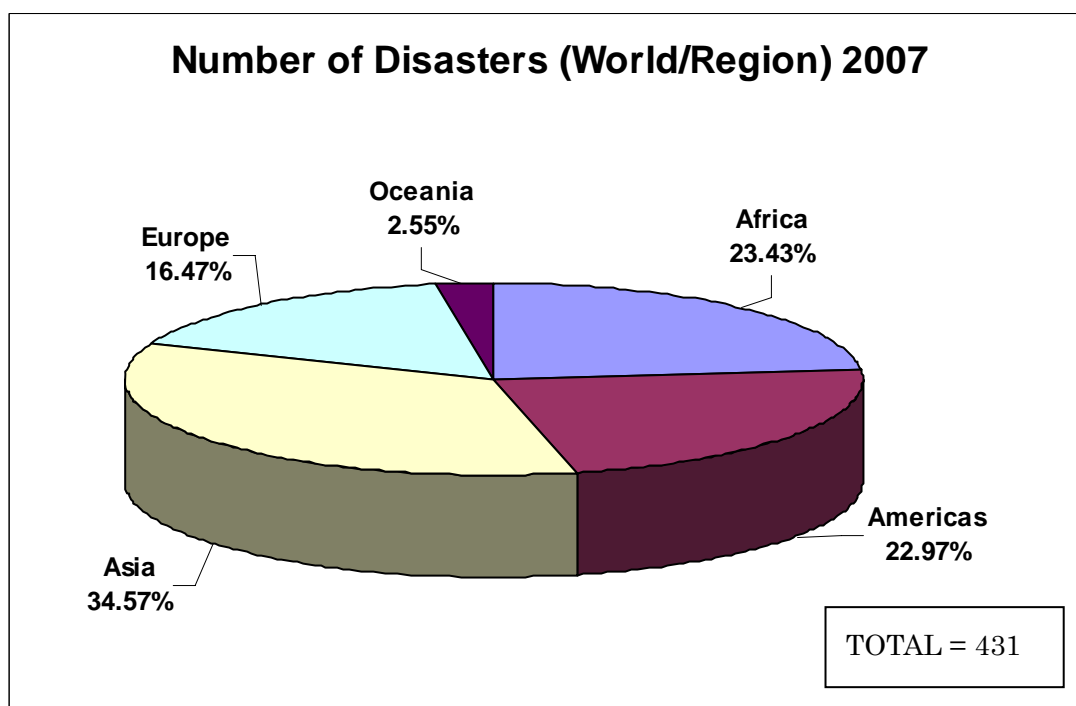


Chapter 3: Regional Characteristics of Natural Disasters

3.1 Proportion of Natural Disasters by Region

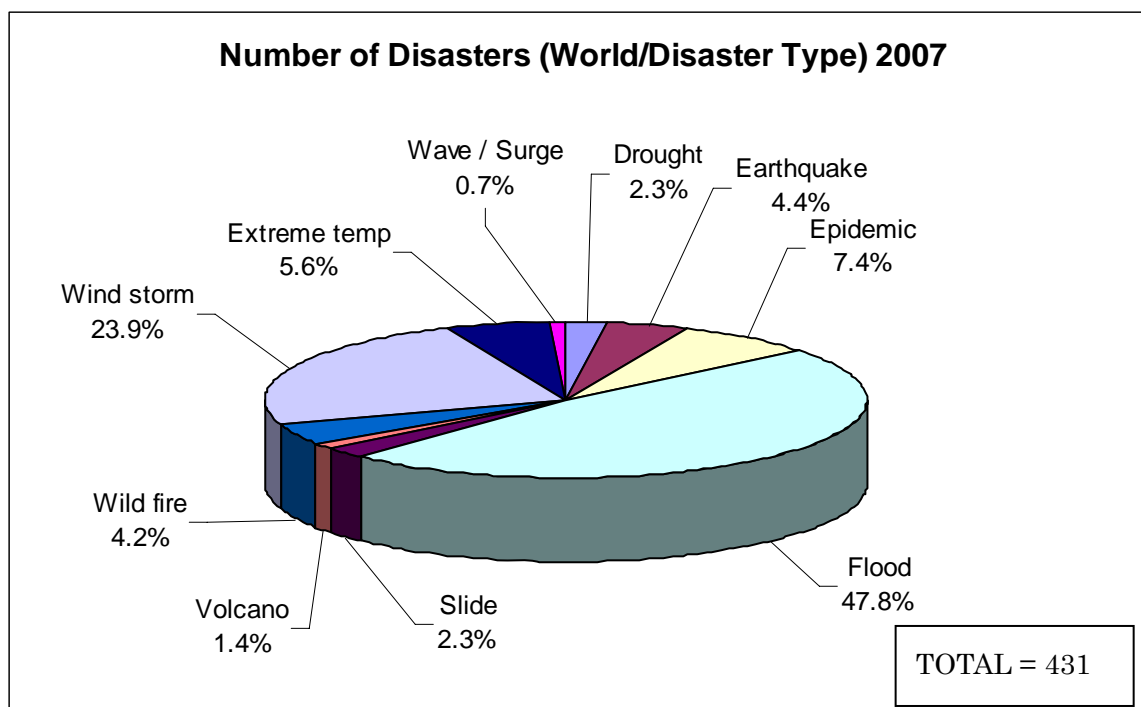
As in the previous year, Asia accounted for most of the devastating disasters that occurred in 2007 (34.6%, a decrease from 40.0% in 2006), followed by Africa (23.4%; a decrease from 27.8% in 2006), the Americas (23.0%; an increase from 14.9% in 2006), Europe (16.5%; an increase from 13.6% in 2006), and Oceania (2.6%; a marginal decrease from 3.7% in 2006). Although the 2007 disaster trends look similar to those for 2004, 2005 and 2006, their impacts in terms of human and economic losses were different. Figure 30A summarizes the 2007 data visually. Figure 30B summarizes the world data by type of disaster. According to Figure 30 B, majority of the disasters in 2007 were floods and wind storms (71.7%) followed by epidemics, extreme temperatures, earthquakes, wildfires, slides and drought respectively.

Figure 30A:



Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2007

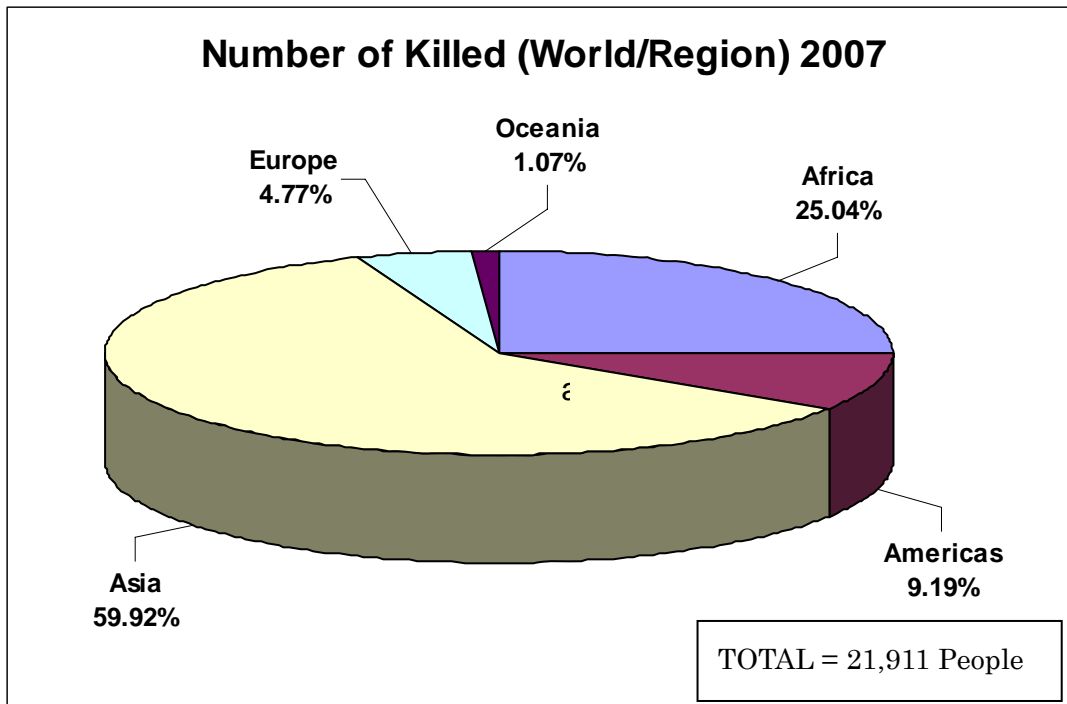
Figure 30B:



Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2007

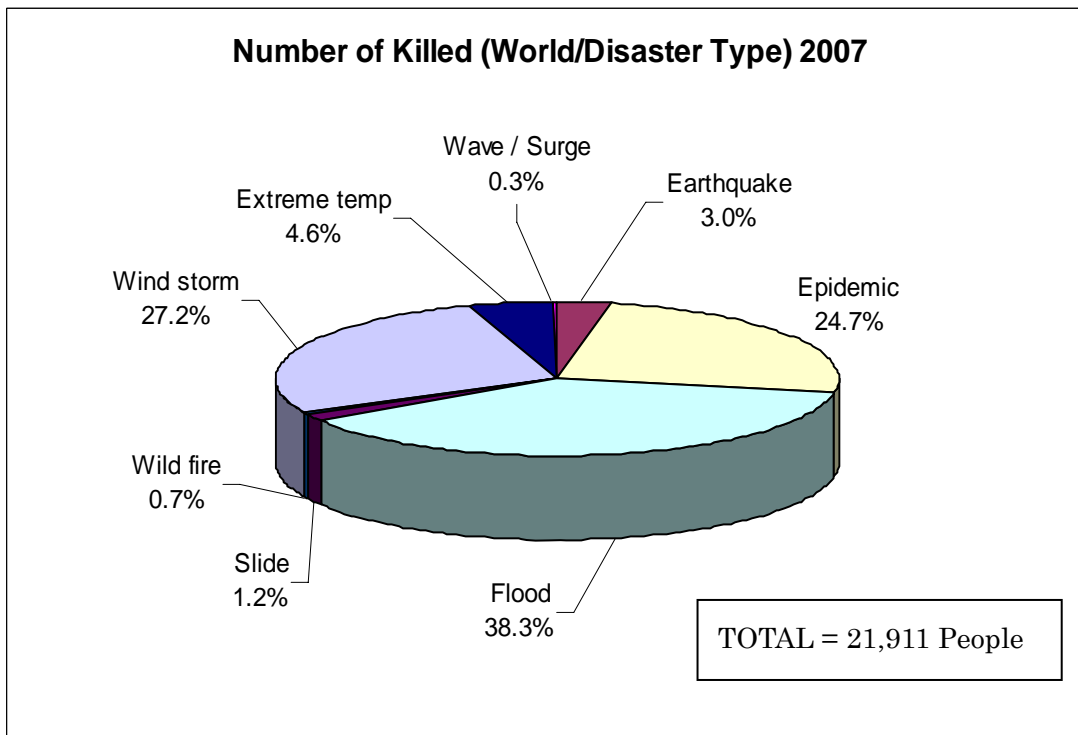
As can be seen in Figure 31A, the majority of people killed by natural disasters in the year 2007 lived in Asia, which accounted for 60.0% of the total number of people killed by disasters worldwide (almost similar percentage of 59.2% when compared to the previous year 2006). As in the previous years, year 2007 disasters victims in Asia are mainly due to the catastrophic floods and windstorms that struck India, Bangladesh, and China, in Asia. Another significant region is Africa, which accounted for 25.0% of the people killed in 2007 (almost similar percentage of 26.1% when compared to the previous year 2006). This is due to the flood, epidemic, windstorms and drought disasters occurred in Africa in 2007. The number of people killed in Europe decreased from 12.4% in 2006 to 4.8% in 2007. European disaster victims are mainly from the extreme temperature conditions and floods that prevailed in Europe in 2007. The Americas instead saw an increase in people killed, from 2.3% in 2006 to 9.2% in 2007. This is due to the floods in the South American regions. Oceania registered marginal increase in the number of people killed by natural disasters in 2007 from the previous year 2006. The heavy death toll in Asia caused by *the Asian Disaster* in 2007 makes other regions' figures look smaller in 2007 as in the previous years of 2006 and 2005. Floods, windstorms and epidemic were responsible for the majority of the death toll worldwide (90%), followed by extreme temperature, and earthquakes, as shown in Figure 31B.

Figure 31A;



Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2007

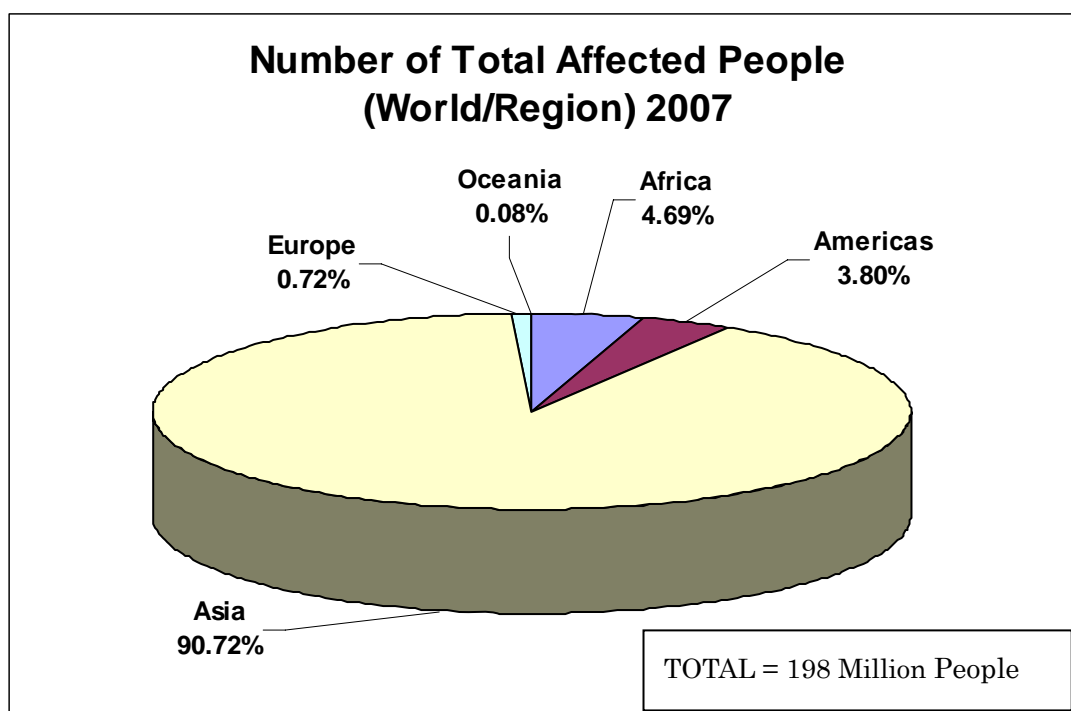
Figure 31B:



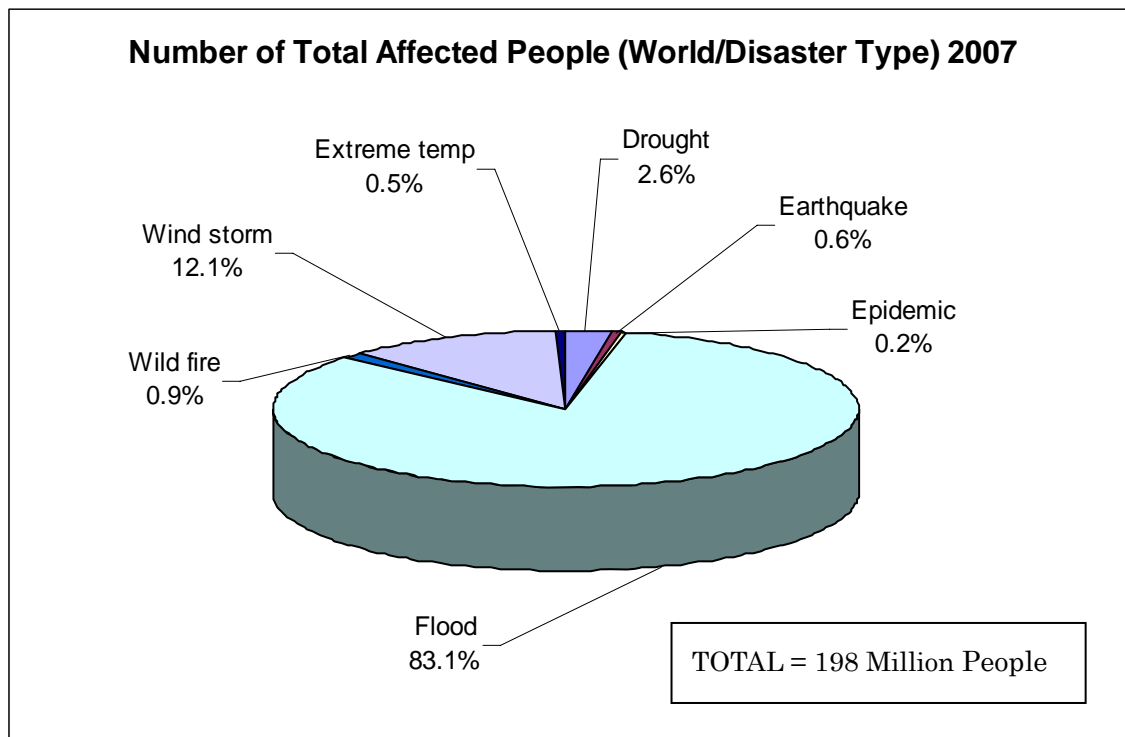
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2007

The number of total affected people increased from 135.1 million in 2006 to 198.2 million in 2007. As shown in Figure 32A, the Asian region accounted for the highest percentage of total affected people, with 90.7% in 2007. This is an increase from the previous year's 88.9%. The real number of total affected people in Asia this year 2007 (179.8 million people) has also increased by 49.8% from the previous year 2006 (120 million people). In addition to the disasters which affected many people in Asia, other disasters in other parts of the world, especially Africa and America, also had a significant impact in 2007. The number of total affected people in every region worldwide increased significantly over previous year 2006 except Africa which registered a decrease in 2007 (9.3 million people) over previous year 2006 (13.4 million people). Nevertheless, the trend clearly reflects Asia's continued vulnerability to natural hazards. Figure 32B shows the percentages of total affected people by disaster type. Hydro-meteorological disasters, such as floods, wind storms, and droughts had a significant impact (almost 95%) on people worldwide.

Figure 32A:



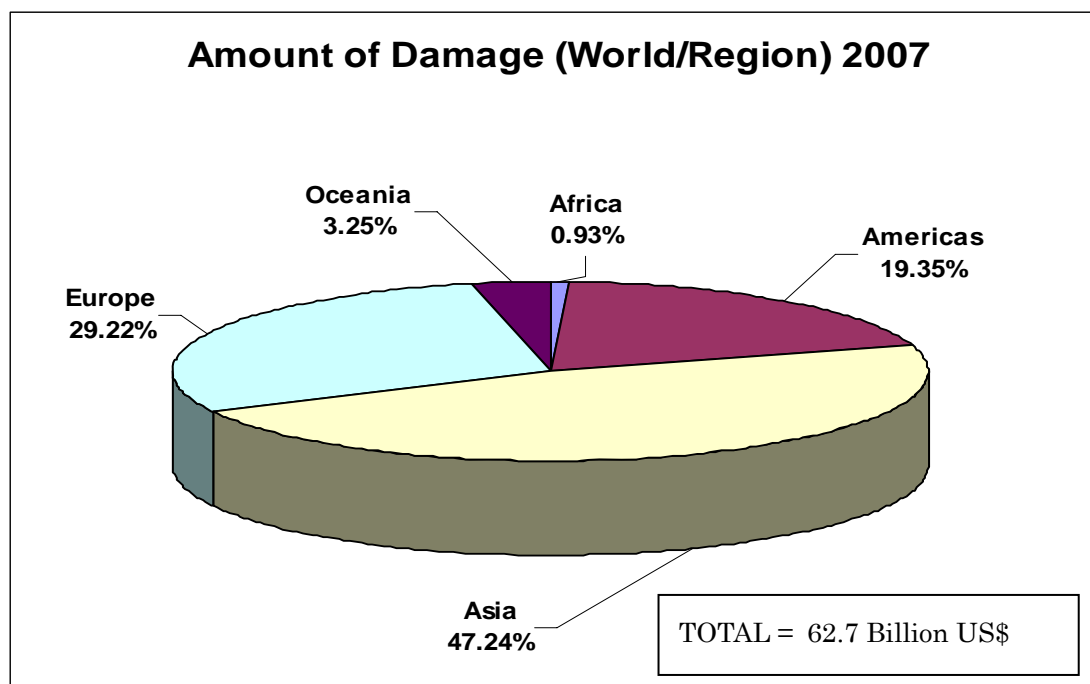
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2007

Figure 32B:

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2007

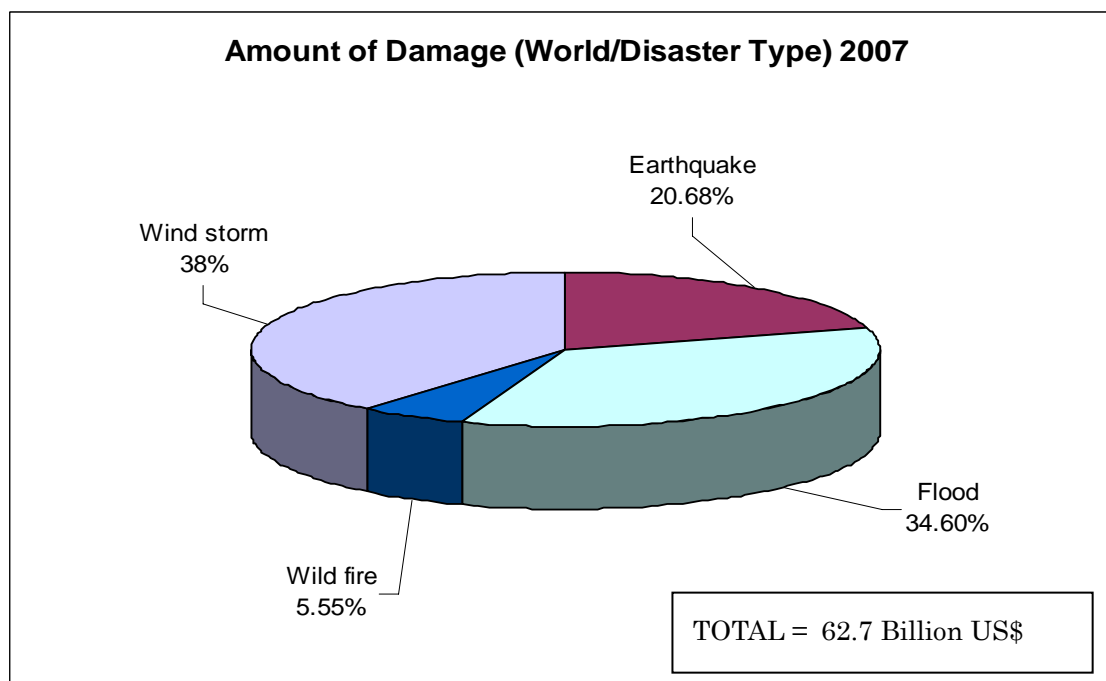
In contrast to previous years, Asia accounted for less than half (47.2%) of the economic damage caused by natural disasters in 2007 (Figure 33A). This damage is also mainly due to the impact of Earthquake in Japan, windstorm and floods in India, Bangladesh and China in 2007. Asia accounted for less economic damage in 2007 (47.2%) than in the previous year (in 2006, it was 71.1%), a considerable decrease by 50.6% from 2006. The Europe (29.2%) accounted for the next highest level of economic losses in 2007. This is due to wind storms and floods in Europe, especially in UK. This is followed by Americas with 19.3% (in 2005, it was the highest at 85.6% due to Cyclones Katrina Wilma and others, and in 2006 also it was big with 14.7% of the total world damage). Americas' 2007 economic damage is mainly from windstorms of the USA and Mexico, and the USA bushfire. Figure 33B shows the amount of damage worldwide for 2007 by disaster type. Wind storms and floods were the leading causes of damage worldwide, followed by earthquakes. The socio-economic structure of these regions and the disaster occurrences and countermeasures could be attributed to these trends. All other regions accounted for much less of the economic damage sustained in 2007. It is also noteworthy to mention that overall damage tremendously increased by about 217% from the previous year 2006, from US\$19.8 billion to US\$62.7 billion. This entirely due to the damage caused by disasters in the high income and developed countries worldwide such as USA, Japan, Australia and the region Europe.

Figure 33A:



Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2007

Figure 33B:



Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2007

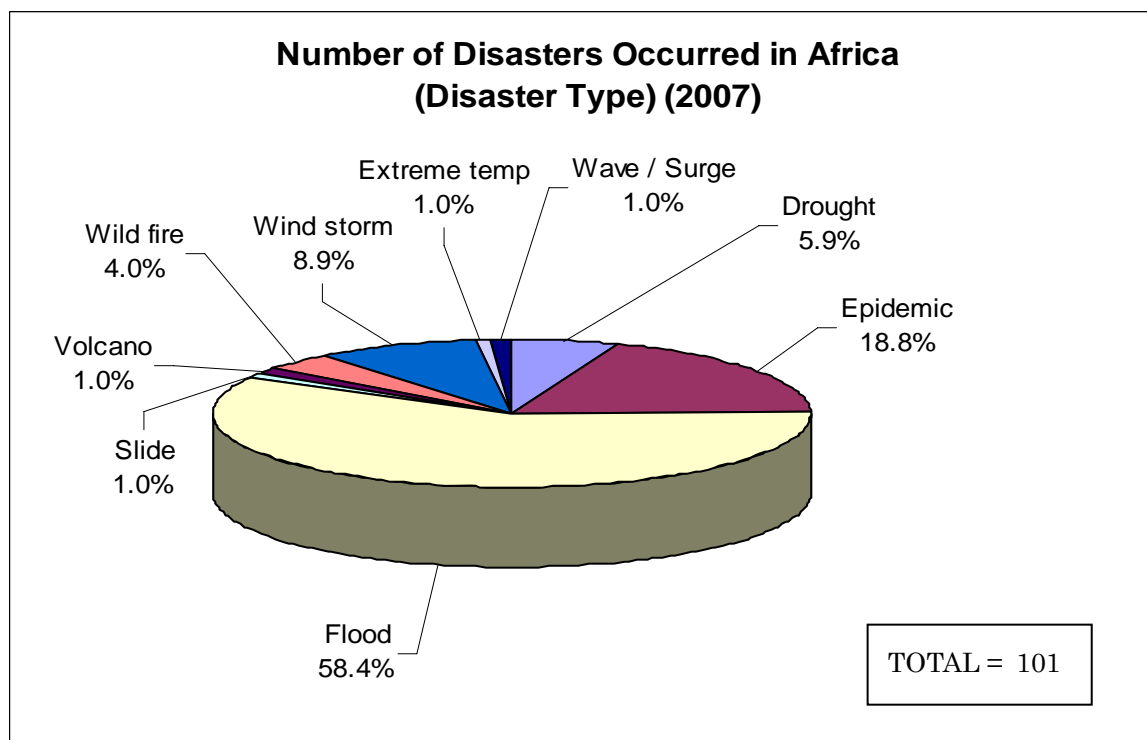
These figures indisputably demonstrate that the disaster vulnerability of the Asian region cannot be neglected in relation to global sustainable development and the need of stronger disaster countermeasures.

3.2 Natural Disasters around the World

3.2.1 Characteristics of Disasters in Africa

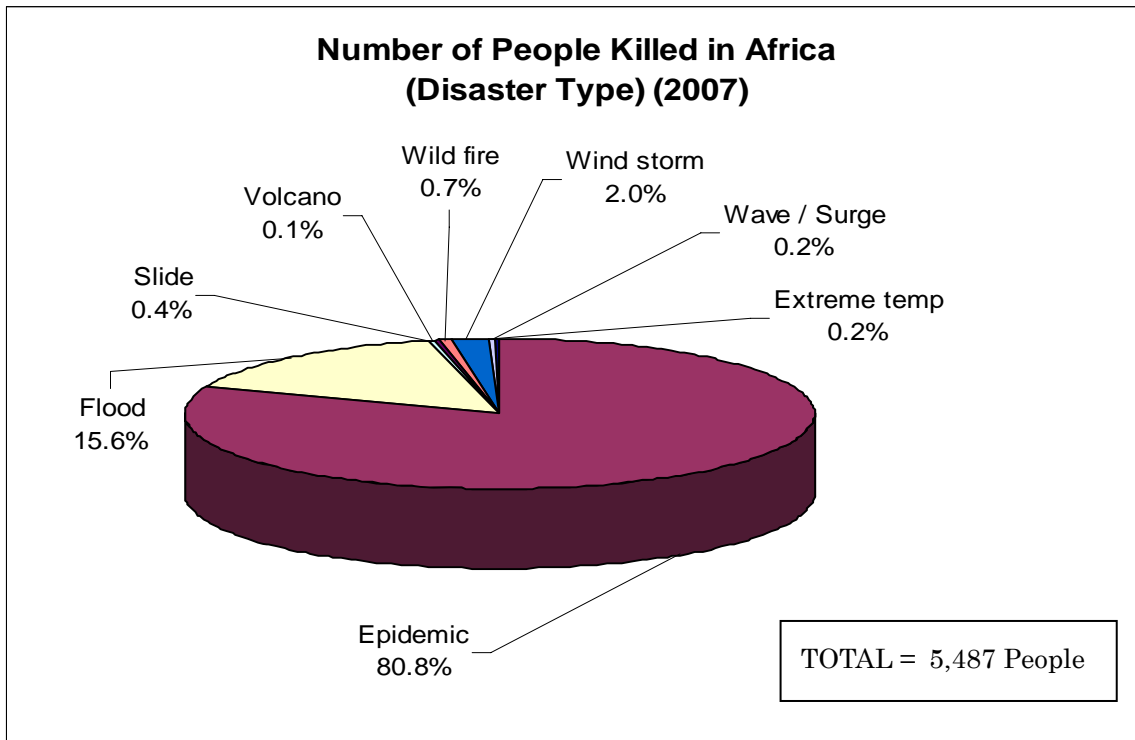
About 73% of the natural disasters that occurred in Africa in 2007 from hydro-meteorological disasters such as floods, windstorms and droughts (Figure 34). Furthermore, the majority of the human losses (80.8%) in Africa were due to epidemics alone and followed by floods, and windstorms (Figure 35). Meanwhile, the majority of people affected by disasters in Africa were affected by floods and droughts, which account for 94.6% of the total affected people in Africa 2007 (Figure 36). A slightly different pattern was seen in the previous year 2006, when droughts accounted for almost 81% of the people affected while floods accounted for 16% of the people affected. In addition to these, windstorms and epidemics also contributed to the total affected population in Africa in 2007. Zambia, Sudan, Malawi, Tanzania, Togo and Mozambique were severely hit by floods, drought and epidemics. It is interesting to note, however, according to the available 2007 data, that all of the economic damage sustained in Africa was caused by flooding and windstorms in 2007 almost similar to the previous year 2006 (Figure 37). This year, economic damage (584 million US\$) in Africa, significantly increased from year 2006 (158 million US\$) by 270%.

Figure 34:



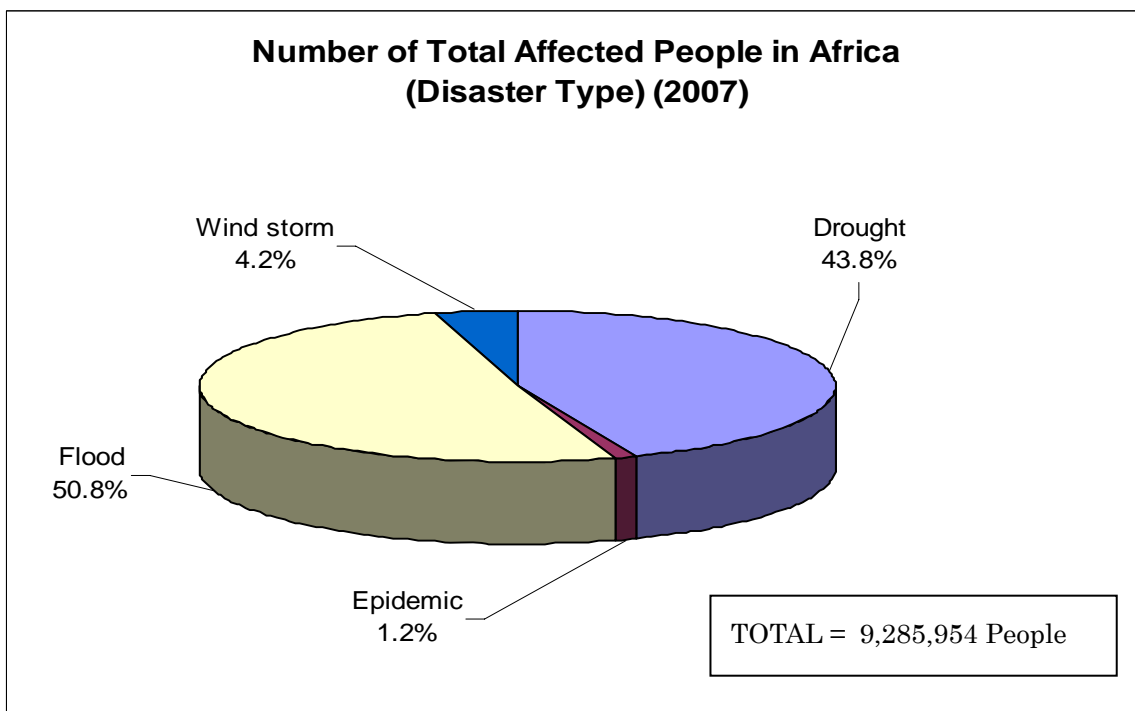
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2007

Figure 35:



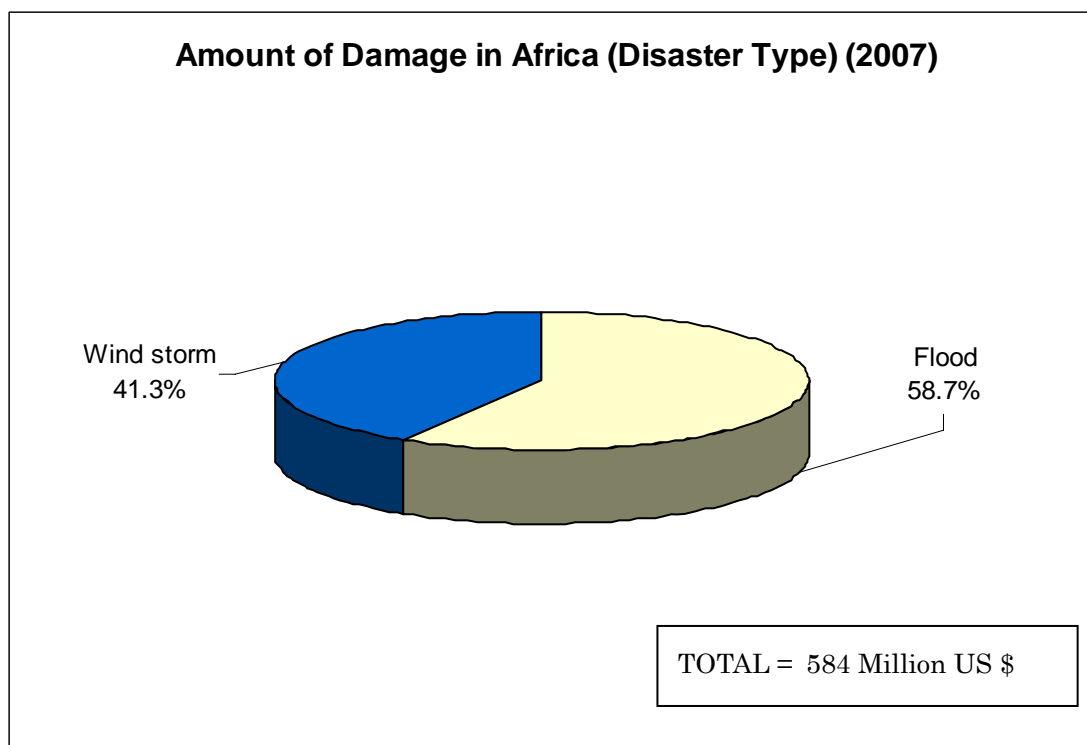
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2007

Figure 36:



Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2007

Figure 37:

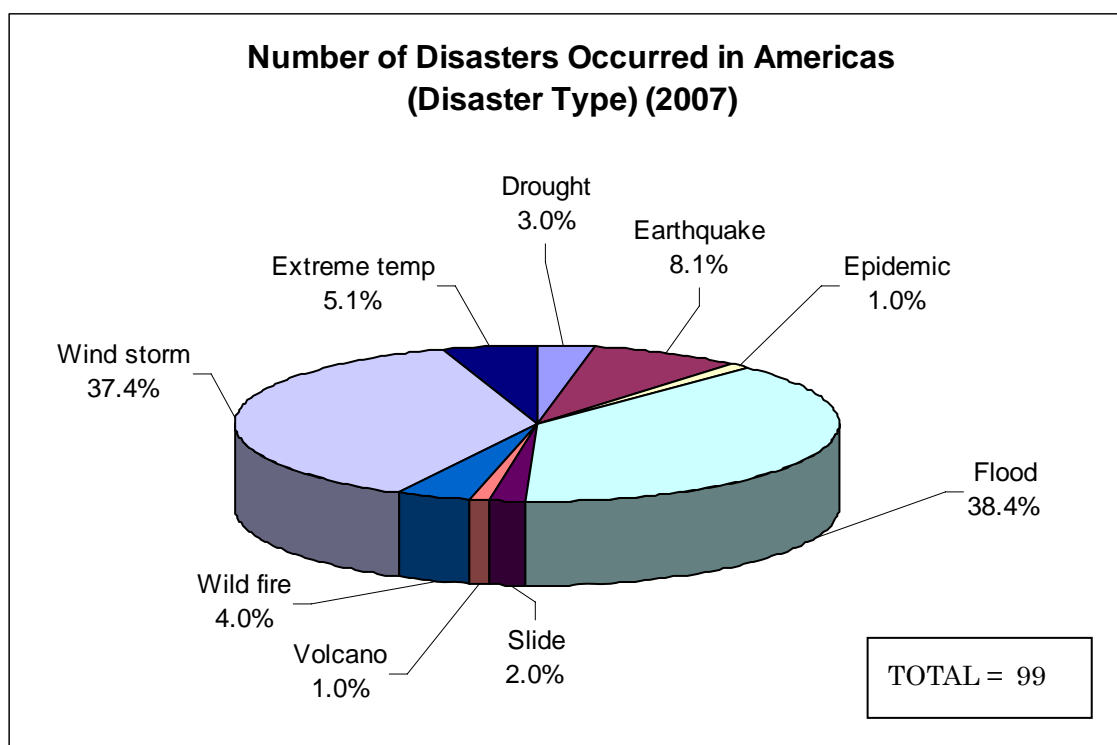


Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2007

3.2.2 Characteristics of Disasters in the Americas

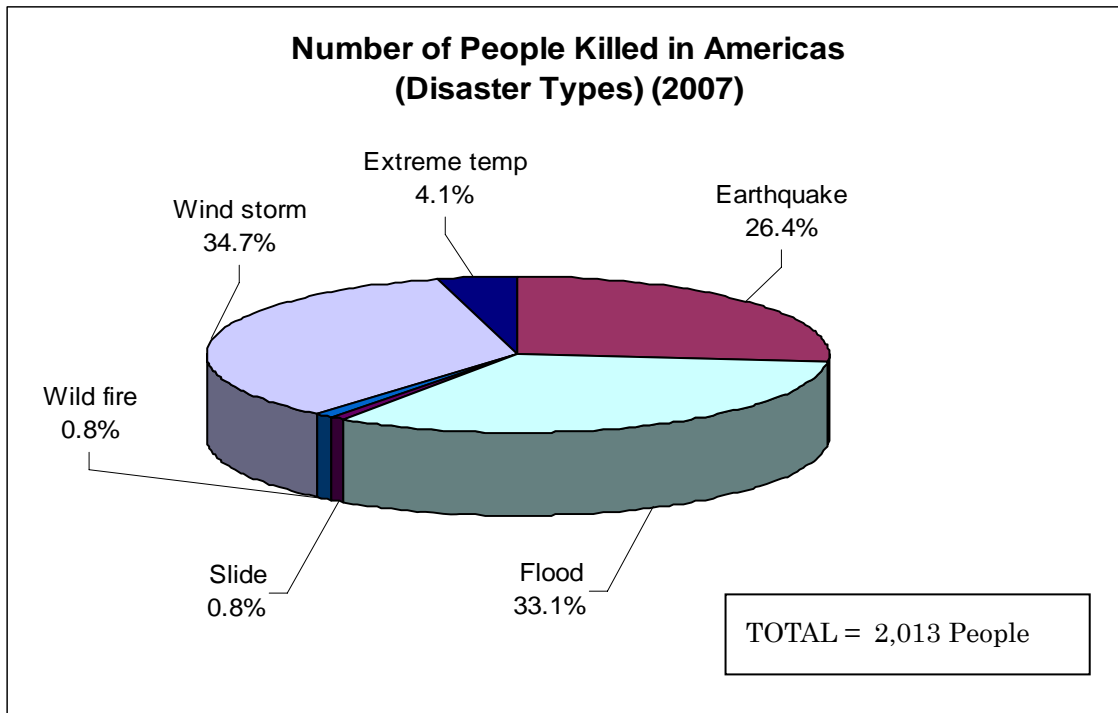
In the Americas which includes the countries of North and South America, floods, and windstorms accounted for the vast majority (almost 76%) of natural disasters that occurred in 2007 as it was in the previous year 2006 which was a devastating year to this region. Earthquakes, extreme temperatures, wildfire, drought, slides and volcano eruptions also created devastation in the Americas in 2007. In terms of human loss, about 94% of people killed were by windstorms, floods, and earthquakes. Nearly 45% of the people affected were affected by floods alone and the rest is mainly from wind storms, extreme temperatures, wildfires, drought and earthquakes in 2007. The majority of the economic damage sustained (79.2%) was caused by windstorms and floods in 2007 followed by wildfire with 20.8%. In 2005 and 2006, severe damage was caused by the historic cyclones that rocked United States. Severe damage was inflicted in 2007 by floods and windstorms that hit the South American countries Mexico and Peru and wildfires in USA. Figures 38 to 41 show that the Americas were visited by significant hydro-meteorological disasters in 2007, as they had been in previous years. Overall the human and economic losses have significantly increased in the Americas in 2007 in comparison to the previous year 2006 (killed people increased by 221.56% from 626 people in 2006 to 2013 people in 2007, total affected population by 423.3% from 1.44 million people to 7.55 million people and economic damage by 315.8% 2.92 billion dollars to 12.14 billion dollars).

Figure 38:



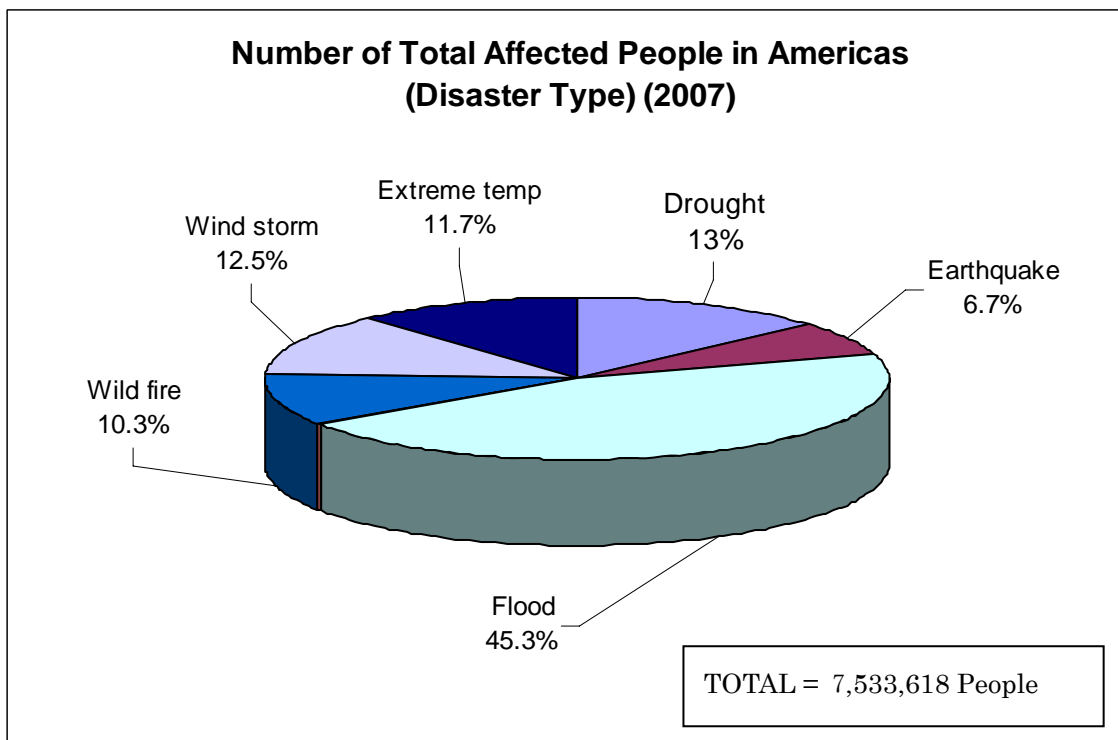
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2007

Figure 39:



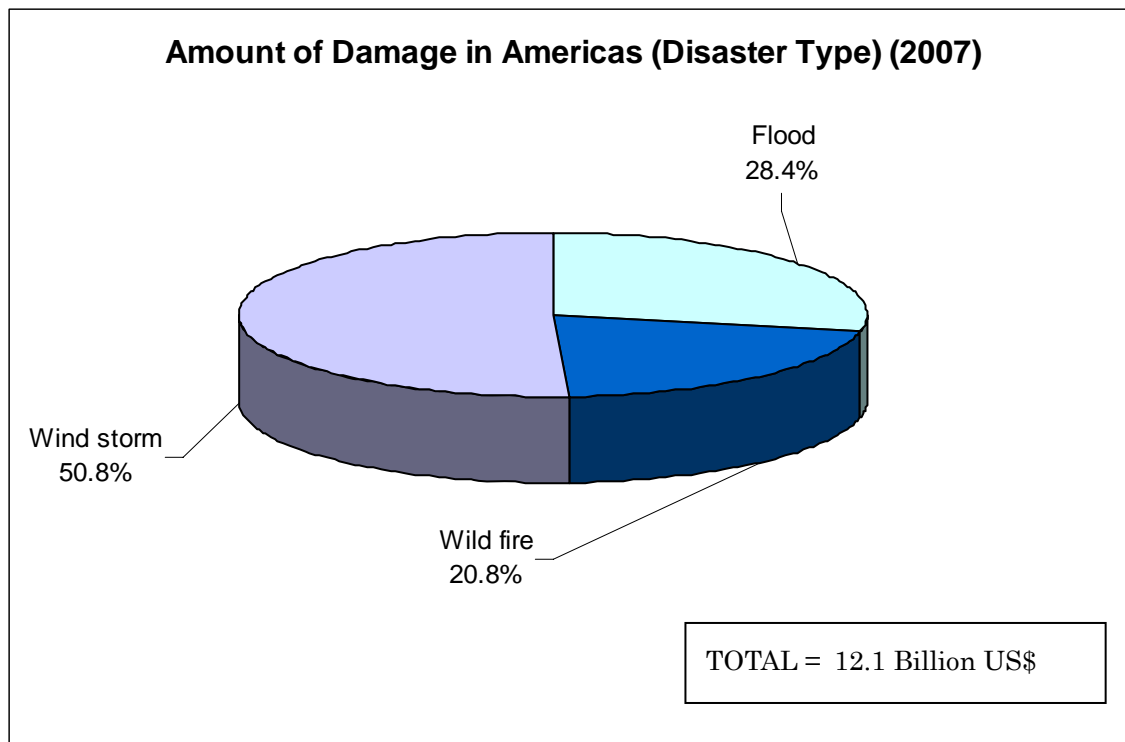
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2007

Figure 40:



Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2007

Figure 41:

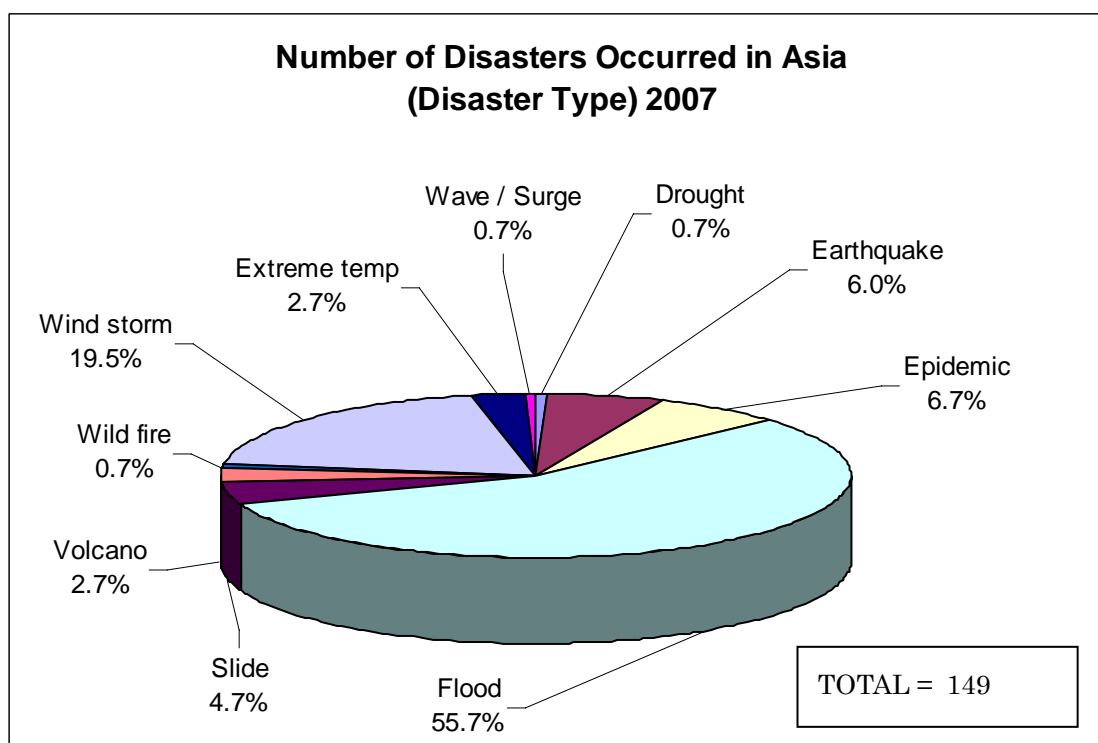


Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2007

3.2.3 Characteristics of Disasters in Asia

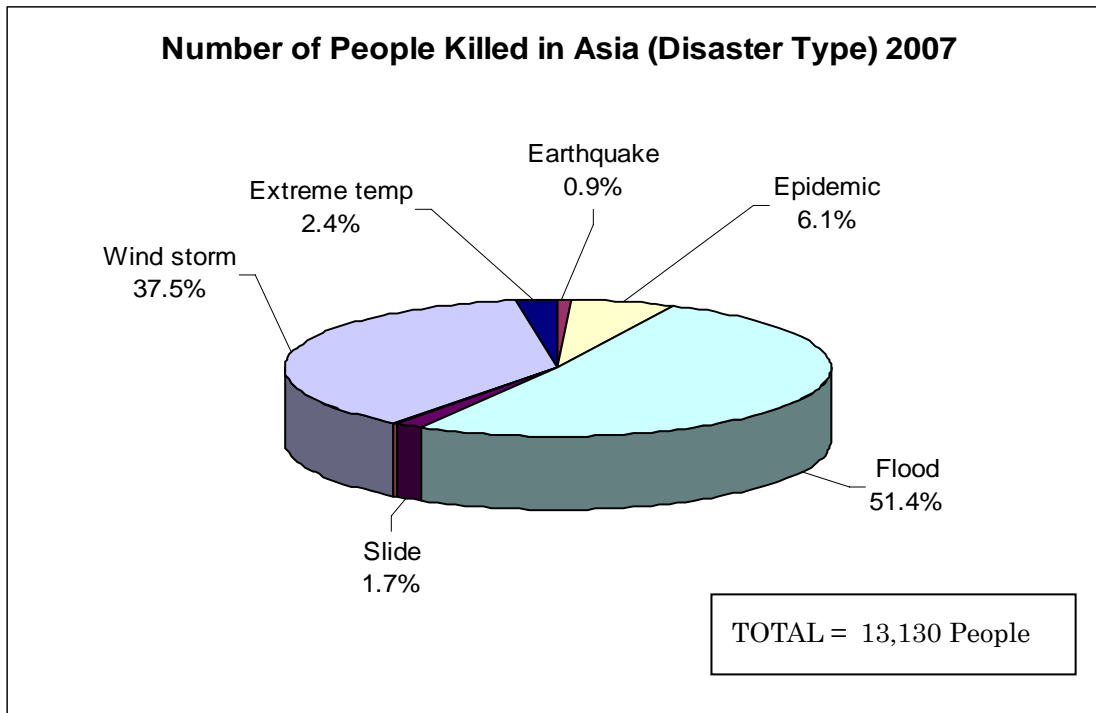
An earlier chapter demonstrated the high vulnerability of the Asian region to natural disasters. The same trend will be observed here. About 75% of the disasters in Asia consisted of wind storms and floods, followed by epidemic (6.7%), earthquake (6%) and slides (4.7%) (Figure 42). It is worth noting that windstorms and floods in Bangladesh, India and China caused considerable human losses (about 89%) in Asia, followed by epidemics, extreme temperatures and slides (Figure 43). Figure 44 shows that floods alone caused almost 87% of the human sufferings in Asia and followed by wind storms, as these accounted for almost all the people affected by natural disasters in the region in 2007. Furthermore, about 44% of the economic damage in 2007 in Asia came from the earthquake in Japan (Niigata) and rest of the damage is mainly from windstorms and floods (almost 56%) (Figure 45). Clearly, the Asian region is severely disaster-prone and vulnerable to both hydro-meteorological and geophysical disasters. The following figures highlight these trends. Though the number of disasters decreased, human sufferings (specially total affected people) and economic damages caused by these Asian natural disasters significantly increased in 2007 from year 2006 (killed people decreased by 18.7% from 16,151 people in 2006 to 13,130 people in 2007, total affected population increased by 49.8% from 120.0 million people to 179.8 million people and economic damage increased by 109.9% 14.1 billion dollars to 29.6 billion dollars).

Figure 42:



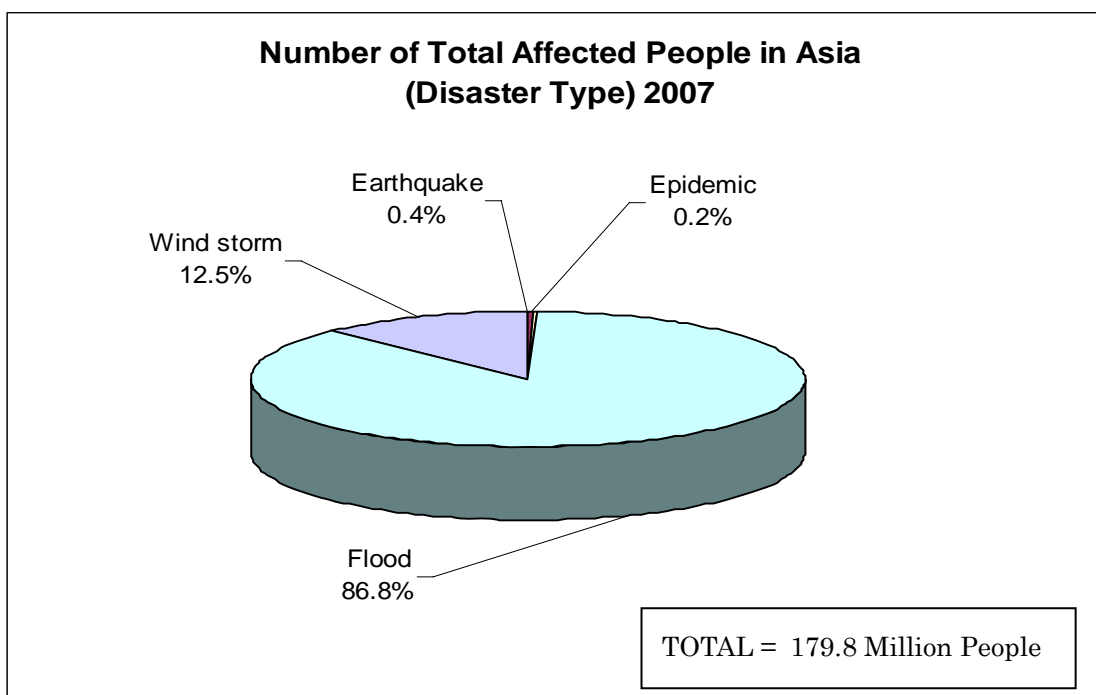
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2007

Figure 43:



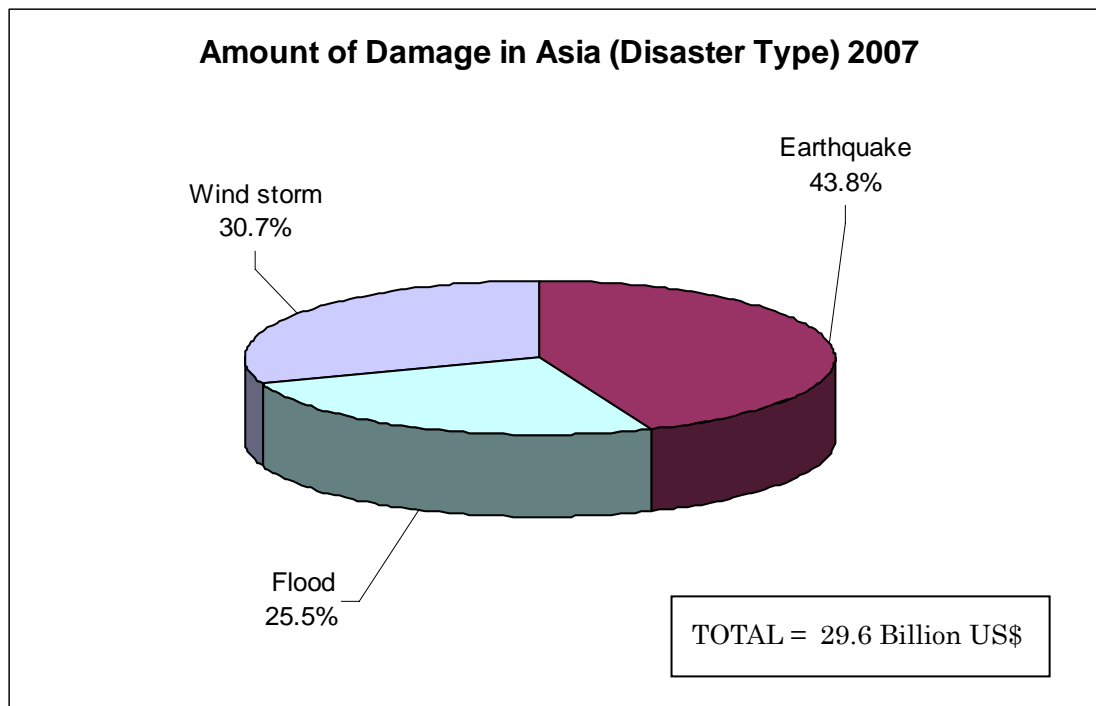
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2007

Figure 44:



Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2007

Figure 45:

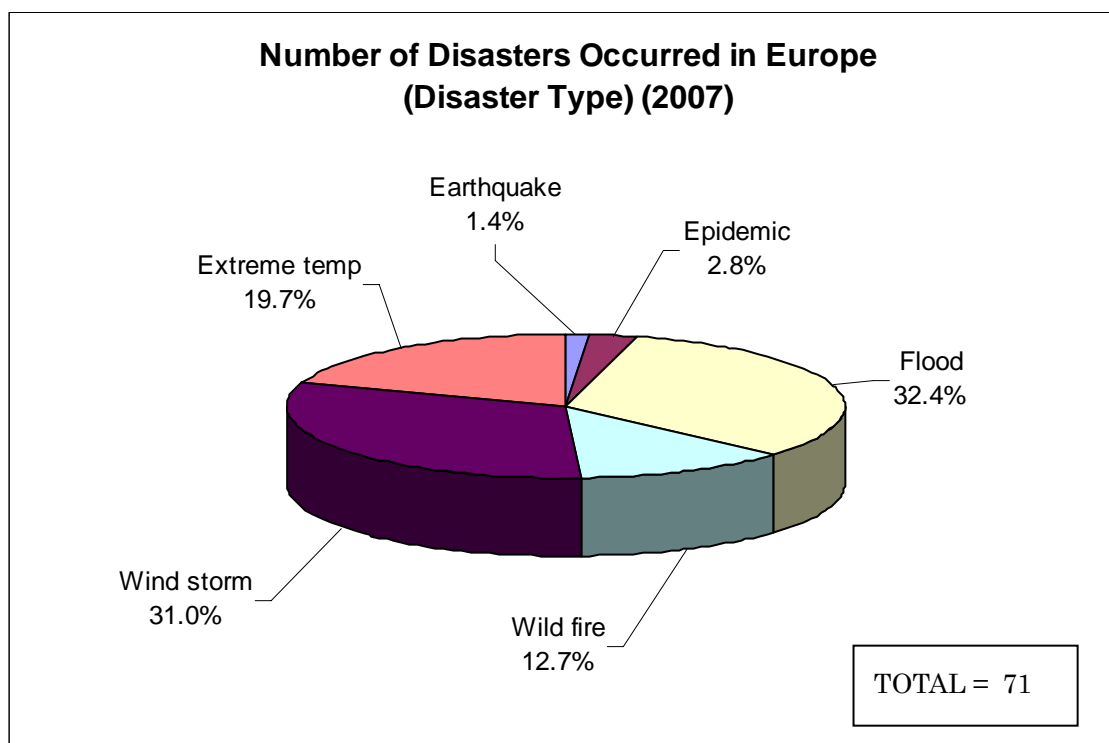


Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2007

3.2.4 Characteristics of Disasters in Europe

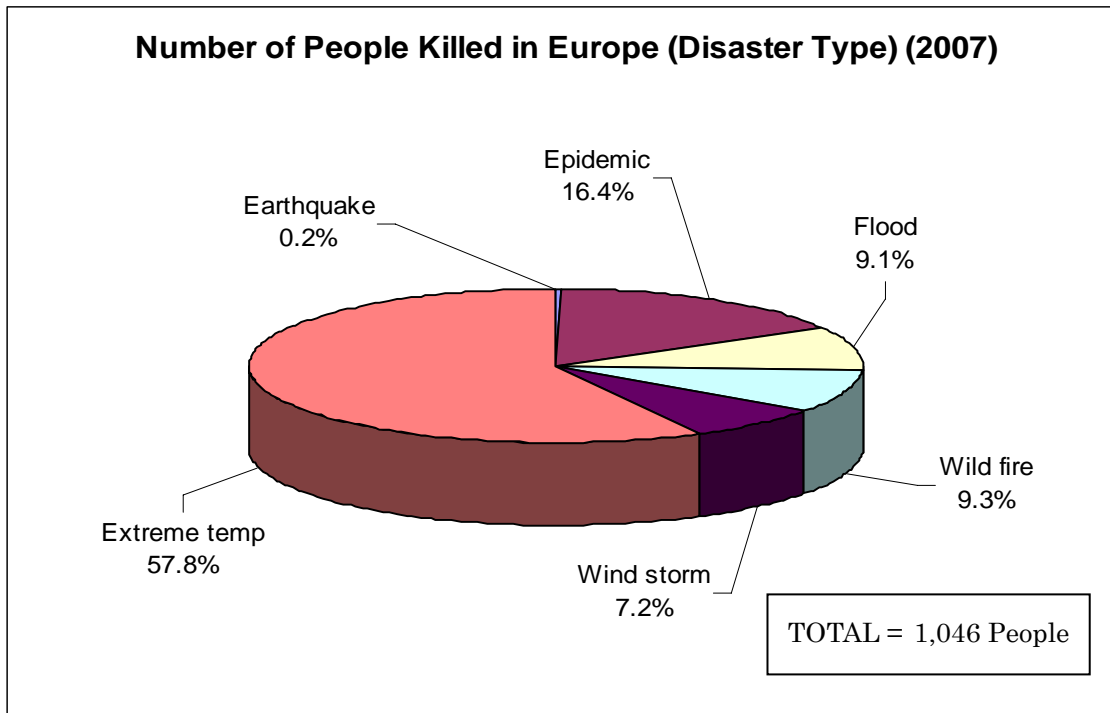
Similar to the previous year, in 2007, floods, windstorms, and extreme temperatures caused havoc in Europe. The majority of disasters in 2007 were floods, windstorms and extreme temperatures, accounting for 83% of all disasters (Figure 46). The majority of human losses were due to extreme temperatures (58%), followed by epidemics, wildfires, floods and windstorms (Figure 47). Furthermore, 70% of the total affected people were affected by wildfire disaster in Europe (mainly from Macedonia) (Figure 48), in contrast to 2006 which saw floods and extreme temperatures affecting majority of the people in the region. Floods and windstorms in UK, Germany, Netherlands, Belgium and Austria contributed significantly to the human losses and economic damage in this region in 2007 (Figure 49). In 2004, droughts created heavy economic losses in the region, but in 2005 and 2006 floods caused severe economic damage in the region. The year 2007 was a rather tumultuous one for Europe, which once again sustained significant damage caused by hydro-meteorological disasters. The economic damage in 2007 (18.3 billion US\$) has also significantly increased from previous year (1.45 billion US\$).

Figure 46:



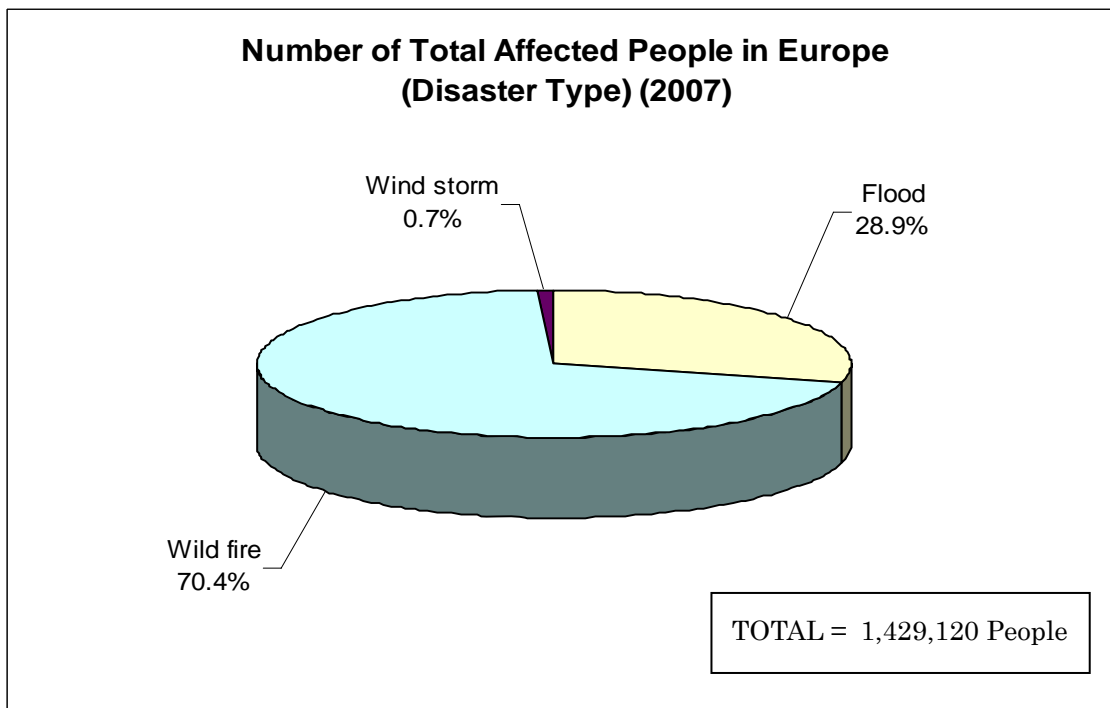
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2007

Figure 47:

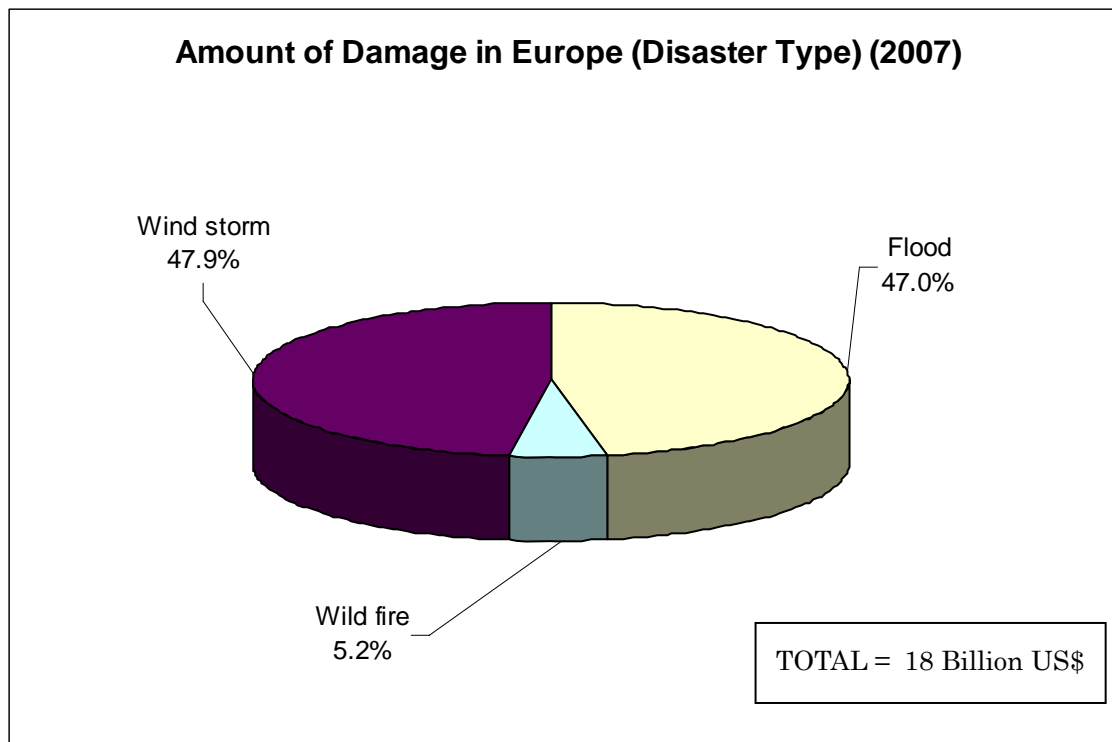


Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2007

Figure 48:



Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2007

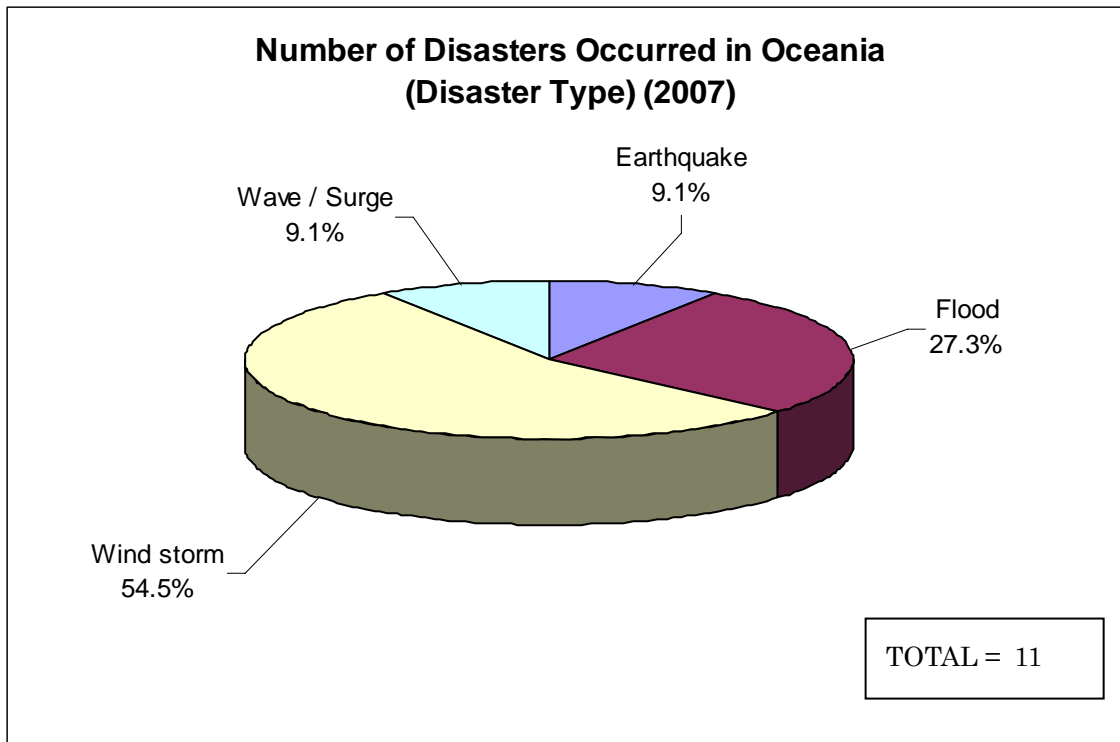
Figure 49:

Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2007

3.2.5 Characteristics of Disasters in Oceania

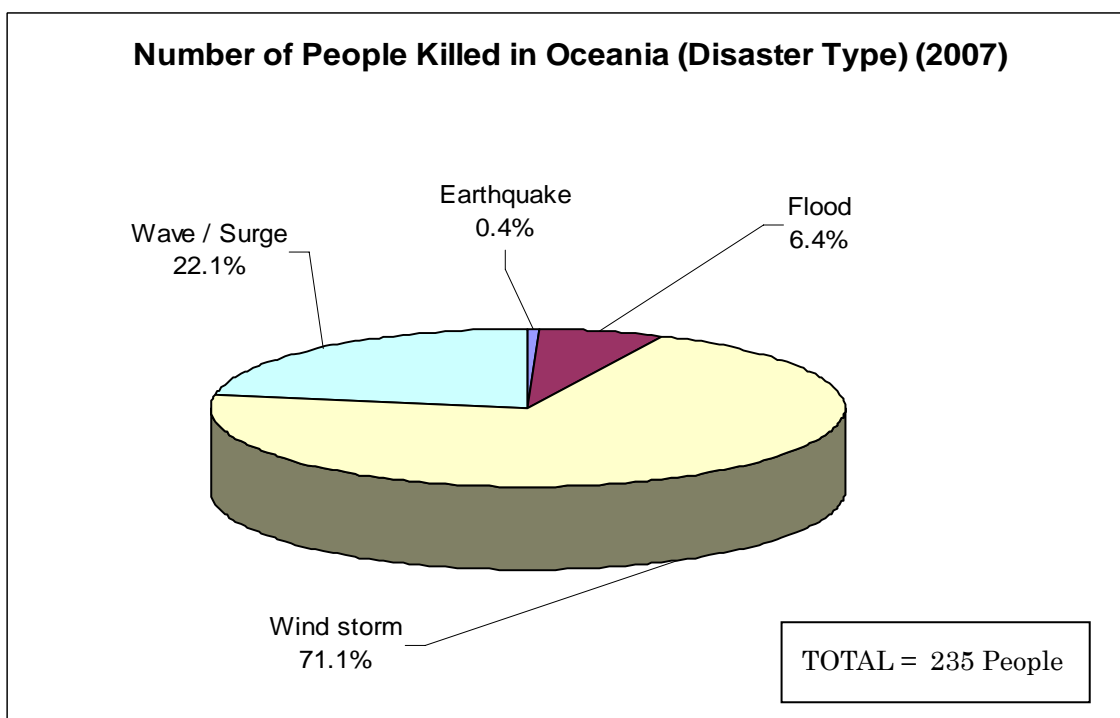
Disaster trends in Oceania were a bit different from those of other regions in previous years as well as in the year 2007, as the natural disasters strayed from the average regional pattern. Not all types of natural disasters occurred here, but the majority that did occur was wind storms, and floods accounting for 82% of the total. The remainder consisted of wave/surge, and earthquake (Figure 50). The majority of human losses were due to windstorms (71%), followed by wave/surge and floods (Figure 51). This was due to the windstorms that struck Fiji and Papua New Guinea, the tsunami that struck Solomon Islands, and floods in Australia, Fiji and Papua New Guinea. The total affected people in Oceania in 2007 were largely affected by floods and windstorms in Papua New Guinea, Fiji and Australia (98%), and wave/surge (tsunami) in Solomon Islands (Figure 52). This unusual picture is due to severe wind storms that hit Australia and the nearby small Pacific island countries in Oceania, and tsunami in Solomon Islands. The majority of the economic damage was caused by floods in Australia (85%), and windstorms (15%) mainly from Australia, and Pacific island countries as shown in Figure 53.

Figure 50:



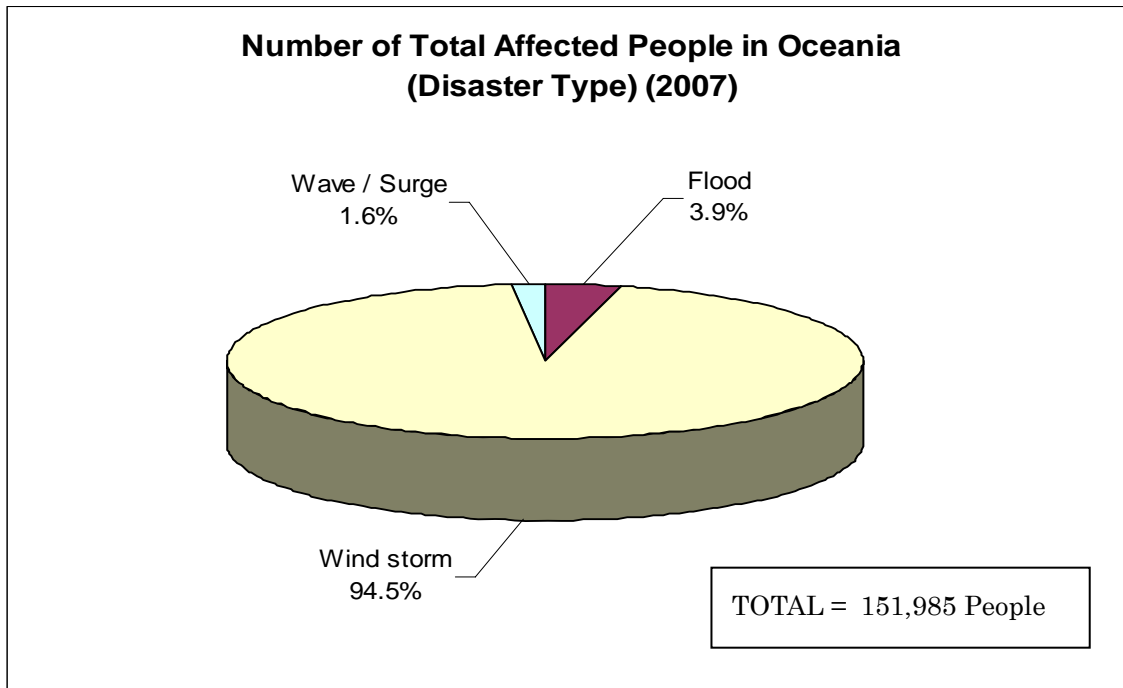
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2007

Figure 51:



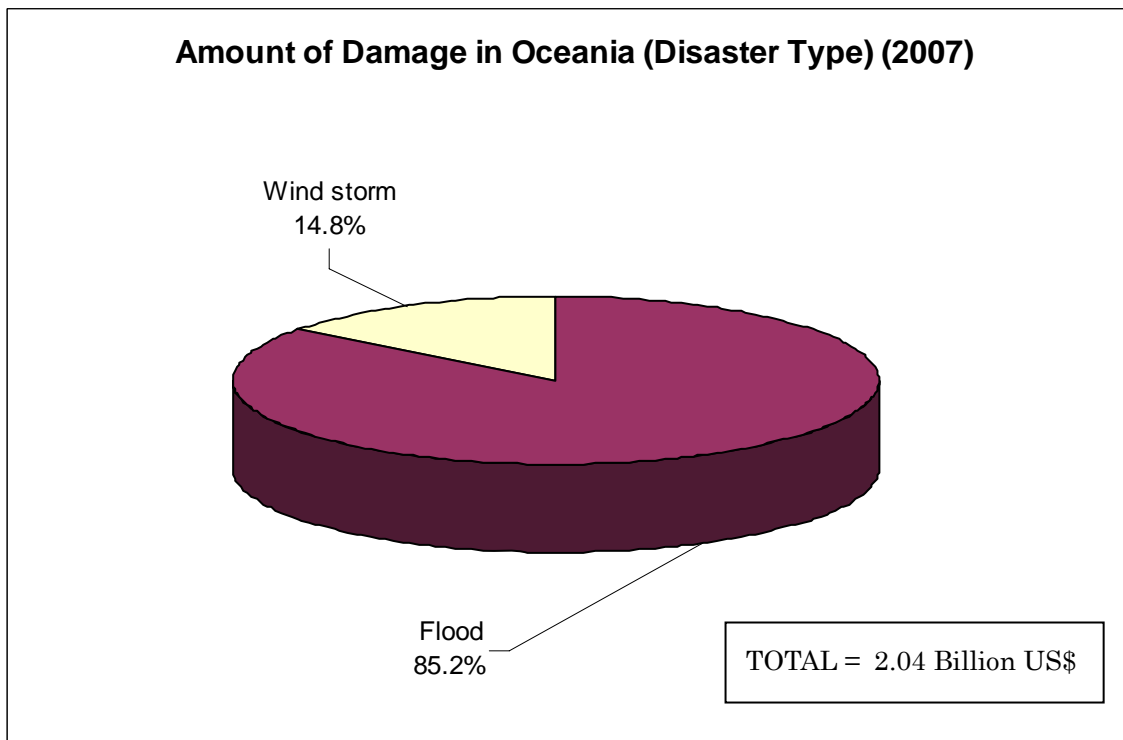
Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2007

Figure 52:



Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2007

Figure 53:



Source: CRED-EMDAT, Université Catholique de Louvain, Brussels, Belgium, 2007

This section summarizes worldwide natural disaster patterns by region. Tables 2B and 3B in Chapter 1 also provide these figures in a tabulated form. Regions all over the world, including Oceania, experienced both hydro-meteorological and geo-physical disasters in 2007. The most significant human and economic losses resulted from the floods and windstorms that hit India, Bangladesh, China, Australia, Papua New Guinea and many parts of Europe, earthquake and tsunami that hit Japan and Solomon Islands, and wildfires that hit USA respectively. Droughts and floods along with epidemic made havoc in Africa. The data shown here clearly demonstrates that Asia is a disaster-prone region of the world that sustains considerable levels of human losses and suffering. The most severe disasters of 2007, such as earthquake in Japan; floods in China; windstorms and floods in India and Bangladesh, occurred in the Asian region. Natural disasters deprive the affected populations of the benefits of socio-economic development, and hinder progress toward sustainable economic development - in disaster-prone regions and all over the globe. This is once again evident from this chapter.