

Natural Disasters in 2005: An Analytical Overview

Chapter 1: Impact of Natural Disasters

This chapter deals with the overall trends in natural disasters and their impacts for the year 2005. 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 2005 was about 2.4% of the world population (an increase of 0.1% over 2004) and the total worldwide economic damage in the year 2005 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 2005 was 30 times the annual GDP (PPP, 2005 estimate) of Mongolia, 13 times that of Laos, 18 times that of Tajikistan, 12 times that of Armenia, 13 times that of Kyrgyz, 11 times that of Papua New Guinea, 14 times that of Niger, and 28 times that of Swaziland. This is quite a large increase when compared against 2004. There was an alarming increase in the number of disasters that occurred (20.2%), the number of total affected people (8.8%), and the amount of economic damage incurred (61.6%). But the number of people killed fell by 62.0% from 2004 to 2005. Figures in 2004 were mainly due to the Indian Ocean Tsunami and its effects in many countries of Asia and Africa. Asia again suffered significant losses of life this year due to the South Asian Earthquake in Pakistan and India, the event responsible for a significant portion of the human losses in Asia. The statistics show that almost 91% of the people killed worldwide are in Asia. This clearly underscores the vulnerability of the region. Further, USA experienced one of the severest economic damages this

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.

year due to Hurricanes Katrina, Wilma, and others. This trend is quite alarming and represents a considerable obstacle to any development activities in the affected countries from the perspective of 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, 1975-2005

Continent	Count of DisNo	Sum of Killed	Sum of TotAff	Sum of Damage US\$ ('000s)
Asia	3,107 (37.35%)	1,251,911 (57.19%)	4,47,825,623 (88.87%)	550,630,595 (44.02%)
World	8,319	2,189,116	5,342,323,780	1,250,829,365

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

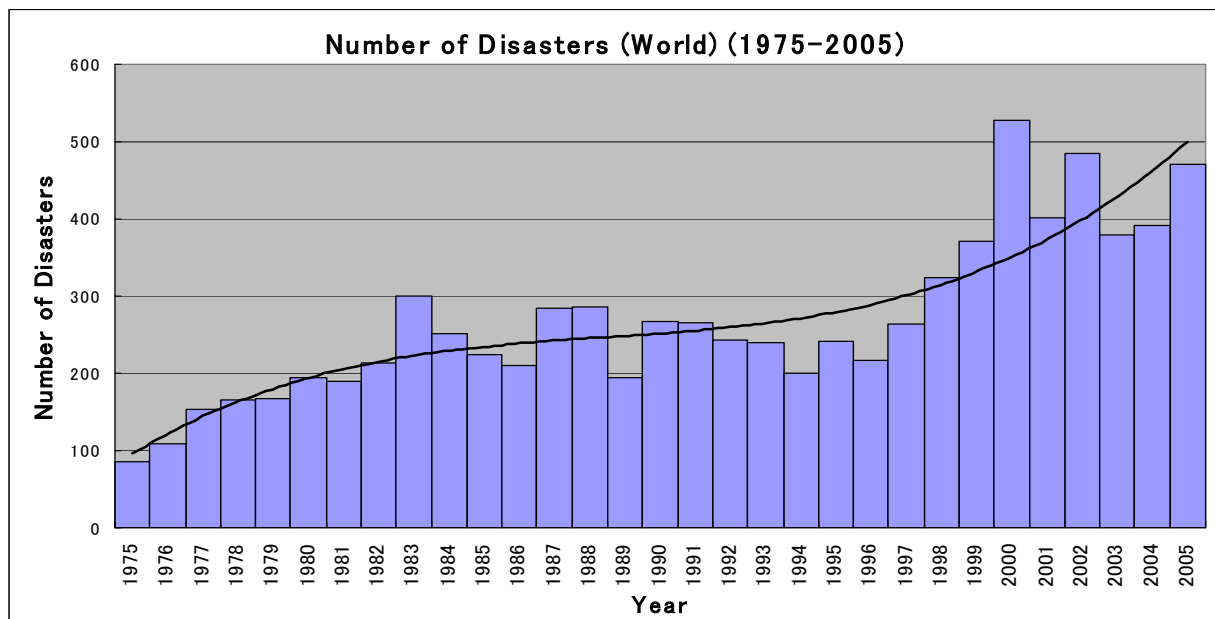
Table 1B: Summary of Natural Disasters, 2005

	Count of DisNo	Sum of Killed	Sum of TotAff	Sum of Damage US\$ ('000s)
Asia	175 (37.15%)	84,354 (90.97%)	131,273,322 (83.04%)	18,816,218 (11.84%)
World	471	92,731	158,081,461	158,932,870

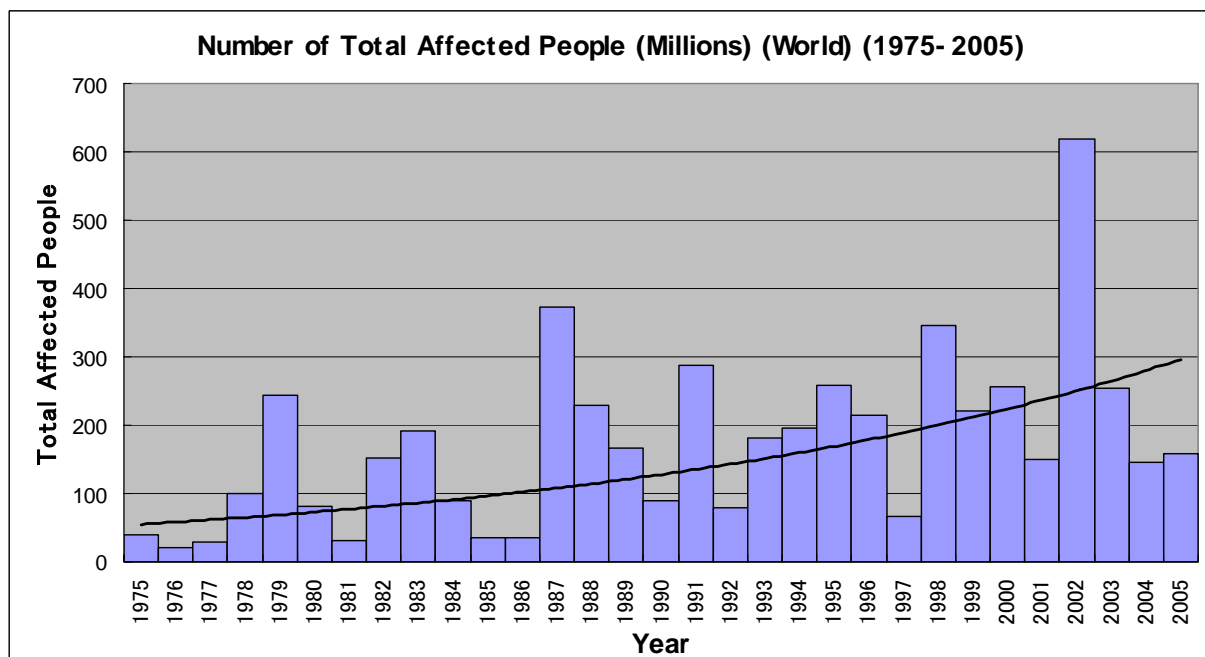
Source: CRED-EMDAT, Université Catholique de Louvain , Brussels, Belgium, 2005

The following figures show the increasing trend in natural disasters, the number of total affected people, and the amount of damage from 1975 to 2005.

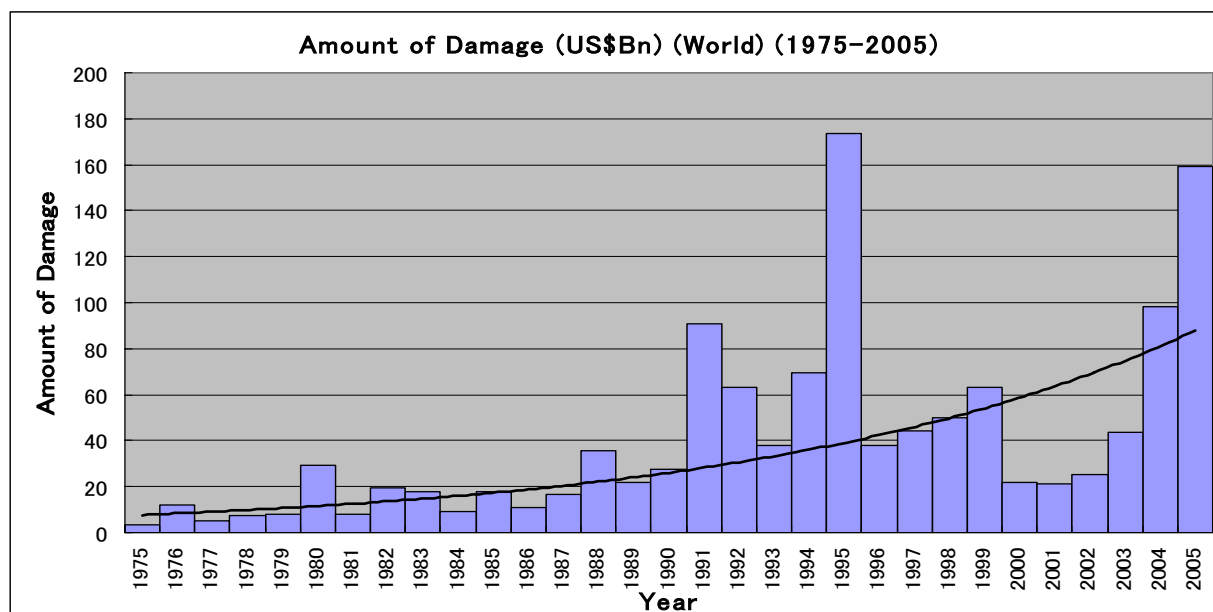
² We used GDP (PPP) 2005 estimate data from the World Fact Book.

Figure 1 Number of Disasters, 1975-2005 (World)

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

Figure 2 Number of Total Affected People (Millions), 1975-2005 (World)

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

Figure 3 Amount of Damage (US\$ Billions), 1975-2005 (World)

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

The following tables show regional disaster characteristics in relation to various types of disaster for the periods 1975-2005. Tables 2A and 3A in particular show this trend for the 31 years from 1975-2005 while Tables 2B and 3B show figures for 2005 only.

Table 2A: Summary of Natural Disasters by Region, 1975-2005

Continent	DisType	Count of DisNo	Sum of Killed	Sum of TotAff	Sum of Damage US\$ ('000s)
Africa	Drought	322	560,493	296,505,049	4,051,193
	Earthquake	53	6,711	1,514,821	8,725,608
	Epidemic	502	106,605	10,302,605	4,730
	Extreme temp	10	218	1,000,218	47,809
	Famine (natural)	34	6,087	31,607,592	89,000
	Flood	453	14,162	33,849,679	3,035,314
	Insect infestation	68		446,000	5,200
	Slide	23	528	18,304	
	Volcano	12	2,152	461,160	
	Wave / Surge	4	312	109,913	30,000
	Wild fire	14	120	16,710	3,500
Wind storm	136	3,350	11,109,022	2,796,873	
Africa Total		1,631	700,738	386,941,073	18,789,227
Americas	Drought	96	79	50,069,164	13,057,539
	Earthquake	151	43,311	11,710,574	56,647,010
	Epidemic	72	14,346	1,626,410	
	Extreme temp	62	5,203	4,089,468	13,911,250
	Famine (natural)	2		1,003,000	
	Flood	609	50,366	43,119,548	51,923,597
	Insect infestation	3		2,000	104,000
	Slide	110	5,189	1,163,028	1,085,200
	Volcano	49	22,005	1,229,912	1,879,022
	Wave / Surge	5	1,274	8,844	
	Wild fire	97	155	362,617	5,566,700
Wind storm	669	38,673	42,953,618	305,207,601	
Americas Total		1,925	180,601	157,338,183	449,381,919
Asia	Drought	136	3,928	1,405,215,138	13,562,391
	Earthquake	386	551,228	70,679,577	248,097,687
	Epidemic	232	44,873	6,713,931	
	Extreme temp	103	19,080	50,711,638	5,042,887
	Famine (natural)	10	760	8,670,000	4,399
	Flood	1,009	131,523	2,627,676,430	161,095,953
	Insect infestation	9		200	925
	Slide	225	15,181	5,473,151	463,888
	Volcano	56	1,424	2,139,814	579,149
	Wave / Surge	22	231,869	2,338,995	7,782,397
	Wild fire	59	450	3,245,885	19,235,500
Wind storm	860	251,595	564,960,864	94,765,419	
Asia Total		3,107	1,251,911	4,747,825,623	550,630,595
Europe	Drought	30		7,062,575	14,190,736
	Earthquake	156	8,704	2,829,742	34,349,776
	Epidemic	28	476	186,089	
	Extreme temp	127	35,260	787,774	2,316,088
	Famine (natural)	2		3,210,000	
	Flood	336	3,065	7,444,055	123,312,165
	Insect infestation	1			
	Slide	47	1,173	39,299	1,669,389
	Volcano	16	9	7,024	19,600
	Wave / Surge	1	11	2	
	Wild fire	80	318	132,587	3,118,249
Wind storm	290	1,948	8,640,518	28,547,948	
Europe Total		1,114	50,964	30,339,665	207,523,951
Oceania	Drought	24	98	8,653,635	11,006,000
	Earthquake	86	585	81,287	2,507,400
	Epidemic	7	288	4,850	
	Extreme temp	4	23	4,600,784	
	Flood	143	243	517,922	2,108,437
	Insect infestation	1			120,000
	Slide	17	431	10,615	2,466
	Volcano	12	9	226,501	400,000
	Wave / Surge	2	2,382	9,867	
	Wild fire	31	130	76,169	1,082,006
	Wind storm	215	713	5,697,606	7,277,364
Oceania Total		542	4,902	19,879,236	24,503,673
Grand Total		8,319	2,189,116	5,342,323,780	1,250,829,365

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

Table 2B: Summary of Natural Disasters by Region, 2005

Continent	DisType	Count of DisNo	Sum of Killed	Sum of TotAff	Sum of Damage US\$ ('000s)
Africa	Drought	14	149	17,114,000	
	Earthquake	3	10	6,558	
	Epidemic	33	2,336	98,412	
	Flood	31	384	709,135	8,456
	Volcano	2	1	284,000	
	Wind storm	6	128	11,845	
Africa Total		89	3,008	18,223,950	8,456
Asia	Drought	5		8,784,000	292,120
	Earthquake	14	76,211	3,887,589	5,080,000
	Epidemic	11	808	6,857	
	Extreme temp	6	715	1,400	
	Flood	83	4,770	70,067,898	9,666,787
	Slide	8	596	7,010	
	Volcano	1		26,000	
	Wild fire	4		2,140	
	Wind storm	43	1,254	48,490,428	3,777,311
Asia Total		175	84,354	131,273,322	18,816,218
Americas	Drought	2		52,990	
	Earthquake	3	17	30,901	
	Extreme temp	1	33	31	
	Flood	33	514	822,686	1,417,430
	Slide	2	29	1,333	
	Volcano	2	2	2,000	
	Wild fire	5	5	4,410	
	Wind storm	44	3,199	7,105,549	134,590,745
	Americas Total		92	3,799	8,019,900
Europe	Earthquake	3	2	3,044	
	Extreme temp	29	1,272	9,785	155,188
	Flood	42	181	116,956	3,245,833
	Slide	2	24	9	
	Wild fire	2	26	137	
	Wind storm	22	34	406,111	500,000
Europe Total		100	1,539	536,042	3,901,021
Oceania	Earthquake	1	1	200	
	Flood	3	1	2,893	100,000
	Volcano	2		20,000	
	Wild fire	1	16	220	40,000
	Wind storm	8	13	4,934	59,000
Oceania Total		15	31	28,247	199,000
Grand Total		471	92,731	158,081,461	158,932,870

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

Table 3A: Summary of Natural Disasters by Disaster Type, 1975-2005

DisType	Continent	Count of DisNo	Sum of Killed	Sum of TotAff	Sum of Damage US\$ ('000s)
Drought	Africa	322	560,493	296,505,049	4,051,193
	Americas	96	79	50,069,164	13,057,539
	Asia	136	3,928	1,405,215,138	13,562,391
	Europe	30	0	7,062,575	14,190,736
	Oceania	24	98	8,653,635	11,006,000
Drought Total		608	564,598	1,767,505,561	55,867,859
Earthquake	Africa	53	6,711	1,514,821	8,725,608
	Americas	151	43,311	11,710,574	56,647,010
	Asia	386	551,228	70,679,577	248,097,687
	Europe	156	8,704	2,829,742	34,349,776
	Oceania	86	585	81,287	2,507,400
Earthquake Total		832	610,539	86,816,001	350,827,481
Epidemic	Africa	502	106,605	10,302,605	4,730
	Americas	72	14,346	1,626,410	
	Asia	232	44,873	6,713,931	
	Europe	28	476	186,089	
	Oceania	7	288	4,850	
Epidemic Total		841	166,588	18,833,885	4,730
Extreme temp	Africa	10	218	1,000,218	47,809
	Americas	62	5,203	4,089,468	13,911,250
	Asia	103	19,080	50,711,638	5,042,887
	Europe	127	35,260	787,774	2,316,088
	Oceania	4	23	4,600,784	
Extreme temp Total		306	59,784	61,189,882	21,818,034
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	453	14,162	33,849,679	3,035,314
	Americas	609	50,366	43,119,548	51,923,597
	Asia	1,009	131,523	2,627,676,430	161,095,953
	Europe	336	3,065	7,444,055	123,312,165
	Oceania	143	243	517,922	2,108,437
Flood Total		2,550	199,359	2,712,607,634	341,475,466
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	23	528	18,304	
	Americas	110	5,189	1,163,028	1,085,200
	Asia	225	15,181	5,473,151	463,888
	Europe	47	1,173	39,299	1,669,389
	Oceania	17	431	10,615	2,466
Slide Total		422	22,502	6,704,397	3,220,943
Volcano	Africa	12	2,152	461,160	
	Americas	49	22,005	1,229,912	1,879,022
	Asia	56	1,424	2,139,814	579,149
	Europe	16	9	7,024	19,600
	Oceania	12	9	226,501	400,000
Volcano Total		145	25,599	4,064,411	2,877,771
Wave / Surge	Africa	4	312	109,913	30,000
	Americas	5	1,274	8,844	
	Asia	22	231,869	2,338,995	7,782,397
	Europe	1	11	2	
	Oceania	2	2,382	9,867	
Wave / Surge Total		34	235,848	2,467,621	7,812,397
Wild fire	Africa	14	120	16,710	3,500
	Americas	97	155	362,617	5,566,700
	Asia	59	450	3,245,885	19,235,500
	Europe	80	318	132,587	3,118,249
	Oceania	31	130	76,169	1,082,006
Wild fire Total		281	1,173	3,833,968	29,005,955
Wind storm	Africa	136	3,350	11,109,022	2,796,873
	Americas	669	38,673	42,953,618	305,207,601
	Asia	860	251,595	564,960,864	94,765,419
	Europe	290	1,948	8,640,518	28,547,948
	Oceania	215	713	5,697,606	7,277,364
Wind storm Total		2,170	296,279	633,361,628	438,595,205
Grand Total		8,319	2,189,116	5,342,323,780	1,250,829,365

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

Table 3B: Summary of Natural Disasters by Disaster Type, 2005

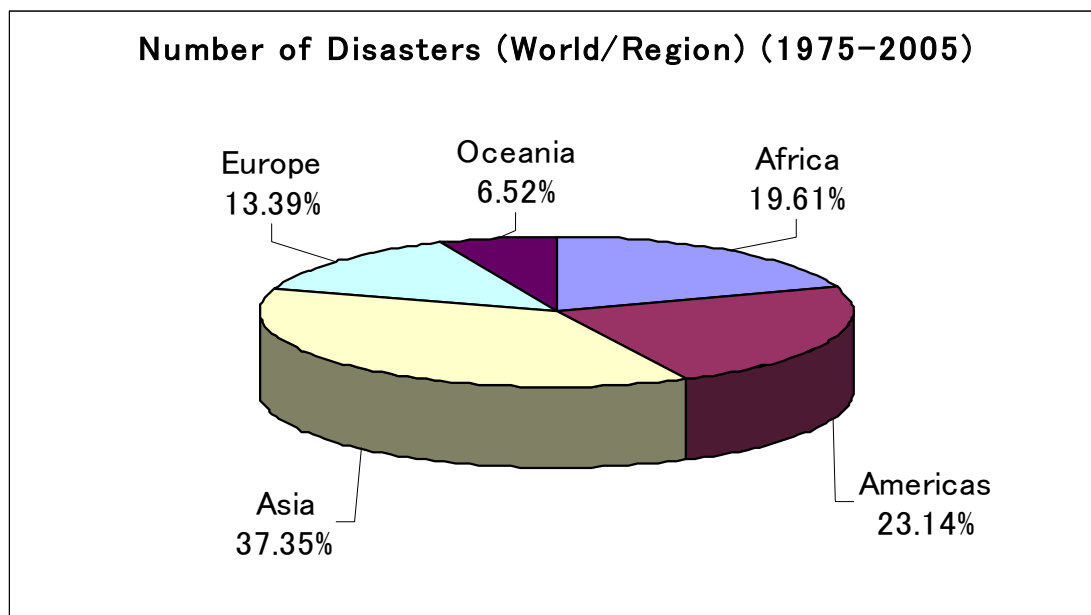
DisType	Continent	Count of DisNo	Sum of Killed	Sum of TotAff	Sum of Damage US\$ ('000s)
Drought	Africa	14	149	17,114,000	
	Asia	5		8,784,000	292,120
	Americas	2		52,990	
Drought Total		21	149	25,950,990	292,120
Earthquake	Africa	3	10	6,558	
	Asia	14	76,211	3,887,589	5,080,000
	Americas	3	17	30,901	
	Europe	3	2	3,044	
	Oceania	1	1	200	
Earthquake Total		24	76,241	3,928,292	5,080,000
Epidemic	Africa	33	2,336	98,412	
	Asia	11	808	6,857	
Epidemic Total		44	3,144	105,269	
Extreme temp	Asia	6	715	1,400	
	Americas	1	33	31	
	Europe	29	1,272	9,785	155,188
Extreme temp Total		36	2,020	11,216	155,188
Flood	Africa	31	384	709,135	8,456
	Asia	83	4,770	70,067,898	9,666,787
	Americas	33	514	822,686	1,417,430
	Europe	42	181	116,956	3,245,833
	Oceania	3	1	2,893	100,000
Flood Total		192	5,850	71,719,568	14,438,506
Slide	Asia	8	596	7,010	
	Americas	2	29	1,333	
	Europe	2	24	9	
Slide Total		12	649	8,352	
Volcano	Africa	2	1	284,000	
	Asia	1		26,000	
	Americas	2	2	2,000	
	Oceania	2		20,000	
Volcano Total		7	3	332,000	
Wild fire	Asia	4		2,140	
	Americas	5	5	4,410	
	Europe	2	26	137	
	Oceania	1	16	220	40,000
Wild fire Total		12	47	6,907	40,000
Wind storm	Africa	6	128	11,845	
	Asia	43	1,254	48,490,428	3,777,311
	Americas	44	3,199	7,105,549	134,590,745
	Europe	22	34	406,111	500,000
	Oceania	8	13	4,934	59,000
Wind storm Total		123	4,628	56,018,867	138,927,056
Grand Total		471	92,731	158,081,461	158,932,870

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

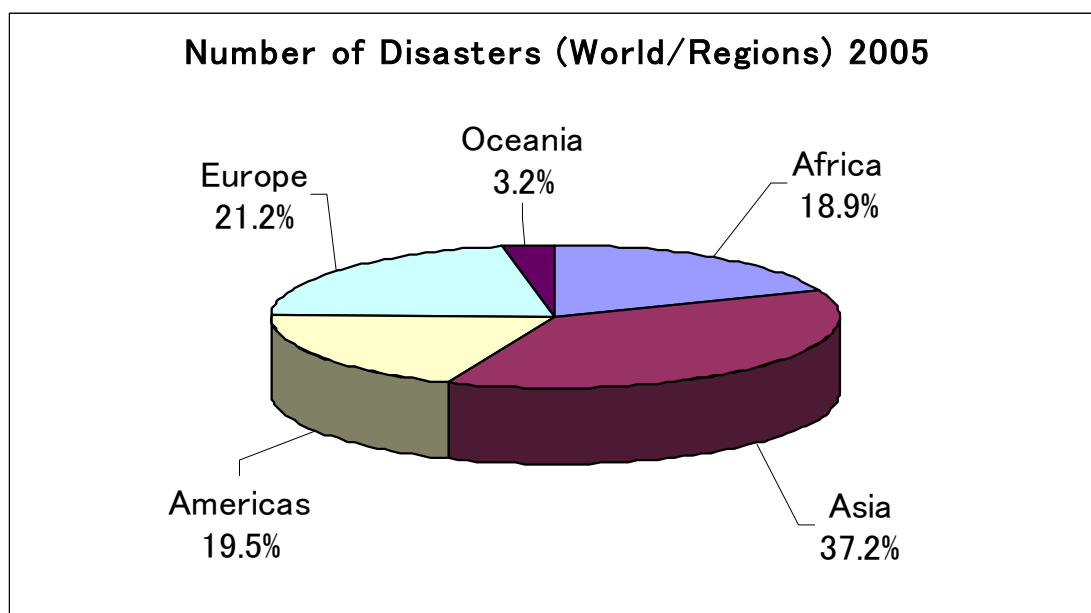
1.2 Regional Vulnerability: Disaster-Prone Asia

The year 2004 was a particularly disastrous year for Asia due to the Indian Ocean Tsunami as well as other earthquakes, wind storms, and floods. The year 2005 was likewise disastrous as a result of the South Asian earthquake, which accounted for almost 91% 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, but not the majority of economic losses, were reported in this region in 2005, as had been the case in previous years. Specifically, nearly 83% (down 3% from 2004) of the total affected people and 91% (down 5% from 2004) of the human losses were reported in Asia. However, only 11.8% of the reported economic damage came from Asia.

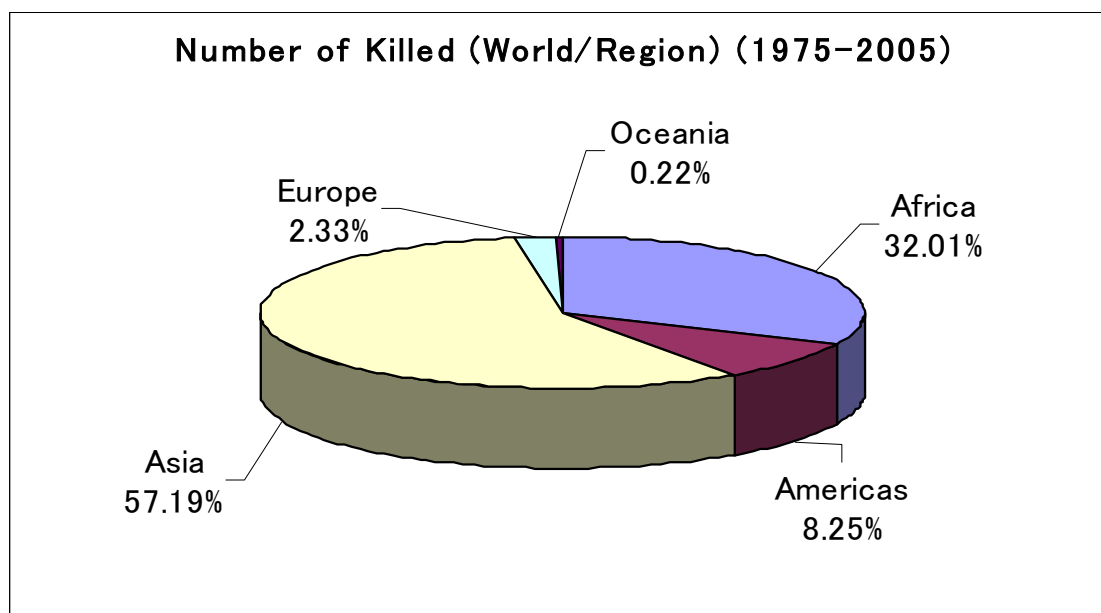
Furthermore, in 2005, the majority of economic losses caused by disasters happened in the Americas, followed by Asia, Europe, and Oceania. These losses were due to the natural disasters that hit India and Pakistan (earthquakes and flood), China (wind storms and floods), the US (windstorms and Hurricanes Katrina, Wilma, and others), and Bangladesh (floods and wind storms). The South Asian earthquake highlighted for the world the region's vulnerability to such a disaster. In contrast, outside of Asia, the second largest death toll was reported in the US, and was due to the wind storms (Hurricanes Katrina, Wilma, and others) that affected the country. This year, 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 year 2005 was better for Europe than for some other regions. The following figures from 4A to 7B show the regional trends for 2005 as well as for the period 1975-2005. Figures 8A to 11C show trends by disaster type for 2005 and for the 1975-2005 period, for the world and the Asian region. We have included figures not only for the year 2005, but also for the 31-year period from 1975 to 2005. This will provide a better understanding of the situation and a useful basis for comparison.

Figure 4A Proportion of Disasters by Region, 1975-2005

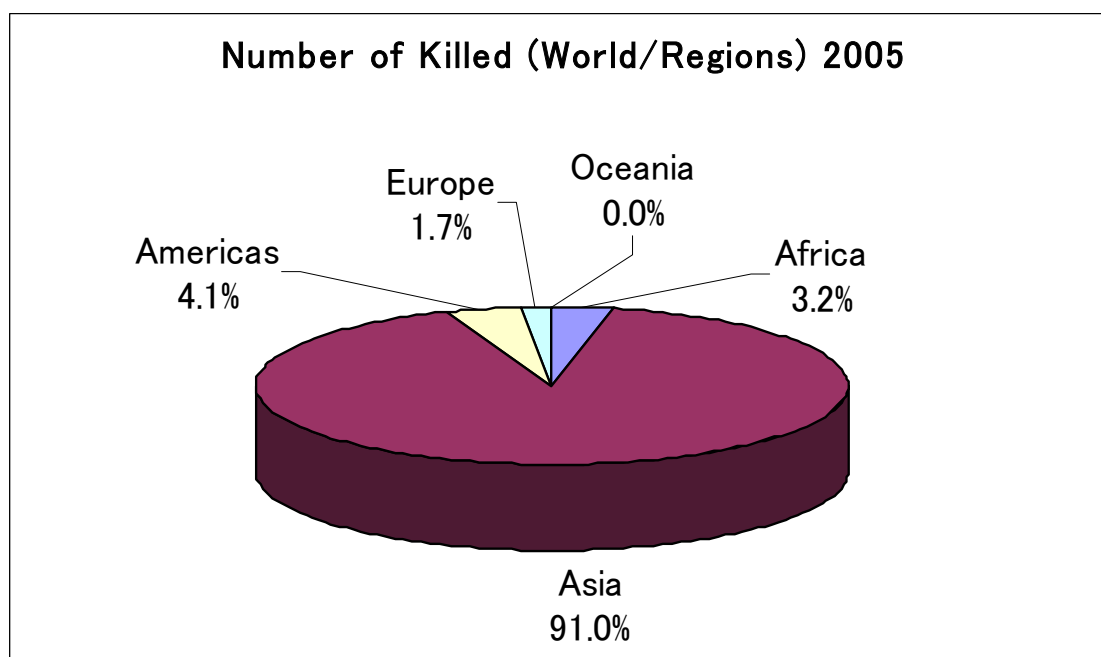
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

Figure 4B Proportion of Disasters by Region, 2005

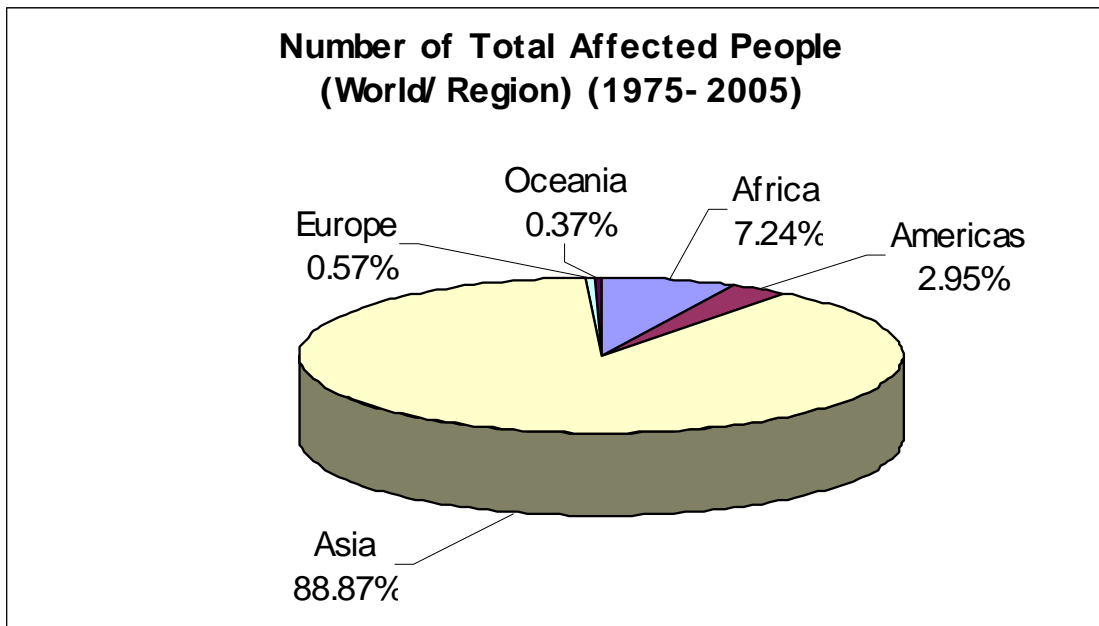
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

Figure 5A Proportion of People Killed by Region, 1975-2005

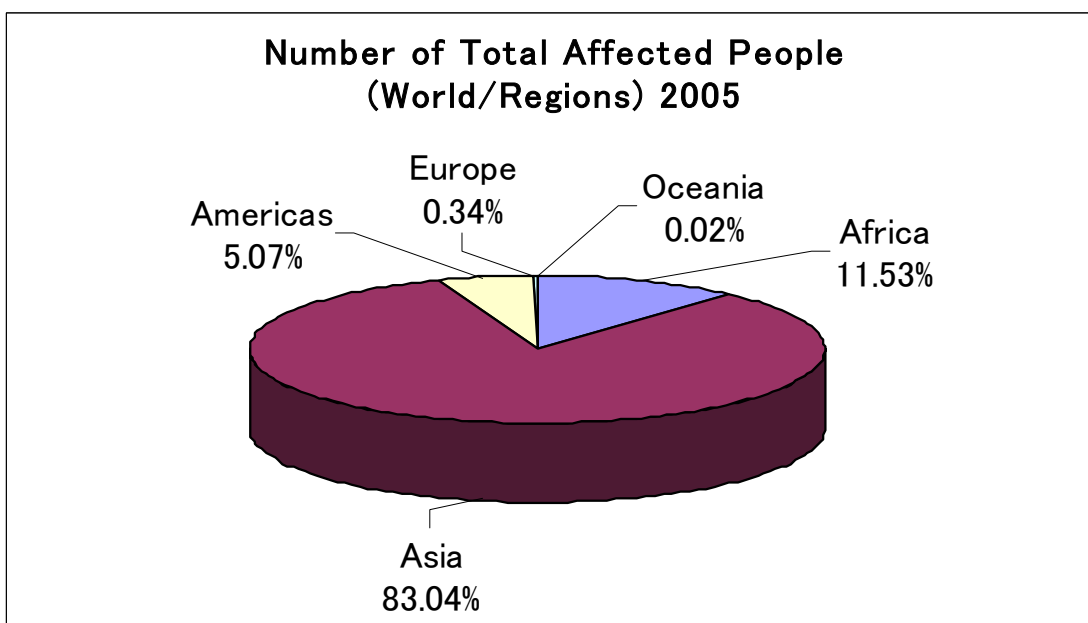
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

Figure 5B Proportion of People Killed by Region, 2005

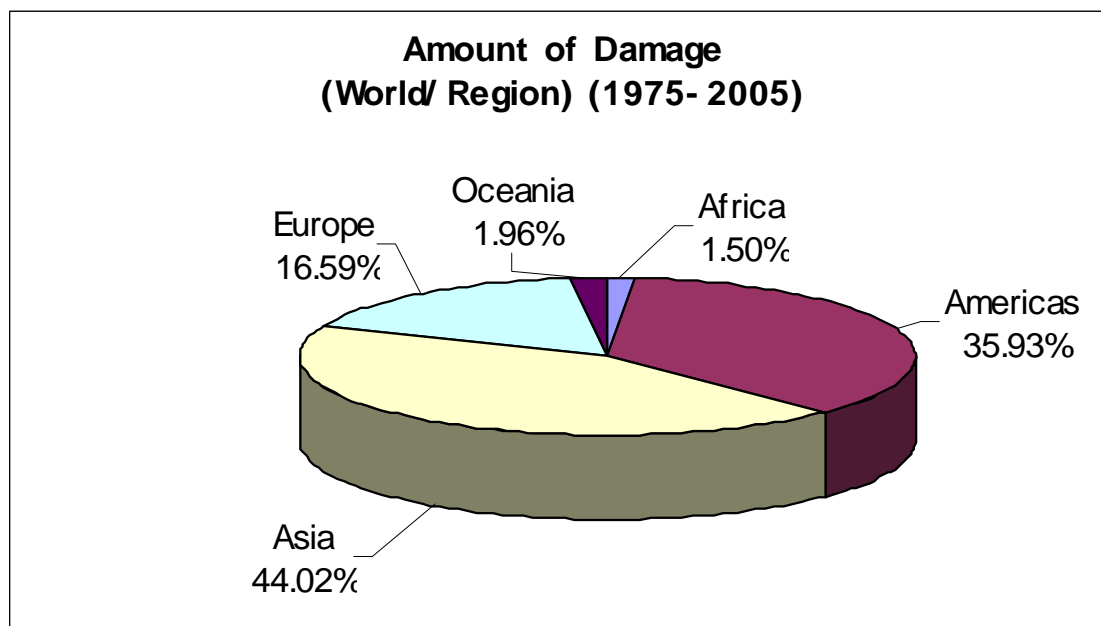
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

Figure 6A Proportion of Total Affected People by Region, 1975-2005

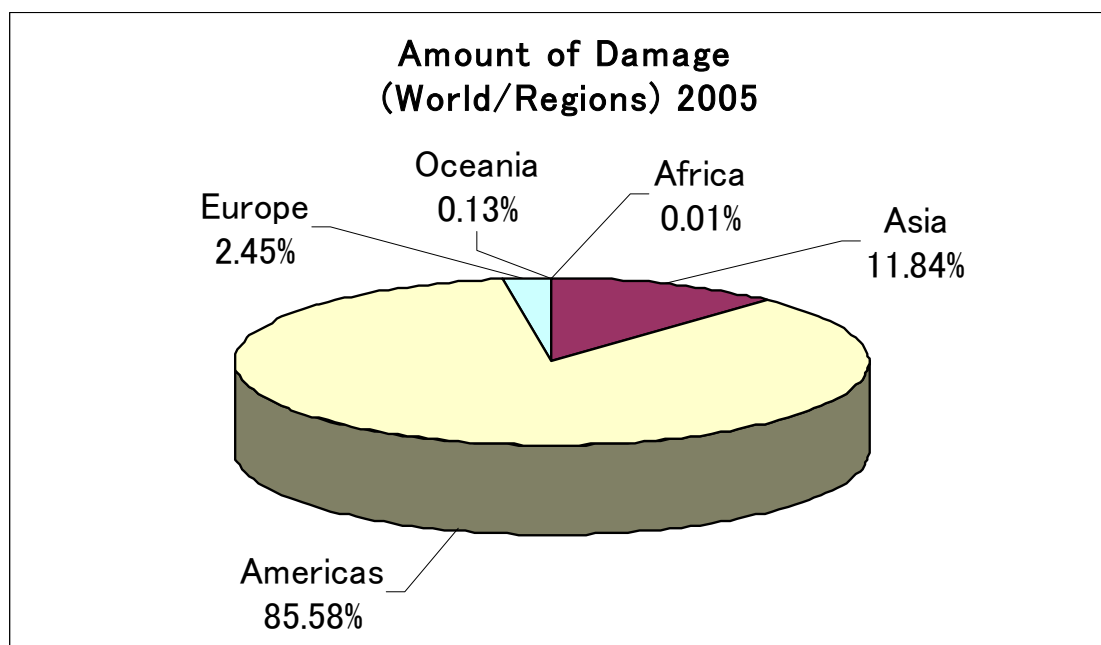
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

Figure 6B Proportion of Total Affected People by Region, 2005

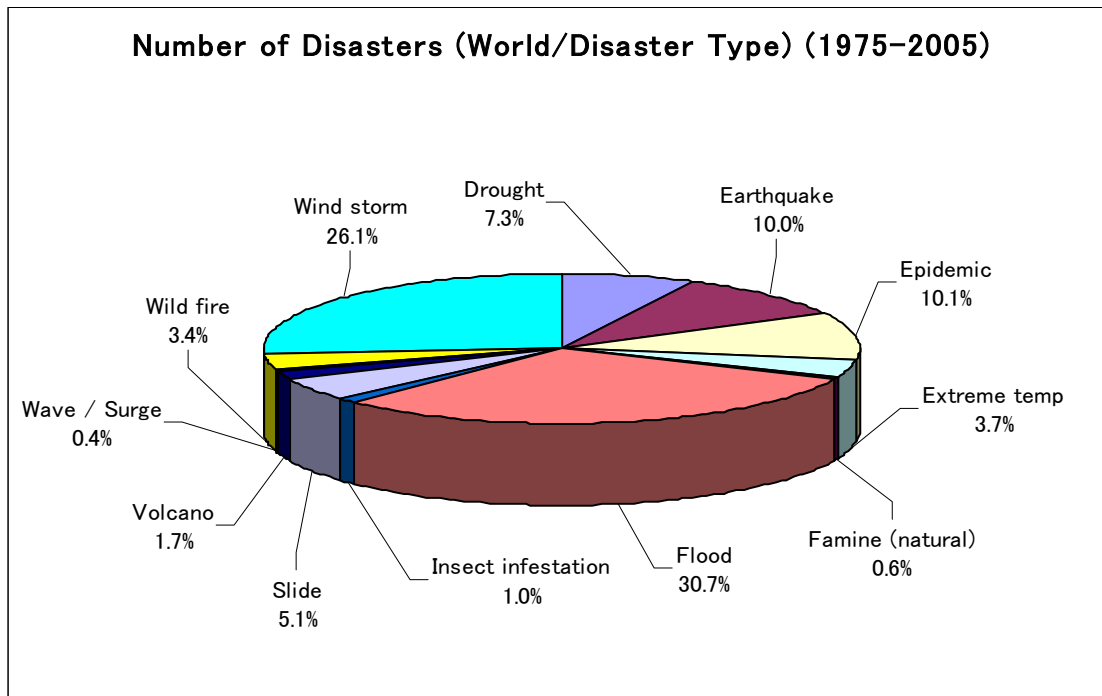
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

Figure 7A Proportion of Damage by Region, 1975-2005

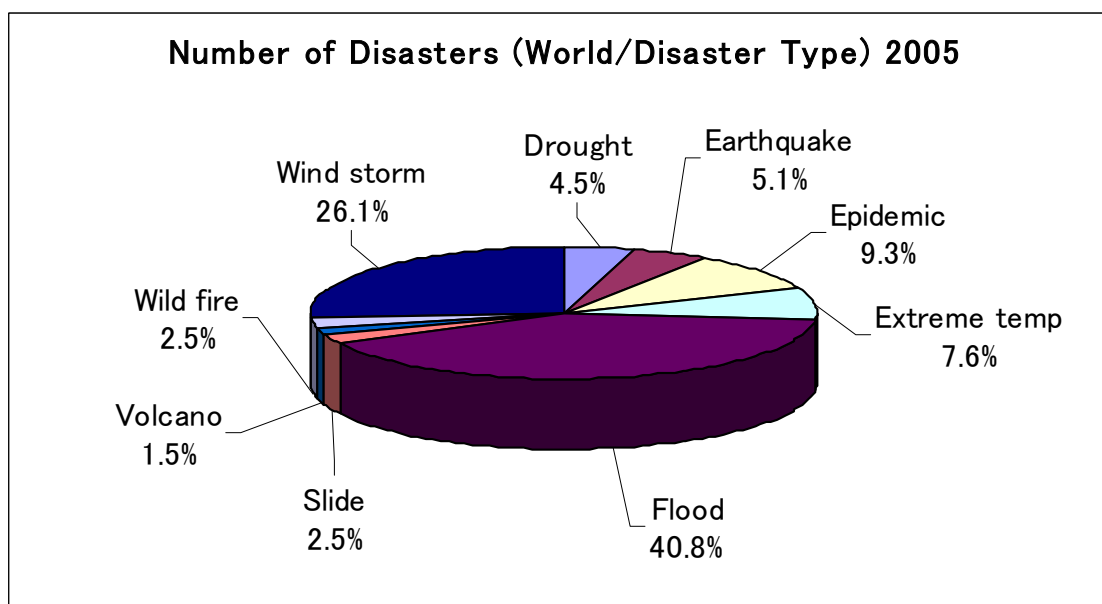
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

Figure 7B Proportion of Damage by Region, 2005

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

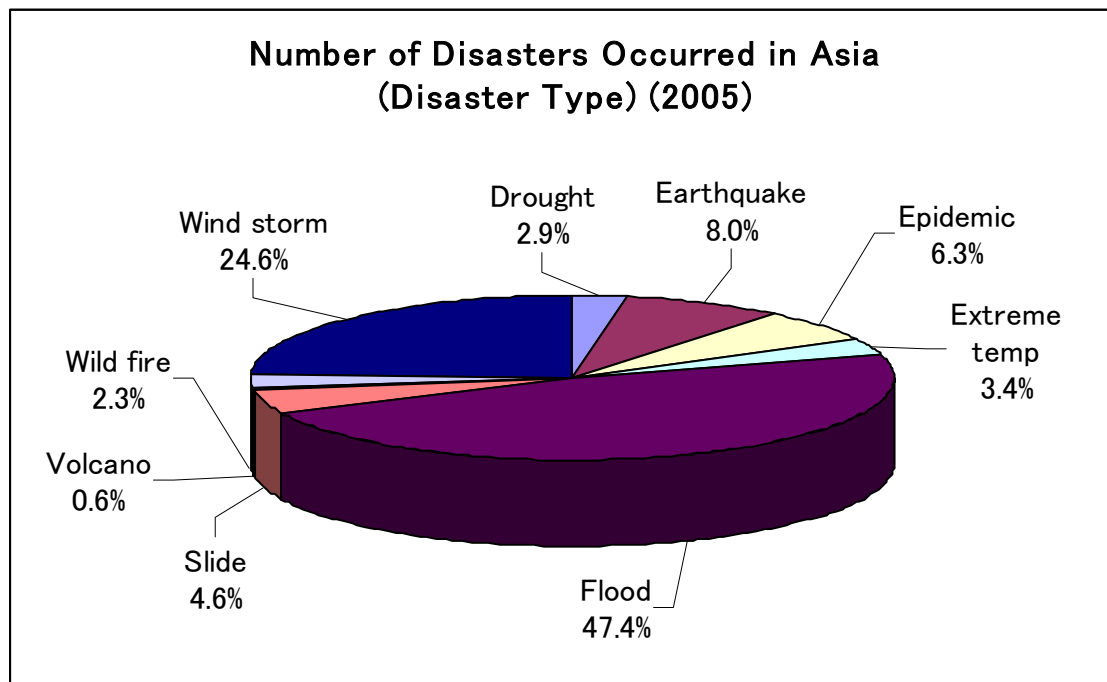
Figure 8A Proportion of Disasters Worldwide by Type, 1975-2005

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

Figure 8B Proportion of Disasters Worldwide by Type, 2005

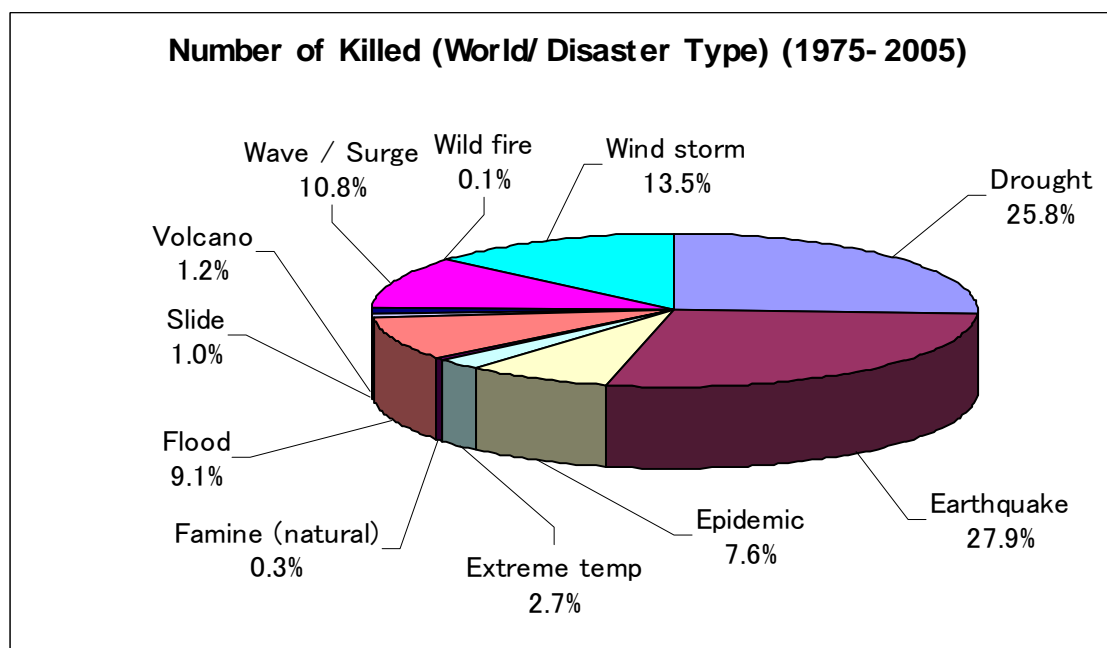
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

Figure 8C Proportion of Disasters in Asia by Type, 1975-2005

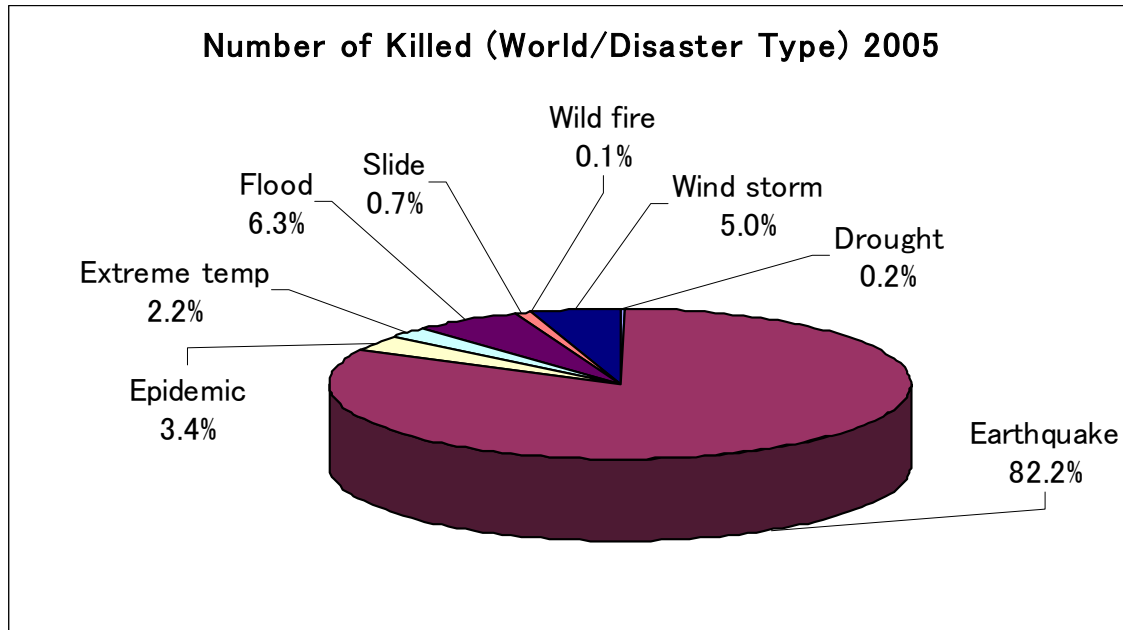


Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

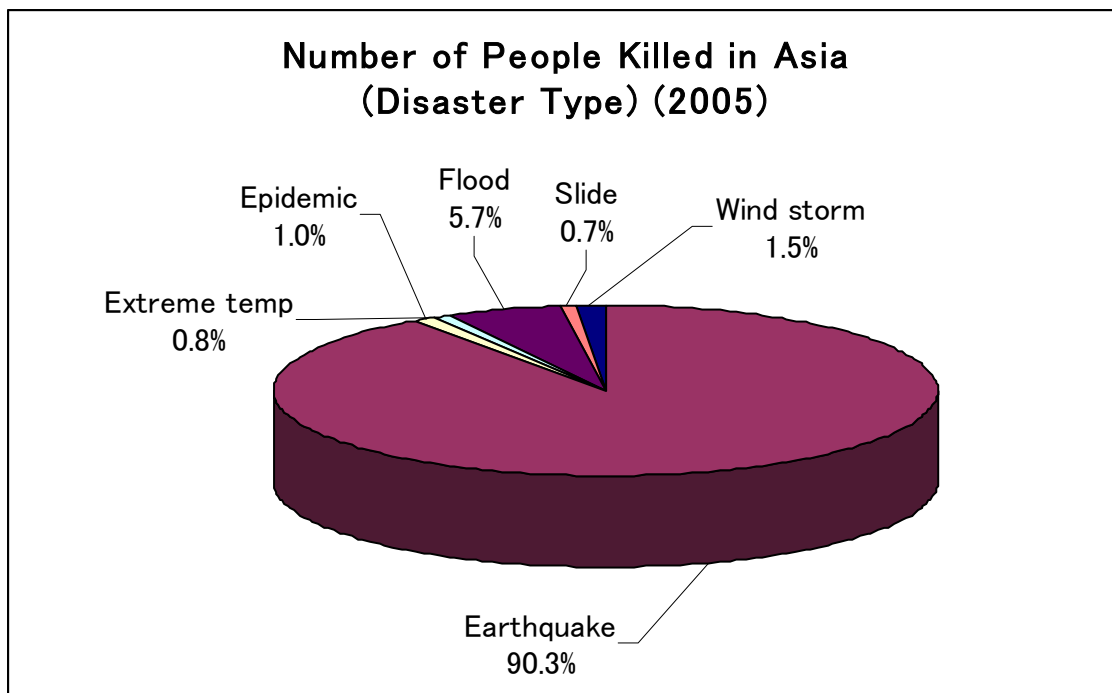
Figure 9A Proportion of People Killed Worldwide by Type of Disaster, 1975-2005



Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

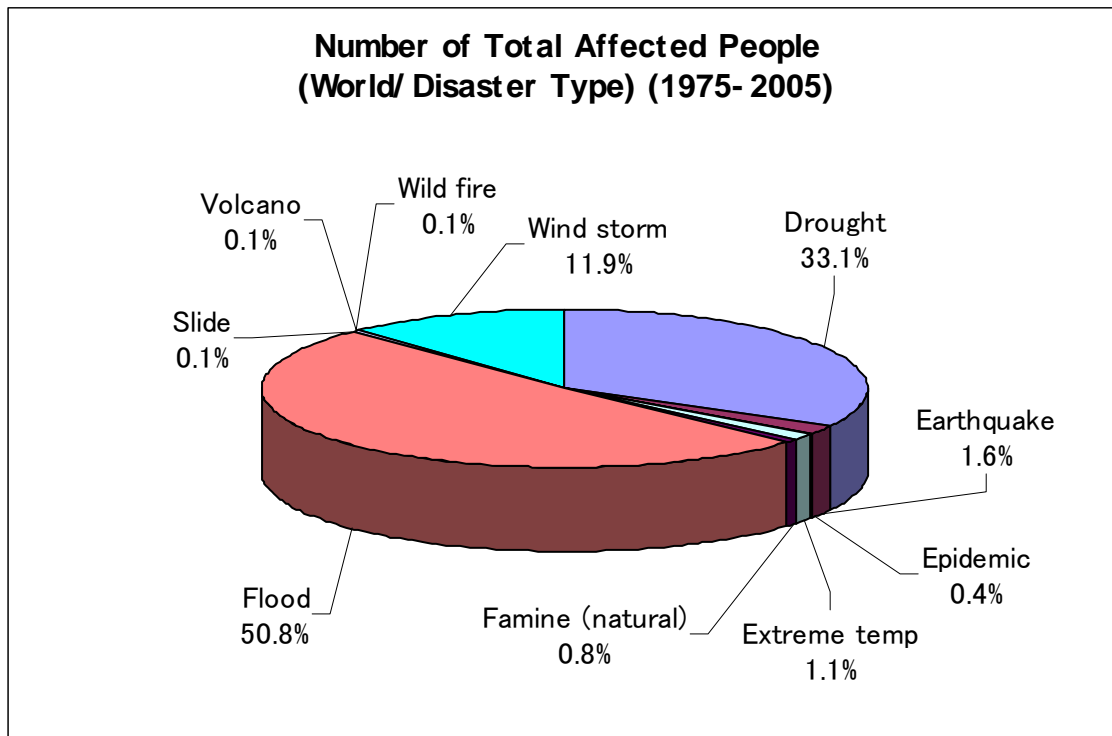
Figure 9B Proportion of People Killed Worldwide by Type of Disaster, 2005

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

Figure 9C Proportion of People Killed in Asia by Type of Disaster, 2005

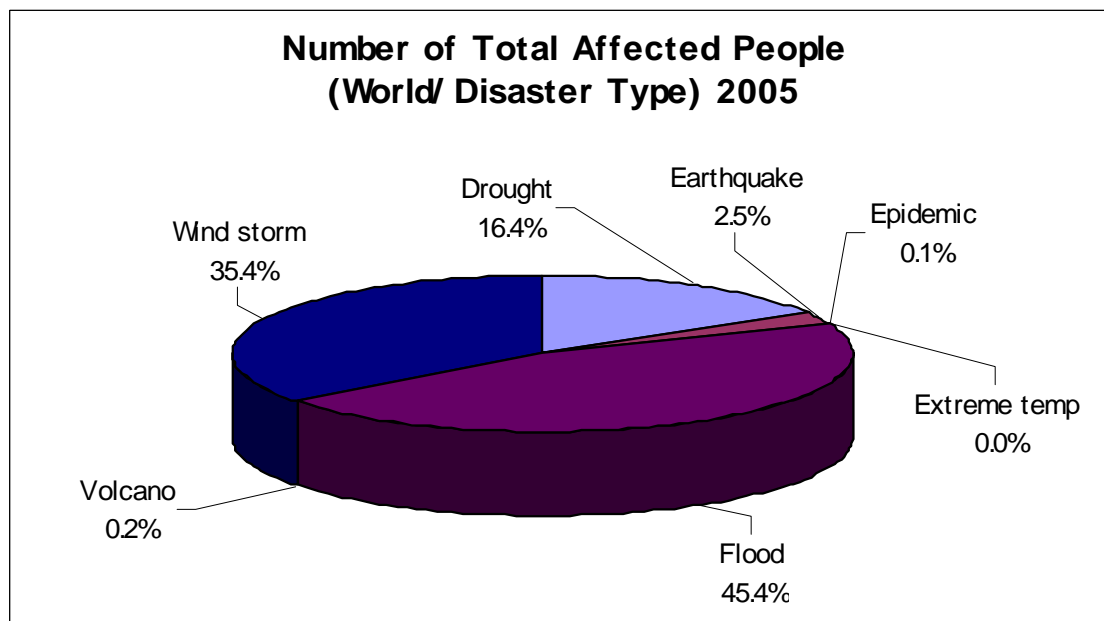
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

Figure 10A Proportion of Total Affected People Worldwide by Type of Disaster, 1975-2005

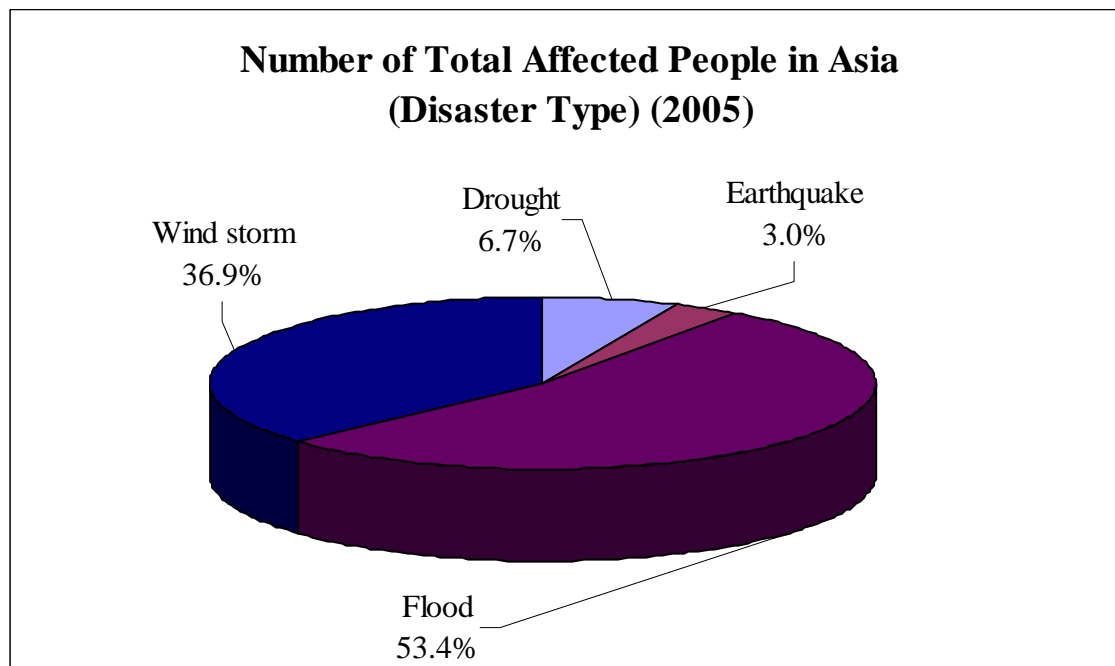


Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

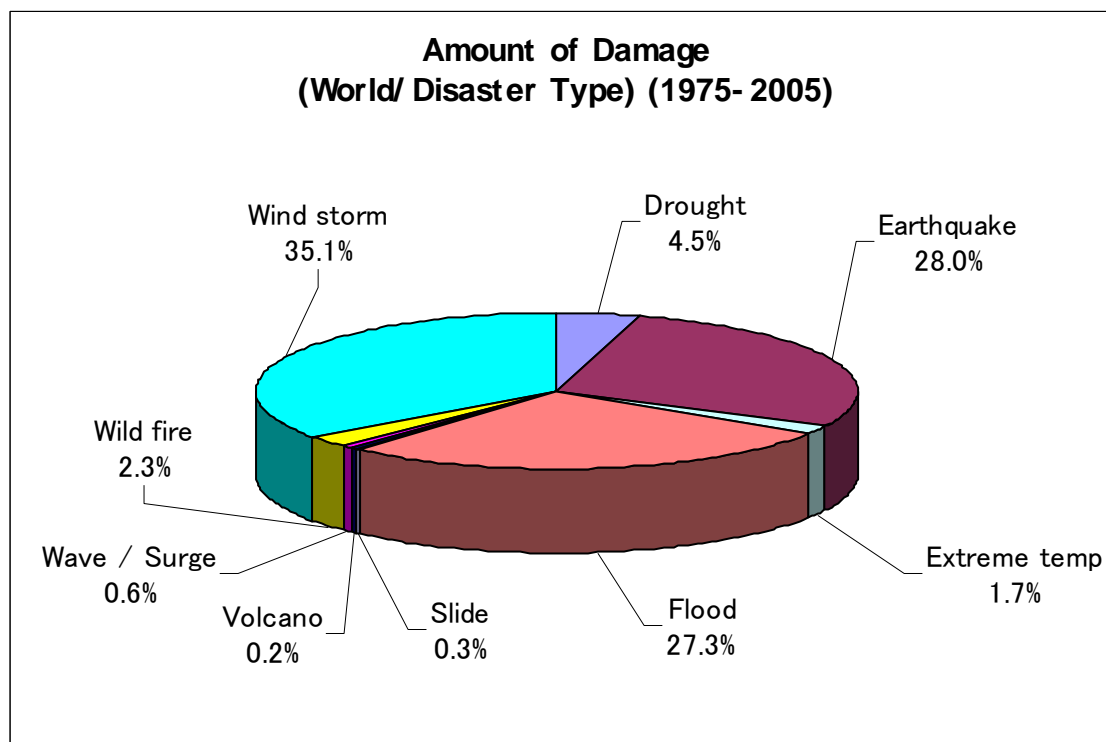
Figure 10B Proportion of Total Affected People Worldwide by Type of Disaster, 2005



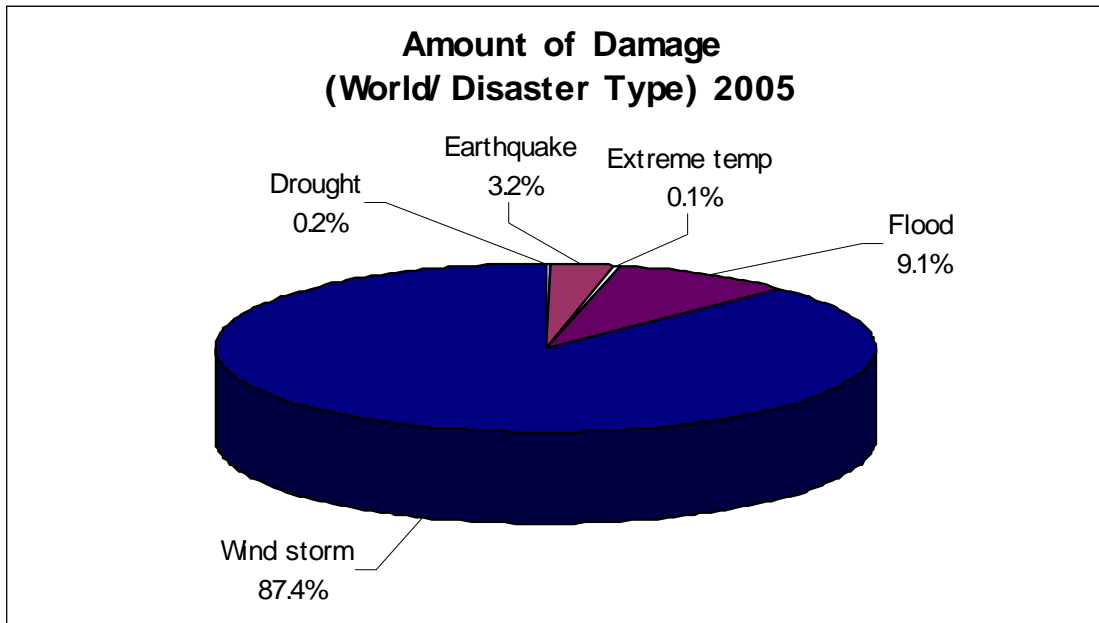
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

Figure 10C Proportion of Total Affected People in Asia by Type of Disaster, 2005

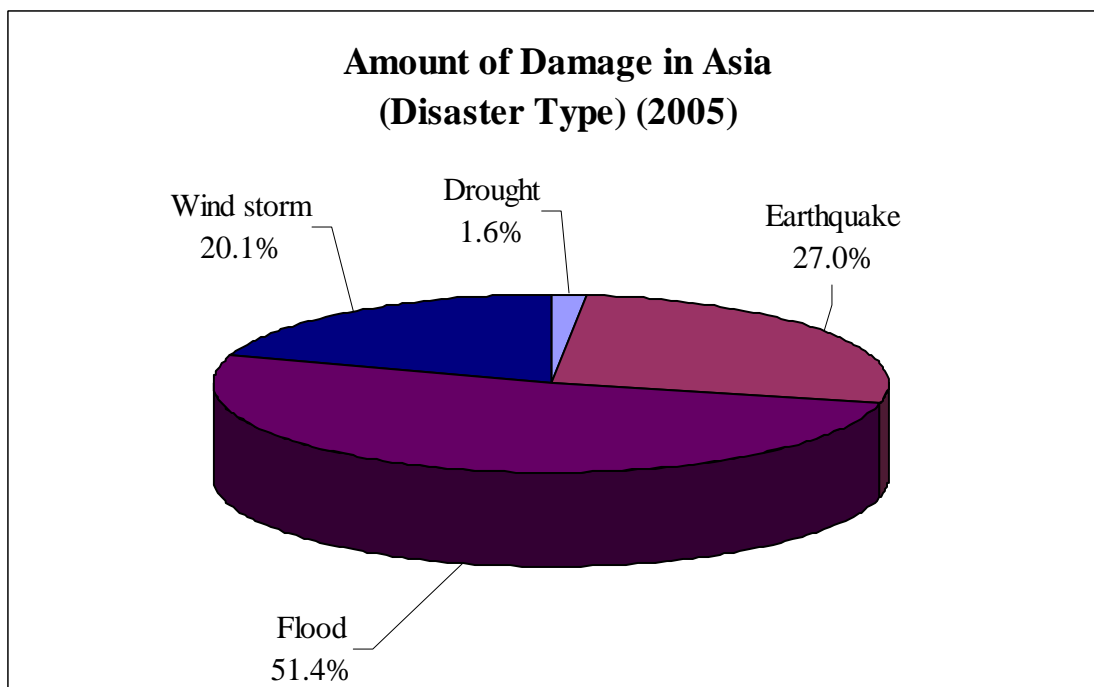
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

Figure 11A Proportion of Damage Worldwide by Type of Disaster, 1975-2005

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

Figure 11B Proportion of Damage Worldwide by Type of Disaster, 2005

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

Figure 11C Proportion of Damage in Asia by Type of Disaster, 2005

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

Based on data related to disaster types and their impact on societies and economies in 2005, 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 2004. In 2005, Asia experienced droughts, extreme temperatures and slides, but these were of a smaller magnitude than the other types of disasters that occurred. 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 and the 2005 South Asian Earthquake disasters changed this perception and prompted the Asian region to adopt appropriate countermeasures. The great amount of human suffering in this region substantially hinders 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 is 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 that countries with smaller populations account for a larger share of human losses. While the Canary Islands ranked at 133, Samoa at 209, East Timor at 115, Grenada at 315, and The Gambia at 156 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 total population. Similar movements can also be observed in other countries, such as El Salvador, Haiti, Somalia, Guinea, Guyana, and Mauritania. Pakistan was ranked 1st and 3rd in its ratio of people killed to the total population and its share of damage to GNI, respectively, due to the disastrous South Asian earthquake disaster. 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, 2004 GNI data and definition on atlas method GNI calculation.

Table 4: Top 25 Natural Disasters by Number of People Killed, 2005

Rank (Kill)	Country	Region	DisType	DisSubset	DisName	Month	Day	Killed	Injured	Homeless	Affected	TotAff	DamageUS ('000s)	Location
1	Pakistan	South Asia	Earthquake	Earthquake	Tetanus	10	8	73338	69142	0	2800000	2869142	5000000	Bagh, Muzaffarabad, Poonch (Kashmir), Abbottabad, Battagram, Kohistan, Manshra, Shangla (NWFP)
2	Guatemala	Central America	Wind storm	Hurricane	Cholera	10	1	1513	386	474928	0	475314	988300	Escuintla, Jutiapa, Santa Rosa, Suchitepequez, San Marcos, Quezaltenango, Huehuetenango, Solola, Mobile, Bayou La Batre, Dauphin Island, Coden (Alabama), New Orleans, Slidell, St. Bernard Parish
3	United States	North America	Wind storm	Hurricane		8	29	1322	0	500000	0	500000	125000000	
4	India	South Asia	Earthquake	Earthquake	Meningococcal disease	10	8	1309	6622	0	150000	156622	0	Jammu and Kashmir
5	India	South Asia	Flood	--		7	24	1200	0	20000000	0	20000000	3500000	Gujarat, Madhya Pradesh, Maharashtra, Goa, Orissa, Karnataka, Himachal Pradesh, Jammu and Kashmir
6	Indonesia	South-east Asia	Earthquake	Earthquake	Poliomyelitis	3	28	915	1146	104167	0	105313	0	Simeule, Nias, Banyak Islands, West Coast
7	Ukraine	Russian Federation	Extreme temp	Cold Wave		12	16	801	9600	0	0	9600	0	
8	China, P Rep	East Asia	Flood	--		6	19	771	0	16700000	0	16700000	2000000	Zhejiang, Fujian, Jiangxi, Hunan, Guangdong, Guangxi provinces
9	Iran, Islam Rep	South Asia	Earthquake	Earthquake		2	22	612	1411	93355	0	94766	80000	Rooein Abad, Akbar, Asghar, Dehaifkan, Behabad, Sardkooyeh, Fathabad, Motaharabad, Eslam Abad.
10	Nigeria	West Africa	Epidemic	Measles	Acute Watery Diarrhoeal syndrome	2	28	561	0	23575	0	23575	0	Adamawa, Kano, Jigawa, Bauchi, Yobe, Sokoto, Kaduna, Katsina, Gombe, Taraba states
11	Pakistan	South Asia	Flood	--		2	9	520	450	7000000	0	7000450	0	Pasni Tehsil, Chaman, Pishin, Awaran, Jaffarabas, Naseerabad (Balouchistan province), Ormara, Bela
12	Guinea Bissau	West Africa	Epidemic	Diarrhoeal/Enteric		6	6	399	0	25111	0	25111	0	Bissau, Biombo, Cacheu, Oio, Bijagos, Bolama, Quinira, Sao Domingos, Tombalia, Gafu and Bafat
13	India	South Asia	Extreme temp	Heat wave		6	0	329	0	0	0	0	0	Uttar Pradesh, Bihar, Bengal occidentale, Orissa, Maharashtra, Andhra Pradesh states
14	Senegal	West Africa	Epidemic	Diarrhoeal/Enteric		1	1	303	0	23022	0	23022	0	Fatick, Dakar, Kolda, Louga, Tambacounda, Touba, Mback - Bambe districts (Diourbel region)
15	India	South Asia	Epidemic	Arbovirus	Leptospirosis	7	29	296	0	939	0	939	0	Uttar Pradesh, Bihar
16	India	South Asia	Epidemic	Arbovirus		7	1	296	0	1145	0	1145	0	Uttar Pradesh and Bihar states
17	Afghanistan	South Asia	Wind storm	Winter		1	0	260	0	22656	0	22656	0	Badakshan, Daikundi, Ghazni, Paktika, Ghor, Zabul, Uruzgan, Wardak
18	India	South Asia	Slide	Avalanche		2	15	250	0	5000	0	5000	0	Verinag, Qazigund, Ramsu, Anantnag, Poonch (Jammu and Cachemire)
19	India	South Asia	Flood	--		6	28	239	0	405000	0	405000	2300000	Surat, Valsad, Navsari, Bharuch, Vadodara, Surendranagar, Dangs, Ahmedabad, Anand, Kheda.
20	Poland	European Union	Extreme temp	Cold Wave		10	0	233	0	0	0	0	0	
21	Korea Dem P Rep	East Asia	Flood	Flash Flood		6	30	193	205	0	16093	16298	0	Dokshon city, Pukchang and Maengsan counties (Pyongan province)
22	Indonesia	South-east Asia	Slide	Landslide		2	21	186	0	0	0	0	0	Bandung
23	India	South Asia	Extreme temp	Cold Wave		12	0	180	0	0	0	0	0	Uttar Pradesh, Punjab, Haryana, Himachal Pradesh, Delhi, Bihar, Radjasthan, Hararyana, Jamma and
24	China, P Rep	East Asia	Wind storm	Typhoon	Khanun	9	1	159	0	19624000	0	19624000	1900000	Anhui, Zhejiang, Fujian, Jiangxi, Hubei provinces
25	Ethiopia	East Africa	Flood	Flash Flood		4	23	156	0	235418	0	235418	0	Ogaden region, Gode. West Emi district. Godie, Deghabur, Mustahil. Gode, Iiisa Kebridehar. Afder

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

Table 5: Top 25 Natural Disasters by the Ratio of People Killed to the Total Population, 2005

Rank (Kill/Popln)	Rank (Kill)	Country	Region	DisType	DisSubset	DisName	Month	Day	Killed	Injured	Homeless	Affected	TotAff	(2005 World Fact Book)	Kill/Popln	US\$ (World Bank 2004)	DamageUS ('000s)	Location
1	1	Pakistan	South Asia	Earthquake	Earthquake	Tetanus	10	8	73338	69142	0	2800000	2869142	#####	0.00042	90.66	5000000	Bagh, Muzaffarabad, Poonch (Kashmir), Abbottabad, Battagram, Kohistan, Mensehra, Shandla (NWFP), Bissau, Biombo, Cacheu, Oio, Bijagos, Bolama, Quinira, Sao Domingos, Tombalia, Gafu and Bafat
2	12	Guinea Bissau	West Africa	Epidemic	Diarrhoeal/Enteric		6	6	399	0	25111	0	25111	1442029	0.000277	0.25	0	Oio, Bijagos, Bolama, Quinira, Sao Domingos, Tombalia, Gafu and Bafat
3	133	Canary Is	North Africa	Wind storm	Tropical storm		11	27	19	0	0	0	0	90234	0.000211	0.73	0	Tenerife, de la Plama Is.
4	2	Guatemala	Central America	Wind storm	Hurricane	Cholera	10	1	1513	386	474928	0	475314	12293545	0.000123	26.95	988300	Escuintla, Jutiapa, Santa Rosa, Suchitepequez, San Marcos, Quezaltenango, Huehuetenango, Solola
5	209	Samoa	Oceania	Wind storm	Cyclone		2	16	9	0	0	0	0	176908	0.000051	0.34	0	
6	83	Guyana	South America	Flood	--		1	15	34	0	274774	0	274774	767245	0.000044	0.77	465100	Georgetown, Demerara-Mahaica, West Demerara-Essequibo Isl., Mahaica-Berbice
7	14	Senegal	West Africa	Epidemic	Diarrhoeal/Enteric		1	1	303	0	23022	0	23022	11987121	0.000025	7.19	0	Fatick, Dakar, Kolda, Louga, Tambacounda, Touba, Mback-Bambey districts (Dionmbel region)
8	115	East Timor	South-east Asia	Epidemic	Arbovirus		1	5	22	0	336	0	336	1062777	0.000021	0.67	0	Dili, Liquica, Maliana, Baucau, Manatuto
9	56	Mauritania	West Africa	Epidemic	Diarrhoeal/Enteric		7	20	55	0	2585	0	2585	3177388	0.000017	1.57	0	Nouakchott, Brakna, Gaidimakha, Traza, Elmina, Arafat, Dar Naim, Ksar, Sebha districts
10	7	Ukraine	Russian Federation	Extreme temp	Cold Wave		12	16	801	9600	0	0	9600	46710816	0.000017	60.20	0	
11	28	Burundi	East Africa	Drought	Drought		1	0	120	0	2150000	0	2150000	8090068	0.000015	0.67	0	Busoni, Bugabira, Ntega, Kirundo communes (Kirundo province), Muyinga province
12	30	Chad	Central Africa	Epidemic	Measles		1	3	115	0	6000	0	6000	9944201	0.000012	2.33	0	Batha, Njamena, Chari-Baguirmi, Moyen-Chari, Tandjile, Ouaddai, Wadi Fara
13	315	Grenada	Caribbean	Wind storm	Hurricane		7	17	1	0	0	835	835	89703	0.000011	0.40	0	Carriacou Isl., Petit Martinique
14	46	El Salvador	Central America	Wind storm	Hurricane	Adrian	10	1	69	0	72141	0	72141	6822378	0.000010	15.70	355700	San Salvador, Lourdes, Chaparral, Aroca, San Marcos, Santa Tecla, El Chaparral, La Libertad
15	93	Liberia	West Africa	Epidemic	Diarrhoeal/Enteric		8	2	29	0	674	0	674	3042004	0.000010	0.37	0	Sierra County
16	156	Cambodia, The	West Africa	Flood	Flash Flood		4	26	15	0	0	0	0	1641564	0.000009	0.41	0	Lawe Mengkudu, Badar
17	9	Iran, Islam Rep	South Asia	Earthquake	Earthquake		2	22	612	1411	93355	0	94766	68688433	0.000009	155.33	80000	Rooein Abad, Akbar, Asghar, Dehaafkan, Behabad, Sardkooyeh, Fathabad, Mofarahabad, Eslam Abad
18	17	Afghanistan	South Asia	Wind storm	Winter		1	0	260	0	22656	0	22656	31056997	0.000008	5.54	0	Badkshan, Daiikundi, Ghazni, Paktika, Ghor, Zabul, Uruzgan, Wardak
19	21	Korea Dem P Rep	East Asia	Flood	Flash Flood		6	30	193	205	0	16093	16298	23113019	0.000008	2.13	0	Dokshon city, Pukchang and Maengsan counties (Pyongan province)
20	44	Guinea	West Africa	Epidemic	Diarrhoeal/Enteric	Cholera	4	11	72	0	1884	0	1884	9690222	0.000007	3.81	0	Conakry, Boko, Boffa, Coyah, Forecariah, Kindia, Pita prefectures
21	64	Honduras	Central America	Wind storm	Tropical storm		11	18	47	0	90000	0	90000	7326496	0.000006	7.32	0	Atlantida, Colon, Cortes, Gracias a Dios, Yoro departments
22	20	Poland	European Union	Extreme temp	Cold Wave		10	0	233	0	0	0	0	38536869	0.000006	232.93	0	
23	87	El Salvador	Central America	Flood	--		6	24	33	0	2332	0	2332	6822378	0.000005	15.70	0	San Pedro Puxtla, San Salvador area, Apameca, Comasagun, Cusinahuat
24	73	Haiti	Caribbean	Wind storm	Hurricane	Emily	7	7	40	0	15000	0	15000	8308504	0.000005	3.73	0	Southern, Western, Nippes, South East, Grande Anse departments
25	74	Somalia	East Africa	Flood	Flash Flood		4	23	40	0	5000	0	5000	8863338	0.000005	4.67	0	Hargeisa, Jowhar, Burco, Berbera, Burao, Borame and Sayla, Hirran region - Beletweyne, Lower Jubbah

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

Table 6: Top 25 Natural Disasters by the Number of Total Affected People, 2005

Rank (TotAff)	Country	Region	DisType	DisSubset	DisName	Month	Day	Killed	Injured	Homeless	Affected	TotAff	DamageUS ('000s)	Location
1	India	South Asia	Flood	--		7	24	1200	0	2000000	0	2000000	3500000	Gujarat, Madhya Pradesh, Maharashtra, Goa, Orissa, Karnataka, Himachal Pradesh.
2	China, P Rep	East Asia	Wind storm	Typhoon	Khanun	9	1	159	0	19624000	0	19624000	1900000	Anhui, Zhejiang, Fujian, Jiangxi, Hubei provinces
3	China, P Rep	East Asia	Flood	--		6	19	771	0	16700000	0	16700000	2000000	Zhejiang, Fujian, Jiangxi, Hunan, Guangdong, Guangxi provinces
4	China, P Rep	East Asia	Flood	--		6	28	58	230	11230000	0	11230230	2700	Dazhou, Bazhong, Guangan, Nanchong, Yibin, Luzhou, Ganzi (Sichuan province)
5	China, P Rep	East Asia	Wind storm	Typhoon	Talim	8	6	19	0	9160000	0	9160000	850000	Shanghai, Jiangsu, Shandong, Angui, Zhejiang provinces
6	China, P Rep	East Asia	Wind storm	Winter		3	3	36	0	8000000	0	8000000	300000	Yunnan
7	China, P Rep	East Asia	Drought	--		7	7	0	0	7600000	0	7600000	0	Shanxi, Inner Mongolia, Ningxia Autonomous rehon, Hunan, Guizhou
8	Pakistan	South Asia	Flood	--		2	9	520	450	7000000	0	7000450	0	Pasni Tehsil, Chaman, Pishin, Awaran, Jaffarabas, Naseerabad (Balouchistan province)
9	China, P Rep	East Asia	Wind storm	Tropical storm	Longwang	9	26	25	0	5719000	0	5719000	0	Hainan Isl., Guangdong, Guangxi provinces
10	China, P Rep	East Asia	Flood	--		9	29	20	0	4610000	0	4610000	239000	Shiyan (Hubei Province), Xixinag county, Hanzhong city and 11 surrounding
11	Malawi	East Africa	Drought	Drought		10	0	0	0	4500000	0	4500000	0	Southern and central regions
12	Niger	West Africa	Drought	Drought	Cholera	7	0	0	0	3600000	0	3600000	0	
13	Pakistan	South Asia	Earthquake	Earthquake	Tetanos	10	8	73338	69142	0	2800000	2869142	5000000	Bagh, Muzaffarabad, Poonch (Kashmir), Abbottabad, Battagram, Kohistan, Mansehra, Cienfuegos, La Habana, Ciudad de la Habana, Matanzas, Sancti Spiritus, Ciego de Avila, Makueni, Kitui,
14	Cuba	Caribbean	Wind storm	Hurricane	Wilma	7	8	16	0	2500000	0	2500000	1400000	Malindi, Kwale, Kilifi, Taita Taveta, Manderu, Wajir, Marsabit.
15	Kenya	East Africa	Drought	Drought		12	0	27	0	2500000	0	2500000	0	
16	China, P Rep	East Asia	Wind storm	Typhoon		10	2	95	0	2460000	0	2460000	148000	Fujian, Guangdong provinces
17	Burundi	East Africa	Drought	Drought		1	0	120	0	2150000	0	2150000	0	Busoni, Bugabira, Ntega, Kirundo communes (Kirundo province), Muviepa
18	India	South Asia	Flood	--		10	21	14	0	2000000	0	2000000	0	East Midnapore, South 24 Parganas, Burdwan and Nadia (West Bengal state), Balasore district
19	Mexico	Central America	Wind storm	Hurricane	Wilma	10	1	15	0	1954571	0	1954571	0	Chiapas, Oaxaca, Veracruz, Puebla, Hidalgo, Tabasco
20	India	South Asia	Flood	--		7	7	70	0	1904000	4000	1908000	0	Majuli, Dibrugarh, Jorhat, Sonitpur, Sivasagar. Districts: Dhemai, Tinsukia, Maputo, Gaza.
21	Mozambique	East Africa	Drought	Drought		5	0	0	0	1400000	0	1400000	0	Inhambane, Manica, Sofala, Zambezia, Tete regions
22	China, P Rep	East Asia	Wind storm	Typhoon	Damrey	9	11	16	0	1350000	0	1350000	0	Shanghai area, Zhejiang province, Jiangsu provinces
23	China, P Rep	East Asia	Flood	--		7	1	5	0	1270000	0	1270000	271000	Jilin, Heilongjiang provinces
24	Zambia	East Africa	Drought	--	Cholera	6	0	0	0	1200000	0	1200000	0	
25	Bangladesh	South Asia	Flood	--		7	7	23	0	1000000	0	1000000	0	Kurigram, Gaibandha, Lalmonirhat, Rangpur, Nilphamari, Sherpur, Sirajganj, Sirajganj

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

Table 7: Top 25 Natural Disasters by the Ratio of Total Affected People to the Total Population, 2005

Rank (TotAff/Popl n)	Rank (TotAff)	Country	Region	DisType	DisSubset	DisName	Month	Day	Killed	Injured	Homeless	Affected	TotAff	(2005) (World Fact Book)	TotAff/Popl	USS (World Bank 2004)	DamageUS ('000s)	Location
1	45	Guyana	South America	Flood	-		1	15	34	0	274774	0	274774	767245	0.35813	0.77	465100	Georgetown, Demerara-Mahaica, West Demerara-Essequibo Isl., Mahaica-Berbice
2	47	Comoros	East Africa	Volcano	Explosive Eruption		11	24	1	0	245000	0	245000	690948	0.35459	0.33	0	Grande-Comores Isl.
3	11	Malawi	East Africa	Drought	Drought		10	0	0	0	4500000	0	4500000	13013926	0.34578	2.04	0	Southern and central regions
4	55	Djibouti	East Africa	Drought	Drought		4	0	0	0	150000	0	150000	486530	0.30831	0.74	0	
5	12	Niger	West Africa	Drought	Drought	Cholera	7	0	0	0	3600000	0	3600000	12525094	0.28742	2.84	0	
6	17	Burundi	East Africa	Drought	Drought		1	0	120	0	2150000	0	2150000	8090068	0.26576	0.67	0	Bisoni, Bugabira, Nega, Kirundo communes (Kirundo province), Murineza province
7	14	Cuba	Caribbean	Wind storm	Hurricane	Wilma	7	8	16	0	2500000	0	2500000	11382820	0.21963	32.83	1400000	Cienfuegos, La Habana, Ciudad de la Habana, Matanzas, Sancti Spiritus, Ciego de Avila
8	40	Albania	Rest of Europe	Wind storm	Winter		1	23	2	0	400000	0	400000	3581655	0.11168	6.59	0	Kukes, Dibra, Shkoder, Lezha, Korca, Elbasan, Berat, Gjirokastra, Vlora prefectures
9	24	Zambia	East Africa	Drought	-	Cholera	6	0	0	0	1200000	0	1200000	11502010	0.10433	4.63	0	
10	27	Mali	West Africa	Drought	Drought	Cholera	3	4	0	0	1000000	0	1000000	11716829	0.08535	4.33	0	Mopti, Tombouctou, Gao
11	15	Kenya	East Africa	Drought	Drought		12	0	27	0	2500000	0	2500000	34707817	0.07203	16.06	0	Mtkeni, Kitui, Mafindi, Kwale, Kilifi, Taita Taveta, Mandera, Wajir, Marsabit, Kajiado
12	21	Mozambique	East Africa	Drought	Drought		5	0	0	0	1400000	0	1400000	19686505	0.07111	5.28	0	Maputo, Gaza, Inhambane, Manica, Sofala, Zambezia, Tete regions
13	77	Comoros	East Africa	Volcano	Explosive Eruption	Karthala	4	16	0	0	39000	0	39000	690948	0.05644	0.33	0	Dixmani, Pidjani regions (Grande Comore)
14	32	Cambodia	South-east Asia	Drought	Drought		4	0	0	0	600000	0	600000	13881427	0.04322	4.81	0	Kompong Speu province
15	8	Pakistan	South Asia	Flood	-		2	9	520	450	7000000	0	7000450	#####	0.04222	90.66	0	Pesni Tehsil, Chaman, Pishin, Awaran, Jaffarabes, Nasserabad (Baluchistan province), Esrumla, Jutapa, Santa Rosa, Suchitepequez, San Marcos, Quezaltenango, Huehuetenango, Solola
16	35	Guatemala	Central America	Wind storm	Hurricane	Cholera	10	1	1513	386	474928	0	475314	12293545	0.08866	26.95	988300	
17	249	Cook Is	Oceania	Wind storm	Cyclone		2	28	0	8	600	0	608	21388	0.02843	0.34	0	Pukapuka, Niassau Islands
18	152	Vanuatu	Oceania	Volcano	Explosive Eruption		11	27	0	0	5000	0	5000	208869	0.02394	0.29	0	Ambae Isl.
19	33	Uganda	East Africa	Drought	Drought	Cholera	3	0	0	0	600000	0	600000	28195754	0.02128	6.89	0	Kalapati, Nyakwae (Kotido district), Rupa, Nadunget (Mroto district), Karamoja region
20	330	Tokelau	Oceania	Wind storm	Cyclone	Emily	2	28	0	1	0	25	26	1392	0.01868	0.10	0	Nukunono, Atafu, Fakaofu
21	1	India	South Asia	Flood	-		7	24	1200	0	20000000	0	20000000	#####	0.01826	673.21	3500000	Gujarat, Madhya Pradesh, Maharashtra, Goa, Orissa, Karnataka, Himachal Pradesh, Jammu and
22	19	Mexico	Central America	Wind storm	Hurricane	Wilma	10	1	15	0	1954571	0	1954571	#####	0.01819	704.91	0	Chiapas, Oaxaca, Veracruz, Puebla, Hidalgo, Tabasco
23	89	Guinea Bissau	West Africa	Epidemic	Diarrhoeal/Enteric		6	6	399	0	25111	0	25111	1442029	0.01741	0.25	0	Bissau, Bombo, Cacheu, Oio, Bijagos, Bolama, Quinara, Sao Domingos, Tombalia, Gafu and Bafat
24	13	Pakistan	South Asia	Earthquake	Earthquake	Tetanus	10	8	73338	69142	0	2800000	2869142	#####	0.01730	90.66	5000000	Muzaffarabad, Poonch (Kashmir), Abbottabad, Battagram, Kohistan, Mianshira
25	2	China, P Rep	East Asia	Wind storm	Typhoon	Khanun	9	1	159	0	19624000	0	19624000	#####	0.01486	1937.97	1900000	Anhui, Zhejiang, Fujian, Jiangxi, Hubei provinces

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

Table 8: Top 25 Natural Disasters by the Amount of Damage, 2005

Rank (Amt Dam)	Country	Region	DisType	DisSubset	DisName	Month	Day	Killed	Injured	Homeless	Affected	TotAff	DamageUS ('000s)	Location
1	United States	North America	Wind storm	Hurricane		8	29	1322	0	500000	0	500000	125000000	Mobile, Bayou La Batre, Dauphin Island, Coden (Alabama), New Orleans, Slidell, St. Bernard Parish
2	United States	North America	Wind storm	Hurricane	Wilma	9	23	0	0	300000	0	300000	6000000	Louisiana, Texas, Mississippi
3	Pakistan	South Asia	Earthquake	Earthquake	Tetasos	10	8	73338	69142	0	2800000	2869142	5000000	Bagh, Muzzalabad, Poonch (Kashmir), Abbottabad, Battagram, Kohistan, Mansehra
4	India	South Asia	Flood	--		7	24	1200	0	20000000	0	20000000	3500000	Gujarat, Madhya Pradesh, Maharashtra, Goa, Orissa, Karnataka, Himachal Pradesh, Jammu and
5	India	South Asia	Flood	--		6	28	239	0	405000	0	405000	2300000	Surat, Valsad, Navsari, Bharch, Vadodara, Surendranagar, Dangas, Ahmedabad, Anand
6	China, P Rep	East Asia	Flood	--		6	19	771	0	16700000	0	16700000	2000000	Zhejiang, Fujian, Jiangxi, Hunan, Guangdong, Guangxi provinces
7	China, P Rep	East Asia	Wind storm	Typhoon	Khanun	9	1	159	0	19624000	0	19624000	1900000	Anhui, Zhejiang, Fujian, Jiangxi, Hubei provinces
8	Cuba	Caribbean	Wind storm	Hurricane	Wilma	7	8	16	0	2500000	0	2500000	1400000	Cienfuegos, La Habana, Ciudad de la Habana, Matanzas, Sancti Spiritus, Ciego de Avila.
9	Switzerland	Rest of Europe	Flood	--		8	21	6	0	2500	0	2500	1096954	Bern, Brienz, Lucerne, Schwyz, Uri, Obwalden
10	Guatemala	Central America	Wind storm	Hurricane	Cholera	10	1	1513	386	474928	0	475314	988300	Escuintla, Jutiapa, Santa Rosa, Suchitepequez, San Marcos, Quezaltenango, Huehuetenango, Solola.
11	China, P Rep	East Asia	Flood	--		8	13	48	0	0	206000	206000	913000	Liaoning, Jilin provinces
12	China, P Rep	East Asia	Wind storm	Typhoon	Talim	8	6	19	0	9160000	0	9160000	850000	Shanghai, Jiangsu, Shandong, Angui, Zhejiang provinces
13	Romania	Rest of Europe	Flood	--		7	12	24	0	14669	0	14669	824887	Alba, Tulcea, Giurgiu, Vrancea, Bacau, Braila, Galati, Vrancea, Ialomita, departments
14	Romania	Rest of Europe	Flood	--		4	21	2	0	3400	0	3400	596000	Arad, Mehedinti, Timis, Caras-Severin, Secanj, Zitiste, Bela Crkva, Plandiste
15	United Kingdom	European Union	Wind storm	Storm		1	7	5	0	6000	0	6000	500000	Scotland, North England, Pays de Galles, West Yorkshire
16	Guyana	South America	Flood	--		1	15	34	0	274774	0	274774	465100	Georgetown, Demerara-Mahaica, West Demerara-Essequibo Isl., Mahaica-Berbice
17	Canada	North America	Flood	--		6	7	4	0	5000	0	5000	400000	Central and southern Alberta, Saskatchewan
18	El Salvador	Central America	Wind storm	Hurricane	Adrian	10	1	69	0	72141	0	72141	355700	San Salvador, Lourdes, Chaparral, Ateos, San Marcos, Santa Tecla, El Chanarral, La Libertad
19	United States	North America	Wind storm	Storm	Dennis	4	6	0	8	45	51	104	350000	Rankin county (Mississippi)
20	United States	North America	Wind storm	Winter		1	22	20	0	0	0	0	350000	New York, Connecticut, Wisconsin, Ohio, Maryland, Massachusetts, Iowa
21	Romania	Rest of Europe	Flood	--		8	14	33	0	2000	0	2000	313000	Harghita, Mures, Dolj, Bacau, Vrancea, Galati, Braila, Bistrita, Gorj, Suceava
22	China, P Rep	East Asia	Wind storm	Winter		3	3	36	0	8000000	0	8000000	300000	Yunnan
23	China, P Rep	East Asia	Flood	--		7	1	5	0	1270000	0	1270000	271000	Jilin, Heilongjiang provinces
24	China, P Rep	East Asia	Wind storm	Typhoon		7	16	9	0	0	13000	13000	260000	Wenzhou, Pingyang (Zhejiang province)
25	Thailand	South-east Asia	Drought	Drought		3	20	9	0	0	0	0	250000	

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

Table 9: Top 25 Natural Disasters by the Ratio of Damage to GNI, 2005

Rank (Dam/GNI)	Rank (Amt Dam)	Country	Region	DisType	DisSubset	DisName	Month	Day	Killed	Injured	Homeless	Affected	TotAft	Population (2005) (World Fact Book)	US\$ (World Bank 2004)	DamageUS ('000s)	Dam/GNI	Location
1	16	Guyana	South America	Flood	--		1	15	34	0	274774	0	274774	767245	0.77	465100	0.604026	Georgetown, Demerara-Mahaica, West Demerara-Essequibo Isl., Mahaica-Berbice
2	3	Pakistan	South Asia	Earthquake	Earthquake	Tetanos	10	8	73338	69142	0	2800000	2869142	165803560	90.66	5000000	0.055151	Bagh, Muzaffarabad, Poonch (Kashmir), Abbottabad, Battagram, Kohistan, Muzaffara, Shanday (NWFP), Cienfuegos, La Habana, Ciudad de la Habana, Matanzas, Sancti Spiritus, Ciego de Avila, Cumanay, Escamula, Jinagu, Santa Rosa, Suchitepequez, San Marcos, Quezaltenango, Huehuetenango, Solola, Mir Sad Ali Hamadon district (Khatlon Oblast, Akhvand, Vamar, Dusht (Rushan district), Gorno-San Salvador, Lourdes, Chaparral, Ateos, San Marcos, Santa Tecla, El Chaparral, La Libertad, Alba, Tulcea, Giurgiu, Vrancea, Bacau, Braila, Galati, Vrancea, Ialomita, departments
3	8	Cuba	Caribbean	Wind storm	Hurricane	Wilma	7	8	16	0	2500000	0	2500000	11382820	32.83	1400000	0.042644	Shoumen, Sara Zagora, Targovitch - Popovo, Rouss - Veliko Tarnovo, Haskovo, Bourgas, Vratza, Silistra, Mobile, Bayou La Batre, Dauphin Island, Coden (Alabama), New Orleans, Slidell, St. Bernard Parish
4	10	Guatemala	Central America	Wind storm	Hurricane	Cholera	10	1	1513	386	474928	0	475314	12293545	26.95	988300	0.036672	Arad, Mehedinti, Timis, Caras-Severin, Secanj, Zituste, Beta Crkva, Pandiste
5	41	Tajikistan	Russian Federation	Flood	--		7	23	0	0	1890	0	1890	7320815	1.78	50000	0.028090	Gujarat, Madhya Pradesh, Maharashtra, Goa, Orissa, Karnataka, Himachal Pradesh, Jammu and Kashmir, Yen Bai (Cit. Hinh in Van
6	18	El Salvador	Central America	Wind storm	Hurricane	Adrian	10	1	69	0	72141	0	72141	6822378	15.70	355700	0.022656	Chan district, Tram Tau, Nghia Lo, Nghe An, Phu ho, Hoa Binh, Lao Cai, Thanh
7	13	Romania	Rest of Europe	Flood	--		7	12	24	0	14669	0	14669	22303552	64.16	824887	0.012857	Harghita, Mures, Dolj, Bacau, Vrancea, Galati, Braila, Bistrita, Gorj, Suceava
8	26	Bulgaria	Rest of Europe	Flood	--		7	2	17	0	200	0	200	7385367	21.34	247000	0.011575	Surat, Valsad, Navsari, Bharuch, Vadodra, Surendranagar, Dangs, Ahmedabad, Anand, Kheda,
9	1	United States	North America	Wind storm	Hurricane		8	29	1322	0	500000	0	500000	298444215	12168.48	125000000	0.010272	Bern, Brienz, Lucerne, Schwyz, Uri, Obwalden
10	14	Romania	Rest of Europe	Flood	--		4	21	2	0	3400	0	3400	22303552	64.16	596000	0.009289	Edinet, Cituleni, Briceni, Nisporeni, Riscani, Chisinau, Balti districts
11	4	India	South Asia	Flood	--		7	24	1200	0	20000000	0	20000000	1095351995	673.21	3500000	0.005199	Ben Tre province
12	29	Viet Nam	South-east Asia	Wind storm	Tropical storm	Kai Tak	9	27	75	28	337632	0	337660	84402966	44.63	219250	0.004913	Nookat, Uzen, Karasu, Karakulja, Alay district (Oj province), Kyzyl, Kia, Kadanjai, Batken, Laylak North Island - Bay of Plenty province - Tauranga, Otumotai, Whakatane District - Matata
13	21	Romania	Rest of Europe	Flood	--		8	14	33	0	2000	0	2000	22303552	64.16	313000	0.004878	Guacimo, Limon, Matina, Pocco, Siquierres, Talamanca (Limon province), Saraniou (Heredia province),
14	5	India	South Asia	Flood	--		6	28	239	0	405000	0	405000	1095351995	673.21	2300000	0.003416	Zhejiang, Fujian, Jiangxi, Hunan, Guangdong, Guangxi provinces
15	9	Switzerland	Rest of Europe	Flood	--		8	21	6	0	2500	0	2500	7523934	366.50	1096954	0.002993	Anhui, Zhejiang, Fujian, Jiangxi, Hubei provinces
16	59	Moldova, Rep	Russian Federation	Flood	--		8	18	0	0	6500	0	6500	4466706	2.61	7752	0.002970	
17	25	Thailand	South-east Asia	Drought	Drought		3	0	0	0	0	0	0	64631595	158.37	250000	0.001579	
18	67	Kyrgyzstan	Russian Federation	Flood	--		6	10	3	0	0	2050	2050	5213898	2.06	2660	0.001291	
19	36	New Zealand	Oceania	Flood	--		5	18	0	0	0	400	400	4076140	81.16	100000	0.001232	
20	51	Costa Rica	Central America	Flood	--		1	11	4	0	2143	0	2143	4075261	19.00	20000	0.001053	
21	6	China, P Rep	East Asia	Flood	--		6	19	771	0	16700000	0	16700000	1320914145	1937.97	2000000	0.001032	
22	7	China, P Rep	East Asia	Wind storm	Typhoon	Khanun	9	1	159	0	19624000	0	19624000	1320914145	1937.97	1900000	0.000980	
23	42	Viet Nam	South-east Asia	Drought	Drought		5	0	0	0	410000	0	410000	84402966	44.63	42120	0.000944	
24	37	Iran, Islam Rep	South Asia	Earthquake	Earthquake		2	22	612	1411	93355	0	94766	68688433	155.33	80000	0.000515	
25	40	Venezuela	South America	Flood	--		2	7	76	0	25000	0	25000	25730435	105.33	52000	0.000494	

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2005

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 2005. 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.