Centre for Research on the Epidemiology of Disasters
CRED

World Health Organization

UCL
Université catholique de Louvain

Annual Disaster Statistical Review 2009

The numbers and trends

Femke Vos - Jose Rodriguez - Regina Below - D. Guha-Sapir

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About CRED

The Centre for Research on the Epidemiology of Disasters (CRED) has been active for more than 30 years in the fields of international disaster and conflict health studies, with research and training activities linking relief, rehabilitation and development. It was established in Brussels in 1973 at the School of Public Health of the Catholic University of Louvain (UCL) as a non-profit institution with international status under Belgian law. In 1980, CRED became a World Health Organization (WHO) collaborating centre as part of WHO's Global Program for Emergency Preparedness and Response. Since then, CRED has increased its international network substantially and collaborates closely with numerous UN agencies, inter-governmental and governmental institutions, non–governmental organizations, research institutes and universities.

Objective

The Centre promotes research and provides an evidence base to the international community on the burden of disease and related health issues due to disasters and conflicts, in order to improve preparedness and responses to these humanitarian emergencies. CRED trains field managers, students, relief personnel and health professionals in the management of short and long-term humanitarian emergencies.

CRED's focus

CRED's research focuses on all humanitarian and emergency situations with a major impact on human health. These include all types of natural and human-made disasters, such as earthquakes, floods and storms; longer-term disasters such as famines and droughts; and situations creating mass displacement of people such as civil strife and conflicts.

The Centre focuses on health aspects and the burden of disease arising from disasters and complex emergencies. CRED also promotes research on broader aspects of humanitarian crises, such as human rights and humanitarian law, socio-economic and environmental issues, early warning systems, the special needs of women and children, and mental health care.

The Centre is actively involved in stimulating debate on the effectiveness of various humanitarian interventions. It encourages scientific and policy discussions on existing and potential interventions and their impacts on acute and chronic malnutrition, human survival, morbidity, infectious diseases and mental health.

The CRED team works in four main areas:

- Natural disasters and their impacts
- Civil strife and conflict epidemiology
- Database and information support
- Capacity building and training

The CRED team

The Centre is composed of a multinational and multidisciplinary team that includes experts in medicine and public health, informatics and database management, psychology, nutritional sciences, sociology, economics and geography. The working languages are English and French.

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Executive Summary

In 2009, 335 natural disasters[1] were reported worldwide. They killed 10 655 persons, affected more than 119 million others and caused over US$ 41.3 billion economic damages. The absence of natural disasters with an extremely large human impact in 2009, so-called 'mega-disasters', was reflected by a decreased number of reported deaths, victims and economic damages, compared to the annual averages for the period 2000-2008.

Asia experienced in 2009 once again the largest share in reported natural disaster occurrence (40.3%), accounted for 89.1% of global reported natural disaster victims and 38.5% of total reported economic damages from natural disasters. The Americas accounted in 2009 for 21.8% of total reported natural disaster occurrence and for 32.1% of total reported economic damages from natural disasters, but only for 4.8% of total reported natural disaster victims.

The highest number of reported deaths was due to the earthquake in Sumatra, Indonesia on September 30th. This earthquake left 1 117 persons killed and over 2.5 million others affected. The most victims in 2009 were caused by floods in July in Southern and Central China, affecting 39.4 million people. Winter storm 'Klaus', which hit France, Spain and Italy in January 2009, caused the most important economic damages of the year (US$ 5.1 billion). The ten most important disasters in terms of people killed, victims and economic damages accounted for 52.1%, 82.8% and 54.4% of the 2009 total, respectively. From the 111 countries that were affected by natural disasters in 2009, 18 countries accounted for 79.0%, 95.1% and 86.7% of the overall reported number of deaths, victims and economic damages. This reflects the unequal distribution of the burden that natural disasters bring upon human society.

The upward trend in disaster occurrence seen over previous years has stabilized in 2009. The number of reported natural disasters in 2009 dropped compared to 2008 (350), and also remained below the annual average disaster occurrence of 392 disasters during the period 2000-2008. The decrease in reported natural disaster occurrence was mainly due to a lower number of reported meteorological disasters in 2009 (85) compared to the annual average number of meteorological disasters from 2000 to 2008 (108). A decrease in occurrence was also seen for hydrological, geophysical and climatological disasters. All continents, except Africa for which an equal number of natural disasters was reported, experienced a decrease in the number of reported natural disasters compared to the annual average disaster occurrence during 2000-2008.

In general, a high variation exists in the reported number of deaths and victims from one year to the next. This is mostly due to single disaster events that cause a tremendous human impact, such as the drought in India in 2002 (300 million victims), the Indian Ocean tsunami in 2004 (226 408 deaths in 12 countries), or cyclone 'Nargis' in Myanmar in 2008 (138 366 deaths). Therefore, it is difficult to identify a clear trend over time.

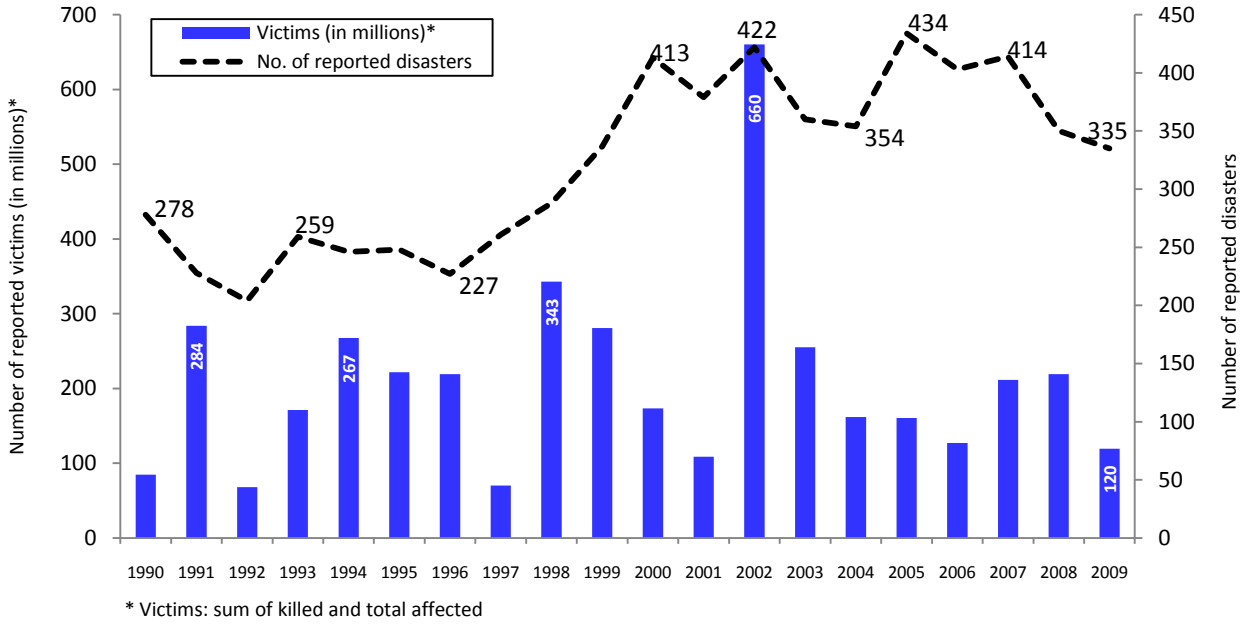
Hydrological disasters remained the most common disasters in 2009, accounting for 53.7% of total reported natural disaster occurrence, followed by meteorological disasters (25.4%). The number of victims from meteorological disasters in 2009 (50.6 million) was higher than the annual average for the period 2000-2008 (38.8 million). This was mostly due to typhoon

[1] Biological disasters are not included in this paper.

'Morakot' (Kiko) that hit Taiwan, China and the Philippines, typhoon 'Pepeng' (Parma) and tropical storm 'Ondoy' (Ketsana), mainly in the Philippines and Vietnam, cyclone 'Aila' in Bangladesh and India, and a major snowstorm in China. The impact of climatological disasters remained relatively small in 2009 compared to previous years. In 2009, geophysical disasters accounted for 2.7% of reported natural disaster victims worldwide, which is below the reported annual average of 3.9% for the period 2000-2008. The difference is even greater compared to 2008, when 21.7% of total natural disaster victims were caused by geophysical disasters, mainly due to the Sichuan earthquake in China. From 2000 to 2008, earthquakes accounted for 58.7% of fatalities from global natural disasters. In 2009, this was only 17%, whereas floods accounted for 32.4% and storms for 31.0% of total fatalities.

Countries need to be better prepared for the destructive impact of natural disasters. Although the natural disaster impact on human society in 2009 was relatively small compared to previous years, the consequences were critical to many families who lost their loved ones and livelihoods. Underlying factors and preconditions that make human populations vulnerable to disasters need to be addressed in order to mitigate impacts and create resilient and sustainable societies.

Figure 1 – Trends in occurrence and victims



* Victims: sum of killed and total affected

Download Figure 1

Chapter 1

About EM-DAT: The International Disaster Database

- What is EM-DAT?
- Data definitions, criteria and content
- Methodology
- Disaster classification

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1. About EM-DAT: the International Disaster Database

1.1 What is EM-DAT?

Since 1988, with the sponsorship of the United States Agency for International Development's Office of Foreign Disaster Assistance (USAID/OFDA), CRED has maintained EM-DAT, a worldwide database on disasters. It contains essential core data on the occurrence and impacts of more than 18 000 disasters in the world dating from 1900 to the present. The database is compiled from various sources, including UN agencies, non-governmental organizations, insurance companies, research institutes and press agencies. Priority is given to data from UN agencies, followed by OFDA, governments and the International Federation of Red Cross and Red Crescent Societies. This prioritization is not only a reflection of the quality or value of the data, but it also reflects the fact that most reporting sources do not cover all disasters or have political limitations that can affect the figures. The entries are constantly reviewed for redundancy, inconsistencies and incompleteness. The database's main objectives are to assist humanitarian action at both national and international levels; to rationalize decision-making for disaster preparedness; and to provide an objective basis for vulnerability assessment and priority setting.

1.2 Data definitions, criteria and content

CRED defines a disaster as "a situation or event which overwhelms local capacity, necessitating a request to a national or international level for external assistance; an unforeseen and often sudden event that causes great damage, destruction and human suffering". Table 1 shows the definitions of natural disaster subgroups and their main types. For a disaster to be entered into the database, at least one of the following criteria must be fulfilled:

- 10 or more people reported killed;
- 100 or more people reported affected;
- declaration of a state of emergency;
- call for international assistance.

Table 1 – Disaster sub-group definition and classification

Disaster Subgroup	Definition	Disaster Main Type
Geophysical	Events originating from solid earth	Earthquake, Volcano, Mass Movement (dry)
Meteorological	Events caused by short-lived/small to meso scale atmospheric processes (in the spectrum from minutes to days)	Storm
Hydrological	Events caused by deviations in the normal water cycle and/or overflow of bodies of water caused by wind set-up	Flood, Mass Movement (wet)
Climatological	Events caused by long-lived/meso to macro scale processes (in the spectrum from intra-seasonal to multi-decadal climate variability)	Extreme Temperature, Drought, Wildfire
Biological	Disaster caused by the exposure of living organisms to germs and toxic substances	Epidemic, Insect Infestation, Animal Stampede

EM-DAT includes the following fields:

DISNO:	Unique disaster number for each disaster event (8 digits: 4 digits for the year and 4 digits for the disaster number – for example, 19950324).
Country:	Country (ies) in which the disaster occurred.
Disaster generic group:	Two groups are distinguished in EM-DAT – natural and technological disasters.
Disaster sub-group:	Five sub-groups of natural disasters have been defined: geophysical, meteorological, hydrological, climatological and biological[2].
Disaster main type and sub-type:	Description of the disaster according to a pre-defined classification (for example, type: flood; sub-type: flash flood).
Date (start and end):	Date when the disaster occurred and ended (month/day/year).
Killed:	Number of people confirmed dead and number missing and presumed dead.
Injured:	Number of people suffering from physical injuries, trauma or an illness requiring immediate medical treatment as a direct result of a disaster.
Homeless:	Number of people needing immediate assistance for shelter.
Affected:	Number of people requiring immediate assistance during a period of emergency; this may include displaced or evacuated people.
Total affected:	Sum of injured, homeless and affected.
Victims:	Sum of killed and total affected.
Estimated damage:	Global figure of the economic impact of a disaster; it is given in US dollars.
Additional fields:	Other geographical information (such as latitude and longitude, location), value and scale of the events (such as the Richter scale value for an earthquake), the international status (OFDA response, request for international assistance, disaster/emergency declaration), the aid contribution (in US dollars), and the different sectors affected.

[2] Biological disasters are not included in this publication.

1.3 Methodology

In EM-DAT and in this report, data are considered at the country level. This is for two reasons: first, it is at this level that they are usually reported; and second, it allows the aggregation and disaggregation of data. In order to facilitate the comparison over time for the analyses of this report, the event start date has been used as the disaster reference date.

The number of people killed includes those confirmed dead and those missing and presumed dead. People affected are those requiring immediate assistance during a period of emergency (e.g. requiring basic survival assistance such as food, water, shelter, sanitation and immediate medical help). People reported injured or homeless are aggregated with those affected to produce the total number of people affected. In this report, the number of victims is used as a measure of the human impact of a disaster. The number of victims is equal to the sum of persons reported killed and total number of persons reported affected.

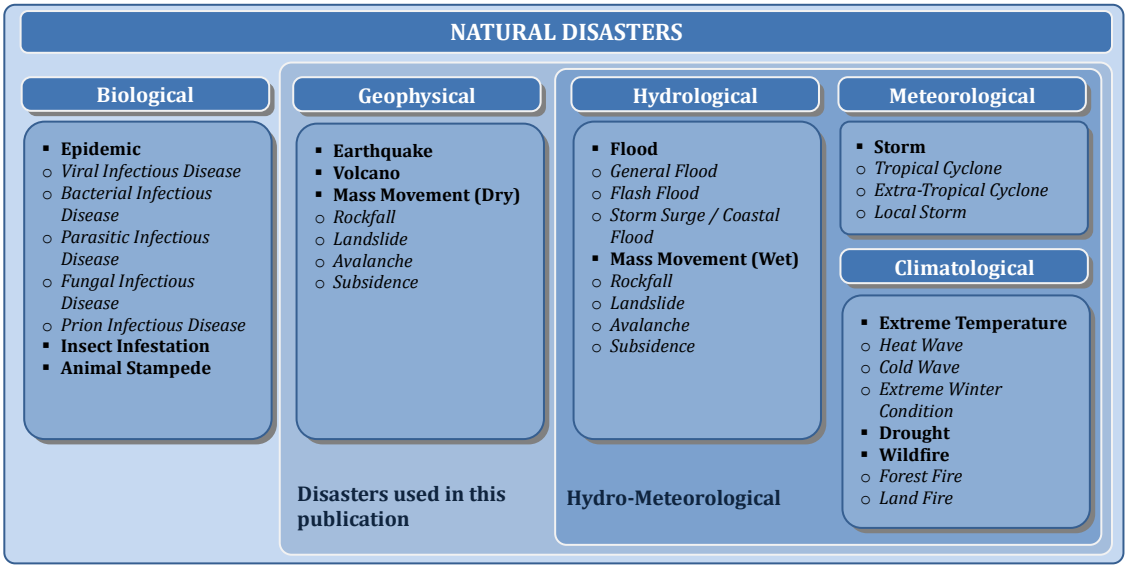
The economic impact of a disaster usually consists of direct consequences on the local economy (e.g. damage to infrastructure, crops, housing) and indirect consequences (e.g. loss of revenues, unemployment, market destabilization). In EM-DAT, the registered figure corresponds to the value of the immediate damage at the time of the event and usually only to the direct damage, expressed in US dollars.

The CRED/EM-DAT team continuously strives to improve its data reporting methodologies and the EM-DAT database as a whole.

1.4 Disaster classification

EM-DAT distinguishes two generic categories for disasters (natural and technological), the natural disaster category is divided into 5 sub-groups, which in turn cover 12 disaster types and more than 30 sub-types (Figure 2). See http://www.emdat.be/classification for complete classification and definitions.

Figure 2 – Natural disaster classification



Download Figure 2

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Chapter 2

What did 2009 bring?

- **Thematic frame: Storms in Europe and Asia**

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2. What did 2009 bring?

In 2009, the Philippines, China and the United States were most often hit by natural disasters (see Figure 3). As in previous years, these countries, together with India and Indonesia, occupied the top ranking of disaster occurrence. A total of 111 countries were affected by natural disasters in 2009. Eighteen countries, representing 79.0%, 95.1% and 86.7% of the total 2009 reported number of deaths, victims and economic damages, respectively, made up the top 10 rankings of 2009 (see Figures 4, 5 and 6). Eight out of these eighteen countries are located in Asia, representing 60.4%, 87.5% and 34.4% of the global reported number of deaths, victims and economic damages from natural disasters respectively, reflecting the unequal distribution of disaster impact throughout the globe.

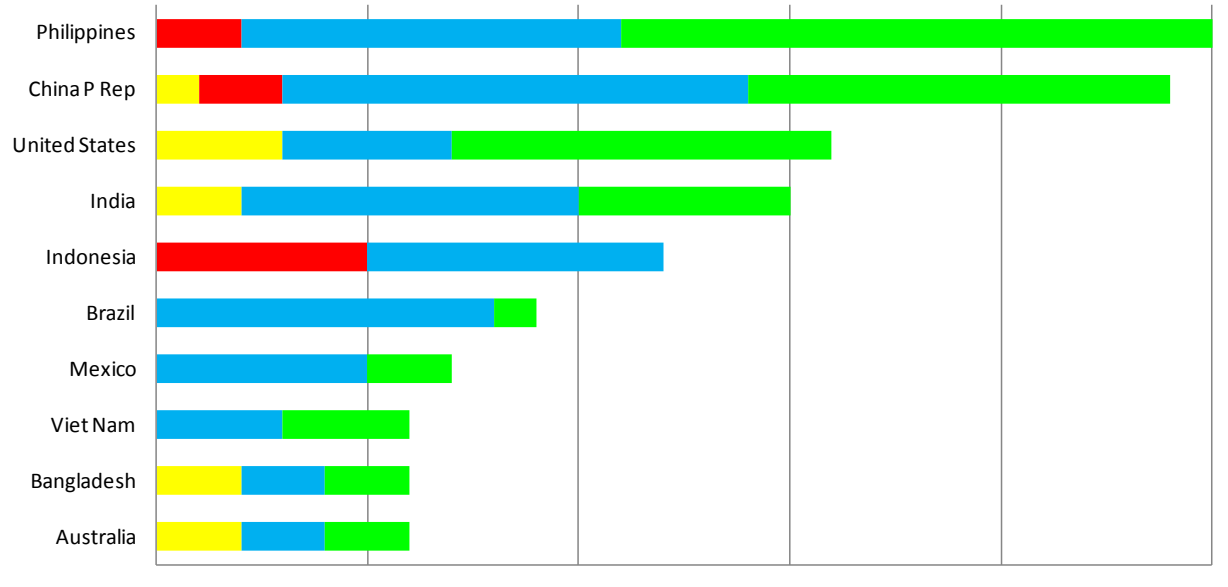
China alone reported 68.8 million victims (57.5% of the world's total), of which 39.4 million victims were caused by flooding and associated landslides in early July 2009. The Philippines also suffered immensely from natural disasters, as it was struck by two important disasters in 2009: tropical storm 'Ondoy' (Ketsana), which made 4.9 million victims including 501 deaths, and typhoon 'Pepeng' (Parma), which caused 4.5 million victims including 539 deaths. Typhoon 'Morakot' (Kiko) also affected the Philippines, causing over 94 thousand victims of which 26 died, but had a major impact on Taiwan and China. Taiwan saw 10% of its population – or a total of 2.3 million victims including 630 deaths - affected by typhoon 'Morakot' (Kiko).

Unlike 2008, no mega-disasters were reported in 2009. Nevertheless, the ten most important disasters accounted for 52.1%, 82.8% and 54.4% of total mortality, victims and economic damages respectively (see Tables 2, 3 and 4). The earthquake in Padang, Indonesia in September had the highest death toll of natural disasters in 2009, causing 1 117 deaths and over 2.5 million victims.

Climatological disasters, i.e. extreme temperatures, droughts and wildfires, also had a great human impact in 2009. A cold wave in Mongolia affected 19.3% of its population, and two droughts affected 18.3% and 10.4% of the population in Guatemala and Sudan, respectively.

The United States suffered the most economic damages from natural disasters in 2009, with a total of US$ 10.8 billion reported damages. These costs were mostly due to storms accounting for US$ 8.9 billion. Besides the United States, no countries from the Americas appear in the country top 10 ranking of economic damages in absolute numbers. However, when the economic damages are compared to the countries' GDP, El Salvador, Honduras and Costa Rica rank high in this list. Damages due to natural disasters accounted respectively for 4.4%, 0.7% and 0.7% of their GDP. Important economic damages in Europe were caused by winter storm 'Klaus', which affected France, Spain and Italy in January (US$ 5.1 billion), the L'Aquila earthquake in Italy in April (US$ 2.5 billion) and a thunderstorm in July (US$ 1.6 billion) causing damages in Switzerland, Austria and Germany. The Asian countries present in the top 10 (Table 4), Indonesia, India, China, Taiwan and the Philippines, accounted for 80.8% of economic damages in the continent and for 27.8% of global economic damages in 2009. Damages in the Lao People's Democratic Republic, Mongolia and Viet Nam amounted to 1.9%, 1.2% and 1.2% of the countries' GDP respectively. In Oceania, Samoa and Tonga suffered greatly from damages representing respectively 28.7% and 3.6% of GDP. Wildfires that affected Australia in February, although not reaching the top 10, caused major damages in the country (US$ 1.3 billion).

Figure 3 – Top 10 countries by number of reported events in 2009



	Philippines	China P Rep	United States	India	Indonesia	Brazil	Mexico	Australia	Bangladesh	Viet Nam	Total
Climatological	0	1	3	2	0	0	0	2	2	0	10
Geophysical	2	2	0	0	5	0	0	0	0	0	9
Hydrological	9	11	4	8	7	8	5	2	2	3	59
Meteorological	14	10	9	5	0	1	2	2	2	3	48
Total	25	24	16	15	12	9	7	6	6	6	126

Download Figure 3

Figure 4 – Top 10 countries in terms of disaster mortality in 2009 and distributed by disaster type

Country	Disaster distribution	No. of deaths	Country	Disaster distribution	Deaths per 100 000
India		1 806	**Samoa**		81.5
Indonesia		1 407	**American Samoa**		51.4
Philippines		1 334	**Tonga**		8.7
Taiwan		630	**El Salvador**		4.5
China P Rep		591	**Namibia**		4.4
Australia		535	**Solomon Is**		4.1
Peru		419	**Bhutan**		3.3
Viet Nam		356	**Taiwan**		2.7
Italy		335	**Australia**		2.5
El Salvador		275	**Sierra Leone**		1.9

Download Figure 4

Figure 5 – Top 10 countries by victims in 2009 and distributed by disaster type

Country	Disaster distribution	No.victims (millions)	Country	Disaster distribution	Victims/ pop. (%)
China P Rep		68.8	Mongolia		19.7
Philippines		13.4	Guatemala		18.4
India		9.0	Namibia		16.6
Bangladesh		4.6	Philippines		14.8
Sudan		4.4	Sudan		10.7
Viet Nam		3.7	Taiwan (China)		10.0
Indonesia		2.9	China P Rep		5.3
Guatemala		2.5	Zambia		4.9
Taiwan (China)		2.3	Viet Nam		4.3
Brazil		1.9	Honduras		4.1

Download Figure 5

Figure 6 – Top 10 countries by damages in 2009 and distributed by disaster type

Country	Disaster distribution	Damages (US$ Bn.)	Country	Disaster distribution	% of GDP
United States		10.8	Samoa		28.7
China P Rep		5.2	El Salvador		4.4
France		3.2	Tonga		3.6
India		2.7	Lao P Dem Rep		1.9
Italy		2.6	Burkina Faso		1.9
Indonesia		2.4	Fiji		1.6
Spain		1.9	Mongolia		1.2
Australia		1.5	Viet Nam		1.2
Japan		1.4	Honduras		0.7
Viet Nam		1.1	Costa Rica		0.7

Download Figure 6

Table 2 – Top 10 most important disasters by number of persons killed

Events	Country	Persons killed
Earthquake, September	Indonesia	1 117
Flood, July-September	India	992
Tropical storm 'Ondoy' (Ketsana), September-October	Philippines, Viet Nam, Cambodia, Lao P Dem Rep*	716
Typhoon 'Morakot' (Kiko), August	Taiwan, Philippines, China P Rep**	664
Typhoon 'Pepeng' (Parma), October	Philippines, China P Rep, Viet Nam***	542
Heat wave, January-February	Australia	347
Flood, September-October	India	300
Cyclone 'Aila', May	Bangladesh, India, Bhutan****	298
Earthquake, April	Italy	295
Hurricane 'Ida', November	El Salvador, United States, Mexico, Nicaragua*****	281
	Total	**5 552**

*Philippines (501), Viet Nam (182), Cambodia (17), Lao P Dem Rep (16)
**Taiwan (630), Philippines (26), China P Rep (8)
***Philippines (539), China P Rep (3), Viet Nam (0)
****Bangladesh (190), India (96), Bhutan (12)
*****El Salvador (275), United States (6), Mexico (0), Nicaragua (0)

Table 3 – Top 10 most important disasters by number of victims

Events	Country	Victims (in millions)
Flood, July	China P Rep	39.4
Typhoon 'Morakot' (Kiko), August	China P Rep, Taiwan, Philippines*	13.4
Snowstorm, November	China P Rep	10.0
Cyclone 'Aila', May	India, Bangladesh, Bhutan**	9.0
Tropical storm 'Ondoy' (Ketsana), September-October	Philippines, Viet Nam, Cambodia, Lao P Dem Rep***	7.7
Flood, April-June	China P Rep	5.6
Typhoon 'Pepeng' (Parma), October	Philippines, China P Rep, Viet Nam****	4.5
Drought, '09-'10	Sudan	4.3
Drought, '09-'10	Guatemala, Ecuador, El Salvador, Venezuela*****	2.6
Earthquake, September	Indonesia	2.5
	Total	**99.0**

*China P Rep (11.0 million), Taiwan (2.3 million), Philippines (94 255)
**India (5.1 million), Bangladesh (3.9 million), Bhutan (12)
***Philippines (4.9 million), Viet Nam (2.5 million), Cambodia (178 108), Lao P Dem Rep (128 903)
****Philippines (4.5 million), China P Rep (3), Viet Nam (0)
*****Guatemala (2.5 million), Ecuador (107 500), El Salvador (0), Venezuela (0)

Table 4 – Top 10 most important disasters by economic damages

Events	Country	Damages (in 2009 US$ bn)
Winter storm 'Klaus', January	France, Spain, Italy*	5.1
Earthquake, April	Italy	2.5
Tornado, February	United States	2.5
Earthquake, September	Indonesia	2.2
Flood, September-October	India	2.2
Tornado, June	United States	2.0
Tornado, April	United States	1.7
Typhoon 'Morakot' (Kiko), August	China P Rep, Taiwan, Philippines**	1.7
Thunderstorm, July	Switzerland, Austria, Germany, Poland, Czech Rep***	1.6
Hurricane 'Ida', November	El Salvador, United States, Mexico, Nicaragua****	1.5
	Total	**23.0**

*France (3.2), Spain (1.9), Italy (0)
**China P Rep (1.4), Taiwan (0.3), Philippines (0.025)
***Switzerland (1), Austria (0.5), Germany (0.05), Poland (0), Czech Rep (0)
****El Salvador (0.9), United States (0.6), Mexico (0), Nicaragua (0)

Thematic Frame: Storms in Europe and Asia

Photo credit: fredpanassac on Flickr

Although Winterstorm Kyrill, which hit a large part of northern Europe in 2007, was described by German experts as "once in a decade", Winterstorm Klaus struck European countries only two years after. This time, Klaus affected Southwest European countries such as France, Spain, and Italy.

Winterstorms like these usually move over the North coast of the United Kingdom, towards Norway, but can veer south to affect other Western European countries, generating hurricane-force winds up to cyclone category 4, as was the case with winterstorm Lothar in 1999. Kyrill (US$ 9.3 billion), Erwin (US$ 6.2 billion) and Klaus (US$ 5.1 billion) were the most damaging storms since Lothar (US$ 14.6 billion), not in human impact but in terms of economic losses.

Could the relatively small human impact of these more recent storms be related to the alert systems put in place? Since the impact of the Great Storm in 1987, European meteorological centres have improved forecast models and France has put in place an alert system based on these models.

In 2007, 21 countries launched an official website, called Meteoalarm (*www.meteoalarm.eu*), to warn the public about severe weather across Europe. According to Meteoalarm, "Our climate is changing and extreme weather is likely to occur more frequently, increasing danger to life and damage to property." It is why more than 30 European countries now work through the public European weather service network within the World Meteorological Organization.

"Storms, floods and heat waves are major threats to Europe, and it is urgent to invest in disaster risk reduction policies to adapt to climate change. These investments are the best governments can make to protect their most vulnerable populations and avoid huge economic losses in the future" says Margareta Wahlström, the Special Representative of the Secretary-General for Disaster Risk Reduction. Progress in monitoring, forecasting and warning of climate-related hazards, linked to effective emergency preparedness and response on the ground, can save lives.

In contrast, the Philippines and Taiwan are still suffering a strong human impact due to severe weather. In the Philippines, typhoon Parma in 2009 reached the far Northern province of Cagayan and a week after typhoon Ketsana (also known as Ondoy) inundated Manila, the capital. The two typhoons killed 1 040 people in the Philippines and affected 9.4 million others. The UN Office for the Coordination of Humanitarian Affairs reported that nearly 870 000 people were living in more than 720 evacuation shelters at this time. After wreaking havoc in the Philippines, typhoon Ketsana moved into Viet Nam. Due to the successful early warning of the impending storm, however, approximately 200 000 people were evacuated by national emergency services.

Photo credit: Storm Crypt on Flickr

"Early warning saves lives," said UN Development Programme (UNDP) Administrator Helen Clark in Bangkok. "With the increasing impact of climate change, this area of our work will need to grow in order to help those most vulnerable to disasters," she added. United Nations agencies are mobilizing to provide longer-term recovery aid to a raft of countries in Asia and the Pacific, where a relentless barrage of tropical storms, earthquakes and tsunamis have affected the lives of millions of people in 2009.

The Philippines were struck by 25 disasters in 2009, as reported by EM-DAT.

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Chapter 3

How different was 2009?

- **Thematic frame: Destructive earthquakes in 2009**

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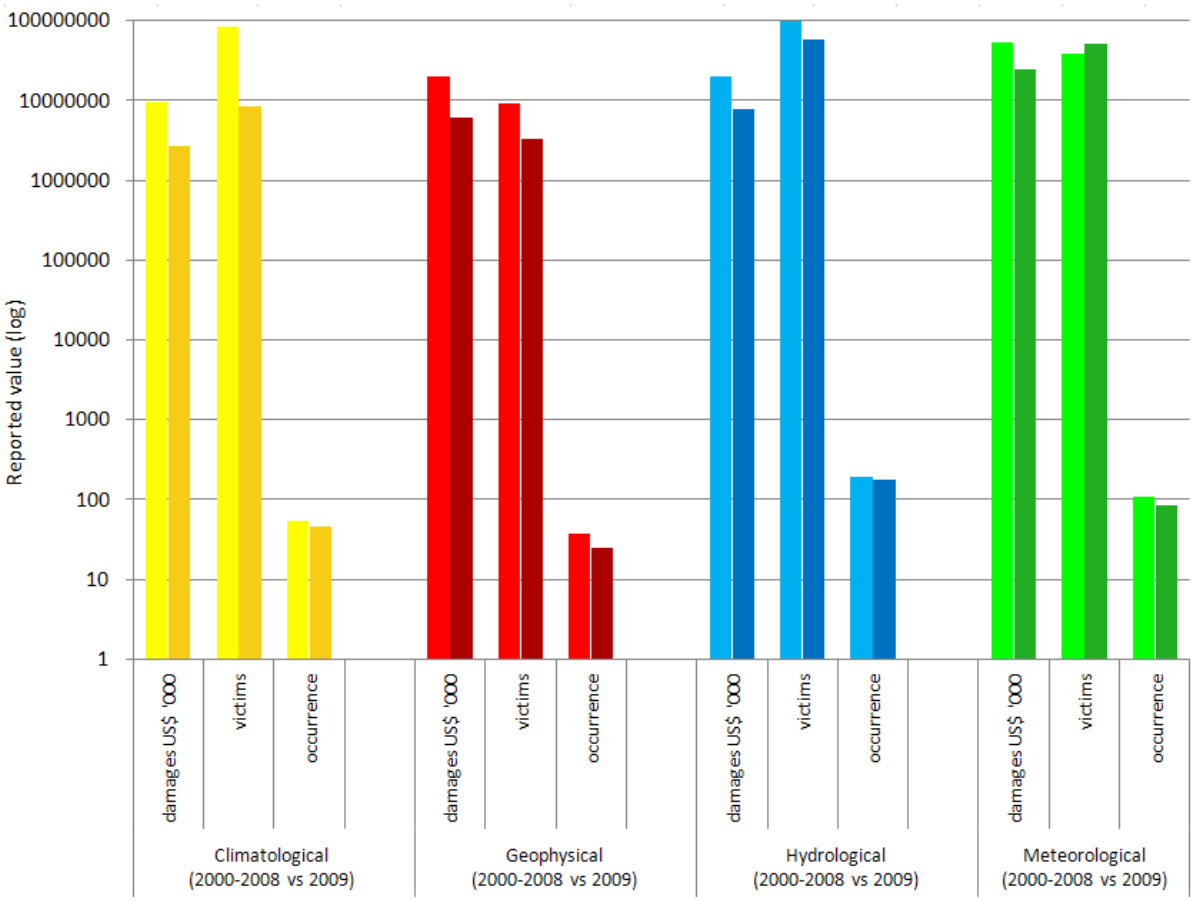
3. How different was 2009?

The trend in disaster impact on society is strongly influenced by single major events with exceptional human impacts. These events lead to a high variation in disaster impact figures from one year to the next. Although 2009 was a year with relatively less human and economic impacts, compared to previous years, it is difficult to identify clear trends over time. For example, in 2007 there were 16 940 people reported killed by natural disasters. In May 2008 cyclone 'Nargis' hit Myanmar and killed 138 366 people, increasing the total reported number of killed people in 2008 to 235 272. In 2009, the reported number of deaths was 10 655.

The upward trend in natural disaster occurrence seen over previous years has stabilized in 2009. The number of natural disasters in 2009 (335) dropped compared to 2008 (350), and also remained far below the annual average occurrence of 392 disasters during the period 2000-2008. Hydrological (floods and wet mass movements) and meteorological (storms) disasters took the largest share in natural disaster occurrence in 2009 (79%). The share of these disasters was smaller than a share of 82.6% in 2008, but greater than the average share of the period 2000-2008 of 76.8%. In the absence of mega-disasters, economic damages in 2009 (US$ 41.3 billion) were less than a quarter of the damage costs in 2008 (US$ 189.2 billion), and also remained far below the annual average economic damages for the period 2000-2008 (US$ 102.6 billion).

Figure 7 – Natural disasters impacts by disaster sub-group: 2009 versus 2000-2008 annual average



Download Figure 7

Hydrological disasters remained the most common disasters in 2009, accounting for over 53% of total natural disaster occurrence. A total of 180 hydrological disasters (82.8% floods and 17.2% wet mass movements) caused over 57.3 million victims in 2009. The number of victims increased by 27.4% compared to 2008, however remained far below the 2000-2008 annual average of 99.2 million (see figure 7). The economic damages from hydrological disasters were lower than in previous years, and accounted for 19.1% of the economic damages from natural disasters worldwide in 2009.

Meteorological disasters also caused a tremendous human impact this year, mainly due to typhoons 'Morakot' (Kiko) and 'Pepeng' (Parma), tropical storm 'Ondoy' (Ketsana), cyclone 'Aila' and a major snowstorm, which all happened in Asia. The number of victims from meteorological disasters in 2009 increased by 220% compared to 2008. Although less pronounced, the number of victims from meteorological disasters in 2009 was also higher than the 2000-2008 annual average. Meteorological disasters accounted for 59.7% of total economic damages from natural disasters in 2009, above the annual average of 52.3 % for the period 2000-2008.

Although the number of reported **climatological** disasters in 2009 was higher than in 2008, the number remained below the annual average occurrence for the period 2000-2008. The human impact from climatological disasters (8.4 million victims) was particularly low in 2009, as were the reported economic damages from climatological disasters (US$ 2.7 billion). Although droughts and extreme temperature affected several countries in 2009, their impact remained relatively small compared to previous years, for example to 2002 when extended droughts in India and in China affected 360 million people, or to 2008 when extreme winter conditions affected 77 million people in China.

In 2009 there were only 25 **geophysical** disasters reported, much less than the 2000-2008 annual average of 37. Eighteen out of these were earthquakes, 4 tsunamis, 2 volcanic eruptions and one a landslide. The unusually low geophysical disaster occurrence in 2009 was reflected by a decrease in human and economic impacts from these disasters. In 2009, geophysical disasters accounted for 2.7% of natural disaster victims worldwide, which is below the annual average of 3.9% for the period 2000-2008. Likewise, economic damages from geophysical disasters accounted for 14.7% of global damages costs from natural disasters in 2009, which is below the annual average of 19.2% for the period 2000-2008. The differences are even greater compared to 2008, when 21.7% of total natural disaster victims and 45.0% of total damage costs were caused by geophysical disasters, mainly due to the Sichuan earthquake in China.

From 2000 to 2008, earthquakes accounted for 58.7% of fatalities from global natural disasters. In 2009, this was only 17.0%. The annual impact of geophysical disasters relies on the occurrence of major events, such as the Sichuan earthquake in China in 2008 or the earthquake in Haiti in 2010.

Thematic Frame: Destructive earthquakes in 2009

Photo credit: United Nations Development Programme on Flickr

On September 30th 2009, a powerful earthquake struck the Southern coast of Sumatra, Indonesia, killing 1 117 people. Sumatra is located along the dangerous Alpide Belt, which extends from Java to Sumatra through the Himalayas, the Mediterranean, to the Atlantic. This is the second most seismic region in the world where more than 15 percent of the world's largest earthquakes and potential disasters happen. The subduction* creates regular earthquakes, many of them of the mega thrust type. Specifically, the Sumatran segment is currently experiencing a period of increased activity that began with the catastrophic 2004 Indian Ocean earthquake.

In the recent earthquake, around 2.5 million people were affected and more than 135 thousand houses were seriously damaged. Padang Pariaman regency (a political subdivision of a province in Indonesia), along with Padang town and Pariaman regency, were the hardest hit by the earthquake. Indonesia is one of the most earthquake-prone nations in the world. As Gamawan Fauzi, governor of the province, said "West Sumatra is a supermarket for disasters, earthquakes and tsunamis". Geologists say that Padang could suffer a major earthquake that could trigger a tsunami capable of wiping out the entire city. However, this event shows again, how poor construction standards in seismically vulnerable regions are a threat to be prevented. Many schools, shops, hotels and government offices collapsed during the September 30th 2009 earthquake.

Rules exist that buildings must be constructed by certified entities, but enforcement has been "less than strict" said Firman Dalil, head of West Sumatra's Building and Environmental Management Department. "Nationally, there's a regulation on quake-proof construction, but in West Sumatra the bar will be set higher," he said. In addition to earthquake-resistant construction, Brian Tucker, president of Geo Hazards International, says "the city should take additional measures: move schools, hospitals and other essential buildings outside the high-risk area, make sure there are adequate roads to quickly evacuate the city, and build a number of tall structures in the city that can provide shelter from the waves".

In Europe, the 6.3-magnitude quake that struck L'Aquila, Italy on April 6th 2009 is a confirmation, once again, that Europe is not immune to powerful earthquakes. This earthquake produced an important human and economic toll, with 295 people reported killed and US$ 2.5 billion of losses. Around 24 major earthquakes have struck Italy in the past 40 years (some with a magnitude of 6.9 or more), killing more than 6 000 people and affecting over 800 000 others.

When earthquakes strike, buildings are the main killers. More than 10 000 buildings were destroyed or damaged by the L'Aquila earthquake, principally in the medieval city as many old structures did not meet modern seismic standards. Retrofitting old buildings is a very costly process, but using seismic standards to create new critical infrastructure such as schools and hospitals can play an important role in saving lives of society's most vulnerable during disasters. More than half of the world's population lives in cities or urban centres. The 20th century has seen massive migration and rapid urbanization. As many as a billion people now live in urban slums and in extreme poverty. More and more people are settling in potential danger zones, such as on unstable hills, volcanic flanks or earthquake faults, flood plains and coastal areas.

The United Nations International Strategy for Disaster Reduction is working with its partners to raise awareness and commitment for sustainable development practices that will reduce disaster risk and increase the wellbeing and safety of citizens - to invest today for a safer tomorrow. Building on previous campaigns focusing on education and the safety of schools and hospitals, ISDR partners are launching a new campaign in 2010: Making Cities Resilient. (*www.unisdr.org/campaign*)

* Subduction is the process of the oceanic lithosphere colliding with and descending beneath the continental lithosphere (USGS).

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Chapter 4

Regional analysis

- Africa
- Americas
- Asia
- Europe
- Oceania

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4. Regional analysis

In 2009, all continents except Africa, which experienced an equal amount of natural disasters, saw a decrease in the number of natural disasters compared to the annual average for the period 2000-2008 (see Table 5). Asia took once more the largest share in natural disaster occurrence (40.3%), followed by the Americas (21.8%) and Africa (19.1%).

Table 5 – Natural disaster occurrence and impacts: regional figures

No. of Natural Disasters	Africa	Americas	Asia	Europe	Oceania	Global
Climatological 2009	3	11	7	22	2	**45**
Avg. 2000-08	*9*	*13*	*13*	*17*	*1*	***54***
Geophysical 2009	2	3	14	2	4	**25**
Avg. 2000-08	*3*	*7*	*22*	*3*	*2*	***37***
Hydrological 2009	46	41	72	15	6	**180**
Avg. 2000-08	*42*	*39*	*81*	*26*	*5*	***194***
Meteorological 2009	13	18	42	9	3	**85**
Avg. 2000-08	*9*	*35*	*42*	*15*	*7*	***108***
Total 2009	**64**	**73**	**135**	**48**	**15**	**335**
Avg. 2000-08	***64***	***94***	***158***	***61***	***16***	***392***

No. victims (millions)	Africa	Americas	Asia	Europe	Oceania	Global
Climatological 2009	4.48	3.08	0.78	0.01	0.01	**8.37**
Avg. 2000-08	*11.19*	*1.02*	*71.38*	*0.29*	*0.00*	***83.89***
Geophysical 2009	0.02	0.18	3.00	0.06	0.01	**3.27**
Avg. 2000-08	*0.09*	*0.39*	*8.54*	*0.01*	*0.01*	***9.03***
Hydrological 2009	2.50	2.26	52.47	0.04	0.03	**57.29**
Avg. 2000-08	*2.31*	*2.94*	*93.51*	*0.37*	*0.02*	***99.15***
Meteorological 2009	0.16	0.23	50.18	0.00	0.02	**50.59**
Avg. 2000-08	*0.48*	*2.88*	*35.03*	*0.36*	*0.04*	***38.79***
Total 2009	**7.16**	**5.75**	**106.44**	**0.11**	**0.07**	**119.52**
Avg. 2000-08	***14.07***	***7.24***	***208.46***	***1.03***	***0.06***	***230.86***

Damages (2009 US$ bn)	Africa	Americas	Asia	Europe	Oceania	Global
Climatological 2009	0.00	1.23	0.06	0.12	1.30	**2.71**
Avg. 2000-08	*0.05*	*2.36*	*3.47*	*3.15*	*0.36*	***9.39***
Geophysical 2009	0.00	0.30	3.10	2.50	0.16	**6.06**
Avg. 2000-08	*0.73*	*0.72*	*17.90*	*0.31*	*0.00*	***19.67***
Hydrological 2009	0.15	1.33	5.23	0.97	0.19	**7.88**
Avg. 2000-08	*0.37*	*2.99*	*9.05*	*7.01*	*0.52*	***19.94***
Meteorological 2009	0.02	10.37	7.53	6.65	0.07	**24.64**
Avg. 2000-08	*0.08*	*39.93*	*10.30*	*3.01*	*0.31*	***53.63***
Total 2009	**0.17**	**13.23**	**15.91**	**10.24**	**1.73**	**41.28**
Avg. 2000-08	***1.23***	***45.99***	***40.72***	***13.49***	***1.19***	***102.63***

The unequal distribution of the human impact of natural disasters is reflected in the number of victims in Asia; 89.1% of global natural disasters victims in 2009 were in Asia, compared to 6.0% in Africa, 4.8% in the Americas, and 0.1% in both Europe and Oceania. Overall, the number of victims in 2009 decreased by 48.2% compared to the 2000-2008 annual average. This is mostly explained by the absence in 2009 of mega-disasters causing major human impact, such as extended droughts or highly destructive earthquakes.

In 2009 the proportion of economic damages from natural disasters was also highest in Asia (38.5%), followed by the Americas (32.1%) and Europe (24.8%). This profile is different from the profile of the 2000-2008 annual average, which showed that the Americas suffered the most economic damages. Africa accounts for only 0.4% of global economic damages from natural disasters in 2009, even below the 2000-2008 annual average of 1.2%.

Africa

Compared to the 2000-2008 annual average, Africa experienced an increase in the number of hydrological and meteorological disasters in 2009, but a decrease in the number of climatological and geophysical disasters. Although climatological disasters still accounted for most of the natural disaster victims in Africa (62.2%), the number of victims decreased in the absence of continuing droughts and famines that affected large populations in previous years. Hydrological disasters accounted for 86.7% of economic damages from natural disasters in Africa in 2009, which was an increase compared to the 2000-2008 annual average share of 29.9%. However, in absolute terms, hydrological disasters caused less economic damages in Africa in 2009 than on average during 2000-2008. For geophysical disasters, which accounted for 59.3% of economic damages on average in Africa during 2000-2008, no economic damages were reported in 2009. However, since economic damages from natural disasters in Africa are poorly reported, these figures can only be considered as underestimations.

Americas

In 2009, the Americas saw a decrease of 22.4% in the reported number of natural disasters, compared to the annual average disaster occurrence from 2000 to 2008, mostly due to a decrease in the number of meteorological disasters. Meteorological disasters, which accounted for 36.7% of disaster occurrence on average from 2000 to 2008, took only 24.7% in 2009. Although less natural disasters occurred in 2009, the number of hydrological disasters slightly increased compared to the annual average number of disasters during 2000-2008. In 2009, 56.2% of disasters were hydrological disasters. In contrast, it were the climatological disasters that caused the most victims in the Americas in 2009; more than half of all natural disasters victims were due to extreme temperatures, droughts and wildfires. A strong decrease in the number of victims from meteorological disasters was observed in 2009, compared to the annual average of 2000-2008. Although economic damages from meteorological disasters in the Americas decreased in 2009 compared to the 2000-2008 annual average, they were still the most costly disasters compared to other disaster types in 2009.

Asia

Asia experienced 14.4% less natural disasters in 2009, compared to the 2000-2008 average. This was mostly due to a drop in the number of geophysical and hydrological disasters. Hydrological disasters occurred most often in Asia in 2009 (53.3% of total disaster occurrence), followed by meteorological disasters (31.1%). Whereas most victims in Asia were caused by hydrological disasters (49.3%) in 2009, the number of victims from meteorological disasters showed the biggest increase, from 35.0 million (16.8%) on average per year during 2000-2008 to 50.2 million (47.1%) in 2009. In the absence of long-lasting and extensive droughts affecting many people, as was seen in previous years, the number of victims from climatological disasters in Asia dropped in 2009 from 71.4 million (34.2%) on average per year during 2000-2008 to 0.8 million (0.7%) in 2009. Economic damages from natural disasters in Asia decreased in 2009, mostly due to a decrease in damages from geophysical disasters, compared to the annual average damage during 2000-2008.

Europe

Compared to the annual average number of natural disasters during 2000-2008, a decrease of 20.9% in disaster occurrence in Europe was seen in 2009. Less hydrological and meteorological disasters occurred, but the number of climatological events slightly increased, making 1 out of every 2.2 disasters in 2009 of climatological origin. Most victims were caused by geophysical disasters (50.9%), in particular the L'Aquila earthquake on April 6, 2009, followed by hydrological disasters (37.9%). Meteorological disasters caused fewer victims in 2009 than in previous years. However, meteorological events were responsible for most economic damages in Europe in 2009 and increased damages from meteorological disasters were reported compared to the annual average during 2000-2008, mostly due to winter storm Klaus that affected France, Spain and Italy in January 2009.

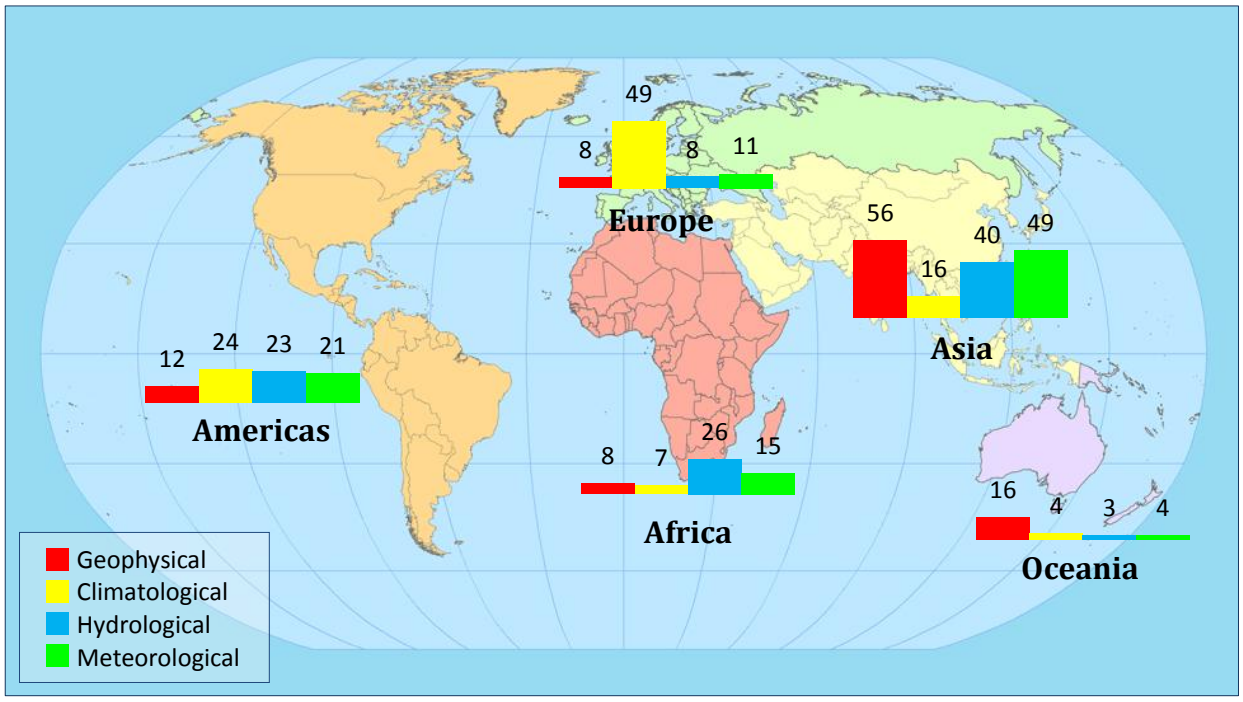
Oceania

Hydrological disasters occurred most often and caused the most victims in Oceania in 2009. This region, in the past years frequently hit by meteorological disasters, was in 2009 less affected by these disasters. Whereas 60.1% of the total number of reported victims from natural disasters in Oceania during 2000-2008 was caused by meteorological disasters, this percentage decreased to 28.0% in 2009. On the other hand, hydrological disasters accounted for 25.9% of total disaster victims during 2000-2008, and for 40.4% of total disaster victims in Oceania in 2009. The costliest disasters in Oceania in 2009 were climatological disasters, more specifically the wildfires that affected Australia in February 2009 that accounted for 75.3% of total damages in Oceania.

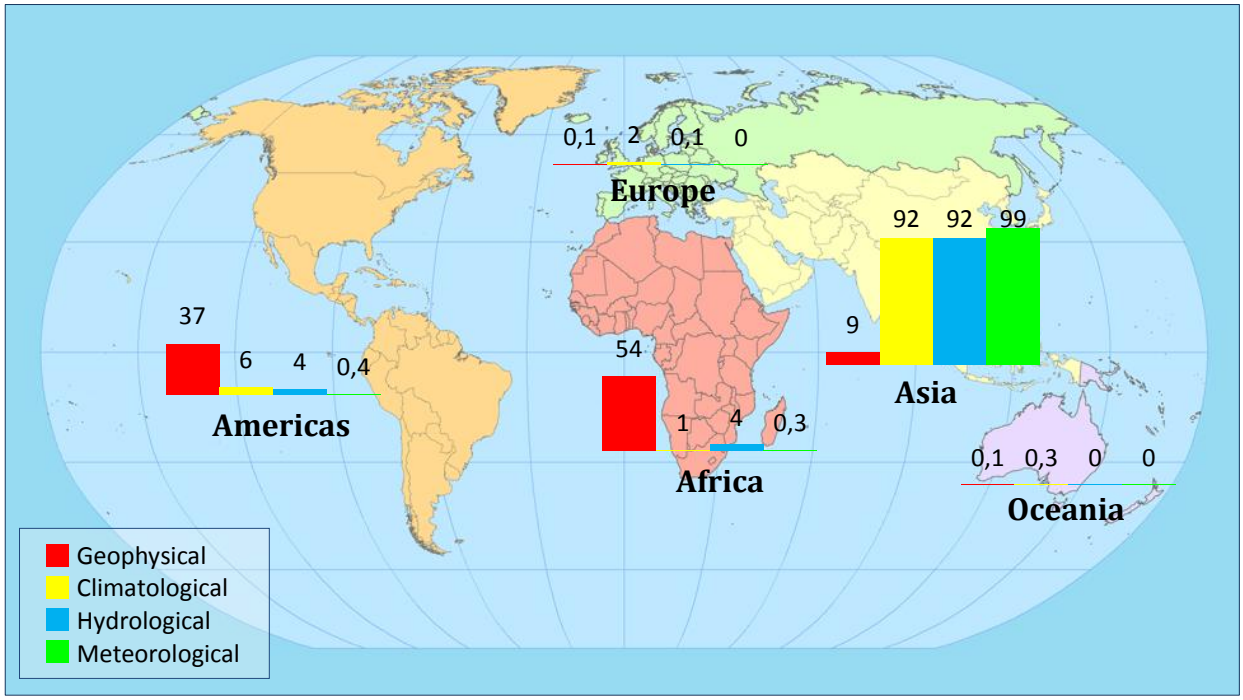
Globally, whereas earthquakes accounted for 58.7% of the total number of people killed by natural disasters in the period 2000-2008, floods (32.4%) and storms (31.0%) caused the most fatalities in 2009. These floods and storms mostly affected countries in Asia and the Americas, such as India, China, Brazil, and the Philippines.

Of all continents, Asia was most prone to geophysical (56.0%), meteorological (49.4%) and hydrological disasters (40.0%), whereas Europe was the most affected continent by climatological disasters (48.9%) in 2009. In terms of victims, Africa had the most victims from climatological disasters (53.5%), whereas once again Asia had the most victims from meteorological (99.2%), geophysical (91.8%) and hydrological disasters (91.6%). Asia also had the most economic damages from hydrological (66.3%) and geophysical disasters (51.2%) in 2009, but it were the Americas that suffered the most economic damages from meteorological disasters (42.1%) and Oceania from climatological disasters (48.0%) (see Maps 1, 2 and 3).

Map 1 – Percent share of reported occurrence by disaster sub-group and continent in 2009

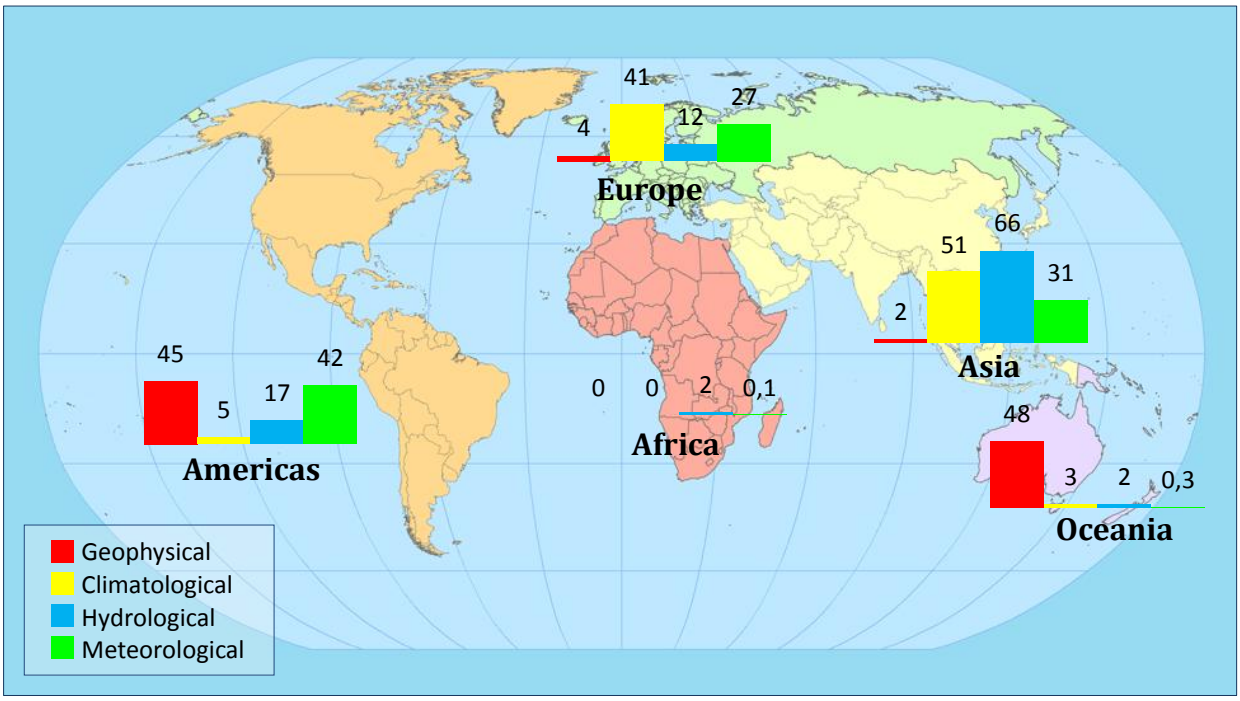


Map 2 – Percent share of reported victims by disaster sub-group and continent in 2009*



*Percentages ≤ 0.05 are displayed as zeros

Map 3 – Percent share of reported economic damages by disaster sub-group and continent in 2009*



*Percentages ≤ 0.05 are displayed as zeros

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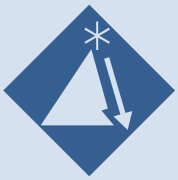
ANNEX 1: Definition table



Avalanche: Avalanche describes a quantity of snow or ice that slides down a mountainside under the force of gravity. It occurs if the load on the upper snow layers exceeds the bonding forces of the entire mass of snow. It often gathers material that is underneath the snowpack like soil, rock etc (debris avalanche). Any kind of rapid snow/ice movement.

Biological Disasters: Disaster caused by the exposure of living organisms to germs and toxic substances.

Climatological Disasters: Events caused by long-lived/meso to macro scale processes (in the spectrum from intraseasonal to multidecadal climate variability).

Cold wave: A cold wave can be both a prolonged period of excessively cold weather and the sudden invasion of very cold air over a large area. Along with frost it can cause damage to agriculture, infrastructure, and property. Damage caused by low temperatures.

Drought: Long-lasting event triggered by a lack of precipitation. A drought is an extended period of time characterized by a deficiency in a region's water supply that is the result of constantly below average precipitation. A drought can lead to losses in agriculture, affect inland navigation and hydropower plants, and cause a lack of drinking water and famine.

Earthquake: Shaking and displacement of ground due to seismic waves. This is the earthquake itself without secondary effects. An earthquake is the result of a sudden release of stored energy in the Earth's crust that creates seismic waves. They can be of tectonic or volcanic origin. At the Earth's surface they are felt as a shaking or displacement of the ground. The energy released in the hypocenter can be measured in different frequency ranges. Therefore there are different scales for measuring the magnitude of a quake according to a certain frequency range. These are: a) surface wave magnitude (Ms); b) body wave magnitude (Mb); c) local magnitude (ML); d) moment magnitude (Mw).

Epidemic: Either an unusual increase in the number of cases of an infectious disease that already exists in the region or population concerned, or the appearance of an infection disease previously absent from a region.

Extreme winter condition: Damage caused by snow and ice. Winter damage refers to damage to buildings, infrastructure, traffic (esp. navigation) inflicted by snow and ice in the form of snow pressure, freezing rain, frozen waterways, etc.

Flash flood: Rapid inland floods due to intense rainfall. A flash flood describes sudden flooding with short duration. In sloped terrains the water flows rapidly with a high destruction potential. In flat terrains the rainwater cannot infiltrate into the ground or run off (due to small slope) as quickly as it falls. Flash floods typically are associated with thunderstorms. A flash flood can occur at virtually any place.

Flood: Significant rise of water level in a stream, lake, reservoir or coastal region.

Forest fire: Fires in forests that cover extensive damage. They may start by natural causes such as volcanic eruptions or lightning, or they may be caused by arsonists or careless smokers, by those burning wood, or by clearing a forest area.

General flood: Gradually rising inland floods (rivers, lakes, groundwater) due to high total depth of rainfall or snowmelt. A general flood is caused when a body of water (river, lake) overflows its normal confines due to rising water levels. The term general flood additionally comprises the accumulation of water on the surface due to long-lasting rainfall (water logging) and the rise of the groundwater table above surface. Furthermore, inundation by melting snow and ice, backwater effects, and special causes such as the outburst of a glacial lake or the breaching of a dam are subsumed under the term general flood. General floods can be expected at certain locations (e.g. along rivers) with a significantly higher probability than at others.

Geophysical disasters: Events originating from solid earth.

Heat wave: A heat wave is a prolonged period of excessively hot and sometimes also humid weather relative to normal climate patterns of a certain region.

Hydrological Disasters: Events caused by deviations in the normal water cycle and/or overflow of bodies of water caused by wind set-up.

Insect infestation: Pervasive influx and development of insects or parasites affecting humans, animals, crops and materials.

Landslide: Any kind of moderate to rapid soil movement including lahar, mudslide and debris flow. A landslide is the movement of soil or rock controlled by gravity and the speed of the movement usually ranges between slow and rapid. It can be superficial or deep, but the materials have to make up a mass that is a portion of the slope or the slope itself. The movement has to be downward and outward with a free face.

Local Windstorm (orographic storm): Local windstorm refers to strong winds caused by regional atmospheric phenomena which are typical for a certain area. These can be katabatic winds, foehn winds, Mistral, Bora etc.

Meteorological disasters: Events caused by short-lived/small to meso scale atmospheric processes (in the spectrum from minutes to days).

Rockfall: Quantities of rock or stone falling freely from a cliff face. It is caused by undercutting, weathering or permafrost degradation.

Storm surge: Coastal flood on coasts and lake shores induced by wind. A storm surge is the rise of the water level in the sea, an estuary or lake as result of strong wind driving the seawater towards the coast. This so-called wind setup is superimposed on the normal astronomical tide. The mean high water level can be exceeded by five and more metres. The areas threatened by storm surges are coastal lowlands.

Subsidence: Downward motion of the Earth's surface relative to a datum (e.g. the sea level). Dry subsidence can be the result of geological faulting, isostatic rebound, human impact (e.g. mining, extraction of natural gas). Wet subsidence can be the result of karst, changes in soil water saturation, permafrost degradation (thermokarst), etc.

Tropical cyclone: A tropical cyclone is a non-frontal storm system that is characterized by a low pressure centre, spiral rain bands and strong winds. Usually it originates over tropical or sub-tropical waters and rotates clockwise in the southern hemisphere and counter-clockwise in the northern hemisphere. The system is fuelled by heat released when moist air rises and the water vapour it contains condenses ("warm core" storm system). Therefore the water temperature must be >27 °C. Depending on their location and strength, tropical cyclones are referred to as hurricane (western Atlantic/eastern Pacific), typhoon (western Pacific), cyclone (southern Pacific/Indian Ocean), tropical storm, and tropical depression (defined by wind speed; see Saffir-Simpson-Scale). Cyclones in tropical areas are called hurricanes, typhoons and tropical depressions (names depending on location).

Volcanic eruption: All volcanic activity like rock fall, ash fall, lava streams, gases etc. Volcanic activity describes both the transport of magma and/or gases to the Earth's surface, which can be accompanied by tremors and eruptions, and the interaction of magma and water (e.g. groundwater, crater lakes) underneath the Earth's surface, which can result in phreatic eruptions. Depending on the composition of the magma, eruptions can be explosive and effusive and result in variations of rock fall, ash fall, lava streams, pyroclastic flows, emission of gases etc.

Wildfire: Wildfire describes an uncontrolled burning fire, usually in wild lands, which can cause damage to forestry, agriculture, infrastructure and buildings.

These definitions have been established by MünichRe/Geo Risks Research Department and CRED. More definitions can be found on the EM-DAT website in the "Glossary" section.

ANNEX 2: List of countries

AFRICA		
Algeria	Gabon	Nigeria
Angola	Gambia	Reunion
Benin	Ghana	Rwanda
Botswana	Guinea	Sao Tome and Principe
Burkina Faso	Guinea-Bissau	Senegal
Burundi	Kenya	Seychelles
Cameroon	Lesotho	Sierra Leone
Cape Verde	Liberia	Somalia
Central African Republic	Libyan Arab Jamahiriya	South Africa
Chad	Madagascar	St. Helena
Comoros	Malawi	Sudan
Congo	Mali	Swaziland
Cote d'Ivoire	Mauritania	Togo
Democratic Republic of Congo	Mauritius	Tunisia
Djibouti	Mayotte	Uganda
Egypt	Morocco	United Republic of Tanzania
Equatorial Guinea	Mozambique	Western Sahara
Eritrea	Namibia	Zambia
Ethiopia	Niger	Zimbabwe

AMERICAS		
Anguilla	Dominican Republic	Panama
Antigua and Barbuda	Ecuador	Paraguay
Argentina	El Salvador	Peru
Aruba	Falkland Islands (Malvinas)	Puerto Rico
Bahamas	French Guiana	St. Barthélemy
Barbados	Greenland	St. Kitts and Nevis
Belize	Grenada	St. Lucia
Bermuda	Guadeloupe	St. Martin (French part)
Bolivia	Guatemala	St. Pierre and Miquelon
Brazil	Guyana	St. Vincent and the Grenadines
British Virgin Islands	Haiti	Suriname
Canada	Honduras	Trinidad and Tobago
Cayman Islands	Jamaica	Turks and Caicos Islands
Chile	Martinique	Uruguay
Colombia	Mexico	Venezuela
Costa Rica	Montserrat	United States of America
Cuba	Netherlands Antilles	United States Virgin Islands
Dominica	Nicaragua	

ASIA

Afghanistan
Armenia
Azerbaijan
Bahrain
Bangladesh
Bhutan
Brunei Darussalam
Cambodia
China
Cyprus
Georgia
Hong Kong (China)
India
Indonesia
Iran
Iraq
Israel
Japan
Jordan
Kazakhstan
Korea (Dem Rep)
Korea (Rep)
Kuwait
Kyrgyzstan
Laos
Lebanon
Macao (China)
Malaysia
Maldives
Mongolia
Myanmar
Nepal
Occupied Palestinian Territory
Oman
Pakistan
Philippines
Qatar
Saudi Arabia
Singapore
Sri Lanka
Syrian Arab Republic
Tajikistan
Thailand
Timor-Leste
Turkey
Turkmenistan
United Arab Emirates
Uzbekistan
Viet Nam
Yemen

EUROPE

Aland Islands
Albania
Andorra
Austria
Belarus
Belgium
Bosnia and Herzegovina
Bulgaria
Channel Islands
Croatia
Czech Republic
Denmark
Estonia
Faroe Islands
Finland
France
Germany
Gibraltar
Greece
Guernsey
Holy See
Hungary
Iceland
Ireland
Italy
Jersey
Latvia
Liechtenstein
Lithuania
Luxembourg
Macedonia, FYR
Malta
Man, Isle of
Moldova
Monaco
Montenegro
Netherlands
Norway
Poland
Portugal
Romania
Russian Federation
San Marino
Serbia
Slovakia
Slovenia
Spain
Svalbard & Jan Mayen Islands
Sweden
Switzerland
Ukraine
United Kingdom

OCEANIA		
American Samoa Australia Cook Islands Federated States of Micronesia Fiji French Polynesia Guam Kiribati Marshall Islands	Nauru New Caledonia New Zealand Niue Norfolk Island Northern Mariana Islands Palau Papua New Guinea Pitcairn	Samoa Solomon Islands Tokelau Tonga Tuvalu Vanuatu Wallis and Futuna

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