

# Natural Disasters in 2004: An Analytical Overview

## Chapter 1: Impact of Natural Disasters

This Chapter deals with the overall trend and impact of natural disasters in the year 2004. It also addresses regional perspectives on disasters based on disaster types and discusses the vulnerability of natural disasters in the Asian region.

### 1.1 Trend of Natural Disaster Damages and Characteristics

According to the following figures (Figures 1, 2 & 3) and summary tables (Tables 1A, 1B, 2 & 3), there is a trend towards increasing occurrences of natural disasters. This is due to various factors, such as global climate changes, environmental and ecological imbalance, increasing population density, improper urbanization, deforestation and desertification. Due to the compounding effect of these factors, human suffering, loss of life, and economic losses caused by natural disasters have also been increasing. It is noteworthy to mention that the *totally*<sup>1</sup> affected population in the year 2004 is about 2.3% of the world population and the worldwide total economic damages in the year 2004 exceeded the GDP (Purchasing Power Parity) of certain developing countries in Asia and Africa, thus underlying the importance of natural disaster mitigation strategies. For instance, the total amount of damages in the world caused by natural disasters in the year 2004 exceeded the annual GDP (2003 estimate) of Mongolia by 16 times, Laos by 8 times, Tajikistan by 11 times, Armenia by 7.5 times,

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<sup>1</sup> According to CRED, Belgium, the *totally* 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.

Kyrgyz by 5.5 times, and Papua New Guinea by 8 times respectively. In comparison to the 2003 statistics, there is an increase in the number of disasters that occurred (3.2 %), the number of people killed (181.1%) and the amount of economic damage (122.7%). But the number of totally affected people reduced from 2003 to 2004 by 42.6%. This is mainly due to the Indian Ocean Tsunami that struck many countries in Asia and Africa. Japan also experienced severe impacts due to earthquakes, wind storms, and floods. Hence the share of disaster impact in Asia is also high. This trend is quite alarming and represents a great obstacle to any development activity of the affected countries within the purview 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 (1975-2004)**

	Number of Disaster	Sum of Killed	Sum of Totally Affected	Sum of Damage US\$ (1,000s)
<b>Asia (Share)</b>	2,932 (37%)	1,167,557 (56%)	4,616,552,301 (89%)	531,814,377 (49%)
<b>World</b>	7,847	2,096,385	5,184,242,319	1,091,676,495

Source: ADRC, Japan and CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2004

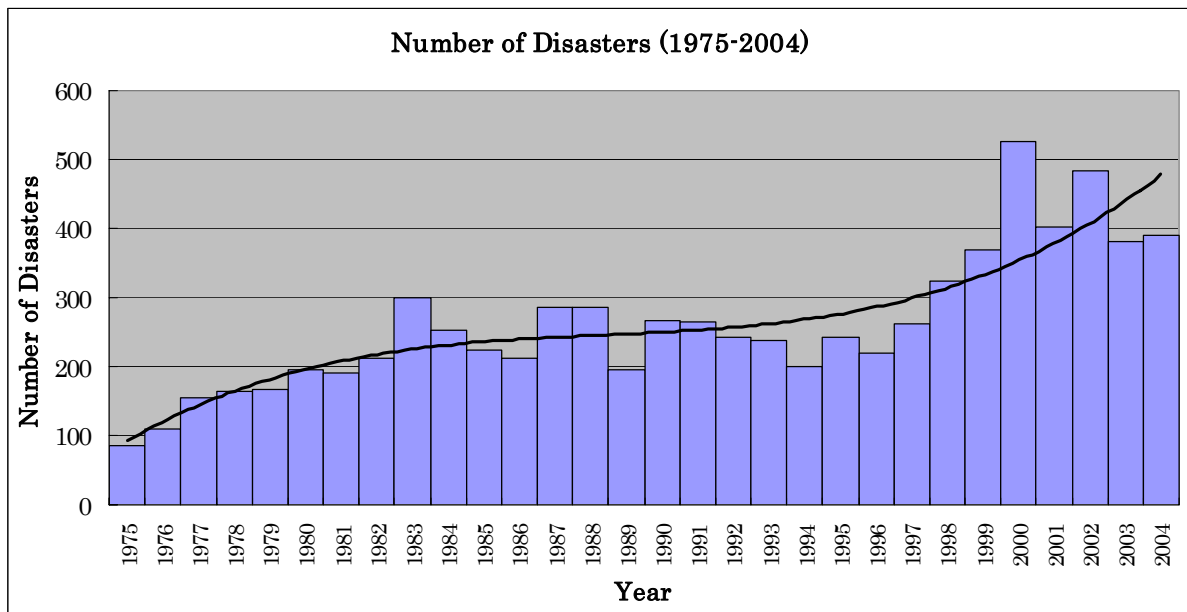
**Table 1B: Summary of Natural Disasters (2004)**

	Number of Disaster	Sum of Killed	Sum of Totally Affected	Sum of Damage US\$ (1,000s)
<b>Asia (Share)</b>	149 (38%)	233,449 (96%)	131,584,916 (90%)	66,986,312 (68%)
<b>World</b>	392	244,200	145,468,473	98,101,657

Source: ADRC, Japan and CRED-EMDAT, Université Catholique de Louvain , Brussels, Belgium, 2004

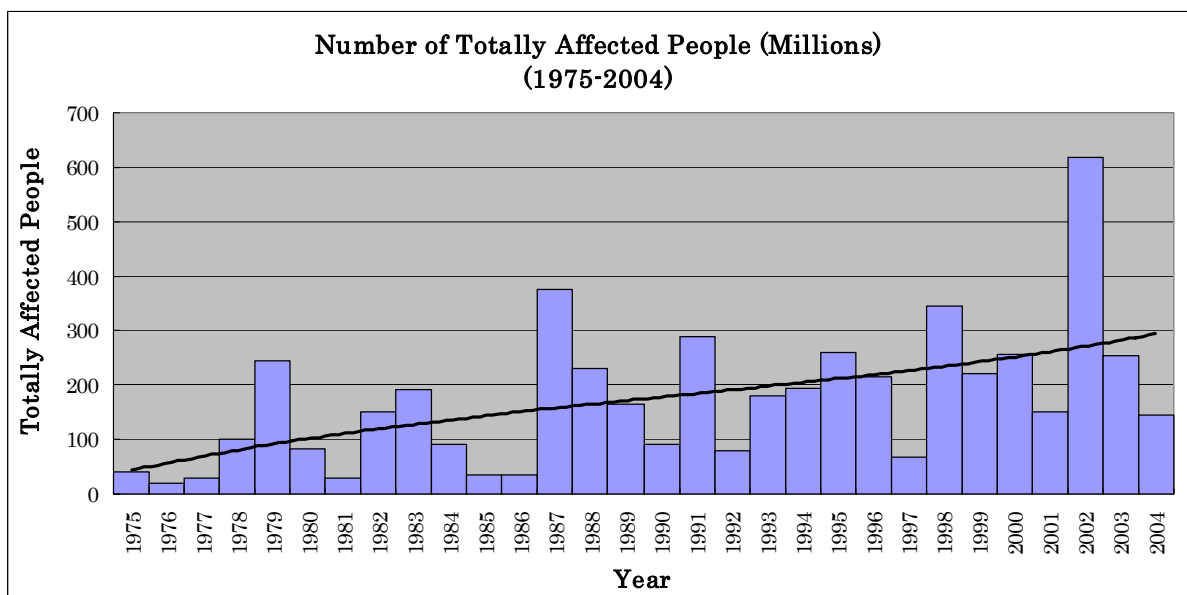
The following figures show the increasing trend in the occurrence of natural disasters, the number of totally affected people and the amount of damage from 1975 to 2004.

**Figure 1**



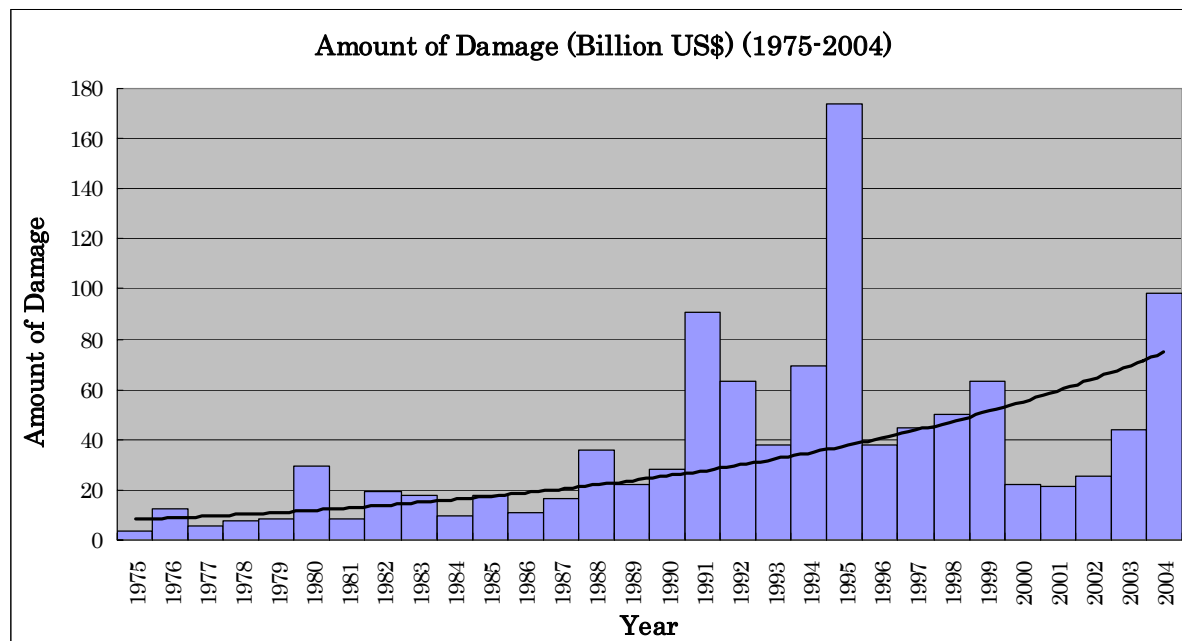
Source: ADRC, Japan and CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2004

**Figure 2**



Source: ADRC, Japan and CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2004

Figure 3



Source: ADRC, Japan and CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2004

The following tables show regional disaster characteristics in relation to various disaster types.

**Table2: Summary of Natural Disasters (2004) (Region/Disaster Type/Disaster Characteristic)**

Continent	DisType	Count of DisNo	Sum of Killed	Sum of TotAff	Sum of Damage US\$ ('000s)
Africa	Drought	5		6,705,000	
	Earthquake	4	631	13,900	400,000
	Epidemic	27	2,048	90,496	
	Extreme temp	1	13	113	
	Flood	27	269	1,004,119	
	Insect Infestation	11			
	Wave / Surge	4	312	109,913	30,000
	Wind storm	7	412	1,055,108	250,000
<b>Africa Total</b>		<b>86</b>	<b>3,685</b>	<b>8,978,649</b>	<b>680,000</b>
Americas	Drought	5	1	212,500	3,139
	Earthquake	5	10	9,071	
	Extreme temp	7	109	2,139,467	
	Flood	25	3,603	641,062	709,470
	Slide	3	42	7,045	
	Wild fire	3		15,487	
	Wind storm	43	3,043	1,240,963	27,178,000
<b>Americas Total</b>		<b>91</b>	<b>6,808</b>	<b>4,265,595</b>	<b>27,890,609</b>
Asia	Drought	1		620,000	
	Earthquake	15	213	567,592	28,250,943
	Epidemic	8	774	58,583	
	Extreme temp	2	49	300	
	Flood	50	3,002	114,460,497	11,682,551
	Slide	13	315	5,685	
	Volcano	4	2	42,933	
	Wave / Surge	9	226,123	2,318,694	7,779,800
	Wild fire	1		2,155	
	Wind storm	46	2,971	13,508,477	19,273,018
<b>Asia Total</b>		<b>149</b>	<b>233,449</b>	<b>131,584,916</b>	<b>66,986,312</b>
Europe	Drought	1			1,338,136
	Earthquake	6	28	37,809	22,000
	Extreme temp	5	68		
	Flood	18	54	454,879	145,817
	Wild fire	3	14	2,100	3,000
	Wind storm	14	59	20,432	519,300
<b>Europe Total</b>		<b>47</b>	<b>223</b>	<b>515,220</b>	<b>2,028,253</b>
Oceania	Flood	7	7	19,570	302,483
	Volcano	1		9,600	
	Wind storm	11	28	94,923	214,000
<b>Oceania Total</b>		<b>19</b>	<b>35</b>	<b>124,093</b>	<b>516,483</b>
<b>Grand Total</b>		<b>392</b>	<b>244,200</b>	<b>145,468,473</b>	<b>98,101,657</b>

Source: ADRC, Japan and CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2004

**Table 3: Summary of Natural Disasters (2004) (Disaster Type/Region/Disaster Characteristic)**

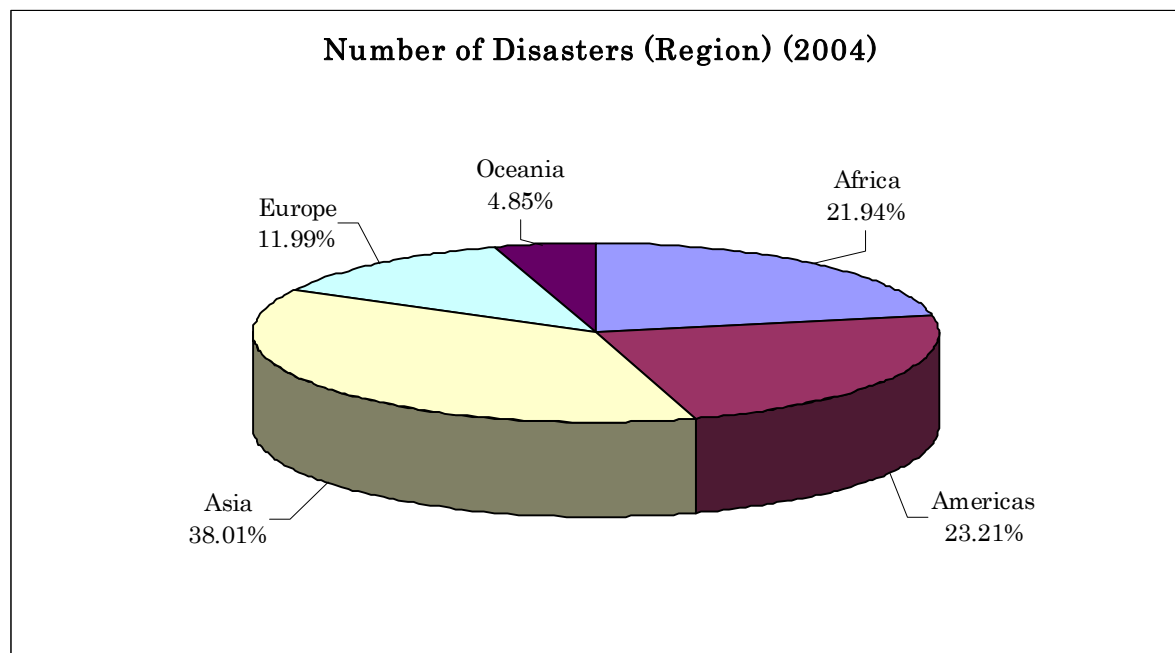
DisType	Continent	Count of DisNo	Sum of Killed	Sum of TotAff	Sum of Damage US\$ ('000s)
Drought	Africa	5		6,705,000	
	Americas	5	1	212,500	3,139
	Asia	1		620,000	
	Europe	1			1,338,136
<b>Drought Total</b>		<b>12</b>	<b>1</b>	<b>7,537,500</b>	<b>1,341,275</b>
Earthquake	Africa	4	631	13,900	400,000
	Americas	5	10	9,071	
	Asia	15	213	567,592	28,250,943
	Europe	6	28	37,809	22,000
<b>Earthquake Total</b>		<b>30</b>	<b>882</b>	<b>628,372</b>	<b>28,672,943</b>
Epidemic	Africa	27	2,048	90,496	
	Asia	8	774	58,583	
<b>Epidemic Total</b>		<b>35</b>	<b>2,822</b>	<b>149,079</b>	
Extreme temp	Africa	1	13	113	
	Americas	7	109	2,139,467	
	Asia	2	49	300	
	Europe	5	68		
<b>Extreme temp Total</b>		<b>15</b>	<b>239</b>	<b>2,139,880</b>	
Flood	Africa	27	269	1,004,119	
	Americas	25	3,603	641,062	709,470
	Asia	50	3,002	114,460,497	11,682,551
	Europe	18	54	454,879	145,817
	Oceania	7	7	19,570	302,483
<b>Flood Total</b>		<b>127</b>	<b>6,935</b>	<b>116,580,127</b>	<b>12,840,321</b>
Insect Infestation	Africa	11			
<b>Insect Infestation Total</b>		<b>11</b>			
Slide	Americas	3	42	7,045	
	Asia	13	315	5,685	
<b>Slide Total</b>		<b>16</b>	<b>357</b>	<b>12,730</b>	
Volcano	Asia	4	2	42,933	
	Oceania	1		9,600	
<b>Volcano Total</b>		<b>5</b>	<b>2</b>	<b>52,533</b>	
Wave / Surge	Africa	4	312	109,913	30,000
	Asia	9	226,123	2,318,694	7,779,800
<b>Wave / Surge Total</b>		<b>13</b>	<b>226,435</b>	<b>2,428,607</b>	<b>7,809,800</b>
Wild fire	Americas	3		15,487	
	Asia	1		2,155	
	Europe	3	14	2,100	3,000
<b>Wild fire Total</b>		<b>7</b>	<b>14</b>	<b>19,742</b>	<b>3,000</b>
Wind storm	Africa	7	412	1,055,108	250,000
	Americas	43	3,043	1,240,963	27,178,000
	Asia	46	2,971	13,508,477	19,273,018
	Europe	14	59	20,432	519,300
	Oceania	11	28	94,923	214,000
<b>Wind storm Total</b>		<b>121</b>	<b>6,513</b>	<b>15,919,903</b>	<b>47,434,318</b>
<b>Grand Total</b>		<b>392</b>	<b>244,200</b>	<b>145,468,473</b>	<b>98,101,657</b>

Source: ADRC, Japan and CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2004

## 1.2 Vulnerability of Asia

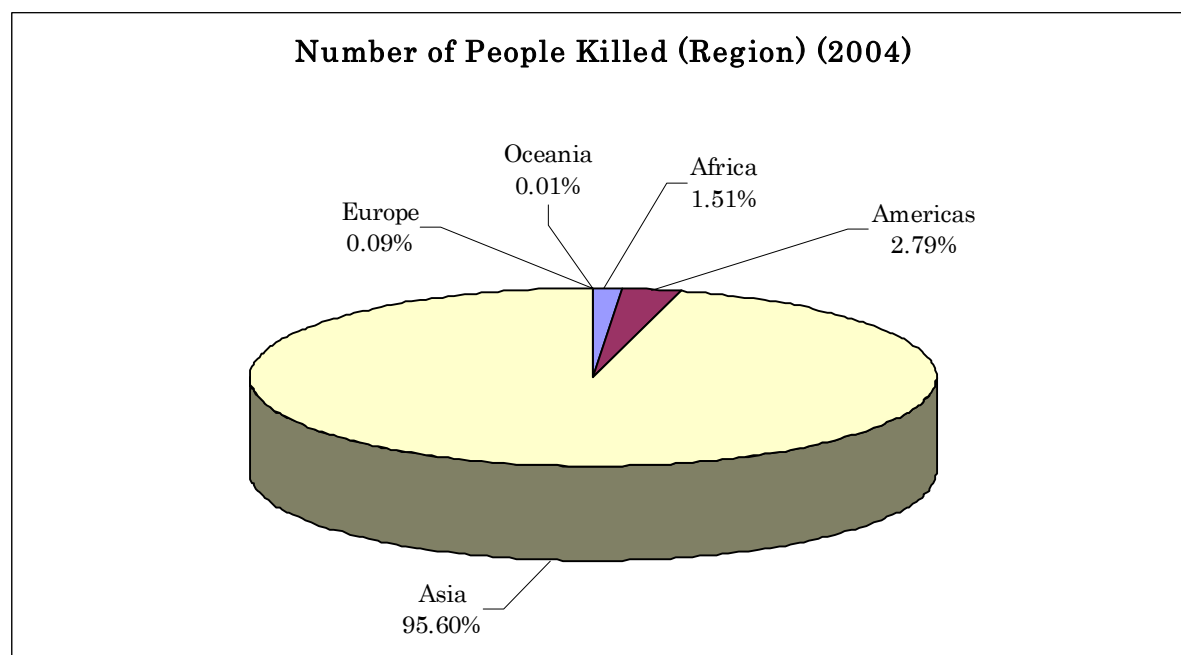
The year 2004 was particularly a disastrous year for Asia due to the Tsunami, earthquakes, wind storms and floods. As we look at the following figures in relation to the Asian region, it is quite evident that the region is extremely vulnerable to natural disasters. The majority of the human loss and suffering, as well as economic loss, were reported in this region in 2004, as in the previous years. Specifically, nearly 91% of the totally affected people and 96% of the human loss were reported in Asia. Moreover, 68% of the reported economic damage also came from Asia. Furthermore, in 2004, the majority of economic losses caused by disasters happened in Asia, followed by America, Europe and Africa. This phenomenon was due to the natural disasters that hit Indonesia (earthquakes and Tsunami), many of the Asian countries such as Sri Lanka, Thailand, India, Maldives, Myanmar and Africa (Tsunami), Japan (earthquakes, typhoons and floods), China (wind storm and flood), USA (wind storm-Hurricane Jeanne/Charley/Ivan/Frances) and Bangladesh (floods and wind storms). The Asian Tsunami disaster especially showed to the world the region's vulnerability to such disaster. In contrast, outside of Asia, the second largest number of deaths toll was reported in Europe and was due to extreme temperatures and heat waves that hit the entire Continent, particularly droughts in Portugal. This year, Africa experienced Tsunami and considerable human and economic loss was reported in Madagascar and Somalia, along with wide droughts.

Figure 4



Source: ADRC, Japan and CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2004

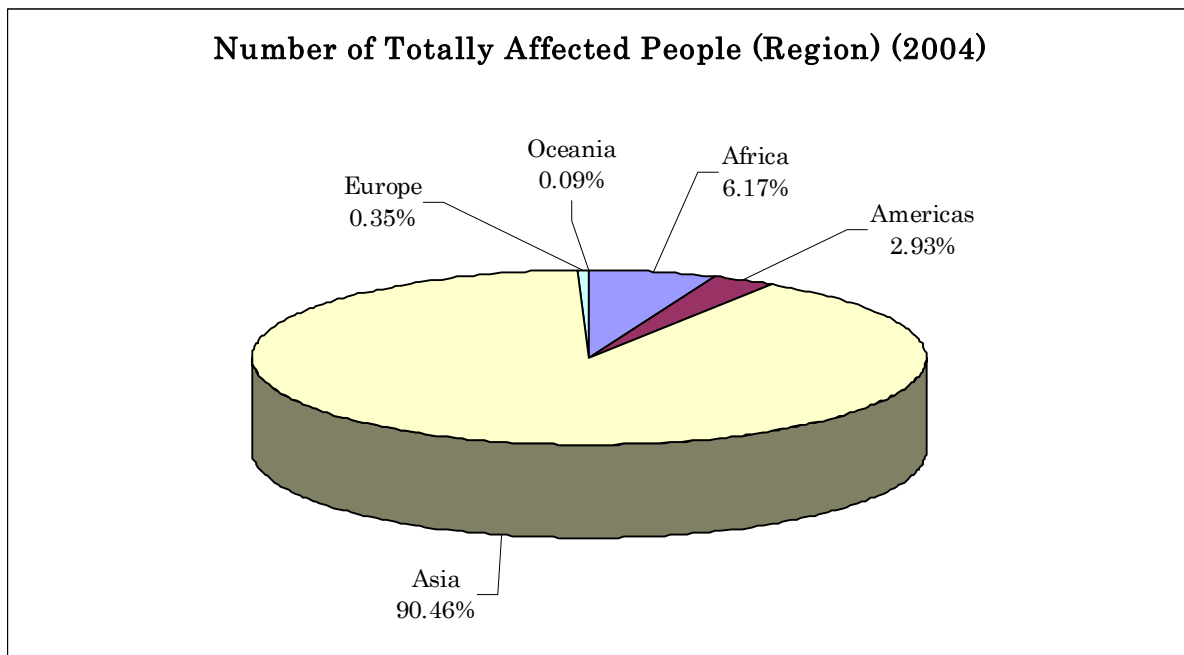
Figure 5



Source: ADRC, Japan and CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2004

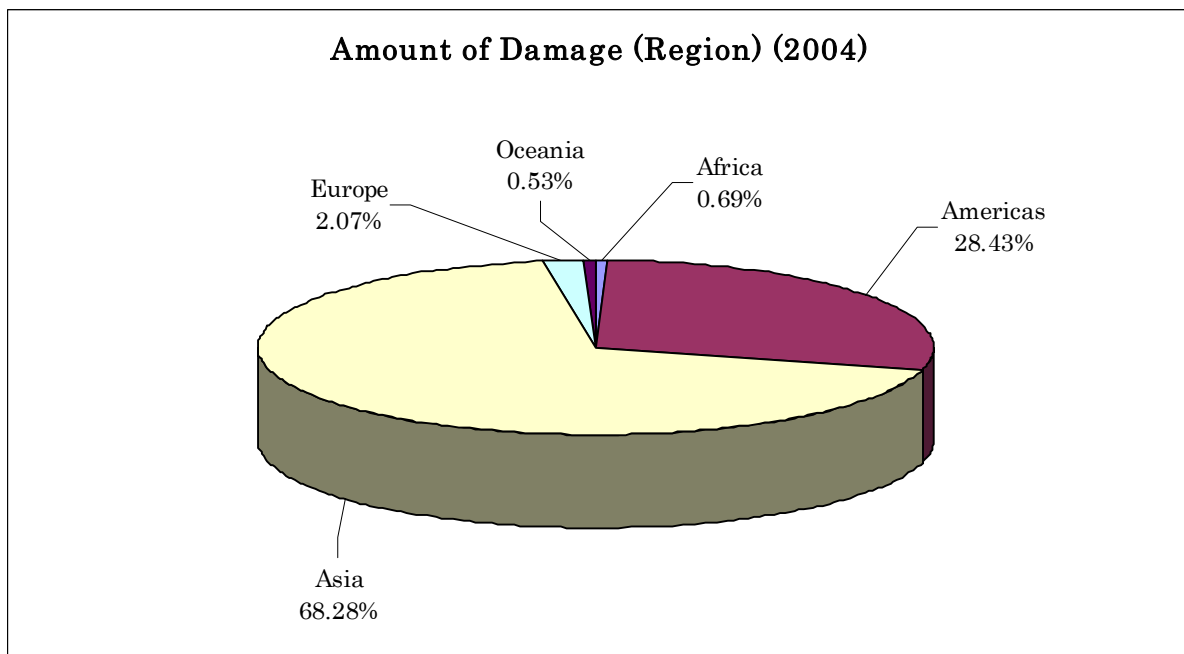


Figure 6



Source: ADRC, Japan and CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2004

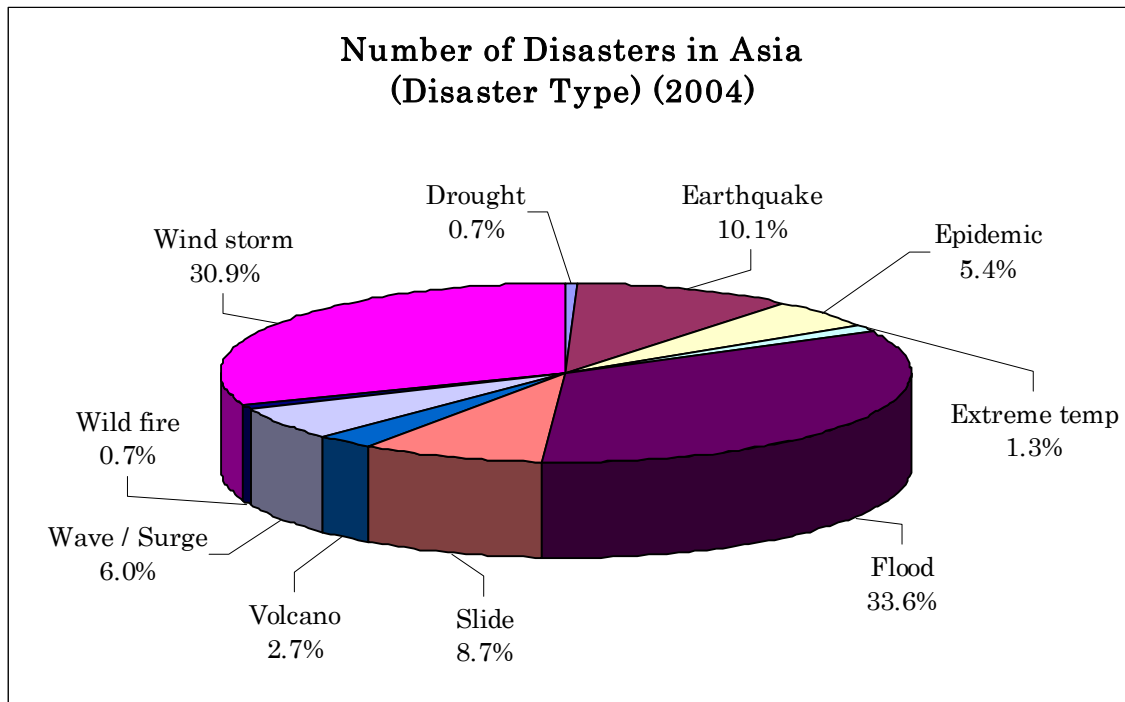
Figure 7



Source: ADRC, Japan and CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2004

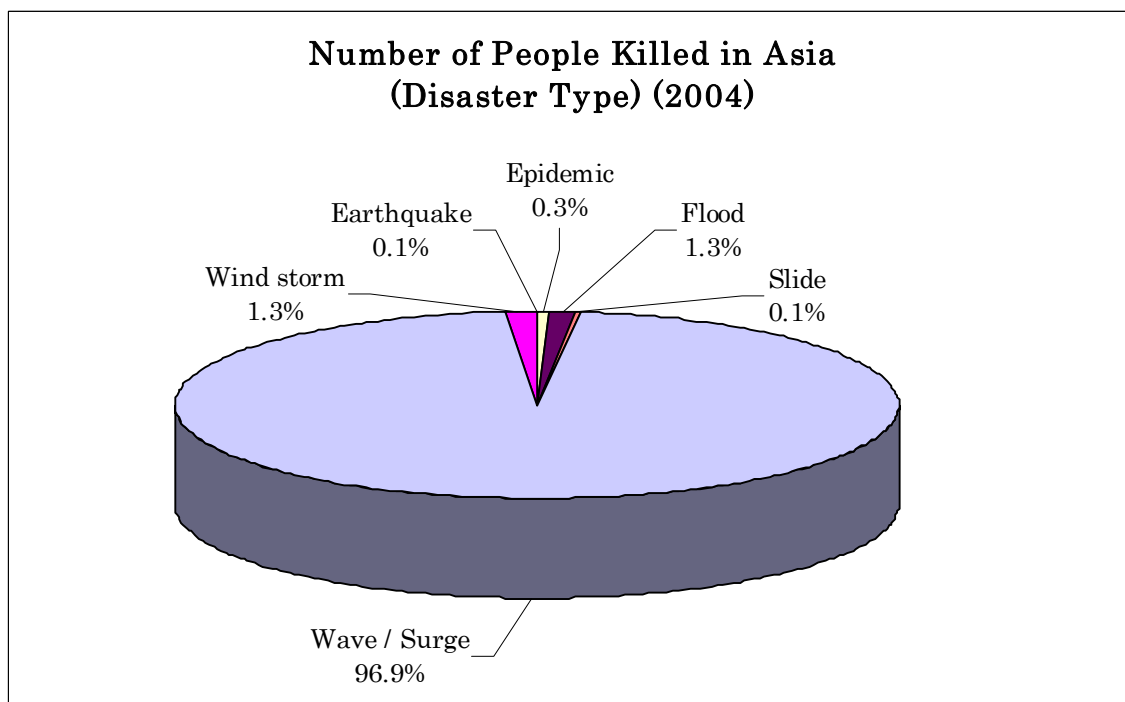
According to data related to disaster types and impact on societies and their economy in 2004, we can conclude that the Asian region is highly affected by both geo-physical and hydro-meteorological disasters like earthquakes and tsunamis, as well as floods and windstorms respectively. In contrast to the past years, Asia was not much affected by extreme temperatures and droughts in 2004. A comparative analysis can be made from past analytical studies of disasters and the ADRC's "20<sup>th</sup> Century Asian Natural Disasters Data Book". Socio-economic and cultural dimensions, specific to the Asian region, are also two of the reasons that explain the great number of affected people, though the real economic damage is comparatively smaller during the previous years. But the 2004 Tsunami disaster 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 following figures illustrate this trend clearly for Asia with different disaster types. Furthermore, the following chapters help us to understand regional differences in the characteristics of disaster in relation to disaster types.

Figure 8



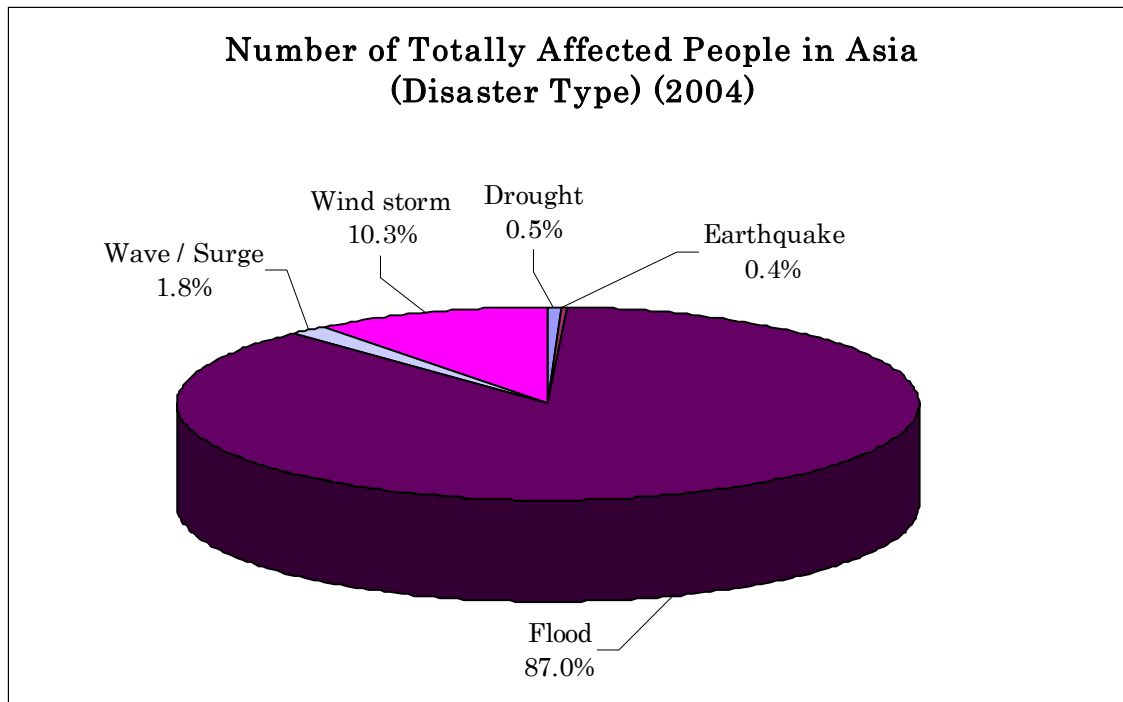
Source: ADRC, Japan and CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2004

Figure 9



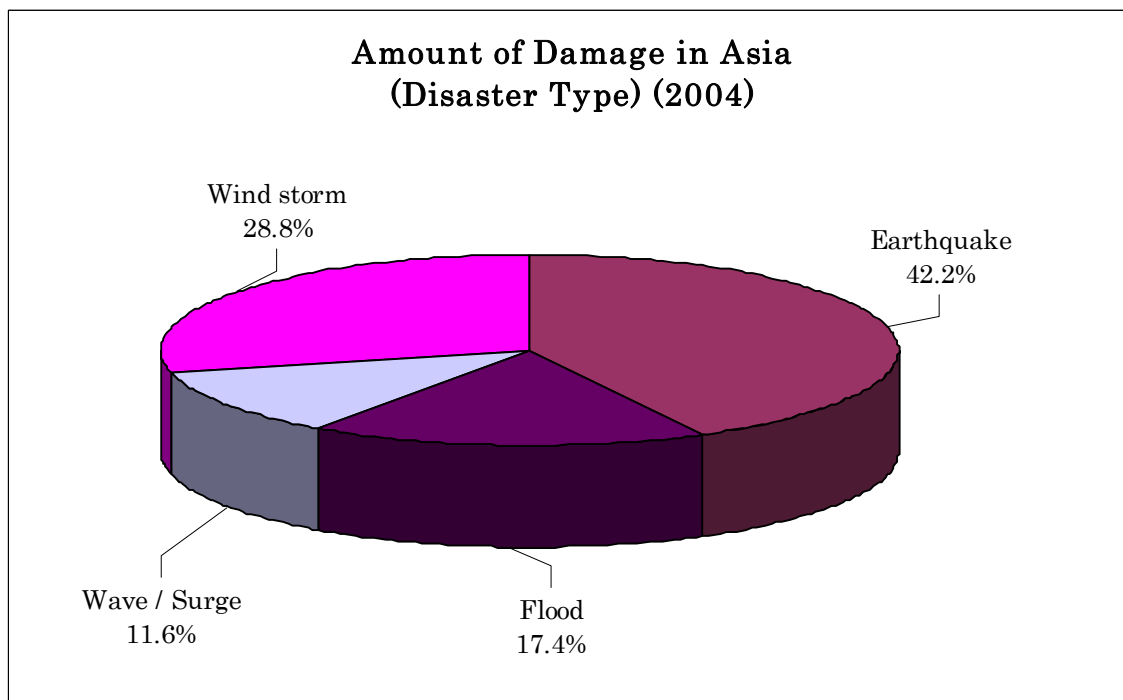
Source: ADRC, Japan and CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2004

Figure 10



Source: ADRC, Japan and CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2004

Figure 11



Source: ADRC, Japan and CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2004

### 1.3 Vulnerability of Countries with Small Economy and Population

It is obvious that countries with small economy and population suffer more, even in the occurrence of a small disaster. The following tables show the ranks of actual disasters in terms of number of killed, number of affected people and 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)<sup>2</sup> respectively.

Table 4 to 9 illustrate that an actual damage in terms of human or economic loss is small, while its effect on the population and economy is large, compared to the population and GNI of these countries. Accordingly, this comparison reveals that countries with small economy and population can bear heavy damage in terms of loss share to population and GNI. For example, Table 4 shows the ranks of disaster events according to the number of people killed. Table 5 shows the ranks according to the share of killed to population. In Table 5, we can see that countries with small population have larger share of human loss. It can be seen that Canary Islands-ranked at 123, Niue-ranked at 258, Seychelles-ranked at 212, and Cayman Islands-ranked at 246 in the Table 4 according to the actual number of killed, has moved up to within the top 25 ranks in the Table 5 according to the share of human loss to population. Similar movements could be observed from other countries such as Sri Lanka, Grenada, Maldives, Equatorial Guinea, Micronesia Federal States, Fiji, and American Samoa and Vanuatu. Furthermore, Sri Lanka and Maldives stay at the 1<sup>st</sup> rank in the tables related to the share of killed to population and share of damage to GNI due to the Tsunami disaster, which severely hit these two countries. Similar observations can be made from other Tables 6 & 7 and 8 & 9 in terms of affected people and economic damage respectively.

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<sup>2</sup> Here we used the values from World Bank, 2003 data and definition.

Table 4: Top 25 Natural Disasters According to Number of People Killed (World) (2004)

Rank (Killed)	Country	Region	DisType	DisSubset	DisName	Month	Day	Killed	Injured	Homeless	Affected	TotAff	DamageUS ('000s)	Location
1	Indonesia	South-east Asia	Wave / Surge	Tsunami		12	26	2E+05	0	532898	0	532898	4450000	Aceh province (Sumatra)
2	Sri Lanka	South Asia	Wave / Surge	Tsunami		12	26	35399	23176	480000	516130	1019306	1000000	North, East and Southern province
3	India	South Asia	Wave / Surge	Tsunami		12	26	16389	6913	0	647599	654512	1500000	Tamil Nadu state, Andaman, Nicobar Isl., Andhra Pradesh, Kerala
4	Thailand	South-east Asia	Wave / Surge	Tsunami		12	26	8345	8457	0	58550	67007	405200	Krabi, Phang Nga, Phuket, Ranong, Satun, Trang
5	Haiti	Caribbean	Wind storm	Hurricane	Jeanne	9	17	2754	2620	14048	298926	315594	21000	Artibonite, Plateau Central, Sud, North-West departments, Gonaives, Passereine, Portail, Marou
6	Haiti	Caribbean	Flood			5	23	2665	153	0	31130	31283	0	Fonds Verrettes (West department), Mapou (Southeast department) - Jacmel, Grand Gosier,
7	Philippines	South-east Asia	Wind storm	Tropical storm	Winnie	11	29	1619	1023	0	880000	881023	78200	Isabela (Region II), Bulacan, Nueva Ecija, Aurora (Region III), Quezon, Rizal (Region IV), Camarines Sur (Region VI) - Darabanga, Madhubani, Sitamarhi, Banka,
8	India	South Asia	Flood	Flash Flood		6	20	900	0	0	3.3E+07	3.3E+07	220000	Bhagalpur, Muzaffarpur, Sheohar (Bihar), South and West Tripura (Tripura), Sylhet, Sunamganj,
9	Bangladesh	South Asia	Flood	Flash Flood		6	20	730	0	0	3.6E+07	3.6E+07	7000000	Moulvibazar, Branchmanbaria, Comilla, Dhaka, Munshiganj, Narayanganj, Chandpur, Netrokona, Habiganj, Jimani, Malpaso
10	Dominican Rep	Caribbean	Flood			5	23	688	0	2092	7910	10002	0	(Independencia province), Elias Piaa, Duarte, Sanchez Ramirez provinces
11	Indonesia	South-east Asia	Epidemic	Arbovirus	Dengue	1	1	658	0	0	58301	58301	0	Aceh, Jambi, Banten, West Java, Central Java, Yogyakarta, East Java, South Kalimantan, Bali
12	Morocco	North Africa	Earthquake	Earthquake		2	24	628	926	12539	0	13465	400000	A* Kamra, Tamassint, Imzoum (Al Hoceima)
13	Burkina Faso	West Africa	Epidemic	Meningitis	Meningococcal	1	1	527	0	0	2783	2783	0	Diougou, Barsalogo, Zabre
14	Madagascar	East Africa	Wind storm	Cyclone	Galifo	3	7	363	879	214260	773000	988139	250000	Antanana, maroantsetra, Mampikoni, Ambilobe, Andapa, Ambajana, Antsohihy, Andanalava, Mahajanga, Vatomandry, Sambava, Vohar, Andava
15	Zaire/Congo Dem Rep	Central Africa	Epidemic	Measles		2	0	300	0	0	0	0	0	Basankusu (Equateur province)
16	Somalia	East Africa	Wave / Surge	Tsunami		12	26	298	283	0	104800	105083	0	Puntland, Bari, Nugal, Mudug regions
17	Myanmar	South-east Asia	Wind storm	Cyclone		5	19	236	0	25000	0	25000	688	Myae Bon, Sittwe, Pauk Taw, Myauk Oo, Ponnar Kyun, Min Byar, Kyauk Nanchong, Bazhong,
18	China P Rep	East Asia	Flood			9	2	222	10000	3000	8240000	8253000	471000	Dazhou, Mianyang, Guangan, Guangyuan, Yaan, Liangshan (Sichuan province), Kaixian, Wanzhou, Yunyang, Wuxi
19	Zaire/Congo Dem Rep	Central Africa	Epidemic	Diarrhoeal/Enteric	Typhoid fever	9	27	214	0	0	42564	42564	0	Kinshasa
20	India	South Asia	Flood			8	1	210	0	0	100000	100000	276000	Uttaranchal, Gujarat, Maharashtra, Punjab, Haryana, Rajasthan states
21	China P Rep	East Asia	Wind storm	Typhoon	Rananim	8	12	188	4000	0	8590000	8594000	2190000	Hainan, Wenzhou, Ningbo, Shaoxing (Zhejiang)
22	Nepal	South Asia	Flood	Flash Flood		7	5	185	15	0	800000	800015	0	Rautahat, Udaiyapur, Dang, Janakpur, Mahottari, Jhapa, Saptari, Siraha, Dhanusha, Mahottari, Sarlahi, Bara, Makwanpur, Morang, Sunsari, Panchthar
23	India	South Asia	Flood			10	7	160	0	100000	0	100000	0	Goalpara district (Assam) Bengal, Meghalaya, Arunachal Pradesh, West
24	Bangladesh	South Asia	Wind storm	Storm		6	12	153	0	0	50	50	0	Cox's Bazar, Teknaf (Bay of Bengal)
25	Niger	West Africa	Epidemic	Measles		1	0	149	0	0	20000	20000	0	Niamey, Tahoua, Tillaberi, Dosso

Source: ADRC, Japan and CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2004

**Table 5: Top 25 Natural Disasters According to the Ratio of Killed/Population (World)**  
**(2004)**

Rank (Killed/Population)	Rank (Killed)	Country	Region	DisType	DisSubset	DisName	Month	Day	Killed	Injured	Homeless	Affected	TotAff	Population (World Fact Book)	Killed/Population (for 1 Million people)	GNI (Bn US\$) (World Bank 2003)	Damage US (\$'000s)	Location
1	2	Sri Lanka	South Asia	Wave / Surge	Tsunami		12	26	35399	23176	480000	516130	1019306	20064776	1764	17.820	1000000	North, East and Sothern province
2	123	Canary Is	North Africa	Extreme temp	Heat wave		7	26	13	113	0	0	113	9910	1312	0.190	0	
3	1	Indonesia	South-east Asia	Wave / Surge	Tsunami		12	26	165708	0	532898	0	532898	241973879	685	173.540	4450000	Aceh province (Sumatra)
4	258	Niue	Oceania	Wind storm	Cyclone	Heta	1	6	1	2	500	200	702	2166	462	0.010	0	Alofi
5	62	Grenada	Caribbean	Wind storm	Hurricane	Ivan	9	8	39	0	0	60000	60000	89502	436	0.390	0	
6	5	Haiti	Caribbean	Wind storm	Hurricane	Jeanne	9	17	2754	2620	14048	298926	315594	8121622	339	3.340	21000	Arribonite, Plateau Central, Sud, North-West departments, Gonaives, Passereine, Portail
7	6	Haiti	Caribbean	Flood			5	23	2665	153	0	31130	31283	8121622	328	3.340	0	Fonds Verrettes (West department), Mapou (Southeast department) - Jacmel, Grand Gosier, Bodarie
8	29	Maldives	South Asia	Wave / Surge	Tsunami		12	26	102	2214	13000	12000	27214	349106	292	0.690	410000	Krabi, Phang Nga,
9	4	Thailand	South-east Asia	Wave / Surge	Tsunami		12	26	8345	8457	0	58550	67007	65444371	128	135.880	4052000	Phuket, Ranong, Satun, Trang
10	48	Djibouti	East Africa	Flood	Flash Flood		4	12	51	0	1500	98500	100000	476703	107	0.640	0	Djibouti city
11	10	Dominican Rep	Caribbean	Flood			5	23	688	0	2092	7910	10002	8950034	77	18.600	0	Jimani, Malpaso (Independencia province), Elias Paa, Duarte, Sanchez Ramirez
12	13	Burkina Faso	West Africa	Epidemic	Meningitis	Meningococcal	1	1	527	0	0	2783	2783	13925313	38	3.590	0	Dougou, Barsalogo, Zabre
13	212	Seychelles	East Africa	Wave / Surge	Tsunami		12	26	3	0	70	4760	4830	81188	37	0.630	30000	Mah - Praslin, La Digue
14	16	Somalia	East Africa	Wave / Surge	Tsunami		12	26	298	283	0	104800	105083	8591629	35	4.460	0	Puntland, Bari, Nugal, Mudug regions
15	110	Equatorial Guinea	Central Africa	Epidemic	Diarrhoeal/Enteric		12	13	15	0	0	946	946	535881	28	4.100	0	Bata, Malabo
16	189	Guam	Oceania	Wind storm	Tropical storm	Tingting	6	27	4	0	0	500	500	168564	24	3.560	0	Agat, Merizo, Barrigada and Mangilao, and Saipan (Northern Marianas)
17	246	Cayman Islands	Caribbean	Wind storm	Hurricane	Ivan	9	12	1	0	0	0	0	44270	23	0.853	0	Grand Cayman
18	14	Madagascar	East Africa	Wind storm	Cyclone	Galifo	3	7	363	879	214260	773000	988139	18040341	20	4.860	250000	Antalana, Maroansetra, Mampikoni, Ambilobe, Andapa, Ambajana, Antsohihy, Andanalava, Mahajanga, Vatomandry, Sambava, Vohar
19	12	Morocco	North Africa	Earthquake	Earthquake		2	24	628	926	12539	0	13465	32725847	19	39.370	400000	A* Kamra, Tamassint, Imzoum (Al Hocima province)
20	7	Philippines	South-east Asia	Wind storm	Tropical storm	Winnie	11	29	1619	1023	0	880000	881023	87857473	18	87.770	78200	Isabela (Region II), Bulacan, Nueva Ecija, Aurora (Region III), Quezon, Rizal (Region IV), Camarines Sur (Region V), Real
21	105	Fiji	Oceania	Wind storm	Tropical storm		4	8	16	0	0	10000	10000	893354	18	1.870	4000	Viti Levu, Vanua Levu
22	3	India	South Asia	Wave / Surge	Tsunami		12	26	16389	6913	0	647599	654512	#####	15	570.760	1500000	Tamil Nadu state, Andaman, Nicobar Isl., Andhra Pradesh, Kerala, UT Pondicherry
23	25	Niger	West Africa	Epidemic	Measles		1	0	149	0	0	20000	20000	11665937	13	2.380	0	Niamey, Tahoua, Tillaberi, Dosso
24	27	Chad	Central Africa	Epidemic	Diarrhoeal/Enteric	Cholera	6	14	123	0	0	2895	2895	9826419	13	2.070	0	vujamma, Cnari, Baguirmi, Kanem, Lac, Mouno
25	30	Guinea	West Africa	Epidemic	Diarrhoeal/Enteric	Cholera	6	0	100	0	0	1092	1092	9467866	11	3.380	0	Kindia, Conakry, Siguiri, Mandiana, Boffa, Coyah, Kaloum, Matam, Matoto, Ratoma

Source: ADRC, Japan and CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2004

Table 6: Top 25 Natural Disasters According to the Number of Totally Affected People (World) (2004)

Rank (TotAff)	Country	Region	DisType	DisSubset	DisName	Month	Day	Killed	Injured	Homeless	Affected	TotAff	DamageUS ('000s)	Location
1	Bangladesh	South Asia	Flood	Flash Flood		6	20	730	0	0	36000000	36000000	7000000	Sylhet, Sunamganj, Moulvibazar, Brahmanbaria, Comilla, Dhaka, Munshiganj, Narayanganj, Chandpur, Netrokona, Habiganj, Kurigram, Rangpur, Cox's Bazar
2	China P Rep	East Asia	Flood			7	15	133	4026	0	33648000	33652026	1100000	Shandong, Henan, Hunan, Hubei, Guangxi, Chongqing, Yunnan provinces
3	India	South Asia	Flood	Flash Flood		6	20	900	0	0	33000000	33000000	220000	Darbhanga, Madhubani, Sitamarhi, Banka, Bhagalpur, Muzaffarpur, Sheohar (Bihar), South and West Tripura (Tripura), Kamrup
4	China P Rep	East Asia	Wind storm	Typhoon	Rananim	8	12	188	4000	0	8590000	8594000	2190000	Taizhou, Wenzhou, Ningbo, Shaoxing (Zhejiang province), Nanzhong, Bazhong, Luzhou, Mianyang, Guangan, Guangyuan, Yaan, Liangshan (Sichuan province), Kaixian, Wanzhou, Yunyang, Wuxi, Chengkou, Bishan, Yubei
5	China P Rep	East Asia	Flood			9	2	222	10000	3000	8240000	8253000	471000	Beibei, Hechuan, Chiyang, Kwazulu Natal, Eastern Cape, Northern Cape, Mpumalanga, North-West, Free state, Northern Cape
6	South Africa	Southern Africa	Drought	Drought		1	0	0	0	0	4000000	4000000	0	Kilifi, Mbezi, Mwingi districts (Eastern province), Turkana, Marsabit, Mijara, Mandera, Kajiado, Wajir, Garissa, Narok, Tana river districts (North Eastern province), Kilifi, Kwale, Taita
7	Kenya	East Africa	Drought	Drought		6	0	0	0	0	2300000	2300000	0	Ancash, Puno, Cuzco, Arequipa, Moquegua, Tacna, Apurimac, Ayacucho, Huancavelica, Huanuco, Junin, Lima, Madre de Dios, Pampanga, Ilocos, Bataan, Bulacan, Pangasinan, Benguet, Rizal, La Union, Nueva Vizcaya, Nueva Ecija, Ilocos provinces (Luzon Isl)
8	Peru	South America	Extreme temp	Cold Wave		6	0	90	1800000	0	337467	2137467	0	North, East and Southern Province
9	Philippines	South-east Asia	Wind storm	Typhoon	Aere	8	25	35	0	0	1058849	1058849	0	Antatana, Maroantsetra, Mampikoni, Ambilobe, Andapa, Ambajana, Antsohiby, Andanalava, Mahajanga, Vatovandry-Isabela (Region II), Bulacan, Nueva Ecija, Aurora (Region III), Quezon, Rizal (Region IV), Camarines Sur (Region V) - Real, Infanta, General Nakar (Quezon province, East
10	Sri Lanka	South Asia	Wave / Surge	Tsunami		12	26	35399	23176	480000	516130	1019306	1000000	Catanduanes Isl., Bicol peninsula, Mindoro Isl., Camarines Sur, Sorsogon
11	Madagascar	East Africa	Wind storm	Cyclone	Galifo	3	7	363	879	214260	773000	988139	250000	Itanagar, Udaypur, Izang, Janakpur, Mahottari, Jhapa, Saptari, Siraha, Dhanusha, Mahottari, Sarlahi, Bara, Makwanpur, Morang, Sunsari, Pyuthan, Damaabha, Chitwan
12	Philippines	South-east Asia	Wind storm	Tropical storm	Winnie	11	29	1619	1023	0	880000	881023	78200	Tamil Nadu state, Andaman, Nicobar Isl., Andhra Pradesh, Kerala, UT
13	Philippines	South-east Asia	Wind storm	Typhoon	Muifa	11	19	104	240	0	838434	838674	6000	Handan (Hebei province), Guangdong province, Guangxi, Hainan Island region, Jiangxi, Anhui
14	Nepal	South Asia	Flood	Flash Flood		7	5	185	15	0	800000	800015	0	Devidwar, Burelchang, Chandina, Chouddogram, Muradnager Upzalisas (Comilla district)
15	India	South Asia	Wave / Surge	Tsunami		12	26	16389	6913	0	647599	654512	1500000	Guizhou province
16	China P Rep	East Asia	Wind storm	Storm		6	20	0	32	0	640000	640032	12700	Aceh province (Sumatra)
17	China P Rep	East Asia	Drought	Drought		11	0	0	0	0	620000	620000	0	Hue, Quang Ngai, Quang Nam, Thua Thien-Hue, Quang Tri, Quang Binh
18	Bangladesh	South Asia	Flood			9	11	20	0	0	600000	600000	0	Prachin Buri, Phanom Dongrak, Prasart, Chom Phra, Thatoom, Muang (Yasothon, Surin), Muang (Nakhon Phanom), Ubon Ratchathani
19	China P Rep	East Asia	Flood			6	22	0	0	73	556000	556073	0	Cagayan, La Union (North of Luzon Isl.), Mindanao
20	Indonesia	South-east Asia	Wave / Surge	Tsunami		12	26	165708	0	532898	0	532898	4450000	Clarendon, Westmoreland, St. Catherine, St. Elizabeth, St. Thomas, St. Ann, Trelawny, Kingston
21	Viet Nam	South-east Asia	Wind storm	Typhoon	Muifa	11	26	56	0	0	500000	500000	23000	Ayapel, Cienaga de Oro, Cerete, San Pelayo, Momil, Planeta Rica, Purisima, Monitos, Loric, San A. de Sotavento, Tierralta, Los Cordobas, San Carlos, Montelibano, Puerto Libertad, San Rafael
22	Thailand	South-east Asia	Flood	Flash Flood		8	6	9	0	0	500000	500000	0	
23	Philippines	South-east Asia	Wind storm	Typhoon	Mindulle	6	29	28	12	0	385000	385012	9700	
24	Jamaica	Caribbean	Wind storm	Hurricane	Ivan	9	11	15	0	0	350000	350000	111000	
25	Colombia	South America	Flood			10	11	36	72	0	345314	345386	0	

Source: ADRC, Japan and CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2004



**Table 7: Top 25 Natural Disasters According to the Ratio of Totally Affected People to Population (World) (2004)**

Rank (TotAff/Population)	Rank (TotAff)	Country	Region	DisType	DisSubset	DisName	Month	Day	Killed	Injured	Homeless	Affected	TotAff	Population (2004) (World Fact Book)	Population (for 1 Million People)	USS (World Bank 2003)	Damage US (\$ '000s)	Location
1	55	Grenada	Caribbean	Wind storm	Hurricane	Ivan	9	8	39	0	0	60000	60000	89502	670376	0.390	0	
2	77	American Samoa	Oceania	Wind storm	Cyclone	Heta	1	5	0	60	3000	20000	23060	57881	398404	0.900	150000	
3	225	Niue	Oceania	Wind storm	Cyclone	Heta	1	6	1	2	500	200	702	2166	324100	0.010	0	Alofi
4	58	Vanuatu	Oceania	Wind storm	Cyclone	Ivy (P13)	2	25	2	8	0	54000	54008	205754	262488	0.250	0	Panna, Ambrym, Epi, NW Maevo, NW Ambae, Malekula, Erromango, Shepards Group, Tanna (St. Michaels), Moulvibazar, Branhmanbaria, Comilla, Dhaka, Munshiganj, Narayanganj, Chandpur, Netrokona, Habiganj, Kariganj, Ranour
5	1	Bangladesh	South Asia	Flood	Flash Flood		6	20	730	0	0	36000000	36000000	144319628	249446	55.010	7000000	
6	47	Djibouti	East Africa	Flood	Flash Flood		4	12	51	0	1500	98500	100000	476703	209774	0.640	0	Djibouti city
7	24	Jamaica	Caribbean	Wind storm	Hurricane	Ivan	9	11	15	0	0	350000	350000	2731832	128119	7.880	111000	Clarendon, Westmoreland, St. Catherine, St. Elizabeth, St. Thomas, St. Ann, Trelawny, Kingston
8	6	South Africa	Southern Africa	Drought	Drought		1	0	0	0	0	4000000	4000000	44344136	90204	125.960	0	KwaZulu Natal, Eastern Cape, Northern Cape, Mpumalanga, North-West, Free state, Northern Cape
9	73	Maldives	South Asia	Wave / Surge	Tsunami		12	26	102	2214	13000	12000	27214	349106	77953	0.690	410000	
10	8	Peru	South America	Extreme temp	Cold Wave		6	0	90	1800000	0	337467	2137467	27925628	76541	58.180	0	Ancash, Puno, Cuzco, Arequipa, Moquegua, Tacna, Apurimac, Ayacucho, Huancavelica, Huanuco, Junin, Lima, Madre de Dios, Pasco
11	28	Bosnia-Herzegovina	Rest of Europe	Flood			4	6	0	0	0	275000	275000	4025476	68315	6.350	0	Banja Luka, Prijedor, Doboj, Una-Sana, Zenica-Doboj, Srednja Bosna, Posavina, Laktasi, Srbae, Celinac, Sipovo, Jezero, Mrkonjic Grad, Prnjavor, Modrica, Travnik, Bugojno, Gornji, Rama, Vukovar, Mladetci districts (Eastern province), Turkana, Marsabit, Mijsara, Manderla, Kajiado, Wajir, Garissa, Narok, Tana river districts (North Eastern province), Kilifi, Kwana
12	7	Kenya	East Africa	Drought	Drought		6	0	0	0	0	2300000	2300000	33829590	67988	12.790	0	
13	142	Seychelles	East Africa	Wave / Surge	Tsunami		12	26	3	0	70	4760	4830	81188	59492	0.630	30000	Mah' Praslin, La Digue
14	126	Micronesia Fed States	Oceania	Wind storm	Typhoon	Sudal	4	9	1	8	0	6000	6008	108105	55576	0.260	0	Yap state
15	11	Madagascar	East Africa	Wind storm	Cyclone	Galifo	3	7	363	879	214260	773000	988139	18040341	54774	4.860	250000	Antananarivo, Maroantsetra, Mampikoni, Ambilobe, Andapa, Ambajana, Antsohihy, Andanalava, Mahajanga, Vatomandry, Sambava, Mahaj, Andava
16	10	Sri Lanka	South Asia	Wave / Surge	Tsunami		12	26	35399	23176	480000	516130	1019306	20064776	50801	17.820	1000000	North, East and Southern province
17	48	Macedonia FRY	Rest of Europe	Flood			6	4	0	0	0	100000	100000	2045262	48893	4.050	3600	Jegunovce, Dzepciste, Strumica, Gevgelija, Kocani, Bogdanci municipalities
18	27	Haiti	Caribbean	Wind storm	Hurricane	Jeanne	9	17	2754	2620	14048	298926	315594	8121622	38858	3.340	21000	Artibonite, Plateau Central, Sud, North-West departments, Gonaives, Passereine, Portail, Mapou, L'Anse-au-Loup, Grand-Anse, Sitamarhi, Banka, Bhagalpur, Muzzaffarpur, Sheohar (Bihar), South and West Tripura (Tripura), Kamrup, Nalbri, Darrang, Sonitpur, Dhemaji, Lakhimpur (Assam state)
19	3	India	South Asia	Flood	Flash Flood		6	20	900	0	0	33000000	33000000	1080264388	30548	570.760	220000	Catata, Calenga municipalities (Huambo)
20	26	Angola	Central Africa	Flood			1	27	27	0	1700	330000	331700	11190786	29640	10.000	0	
21	14	Nepal	South Asia	Flood	Flash Flood		7	5	185	15	0	800000	800015	27676547	28906	5.870	0	Rautahat, Udaypur, Dang, Janakpur, Mahottari, Jhapa, Saptari, Siraha, Dhanusha, Mahottari, Sarlahi, Bara, Makwanpur, Morang, Sunsari, Pyuthan, Ramechhan, Chitwan
22	116	Bahamas	Caribbean	Wind storm	Hurricane	Frances	9	2	2	0	0	8000	8000	301790	26508	7.700	0	Abacos, Andros, Berry Islands, Bimini, Eleuthera, Grand Bahama, New
23	2	China P Rep	East Asia	Flood			7	15	133	4026	0	33648000	33652026	1306313812	25761	1416.750	1100000	Shandong, Henan, Hunan, Hubei, Guangxi, Chongqing, Yunnan provinces
24	32	Somalia	East Africa	Drought	Drought		0	0	0	0	0	200000	200000	8591629	23278	4.460	0	Sool Plateau, Sanag, Togdheer, Nudal valley, La Habana, Pinar del Rio, Cienfuegos
25	30	Cuba	Caribbean	Wind storm	Hurricane	Charley	8	14	4	5	41500	202500	244005	11346670	21505	31.720	1000000	

Source: ADRC, Japan and CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2004

Table 8: Top 25 Natural Disasters According to Amount of Damage (World) (2004)

Rank (Damage)	Country	Region	DisType	DisSubset	DisName	Month	Day	Killed	Injured	Homeless	Affected	TotAff	DamageUS ('000s)	Location
1	Japan	East Asia	Earthquake	Earthquake		10	23	40	3183	0	59000	62183	28000000	Niigata
2	Japan	East Asia	Wind storm	Typhoon	Tokage	10	20	89	342	0	84450	84792	7500000	Ibaraki, Kanagawa, Nagano, Toyama, Kyoto, Okayama, Tokushima, Ehime, Kagawa, Saga, Miyazaki, Okinawa, Syhiet, Sunamganj,
3	Bangladesh	South Asia	Flood	Flash Flood		6	20	730	0	0	36000000	36000000	7000000	Moulvibazar, Branhmanbaria, Comilla, Dhaka, Munshiganj, Narayanganj, Chandpur, Netrokona, Habiganj, Kurigram, Rajshahi
4	United States	North America	Wind storm	Hurricane	Jeanne	9	25	6	0	0	40000	40000	7000000	Florida
5	United States	North America	Wind storm	Hurricane	Charley	8	13	16	0	0	30000	30000	6800000	Florida
6	Japan	East Asia	Wind storm	Typhoon	Songda	9	5	41	900	0	40000	40900	6000000	Kyushu Isl.
7	United States	North America	Wind storm	Hurricane	Ivan	9	15	52	0	0	0	0	6000000	Alabama, Louisiana, Mississippi, Florida, Pennsylvania, Maryland, New Jersey, Ohio, North Carolina, West Virginia, Georgia, Tennessee states
8	Indonesia	South-east Asia	Wave / Surge	Tsunami		12	26	2E+05	0	532898	0	532898	4450000	Aceh province (Sumatra)
9	United States	North America	Wind storm	Hurricane	Frances	9	5	2	0	0	0	0	4400000	Martin, Plam Beach counties (Florida state), North Carolina, South Carolina, Ohio, states
10	China P Rep	East Asia	Wind storm	Typhoon	Rananim	8	12	188	4000	0	8590000	8594000	2190000	Taizhou, Wenzhou, Ningbo, Shaoxing (Zhejiang province)
11	Japan	East Asia	Wind storm	Typhoon	Chaba	8	30	16	0	0	180000	180000	2000000	Osaka, Hyogo, Okayama, Ehime, Kagawa, Miyazaki, Kagoshima prefectures (Chugoku and Shikoku regions)
12	Japan	East Asia	Flood	Flash Flood		7	12	21	7	5800	20000	25807	1950000	Niigata, Fukushima regions
13	India	South Asia	Wave / Surge	Tsunami		12	26	16389	6913	0	647599	654512	1500000	Tamil Nadu state, Andaman, Nicobar Isl., Andhra Pradesh, Kerala, UT Pondicherry
14	Portugal	European Union	Drought	Drought		9	0	0	0	0	0	0	1338136	Algarve, Alentejo
15	China P Rep	East Asia	Flood			7	15	133	4026	0	33648000	33652026	1100000	Shandong, Henan, Hunan, Hubei, Guangxi, Chongqing, Yunnan
16	Cuba	Caribbean	Wind storm	Hurricane	Charley	8	14	4	5	41500	202500	244005	1000000	La Habana, Pinar del Rio, Cienfuegos
17	Sri Lanka	South Asia	Wave / Surge	Tsunami		12	26	35399	23176	480000	516130	1019306	1000000	North, East and Southern Province
18	Japan	East Asia	Wind storm	Typhoon	Ma-on	10	4	11	44	0	5904	5948	798000	Tokyo, Shizuoka, Aichi
19	United States	North America	Wind storm	Storm		5	29	10	0	0	1000	1000	700000	Arkansas, Illinois, Indiana, Kansas, Kentucky, Louisiana, Missouri, Nebraska, Oklahoma, South Dakota, Chungcheong,
20	Korea Rep	East Asia	Wind storm	Winter		3	5	0	0	0	0	0	570000	Gyeongsang, Daejeon provinces
21	United States	North America	Wind storm	Tornado		5	21	4	37	0	300	337	500000	Illinois, Indiana, Iowa, Kentucky, Michigan, Missouri, Nebraska, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, South Carolina, West Virginia
22	United States	North America	Flood			7	12	1	0	0	0	0	500000	Pennsylvania, New Jersey
23	China P Rep	East Asia	Flood			9	2	222	10000	3000	8240000	8253000	471000	Nanchong, Bazhong, Dazhou, Mianyang, Guangan, Guangyuan, Yaan, Liangshan (Sichuan province), Kaixian, Wanzhou
24	Maldives	South Asia	Wave / Surge	Tsunami		12	26	102	2214	13000	12000	27214	410000	
25	Thailand	South-east Asia	Wave / Surge	Tsunami		12	26	8345	8457	0	58550	67007	405200	Krabi, Phang Nga, Phuket, Ranong, Satun,

Source: ADRC, Japan and CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2004

**Table 9: Top 25 Natural Disasters According to the Ratio of Amount of Damage to GNI (World) (2004)**

Rank (Damage/GNI)	Rank (Damage)	Country	Region	DisType	DisSubset	DisName	Month	Day	Killed	Injured	Homeless	Affected	TotAff	Population (2004) (World Fact Book)	GNI (Bn US\$) (World Bank)	DamageUS (\$'000s)	Dam/GNI (%)	Location
1	24	Maldives	South Asia	Wave / Surge	Tsunami		12	26	102	2214	13000	12000	27214	349106	0.690	410000	59.42	
2	37	American Samoa	Oceania	Wind storm	Cyclone	Heta	1	5	0	60	3000	20000	23060	57881	0.900	150000	16.67	
3	3	Bangladesh	South Asia	Flood	Flash Flood		6	20	730	0	0	36000000	36000000	144319628	55.010	7000000	12.72	Sylhet, Sunamganj, Moulvibazar, Brahmanbaria, Comilla, Dhaka, Munshiganj
4	17	Sri Lanka	South Asia	Wave / Surge	Tsunami		12	26	35399	23176	480000	516130	1019306	20064776	17.820	1000000	5.61	North, East and Southern Province
5	31	Madagascar	East Africa	Wind storm	Cyclone	Galifo	3	7	363	879	214260	773000	988139	18040341	4.860	250000	5.14	Antalaha, Maroantsetra, Mampikoni, Ambilobe, Andapa, Ambajana, Antsohihy, Andanalava, Mahajanga, Vatomanady
6	53	Seychelles	East Africa	Wave / Surge	Tsunami		12	26	3	0	70	4760	4830	81188	0.630	30000	4.76	Mah Praslin, La Digue
7	16	Cuba	Caribbean	Wind storm	Hurricane	Charley	8	14	4	5	41500	202500	244005	11346670	31.720	1000000	3.15	La Habana, Pinar del Rio, Cienfuegos
8	8	Indonesia	South-east Asia	Wave / Surge	Tsunami		12	26	165708	0	532898	0	532898	241973879	173.540	4450000	2.56	Aceh province (Sumatra)
9	27	Slovakia	REST of Europe	Wind storm	Storm		11	19	2	24	0	10300	10324	5431363	26.630	383300	1.44	Tatras region
10	39	Jamaica	Caribbean	Wind storm	Hurricane	Ivan	9	11	15	0	0	350000	350000	2731832	7.880	111000	1.41	Clarendon, Westmoreland, St. Catherine, St. Elizabeth, St. Thomas, St. Ann.
11	14	Portugal	European Union	Drought	Drought		9	0	0	0	0	0	0	10566212	123.290	1338136	1.09	Algarve, Alentejo
12	26	Morocco	North Africa	Earthquake	Earthquake		2	24	628	926	12539	0	13465	32725847	39.370	400000	1.02	A. Kamra, Tamassint, Imzoun (Al Hoceima province)
13	1	Japan	East Asia	Earthquake	Earthquake		10	23	40	3183	0	59000	62183	127417244	4360.820	28000000	0.64	Niigata
14	57	Haiti	Caribbean	Wind storm	Hurricane	Jeanne	9	17	2754	2620	14048	298926	315594	8121622	3.340	21000	0.63	Artibonite, Plateau Central, Sud, North-West departments, Gonaives, Passereine, Portail, Manawatu, Rangitikei, Taranua, Horowhenua, Ruapehu, Wanganui, South Taranaki districts (Manawatu-Wanganui, Wellington region)
15	33	New Zealand	Oceania	Flood	Flash Flood		2	13	2	0	0	2500	2500	4035461	62.250	210000	0.34	Krabi, Phang Nga, Phuket, Ranong, Satun, Trang
16	25	Thailand	South-east Asia	Wave / Surge	Tsunami		12	26	8345	8457	0	58550	67007	65444371	135.880	405200	0.30	Tamil Nadu state, Andaman, Nicobar Isl., Andhra Pradesh, Kerala, UT Pondicherry
17	13	India	South Asia	Wave / Surge	Tsunami		12	26	16389	6913	0	647599	654512	1080264388	570.760	1500000	0.26	Viti Levu, Vanua Levu
18	80	Fiji	Oceania	Wind storm	Tropical storm		4	8	16	0	0	10000	10000	893354	1.870	4000	0.21	Ibaraki, Kanagawa, Nagano, Toyama, Kyoto, Okayama, Tokushima, Ehime, Kagawa, Saga, Miyazaki, Okinawa,
19	2	Japan	East Asia	Wind storm	Typhoon	Tokage	10	20	89	342	0	84450	84792	127417244	4360.820	7500000	0.17	Taizhou, Wenzhou, Ningbo, Shaoxing (Zhejiang province)
20	10	China P Rep	East Asia	Wind storm	Typhoon	Rananim	8	12	188	4000	0	8590000	8594000	1306313812	1416.750	2190000	0.15	Kyushu Isl.
21	6	Japan	East Asia	Wind storm	Typhoon	Songda	9	5	41	900	0	40000	40900	127417244	4360.820	6000000	0.14	Sukhkhin (Naratmwat), Phra Phrom, Hua Sai, Pak Phanang and Ron Phiboon (Nakhon Si Thammarat), Muang and Kongra (Phattalung), Thana, Tab (Yala), Chungcheong
22	36	Thailand	South-east Asia	Flood			12	10	2	0	0	5000	5000	65444371	135.880	175000	0.13	Gyeong-sang, Daejeon provinces
23	20	Korea Rep	East Asia	Wind storm	Winter		3	5	0	0	0	0	0	48422644	576.430	570000	0.10	Isabela (Region II), Bulacan, Nueva Ecija, Aurora (Region III), Quezon, Rizal (Region IV), Camarines Sur (Region V) - Real, Jofanto, General Nakar
24	41	Philippines	South-east Asia	Wind storm	Tropical storm	Winnie	11	29	1619	1023	0	880000	881023	87857473	87.770	78200	0.09	Strumica, Gevgelija, Kocani, Bogdanci
25	82	Macedonia FRY	Rest of Europe	Flood			6	4	0	0	0	100000	100000	2045262	4.050	3600	0.09	

Source: ADRC, Japan and CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2004

The above tables and figures clearly show the trend of the world's and Asia's natural disasters, their impacts, and characteristics for the year 2004. This chapter also analyzed the vulnerability of the small states due to their small population size and economy. It is equally important to analyze disaster impact on economic development and efforts for sustainable development in order to stimulate effective disaster risk management approaches. The following chapters will illustrate these issues in detail with respect to human development and income levels.