

Munich, 04 January 2012

## Press release

### Review of natural catastrophes in 2011: Earthquakes result in record loss year

Contact  
Media Relations Munich,  
Michael Able  
Tel.: +49 (89) 3891-2934  
Fax: +49 (89) 3891-72934  
mable@munichre.com

**Münchener Rückversicherungs-  
Gesellschaft**  
Aktiengesellschaft in München  
Media Relations  
Königinstraße 107  
80802 München  
Germany  
Letters: 80791 München

www.munichre.com  
<http://twitter.com/munichre>

**A sequence of devastating earthquakes and a large number of weather-related catastrophes made 2011 the costliest year ever in terms of natural catastrophe losses. At about US\$ 380bn, global economic losses were nearly two-thirds higher than in 2005, the previous record year with losses of US\$ 220bn. The earthquakes in Japan in March and New Zealand in February alone caused almost two-thirds of these losses. Insured losses of US\$ 105bn also exceeded the 2005 record (US\$ 101bn).**

Torsten Jeworrek, Munich Re Board member responsible for global reinsurance business: "Thankfully, a sequence of severe natural catastrophes like last year's is a very rare occurrence. We had to contend with events with return periods of once every 1,000 years or even higher at the locations concerned. But we are prepared for such extreme situations. It is the insurance industry's task to cover extreme losses as well, to help society cope with such events and to learn from them in order to protect mankind better from these natural perils."

#### **The year in figures**

With some 820 loss-relevant events, the figures for 2011 were in line with the average of the last ten years. 90% of the recorded natural catastrophes were weather-related – however, nearly two-thirds of economic losses and about half the insured losses stemmed from geophysical events, principally from the large earthquakes. Normally, it is the weather-related natural catastrophes that are the dominant loss drivers. On average over the last three decades, geophysical events accounted for just under 10% of insured losses. The distribution of regional losses in 2011 was also unusual. Around 70% of economic losses in 2011 occurred in Asia.

Some 27,000 people fell victim to natural catastrophes in 2011. This figure does not include the countless people who died as a result of the famine following the worst drought in decades on the Horn of Africa, which was the greatest humanitarian catastrophe of the year. Civil war and political instability made it very difficult to bring effective aid to the victims.

#### **The earth shakes: 11 March, the Tohoku earthquake**

The most destructive loss event of the year was the earthquake of 11 March in Tohoku, Japan, when a seaquake with a magnitude of 9.0 occurred 130 km east

of the port of Sendai and 370 km north of Tokyo. It was the strongest quake ever recorded in Japan. The damage from the tremors themselves was relatively moderate thanks to strict building codes. However, the quake triggered a terrible tsunami. The wave devastated the northeast coast of the main island Honshu. In some bays, the wave reached a height of up to 40 metres. Entire towns, roads and railway lines were washed away, hundreds of thousands of houses were destroyed. Some 16,000 people were killed in spite of high protective dykes and an excellent early-warning system. Without these protective installations, the death toll would have been much higher. The tsunami-exposed northeast of Japan is believed to have last been hit by a seismic sea wave of this size in the year 869.

The tsunami led to severe damage at several blocks of the Fukushima 1 nuclear power plant. Some areas within a radius of several kilometres of the plant will remain uninhabitable for a period of many years. Even without considering the consequences of the nuclear accident, the economic losses caused by the quake and the tsunami came to US\$ 210bn – the costliest natural catastrophe of all time. The share of insured losses may amount to as much as US\$ 40bn.

The fault line that triggered the quake was actually fairly short with a length of 450 km. However, the seabed at the fracture face shifted by 30 to 40 metres. Experts believe that an earthquake of this strength occurs there once every 500 to 1,500 years. The main shock was followed by thousands of aftershocks, the strongest of which, some 40 minutes after the main shock, had a magnitude of 7.9.

### **The earth shakes II: The Christchurch earthquake**

Before the tsunami catastrophe in Japan, there had been an earthquake of 6.3 magnitude in Christchurch, New Zealand, on 22 February. The notable aspect of this event was that an earthquake of 7.1 magnitude had hit Christchurch just six months earlier. Unfortunately, the seismic waves were amplified due to reflection off an extinct volcano, so that far greater destruction was caused than would have normally been expected with an earthquake of this magnitude. The epicentre was located at a shallow depth and only a few kilometres from the city centre.

The losses were enormous. Numerous old buildings collapsed, and many new buildings were damaged despite the very high building standards. Some residential areas will not be rebuilt. Economic losses came to around US\$ 16bn, of which approximately US\$ 13bn was insured.

One day before Christmas, the earth shook again in Christchurch. Over a dozen people were injured following three strong earthquakes. However, in terms of their severity, the quakes were not as bad as the devastating event in February. Consequently, losses for the insurance industry from these aftershocks are expected to be significantly lower.

Prof. Peter Höppe, Head of Munich Re's Geo Risks Research unit: "Even if it seems hard to believe given recent events, the probability of earthquakes has

not increased. However, these severe earthquakes are timely reminders that the decisions on where to build towns need careful and serious consideration of these risks, especially where certain buildings are concerned, above all nuclear power plants. Also, building codes in regions exposed to earthquakes need to be made even stricter, so that buildings do not just remain standing to an extent sufficient to save lives but can be used again afterwards.”

#### **Weather-related catastrophes: Floods in Thailand**

The floods in Thailand stand out among the many weather-related catastrophes of 2011. They were triggered by extreme rainfall, which started in spring and peaked in the autumn. Due to its low elevation above sea level, the plain of central Thailand – where the capital Bangkok is situated – is prone to flooding throughout the rainy season from May to October. According to the authorities, this year's floods were the worst for around 50 years. It is presumed that the La Niña natural climate phenomenon was a contributory factor, since the rainy season is often stronger during this phase.

The floods claimed the lives of some 800 people. Not only were hundreds of thousands of houses and vast expanses of farmland flooded, but also seven major industrial areas with production facilities belonging mainly to Japanese groups. A large number of electronic key component manufacturers were affected, leading to production delays and disruptions at client businesses. Approximately 25% of the world's supply of components for computer hard drives was directly impacted by the floods. With economic losses amounting to tens of billions of dollars, the floods were by far the costliest natural catastrophe in Thailand's history.

#### **North America: Many storms but few hurricanes in North America**

The tornado season was especially violent in the Midwest and southern states of the USA. Several series of storms with numerous tornadoes caused economic losses totalling some US\$ 46bn, of which US\$ 25bn was insured. Insured losses were thus twice as high as in the previous record year of 2010. The series of severe weather events can largely be explained by the La Niña climate phenomenon. As part of this natural climate oscillation, weather fronts with cool air from the northwest more frequently move over the central states of the USA and meet humid warm air in the south. Under such conditions, extreme weather events are more probable than in normal years.

Losses from North-Atlantic hurricanes were moderate. However, as in 2010, this was purely by chance. At 18, the number of recorded tropical cyclones in this season was some way above the long-term average (11) and above the average for the current warm phase with increased hurricane activity since the mid-1990s (15). The number of hurricane-strength storms (6) was in line with the long-term average. However, the number of tropical cyclones that made landfall, especially on the US coast, was very low. Only three named storms, one of them Hurricane Irene, made landfall in the USA. Irene caused economic losses in the Caribbean and USA totalling US\$ 15bn, US\$ 7bn of which was insured.

Another striking feature of this year was that, for the first time ever, US weather agency NOAA categorised a low-pressure system over the Mediterranean as a tropical storm. The low-pressure system Rolf formed on 3 November. It was caused by a ridge of cold air forming over the still warm sea (20°C ). With peak wind speeds of 120 km/h, the storm "01M" made landfall on the French Mediterranean coast before dispersing. The storm produced extreme rainfall along the Cote d'Azur.

Note for the editorial staff:  
For further questions please contact

Media Relations Munich, Michael Able  
Tel.: +49 (89) 3891-2934

Media Relations Asia, Nikola Kemper  
Tel.: +852 2536 6936

Media Relations USA, Terese Rosenthal  
Tel.: +1 (609) 243-4339

**Munich Re** stands for exceptional solution-based expertise, consistent risk management, financial stability and client proximity. Munich Re creates value for clients, shareholders and staff alike. In the financial year 2010, the Group – which pursues an integrated business model consisting of insurance and reinsurance – achieved a profit of €2.4bn on premium income of around €46bn. It operates in all lines of insurance, with around 47,000 employees throughout the world. With premium income of around €24bn from reinsurance alone, it is one of the world's leading reinsurers. Especially when clients require solutions for complex risks, Munich Re is a much sought-after risk carrier. Our primary insurance operations are concentrated mainly in the ERGO Insurance Group. With premium income of over €20bn, ERGO is one of the largest insurance groups in Europe and Germany. It is the market leader in Europe in health and legal protection insurance. More than 40 million clients in over 30 countries place their trust in the services and security it provides. In international healthcare business, Munich Re pools its insurance and reinsurance operations, as well as related services, under the Munich Health brand. Munich Re's global investments amounting to €193bn are managed by MEAG, which also makes its competence available to private and institutional investors outside the Group.

#### **Disclaimer**

This press release contains forward-looking statements that are based on current assumptions and forecasts of the management of Munich Re. Known and unknown risks, uncertainties and other factors could lead to material differences between the forward-looking statements given here and the actual development, in particular the results, financial situation and performance of our Company. The Company assumes no liability to update these forward-looking statements or to conform them to future events or developments.

Munich, 04 January 2012

#### **Münchener Rückversicherungs-Gesellschaft**

Aktiengesellschaft in München  
Media Relations  
Königinstraße 107  
80802 München  
Germany