zhejiang, Guangxi provinces
8	Indonesia	South-Eastern Asia	Wave / Surge	Tsunami		7	17	802	543		35000	35543	2000	Tasikmalaya, Ciamis, Sukabumi, Garut (West Java province), Cilacap, Kebumen, Banyumas (Central Java province), Gunung Kidul, Bantul (Yogyakarta)
9	Ukraine	Eastern Europe	Extreme Temperature	Cold Wave		1	16	801	9600		50000	59600		Kiev
10	Ethiopia	Eastern Africa	Flood	Flash Flood		8	5	498	96		10000	10096	3200	Dire Dawa city, Addis Ketema, Genfele, Coca Cola, Aftessa districts
11	Sudan	Northern Africa	Epidemic	Diarrhoeal/Enteric	Cholera	1	28	476			15711	15711		Central Equatoria, East Equatoria, Western Equatoria, Upper Nile, Jonglei, Lakes, Unity, Northern Bahr el Ghazal, Yei, Juba, Kajo-Kaji, Label-Loda, Dibat, Dibat
12	Botswana	Southern Africa	Epidemic	Diarrhoeal/Enteric	Acute diarrhoeal syndrome	1		470			22264	22264		Francistown, S/Palapye, Boteti, Tutume, Bobirwa, Phikwe, Kweneng East, Kanye, Lobatse, N/West, Mahalapye, Goothohe
13	Sudan	Northern Africa	Epidemic	Meningitis	Meningococcal disease	12	3	382			3436	3436		Twic, Wau, Tanj, Gogerial counties (Bahr Al Gazal state), Unity State
14	China, P Rep	Eastern Asia	Wind Storm	Typhoon	Saomai	8	10	373			5920000	5920000	1500000	Zhejiang, Fujian provinces
15	Ethiopia	Eastern Africa	Flood	Flash Flood		8	13	364			8000	8000		Amorate, Gangato villages (North, near Turkana lake), South Omo zone (Southern Nation and Nationalities People's Region)
16	Korea Dem P Rep	Eastern Asia	Flood	Flash Flood		7	12	278		84500	84500		South Pyongan, North Hwanghe, Kangwon, South Hamgyong provinces	
17	Burkina Faso	Western Africa	Epidemic	Meningitis	Meningococcal disease	1	1	246			2000	2000		Bamora, Barsotogo, Borono, Bousse, Dande, Dano, Diebougou, Djibo, Bobo-Dioulasso, Gaoua, Gourcy, Kaya, Koumpoussi, Salongo
18	Indonesia	South-Eastern Asia	Flood	Flash Flood		12	23	236			300000	300000		Langkat, Mendaling Natal districts (North Sumatra province), Nanggroe Aceh Darussalam, Riau provinces
19	Indonesia	South-Eastern Asia	Flood	Flash Flood		6	19	236	56	670	28505	29231	55200	Sinjai, Jeneponto, Bunkumala, Bantaeng, Luwu Utara, Bone, Gowa, Sidrap, Selayar, Wajo, Soppeng (South Sulawesi province)
20	Philippines	South-Eastern Asia	Wind Storm	Typhoon	Xangsane (Mileny)	9	27	228	406		3842000	3842406	113000	Luzon, Manila, Panay Isl.
21	Ethiopia	Eastern Africa	Epidemic	Diarrhoeal/Enteric	Acute Watery Diarrheal syndrome	4	15	219			21882	21882		Oromiya, Amhara, Somali, Tigray, Southern Nation Nationalities, People Region, Afar, Addis Abeba city
22	Viet Nam	South-Eastern Asia	Wind Storm	Tropical storm	Chanchu (Caloy)	5	17	204			600000	600000		
23	Sudan	Northern Africa	Epidemic	Diarrhoeal/Enteric	Acute Watery Diarrhoeal Syndrome/Cholera	4	21	196			5757	5757		Khartoum, North Kordofan, South Kordofan, White Nile, River Nile, South Darfur, Gezira, Kassala (North Sudan)
24	Poland	Eastern Europe	Extreme Temperature	Cold Wave		10		191						
25	India	Southern Asia	Flood			8	1	185			2000000	2000000		Orissa, Andhra Pradesh, Chhattisgarh

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Table 5: Top 25 Natural Disasters by the Ratio of People Killed to the Total Population, 2006

Rank (Killed/Popln)	Rank (Killed)	Country	Region	DisType	DisName	Month	Day	Killed	Injured	Homeless	Affected	TotAff	Population (World Fact Book)	Kill/Popln	Damage (US\$ '000s)	Location
1	12	Botswana	Southern Africa	Epidemic	Acute diarrhoeal syndrome	1		470			22264	22264	1639833	0.000287		Francistown, S/Palapye, Boteti, Tutume, Bobirwa, Phikwe, Kweneng East, Kanye, Lobatse, N/West, Mahalapye, Goodhope
2	2	Angola	Middle Africa	Epidemic	Cholera	2	13	2179			50893	50893	12127071	0.000180		Lubango, Bengo, Kwanza Norte, Benguela, Huambo, Malanje, Namibe, Bie, Huila, Kwanza Sul, Uige, Zaire, Lunda-Norte, Cabinda, Namiba, Kuando
3	6	Belgium	Western Europe	Extreme Temperature		6		940					10379067	0.000091		
4	5	Netherlands	Western Europe	Extreme Temperature		7	15	1000					16491461	0.000061		
5	1	Indonesia	South-Eastern Asia	Earthquake		5	27	5778	137883	699295	2340745	3177923	#####	0.000024	3100000	Yogyakarta, Central Java
6	17	Burkina Faso	Western Africa	Epidemic	Meningococcal disease	1	1	246			2000	2000	13902972	0.000018		Bambara, Barsoloko, Boroto, Bousse, Dande, Dano, Diebougou, Djibo, Bobo-Dioulasso, Gaoua, Gouy, Kaya, Koumassi
7	81	Latvia	Northern Europe	Extreme Temperature		1		40					2274735	0.000018		
8	9	Ukraine	Eastern Europe	Extreme Temperature		1	16	801	9600		50000	59600	46710816	0.000017		Kiev
9	3	Philippines	South-Eastern Asia	Wind Storm	Durian (Reming)	11	30	1399	2143		2560374	2562517	89468677	0.000016	66400	Daraga town, Bicol region (Albay province), Catanduanes, Camarines, Sorsogon, Mindoro, Marinduque, Batangas, Laguna
10	37	Burundi	Eastern Africa	Drought		1		120			2150000	2150000	8090068	0.000015		Busoni, Bugabira, Ntega, Kirundo communes (Kirundo province), Ruyigi, Cankuzo, Rutana, Muyinga provinces
11	33	Zambia	Eastern Africa	Epidemic	Cholera	8	13	144			7615	7615	11502010	0.000013		Lusaka, Karwe, Chimombo, Kapiri Mposhi, Mufulira, Kasempa, Copperbelt, Central, Eastern, Luampala, North Western, Western, Lusaka
12	4	Philippines	South-Eastern Asia	Slides		2	17	1112	19		3272	3291	89468677	0.000012	2203	Barangay Guinsaugon (St Bernard, Southern Leyte)
13	16	Korea Dem P Rep	Eastern Asia	Flood		7	12	278		84500		84500	23113019	0.000012		South Pyongan, North Hwanghe, Kangwon, South Hamgyong provinces
14	11	Sudan	Northern Africa	Epidemic	Cholera	1	28	476			15711	15711	41236378	0.000012		Central Equatoria, East Equatoria, Western Equatoria, Upper Nile, Jonglei, Lakes, Unity, Northern Bahr el Ghazal, Yei, Juba, Kajo, Kaol, Jabal Lado, Dhor
15	43	Guinea	Western Africa	Epidemic	Cholera	1		111			173	173	9690222	0.000011		Gueckedou, Kissidougou, N'zerekore, Lola district of Farnah and Conakry
16	13	Sudan	Northern Africa	Epidemic	Meningococcal disease	12	3	382			3436	3436	41236378	0.000009		Twic, Wau, Tanj, Gogerial counties (Bahr Al Gazal state), Unity State
17	10	Ethiopia	Eastern Africa	Flood		8	5	498	96		10000	10096	74777981	0.000007	3200	Dire Dawa city, Addiq Ketema, Genfele, Coca Cola, Afessa districts
18	53	Zimbabwe	Eastern Africa	Epidemic	Cholera	12	10	73			980	980	12236805	0.000006		Chikomba, Buhera, Harare, Manicaland, Mashonaland Central, East and West, Masvingo, Midlands
19	67	Somalia	Eastern Africa	Flood		10	26	52			299000	299000	8863338	0.000006		Beletweyne, Jalalaqi, Jowhar districts
20	55	Angola	Middle Africa	Epidemic	Cholera	10	24	68					12127071	0.000006		Huila, Uige provinces
21	27	Afghanistan	Southern Asia	Flood		11	16	166			17575	17575	31056997	0.000005		Murghab, Ghormach, Balamourghab district (Baghdis province)
22	68	Chad	Middle Africa	Flood		9	5	52					9944201	0.000005		NDjamena, Sahr, Doba, B&B&idja, Gor* Pala, Kouma (Western and Southwestern)
23	32	Nepal	Southern Asia	Slides		8	26	147		80000		80000	28287147	0.000005		Banke, Baroya, Achham, Chitwan, Makwanpur, Tanahun, Tehrathum, Nawalparasi, Kailali districts
24	24	Poland	Eastern Europe	Extreme Temperature		10		191					38536869	0.000005		
25	199	Namibia	Southern Africa	Epidemic	Polio	5	7	10			47	47	2044147	0.000005		Aranos (Mariental), Windhoek, Engela, Okahonjohakati (Oshana), Okahandja (Otjozondjupa)

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Table 6: Top 25 Natural Disasters by the Number of Total Affected People, 2006

Rank	Country	Region	DisType	DisSubset	DisName	Month	Day	Killed	Injured	Homeless	Affected	TotAff	Damage US\$ ('000s)	Location
1	China, P Rep	Eastern Asia	Wind Storm	Typhoon	Bilis	7	16	820			29622000	29622000	3325000	Fujian, Hunan, Guangdong, Jiangxi, Zhejiang, Guangxi provinces
2	China, P Rep	Eastern Asia	Drought	Drought		8					18000000	18000000	817000	Sichuan, Guizhou, Zhejiang, Anhui, Jiangxi, Hunana, Hubei provinces
3	China, P Rep	Eastern Asia	Wind Storm	Typhoon	Prapiroon	8	3	89			10000000	10000000	900000	Guangdong, Guangxi, Hainan provinces
4	China, P Rep	Eastern Asia	Wind Storm	Cyclone	Kaemi	7	24	109			6531000	6531000	367000	Jiangxi, Fujian, Zhejiang, Guangdong, Hunan
5	India	Southern Asia	Flood			7	28	161	65		6000000	6000065		Andhra Pradesh, Gujarat, Maharashtra, Chhattisgarh, Rajasthan, Madhya Pradesh, Orissa, Karnataka
6	China, P Rep	Eastern Asia	Wind Storm	Typhoon	Saomai	8	10	373			5920000	5920000	1500000	Zhejiang, Fujian provinces
7	China, P Rep	Eastern Asia	Flood			6	8	21	24		4600000	4600024		Wuzhou, Baise (Guangxi province)
8	Malawi	Eastern Africa	Drought	Drought		10					4500000	4500000		Southern and central regions
9	China, P Rep	Eastern Asia	Flood			6	28	30			4120000	4120000	2500	Sixian, Xiaoxian and Fengyang counties (Anhui Province), Yuzhou City (Henan Province)
10	Philippines	South-Eastern Asia	Wind Storm	Typhoon	Xangsane (Milenyo)	9	27	228	406		3842000	3842406	113000	Luzon, Manila, Panay Isl.
11	Kenya	Eastern Africa	Drought	Drought		12		27			3500000	3500000		Makueni, Kitui, Mambur, Kwale, Kilifi, Taita Taveta, Mandera, Wajir, Marsabit, Kajiado, Garissa, Myale, Tala, Murang'a, Tana River
12	Indonesia	South-Eastern Asia	Earthquake	Earthquake		5	27	5778	137883	699295	2340745	3177923	3100000	Yogyakarta, Central Java
13	China, P Rep	Eastern Asia	Wind Storm	Tropical storm	ChanChu (Caloy)	5	18	23			3150000	3150000	745000	Shantou (Guangdong province), Fujian province
14	Philippines	South-Eastern Asia	Wind Storm	Typhoon	Durian (Reming)	11	30	1399	2143		2560374	2562517	66400	Daraga town, Bicol region (Albay province), Catanduanes, Camarines, Sorsogon, Mindoro, Marikina, Batanes
15	China, P Rep	Eastern Asia	Flood	Valley Flood		6	25	27			2375000	2375000		Shaoyang, Huaihua, Loudi, Zhangjiajie and Xiangxi (Longhui county, Hunan province)
16	Thailand	South-Eastern Asia	Flood	Flash Flood		8	20	164			2212413	2212413	9940	Chiang Mai, Chiang Mai, Mae Hong Son, Lamphun, Lampang, Phrae, Phayao, Utharadit, Phetchabun, Phitsanulok, Sukhothai, Tak, Buriram, Bugabira, Nuea, Kirundo communes (Kirundo province), Ruyigi, Cankuzo, Rutana, Mwanza provinces
17	Burundi	Eastern Africa	Drought	Drought		1		120			2150000	2150000		
18	India	Southern Asia	Flood			8	1	185			2000000	2000000		Orissa, Andhra Pradesh, Chhattisgarh
19	Afghanistan	Southern Asia	Drought	Drought		7					1900000	1900000		
20	Viet Nam	South-Eastern Asia	Wind Storm	Typhoon	Xangsane (Milenyo)	9	27	71	525	98680	1368720	1467925	624000	Ha Tinh, Thua Thien-Hue, Da Nang, Quang Nam, Quang Ngai provinces
21	China, P Rep	Eastern Asia	Flood			6	13	2			1410000	1410000		Hunan province
22	China, P Rep	Eastern Asia	Flood			7	7	10			1400000	1400000	31000	Qinzhou, Yulin (Guangxi Zhuang)
23	Viet Nam	South-Eastern Asia	Wind Storm	Typhoon	Durian (Reming)	11	30	95	1360	250000	975000	1226360	456000	Ba Ria-Vung Tau, Ben Tre, Binh Thuan, Vinh Long, Tien Giang, Khanh Hoa, An Giang, Tra Vinh, Dardak, Kwale, Garissa
24	Kenya	Eastern Africa	Flood			10	23	114			723000	723000		Kilifi, Tana river, Ijara, Wajir, Moyale, El Wak, Budalangi, Mandera, Lamu, Mandera
25	Thailand	South-Eastern Asia	Flood	Flash Flood		11	23	55			700000	700000	97000	Songkhla, Trang, Satun, Nakhon Si Thammarat, Phatthalung, Samui, Chomphon, Narathiwat, Pattani, Yala provinces

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Table 7: Top 25 Natural Disasters by the Ratio of Total Affected People to the Total Population, 2006

Rank (TotAff/Popl n)	Rank (TotAff)	Country	Region	DisType	DisSubset	DisName	Month	Day	Killed	Injured	Homeless	Affected	TotAff	Population (World Fact Book)	TotAff/Popl n	Damage US\$ ('000s)	Location
1	8	Malawi	Eastern Africa	Drought	Drought		10					4500000	4500000	13013926	0.345783		Southern and central regions
2	17	Burundi	Eastern Africa	Drought	Drought		1		120			2150000	2150000	8090068	0.265758		Bisozi, Bugabira, Ntega, Kirundo communes (Kirundo province), Ruyigi, Cankuzo, Rutana
3	49	Reunion	Eastern Africa	Epidemic		Chikungunya virus disease	3	28				157000	157000	787584	0.199344		
4	11	Kenya	Eastern Africa	Drought	Drought		12		27			3500000	3500000	34707817	0.100842		Makueni, Kitui, Malindi, Kwale, Kilifi, Taita Taveta, Mandera, Wajir, Marsabit, Kericho, Garissa
5	172	Seychelles	Eastern Africa	Epidemic		Chikungunya virus disease	1					5461	5461	81541	0.066972		
6	19	Afghanistan	Southern Asia	Drought	Drought		7					1900000	1900000	31056997	0.061178		
7	87	Guyana	South America	Flood			1	8				35000	35000	767245	0.045618	169000	Barima, Waimi (Region One), Pomeroon, Supenaam (Region Two), Essequibo Islands, West Demerara
8	10	Philippines	South-Eastern Asia	Wind Storm	Typhoon	Xangsane (Milenyo)	9	27	228	406		3842000	3842406	89468677	0.042947	113000	Luzon, Manila, Panay Isl.
9	16	Thailand	South-Eastern Asia	Flood	Flash Flood		8	20	164			2212413	2212413	64631595	0.034231	9940	Chiang Rai, Chiang mai, Mae Hong Son, Lamphun, Lampang, Phrae, Phayao, Udonrath, Buriram
10	40	Somalia	Eastern Africa	Flood			10	26	52			299000	299000	8863338	0.033734		Beletweyne, Jalalaqsi, Jowhar districts
11	14	Philippines	South-Eastern Asia	Wind Storm	Typhoon	Durian (Reming)	11	30	1399	2143		2560374	2562517	89468677	0.028641	66400	Daraga town, Bicol region (Albay province), Catanduanes, Camarines, Sorsogon, Masbate, Marikina
12	1	China, P Rep	Eastern Asia	Wind Storm	Typhoon	Bilis	7	16	820			29622000	29622000	#####	0.022425	3325000	Fujian, Hunan, Guangdong, Jiangxi, Zhejiang, Guangxi provinces
13	90	Guinea Bissau	Western Africa	Drought	Drought		5	0	0			32000	32000	1442029	0.022191		Quinara, Tombali regions, Bijagos Isl.
14	36	Ecuador	South America	Volcano	Explosive Eruption	Tungurahua	7	14	5	13		300000	300013	13547510	0.022145	150000	Tungurahua, Chimborazo, Bolivar, Pastaza provinces
15	97	Suriname	South America	Flood			5	7	3			25000	25000	1136334	0.022001		Paranamoni, Boven Suriname, Boven Saramacca, Boven Coppename, Kabalebo, Coppename, Saparua, Kwakwaka
16	26	Uganda	Eastern Africa	Drought	Drought		3					600000	600000	28195754	0.021280		Kampuli, Nyakwale (Kotido district), Rupa, Nalundere (Moroto district), Karamoja region
17	24	Kenya	Eastern Africa	Flood			10	23	114			723000	723000	34707817	0.020831		Dabibo, Kwana, Garissa, Kilifi, Tana river, Jara, Wajir, Moyale, El Wak, Bardiobe, Mandera
18	50	Somalia	Eastern Africa	Flood			10	23	35			155500	155500	8863338	0.017544		Gedo region
19	20	Viet Nam	South-Eastern Asia	Wind Storm	Typhoon	Xangsane (Milenyo)	9	27	71	525	98680	1368720	1467925	84402966	0.017392	624000	Ha Tinh, Thua Thien-Hue, Da Nang, Quang Nam, Quang Ngai provinces
20	35	Sri Lanka	Southern Asia	Flood			10	26	25	2		333000	333002	20222240	0.016467		CHORHOD, Gampaha, Kalutara, Galle, Matara, Puttalam, Ratnapura, Badulla, Kandy, Kandy, Kandy
21	23	Viet Nam	South-Eastern Asia	Wind Storm	Typhoon	Durian (Reming)	11	30	95	1360	250000	975000	1226360	84402966	0.014530	456000	Ben Tre, Binh Thuan, Vinh Long, Tien Giang, Khanh Hao, An Giang, Tra Vinh, Soc Trang, Thuan An, Phuoc Ninh, Phuoc Ninh, Phuoc Ninh
22	55	Bolivia	South America	Flood			1	25	25	21		126075	126096	8989046	0.014028	35000	Yungas, Luribay, Papel Pampa, San Pedro de Curahuara (La Paz), Misiones, Acremas
23	2	China, P Rep	Eastern Asia	Drought	Drought		8					18000000	18000000	#####	0.013627	817000	Sichuan, Guizhou, Zhejiang, Anhui, Jiangxi, Hunan, Hubei provinces
24	98	Botswana	Southern Africa	Epidemic	Diarrhoeal/Enteric	Acute diarrhoeal syndrome	1		470			22264	22264	1639833	0.013577		FRANSTOWN, SAMPANYE, Boteti, Tutume, Bobirwa, Phikwe, Kweneng East, Kanye, Lobotse, NALAYAT
25	12	Indonesia	South-Eastern Asia	Earthquake	Earthquake		5	27	5778	137883	699295	2340745	3177923	245452739	0.012947	3100000	Yogyakarta, Central Java

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Table 8: Top 25 Natural Disasters by the Amount of Damage, 2006

Rank	Country	Region	DisType	DisSubset	DisName	Month	Day	Killed	Injured	Homeless	Affected	TotAff	Damage US\$ ('000s)	Location
1	China, P Rep	Eastern Asia	Wind Storm	Typhoon	Bilis	7	16	820			29622000	29622000	3325000	Fujian, Hunan, Guangdong, Jiangxi, Zhejiang, Guangxi provinces
2	Indonesia	South-Eastern Asia	Earthquake	Earthquake		5	27	5778	137883	699295	2340745	3177923	3100000	Yogyakarta, Central Java
3	China, P Rep	Eastern Asia	Wind Storm	Typhoon	Saomai	8	10	373			5920000	5920000	1500000	Zhejiang, Fujian provinces
4	Australia	Australia and New Zealand	Wind Storm	Tropical storm	Larry	3	20		30		7000	7030	1100000	South of Cairns (Queensland state)
5	Russia	Eastern Europe	Extreme Temperature	Cold Wave		1		116	14			14	1000000	Moscou, Volgograd region, St Petersburg, Tchita region, Magadan region
6	United States	Northern America	Flood			6	25	11			65000	65000	1000000	Maryland, Pennsylvania, New York, Delaware, Virginia, New Jersey
7	China, P Rep	Eastern Asia	Wind Storm	Typhoon	Prapiroon	8	3	89			10000000	10000000	900000	Guangdong, Guangxi, Hainan provinces
8	China, P Rep	Eastern Asia	Drought	Drought		8					18000000	18000000	817000	Sichuan, Guizhou, Zhejiang, Anhui, Jiangxi, Hunana, Hubei provinces
9	China, P Rep	Eastern Asia	Wind Storm	Tropical storm	Chanchu (Caloy)	5	18	23			3150000	3150000	745000	Shantou (Guangdong province), Fujian province
10	Philippines	South-Eastern Asia	Wind Storm	Tropical storm	Henry	6	30	8			476027	476027	644660	Tarlac, Zambales, Nueva Ecija
11	Viet Nam	South-Eastern Asia	Wind Storm	Typhoon	Xangsane (Milenyo)	9	27	71	525	98680	1368720	1467925	624000	Ha Tinh, Thua Thien-Hue, Da Nang, Quang Nam, Quang Ngai provinces
12	United States	Northern America	Wind Storm	Tornado		4	2	28			3600	3600	600000	Tennessee, Illinois, Arkansas, Indiana, Oklahoma, Missouri, Kentucky, Iowa
13	Viet Nam	South-Eastern Asia	Wind Storm	Typhoon	Durian (Reming)	11	30	95	1360	250000	975000	1226360	456000	Ba Ria-Vung tau, Ben Tre, Binh Thuan, Vinh Long, Tien Giang, Khanh Hoa, An Giang, Tra Vinh, Long An, Dong Thap, Ho Chi Minh
14	China, P Rep	Eastern Asia	Flood			5	30	57			356000	356000	393000	Fujian province
15	China, P Rep	Eastern Asia	Wind Storm	Cyclone	Kaemi	7	24	109			6531000	6531000	367000	Jiangxi, Fujian, Zhejiang, Guangdong, Hunan
16	United States	Northern America	Flood			4	4	1			600	600	259000	Amador, Calaveras, Fresno, Merced, San Joaquin, San Mateo, Stanislaus (Northern California)
17	United States	Northern America	Flood			12	31	3			3600	3600	245000	Napa, Sonoma, Mendocino, Marin, Solano (San Francisco region), Los Angeles (California), Reno, Truckee, Carson (Nevada)
18	Lithuania	Northern Europe	Drought	Drought		8							225573	
19	Guyana	South America	Flood			1	8				35000	35000	169000	Barima, Waimi (Region One), Pomeroy, Supenaam (Region Two), Essequibo Islands, West Demerara (Region Three), Mahaica, Mahaiconi
20	Ecuador	South America	Volcano	Explosive Eruption	Tungurahua	7	14	5	13		300000	300013	150000	Tungurahua, Chimborazo, Bolivar, Pastaza provinces
21	South Africa	Southern Africa	Flood			8	2	6			3000	3000	145000	Eastern and Southern Cape regions
22	Philippines	South-Eastern Asia	Wind Storm	Typhoon	Prapiroon	8	2	6			15000	15000	135000	Quirino region, Northern Luzon
23	China, P Rep	Eastern Asia	Flood	Flash Flood		6	12	52			5900	5900	130000	Wangmo, Luodian, Qianxinan Bouyei, Miao counties (Guizhou province)
24	Russia	Eastern Europe	Flood			6	4				1300	1300	125000	Lens, Olekminsk regions (Yakutia)
25	Taiwan (China)	Eastern Asia	Flood			6	10	3			300	300	116130	Nantou, Taichung, Hsinchu, Changhua and Chiayi, Kaohsiung counties (Central and southern Taiwan)

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

Table 9: Top 25 Natural Disasters by the Ratio of Damage to GNI, 2006

Rank (Damage/GNI)	Rank (Damage)	Country	Region	DisType	DisSubset	DisName	Month	Day	Killed	Injured	Homeless	Affected	TotAff	GNI (Bn US\$ (World Bank))	DamageUS ('000s)	Dam/GNI	Location
1	19	Guyana	South America	Flood			1	8				35000	35000	0.77	169000	0.2194805	Burma, Waik (Region One), Pomerom, Supenaam (Region Two), Essequibo Islands, West Demerara (Region Three), Maboia
2	11	Viet Nam	South-Eastern Asia	Wind Storm	Typhoon	Xangsane (Milenyo)	9	27	71	525	98680	1368720	1467925	44.63	624000	0.0139816	Ha Tinh, Thua Thien-Hue, Da Nang, Quang Nam, Quang Ngai provinces
3	2	Indonesia	South-Eastern Asia	Earthquake	Earthquake		5	27	5778	137883	699295	2340745	3177923	248.01	3100000	0.0124995	Yogyakarta, Central Java
4	47	Tajikistan	Central Asia	Earthquake	Earthquake		7	29	3	19		15408	15427	1.78	22000	0.0123596	Koumsanguir, Panj Jamoat
5	18	Lithuania	Northern Europe	Drought	Drought		8							19.73	225573	0.0114330	
6	13	Viet Nam	South-Eastern Asia	Wind Storm	Typhoon	Durian (Reming)	11	30	95	1360	250000	975000	1226360	44.63	456000	0.0102173	Ba Ria-Vung Tau, Ben Tre, Binh Thuan, Vinh Long, Tien Giang, Khanh Hao, An Giang, Tra Vinh, Long An, Dong Thap, Ho Chi Minh
7	10	Philippines	South-Eastern Asia	Wind Storm	Tropical storm	Henry	6	30	8			476027	476027	95.08	644660	0.0067802	Tarlac, Zambales, Nueva Ecija
8	20	Ecuador	South America	Volcano	Explosive Eruption	Tungurahua	7	14	5	13		300000	300013	28.86	150000	0.0051975	Tungurahua, Chimborazo, Bolivar, Pastaza provinces
9	40	Bolivia	South America	Flood			1	25	25	21		126075	126096	8.64	35000	0.0040509	City of La Paz, Los Yungas, Luribay, Pampamarca, San Pedro de Curahuara (La Paz), Viloma, Aymaya, Tiquina (Cochabamba)
10	5	Russia	Eastern Europe	Extreme Temperature	Cold Wave		1		116	14			14	488.50	1000000	0.0020471	Moscow, Volgograd region, St Petersburg, Tchita region, Magadan region
11	4	Australia and New Zealand	Australia and New Zealand	Wind Storm	Tropical storm	Larry	3	20		30		7000	7030	544.34	1100000	0.0020208	South of Cairns (Queensland state)
12	62	Namibia	Southern Africa	Flood			2	24	5			2100	2100	4.79	8490	0.0017724	Mariental
13	1	China, P Rep	Eastern Asia	Wind Storm	Typhoon	Bilis	7	16	820			29622000	29622000	1937.97	3325000	0.0017157	Fujian, Hunan, Guangdong, Jiangxi, Zhejiang, Guangxi provinces
14	22	Philippines	South-Eastern Asia	Wind Storm	Typhoon	Prapiroon	8	2	6			15000	15000	95.08	135000	0.0014199	Quirino region, Northern Luzon
15	26	Philippines	South-Eastern Asia	Wind Storm	Typhoon	Xangsane (Milenyo)	9	27	228	406		3842000	3842406	95.08	113000	0.0011885	Luzon, Manila, Panay Isl.
16	63	Honduras	Central America	Flood			6	25	4			1500	1500	7.32	8000	0.0010929	Cortes, Intibuca
17	21	South Africa	Southern Africa	Flood			8	2	6			3000	3000	165.33	145000	0.0008770	Eastern and Southern Cape regions
18	3	China, P Rep	Eastern Asia	Wind Storm	Typhoon	Saomai	8	10	373			5920000	5920000	1937.97	1500000	0.0007740	Zhejiang, Fujian provinces
19	33	Philippines	South-Eastern Asia	Wind Storm	Typhoon	Durian (Reming)	11	30	1399	2143		2560374	2562517	95.08	66400	0.0006984	Danga town, Bicol region (Albay province), Catanduanes, Camarines, Sorsogon, Mindoro, Marikina, Baguio, Pangasinan, Iloilo, Zamboanga, Negros, Cebu, Manila, Nakhon Si Thammarat, Phthalung, Samui, Chomphon, Narathiwat, Pattani, Yala, Assam
20	30	Thailand	South-Eastern Asia	Flood	Flash Flood		11	23	55			700000	700000	158.37	97000	0.0006125	
21	7	China, P Rep	Eastern Asia	Wind Storm	Typhoon	Prapiroon	8	3	89			10000000	10000000	1937.97	900000	0.0004644	Guangdong, Guangxi, Hainan provinces
22	8	China, P Rep	Eastern Asia	Drought	Drought		8					18000000	18000000	1937.97	817000	0.0004216	Sichuan, Guizhou, Zhejiang, Anhui, Jiangxi, Hunan, Hubei provinces
23	71	Ethiopia	Eastern Africa	Flood	Flash Flood		8	5	498	96		10000	10096	7.64	3200	0.0004188	Dire Dawa city, Addis Ketema, Genfele, Coca Cola, Afessa districts
24	46	Ukraine	Eastern Europe	Flood			7	2	2			5000	5000	60.20	23855	0.0003963	Belogorsky district, Lvivskaya, Ivano-Frankovskaya, Chernovetskaya oblast, South Caucasus
25	9	China, P Rep	Eastern Asia	Wind Storm	Tropical storm	Chanchu (Cabo)	5	18	23			3150000	3150000	1937.97	745000	0.0003844	Shantou (Guangdong province), Fujian province

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2006

The above tables and figures clearly show the trends in natural disasters in Asia and around the world, as well as the impacts and characteristics of those disasters in 2006. This chapter also analyzed the vulnerability of the small states due to the small size of their populations and economies. It is equally important to analyze the impact of disasters on economic development and efforts to achieve sustainable development in order to stimulate the development of effective disaster risk management approaches. The following chapters will illustrate these issues in detail.