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## Press release

# Overall picture of natural catastrophes in 2013 dominated by weather extremes in Europe and Supertyphoon Haiyan

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**Exceptionally high losses from weather-related catastrophes in Europe and Supertyphoon Haiyan dominated the overall picture of natural catastrophes in 2013. Floods and hailstorms caused double-digit billion-dollar losses in central Europe, and in the Philippines one of the strongest cyclones in history, Supertyphoon Haiyan, resulted in a human catastrophe with over 6,000 fatalities.**

Globally, losses from natural catastrophes in 2013 were somewhat more moderate: the direct overall losses of around US\$ 125bn and insured losses of around US\$ 31bn remained below the average figures of the past ten years (US\$ 184bn and US\$ 56bn). Regrettably, in a total of 880 natural catastrophes (average of the past ten years: 790), more than 20,000 people were killed. This meant that the death toll was higher than in 2012, but significantly below the average of the past ten years (106,000).

“Several of the events of 2013 illustrated how well warnings and loss minimisation measures can restrict the impact of natural catastrophes. In the case of the most recent winter storms in Europe, for example, the losses remained comparatively low,” said Torsten Jeworrek, Munich Re Board member responsible for global reinsurance business. “At the same time, events like those in the Philippines show the urgent need for more to be done in developing and emerging countries to protect people better. This includes stabler buildings and protection facilities, and insurance programmes – also with state backing – to provide those affected with financial assistance after a disaster.”

### **Lowest number of hurricanes in the North Atlantic since 1982**

By contrast, the North Atlantic hurricane season was very quiet. Not a single storm of hurricane strength reached the US mainland. Altogether, a total of 13 cyclones formed in the tropical North Atlantic, of which only two (Ingrid and Humberto) achieved hurricane force and those only in category one, the weakest rating for a hurricane. The number of hurricanes was thus well below the long-term average (six) and even further below the average for the warm phase in the North Atlantic (eight) which has persisted since the mid-1990s and is material for current risk management.

“In the main development region of hurricanes, the air was exceptionally dry for a long period with a simultaneously high wind shear – conditions which curb the development of cyclones,” said Peter Höppe, Head of Geo Risks Research at Munich Re. “But these are unpredictable short-term phenomena, and the risk situation overall remains unchanged nonetheless. We are still proceeding on the assumption of a continued natural warm phase in the North Atlantic with the higher hurricane activity typical of this.”

The most serious natural catastrophe in the USA in the past year was brought about by a squall line with a series of very severe tornadoes in the state of Oklahoma. On 21 May, a tornado of the highest category (five), with wind speeds of over 300 km/h, devastated the suburb of Moore. Here alone, around 10,000 houses were damaged or destroyed. The loss resulting from the squall line as a whole amounted to US\$ 3.1bn, of which US\$ 1.8bn was insured.

Also exceptional was a series of tornadoes that caused serious damage in the State of Illinois on 17 November. “It may seem late in the year, but a severe tornado outbreak in November is not so unusual. For example, in 2005, there were almost 200 tornadoes reported in November,” said Höppe. “The series of tornadoes that mainly struck Illinois occurred comparatively far north for this time of the season, though.” Overall, the number of tornadoes recorded in the past year, at slightly over 900, was significantly below the long-term average of around 1,500.

“The need for sound building science research that leads to stronger, safer homes, businesses and communities is apparent. Nowhere in the world is the rising number of natural catastrophes more evident than in North America, where the number of weather-related loss events has almost quintupled over the past three decades. And the losses from severe thunderstorms in the USA are on the rise as well. This is important to note despite the comparably low number of tornadoes this year,” said Tony Kuczinski, President and CEO of Munich Reinsurance America, Inc.

Canada was also hit by severe natural catastrophes in 2013. Unusually heavy rainfall in the province of Alberta of up to 190 litres per square metre in one day coincided with late snowmelt. This led to record flooding on the rivers flowing through the province’s capital of Calgary – the Bow River and Elbow River – with water levels far greater than during the recent flood of 2005. Some 75,000 people had to be evacuated, with many city districts and residential areas inundated. The Saddledome, home to ice-hockey club Calgary Flames, was also hit, with flood water reaching up to the tenth row of seating. The economic loss amounted to US\$ 5.7bn, of which nearly US\$ 1.6bn was insured, making it the costliest natural catastrophe in Canada ever.

#### **Europe: June flooding was the year’s most expensive catastrophe**

The costliest natural catastrophe of the year in terms of overall economic losses was the flooding in southern and eastern Germany and the neighbouring states at the beginning of June. Overall losses totalled US\$ 15.2bn (€11.7bn), while insured losses came to US\$ 3bn (€2.3bn).

The flooding was triggered by so-called Vb weather conditions, in which a strong low-pressure system drew warm moist air from the Mediterranean across the Black Sea and carried it in a wide arc around the Alps as far as Germany. When this met with cold air masses, the result was days of heavy rainfall on already saturated ground. In some cases, precipitation of 400 litres per square metre in only a few days was measured. On many rivers, the subsequent flooding set new records.

Unlike during the Elbe flood of 2002, the historical old city centre of Dresden escaped largely unscathed, thanks to the protection measures having been strengthened there. However, because of the better protection in many places upstream, the situation was worse downstream, with the waters rising even higher than in the hundred-year flood of 2002. Back then, the overall loss Europe-wide had totalled US\$ 16.5bn (€16.8bn), of which US\$ 3.4bn (€3.4bn) was insured.

“The 2013 floods showed that flood control can work,” said Höppe.  
“Nevertheless, it also demonstrated that flood control has to cover the whole course of a river and cannot just consist of dykes.”

Precautionary measures also proved their worth in several other weather-related natural catastrophes in Europe. Losses from Windstorm Christian in autumn and Winter Storm Xaver were comparatively low, even though both swept over the UK, the Benelux states, northern Germany and Denmark with wind speeds sometimes exceeding 150 km/h. Winter Storm Xaver also triggered a storm surge which led to the water in the River Elbe rising to over 6.09 metres above normal in Hamburg, the second highest level since measurements began, and significantly higher than in the flood disaster of 1962, which caused 347 fatalities. As Hamburg had invested more than €2bn in protection measures since then, the storm surge caused no major losses.

### **Hailstorms in Germany cause the highest insured losses**

The most expensive event for the insurance industry in 2013 was a squall line with hailstorms that hit some regions in northern and southwestern Germany between 27 and 28 July. At the same time, this squall line was also the insurance industry’s most expensive hail event in German history. In Baden-Württemberg, areas around Pforzheim and the region northeast of Stuttgart were badly affected, while in the north a line northeast of the Ruhr area as far as Wolfsburg was hit. Some of the hailstones were bigger than tennis balls. One of the hailstones found was 14 centimetres in diameter – a record for Germany.

The hailstones damaged numerous cars, building façades, roofs and solar installations. The hail did particular damage to buildings with thermal insulation, ruining the exterior finish in some cases. Overall, the loss from heavy hailstorms in July and August in Germany totalled around US\$ 5.2bn (€3.9bn), of which US\$ 4.1bn (€3.1bn) was insured. The hailstorms in late July alone accounted for US\$ 4.8bn (€3.6bn) of the overall loss, and US\$ 3.7bn (€2.8bn) of the insured loss.

### **Haiyan probably the strongest tropical storm ever to make landfall**

The most severe catastrophe in human terms was caused by Supertyphoon Haiyan, which tore across the southern Philippines on 7 November, with maximum wind speeds of well over 300 km/h. Shortly before that, the strongest gust was measured over the ocean at 379 km/h. The radius of the storm system amounted to around 600 km. And the eye of the tropical storm, just outside of which the wind speeds are highest, measured an exceptional 20–25 km in diameter. Haiyan was probably the strongest recorded cyclone ever to make landfall. As a result of the extreme wind force of over 300 km/h and the resultant flood wave of up to 6 m in height, many settlements like the coastal city of Tacloban were razed almost to the ground.

Over 6,000 people were killed in the storm, and millions were left homeless. The harvest in this significant agricultural region, with extensive sugar cane cultivation, was largely destroyed. The overall loss totalled some US\$ 10bn, equivalent to around 5% of the Philippines' annual economic output. Owing to the very low insurance penetration, the insured loss will probably only be in the mid three-digit million range.

“Haiyan shows the importance of government measures in construction planning. The Philippines are the country most frequently affected by tropical cyclones,” said Ludger Arnoldussen, whose responsibilities on Munich Re's Board of Management include the Asian markets. “At the same time, insurance programmes – possibly also with state backing – can help provide the people affected with quicker financial support. Studies sponsored by Munich Re have shown that insurance against natural catastrophes in emerging countries has the greatest relief effect in macroeconomic terms.”

The 2013 typhoon season in the Pacific was above average in terms of activity, with 31 named storms. “The destructive power of typhoons threatens coastal regions, islands and also inland regions throughout Southeast Asia. Based on a natural cycle, our analyses predict the beginning of a phase with higher typhoon activity for the coming years,” added Arnoldussen.

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