Natural catastrophes and man-made disasters in 2014: convective and winter storms generate most losses
Executive summary

In 2014, there were 336 disaster events. Of these, 189 were natural catastrophes, the highest ever recorded, and 147 were man-made disasters. More than 12,700 people lost their lives or went missing in the disasters.

The total economic losses generated by natural catastrophes and man-made disasters in 2014 were around USD 110 billion, down from USD 138 billion in 2013 and well below the inflation-adjusted average of USD 200 billion for the previous 10 years. Asia was hardest hit, with cyclones in the Pacific creating the most losses. Weather events in North America and Europe caused most of the remaining losses.

Insured losses were USD 35 billion, down from USD 44 billion in 2013 and well below the inflation-adjusted previous 10-year average of USD 64 billion. As in recent years, the decline was largely due to a benign hurricane season in the US. Of the insured losses, USD 28 billion were attributed to natural catastrophes and USD 7 billion to man-made events. In the US and Europe, severe thunderstorms (also known as severe convective storms) triggered many of the insurance claims. Harsh winters in the US and in Japan were the other major cause of claims in 2014.

The number of victims of disaster events in 2014 was one of the lowest recorded, even though the number of natural catastrophes was the highest ever in a single year. Improvements in early warning systems and emergency preparedness meant fewer victims than otherwise may have been. Progress in local prevention and mitigation measures to strengthen resilience will be a key variable in total victim numbers in the future, especially if climate change leads to more frequent natural catastrophe events.

Severe convective storms include tornadoes, hail, thunder and lightning, heavy rains and flash floods, and pose a significant threat to modern societies. The localised nature of the storms means they can cause considerable damage to crops, and also to properties and vehicles when they hit densely populated areas. This sigma includes a special chapter on severe convective storms and the trend of rising insurance losses therefrom. Increasing exposures as a result of economic development and the associated population expansion and urbanisation, among other factors, suggest that losses from severe weather events may well continue on an upward path. This calls for more sophisticated modelling techniques of the risks posed by the different sub-perils in the severe convective storm family.

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1 The criteria to classify a convective storm as “severe” is generally the threshold where damage is likely to occur, typically winds of 90 km/56 miles per hour and/or hail of 2 cm/1 inch in diameter or more.
Catastrophes in 2014: global overview

There were 189 natural and 147 man-made disasters in 2014.

Number of events: 336

Based on sigma criteria, there were 336 catastrophe events in 2014, up from 325 in 2013. Of the total, 189 were natural catastrophes, the highest ever recorded in one year, and up from 166 in 2013. There were 147 man-made disaster events last year, down from 159 in 2013.

Figure 1
Number of catastrophic events, 1970–2014

What makes a catastrophe?

In sigma terminology, an event is classified as a catastrophe and included in the sigma database when insured claims, total losses or the number of casualties exceed certain thresholds. The following table details those thresholds.

Table 1
The sigma event selection criteria, 2014

<table>
<thead>
<tr>
<th>Insured loss thresholds</th>
<th>19.6 million</th>
<th>39.3 million</th>
<th>48.8 million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maritime disasters</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aviation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other losses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total economic loss threshold</td>
<td>97.6 million</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Casualties                       |              |              |              |
| Dead or missing                  | 20           |              |              |
| Injured                          | 50           |              |              |
| Homeless                         | 2000         |              |              |

Source: Swiss Re Economic Research & Consulting and Cat Perils.
In 2014, more than 12 700 people lost their lives or went missing in natural and man-made catastrophe events, one of the lowest totals ever recorded, even though the number of natural disasters was the highest ever recorded in a single year. The number of lives lost was nearly half the number in 2013 and well below the yearly average of around 66 000 deaths since 1990. An earthquake in Yunnan, China in August caused the most loss of life: at least 731 people died or went missing. Globally more than 7 000 people were killed or went missing in natural disasters in 2014, the majority in earthquakes, floods and other severe weather events. In addition to the China earthquake, monsoon flooding in the state of Jammu and Kashmir in India and nearby regions of Pakistan claimed 685 lives. Freezing conditions also took their toll. According to official statistics, there were 505 deaths in Peru, mainly of children and the elderly due to very low temperatures. Elsewhere, many people died in flooding and landslides in Afghanistan, Nepal and Sri Lanka. Man-made disasters claimed roughly 5 700 lives, about the same number as in 2013. The sinking of a passenger ferry in South Korea killed most, with 304 deaths from drowning. Overall, maritime disasters claimed 2 118 victims in 2014, almost double the previous year’s number. Many refugees from war-torn lands died as the boats they boarded in search of a better life sank. Other man-made disasters claiming a high number of victims included a fire in a coal mine in Turkey (301 deaths), an aircraft crash in Ukraine (298) and one in the Indian Ocean (239). Together aviation losses claimed 960 lives, more than five times the previous year’s toll. Terrorism attacks in different parts of the world claimed 1 361 lives, up from 1192 in 2013. Major fires and explosions took 490 victims, a quarter of the previous year.

**Number of victims: 12 777**

Note: Scale is logarithmic: number of victims increases tenfold per band.

Source: Swiss Re Economic Research & Consulting and Cat Perils.

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**Figure 2**

Number of victims, 1970–2014

1 1970: Bangladesh storm
2 1976: Tangshan earthquake, China
3 1991: Cyclone Gorky, Bangladesh
4 2004: Indian Ocean earthquake and tsunami
5 2008: Cyclone Nargis, Myanmar
6 2010: Haiti earthquake

Table showing the number of victims for specific events from 1970 to 2010.

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**Source**

Swiss Re Economic Research & Consulting and Cat Perils.
Catastrophes in 2014: global overview

Total losses in 2014 were well below the 10-year average.

Natural catastrophe-related losses were around USD 101 billion.

<table>
<thead>
<tr>
<th>Regions</th>
<th>in USD bn*</th>
<th>in % of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>29</td>
<td>0.15%</td>
</tr>
<tr>
<td>Latin America &amp; Caribbean</td>
<td>8</td>
<td>0.15%</td>
</tr>
<tr>
<td>Europe</td>
<td>16</td>
<td>0.07%</td>
</tr>
<tr>
<td>Africa</td>
<td>1</td>
<td>0.06%</td>
</tr>
<tr>
<td>Asia</td>
<td>52</td>
<td>0.21%</td>
</tr>
<tr>
<td>Oceania/Australia</td>
<td>2</td>
<td>0.14%</td>
</tr>
<tr>
<td>Seas / space</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>110</strong></td>
<td><strong>0.14%</strong></td>
</tr>
<tr>
<td>10-year average**</td>
<td>200</td>
<td>0.30%</td>
</tr>
</tbody>
</table>

* rounded numbers
** inflation adjusted
Source: Swiss Re Economic Research & Consulting and Cat Perils.

Man-made disasters are estimated to have caused USD 9 billion of the total losses of USD 110 billion in 2014, little changed from the year before.

Total economic losses: USD 110 billion

Estimated total economic losses from natural catastrophes and man-made disasters were USD 110 billion in 2014, down from USD 138 billion in 2013 and well below the inflation-adjusted average of USD 200 billion of the previous 10 years. Disaster losses in 2014 were 0.14% of gross domestic product (GDP), below the 0.30% annual average of the previous 10 years.

Natural catastrophe-related losses were around USD 101 billion in 2014, stemming mostly from floods, tropical cyclones and severe convective storms in Asia, North America and Europe.

Man-made disasters are estimated to have caused USD 9 billion of the total losses of USD 110 billion in 2014, little changed from the year before.
The insurance industry covered an estimated USD 35 billion, or one-third of the total losses from natural and man-made disasters in 2014. Natural catastrophes resulted in claims of USD 28 billion, the lowest since 2009 and about half the previous 10-year inflation-adjusted average (USD 58 billion). Large man-made disasters led to claims of USD 7 billion, down from USD 8 billion in 2013.

Relative to GDP and direct non-life premiums written (DPW), the 2014 natural catastrophe losses were 0.04% of GDP and 1.8% of DPW, below the respective previous 10-year annual averages of 0.08% and 3.8%.

Nine disasters triggered insured claims of USD 1 billion or more in 2014 (see Table 6 on page 22). A severe convective storm with wind and hail over a five-day period in the US in May was the single most expensive event of the year, causing an estimated USD 2.9 billion in insured losses. The second costliest was a winter storm in Japan, with claims of USD 2.5 billion. Hail and wind storm Ela in Europe in June led to insured losses of USD 2.2 billion, and Hurricane Odile in Mexico in September a further USD 1.7 billion.

Figure 4 shows the difference between insured and total losses over time. The difference is defined as the insurance protection or funding gap. It is the amount of financial loss generated by catastrophes not covered by insurance. In 2014, the global protection gap was USD 75 billion. The rate of growth of total losses has outpaced the growth of insured losses. In terms of the 10-year moving average, insured losses grew at 10.7% between 1979 and 2014, and total losses by 11.4%.
Catastrophes in 2014: global overview

Figure 4
Insured vs uninsured losses, 1970–2014, in USD billion in 2014 prices

Total losses = insured + uninsured losses
Source: Swiss Re Economic Research & Consulting and Cat Perils.

The protection gap can be narrowed with greater insurance penetration.

Economic development, population growth, a higher concentration of assets in exposed areas and a changing climate are increasing the economic cost of natural disasters. The above, if not accompanied by a commensurate increase in insurance penetration, will likely result in a widening protection gap over the long term.
Regional overview

The highest insured losses in 2014 were in North America and Europe.

Severe thunder (or convective) storms and hard winter conditions in the US and Europe caused the biggest insurance losses globally in 2014. In Asia, Cyclone Hudhud and other major storms led to the highest losses in the region, while an earthquake in China and monsoon floods in India and Pakistan took most lives.

Table 3
Number of events, victims, economic and insured losses by region, 2014

<table>
<thead>
<tr>
<th>Region</th>
<th>Number</th>
<th>Victims</th>
<th>in %</th>
<th>Insured losses in USDbn</th>
<th>in %</th>
<th>Total loss in USDbn</th>
<th>in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>51</td>
<td>206</td>
<td>1.6%</td>
<td>17.5</td>
<td>50.4%</td>
<td>28.6</td>
<td>26.0%</td>
</tr>
<tr>
<td>Latin America &amp; Caribbean</td>
<td>31</td>
<td>883</td>
<td>6.9%</td>
<td>2.3</td>
<td>6.5%</td>
<td>8.2</td>
<td>7.4%</td>
</tr>
<tr>
<td>Europe</td>
<td>37</td>
<td>783</td>
<td>6.0%</td>
<td>6.6</td>
<td>19.1%</td>
<td>15.9</td>
<td>14.5%</td>
</tr>
<tr>
<td>Africa</td>
<td>47</td>
<td>2506</td>
<td>19.6%</td>
<td>0.8</td>
<td>2.3%</td>
<td>1.5</td>
<td>1.3%</td>
</tr>
<tr>
<td>Asia</td>
<td>130</td>
<td>7093</td>
<td>55.5%</td>
<td>5.2</td>
<td>15.0%</td>
<td>51.7</td>
<td>47.0%</td>
</tr>
<tr>
<td>Oceania/Australia</td>
<td>7</td>
<td>206</td>
<td>1.6%</td>
<td>1.0</td>
<td>2.9%</td>
<td>2.3</td>
<td>2.1%</td>
</tr>
<tr>
<td>Seas / space</td>
<td>33</td>
<td>1120</td>
<td>8.8%</td>
<td>1.3</td>
<td>3.8%</td>
<td>1.7</td>
<td>1.5%</td>
</tr>
<tr>
<td>World</td>
<td>336</td>
<td>12 777</td>
<td>100.0%</td>
<td>34.7</td>
<td>100.0%</td>
<td>109.9</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source: Swiss Re Economic Research & Consulting and Cat Perils.

In North America, the biggest losses came from convective activity and winter storms.

In North America, insured losses were USD 17.5 billion in 2014, the highest of all regions. Losses were primarily caused by convective activity and by a series of winter storms in the US. Five independent events each caused insured losses of USD 1 billion or above, all of them in the US. Canada experienced relatively few catastrophes last year.

Tornadoes and hail in May and June caused major damage.

In mid-May, a spate of severe convective storms over a five-day period brought large hail and strong winds across the Rockies, Midwest and Eastern states, with Pennsylvania, Colorado and Illinois the worst hit. The storms caused USD 2.9 billion in insured losses, the most from a single weather event in the year. Another hail event in June also caused significant damage to property and agriculture, particularly in Nebraska. There was also a tornado outbreak which, with the hail storms, caused overall combined insured losses of USD 1.3 billion. Central Nebraska’s corn and soybean crops suffered more damage in July, again because of hail. July is the most critical growth period for these crops.

The total number of tornadoes in the US in 2014 was well below the annual average ...

... but even so, the year ranks fourth highest in terms of tornado-induced insurance losses.

The losses from harsh winter conditions were above average.

Overall the number of recorded tornadoes in the US was below average for the third year running. The Storm Prediction Centre of the National Oceanic and Atmospheric Administration (NOAA) tallied 888 tornadoes in 2014, well below the yearly average of 1235 since 1990, and less than half the 1811 of the record season in 2004. Last year’s number was also the lowest on record since the start of the Doppler radar era in the early 1990s.

Nevertheless, with an estimated USD 13 billion in insured losses from tornado outbreaks and thunderstorms, 2014 ranks as the fourth costliest year on sigma record in terms of insured losses from these perils. Four of the thunderstorm events caused losses of USD 1 billion or more, compared to three in 2013.

It was an active winter season in the US in 2014, with multiple storms bringing heavy snowfall, icy winds and long periods of freezing temperatures. At the beginning of January, a storm caused widespread damage in 17 states, with snow falling as far south as Florida. The damage was estimated at USD 1.7 billion, and came mainly from burst frozen water pipes, ice weight and water damage to houses and businesses. Overall insured losses from winter weather damage in the US in 2014 were USD 2.4 billion, more than double the previous 10-years’ annual average.
Regional overview

Heavy rainfall triggered severe flooding in parts of Northeast, and Arizona had its rainiest day on record.

In August, a slow-moving low pressure system delivered rainfall in excess of 12.7 cm/5 inches, resulting in widespread flooding in several cities across Michigan, with the metro Detroit area worst affected. Flooding also occurred in Maryland and Long Island, New York, as part of the same weather system. In Islip, NY, a new 24-hour rainfall record was set. The preliminary estimate for the total damage was USD 1.6 billion, with approximately one third insured. A month later, on 8 September Phoenix, Arizona experienced its rainiest day on record.3

However, California had its driest year ever…

The western US, however, had very little rain. California had its driest year on record in 2014. Following two consecutive dry years, a state of emergency was declared in January and state officials took all necessary actions to prepare for water shortages. As of late September, the US Drought Monitor classified 58% of California as experiencing “exceptional” drought, the worst category, with more than 80% in “extreme” drought conditions.4

…leading to an estimated total loss of USD 2.2 billion, mainly in agriculture.

California is a major producer of fruit, vegetables, nuts and dairy products. Its extensive system of water infrastructure and groundwater pumping helped counteract the water shortages. Even so, agriculture suffered an estimated total loss of USD 1.5 billion out of overall economic losses of USD 2.2 billion.5 Private insured losses were limited by farmers’ increasing reliance on the federal insurance program after the passage of the Federal Crop Insurance Act of 1980 and after 1995, when the catastrophic (CAT) option became available for specialty crops such as fruits, vegetables and tree nuts. Drought conditions still lingered in early 2015 and are expected to continue. As groundwater depletion is likely to increase the cost of irrigation, agriculture losses are expected to rise further.

The North Atlantic hurricane season was very quiet in 2014.

The 2014 Atlantic hurricane season produced eight named storms (13 in 2013), six of which became hurricanes (two in 2013). Two were major hurricanes (Category 3 or stronger on the Saffir-Simpson scale; there were none in 2013). Only Hurricane Arthur, the first named storm of the season, made US landfall last year. It was also the first Category 2 hurricane since Ike in 2008, according to the National Weather Service.6 It caused power outages and limited flooding and damage. Last year was the ninth in succession (ie, since 2005) that no major hurricane made US landfall,7 the longest stretch since the 1860s.

Stable weather conditions limited the formation of storms.

Overall in terms of numbers, collective strength and duration of named storms and hurricanes, 2014 ranks as the 10th-least active Atlantic hurricane season on record since 1950. According to the Climate Prediction Centre of the NOAA, the combination of stable atmospheric conditions and high wind shear in the large parts of the main hurricane generation region curbed the development of storms.

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7 Hurricane Sandy in 2012 produced the third-biggest loss ever from a storm event, but being rated Category 1 on the Saffir-Simpson scale, it is not considered a “major” hurricane. The damage wreaked was because of Sandy’s very large size, which drove a strong storm surge into the affected areas on land.
Earthquake South Napa, measuring 6.0 on the moment-magnitude (Mw) scale, struck just north of San Francisco on 24 August 2014. It was the most powerful in the San Francisco Bay Area since the 1989 Loma Prieta earthquake. The quake caused structural damage mainly to old unreinforced masonry buildings and also inventory damage, particularly in the numerous barrel storage facilities of the local wine industry. The estimated insured losses of USD 0.15 billion were limited by low insurance penetration in the region. In spite of the high exposure to seismic risk, insurance take-up in San Francisco County and in California overall is still very low, even for commercial properties.

In Canada, the biggest loss-inducing natural disaster was a series of thunderstorms in Calgary, Alberta in mid-August, leading to insured losses of USD 0.46 billion. After record losses in 2013, it was a quiet year in terms of natural catastrophes in Canada.

With respect to man-made disasters, a fire at a petrochemical plant in Texas, US caused the biggest insured loss. Another main event was a fire at an elderly home in Canada in January, which claimed 17 lives.

Europe

Natural catastrophes and man-made disasters caused total losses of USD 15.9 billion in Europe in 2014. Insured losses were USD 6.6 billion. Most losses came from convective storms and heavy precipitation in several countries.

During the third week of May, the low pressure system Yvette brought very heavy rainfall to Serbia, Bosnia and Croatia. For some areas, it was the heaviest downpour in 120 years. Several dams were broken and the ensuing floods and debris flows destroyed houses, infrastructure and crops. The devastation caused total losses of USD 3 billion, much of which was uninsured. Eighty-two people died, the largest loss of life from a natural catastrophe event in Europe last year.

In early June, the low pressure system Ela brought severe hail storms to France and Belgium, and strong winds in Germany. After a period of above-average temperatures, the severe storms from northwest Europe moved south-eastwards, mixing with an influx of warm air and creating the conditions for strong winds, thunder, rainfall and hail. Damage was severe in parts of northern France, Belgium and north-west Germany. More than 600,000 houses and 500,000 vehicles were damaged, and the associated insured losses were USD 2.2 billion. Ela is the second most expensive convective storm event in Europe on sigma records after hail storm Andreas just one year earlier.

Hail is a familiar hazard in Europe and one of the major drivers of residential, business and agricultural property damage. Areas of significant to high hail risk include central, eastern and southern Europe, including the Alps and the Pyrenees mountain regions. Hail storms can come in isolation or, more often, as part of more complex convective storms, which may also leave wind and flood damage. In Europe, hail and flash floods tend to be the main drivers of severe convective storms losses. In general, the limited spatial scale and lack of uniform detection methods of severe hail events limits full assessment of their impact beyond local damage reports.

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8 The moment magnitude scale measures the scale of earthquakes based on the area of earth ruptured by a quake. For more see Measuring the Size of an Earthquake, US Geological Survey. http://earthquake.usgs.gov/learn/topics/measure.php
Nevertheless, hail risk is a standard component of building insurance in Western Europe, purchased as part of a package for protection against windstorm damage. The insurance penetration for these perils is above 75% in the region, except in Italy. In some countries (eg, France, Switzerland and Belgium), hail and wind storm insurance are compulsory, along with fire coverage, which is why insured losses after hail storms can be high.

The loss potential in Europe has been on an upward trend due to increased exposure from societal and economic development. In addition, average claim severity has risen because the modern building materials used for thermal insulation and energy generation systems are susceptible to damage from hail stones. The localised nature of hail events limits the overall losses, especially compared to winter storm losses, the biggest weather-event risk in Europe. But the loss experience of the last two years is a stark reminder that multi-billion-loss convective storm events do happen. Stronger mitigation measures in building construction, and more comprehensive risk modelling are needed.

The 2013–2014 winter windstorm season in Europe was very active, especially from early December 2013 to mid-February 2014. A series of low pressure systems triggered major losses in December 2013, and winter storms continued to flow into northwest Europe from the Atlantic well into 2014. Individually, the January and February storm events were not significant but their quick succession brought heavy rainfall and widespread inland flooding, particularly in the UK. The combination of strong winds coincided with peak high tides, leading to coastal inundations that exacerbated the flood situation. The UK Met Office classified January 2014 as the wettest calendar month in southeast and central southern England since records began in 1910. The resulting insured losses were USD 0.5 billion.

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In addition to the North Atlantic winter storms, multiple low pressure systems originating in the Mediterranean generated a series of wind, flood and landslide events in central and southern Europe. France and Italy, in particular, experienced numerous episodes of heavy precipitation. France had its wettest July on record and the highest number of tornadoes since 2004: around 50, almost three times the annual average. The total losses from the flood events in France and Italy are estimated to have reached at least USD 2 billion, and insured losses USD 0.5 billion.

In Slovenia and Croatia, heavy snowfall, freezing rains and floods in the period from 31 January to 6 February caused damage to forest stands, roads, ski-trails and other infrastructure, with total losses estimated at around USD 0.9 billion. A state of emergency was declared in affected areas and EU solidarity funds were dispersed.

Of man-made disasters, in May a fire at a coal mine in Turkey claimed 301 lives. In June, a major fire followed by explosion at an oil refinery in Russia caused the biggest man-made financial loss in Europe.

Europe was hit by deadly and costly man-made disasters.

Asia

Asia was hardest hit in terms of human loss in 2014, with over 7000 victims from natural and man-made catastrophes. The region also suffered the most loss of life relative to others in 2013 and 2012. The total cost of disaster events in the region in 2014 is estimated to be around USD 52 billion. Insured losses were over USD 5 billion.

In mid-February, a severe cold snap brought the heaviest snowfall seen in Japan for many decades, killing 26 people and injuring many more, primarily in road accidents. Metropolitan Tokyo was also hit hard. The snow caused widespread damage to residential and commercial property, and to agriculture. Insurers estimated claims of USD 2.5 billion, making it the costliest disaster of the year in Asia. Total losses were USD 6 billion.

In early September, monsoon rains in the northern state of Jammu and Kashmir in India and the neighbouring region in Pakistan resulted in the worst flooding in 60 years. At least 665 perished and over 200,000 houses were destroyed. The total losses from the destruction of housing in India were set at USD 4.4 billion. However, the rural communities were hit harder as the floods came at harvest time for rice and apple crops, the livelihood of many farmers. Together, the total losses in India and Pakistan were USD 5.9 billion, and insured losses were at least USD 0.2 billion.

The biggest storm of the Pacific and Indian Ocean season was Cyclone Hudhud in October. Hudhud made landfall near the port city of Visakhapatnam in the Indian state of Andhra Pradesh with winds of up to 200 km/124 miles per hour and a storm surge of up to three metres in some areas. The storm brought heavy rains and flooding in neighbouring states also. With a population of 2 million, Visakhapatnam is the third largest city on India’s east coast. The total losses were estimated at USD 7 billion, the largest of all natural catastrophes in the world in 2014. However, the insured losses were a fraction of the total at just USD 0.6 billion. The cyclone claimed 68 lives but the number could have been much higher. Early warning and evacuation of up to 400,000 people ahead of the storm saved many lives.

Mediterranean cyclone activity triggered convective precipitation and flash flood events in France and Italy.

Winter weather caused severe forest damage in Slovenia and Croatia.

Europe was hit by deadly and costly man-made disasters.

The Asia region has suffered the most loss of life from catastrophic events for three years running.

Snow covered and damaged parts of Japan.

Heavy monsoon rains hit northern India and Pakistan.

Cyclone Hudhud caused the largest loss from a tropical cyclone.

Typhoon Rammasun hit the Philippines and China in a double landfall in July, destroying over 140,000 houses and damaging at least another 500,000, while also causing crop losses in Vietnam. The total loss was USD 5 billion, of which USD 0.8 billion and 101 of the 202 total victims were in the Philippines. This was the deadliest and most damaging event for the Philippines in 2014, which one year earlier suffered the deadliest and most disastrous event in its history, Typhoon Haiyan. Another typhoon struck the Philippines later in the year, in December. This was Typhoon Hagupit. The country’s disaster management authority managed to evacuate close to 1 million people ahead of the storm, saving many lives.

In August, an Mw 6.1 earthquake struck Yunnan Province in southwest China, killing 617 people, while 114 remain missing. The high number of victims was due to the widespread use of unreinforced masonry in residential housing. The quake destroyed 25,800 houses and caused damage to a further 40,600. It caused damage to local infrastructure, generating total losses of USD 5 billion, according to local authorities.

An explosion at a metal factory in China caused the biggest loss of life.

In August, an explosion at a metal factory in China caused the largest loss of life generated by a man-made disaster (146). Numerous fires and explosion at refineries and various industrial plants triggered further losses.

Latin America and the Caribbean

Natural catastrophes and man-made disasters caused total damage of at least USD 8.2 billion in Latin America and the Caribbean in 2014. Insured losses were over USD 2.3 billion. The main drivers were hurricanes and industrial accidents.

Hurricane Odile in Mexico caused the biggest insured losses...

While it was a quiet hurricane season in the North Atlantic, the eastern Pacific had 20 named storms. That’s five more than the annual average of 15 since 1990, making 2014 the most active hurricane year in the region since 1992. The most devastating was Hurricane Odile in Mexico, which ties with Hurricane Olivia (1967) as the strongest hurricane to make landfall along the Baja California peninsula during the satellite era. The combination of strong winds and heavy rains resulted in insured losses of USD 1.7 billion, mainly from the tourist resort of Cabo San Lucas where commercial insurance penetration is relatively high given a large number of hotels and other commercial properties. Hurricane Odile is the second most costly catastrophe event in Mexico after Hurricane Wilma in 2005.

... while drought impacted other countries in the region.

Drought affected Brazil and Central America, disrupting coffee, maze and bean production and killing thousands of livestock. This impacted the livelihood of farmers and low-income families, particularly in Central America. International aid helped alleviate the situation. However, dry conditions were still lingering at the beginning of 2015. The preliminary estimate of total losses is USD 3 billion, at least.

More than 500 people died in a cold snap in Peru.

For the second successive year, very low temperatures caused high casualties in Peru. It is believed as many as 505 people, mainly children and the elderly, died in the Andean region because of freezing temperatures.

Oceania

Natural catastrophes and man-made disasters in 2014 caused insured losses of just USD 1 billion in Oceania, primarily from hail in Australia. On 27 November 2014, a powerful storm system brought large hail, strong winds and heavy rainfall to Brisbane and southeast Queensland. Damage affected Brisbane’s central business district. Estimated insured losses from the storm were around USD 0.9 billion, the costliest catastrophe event in Australia and the region last year. There were some other storm events and bushfires, but these were below the *sigma* threshold in terms of losses.

Africa

Natural catastrophes and man-made disasters in Africa claimed 2506 lives in 2014 and caused total losses of USD 1.5 billion. The insured losses were just USD 0.8 billion. Late in the year, 47 people died in floods in southern Morocco, which inundated 356 villages causing thousands of houses to collapse, and damage to 505 bridges and 18 000 roads. Total losses were estimated to be USD 0.5 billion. Elsewhere, floods hit Burundi, Tanzania, Zimbabwe, the Ivory Coast and Niger. Cyclone Bejisa hit La Réunion causing power outages that affected 170 000 homes and severe damage to sugar crops. Terrorism contributed to the largest loss of life in the region, resulting in at least 900 victims.
Convective storms, or thunderstorms, are a meteorological hazard generated by the collision of cold dry air and warm moist air. Most thunderstorms are localised and short-lived, but severe thunderstorms, also called severe convective storms, can persist for many hours and even develop into multi-day events. They consist of hail, tornadoes, straight-line winds, flash flooding and lightning. The classification of a storm as "severe" varies across regions, but generally the criteria are set at the threshold where damage is expected to occur (typically winds of 90 km/56 miles per hour and/or hail stones of 2 cm in diameter or more in countries using the metric system, and 1 inch or more in US reference terminology). The severe storms occur in many countries around the world to different degrees of frequency and severity, but it is in the US where they wreak most havoc.

The damage left in the wake of a severe convective storm can be extreme, and the impact and costs of such storms have been rising over the last 25 years. Tornadoes and hail are the two most damaging sub-perils of the severe convective storm family. Between 1990 and 2014, the global total and insured losses from severe convective storms grew at average annual rates of 7.7% and 9.0%, respectively. In contrast, total and insured losses from all natural catastrophe events in the same period grew by 6.4% and 6.6% on average each year, respectively.

The share of severe convective storm losses from all-weather event losses has similarly been on an upward trend. In the 1990s, the share of insured losses inflicted by severe convective storms was estimated to be about 29% of the total all-weather related insured losses. In the period 2010–2014, the estimated share was over 40% (see Figure 6). Notably, from the early 2000s, with the exception of 2005, at least one severe convective storm each year has resulted in insured losses of USD 1 billion or more. Since 2008, there have been four to seven such storm events annually.

Figure 6
Severe convective storm-related insured losses as % of all-weather event insured losses

Source: Swiss Re Economic Research & Consulting and Cat Perils.

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16 To smooth out the short term-fluctuations and highlight the longer-term trends, the annual growth rate is calculated based on the the average of the years 1986-1990 and 2010-2014.
17 The sigma database does not include estimates for all drought events. Hence all-weather event related losses may be underestimated and the share of the losses from severe convective storms overestimated. However, in regions other than the US and Europe, given scarcity of information insured losses from convective storm activity in those regions may be underestimated.
The rising losses are due to the growing exposures that come with economic development.

Among the reasons for the rise in losses from severe convective storms are the growing exposures and increasing insurance penetration that come with economic development: expanding populations and urban centres, and increasing values and technology at risk. For example, the US states with the most severe convective storm activity have seen 15–48% population growth since 1990 and, in parallel, increasing risk exposure. The rising losses from convective storms worldwide is mostly due to the mounting levels of damage seen in the US. In addition, with better understanding of the meteorological systems responsible for the sudden and heavy precipitation that can come with severe convective storms, such as the cloud systems that cause the flash floods in the Mediterranean basin, in certain regions it is now possible to better-estimate the losses arising from specific storms. Previously, those losses would have been attributed to all-weather, not convective-storm, events.

Insurers need to be able to model a broad range of weather perils...

Today there are many models to assess the risks from “main” perils such as tropical cyclones and earthquakes. In contrast, modelling of severe convective storms is still in its infancy and is constrained by several limitations. For example, in many countries there is no official process to collect reports of observed severe convective storm events. And, even when there is such a system (eg, like in the US, since 1950, for tornadoes), the observed increase in the number of single events may be due to more effective reporting and recording than in the past, particularly after the introduction of Doppler radar technology in the early 1990s. As such, the observed frequency of tornadoes based on available records may not fully reflect the real frequency, which makes historical analysis more complicated.

... but the localised nature of sub-perils makes modelling difficult.

Even with better understanding of meteorological systems in certain regions, the modelling of severe convective storms remains challenging. They are local in nature compared to tropical cyclones, must often be observed remotely via Doppler radar or satellite technology, and frequently include different sub-perils interacting simultaneously. But in a world where convective storm-related losses are mounting, the development of probabilistic models for a broad range of perils is essential for insurers and communities to better assess this growing risk and manage the impacts.

The US has more tornadoes than anywhere else in the world.

Severe convective storms: the regional risk landscape

In North America, severe convective storm losses are mainly driven by hail and tornadoes, particularly in the US. According to the NOAA’s Storm Prediction Center (SPC), there are on average around 1200 tornadoes in the US each year, and an average 216 days with hail of 1 inch in diameter or larger. The US has more tornadoes than any other country in the world, which is due to its geography. Cold dry air from Canada/Rocky Mountains, hot dry air from the desert southwest and warm moist air from the Gulf of Mexico all come together in the central US. In the spring, these air masses collide with the winds in the lower atmosphere coming from different directions at different speeds, causing thunderstorms to rotate. These rotating storms — supercells — are the source of the strongest tornadoes and largest hailstones. Up to 60 people die in US tornadoes each year and 1500 are injured.19

In Canada, there are on average 60 tornadoes and 160 severe hail events every year, mostly in the lower latitude provinces of Alberta, Manitoba, Saskatchewan and Ontario.20

Severe convective storms: a growing global risk

In Europe, thunderstorms tend to be smaller scale than in the US. The Alps protect many countries against intense influx of moisture from the Mediterranean, which limits the formation of severe convective storms. Nevertheless, during the summer months moist air masses do move through continental central Europe, creating conditions for severe thunderstorms in which hail, rather than tornadoes, tends to be the cause of the larger losses. Tornadoes do happen in Europe but they are typically weaker and have less loss impact than in other tornado-prone regions. A recent study indicated that on average 276 tornadoes were reported each year in Europe from 2006 to 2013. An earlier study estimated around 295 tornadoes annually but that only 169 of those were reported, an under-reporting of about 40%.

Flash flooding is another regular occurrence in Europe, particularly in south western France, north eastern Italy and the southern Pyrenees in Spain. The topography of these regions with steep mountains near the coast and torrent-like rivers, renders them susceptible to sudden flooding when there are heavy downpours.

In Latin America, the majority of the tornado and hail activity occurs in southern Brazil, Paraguay, Uruguay and Argentina. On average, Brazil experiences two tornadoes every year, mostly in the Sur region, and around 68 hail storms throughout the country.

In Asia, the bulk of the severe convective storm activity occurs in India and Bangladesh, most often in the pre-monsoon period from March-May. The storms are classified by wind speed, with speeds of 42 meters per second/151 km per hour or higher referred to as tornadoes, and below that as “nor’westers”. The four deadliest tornadoes on sigma records were all in Bangladesh and the fifth and sixth in India. On 26 April 1989, a tornado in the Manikganj district of Bangladesh killed 1 115 people, the most ever. The twister injured a further 12,000 and left 40,000 people homeless. Elsewhere in Asia, China has many severe thunderstorms, with the highest activity over the central Tibetan Plateau and Qilian Mountain region. Nagqu has the highest number of hail days recorded per year at 33. The nationwide average is lower at one to five per year. Overall, good reporting and data are scarce in Asia.

In Australia, on average 22 tornadoes were reported each year between 1990 and 2014, the majority in Western Australia near Perth. Hail storms are also common in New South Wales, particularly in September through March, with about 45 events per year, although the number of hail storms reported in the last five year has fallen. Meanwhile, the New Zealand National Institute of Water and Atmospheric Research estimates that seven to 10 tornado loss events happen in the country each year.

Losses from severe convective storms are highest in the US

Given the high frequency and intensity, particularly of tornadoes, the US is the most susceptible to high-impact, high-cost severe convective storms. It follows, therefore, that insured and total losses from this hazard in the US are higher than anywhere else in the world. Between 1990 and 2014, insured losses from severe convective storms in the US averaged USD 8 billion annually. Since 2008, those insured losses have exceeded USD 10 billion every year, including in 2014 which was the quietest year for tornado activity since the early 1990s. Hail activity was also below average

26 Ibid.
in 2014. The high insured loss total of USD 13 billion in 2014 resulted because the
less-than average number of severe events often hit densely populated areas.

According to sigma records, 2011 was the record year in the US in terms of insured
(USD 28 billion) and total losses (USD 39 billion) from severe convective storms.
Most of the losses were caused by tornado outbreaks. There were 1690 tornadoes
in the US that year, and new records were set for the highest number registered in
both a single day and in a single month. Two outbreaks in the southern and Midwest
states in April and May caused the most damage. A single Enhanced Fujita scale
5 (EF5) tornado,28 the strongest category, hit the city of Joplin, Missouri on May 22
killing 160 people, the deadliest single tornado in the US since 1950. The outbreak
at the end of April spawned a record 349 tornadoes, the highest for a single
outbreak since 1950. In terms of insured losses, the two tornado outbreaks are the
12th and 13th most expensive US natural catastrophe events on sigma records, and
the 19th and 20th worldwide. The most damaging hail event ever recorded in the
US was in 2001, when a hailstorm inflicted severe damage on Kansas City, causing
insured losses of USD 2.9 billion (in 2014 prices). The claims were mostly for vehicle
and property damage.

Figure 7
US total and insured losses from severe convective storms in USD billions, and
number of events leading to insured losses in excess of USD 1 billion

Severe convective storms: a need for robust modelling
The increasing losses from severe convective storms are a growing challenge for
society and insurers alike. The multi-billion dollar severe convective storm loss events
of recent years reaffirm the need for stronger mitigation measures, for example in
building codes and construction practices. They also call for more comprehensive
risk modelling in order to better understand the risks.

28 The Enhanced Fujita scale is a ratings system to measure the strength of tornadoes based on the damage
caused. There are six categories: zero to five, representing increasing degrees of damage. For more
information, see http://en.wikipedia.org/wiki/Enhanced_Fujita_scale
Challenges in severe convective storm risk assessment

The reality, however, is that modelling severe convective storm risk is inherently difficult. The risk assessment models are typically built from the historical archives of events. Yet the archives for severe convective storms are not very reliable, if they exist at all. For example, the US record of tornadoes, hail and straight-line winds is the most complete in the world. Even so, to use this information for risk assessment presents still many challenges, such as:

- Short and incomplete entries.
- Duplicate entries (e.g., when a tornado crosses state boundaries).
- Reporting biases near population centres and by time of day.
- Tornado intensity rating based on damage as a proxy for actual wind speed intensity, which can often lead to under-reporting of weak tornadoes and under-classification of strong tornadoes.
- Tornado intensity classification based on the maximum rather than the average or distribution of damage observed.
- Tornado path width and length based on the maximum rather than average or distribution of width observed. These parameters are also often rounded to the nearest 100 yards or mile.
- Recording of only the start and end points of the tornado damage path, and no information on path curvature.
- In the US, the Enhanced Fujita scale replaced the Fujita scale in 2007. The tornadoes on record prior to 1970s were retroactively rated.
- Descriptions of hail storm intensity in reports are very subjective, and based on the relative size of common objects such as golf balls.
- Hail reports are from point locations only. Information on hail swaths has to be derived from other methods (e.g., Doppler radar or satellite observations).

In addition, insured losses for severe convective storms are generally reported with tornado, hail and straight-line wind losses aggregated. Also the historical reporting thresholds are high and can change. For example, from 1941–1981 the threshold used by the Property Claim Services (PCS) in the US was USD 1 million. That moved to USD 5 million in 1982–1996, and has been at USD 25 million since 1997.

Models for severe convective storms risk assessment

There are many models to assess the risks from “main” perils such as tropical cyclones and earthquakes, but there are few that model severe convective storms. Risk assessment models generally use simulated event sets based on statistics derived from historical records. The localized nature of the severe convective storms, however, means that the associated damage can be concentrated over a very small area, and that hundreds of thousands to millions of simulated events would need to be generated to obtain enough data to assess the risk at any given location. Today, computing capability has reached a level where generating these millions of years of events is possible. But this is a recent development, which explains why risk assessment modelling for severe convective storms is still a new art.

The few severe convective storm risk assessment models that do exist have many shortcomings. The models are all hybrids incorporating, for example, statistical techniques coupled with numerical weather prediction modelling and claims analyses, or using satellite or Doppler radar data as proxies for hail or tornado-favourable environments. These techniques are used to circumvent some of the difficulties posed by the historical archives, but they have their own uncertainties and complications. Additionally, the grid spacing, spatial correlation, structural vulnerability and loss accumulation potential are generally all treated very differently from model to model. One model used in the US and Canada considers the impact of tornadoes, hail and straight-line winds together, while another used in the US, Canada and Australia can be run for each sub-peril independently or in combination.

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29 The predecessor to the EF scale, also rating six levels of tornado intensity based on damage caused. For more, see http://en.wikipedia.org/wiki/Fujita_scale
Yet another model focuses on tornadoes and hail storms in the US. Because of the wide variety of approaches and assumptions used, the models rarely compare well with one another. These challenges and difficulties are further amplified with short, incomplete, or non-existent historical records.

Also, different approaches are required depending on whether the focus is a single risk/location or a large portfolio of risks/locations (ie, reinsurance treaty). This is particularly important from the reinsurance perspective. For reinsurance treaties, large severe convective storm outbreaks are the major loss drivers, and the losses tend to correlate better with market losses. For a single location, however, a single storm can cause significant to total loss, but the likelihood of the specific location being hit directly by a severe convective storm is much lower.

Swiss Re has three models to assess severe convective storm risk.

Swiss Re’s models for severe convective storms

Swiss Re has three models for severe convective storm risk assessment. One is a combined tornado/hail model for the eastern US, and another a hail model covering central Europe, both for treaty business. A recent addition in 2014 is a tornado-only model for single-risk business in the US and Canada.

The latest is a single-risk tornado model for the US and Canada.

This latest model was developed based on the occurrence and severity of historical tornadoes, the spatial correlation of damage and the frequency of expected losses. A “hazard map” was developed using the SPC’s 1950–2013 tornado track set after removing all EF/F0 tornadoes, the lowest intensity tornadoes based on the Enhanced Fujita/Fujita scales, and tornadoes caused by tropical cyclones. The number of tornadoes within a 100km/62 mile radius for each grid point on a 1km/0.62 mile grid was determined, and a severity factor was applied on a regional basis depending on the likelihood that a tornado would exceed a certain intensity. Finally, adjustments were made to account for reporting biases near population centres.

The model builds a hazard map showing high and low risk areas.

An irregular grid was developed to take the spatial correlation of damage into account. The grid resolution and orientation are based on the average track direction (on a regional basis), and also the tornado path width and length characteristics (Table 4).

### Table 4: Tornado path characteristics

<table>
<thead>
<tr>
<th>Enhanced Fujita/Fujita scale rating</th>
<th>Number of tornadoes evaluated</th>
<th>Average compass direction (degrees)</th>
<th>Tornado path length</th>
<th>Tornado path width</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>50th Percentile (km)</td>
<td>95th Percentile (km)</td>
<td>50th Percentile (m)</td>
</tr>
<tr>
<td>1</td>
<td>18691</td>
<td>67</td>
<td>1.6</td>
<td>21.1</td>
</tr>
<tr>
<td>2</td>
<td>8904</td>
<td>56</td>
<td>4.8</td>
<td>42.2</td>
</tr>
<tr>
<td>3</td>
<td>2510</td>
<td>62</td>
<td>15.5</td>
<td>77.4</td>
</tr>
<tr>
<td>4</td>
<td>658</td>
<td>66</td>
<td>30.3</td>
<td>140.7</td>
</tr>
<tr>
<td>5</td>
<td>81</td>
<td>54</td>
<td>48.4</td>
<td>182.6</td>
</tr>
</tbody>
</table>

Source: Swiss Re.
Severe convective storms: a growing global risk

**Figure 8**
US tornado hazard map

The expected losses are accumulated from the hazard map and irregular grid.

**Figure 9**
Regional exceedance probability curves for tornado intensity

Using the “hazard map” and irregular grid, the expected losses were accumulated assuming full correlation within the grid cell, and no correlation between grid cells. Finally, the model was benchmarked by comparing expected market losses with severe convective storm loss data from Property Claim Services.

Much more needs to be done to improve severe convective storm risk assessment modelling.

Like all severe convective storm models, the Swiss Re models have shortcomings for all the same reasons mentioned previously. Models are only as good as the data and assumptions that go into them. That is why more attention needs to be devoted to building a longer and higher quality historical archive of events and losses, and also to developing probabilistic models for a broad range of perils. Only then will severe convective storm risk assessment be significantly improved.
### Tables for reporting year 2014

#### Table 5
List of major losses in 2014 according to loss category

<table>
<thead>
<tr>
<th>Loss Category</th>
<th>Number</th>
<th>in %</th>
<th>Victims&lt;sup&gt;30&lt;/sup&gt;</th>
<th>in %</th>
<th>Insured loss&lt;sup&gt;31&lt;/sup&gt; (in USD m)</th>
<th>in %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Natural catastrophes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floods</td>
<td>61</td>
<td>30.6%</td>
<td>3 064</td>
<td>55.3%</td>
<td>2 162</td>
<td>80.0%</td>
</tr>
<tr>
<td>Storms</td>
<td>85</td>
<td>43.8%</td>
<td>1 195</td>
<td>55.3%</td>
<td>18 397</td>
<td>80.0%</td>
</tr>
<tr>
<td>Earthquakes</td>
<td>15</td>
<td>7.7%</td>
<td>897</td>
<td>6.3%</td>
<td>313</td>
<td>80.0%</td>
</tr>
<tr>
<td>Droughts, bush fires, heat waves</td>
<td>10</td>
<td>4.9%</td>
<td>335</td>
<td>6.3%</td>
<td>150</td>
<td>80.0%</td>
</tr>
<tr>
<td>Cold, frost</td>
<td>6</td>
<td>2.9%</td>
<td>745</td>
<td>4.5%</td>
<td>53</td>
<td>80.0%</td>
</tr>
<tr>
<td>Hail</td>
<td>5</td>
<td>2.4%</td>
<td>7</td>
<td>1.3%</td>
<td>6 641</td>
<td>80.0%</td>
</tr>
<tr>
<td>Other natural catastrophes</td>
<td>7</td>
<td>3.4%</td>
<td>823</td>
<td>1.5%</td>
<td>34</td>
<td>80.0%</td>
</tr>
<tr>
<td><strong>Man-made disasters</strong></td>
<td>147</td>
<td>60.4%</td>
<td>5 711</td>
<td>44.7%</td>
<td>6 958</td>
<td>20.0%</td>
</tr>
<tr>
<td>Industry, warehouses</td>
<td>12</td>
<td>4.9%</td>
<td>152</td>
<td>2.4%</td>
<td>1 278</td>
<td>80.0%</td>
</tr>
<tr>
<td>Oil, gas</td>
<td>18</td>
<td>7.0%</td>
<td>40</td>
<td>0.6%</td>
<td>2 928</td>
<td>80.0%</td>
</tr>
<tr>
<td>Other buildings</td>
<td>9</td>
<td>3.8%</td>
<td>296</td>
<td>0.5%</td>
<td>50</td>
<td>80.0%</td>
</tr>
<tr>
<td>Other fires, explosions</td>
<td>4</td>
<td>1.7%</td>
<td>2</td>
<td>0.0%</td>
<td></td>
<td>80.0%</td>
</tr>
<tr>
<td><strong>Aviation disasters</strong></td>
<td>12</td>
<td>4.9%</td>
<td>960</td>
<td>7.5%</td>
<td>916</td>
<td>28.6%</td>
</tr>
<tr>
<td>Crashes</td>
<td>7</td>
<td>2.9%</td>
<td>940</td>
<td>7.1%</td>
<td>337</td>
<td>80.0%</td>
</tr>
<tr>
<td>Explosions, fires</td>
<td>1</td>
<td>0.4%</td>
<td>20</td>
<td>0.3%</td>
<td></td>
<td>80.0%</td>
</tr>
<tr>
<td>Space</td>
<td>4</td>
<td>1.5%</td>
<td>59</td>
<td>0.5%</td>
<td></td>
<td>80.0%</td>
</tr>
<tr>
<td><strong>Maritime disasters</strong></td>
<td>39</td>
<td>16.0%</td>
<td>2 118</td>
<td>16.6%</td>
<td>783</td>
<td>23.2%</td>
</tr>
<tr>
<td>Freighters</td>
<td>3</td>
<td>1.3%</td>
<td>8</td>
<td>0.1%</td>
<td>156</td>
<td>80.0%</td>
</tr>
<tr>
<td>Passenger ships</td>
<td>28</td>
<td>11.1%</td>
<td>2 000</td>
<td>15.6%</td>
<td>231</td>
<td>80.0%</td>
</tr>
<tr>
<td>Drilling platforms</td>
<td>4</td>
<td>1.6%</td>
<td>326</td>
<td>2.4%</td>
<td>326</td>
<td>80.0%</td>
</tr>
<tr>
<td>Other maritime accidents</td>
<td>4</td>
<td>1.6%</td>
<td>110</td>
<td>0.8%</td>
<td>70</td>
<td>80.0%</td>
</tr>
<tr>
<td>Rail disasters (incl. cableways)</td>
<td>5</td>
<td>2.0%</td>
<td>127</td>
<td>1.0%</td>
<td></td>
<td>80.0%</td>
</tr>
<tr>
<td><strong>Mining accidents</strong></td>
<td>7</td>
<td>2.9%</td>
<td>400</td>
<td>3.1%</td>
<td>110</td>
<td>80.0%</td>
</tr>
<tr>
<td><strong>Collapse of buildings/bridges</strong></td>
<td>3</td>
<td>1.2%</td>
<td>42</td>
<td>0.3%</td>
<td></td>
<td>80.0%</td>
</tr>
<tr>
<td><strong>Miscellaneous</strong></td>
<td>38</td>
<td>15.1%</td>
<td>1 574</td>
<td>12.3%</td>
<td>893</td>
<td>25.2%</td>
</tr>
<tr>
<td>Social unrest</td>
<td>1</td>
<td>0.4%</td>
<td>21</td>
<td>0.2%</td>
<td>350</td>
<td>80.0%</td>
</tr>
<tr>
<td>Terrorism</td>
<td>28</td>
<td>11.2%</td>
<td>1 361</td>
<td>10.7%</td>
<td>543</td>
<td>80.0%</td>
</tr>
<tr>
<td>Other miscellaneous losses</td>
<td>9</td>
<td>3.7%</td>
<td>192</td>
<td>1.5%</td>
<td></td>
<td>80.0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>336</td>
<td>100.0%</td>
<td>12 777</td>
<td>100.0%</td>
<td>34 708</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source: Swiss Re Economic Research & Consulting and Cat Perils.

<sup>30</sup> Dead or missing.

<sup>31</sup> Property and business interruption, excluding liability and life insurance losses.
Table 6
The 20 most costly insurance losses in 2014

<table>
<thead>
<tr>
<th>Insured loss 32 (in USD m)</th>
<th>Victims 33</th>
<th>Date (start)</th>
<th>Event</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,935</td>
<td>–</td>
<td>18.05.2014</td>
<td>Severe thunderstorms, large hail</td>
<td>US</td>
</tr>
<tr>
<td>2,502</td>
<td>26</td>
<td>08.02.2014</td>
<td>Snow storm</td>
<td>Japan</td>
</tr>
<tr>
<td>2,190</td>
<td>6</td>
<td>08.06.2014</td>
<td>Wind and hail storm Ela</td>
<td>France, Germany, Belgium</td>
</tr>
<tr>
<td>1,700</td>
<td>6</td>
<td>14.09.2014</td>
<td>Hurricane Odile</td>
<td>Mexico</td>
</tr>
<tr>
<td>1,669</td>
<td>21</td>
<td>05.01.2014</td>
<td>Winter storm</td>
<td>US</td>
</tr>
<tr>
<td>1,129</td>
<td>2</td>
<td>03.06.2014</td>
<td>Severe thunderstorms, large hail, tornadoes</td>
<td>US</td>
</tr>
<tr>
<td>1,220</td>
<td>33</td>
<td>27.04.2014</td>
<td>Thunderstorms, large hail, 83 tornadoes, severe flash floods</td>
<td>US</td>
</tr>
<tr>
<td>1,084</td>
<td>–</td>
<td>02.04.2014</td>
<td>Severe storms, large hail, tornadoes</td>
<td>US</td>
</tr>
<tr>
<td>ns</td>
<td>7</td>
<td>15.06.2014</td>
<td>Major fire and explosion at oil refinery</td>
<td>Russia</td>
</tr>
<tr>
<td>ns*</td>
<td></td>
<td></td>
<td>Thunderstorms with winds up to 108 km/67 miles per hour, hail, flash floods</td>
<td>US</td>
</tr>
<tr>
<td>905</td>
<td>–</td>
<td>27.09.2014</td>
<td></td>
<td></td>
</tr>
<tr>
<td>852</td>
<td>–</td>
<td>30.11.2014</td>
<td>Hailstorm</td>
<td>Australia</td>
</tr>
<tr>
<td>678</td>
<td>–</td>
<td>12.04.2014</td>
<td>Thunderstorms, large hail, tornadoes</td>
<td>US</td>
</tr>
<tr>
<td>ns</td>
<td>–</td>
<td>07.07.2014</td>
<td>Fire at petrochemical plant</td>
<td>US</td>
</tr>
<tr>
<td>635</td>
<td>–</td>
<td>10.05.2014</td>
<td>Thunderstorms, hail, tornadoes, flash floods</td>
<td>US</td>
</tr>
<tr>
<td>632</td>
<td>68</td>
<td>12.10.2014</td>
<td>Cyclone Hudhud</td>
<td>India</td>
</tr>
<tr>
<td>592</td>
<td>–</td>
<td>27.03.2014</td>
<td>Thunderstorms, winds up to 129 km/80 miles per hour, large hail, tornadoes</td>
<td>US</td>
</tr>
<tr>
<td>545</td>
<td>3</td>
<td>14.06.2014</td>
<td>Thunderstorms, &gt;100 tornadoes, hail</td>
<td>US</td>
</tr>
<tr>
<td>539</td>
<td>2</td>
<td>11.08.2014</td>
<td>Torrential rains trigger severe floods</td>
<td>US</td>
</tr>
<tr>
<td>ns*</td>
<td>47</td>
<td>13.07.2014</td>
<td>Fighting at airport destroys aircrafts</td>
<td>Libyan Arab Jamahiriya</td>
</tr>
<tr>
<td>530</td>
<td>–</td>
<td>01.01.2014</td>
<td>Floods</td>
<td>UK</td>
</tr>
</tbody>
</table>

*Not shown.

Source: Swiss Re Economic Research & Consulting and Cat Perils.

32 Property and business interruption, excluding liability and life insurance losses; US natural catastrophe figures based on Property Claim Services, including National Flood Insurance Program (NFIP) losses (see page 43, “Terms and selection criteria” section).
33 Dead and missing.
### Table 7
The 20 worst catastrophes in terms of victims 2014

<table>
<thead>
<tr>
<th>Victims*</th>
<th>Insured loss**</th>
<th>Date (start)</th>
<th>Event</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>731</td>
<td>–</td>
<td>03.08.2014</td>
<td>Earthquake (Mw* 6.1); aftershocks and landslides</td>
<td>China</td>
</tr>
<tr>
<td>665</td>
<td>237</td>
<td>03.09.2014</td>
<td>Severe monsoon floods</td>
<td>India, Pakistan</td>
</tr>
<tr>
<td>505</td>
<td>–</td>
<td>13.04.2014</td>
<td>Cold wave; freezing temperatures</td>
<td>Peru</td>
</tr>
<tr>
<td>304</td>
<td>ns</td>
<td>16.04.2014</td>
<td>Passenger ferry sinks</td>
<td>North Pacific Ocean, South Korea</td>
</tr>
<tr>
<td>301</td>
<td>–</td>
<td>13.05.2014</td>
<td>Fire at coal mine</td>
<td>Turkey</td>
</tr>
<tr>
<td>298</td>
<td>ns</td>
<td>17.07.2014</td>
<td>Malaysia Airlines Boeing 777-2H6ER (Flight MH17) crashes</td>
<td>Ukraine</td>
</tr>
<tr>
<td>256</td>
<td>–</td>
<td>02.05.2014</td>
<td>Heavy rains trigger massive landslide</td>
<td>Afghanistan</td>
</tr>
<tr>
<td>251</td>
<td>–</td>
<td>22.03.2014</td>
<td>Overcrowded boat carrying refugees capsizes on Lake Albert</td>
<td>Uganda</td>
</tr>
<tr>
<td>250</td>
<td>–</td>
<td>13.01.2014</td>
<td>Overcrowded boat capsizes on the Nile</td>
<td>Sudan</td>
</tr>
<tr>
<td>241</td>
<td>–</td>
<td>13.08.2014</td>
<td>Monsoon floods</td>
<td>Nepal</td>
</tr>
<tr>
<td>239</td>
<td>ns</td>
<td>08.03.2014</td>
<td>Malaysia Airlines Boeing 777-2H6ER (Flight MH-370) crashes</td>
<td>Indian Ocean</td>
</tr>
<tr>
<td>212</td>
<td>–</td>
<td>15.03.2014</td>
<td>Terrorist attacks at area nearby prison</td>
<td>Nigeria</td>
</tr>
<tr>
<td>209</td>
<td>–</td>
<td>30.07.2014</td>
<td>Landslide triggered by heavy rains buries a village</td>
<td>India</td>
</tr>
<tr>
<td>202</td>
<td>250</td>
<td>15.07.2014</td>
<td>Typhoon Rammasun</td>
<td>China, Philippines, Viet Nam</td>
</tr>
<tr>
<td>196</td>
<td>–</td>
<td>29.10.2014</td>
<td>Massive landslide</td>
<td>Sri Lanka</td>
</tr>
<tr>
<td>190</td>
<td>–</td>
<td>11.04.2014</td>
<td>Heavy rains trigger floods and landslides</td>
<td>Afghanistan, Tajikistan</td>
</tr>
<tr>
<td>186</td>
<td>–</td>
<td>02.08.2014</td>
<td>Massive landslide</td>
<td>Nepal</td>
</tr>
<tr>
<td>180</td>
<td>–</td>
<td>01.01.2014</td>
<td>Heat wave</td>
<td>Pakistan</td>
</tr>
<tr>
<td>162</td>
<td>–</td>
<td>28.12.2014</td>
<td>Indonesia AirAsia Airbus A320-216 goes missing</td>
<td>Indonesia</td>
</tr>
<tr>
<td>154</td>
<td>–</td>
<td>22.04.2014</td>
<td>Floods</td>
<td>Tajikistan</td>
</tr>
</tbody>
</table>

* Mw = moment-magnitude scale.

Source: Swiss Re Economic Research & Consulting and Cat Perils.

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34 Dead and missing.
35 Property and business interruption, excluding liability and life insurance losses.
# Tables for reporting year 2014

## Table 8
Chronological list of all natural catastrophes 2014

<table>
<thead>
<tr>
<th>Date</th>
<th>Country Place</th>
<th>Event</th>
<th>Number of victims</th>
<th>Amount of damage (where data available)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1.–24.1.</td>
<td>UK South</td>
<td>Floods; ongoing precipitation during winter storms trigger floods on saturated soil</td>
<td>64 dead, 10 missing</td>
<td>GBP 340m (USD 530m) insured loss GBP 400m (USD 624m) total damage</td>
</tr>
<tr>
<td>1.1.–20.1.</td>
<td>Peru Cusco, Huancavelica</td>
<td>Floods</td>
<td>21 dead</td>
<td></td>
</tr>
<tr>
<td>4.1.–5.1.</td>
<td>Italy Liguria, Tuscany</td>
<td>Flash floods</td>
<td>64 dead, 8 missing</td>
<td>EUR 154m (USD 180m) total damage</td>
</tr>
<tr>
<td>10.1.–28.2.</td>
<td>Bolivia Beni</td>
<td>Floods, landslides; 1 600 houses destroyed</td>
<td>64 dead, 10 missing</td>
<td>USD 200m total damage</td>
</tr>
<tr>
<td>13.1.</td>
<td>Brazil Itaoca (Sao Paulo)</td>
<td>Flash floods</td>
<td>32 dead</td>
<td>USD 20m insured loss USD 600m total damage</td>
</tr>
<tr>
<td>14.1.–7.2.</td>
<td>Indonesia Jakarta</td>
<td>Floods</td>
<td>32 dead</td>
<td>USD 20m insured loss USD 600m total damage</td>
</tr>
<tr>
<td>16.1.–19.1.</td>
<td>France, Italy Var (France), Liguria, Tuscany (Italy)</td>
<td>Flash floods, landslides; train derails in Italy</td>
<td>1 dead</td>
<td>EUR 140m (USD 169m) insured loss EUR 320m (USD 387m) total damage</td>
</tr>
<tr>
<td>19.1.</td>
<td>Italy Modena, Bologna (Emilia Romagna)</td>
<td>Flash floods caused by torrential rains; River Secchia burst its banks; 6500 ha of agricultural land flooded</td>
<td>2 dead</td>
<td>1 injured 1 000 homeless EUR 99m (USD 120m) total damage</td>
</tr>
<tr>
<td>22.1.–23.1.</td>
<td>Tanzania Morogoro</td>
<td>Flash floods; 500 houses destroyed</td>
<td>5 000 homeless</td>
<td></td>
</tr>
<tr>
<td>24.1.</td>
<td>Argentina El Rodeo (Catamarca)</td>
<td>Floods cause landslide</td>
<td>24 dead</td>
<td></td>
</tr>
<tr>
<td>27.1.</td>
<td>Peru Tambopata, Manú</td>
<td>Heavy rains and floods; 500 houses destroyed, 1 240 houses damaged</td>
<td>6 000 homeless</td>
<td></td>
</tr>
<tr>
<td>30.1.–31.1.</td>
<td>Italy Rome</td>
<td>Floods caused by torrential rains</td>
<td>EUR 243m (USD 294m) total damage</td>
<td></td>
</tr>
<tr>
<td>1.2.–30.3.</td>
<td>Zimbabwe</td>
<td>Floods</td>
<td>4 000 homeless</td>
<td></td>
</tr>
<tr>
<td>6.2.</td>
<td>Sri Lanka</td>
<td>Floods</td>
<td>27 dead</td>
<td></td>
</tr>
<tr>
<td>19.2.–10.3.</td>
<td>Burundi Bujumbura</td>
<td>Floods, landslides</td>
<td>64 dead, 32 missing</td>
<td>182 injured 12 500 homeless</td>
</tr>
<tr>
<td>25.2.–10.3.</td>
<td>Paraguay Asuncion</td>
<td>Floods</td>
<td>2 000 homeless</td>
<td></td>
</tr>
<tr>
<td>15.3.–15.5.</td>
<td>Colombia Caquetá, Magdalena, Chocó, Cauca</td>
<td>Floods</td>
<td>33 dead</td>
<td></td>
</tr>
<tr>
<td>2.4.–3.4.</td>
<td>Solomon Islands</td>
<td>Flash floods</td>
<td>22 dead</td>
<td></td>
</tr>
<tr>
<td>5.4.–9.4.</td>
<td>Argentina Neuquén, Rio Negro, Cordoba, Santa Fe, Entre Rios, Catamarca, Santiago del Estero</td>
<td>Floods</td>
<td>3 000 homeless</td>
<td></td>
</tr>
<tr>
<td>11.4.–13.4.</td>
<td>Afghanistan, Tajikistan</td>
<td>Heavy rains trigger floods and landslides</td>
<td>190 dead</td>
<td></td>
</tr>
<tr>
<td>11.4.–17.4.</td>
<td>Tanzania Dar es Salaam</td>
<td>Floods</td>
<td>41 dead</td>
<td></td>
</tr>
<tr>
<td>22.4.–30.4.</td>
<td>Tajikistan</td>
<td>Floods</td>
<td>154 dead</td>
<td></td>
</tr>
<tr>
<td>2.5.</td>
<td>Afghanistan Badakhshan</td>
<td>Heavy rains trigger massive landslide; 300 houses destroyed</td>
<td>256 dead</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Country Place</td>
<td>Event</td>
<td>Number of victims</td>
<td>Amount of damage (where data available)</td>
</tr>
<tr>
<td>------------</td>
<td>--------------------------------</td>
<td>----------------------------------------------------------------------</td>
<td>-------------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>2.5.–4.5.</td>
<td>Italy Senigallia, Chiaravalle</td>
<td>Flash floods caused by torrential rains; Rivers Triponzio and Misa burst their banks; 2,670 houses damaged</td>
<td>3 dead</td>
<td>EUR 99m (USD 120m) total damage</td>
</tr>
<tr>
<td>12.5.–16.5.</td>
<td>China Hunan</td>
<td>Floods as a result of torrential rains</td>
<td>53 dead</td>
<td>USD 700m total damage</td>
</tr>
<tr>
<td>12.5.–21.5.</td>
<td>Serbia and Montenegro, Bosnia and Herzegovina, Croatia, Romania, Slovakia, Poland</td>
<td>Severe floods, landslides</td>
<td>82 dead</td>
<td>&lt; USD 100m insured loss USD 3.1bn total damage</td>
</tr>
<tr>
<td>24.5.–28.5.</td>
<td>China Guangdong</td>
<td>Floods; more than 90,000 houses destroyed or damaged</td>
<td>37 dead</td>
<td>USD 1.1bn total damage</td>
</tr>
<tr>
<td>27.5.–31.5.</td>
<td>Russia Altai region, Khakassia Republic, Altai Republic</td>
<td>Floods caused by heavy torrential rains; 4,000 houses severely damaged</td>
<td>6 dead</td>
<td>2000 injured RUB 600m (USD 8m) total damage</td>
</tr>
<tr>
<td>1.6.–10.6.</td>
<td>Iran Khorasan, Golestan</td>
<td>Floods</td>
<td>37 dead</td>
<td>USD 500m total damage</td>
</tr>
<tr>
<td>2.6.–7.6.</td>
<td>India Khorasan, Golestan</td>
<td>Floods, landslides</td>
<td>23 dead</td>
<td>USD 500m total damage</td>
</tr>
<tr>
<td>2.6.–10.6.</td>
<td>China Guishou, Gangdong</td>
<td>Floods; over 70,000 houses damaged; damage to agriculture</td>
<td>33 dead</td>
<td>CNY 4.2bn (USD 677m) total damage</td>
</tr>
<tr>
<td>5.6.–20.6.</td>
<td>Brazil Paraguay, Argentina Parán (Brazil), El Chaco (Paraguay)</td>
<td>Floods</td>
<td>13 dead</td>
<td>7000 homeless USD 500m total damage</td>
</tr>
<tr>
<td>6.6.</td>
<td>Afghanistan Guzargah-e-Nur (Baghlan)</td>
<td>Flash floods; 380 houses destroyed, 40 houses damaged</td>
<td>81 dead</td>
<td>35 injured</td>
</tr>
<tr>
<td>16.8.–25.6.</td>
<td>China Sichuan, Fujian</td>
<td>Monsoon floods, thundestorms, hail; over 80,000 houses damaged or destroyed; damage to cropland</td>
<td>34 dead</td>
<td>CNY 5.74bn (USD 925m) total damage</td>
</tr>
<tr>
<td>18.6.–20.6.</td>
<td>Bulgaria Varna, Dobrich, Gabrovo, Veliko Tarnovo, Burgas, Montana, Kyustendil, Plovdiv, Haskovo, Yambol, Sofia</td>
<td>Thunderstorms trigger flash floods and hail</td>
<td>15 dead</td>
<td>1280 homeless EUR 311m (USD 377m) total damage</td>
</tr>
<tr>
<td>19.6.–11.7.</td>
<td>Ivory Coast Abidjan</td>
<td>Floods</td>
<td>23 dead</td>
<td>USD 475m total damage</td>
</tr>
<tr>
<td>23.6.–25.6.</td>
<td>India Assam</td>
<td>Floods</td>
<td>27 dead</td>
<td>USD 475m total damage</td>
</tr>
<tr>
<td>26.6.–28.6.</td>
<td>China Sichuan, Zhejiang</td>
<td>Monsoon floods</td>
<td>24 dead</td>
<td>USD 900m total damage</td>
</tr>
<tr>
<td>3.7.–29.7.</td>
<td>Brazil, Uruguay Rio Grande do Sul (Brazil), Paysandú (Uruguay)</td>
<td>Floods</td>
<td>10 dead</td>
<td>8405 homeless</td>
</tr>
<tr>
<td>3.7.–7.7.</td>
<td>China Guizhou, Yunnan</td>
<td>Floods; 5000 houses destroyed</td>
<td>15 dead, 8 missing</td>
<td>USD 500m total damage</td>
</tr>
<tr>
<td>13.7.–18.7.</td>
<td>China Fujian, Jiangxi, Shandong</td>
<td>Floods; 5800 houses destroyed, 16,300 houses damaged</td>
<td>66 dead</td>
<td>USD 1.25bn total damage</td>
</tr>
<tr>
<td>29.7.–3.8.</td>
<td>Germany, Bulgaria, Romania North Rhine-Westphalia, Baden-Württemberg (Germany)</td>
<td>Thunderstorms trigger flash floods and landslides; severe flood damage in city of Münster (Germany)</td>
<td>6 dead</td>
<td>EUR 140m (USD 169m) insured loss EUR 300m (USD 363m) total damage</td>
</tr>
<tr>
<td>30.7.–31.7.</td>
<td>Cambodia Mekong River</td>
<td>Flash floods</td>
<td>45 dead</td>
<td>USD 100m total damage</td>
</tr>
<tr>
<td>2.8.–20.8.</td>
<td>Niger Tillabéry</td>
<td>Floods; 4,700 houses destroyed</td>
<td>38 dead</td>
<td>36,000 homeless</td>
</tr>
<tr>
<td>7.8.–8.8.</td>
<td>India Odisha</td>
<td>Floods caused by monsoon rains</td>
<td>45 dead</td>
<td>USD 100m total damage</td>
</tr>
</tbody>
</table>
## Tables for reporting year 2014

<table>
<thead>
<tr>
<th>Date</th>
<th>Country</th>
<th>Place</th>
<th>Event</th>
<th>Number of victims</th>
<th>Amount of damage (where data available)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.8.–13.8</td>
<td>US</td>
<td>Detroit (MI), NY, MD</td>
<td>Torrential rains trigger severe floods in Michigan and Northeast</td>
<td>2 dead</td>
<td>USD 600m-1bn insured loss USD 1.6bn total damage</td>
</tr>
<tr>
<td>11.8.–19.8</td>
<td>China</td>
<td>Fujian, Jiangxi, Hunan, Guangdong, Sichuan and Guangxi regions</td>
<td>Flood caused by heavy monsoon rains</td>
<td>27 dead</td>
<td>USD 400m total damage</td>
</tr>
<tr>
<td>13.8.–20.8</td>
<td>Nepal</td>
<td></td>
<td>Monsoon floods</td>
<td>92 dead, 149 missing</td>
<td></td>
</tr>
<tr>
<td>13.8.–18.8</td>
<td>Bangladesh</td>
<td>Bhola District, Barisal</td>
<td>Monsoon floods; 16,314 houses destroyed, 110,682 houses damaged</td>
<td>59 dead</td>
<td>USD 150m total damage</td>
</tr>
<tr>
<td>20.8.</td>
<td>Japan</td>
<td>Hiroshima</td>
<td>Landslides triggered by heavy rains</td>
<td>74 dead</td>
<td>67 injured USD 30.9m insured loss USD 38m total damage</td>
</tr>
<tr>
<td>22.8.–28.8</td>
<td>China</td>
<td></td>
<td>Floods</td>
<td>10 dead</td>
<td>USD 600m total damage</td>
</tr>
<tr>
<td>1.9.–8.9</td>
<td>China</td>
<td></td>
<td>Floods caused by monsoon rains</td>
<td>65 dead</td>
<td>USD 570m total damage</td>
</tr>
<tr>
<td>3.9.–10.9</td>
<td>India, Pakistan</td>
<td>Jammu and Kashmir (India)</td>
<td>Severe monsoon floods</td>
<td>665 dead</td>
<td>53,735 injured &gt;INR 15bn (USD 237m) insured loss USD 5.97bn total damage</td>
</tr>
<tr>
<td>19.9.–20.9</td>
<td>France</td>
<td>Hérault, Gard, Ardèche (Languedoc)</td>
<td>Thunderstorms cause flash floods, hail</td>
<td>6 dead</td>
<td>EUR 120m (USD 145m) insured loss EUR 150m (USD 182m) total damage</td>
</tr>
<tr>
<td>20.9.–25.9</td>
<td>India</td>
<td></td>
<td>Floods following Typhoon Kalmaegi</td>
<td>73 dead</td>
<td>INR 10bn (USD 158m) total damage</td>
</tr>
<tr>
<td>28.9.–30.9</td>
<td>France</td>
<td>Montpellier, Hérault, Montagnac, Saint-Pargoire (Languedoc-Roussillon)</td>
<td>Thunderstorms cause flash floods, hail</td>
<td>EUR 200m (USD 242m) insured loss</td>
<td></td>
</tr>
<tr>
<td>8.10.–13.10</td>
<td>Italy</td>
<td>Genoa, La Spezia (Liguria)</td>
<td>Flash floods</td>
<td>1 dead</td>
<td>EUR 250m (USD 303m) total damage</td>
</tr>
<tr>
<td>15.10.–27.10</td>
<td>Nicaragua, Honduras, Guatemala</td>
<td>Floods caused by heavy torrential rains</td>
<td>33 dead</td>
<td>32,000 homeless</td>
<td></td>
</tr>
<tr>
<td>28.10.–24.11</td>
<td>Colombia</td>
<td></td>
<td>Floods</td>
<td>44 dead</td>
<td></td>
</tr>
<tr>
<td>4.11.–16.11</td>
<td>Italy, France, Switzerland, Slovenia</td>
<td>Multiple low depression systems trigger thunderstorms, flash floods and tornadoes</td>
<td>12 dead, 3 missing</td>
<td>5 injured EUR 300m (USD 363m) total damage</td>
<td></td>
</tr>
<tr>
<td>22.11.–30.11</td>
<td>Morocco</td>
<td>Spain Guelmim-Es-Semara, Souss Massa Drâa (Morocco)</td>
<td>Storms trigger severe floods and damage to infrastructure</td>
<td>47 dead</td>
<td>USD 450m total damage</td>
</tr>
<tr>
<td>3.12.–4.12</td>
<td>Colombia</td>
<td>Chocó</td>
<td>Flash floods</td>
<td>44 dead</td>
<td></td>
</tr>
<tr>
<td>17.12.–30.12</td>
<td>Malaysia, Thailand</td>
<td>Floods</td>
<td>36 dead</td>
<td>USD 284m total damage</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Country Place</td>
<td>Event</td>
<td>Number of victims</td>
<td>Amount of damage (where data available)</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
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<td></td>
</tr>
<tr>
<td>2.1.</td>
<td>Réunion</td>
<td>Cyclone Bejisa; power cuts to 170000 houses, roads damaged by high waves, severe damage to sugar cane crops</td>
<td>2 dead</td>
<td>EUR 41m (USD 49m) insured loss EUR 70m (USD 85m) total damage</td>
<td></td>
</tr>
<tr>
<td>2.1.–5.1.</td>
<td>US MA, NJ, NY, PA, CT</td>
<td>Winter storm</td>
<td>16 dead</td>
<td>USD 100–300m insured loss USD 210m total damage</td>
<td></td>
</tr>
<tr>
<td>5.1.–8.1.</td>
<td>US GA, OH, NY, TN, IL, PA, MI, MD, NJ, IN, VA, NC, KY, AL, MO, SC, MS</td>
<td>Winter storm</td>
<td>21 dead</td>
<td>USD 1.67bn insured loss USD 2.5bn total damage</td>
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<tr>
<td>11.1.</td>
<td>Tonga Ha’apai</td>
<td>Cyclone Ian (Cat 5) with winds up to 430 km/267 miles per hour; 800 houses damaged or destroyed; 17 schools damaged; extensive damage to staple crops</td>
<td>1 dead</td>
<td>300 homeless TO $2.6bn (USD 31m) total damage</td>
<td></td>
</tr>
<tr>
<td>12.1.–20.1.</td>
<td>Philippines</td>
<td>Tropical Storm Linglin</td>
<td>64 dead</td>
<td>36 injured USD 15m total damage</td>
<td></td>
</tr>
<tr>
<td>25.1.</td>
<td>Burundi Nyanza-Lac</td>
<td>Lightning strikes a school</td>
<td>7 dead</td>
<td>51 injured</td>
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</tr>
<tr>
<td>1.2.–11.2.</td>
<td>Afghanistan Jawzjan</td>
<td>Winter storm, heavy snowfall, cold wave</td>
<td>63 dead</td>
<td></td>
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<tr>
<td>4.2.–6.2.</td>
<td>France, Spain, UK, Ireland</td>
<td>Winter storm Petra, floods</td>
<td>EUR 77m (USD 94m) insured loss EUR 130m (USD 157m) total damage</td>
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<td>4.2.–6.2.</td>
<td>US PA, MD</td>
<td>Winter storm, icy winds</td>
<td>USD 100–300m insured loss USD 260m total damage</td>
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<tr>
<td>6.2.–9.2.</td>
<td>France, Ireland, UK, Spain, Portugal</td>
<td>Winter storms</td>
<td>EUR 125m (USD 151m) insured loss EUR 170m (USD 206m) total damage</td>
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<tr>
<td>7.2.–14.2.</td>
<td>China South</td>
<td>Winter storm, heavy snowfall</td>
<td>10 dead</td>
<td>90 injured USD 675m total damage</td>
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</tr>
<tr>
<td>8.2.</td>
<td>Japan</td>
<td>Snow storm</td>
<td>26 dead</td>
<td>600 injured USD 2.5bn insured loss USD 5bn total damage</td>
<td></td>
</tr>
<tr>
<td>11.2.</td>
<td>US GA, NY, NC, PA, SC</td>
<td>Winter storm, icy rains, snowfall</td>
<td>12 dead</td>
<td>USD 100–300m insured loss USD 650m total damage</td>
<td></td>
</tr>
<tr>
<td>12.2.–13.2.</td>
<td>UK, Ireland</td>
<td>Windstorm Tini (Darwin); winds up to 180 km/112 miles per hour; heavy rainfall exacerbates flooding in southern England.</td>
<td>1 dead</td>
<td>USD 362m insured loss USD 500m total damage</td>
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<tr>
<td>14.2.–15.2.</td>
<td>Ireland, UK, France, Belgium, Norway</td>
<td>Winter storm Ulla</td>
<td>EUR 136m (USD 165m) insured loss EUR 160m (USD 194m) total damage</td>
<td></td>
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<tr>
<td>17.2.–21.2.</td>
<td>China Sichuan, Guizhou, Yunnan</td>
<td>Winter storm, snow fall, damage to houses and agriculture</td>
<td>USD 140m total damage</td>
<td></td>
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<tr>
<td>20.2.–21.2.</td>
<td>US MO, IL</td>
<td>Thunderstorms, tornadoes, hail</td>
<td>1 dead</td>
<td>USD 100–300m insured loss USD 170m total damage</td>
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</tr>
<tr>
<td>3.3.–4.3.</td>
<td>India Hyderabad (Andhra Pradesh)</td>
<td>Thunderstorms, hail, flash floods; 374 houses damaged</td>
<td>7 dead</td>
<td>58 injured</td>
<td></td>
</tr>
<tr>
<td>6.3.–7.3.</td>
<td>US NC</td>
<td>Winter storm, icy rains, flooding</td>
<td>USD 50–100m insured loss USD 100m total damage</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Data taken from Perils AG, http://www.perils.org/
<table>
<thead>
<tr>
<th>Date</th>
<th>Country Place</th>
<th>Event</th>
<th>Number of victims</th>
<th>Amount of damage (where data available)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.–7.3.</td>
<td>US NC</td>
<td>Winter storm, icy rains, flooding</td>
<td></td>
<td>USD 50–100m insured loss USD 100m total damage</td>
</tr>
<tr>
<td>14.3.–16.3.</td>
<td>Germany, Denmark, Norway, Sweden</td>
<td>Winter storm</td>
<td></td>
<td>EUR 67m (USD 81m) insured loss EUR 100m (USD 121m) total damage</td>
</tr>
<tr>
<td>16.3.</td>
<td>Thailand</td>
<td>Thunderstorms, heavy rains, hail</td>
<td>2000 homeless</td>
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<tr>
<td>19.3.–20.3.</td>
<td>China Sichuan, Xinjiang, Henan</td>
<td>Thunderstorms, hail</td>
<td>1 dead</td>
<td>CNY 728m (USD 117m) total damage</td>
</tr>
<tr>
<td>26.3.–5.4.</td>
<td>Madagascar, Comoros, Mozambique</td>
<td>Tropical cyclone Hellen (Category 4); over 600 houses destroyed, over 1 000 houses damaged</td>
<td>12 dead 2736 homeless</td>
<td>USD 20m total damage</td>
</tr>
<tr>
<td>29.3.–4.4.</td>
<td>China Guangdong, Guangxi, Guizhou</td>
<td>Storms, hail, landslides</td>
<td>21 dead</td>
<td>USD 155m total damage</td>
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<tr>
<td>2.4.–4.4.</td>
<td>US TX, IL, KS, MO</td>
<td>Severe storms, large hail, tornadoes</td>
<td></td>
<td>USD 1.08bn insured loss USD 1.6bn total damage</td>
</tr>
<tr>
<td>7.4.–16.4.</td>
<td>China</td>
<td>Winter storm, heavy snow fall, freezing temperatures</td>
<td>128 dead</td>
<td>USD 100m total damage</td>
</tr>
<tr>
<td>12.4.–14.4.</td>
<td>US IL, MI, TX, IA, W</td>
<td>Thunderstorms, large hail, tornadoes</td>
<td></td>
<td>USD 678m insured loss USD 800m total damage</td>
</tr>
<tr>
<td>14.4.–16.4.</td>
<td>Australia, Solomon Islands, New Zealand</td>
<td>Cyclone Iita; over 760 houses destroyed (mainly on the Solomon Islands), over 1 066 houses damaged; severe damage to banana plantations and public infrastructure.</td>
<td>22 dead 9000 injured</td>
<td>USD 50m insured loss USD 981m total damage</td>
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<tr>
<td>17.4.–20.4.</td>
<td>India</td>
<td>Storms</td>
<td>27 dead</td>
<td></td>
</tr>
<tr>
<td>17.4.–19.4.</td>
<td>China</td>
<td>Severe storm</td>
<td>3 dead</td>
<td>USD 156m total damage</td>
</tr>
<tr>
<td>23.4.–26.4.</td>
<td>China Xinjiang, Shaanxi, Guangxi, Hunan, Jiangxi, Qinghai</td>
<td>Severe storms, heavy rains, flash floods, landslides; over 5 000 houses destroyed or damaged, damage to cropland</td>
<td>9 dead CNY 2.83bn (USD 456m) total damage</td>
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<tr>
<td>27.4.–1.5.</td>
<td>US MS, AL, AR, FL, MD, PA, TN, GA, KS, MO, NJ, NY, VA, NC, DE, DC</td>
<td>Thunderstorms, large hail, 83 tornadoes; heavy precipitation triggers flash floods in Florida and Alabama</td>
<td>33 dead 115 injured</td>
<td>USD 1.22bn insured loss USD 1.9bn total damage</td>
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<tr>
<td>28.4.</td>
<td>Bangladesh Netrokona</td>
<td>Thunderstorms, hail, 1 000 houses destroyed</td>
<td>16 dead</td>
<td>4000 homeless</td>
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<tr>
<td>3.5.–7.5.</td>
<td>China</td>
<td>Storm, freezing temperatures</td>
<td></td>
<td>CNY 2.6bn (USD 419m) total damage</td>
</tr>
<tr>
<td>7.5.–9.5.</td>
<td>US TX, MN, CO, KS, MO</td>
<td>Thunderstorms, large hail, tornadoes, flash floods</td>
<td>USD 100–300m insured loss USD 200m total damage</td>
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<tr>
<td>10.5.–14.5.</td>
<td>US OH, MO, IN, NE, KS, TX, IL, WV</td>
<td>Thunderstorms with winds up to 160 km/99 miles per hour, hail, tornadoes, flash floods</td>
<td>USD 600m-1bn insured loss USD 1bn total damage</td>
<td></td>
</tr>
<tr>
<td>24.5.–28.5.</td>
<td>US TX, NM</td>
<td>Thunderstorms, tornadoes, hail, flash floods</td>
<td>USD 100–300m insured loss USD 200m total damage</td>
<td></td>
</tr>
<tr>
<td>2.6.–4.6.</td>
<td>Chile</td>
<td>Thunderstorms trigger flash floods</td>
<td>7 injured</td>
<td>2000 homeless</td>
</tr>
<tr>
<td>3.6.–5.6.</td>
<td>US Blair (NE), IA, KS, AR, WY</td>
<td>Severe thunderstorms with winds up to 128 km/80 miles per hour, large hail, tornadoes; severe hail damage in city of Blair and to agriculture.</td>
<td>2 dead USD 1.27bn insured loss USD 1.7bn total damage</td>
<td></td>
</tr>
<tr>
<td>5.6.–6.6.</td>
<td>US SD</td>
<td>Thunderstorms, large hail, 1 tornado, flash floods</td>
<td>USD 100–300m insured loss USD 170m total damage</td>
<td></td>
</tr>
<tr>
<td>6.6.–9.6.</td>
<td>China Beijing, Tianjin</td>
<td>Thunderstorms, strong winds, floods; damage to cropland</td>
<td>1 dead</td>
<td>USD 193m total damage</td>
</tr>
<tr>
<td>Date</td>
<td>Country, Place</td>
<td>Event</td>
<td>Number of victims/Amount of damage (where data available)</td>
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<tr>
<td>--------------------</td>
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<td>----------------------------------------------------------------------</td>
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<tr>
<td>12.6.–13.6.</td>
<td>US, Texas</td>
<td>Thunderstorms, large hail, tornadoes</td>
<td>USD 300–600m insured loss, USD 560m total damage</td>
<td></td>
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<tr>
<td>13.6.–21.6.</td>
<td>China, Shantou City (Guangdong)</td>
<td>Tropical Storm Hagibis</td>
<td>USD 131m total damage</td>
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<tr>
<td>14.6.–18.6.</td>
<td>US, SD, NE, CO, MN, IA, WI, KS</td>
<td>Thunderstorms, &gt;100 tornadoes and hail; large damage from twin EF4 tornadoes from single supercell thunderstorm in the city of Pilger</td>
<td>3 dead, 17 injured, USD 300–600m insured loss, USD 800m total damage</td>
<td></td>
</tr>
<tr>
<td>24.6.–25.6.</td>
<td>US, CO, WY</td>
<td>Thunderstorms, large hail, flash floods</td>
<td>USD 100–300m insured loss, USD 270m total damage</td>
<td></td>
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<tr>
<td>28.6.–1.7.</td>
<td>Canada, Saskatchewan, Manitoba</td>
<td>Storm bringing wind and flood damage</td>
<td>CAD 103m (USD 89m) insured loss, CAD 200m (USD 173m) total damage</td>
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<tr>
<td>29.6.–1.7.</td>
<td>US, IA, IL, IN, MI</td>
<td>Thunderstorms, tornadoes, large hail, flash floods</td>
<td>USD 300–600m insured loss, USD 600m total damage</td>
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</tr>
<tr>
<td>6.7.–7.7.</td>
<td>France, Germany, Luxembourg</td>
<td>Thunderstorms, heavy rains, hail, flash floods</td>
<td>EUR 300m (USD 363m) total damage</td>
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<tr>
<td>7.7.–9.7.</td>
<td>US, NE, CO, MO, NY, PA</td>
<td>Thunderstorms with winds up to 113 km/70 miles per hour, hail, flash floods and tornadoes; severe hail damage to corn and soybean crops in central Nebraska (Buffalo County)</td>
<td>4 dead, USD 100–300m insured loss, USD 500m total damage</td>
<td></td>
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<tr>
<td>8.7.–14.7.</td>
<td>Japan, Honshu</td>
<td>Typhoon Neoguri</td>
<td>3 dead, 64 injured, USD 156m total damage</td>
<td></td>
</tr>
<tr>
<td>15.7.–21.7.</td>
<td>China, Philippines, Vietnam, Typhoon Rammasun: more than 140000 houses destroyed, 500000 houses damaged</td>
<td>176 dead, 28 missing, 125 injured, USD 250m insured loss, USD 5.15bn total damage</td>
<td></td>
<td></td>
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<tr>
<td>19.7.–20.7.</td>
<td>China, Shaanxi, Shanxi</td>
<td>Thunderstorms, hail, flash floods; over 5000 houses destroyed</td>
<td>5 dead, CNY 1.7bn (USD 274m) total damage</td>
<td></td>
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<tr>
<td>19.7.–26.7.</td>
<td>China, Taiwan, Fujian, Jiangxi, Shandong (China)</td>
<td>Typhoon Matmo</td>
<td>14 dead, USD 500m total damage</td>
<td></td>
</tr>
<tr>
<td>26.7.–28.7.</td>
<td>US, MI, TN, MA</td>
<td>Storms with winds up to 160 km/99 miles per hour, hail, flash floods and tornadoes</td>
<td>USD 100–300m insured loss, USD 270m total damage</td>
<td></td>
</tr>
<tr>
<td>3.8.–10.8.</td>
<td>France, Germany, Belgium, Spain, UK</td>
<td>Remnants of Hurricane Bertha bring winds of up to 128 km/80 miles per hour, tornadoes, heavy rains, flash floods</td>
<td>1 dead, EUR 200m (USD 242m) total damage</td>
<td></td>
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<tr>
<td>4.8.–5.8.</td>
<td>Canada, Ontario</td>
<td>Thunderstorms trigger flash floods</td>
<td>4 injured, CAD 100m (USD 87m) insured loss, CAD 150m (USD 129m) total damage</td>
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<tr>
<td>7.8.–8.8.</td>
<td>Canada, Airdrie, Calgary (Alberta)</td>
<td>Thunderstorms with winds up to 94 km/58 miles per hour, hail, flash floods</td>
<td>CAD 537m (USD 463m) insured loss, CAD 700m (USD 604m) total damage</td>
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<tr>
<td>10.8.–11.8.</td>
<td>China, Xishui (Guizhou)</td>
<td>Thunderstorms</td>
<td>9 dead, 11 missing, CNY 190m (USD 31m) total damage</td>
<td></td>
</tr>
<tr>
<td>23.8.–24.8.</td>
<td>Dominican Republic, Haiti, Turks and Caicos Islands</td>
<td>Flooding after Tropical Storm Cristobal; more than 10000 houses damaged</td>
<td>5 dead, 1 missing, 4000 homeless</td>
<td></td>
</tr>
<tr>
<td>7.9.–8.9.</td>
<td>US, Mexico, Phoenix (AZ), Mexico</td>
<td>Remnants of Hurricane Norbert bring thunderstorms, heavy precipitation and flash floods (8 August 2014 was the rainiest day in Phoenix since 1895 (rainiest day on record))</td>
<td>6 dead, USD 25–100m insured loss, USD 325m total damage</td>
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</tr>
<tr>
<td>10.9.–16.10.</td>
<td>China, Philippines, Vietnam, Hong Kong</td>
<td>Typhoon Kalmaegi</td>
<td>25 dead, 45 injured, &lt;USD 3bn total damage</td>
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<tr>
<td>14.9.–16.9.</td>
<td>Mexico, Cabo San Lucas (Baja California Peninsula)</td>
<td>Hurricane Odile</td>
<td>6 dead, USD 1.7bn insured loss, MXN 48bn (USD 3.26bn) total damage</td>
<td></td>
</tr>
<tr>
<td>19.9.–24.9.</td>
<td>China, Philippines, Taiwan</td>
<td>Tropical Storm Fung-Wong</td>
<td>21 dead, 4 missing, USD 263m total damage</td>
<td></td>
</tr>
</tbody>
</table>
## Tables for reporting year 2014

<table>
<thead>
<tr>
<th>Date</th>
<th>Country Place</th>
<th>Event</th>
<th>Number of victims</th>
<th>Amount of damage (where data available)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.9.–26.9</td>
<td>China Gansu, Shanxi, Inner Mongolia</td>
<td>Thunderstorms, hail, flash floods</td>
<td></td>
<td>CNY 821m (USD 132m) total damage</td>
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<tr>
<td>27.9.–30.9</td>
<td>US C0, AZ</td>
<td>Thunderstorms with winds up to 108 km/67 miles per hour, large hail, flash floods</td>
<td></td>
<td>USD 600m-1bn insured loss USD 1.4bn total damage</td>
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<tr>
<td>1.10.–3.10</td>
<td>US Dallas (TX), KS</td>
<td>Thunderstorms with winds up to 145 km/90 miles per hour, large hail, flash floods</td>
<td></td>
<td>USD 100–300m insured loss USD 360m total damage</td>
</tr>
<tr>
<td>5.10.–10.10</td>
<td>Japan</td>
<td>Typhoon Phanfone</td>
<td>6 dead, 1 missing</td>
<td>60 injured USD 100m total damage</td>
</tr>
<tr>
<td></td>
<td>Japan, Philippines, Taiwan</td>
<td>Typhoon Vongfong, storm surge</td>
<td>9 dead, 2 missing</td>
<td>90 injured USD 80m total damage</td>
</tr>
<tr>
<td>12.10.–13.10</td>
<td>India Visakhapatnam (Andhra Pradesh)</td>
<td>Cyclone Hudhud</td>
<td>68 dead</td>
<td>43 injured INR 40bn (USD 632m) insured loss USD 7bn total damage</td>
</tr>
<tr>
<td>12.10.–14.10</td>
<td>US LA, AL, TX</td>
<td>Storms with winds up to 160 km/99 miles per hour, hail, tornadoes, straight line winds</td>
<td>2 dead</td>
<td>USD 100-300m insured loss USD 170m total damage</td>
</tr>
<tr>
<td>15.10</td>
<td>Nepal Manang, Mustang (Himalaya mountains)</td>
<td>Remnants of Cyclone Hudhud cause blizzard and massive avalanche; hikers, guides and herders perish</td>
<td>43 dead, 40 missing</td>
<td>176 injured</td>
</tr>
<tr>
<td>17.10</td>
<td>Bermuda, Anguilla, Saint Kitts and Nevis, Antigua and Barbuda, Netherlands Antilles</td>
<td>Hurricane Gonzalo (Cat 2) with winds up to 175 km/108 miles per hour; 37 boats destroyed</td>
<td>2 dead, 2 missing</td>
<td>12 injured USD 41m insured loss USD 100m total damage</td>
</tr>
<tr>
<td>15.10–28.10</td>
<td>Congo, Democratic Republic of (DRC) South Kivu Province</td>
<td>Thunderstorms, flash floods</td>
<td>30 dead</td>
<td></td>
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<tr>
<td>2.11.–7.11</td>
<td>Haiti, Dominican Republic</td>
<td>Strong winds, heavy rains, flash floods</td>
<td>17 dead</td>
<td>4000 homeless</td>
</tr>
<tr>
<td>10.11.–14.11</td>
<td>China</td>
<td>Winter storm</td>
<td></td>
<td>CAD 96m (USD 83m) total damage</td>
</tr>
<tr>
<td>24.11.–25.11</td>
<td>Canada Ontario, Quebec</td>
<td>Storm with winds up 100 km/62 miles per hour, flooding</td>
<td></td>
<td>CAD 110m (USD 95m) total damage</td>
</tr>
<tr>
<td>26.11.–1.12</td>
<td>France Var, Gard, Hérault, Aude, Pyrénées Orientales</td>
<td>Thunderstorms, flash floods</td>
<td>5 dead</td>
<td>EUR 200m (USD 242m) insured loss EUR 250m (USD 303m) total damage</td>
</tr>
<tr>
<td>2.12.–4.12</td>
<td>US CA</td>
<td>Thunderstorms, heavy rainfall, flash floods, mudslides</td>
<td>USD 25–100m insured loss</td>
<td>USD 100m total damage</td>
</tr>
<tr>
<td>5.12.–6.12</td>
<td>Japan Tokushima</td>
<td>Winter storm, heavy snowfall</td>
<td>24 dead</td>
<td>101 injured</td>
</tr>
<tr>
<td>6.12.–10.12</td>
<td>Philippines Eastern Samar</td>
<td>Typhoon Hagupit (Ruby) 42 466 houses destroyed, 248 204 houses damaged</td>
<td>18 dead</td>
<td>916 injured 1000264 homeless PHP 6.39bn (USD 143m) total damage</td>
</tr>
<tr>
<td>10.12.–12.12</td>
<td>US CA, WA, OR</td>
<td>Thunderstorms, heavy rains, flooding</td>
<td>1 dead</td>
<td>1 injured USD 100–300m insured loss USD 240m total damage</td>
</tr>
<tr>
<td>12.12.–13.12</td>
<td>China, Russia Northeast China and Khabarovsk, Amur(Russia)</td>
<td>Winter storm, blizzard, heavy snowfall; over 300 houses damaged</td>
<td>USD 135m total damage</td>
<td></td>
</tr>
<tr>
<td>24.12</td>
<td>US Columbia (Mississippi)</td>
<td>Tornado</td>
<td>5 dead</td>
<td>50 injured</td>
</tr>
<tr>
<td>28.12.–29.12</td>
<td>Philippines Surigao del Sur</td>
<td>Tropical storm Jangmi (Seniang) causes wind and flood damage; 610 houses destroyed, 2 687 houses damaged</td>
<td>66 dead, 6 missing</td>
<td>43 injured PHP 1.6bn (USD 36m) total damage</td>
</tr>
<tr>
<td>Date</td>
<td>Country</td>
<td>Place</td>
<td>Event</td>
<td>Number of victims</td>
</tr>
<tr>
<td>------------</td>
<td>------------------</td>
<td>------------------------</td>
<td>----------------------------------------------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>26.1.–3.2.</td>
<td>Greece</td>
<td>Argostoli and Livadi</td>
<td>Earthquakes (Mw 6.1 and Mw 6.0); 600 buildings destroyed, 2,500 buildings damaged; also damage to roads and ports</td>
<td>12 injured</td>
</tr>
<tr>
<td>1.2.</td>
<td>Indonesia</td>
<td>Sumatra</td>
<td>Volcano Sinabung eruption</td>
<td>32 dead</td>
</tr>
<tr>
<td>12.2.</td>
<td>China</td>
<td>Yutian (Xinjiang)</td>
<td>Earthquake (Mw 6.9); 90,000 houses damaged</td>
<td></td>
</tr>
<tr>
<td>1.4.</td>
<td>Chile, Peru</td>
<td></td>
<td>Earthquake (Mw 8.2)</td>
<td>6 dead</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9 injured</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&gt;CLP 92.4bn (USD 152m) insured loss &gt;CLP 347bn (USD 571m) total damage</td>
</tr>
<tr>
<td>10.4.</td>
<td>Nicaragua</td>
<td>Nagarote</td>
<td>Earthquake (Mw 6.1); 1,001 houses damaged, landslides blocked a highway</td>
<td>3 dead</td>
</tr>
<tr>
<td>24.5.</td>
<td>Greece, Turkey</td>
<td>Kamarotissa, Thessaloniki</td>
<td>Earthquake (Mw 6.9); 11 houses destroyed, 312 houses damaged</td>
<td>3 dead</td>
</tr>
<tr>
<td>7.7.</td>
<td>Guatemala</td>
<td>San Marcos</td>
<td>Earthquake (6.4 Richter scale); 10,050 houses damaged (of which 3,087 severely damaged)</td>
<td>1 dead</td>
</tr>
<tr>
<td>3.8.</td>
<td>China</td>
<td>Wenping (Yunnan)</td>
<td>Earthquake (Mw 6.1); aftershocks and landslides; 25,800 houses destroyed, 40,600 houses severely damaged</td>
<td>617 dead, 114 missing</td>
</tr>
<tr>
<td>18.8.</td>
<td>Iran</td>
<td>Mormori (Iram province)</td>
<td>Earthquake (Mw 6.2); aftershocks; 17,000 buildings damaged</td>
<td>250 injured</td>
</tr>
<tr>
<td>24.8.</td>
<td>US</td>
<td>South Napa (CA)</td>
<td>Earthquake (Mw 8.0); over 500 buildings damaged; content damage to wine industry</td>
<td>1 dead</td>
</tr>
<tr>
<td>27.9.</td>
<td>Japan</td>
<td>Honshu</td>
<td>Mount Ontake eruption</td>
<td>57 dead, 6 missing</td>
</tr>
<tr>
<td>7.10.</td>
<td>China</td>
<td>Yongping (Yunnan)</td>
<td>Earthquake (Mw 6.6); 6987 houses destroyed, 79,146 houses damaged</td>
<td>1 dead</td>
</tr>
<tr>
<td>14.10.–22.10.</td>
<td>Indonesia</td>
<td>North Sumatra</td>
<td>Mount Sinabung volcano activity</td>
<td>50 dead</td>
</tr>
<tr>
<td>22.11.</td>
<td>China</td>
<td>Kangding (Sichuan)</td>
<td>Earthquake (Mw 5.9)</td>
<td>5 dead</td>
</tr>
<tr>
<td>6.12.</td>
<td>China</td>
<td>Weiuyuan</td>
<td>Earthquake (Mw 5.5)</td>
<td>1 dead</td>
</tr>
</tbody>
</table>
### Droughts, bush fires, heat waves

<table>
<thead>
<tr>
<th>Date</th>
<th>Country</th>
<th>Place</th>
<th>Event</th>
<th>Number of victims</th>
<th>Amount of damage (where data available)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1.–30.11.</td>
<td>Brazil</td>
<td>Severe drought</td>
<td></td>
<td></td>
<td>USD 3bn total damage</td>
</tr>
<tr>
<td>1.1.–30.4.</td>
<td>Pakistan</td>
<td>Heat wave</td>
<td></td>
<td>180 dead</td>
<td></td>
</tr>
<tr>
<td>1.1.–31.12.</td>
<td>US</td>
<td>San Joaquin Valley, Central</td>
<td>Drought in California</td>
<td></td>
<td>USD 2.2bn total damage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coast (California)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.1.–18.1.</td>
<td>Australia</td>
<td>Victoria</td>
<td>Heatwave</td>
<td>139 dead</td>
<td></td>
</tr>
<tr>
<td>Summer</td>
<td>China</td>
<td>Henan</td>
<td>Drought; 508 000 ha of</td>
<td></td>
<td>CNY 7.3bn (USD 1.18bn) total damage</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>cropland lost</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer</td>
<td>China</td>
<td>Liaoning</td>
<td>Drought; 471 000 ha of</td>
<td>USD 110m insured</td>
<td>USD 2.5bn total damage</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>cropland lost</td>
<td>loss</td>
<td></td>
</tr>
<tr>
<td>12.4.–16.4.</td>
<td>Chile</td>
<td>Valparaiso</td>
<td>Wildfires</td>
<td>15 dead</td>
<td>USD 34m total damage</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10 injured</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8 000 homeless</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer</td>
<td>China</td>
<td>Mongolia</td>
<td>Drought; 178 000 ha of</td>
<td></td>
<td>USD 459m total damage</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>cropland destroyed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.6.–10.10.</td>
<td>Guatemala</td>
<td></td>
<td>Severe drought in Central</td>
<td></td>
<td>USD 100m total damage</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>America</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31.7.–25.8.</td>
<td>Sweden</td>
<td>Västmanland</td>
<td>Wildfires</td>
<td></td>
<td>1 dead</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&gt;USD 30m insured loss</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&gt;USD 100m total damage</td>
</tr>
</tbody>
</table>

### Cold, frost

<table>
<thead>
<tr>
<th>Date</th>
<th>Country</th>
<th>Place</th>
<th>Event</th>
<th>Number of victims</th>
<th>Amount of damage (where data available)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1.–20.1.</td>
<td>India</td>
<td></td>
<td>Cold wave, dense fog</td>
<td>24 dead</td>
<td></td>
</tr>
<tr>
<td>23.1.–31.1.</td>
<td>Thailand</td>
<td>Loei, Tak</td>
<td>Cold wave</td>
<td>63 dead</td>
<td></td>
</tr>
<tr>
<td>31.1.–6.2.</td>
<td>Slovenia, Croatia</td>
<td>Slovenia: whole country</td>
<td>Cold wave, dense fog</td>
<td>24 dead</td>
<td>EUR 721m (USD 873m) total damage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Croatia: Primorje-Gorski, Kotar, Karlovac, Sisak-Moslavina, Varazdin, Zagreb</td>
<td>Heavy snowfall, icy rains and floods from ice breaks cause severe forest damage; over 500 000 ha of forest destroyed or damaged (40% of Slovenia forest resources)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.4.–27.9.</td>
<td>Peru</td>
<td>Ancash, Apurimac, Arequipa, Ayacucho, Cusco, Huancavelica, Huanuco, Junin, Lima, Moquegua, Pasco, Puno and Tacna</td>
<td>Cold wave, freezing temperatures</td>
<td>505 dead</td>
<td></td>
</tr>
<tr>
<td>17.11.–19.11.</td>
<td>US</td>
<td>Buffalo (NY)</td>
<td>Winter storm (lake-effect storm) brings heavy snowfall; Buffalo gets 1.5 metres of snow</td>
<td>13 dead</td>
<td>USD 25-100m insured loss USD 100m total damage</td>
</tr>
<tr>
<td>23.12.–30.12.</td>
<td>India</td>
<td>Uttar Pradesh</td>
<td>Cold wave, icy winds, dense fog</td>
<td>140 dead</td>
<td></td>
</tr>
</tbody>
</table>
### Hail

<table>
<thead>
<tr>
<th>Date</th>
<th>Country</th>
<th>Place</th>
<th>Event</th>
<th>Number of victims</th>
<th>Amount of damage (where data available)</th>
</tr>
</thead>
<tbody>
<tr>
<td>27.3.–29.3.</td>
<td>US</td>
<td>TX, MO, LA</td>
<td>Thunderstorms, winds up to 129 km/80 miles per hour, large hail, tornadoes; considerable hail damage in Texas</td>
<td>USD 600m-1bn insured loss</td>
<td>USD 1bn total damage</td>
</tr>
<tr>
<td>18.5.–23.5</td>
<td>US</td>
<td>PA, CO, IL, MT, SC, IN, NY, IA, GA, VA</td>
<td>Severe thunderstorms, large hail</td>
<td>USD 2.94bn insured loss</td>
<td>USD 3.7bn total damage</td>
</tr>
<tr>
<td>8.6.–10.6.</td>
<td>France, Germany, Belgium</td>
<td>Storm Ela brings large hail in France and Belgium, and wind damage in Germany; over 6000000 houses and 500000 vehicles damaged</td>
<td>6 dead</td>
<td>EUR 1.81bn (USD 2.19bn) insured loss EUR 2.6bn (USD 3.15bn) total damage</td>
<td></td>
</tr>
<tr>
<td>8.7.</td>
<td>Bulgaria</td>
<td>Sofia</td>
<td>Severe hailstorm; severe damage in Sofia, 100000 vehicles damaged</td>
<td>1 dead 40 injured</td>
<td>EUR 60m (USD 73m) insured loss EUR 450m (USD 545m) total damage</td>
</tr>
<tr>
<td>30.11.</td>
<td>Australia</td>
<td>Brisbane</td>
<td>Hailstorm; 17509 houses and 51472 vehicles damaged</td>
<td>12 injured</td>
<td>AUD 1.04bn (USD 852m) insured loss AUD 1.3bn (USD 1bn) total damage</td>
</tr>
</tbody>
</table>

### Other natural catastrophes

<table>
<thead>
<tr>
<th>Date</th>
<th>Country</th>
<th>Place</th>
<th>Event</th>
<th>Number of victims</th>
<th>Amount of damage (where data available)</th>
</tr>
</thead>
<tbody>
<tr>
<td>22.3.</td>
<td>US</td>
<td>Oso (Washington State)</td>
<td>Landslide</td>
<td>43 dead 4 injured</td>
<td>USD 20m total damage</td>
</tr>
<tr>
<td>13.4.</td>
<td>Indonesia</td>
<td>Kediri District (Java)</td>
<td>Ash fall from Volcano Kelud eruption, cold lava flooding exacerbated by concomitant rains; 11093 houses severely damaged, 15412 houses with moderate damage</td>
<td>7 dead 70 injured</td>
<td>USD 103m total damage</td>
</tr>
<tr>
<td>30.7.</td>
<td>India</td>
<td>Malin, Pune district (Maharashtra)</td>
<td>Landslide triggered by heavy rains</td>
<td>209 dead</td>
<td></td>
</tr>
<tr>
<td>2.8.</td>
<td>Nepal</td>
<td>Sindulpalchow district</td>
<td>Massive landslide</td>
<td>33 dead, 153 missing</td>
<td></td>
</tr>
<tr>
<td>29.10.</td>
<td>Sri Lanka</td>
<td>Haldummulla (Badulla District)</td>
<td>Massive landslide; 63 houses destroyed</td>
<td>4 dead, 192 missing</td>
<td></td>
</tr>
<tr>
<td>20.12.</td>
<td>Indonesia</td>
<td>BanjarNEGARA (Java)</td>
<td>Landslide; over 100 houses destroyed</td>
<td>95 dead, 13 missing</td>
<td>2000 homeless</td>
</tr>
</tbody>
</table>

Note: Table 8 uses loss ranges for US natural catastrophes as defined by the Property Claim Services. Source: Swiss Re Economic Research & Consulting and Cat Perils.
### Table 9
Chronological list of all man-made disasters 2014

**Major fires, explosions**

<table>
<thead>
<tr>
<th>Date</th>
<th>Country</th>
<th>Place</th>
<th>Event</th>
<th>Number of victims</th>
<th>Amount of damage (where data available)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1.</td>
<td>Saudi Arabia</td>
<td></td>
<td>Fire at a petrochemical plant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.1.–19.1.</td>
<td>Norway</td>
<td>Laerdalsonyi</td>
<td>Fire destroys a historical village</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.1.</td>
<td>Kuwait</td>
<td></td>
<td>Fire at an oil refinery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23.1.</td>
<td>Canada</td>
<td>L’Isle-Verte (Quebec)</td>
<td>Fire at a home for the elderly</td>
<td>17 dead, 15 missing</td>
<td></td>
</tr>
<tr>
<td>8.2.</td>
<td>Saudi Arabia</td>
<td>Medina</td>
<td>Fire at a hotel</td>
<td>15 dead</td>
<td>130 injured</td>
</tr>
<tr>
<td>12.2.</td>
<td>US</td>
<td>Connecticut</td>
<td>Fire at a gas turbine plant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26.2.</td>
<td>Russia</td>
<td>Stavropol Krai</td>
<td>Fire at a petrochemical plant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.3.</td>
<td>South Korea</td>
<td></td>
<td>Fire at an electronics plant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.3.</td>
<td>Sweden</td>
<td>Lysekil</td>
<td>Fire at an oil refinery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.3.</td>
<td>US</td>
<td>New York</td>
<td>Gas leak causes explosion in two apartment blocks</td>
<td>6 dead</td>
<td>63 injured</td>
</tr>
<tr>
<td>17.3.</td>
<td>North Sea, Norway</td>
<td></td>
<td>Fire at an offshore pipeline</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22.3.–24.3.</td>
<td>Argentina</td>
<td>Mendoza</td>
<td>Fire at an oil plant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22.3.</td>
<td>US</td>
<td>Storm Lake</td>
<td>Fire at a meat processing plant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29.3.</td>
<td>South Korea</td>
<td></td>
<td>Fire at an optical company</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30.4.</td>
<td>US</td>
<td>Pensacola (Florida)</td>
<td>Gas explosion in a jail</td>
<td>2 dead</td>
<td>184 injured</td>
</tr>
<tr>
<td>5.5.</td>
<td>US</td>
<td>Colorado Springs</td>
<td>Fire at a power plant</td>
<td>1 injured</td>
<td></td>
</tr>
<tr>
<td>12.5.</td>
<td>Germany</td>
<td>Hesse</td>
<td>Explosion at a thermal power station</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28.5.</td>
<td>South Korea</td>
<td>Jangseong</td>
<td>Fire at a hospital</td>
<td>21 dead</td>
<td></td>
</tr>
<tr>
<td>29.5.</td>
<td>US</td>
<td></td>
<td>Fire at an oil well</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.6.</td>
<td>Thailand</td>
<td>Rayong</td>
<td>Fire at a refinery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.6.</td>
<td>India</td>
<td>Chhattisgarh</td>
<td>Explosion at a steel plant</td>
<td>6 dead</td>
<td>50 injured</td>
</tr>
<tr>
<td>14.6.</td>
<td>Ghana</td>
<td>Sekondi-Takoradi</td>
<td>Damage at an oil plant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.6.</td>
<td>Russia</td>
<td>Achinsk (Krasnoyarsk Krai)</td>
<td>Major fire and explosion at an oil refinery</td>
<td>7 dead</td>
<td>12 injured</td>
</tr>
<tr>
<td>20.6.</td>
<td>India</td>
<td>Bhatinda (Sirs)</td>
<td>Fire at a refinery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25.6.</td>
<td>Canada</td>
<td>Becancour</td>
<td>Explosion at a chemical plant</td>
<td>1 dead</td>
<td></td>
</tr>
<tr>
<td>27.6.</td>
<td>Brazil</td>
<td></td>
<td>Fire at a hydroelectric plant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28.6.</td>
<td>India</td>
<td>Chennai</td>
<td>Eleven-storey building under construction collapses</td>
<td>61 dead</td>
<td>27 injured</td>
</tr>
<tr>
<td>Date</td>
<td>Country</td>
<td>Place</td>
<td>Event</td>
<td>Number of victims</td>
<td>Amount of damage (where data available)</td>
</tr>
<tr>
<td>-------</td>
<td>---------</td>
<td>----------------</td>
<td>-------------------------------------------------</td>
<td>-------------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>7.7</td>
<td>US</td>
<td>Port Arthur</td>
<td>Fire at a petrochemical plant</td>
<td>2 injured</td>
<td></td>
</tr>
<tr>
<td>11.7</td>
<td>Morocco</td>
<td>Casablanca</td>
<td>Collapse of three residential buildings</td>
<td>23 dead</td>
<td>55 injured</td>
</tr>
<tr>
<td>24.7</td>
<td>Angola</td>
<td>Luanda</td>
<td>Fire at a food retailer’s warehouse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31.7</td>
<td>Taiwan</td>
<td>Kaohsiung</td>
<td>Series of underground gas explosions in pipelines</td>
<td>32 dead</td>
<td>321 injured</td>
</tr>
<tr>
<td>2.8</td>
<td>China</td>
<td>Kunshan</td>
<td>Explosion at a metal factory</td>
<td>146 dead</td>
<td>185 injured</td>
</tr>
<tr>
<td>8.9</td>
<td>Brazil</td>
<td>Sao Paulo</td>
<td>Fire destroys 600 houses (80%) in a shanty town</td>
<td>2 000 homeless</td>
<td></td>
</tr>
<tr>
<td>9.9</td>
<td>Pakistan</td>
<td>Lahore</td>
<td>Roof failure at a mosque</td>
<td>24 dead</td>
<td></td>
</tr>
<tr>
<td>10.9</td>
<td>Saudi Arabia</td>
<td>Jeddah</td>
<td>Fire at a large bakery plant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.9</td>
<td>South Africa</td>
<td>Kya Sands</td>
<td>Fire at a shanty town</td>
<td>8 injured</td>
<td>2 000 homeless</td>
</tr>
<tr>
<td>13.10</td>
<td>Nigeria</td>
<td>Lagos</td>
<td>Collapse of a church hostel building</td>
<td>115 dead</td>
<td></td>
</tr>
<tr>
<td>6.11</td>
<td>Argentina</td>
<td>Córdoba</td>
<td>Explosion at a chemicals plant</td>
<td>66 injured</td>
<td></td>
</tr>
<tr>
<td>12.11</td>
<td>Thailand</td>
<td>Pathum Thani</td>
<td>Fire at an electronic component plant</td>
<td>2 injured</td>
<td></td>
</tr>
<tr>
<td>16.11</td>
<td>Spain</td>
<td>Burgos</td>
<td>Fire at a meat processing plant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.11</td>
<td>US</td>
<td>Los Angeles</td>
<td>Explosion at a wastewater plant</td>
<td>52 injured</td>
<td></td>
</tr>
<tr>
<td>8.12</td>
<td>US</td>
<td>Los Angeles</td>
<td>Fire at a residential building</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Aviation disasters

<table>
<thead>
<tr>
<th>Date</th>
<th>Country</th>
<th>Place</th>
<th>Event</th>
<th>Number of victims</th>
<th>Amount of damage (where data available)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.1.</td>
<td>Congo, Democratic Republic of (DRC)</td>
<td>Mbuji-Mayi</td>
<td>Explosion at arms depot triggered by lightning strike</td>
<td>20 dead</td>
<td>50 injured</td>
</tr>
<tr>
<td>11.2.</td>
<td>Algeria</td>
<td>Ain Kercha</td>
<td>Algerian Air Force Lockheed C-130 Hercules crash lands</td>
<td>76 dead</td>
<td></td>
</tr>
<tr>
<td>8.3.</td>
<td>Indian Ocean</td>
<td></td>
<td>Malaysia Airlines Boeing 777-2H6ER (Flight MH-370) crashes in unknown circumstances</td>
<td>239 dead</td>
<td></td>
</tr>
<tr>
<td>15.4.</td>
<td>Space</td>
<td></td>
<td>Power anomaly on satellite in orbit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.5.</td>
<td>Space</td>
<td></td>
<td>Communications satellite lost after failing to reach orbit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.7.</td>
<td>Ukraine</td>
<td>Donetsk</td>
<td>Malaysia Airlines Boeing 777-2H6ER (Flight MH17) crashes in unknown circumstances</td>
<td>298 dead</td>
<td></td>
</tr>
<tr>
<td>23.7.</td>
<td>Taiwan</td>
<td>Penghu Islands</td>
<td>TransAsia Airways ATR 72-500 crash lands</td>
<td>48 dead</td>
<td></td>
</tr>
<tr>
<td>24.7.</td>
<td>Mali</td>
<td>Gossi</td>
<td>Air Algérie McDonnell Douglas MD-83 crashes</td>
<td>116 dead</td>
<td></td>
</tr>
<tr>
<td>26.7.</td>
<td>Space</td>
<td></td>
<td>Failure of transmission beam on satellite in orbit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28.10.</td>
<td>Space</td>
<td>Wallops Island (Virginia)</td>
<td>Rocket carrying supply to space station blows up shortly after launch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31.10.</td>
<td>US</td>
<td>Mojave Desert (CA)</td>
<td>Spacecraft crashes during test flight</td>
<td>1 dead</td>
<td>1 injured</td>
</tr>
<tr>
<td>28.12.</td>
<td>Indonesia</td>
<td>Java Sea</td>
<td>AirAsia Airbus A320-216 crashes in Java Sea</td>
<td>162 dead</td>
<td></td>
</tr>
</tbody>
</table>

## Maritime disasters

<table>
<thead>
<tr>
<th>Date</th>
<th>Country</th>
<th>Place</th>
<th>Event</th>
<th>Number of victims</th>
<th>Amount of damage (where data available)</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.1.</td>
<td>Sudan</td>
<td>Nile</td>
<td>Overcrowded boat capsizes on the Nile</td>
<td>250 dead</td>
<td></td>
</tr>
<tr>
<td>26.1.</td>
<td>Indian Ocean, India</td>
<td>Nicobar Islands</td>
<td>Boat carrying tourists capsizes</td>
<td>22 dead</td>
<td>9 injured</td>
</tr>
<tr>
<td>3.2.</td>
<td>Bangladesh</td>
<td>Sunamganj</td>
<td>Boat carrying workers catches fire and capsizes on Surma river</td>
<td>11 dead, 30 missing</td>
<td></td>
</tr>
<tr>
<td>10.2.</td>
<td>Gulf of Mexico, Mexico</td>
<td></td>
<td>Fire on oil rig</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.3.</td>
<td>Indian Ocean, Indonesia</td>
<td>East Java</td>
<td>Ground subsidence causes damage to oil rig</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.3.</td>
<td>Nigeria</td>
<td></td>
<td>Fire at offshore oil rig</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.3.</td>
<td>Indian Ocean, Yemen</td>
<td>Beer Ali (Shabwa)</td>
<td>Boat carrying migrants capsizes</td>
<td>43 dead</td>
<td></td>
</tr>
<tr>
<td>17.3.</td>
<td>North Pacific Ocean, Japan</td>
<td>Tokyo Bay</td>
<td>Cargo vessel collides with container ship and sinks</td>
<td>8 missing</td>
<td>1 injured</td>
</tr>
<tr>
<td>22.3.</td>
<td>Uganda</td>
<td>Ndaiga (Kibaale district)</td>
<td>Overcrowded boat carrying refugees capsizes on Lake Albert</td>
<td>251 dead</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Country Place</td>
<td>Event</td>
<td>Number of victims</td>
<td>Amount of damage (where data available)</td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>--------------------------------</td>
<td>------------------------------------------------------------</td>
<td>-------------------</td>
<td>----------------------------------------</td>
<td></td>
</tr>
<tr>
<td>22.3</td>
<td>Gulf of Mexico, Mexico Bay of Campeche</td>
<td>Blowout at oil rig</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.4</td>
<td>North Pacific Ocean, Japan Wakayama</td>
<td>Cargo ship catches fire</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.4</td>
<td>North Pacific Ocean, South Korea Jeju</td>
<td>Passenger ferry sinks</td>
<td></td>
<td>297 dead, 7 missing</td>
<td></td>
</tr>
<tr>
<td>3.5</td>
<td>Bangladesh, Meghna River, Kalagasia, Munshiganj</td>
<td>Ferry capsizes in rough weather</td>
<td></td>
<td>58 dead, 12 missing</td>
<td></td>
</tr>
<tr>
<td>5.5</td>
<td>Mediterranean Sea, Greece Samos</td>
<td>Boat carrying migrants capsizes</td>
<td></td>
<td>22 dead</td>
<td></td>
</tr>
<tr>
<td>6.5</td>
<td>Mediterranean Sea, Libyan Arab Jamahiriya Tripoli</td>
<td>Boat carrying migrants capsizes</td>
<td></td>
<td>36 dead, 42 missing</td>
<td></td>
</tr>
<tr>
<td>31.5</td>
<td>Red Sea, Yemen, Indian Ocean Dhubab</td>
<td>Overcrowded boat carrying migrants capsizes</td>
<td></td>
<td>60 dead</td>
<td></td>
</tr>
<tr>
<td>18.6</td>
<td>North Pacific Ocean, Malaysia Sepang</td>
<td>Ferry carrying migrants capsizes</td>
<td></td>
<td>10 dead, 20 missing</td>
<td></td>
</tr>
<tr>
<td>30.6</td>
<td>Mediterranean Sea, Italy off Sicilian coast</td>
<td>30 people die of asphyxia on boat carrying migrants</td>
<td></td>
<td>30 dead</td>
<td></td>
</tr>
<tr>
<td>13.7</td>
<td>Baltic Sea, Germany</td>
<td>Pontoon sinks and cargo value is lost overboard</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.7</td>
<td>Indian Ocean, Malaysia Southern Malaysia</td>
<td>Boat carrying migrants capsizes</td>
<td></td>
<td>2 dead, 18 missing</td>
<td></td>
</tr>
<tr>
<td>19.7</td>
<td>Mediterranean Sea, Malta Malta</td>
<td>Boat carrying migrants capsizes</td>
<td></td>
<td>29 dead</td>
<td></td>
</tr>
<tr>
<td>1.8</td>
<td>Brazil Santos</td>
<td>Fire at sugar export terminal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.8</td>
<td>Bangladesh Munshiganj district</td>
<td>Ferry capsizes on Padma River</td>
<td></td>
<td>130 missing</td>
<td></td>
</tr>
<tr>
<td>22.8</td>
<td>Mediterranean Sea, Libyan Arab Jamahiriya Guarabouli</td>
<td>Boat carrying migrants capsizes</td>
<td></td>
<td>119 dead</td>
<td></td>
</tr>
<tr>
<td>23.8</td>
<td>Sudan Shagarab</td>
<td>Boat carrying migrants capsizes on Atbara River</td>
<td></td>
<td>21 dead</td>
<td></td>
</tr>
<tr>
<td>23.8</td>
<td>Mediterranean Sea, Italy Mediterranean Sea</td>
<td>Boat carrying migrants capsizes</td>
<td></td>
<td>18 dead, 10 missing</td>
<td></td>
</tr>
<tr>
<td>23.8</td>
<td>Mediterranean Sea, Libyan Arab Jamahiriya North Libya</td>
<td>Fishing boat capsizes north of the Libyan coast in bad weather</td>
<td></td>
<td>24 dead</td>
<td></td>
</tr>
<tr>
<td>12.9</td>
<td>Central African Republic Bangui</td>
<td>Boat capsizes on M’poko River</td>
<td></td>
<td>80 missing</td>
<td></td>
</tr>
<tr>
<td>16.9</td>
<td>North Pacific Ocean, Indonesia North Maluku</td>
<td>Passenger boat capsizes in rough weather</td>
<td></td>
<td>14 dead, 7 missing</td>
<td></td>
</tr>
<tr>
<td>6.10–6.12</td>
<td>Red Sea, Indian Ocean, Yemen Al-Makha (Taiz province)</td>
<td>Boat carrying migrants capsizes in rough weather</td>
<td></td>
<td>70 dead</td>
<td></td>
</tr>
<tr>
<td>7.10</td>
<td>South Pacific Ocean, Indonesia Bali</td>
<td>Passenger ferry capsizes due to engine malfunction</td>
<td></td>
<td>22 dead, 21 missing</td>
<td></td>
</tr>
<tr>
<td>10.10</td>
<td>North Atlantic, Guinea Benty</td>
<td>Overcrowded boat capsizes</td>
<td></td>
<td>18 dead, 20 missing</td>
<td></td>
</tr>
</tbody>
</table>
### Tables for reporting year 2014

<table>
<thead>
<tr>
<th>Date</th>
<th>Country Place</th>
<th>Event</th>
<th>Number of victims</th>
<th>Amount of damage (where data available)</th>
</tr>
</thead>
<tbody>
<tr>
<td>24.10.</td>
<td>Zambia Lake Kariba</td>
<td>Overcrowded ferry capsizes on Lake Kariba</td>
<td>26 dead</td>
<td></td>
</tr>
<tr>
<td>31.10.</td>
<td>North Atlantic, Bahamas</td>
<td>Grounding of cruise ship</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.11.</td>
<td>Black Sea, Turkey Istanbul</td>
<td>Boat carrying migrants capsizes in the Bosphorus Strait</td>
<td>24 dead</td>
<td></td>
</tr>
<tr>
<td>1.12.</td>
<td>North Pacific Ocean, Russia Anadyr Bay, Chukotka Peninsula</td>
<td>Fishing vessel capsizes in rough weather</td>
<td>27 dead, 26 missing</td>
<td></td>
</tr>
<tr>
<td>13.12.</td>
<td>Red Sea, Egypt Suez</td>
<td>Containership collides with fishing boat</td>
<td>13 dead, 14 missing</td>
<td></td>
</tr>
<tr>
<td>28.12.</td>
<td>Mediterranean Sea, Greece Corfu</td>
<td>Passenger ferry catches fire; rescue operations hindered by severe weather</td>
<td>9 dead (at least), 18 missing</td>
<td></td>
</tr>
</tbody>
</table>

### Rail disasters, including cableways

<table>
<thead>
<tr>
<th>Date</th>
<th>Country Place</th>
<th>Event</th>
<th>Number of victims</th>
<th>Amount of damage (where data available)</th>
</tr>
</thead>
<tbody>
<tr>
<td>22.4.</td>
<td>Congo, Democratic Republic of (DRC) Katanga</td>
<td>Freight train derails</td>
<td>63 dead</td>
<td>162 injured</td>
</tr>
<tr>
<td>2.5.</td>
<td>South Korea Seoul</td>
<td>Two subway trains collide at station</td>
<td>200 injured</td>
<td></td>
</tr>
<tr>
<td>4.5.</td>
<td>India Raigad</td>
<td>Passenger train derails</td>
<td>18 dead</td>
<td>124 injured</td>
</tr>
<tr>
<td>26.5.</td>
<td>India Khalilabad, Uttar Pradesh</td>
<td>Two trains collide</td>
<td>28 dead</td>
<td>74 injured</td>
</tr>
<tr>
<td>18.8.</td>
<td>India Bihar</td>
<td>Train strikes an autonickshaw at a railway crossing</td>
<td>20 dead</td>
<td></td>
</tr>
</tbody>
</table>

### Mining accidents

<table>
<thead>
<tr>
<th>Date</th>
<th>Country Place</th>
<th>Event</th>
<th>Number of victims</th>
<th>Amount of damage (where data available)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.4.</td>
<td>China Chongqing</td>
<td>Explosion at a coal mine</td>
<td>22 dead</td>
<td>2 injured</td>
</tr>
<tr>
<td>25.4.</td>
<td>Colombia Buritica</td>
<td>Explosion at a gold mine</td>
<td>4 dead</td>
<td>95 injured</td>
</tr>
<tr>
<td>13.5.</td>
<td>Turkey Soma</td>
<td>Fire at a coal mine</td>
<td>301 dead</td>
<td>80 injured</td>
</tr>
<tr>
<td>3.6.</td>
<td>China Chongqing (Wansheng)</td>
<td>Gas explosion at a coal mine</td>
<td>22 dead</td>
<td>2 injured</td>
</tr>
<tr>
<td>25.10.</td>
<td>Australia Koolan Island</td>
<td>Seawall at an iron ore mine fails</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26.11.</td>
<td>China Liaoning</td>
<td>Fire at a coal mine</td>
<td>24 dead</td>
<td>52 injured</td>
</tr>
</tbody>
</table>
### Collapse of building/bridges

<table>
<thead>
<tr>
<th>Date</th>
<th>Country</th>
<th>Place</th>
<th>Event</th>
<th>Number of victims</th>
<th>Amount of damage (where data available)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1.</td>
<td>India</td>
<td>Canacona (Goa)</td>
<td>Five-story building under construction collapses</td>
<td>32 dead</td>
<td>14 injured</td>
</tr>
<tr>
<td>11.1</td>
<td>China</td>
<td>Dukezong (Yunnan)</td>
<td>Fire at a guesthouse spreads to nearby buildings; 242 houses destroyed</td>
<td>2600 homeless</td>
<td></td>
</tr>
<tr>
<td>18.2</td>
<td>South Korea</td>
<td>Gyeongju</td>
<td>Auditorium roof collapses</td>
<td>10 dead</td>
<td>100 injured</td>
</tr>
</tbody>
</table>

### Miscellaneous

<table>
<thead>
<tr>
<th>Date</th>
<th>Country</th>
<th>Place</th>
<th>Event</th>
<th>Number of victims</th>
<th>Amount of damage (where data available)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1.</td>
<td>Philippines</td>
<td></td>
<td>Fireworks explode during a New Year’s eve celebrations</td>
<td>2 dead</td>
<td>599 injured</td>
</tr>
<tr>
<td>9.1.–10.1</td>
<td>US</td>
<td>Charleston (West Virginia)</td>
<td>Chemical spill into West Virginia’s Elk River</td>
<td>169 injured</td>
<td></td>
</tr>
<tr>
<td>14.1.</td>
<td>Nigeria</td>
<td>Maiduguri, Borno State</td>
<td>Suicide bombing at a market district</td>
<td>30 dead</td>
<td>50 injured</td>
</tr>
<tr>
<td>17.1.</td>
<td>Afghanistan</td>
<td>Kabul</td>
<td>Suicide bomb attack at a restaurant</td>
<td>21 dead</td>
<td>12 injured</td>
</tr>
<tr>
<td>18.1.</td>
<td>India</td>
<td>Mumbai</td>
<td>Stampede at a funeral</td>
<td>18 dead</td>
<td>56 injured</td>
</tr>
<tr>
<td>21.1.</td>
<td>Pakistan</td>
<td>Balochistan</td>
<td>Bomb explosion on a bus carrying pilgrims</td>
<td>24 dead</td>
<td>31 injured</td>
</tr>
<tr>
<td>24.1.–25.1</td>
<td>Egypt</td>
<td>Cairo</td>
<td>Series of car bomb explosions outside police headquarters</td>
<td>7 dead</td>
<td>100 injured</td>
</tr>
<tr>
<td>26.1.</td>
<td>Nigeria</td>
<td>Kawuri, Borno</td>
<td>Gunmen attack village</td>
<td>85 dead</td>
<td>50 injured</td>
</tr>
<tr>
<td>15.2.</td>
<td>Nigeria</td>
<td>Izighe</td>
<td>Gunmen attack village</td>
<td>106 dead</td>
<td></td>
</tr>
<tr>
<td>19.2.</td>
<td>Lebanon</td>
<td>Beirut</td>
<td>Suicide bombing attacks near a cultural centre</td>
<td>7 dead</td>
<td>100 injured</td>
</tr>
<tr>
<td>25.2.</td>
<td>Nigeria</td>
<td>Buni Yadi</td>
<td>Terrorist attack at a university college</td>
<td>59 dead</td>
<td></td>
</tr>
<tr>
<td>1.3.</td>
<td>China</td>
<td>Kunming</td>
<td>Terrorist attack at a metro station</td>
<td>28 dead</td>
<td>113 injured</td>
</tr>
<tr>
<td>15.3.</td>
<td>Nigeria</td>
<td>Maiduguri</td>
<td>Terrorist attacks at a prison</td>
<td>212 dead</td>
<td></td>
</tr>
<tr>
<td>9.4.</td>
<td>Pakistan</td>
<td>Islamabad</td>
<td>Bomb explosion at a market</td>
<td>22 dead</td>
<td>100 injured</td>
</tr>
<tr>
<td>14.4.</td>
<td>Nigeria</td>
<td>Abuja</td>
<td>Bomb explosions at a bus station</td>
<td>71 dead</td>
<td>124 injured</td>
</tr>
<tr>
<td>25.4.</td>
<td>Congo, Democratic Republic of (DRC)</td>
<td>Kikwit</td>
<td>Stamped at a music festival</td>
<td>21 dead</td>
<td></td>
</tr>
<tr>
<td>1.5.</td>
<td>Nigeria</td>
<td>Abuja</td>
<td>Car bomb explosion in a residential area</td>
<td>19 dead</td>
<td>60 injured</td>
</tr>
<tr>
<td>13.5.</td>
<td>Vietnam</td>
<td></td>
<td>Anti-China riots; over 400 factories damaged</td>
<td>21 dead</td>
<td></td>
</tr>
<tr>
<td>20.5.</td>
<td>Nigeria</td>
<td>Jos</td>
<td>Bomb explosions at a market and bus station</td>
<td>118 dead</td>
<td>84 injured</td>
</tr>
<tr>
<td>23.5.</td>
<td>China</td>
<td>Ürümqi</td>
<td>Bomb explosion at a market</td>
<td>31 dead</td>
<td>90 injured</td>
</tr>
<tr>
<td>Date</td>
<td>Country</td>
<td>Place</td>
<td>Event</td>
<td>Number of victims</td>
<td>Amount of damage (where data available)</td>
</tr>
<tr>
<td>------------</td>
<td>----------------</td>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------</td>
<td>-------------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>24.5.</td>
<td>Nigeria</td>
<td>Borno</td>
<td>Terrorist attacks at a village</td>
<td>28 dead</td>
<td></td>
</tr>
<tr>
<td>25.5.</td>
<td>Thailand</td>
<td>Pattani</td>
<td>Bomb explosions in shops and public offices</td>
<td>3 dead</td>
<td>55 injured</td>
</tr>
<tr>
<td>30.5.</td>
<td>Central African Republic</td>
<td>Bangui</td>
<td>Gunmen attack in a church</td>
<td>30 dead</td>
<td></td>
</tr>
<tr>
<td>8.6.</td>
<td>Pakistan</td>
<td>Karachi</td>
<td>Terrorist attack at the airport</td>
<td>36 dead</td>
<td>18 injured, USD 10m insured loss</td>
</tr>
<tr>
<td>8.6.</td>
<td>India</td>
<td>Shalanala Village, Mandi district (Himachal Pradesh)</td>
<td>Students on educational trip drown after flood gates of the Larji Hydro Power Project opened</td>
<td>24 dead, 1 missing</td>
<td></td>
</tr>
<tr>
<td>15.6.</td>
<td>Kenya</td>
<td>Mpeketoni</td>
<td>Terrorist attack</td>
<td>48 dead</td>
<td></td>
</tr>
<tr>
<td>18.6.</td>
<td>Nigeria</td>
<td>Damaturu</td>
<td>Bomb explosion at public venue</td>
<td>21 dead</td>
<td>27 injured</td>
</tr>
<tr>
<td>13.7.–20.7.</td>
<td>Libyan Arab Jamahiriya</td>
<td>Tripoli</td>
<td>Fighting at the airport destroys airplanes</td>
<td>47 dead</td>
<td>120 injured</td>
</tr>
<tr>
<td>29.7.</td>
<td>Guinea</td>
<td>Conakry</td>
<td>Stampede at a concert</td>
<td>24 dead</td>
<td></td>
</tr>
<tr>
<td>31.7.</td>
<td>Pakistan</td>
<td>Karachi</td>
<td>Picnickers drown during Eid celebrations</td>
<td>33 dead</td>
<td></td>
</tr>
<tr>
<td>19.9.</td>
<td>Nigeria</td>
<td>Mainok</td>
<td>Gunmen attack a market</td>
<td>30 dead</td>
<td></td>
</tr>
<tr>
<td>26.9.</td>
<td>China</td>
<td>Xinjiang</td>
<td>Explosions at a police station, shop and market</td>
<td>50 dead</td>
<td>54 injured</td>
</tr>
<tr>
<td>3.10.</td>
<td>India</td>
<td>Patna (Bihar)</td>
<td>Stampede at a religious festival</td>
<td>33 dead</td>
<td>29 injured</td>
</tr>
<tr>
<td>29.11.</td>
<td>China</td>
<td>Xinjiang</td>
<td>Terrorist attack at a busy market</td>
<td>26 dead</td>
<td></td>
</tr>
<tr>
<td>2.12.</td>
<td>Nigeria</td>
<td>Mandera</td>
<td>Shooting at a stone quarry</td>
<td>36 dead</td>
<td></td>
</tr>
<tr>
<td>16.12.</td>
<td>Pakistan</td>
<td>Peshawar</td>
<td>Shooting at a school</td>
<td>145 dead</td>
<td>130 injured</td>
</tr>
<tr>
<td>31.12.</td>
<td>China</td>
<td>Shanghai</td>
<td>Stampede during new year celebrations</td>
<td>36 dead</td>
<td>49 injured</td>
</tr>
</tbody>
</table>

Source: Swiss Re Economic Research & Consulting and Cat Perils.
Table 10
The 40 most costly insurance losses (1970–2014)

<table>
<thead>
<tr>
<th>Insured loss (in USD m, 2014 prices)</th>
<th>Victims</th>
<th>Date (start)</th>
<th>Event</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>78638</td>
<td>1836</td>
<td>25.08.2006</td>
<td>Hurricane Katrina; storm surge, damage to oil rigs</td>
<td>US, Gulf of Mexico, Bahamas</td>
</tr>
<tr>
<td>36828</td>
<td>18520</td>
<td>11.03.2011</td>
<td>Earthquake (Mw 9.0) triggers tsunami</td>
<td>Japan</td>
</tr>
<tr>
<td>36079</td>
<td>237</td>
<td>24.10.2012</td>
<td>Hurricane Sandy, massive storm surge</td>
<td>US, Caribbean</td>
</tr>
<tr>
<td>26990</td>
<td>43</td>
<td>23.08.1992</td>
<td>Hurricane Andrew; floods</td>
<td>US, Bahamas</td>
</tr>
<tr>
<td>25104</td>
<td>2982</td>
<td>11.09.2001</td>
<td>Terror attack on WTC, Pentagon, other buildings</td>
<td>US</td>
</tr>
<tr>
<td>22355</td>
<td>61</td>
<td>17.01.1994</td>
<td>Northridge earthquake (M* 6.6)</td>
<td>US</td>
</tr>
<tr>
<td>22258</td>
<td>136</td>
<td>06.09.2008</td>
<td>Hurricane Ike</td>
<td>US, Gulf of Mexico, Caribbean et al.</td>
</tr>
<tr>
<td>16836</td>
<td>181</td>
<td>22.02.2011</td>
<td>Earthquake (Mw 6.3), aftershocks</td>
<td>New Zealand</td>
</tr>
<tr>
<td>16157</td>
<td>119</td>
<td>02.09.2004</td>
<td>Hurricane Ivan; damage to oil rigs</td>
<td>US, Caribbean, Barbados et al.</td>
</tr>
<tr>
<td>15783</td>
<td>815</td>
<td>27.07.2011</td>
<td>Floods caused by heavy monsoon rains</td>
<td>Thailand</td>
</tr>
<tr>
<td>15234</td>
<td>35</td>
<td>19.10.2005</td>
<td>Hurricane Wilma; torrential rain, floods</td>
<td>US, Mexico, Jamaica, Haiti et al.</td>
</tr>
<tr>
<td>12240</td>
<td>34</td>
<td>20.09.2005</td>
<td>Hurricane Rita; floods, damage to oil rigs</td>
<td>US, Gulf of Mexico, Cuba</td>
</tr>
<tr>
<td>11339</td>
<td>123</td>
<td>15.07.2012</td>
<td>Drought in the Corn Belt</td>
<td>US</td>
</tr>
<tr>
<td>10087</td>
<td>24</td>
<td>11.08.2004</td>
<td>Hurricane Charley</td>
<td>US, Cuba, Jamaica et al.</td>
</tr>
<tr>
<td>9813</td>
<td>51</td>
<td>27.09.1991</td>
<td>Typhoon Mireille</td>
<td>Japan</td>
</tr>
<tr>
<td>8682</td>
<td>562</td>
<td>27.02.2010</td>
<td>Earthquake (Mw 8.8) triggers tsunami</td>
<td>Chile</td>
</tr>
<tr>
<td>8458</td>
<td>95</td>
<td>25.01.1990</td>
<td>Winter storm Daria</td>
<td>France, UK et al.</td>
</tr>
<tr>
<td>7081</td>
<td>321</td>
<td>22.04.2011</td>
<td>Major tornado outbreak; 343 tornadoes, hail</td>
<td>US</td>
</tr>
<tr>
<td>7418</td>
<td>177</td>
<td>20.05.2011</td>
<td>Major tornado outbreak (180 tornadoes)</td>
<td>US</td>
</tr>
<tr>
<td>6959</td>
<td>54</td>
<td>18.01.2007</td>
<td>Winter storm Kyrril, floods</td>
<td>Germany, UK, et al.</td>
</tr>
<tr>
<td>6466</td>
<td>22</td>
<td>15.10.1987</td>
<td>Storm and floods in Europe</td>
<td>France, UK et al.</td>
</tr>
<tr>
<td>6449</td>
<td>38</td>
<td>26.07.2012</td>
<td>Hurricane Frances</td>
<td>US, Bahamas</td>
</tr>
<tr>
<td>6134</td>
<td>50</td>
<td>22.08.2011</td>
<td>Hurricane Irene, torrential rainfall, flooding</td>
<td>US, Canada, Bahamas et al.</td>
</tr>
<tr>
<td>5780</td>
<td>64</td>
<td>25.02.1990</td>
<td>Winter storm Vivian</td>
<td>Switzerland, Germany</td>
</tr>
<tr>
<td>5740</td>
<td>26</td>
<td>22.09.1999</td>
<td>Typhoon Bart</td>
<td>Japan</td>
</tr>
<tr>
<td>5426</td>
<td>–</td>
<td>04.09.2010</td>
<td>Earthquake (Mw 7.0), over 300 aftershocks</td>
<td>New Zealand</td>
</tr>
<tr>
<td>5125</td>
<td>600</td>
<td>20.09.1998</td>
<td>Hurricane Georges; floods</td>
<td>US, Caribbean</td>
</tr>
<tr>
<td>4818</td>
<td>41</td>
<td>05.06.2001</td>
<td>Tropical storm Allison; heavy rain, floods</td>
<td>US</td>
</tr>
<tr>
<td>4492</td>
<td>45</td>
<td>06.09.2004</td>
<td>Typhoon Songda</td>
<td>Japan, South Korea</td>
</tr>
<tr>
<td>4200</td>
<td>25</td>
<td>27.05.2013</td>
<td>Floods</td>
<td>Germany, Czech Republic et al.</td>
</tr>
<tr>
<td>4123</td>
<td>51</td>
<td>02.05.2003</td>
<td>Thunderstorms, tornadoes, hail, flash floods</td>
<td>US</td>
</tr>
<tr>
<td>4010</td>
<td>70</td>
<td>10.09.1999</td>
<td>Hurricane Floyd; heavy rain, floods</td>
<td>US, Bahamas</td>
</tr>
<tr>
<td>3899</td>
<td>–</td>
<td>27.07.2013</td>
<td>Hailstorms</td>
<td>Germany, France</td>
</tr>
<tr>
<td>3882</td>
<td>59</td>
<td>01.10.1995</td>
<td>Hurricane Opal; floods</td>
<td>US, Mexico, Gulf of Mexico et al.</td>
</tr>
<tr>
<td>3839</td>
<td>6,425</td>
<td>17.01.1995</td>
<td>Great Hanshin earthquake (M 7.2) in Kobe</td>
<td>Japan</td>
</tr>
<tr>
<td>3501</td>
<td>25</td>
<td>24.01.2009</td>
<td>Winter storm Klaus</td>
<td>France, Spain</td>
</tr>
<tr>
<td>3410</td>
<td>57</td>
<td>27.12.1999</td>
<td>Winter storm Martin</td>
<td>Spain, France, Switzerland, Italy</td>
</tr>
</tbody>
</table>

* M = moment magnitude
Source: Swiss Re Economic Research & Consulting and Cat Perils.

37 Property and business interruption, excluding liability and life insurance losses; US natural catastrophe figures based on Property Claim Services, including NFIP losses (see page 43, “Terms and selection criteria” section).
38 Dead and missing.
Table 11
The 40 worst catastrophes in terms of victims (1970–2014)

<table>
<thead>
<tr>
<th>Victims</th>
<th>Insured loss*</th>
<th>Date (start)</th>
<th>Event</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>300,000</td>
<td>–</td>
<td>11.11.1970</td>
<td>Storm and flood catastrophe</td>
<td>Bangladesh</td>
</tr>
<tr>
<td>255,000</td>
<td>–</td>
<td>28.07.1976</td>
<td>Earthquake (M 7.5)</td>
<td>China</td>
</tr>
<tr>
<td>222,670</td>
<td>109</td>
<td>12.01.2010</td>
<td>Earthquake (Mw 7.0), aftershocks</td>
<td>Haiti, Thailand et al.</td>
</tr>
<tr>
<td>220,000</td>
<td>2506</td>
<td>26.12.2004</td>
<td>Earthquake (Mw 9), tsunami in Indian Ocean</td>
<td>Indonesia, Thailand et al.</td>
</tr>
<tr>
<td>138,300</td>
<td>–</td>
<td>02.05.2008</td>
<td>Tropical cyclone Nargis</td>
<td>Myanmar (Burma), Bay of Bengal</td>
</tr>
<tr>
<td>138,000</td>
<td>4</td>
<td>29.04.1991</td>
<td>Tropical cyclone Gorky</td>
<td>Bangladesh</td>
</tr>
<tr>
<td>87,449</td>
<td>403</td>
<td>12.05.2008</td>
<td>Earthquake (Mw 7.9) in Sichuan, aftershocks</td>
<td>China</td>
</tr>
<tr>
<td>74,310</td>
<td>–</td>
<td>08.10.2005</td>
<td>Earthquake (Mw 7.6); aftershocks, landslides</td>
<td>Pakistan, India, Afghanistan</td>
</tr>
<tr>
<td>66,000</td>
<td>–</td>
<td>31.05.1970</td>
<td>Earthquake (M 7.7) triggers massive avalanche and floods</td>
<td>Peru</td>
</tr>
<tr>
<td>55,630</td>
<td>–</td>
<td>15.06.2010</td>
<td>Heat wave with temperatures up to 40 degrees Celsius</td>
<td>Russia, Czech Republic</td>
</tr>
<tr>
<td>40,000</td>
<td>208</td>
<td>21.06.1990</td>
<td>Earthquake (M 7.7); landslides</td>
<td>Iran</td>
</tr>
<tr>
<td>35,000</td>
<td>1622</td>
<td>01.06.2003</td>
<td>Heat wave and drought in Europe</td>
<td>France, Italy, Germany et al.</td>
</tr>
<tr>
<td>26,271</td>
<td>–</td>
<td>26.12.2003</td>
<td>Earthquake (M 6.5) destroys 85% of Bam</td>
<td>Iran</td>
</tr>
<tr>
<td>25,000</td>
<td>–</td>
<td>16.09.1978</td>
<td>Earthquake (M 7.7) in Tabas</td>
<td>Iran</td>
</tr>
<tr>
<td>25,000</td>
<td>–</td>
<td>07.12.1988</td>
<td>Earthquake (M 6.9)</td>
<td>Armenia, ex USSR</td>
</tr>
<tr>
<td>23,000</td>
<td>–</td>
<td>13.11.1985</td>
<td>Volcanic eruption on Nevado del Ruiz and avalanches</td>
<td>Colombia</td>
</tr>
<tr>
<td>22,300</td>
<td>312</td>
<td>04.02.1976</td>
<td>Earthquake (M 7.5)</td>
<td>Guatemala</td>
</tr>
<tr>
<td>19,737</td>
<td>134</td>
<td>26.01.2001</td>
<td>Earthquake (Mw 7.6) in Gujarat</td>
<td>India, Pakistan</td>
</tr>
<tr>
<td>19,118</td>
<td>1421</td>
<td>17.08.1999</td>
<td>Earthquake (Mw 7) in Izmit</td>
<td>Turkey</td>
</tr>
<tr>
<td>18,520</td>
<td>36,828</td>
<td>11.03.2011</td>
<td>Earthquake (Mw 9.0) triggers tsunami</td>
<td>Japan</td>
</tr>
<tr>
<td>15,000</td>
<td>142</td>
<td>29.10.1999</td>
<td>Tropical cyclone OSB</td>
<td>India</td>
</tr>
<tr>
<td>14,204</td>
<td>–</td>
<td>20.11.1977</td>
<td>Tropical cyclone in Andhra Pradesh</td>
<td>India</td>
</tr>
<tr>
<td>11,069</td>
<td>–</td>
<td>25.06.1986</td>
<td>Tropical cyclone in Bay of Bengal</td>
<td>Bangladesh</td>
</tr>
<tr>
<td>10,800</td>
<td>–</td>
<td>26.10.1971</td>
<td>Odisha cyclone, flooding in Bay of Bengal and Orissa state</td>
<td>India</td>
</tr>
<tr>
<td>10,000</td>
<td>313</td>
<td>12.12.1999</td>
<td>Floods, mudflows and landslides</td>
<td>Venezuela</td>
</tr>
<tr>
<td>9,500</td>
<td>1041</td>
<td>19.09.1985</td>
<td>Earthquake (M 8.1)</td>
<td>Mexico</td>
</tr>
<tr>
<td>9,475</td>
<td>–</td>
<td>30.09.1993</td>
<td>Earthquake (M 6.4)</td>
<td>India</td>
</tr>
<tr>
<td>9,000</td>
<td>726</td>
<td>22.10.1998</td>
<td>Hurricane Mitch in Central America</td>
<td>Honduras, Nicaragua et al.</td>
</tr>
<tr>
<td>8,135</td>
<td>518</td>
<td>08.11.2013</td>
<td>Typhoon Haiyan, storm surge</td>
<td>Philippines, Vietnam, China, Palau</td>
</tr>
<tr>
<td>7,079</td>
<td>–</td>
<td>17.08.1976</td>
<td>Earthquake (M 7.9), tsunami in Moro Gulf</td>
<td>Philippines</td>
</tr>
<tr>
<td>6,426</td>
<td>3839</td>
<td>17.01.1995</td>
<td>Great Hanshin earthquake (M 7.2) in Kobe</td>
<td>Japan</td>
</tr>
<tr>
<td>6,304</td>
<td>–</td>
<td>05.11.1991</td>
<td>Typhoon Thelma (Uring)</td>
<td>Philippines</td>
</tr>
<tr>
<td>6,000</td>
<td>–</td>
<td>02.12.1984</td>
<td>Accident in chemical plant; methyl isocyanates released</td>
<td>India</td>
</tr>
<tr>
<td>6,000</td>
<td>–</td>
<td>01.06.1976</td>
<td>Heat wave, drought</td>
<td>France</td>
</tr>
<tr>
<td>5,749</td>
<td>47</td>
<td>27.05.2006</td>
<td>Earthquake (ML* 6.3); Bantul almost destroyed</td>
<td>Indonesia</td>
</tr>
<tr>
<td>5,748</td>
<td>508</td>
<td>14.06.2013</td>
<td>Floods caused by heavy monsoon rains</td>
<td>India</td>
</tr>
<tr>
<td>5,422</td>
<td>–</td>
<td>25.06.1976</td>
<td>Earthquake (M 7.1)</td>
<td>Indonesia</td>
</tr>
<tr>
<td>5,374</td>
<td>–</td>
<td>10.04.1972</td>
<td>Earthquake (M 6.9) in Fars</td>
<td>Iran</td>
</tr>
<tr>
<td>5,300</td>
<td>–</td>
<td>28.12.1974</td>
<td>Earthquake (M 6.3)</td>
<td>Pakistan</td>
</tr>
<tr>
<td>5,000</td>
<td>765</td>
<td>23.12.1972</td>
<td>Earthquake (M 6.2)</td>
<td>Nicaragua</td>
</tr>
</tbody>
</table>

*ML = local magnitude scale

Source: Swiss Re Economic Research & Consulting and Cat Perils.

**Victims**
39 Dead and missing.
40 Property and business interruption, excluding liability and life insurance.
Terms and selection criteria

A natural catastrophe is caused by natural forces.

**Natural catastrophes**
The term “natural catastrophe” refers to an event caused by natural forces. Such an event generally results in a large number of individual losses involving many insurance policies. The scale of the losses resulting from a catastrophe depends not only on the severity of the natural forces concerned, but also on man-made factors, such as building design or the efficiency of disaster control in the afflicted region. In this sigma study, natural catastrophes are subdivided into the following categories: floods, storms, earthquakes, droughts/forest fires/heat waves, cold waves/frost, hail, tsunamis, and other natural catastrophes.

A man-made or technical disaster is triggered by human activities.

**Man-made disasters**
This study categorises major events associated with human activities as “man-made” or “technical” disasters. Generally, a large object in a very limited space is affected, which is covered by a small number of insurance policies. War, civil war, and war-like events are excluded. sigma subdivides man-made disasters into the following categories: major fires and explosions, aviation and space disasters, shipping disasters, rail disasters, mining accidents, collapse of buildings/bridges, and miscellaneous (including terrorism). In Tables 8 and 9 (pages 24–41), all major natural catastrophes and man-made disasters and the associated losses are listed chronologically.

Losses due to property damage and business interruption that are directly attributable to major events are included in this study.

**Total losses**
For the purposes of the present sigma study, total losses are all the financial losses directly attributable to a major event, ie damage to buildings, infrastructure, vehicles etc. The term also includes losses due to business interruption as a direct consequence of the property damage. Insured losses are gross of any reinsurance, be it provided by commercial or government schemes. A figure identified as “total damage” or “economic loss” includes all damage, insured and uninsured. Total loss figures do not include indirect financial losses – ie, loss of earnings by suppliers due to disabled businesses, estimated shortfalls in GDP and non-economic losses, such as loss of reputation or impaired quality of life.

The amount of the total losses is a general indication only.

Generally, total (or economic) losses are estimated and communicated in very different ways. As a result, they are not directly comparable and should be seen only as an indication of the general order of magnitude.

The term “losses” refer to insured losses, but do not include liability.

**Insured losses**
“Losses” refer to all insured losses except liability. Leaving aside liability losses, on one hand allows a relatively swift assessment of the insurance year. On the other, it tends to understare the cost of man-made disasters. Life insurance losses are also not included.

NFIP flood damage in the US

**NFIP flood damage in the US**
The sigma catastrophe database also includes flood damage covered by the National Flood Insurance Program (NFIP) in the US, provided that it fulfils the sigma selection criteria.
Selection criteria

*sigma* has been publishing tables listing major losses since 1970. Thresholds with respect to casualties – the number of dead, missing, severely injured and homeless – also make it possible to tabulate events in regions where the insurance penetration is below average. Table 12 details the loss thresholds for the reporting year 2014.

**Table 12**
Thresholds for insured losses and casualties in 2014

<table>
<thead>
<tr>
<th>Insured losses (claims):</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Maritime disasters</td>
<td>USD 19.6 million</td>
</tr>
<tr>
<td>Aviation</td>
<td>USD 39.3 million</td>
</tr>
<tr>
<td>Other losses</td>
<td>USD 48.8 million</td>
</tr>
</tbody>
</table>

or Total losses: USD 97.6 million

or Casualties:

<table>
<thead>
<tr>
<th>Dead or missing</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injured</td>
<td>50</td>
</tr>
<tr>
<td>Homeless</td>
<td>2000</td>
</tr>
</tbody>
</table>

Source: Swiss Re Economic Research & Consulting and Cat Perils.

**Adjustment for inflation, changes to published data, information**

*sigma* converts all losses for the occurrence year not given in USD into USD using the end-of-year exchange rate. To adjust for inflation, these USD values are extrapolated using the US consumer price index to give current (2014) values.

This can be illustrated by examining the insured property losses arising from the floods which occurred in the UK between 29 October and 10 November 2000:

**Figure 10**
Alternative methods of adjusting for inflation, by comparison

<table>
<thead>
<tr>
<th>Floods UK</th>
<th>Exchange rate</th>
<th>US inflation</th>
</tr>
</thead>
<tbody>
<tr>
<td>29 October–10 November 2000</td>
<td>GBPm USDGBP</td>
<td>USDm USDm</td>
</tr>
<tr>
<td>Original loss</td>
<td>700.0 1.494</td>
<td>1045.7 1045.7</td>
</tr>
<tr>
<td>Level of consumer price index 2000</td>
<td>93.1</td>
<td>172.2</td>
</tr>
<tr>
<td>Level of consumer price index 2014</td>
<td>128.0</td>
<td>236.7</td>
</tr>
<tr>
<td>Inflation factor</td>
<td>1.375</td>
<td>1.375</td>
</tr>
<tr>
<td>Adjusted for inflation to 2014</td>
<td>962.7 1.561</td>
<td>1502.6 1437.6</td>
</tr>
<tr>
<td>Comparison</td>
<td>105%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Swiss Re Economic Research & Consulting.
If changes to the loss amounts of previously published events become known, sigma takes these into account in its database. However, these changes only become evident when an event appears in the table of the 40 most costly insured losses or the 40 disasters with the most fatalities since 1970 (see Tables 10 and 11).

In the chronological lists of all man-made disasters, the insured losses are not shown for data protection reasons. However, the total of these insured losses is included in the list of major losses in 2014 according to loss category. sigma does not provide further information on individual insured losses or about updates made to published data.

Sources
Information is collected from newspapers, direct insurance and reinsurance periodicals, specialist publications (in printed or electronic form) and reports from insurers and reinsurers. In no event shall Swiss Re be liable for any loss or damage arising in connection with the use of this information.

<table>
<thead>
<tr>
<th>Country</th>
<th>Currency</th>
<th>Exchange rate, end 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>AUD</td>
<td>1.2213</td>
</tr>
<tr>
<td>Canada</td>
<td>CAD</td>
<td>1.1584</td>
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<td>Chile</td>
<td>CLP</td>
<td>607.2500</td>
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<tr>
<td>China</td>
<td>CNY</td>
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<tr>
<td>Europe</td>
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<tr>
<td>UK</td>
<td>GBP</td>
<td>0.6414</td>
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<tr>
<td>India</td>
<td>INR</td>
<td>63.2500</td>
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<tr>
<td>Iran</td>
<td>IRR</td>
<td>27163.0000</td>
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<tr>
<td>Mexico</td>
<td>MXN</td>
<td>14.7395</td>
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<tr>
<td>Philippines</td>
<td>PHP</td>
<td>44.8000</td>
</tr>
<tr>
<td>Russia</td>
<td>RUB</td>
<td>59.7500</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>SAR</td>
<td>3.7535</td>
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<tr>
<td>Thailand</td>
<td>THB</td>
<td>32.9150</td>
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<tr>
<td>Tonga</td>
<td>TOP</td>
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<tr>
<td>U.S.A.</td>
<td>USD</td>
<td>1.0000</td>
</tr>
<tr>
<td>South Africa</td>
<td>ZAR</td>
<td>11.5671</td>
</tr>
</tbody>
</table>

Source: Swiss Re Economic Research & Consulting.

41 Natural catastrophes in the US: those sigma figures which are based on estimates of Property Claim Services (PCS), a unit of the Insurance Services Office, Inc (ISO), are given for each individual event in ranges defined by PCS. The estimates are the property of ISO and may not be printed or used for any purpose, including use as a component in any financial instruments, without the express consent of ISO.
Terms and selection criteria
### Recent *sigma* publications

<table>
<thead>
<tr>
<th>Year</th>
<th>No</th>
<th>Title</th>
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<tbody>
<tr>
<td>2015</td>
<td>1</td>
<td>Keeping healthy in emerging markets: insurance can help</td>
</tr>
<tr>
<td>2015</td>
<td>2</td>
<td>Natural catastrophes and man-made disasters in 2014: convective and winter storms generate most losses</td>
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<tr>
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<td>2014</td>
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<td>Digital distribution in insurance: a quiet revolution</td>
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<td>World insurance in 2013: steering towards recovery</td>
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<td>Liability claims trends: emerging risks and rebounding economic drivers</td>
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<td>How will we care? Finding sustainable long-term care solutions for an ageing world</td>
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<td>Partnering for food security in emerging markets</td>
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<td>Natural catastrophes and man-made disasters in 2012: a year of extreme weather events in the US</td>
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<td>Navigating recent developments in marine and airline insurance</td>
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<td>Urbanisation in emerging markets: boon and bane for insurers</td>
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<td>Life insurance: focusing on the consumer</td>
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<td>Natural catastrophes and man-made disasters in 2011: historic losses surface from record earthquakes and floods</td>
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<td>Natural catastrophes and man-made disasters in 2008: North America and Asia suffer heavy losses</td>
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