

NATURAL CATASTROPHES 2002 - A GLOBAL OVERVIEW

Hard facts and realistic fears - a warning from the future

FACT - 2002 was the second warmest year, just behind 1998, since global temperature readings began

FACT - the ten warmest years since 1860 have all been recorded since 1987, and nine of those since 1990

FACT - the warming of the world's atmosphere has accelerated dramatically in the last 25 years

FACT - 700 natural catastrophes (loss events) occurred in 2002 (up from the long-term annual average of 650) with economic losses of US\$ 55bn (2001: US\$ 35bn) of which only US\$ 13bn were insured (2001: US\$ 11.5bn)

FACT - there is no sign of any change in the unbroken trend of global warming

FEAR - the negative effects of climate change will become more pronounced, manifesting themselves in an increase in extreme weather-related events

FEAR - with growing urbanisation and the increasing concentration of property values in megacities around the globe, major loss events will increase

FEAR - the continued threat of unprovoked terrorist attacks will add to the problem

2002 has gone down in the history books as a year of extreme storms and floods that topped the annual list of natural catastrophes accounting for 69% of loss events worldwide. The picture is filled out with 13% earthquakes/volcanic eruptions and 18% droughts, forest fires, landslides and avalanches.



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disasters
have no respect

In August central Europe experienced a 'thousand year flood', the worst since the Middle Ages, during which the Elbe, Vltava, Danube and their tributaries overflowed causing massive disruption and devastation. The majority of losses were public facilities such as roads, railways and bridges as well as factories and infrastructural facilities (e.g. telecommunications, water supply and power). The floods were the result of historically extreme precipitation between July and September. An illustration of this occurred in Dresden on August 12 th

when 158mm of rain fell in 24 hours, twice the existing record. Similarly at Zinnwald in Saxony an unbelievable 312mm fell exceeding the previous record for 24-hour rainfall in Germany by 20%. In the same month flash floods with attendant landslides were recorded in Majorca and Russia causing rapid death and devastation. In the Rhône valley on 8-

9 th September more than half the usual annual rainfall fell in only 36 hours, creating not only a regional but a supra-regional flood that affected southern France. Likewise in northern Italy in November many places were submerged after days of incessant rainfall. Resulting European economic losses, centred on Austria, the Czech Republic and Germany, totalled about US\$ 18.5bn, of which US\$ 3.1bn was insured. Losses were also incurred in Italy, Switzerland, Slovakia, Hungary, Romania and Russia. To a lesser degree Great Britain, the Netherlands, Spain, Poland, Moldova and Ukraine also suffered.

Weather records were also broken outside Europe in 2002. Parts of Australia and the United States experienced extreme weather in the form of heat waves and droughts, resulting in damage to agriculture as well as forest fires that threatened domestic and commercial properties. The worst bush fires were in Sydney where fire fighters struggled to save suburban buildings from destruction. In East Asia in the spring, prolonged sand and dust storms, carrying unusually high concentrations of material, affected more than half the surface area of Korea, China, Siberia and Mongolia. By the summer China was experiencing extreme precipitation and floods that destroyed many infrastructural facilities. In September Typhoon Rusa hit South Korea destroying hundreds of ships and damaging harbours resulting in property damage of US\$ 4.9bn. Later the same month Hurricanes Lili and Isidore damaged high value oil rigs in the Caribbean. A major catastrophe was avoided in October when Typhoon Higos blew itself out just before arriving in the Japanese capital of Tokyo. In the United States a spectacular series of tornadoes whipped across the Midwest and the East in April damaging houses, businesses and freight trains. Insurers faced the highest tornado losses of all time (US\$ 1.6bn) made even worse by a second cyclone strike in November. The year's catalogue of catastrophes ended back in Europe where in October a violent winter storm christened Jeanett caused widespread dislocation across western and central regions. In Germany where the wind damage was particularly heavy the storm has resulted in insurance claims of US\$ 1bn, the costliest insured windstorm loss of all time.



Not thought to be related to global warming, but no less destructive were the 20 volcanic eruptions and 70 earthquakes that occurred worldwide in 2002. Between them they produced economic losses of US\$ 1.2bn of which US\$ 11m were insured. The Nyiragongo volcano on the Congo/Rwanda border buried entire settlements in lava whilst in Italy both Mount Etna and Stromboli made ominous noises. Meanwhile in Korea, a catastrophe hot spot in 2002, an earthquake measuring 7.1 on the Richter scale shook the capital of Taiwan. Afghanistan experienced the

year's most devastating earthquake claiming 2,000 lives. Mercifully the strongest earthquake recorded (7.9 on the Richter scale) had an epicentre in a scarcely populated area of Alaska - a timely reminder that not all natural catastrophes need be devastating to man and his activities.

When reviewing the economic losses of 2002 together with the type of natural catastrophe responsible, the statistics show a disproportionate 80% as being the result of storms and floods whilst accounting only for 69% of total loss events. Also apparent is the high number of flood-related loss events in Europe in 2002 when compared to the rest of the world, where windstorms and heat waves were more prevalent. It should be noted too that 37% of total global insured losses were for flood against 63% for windstorm, corroborating the inevitable conclusion that Europe was simply not geared up for the floods of 2002. Traditionally the proportion of losses insured against floods is relatively low. This parlous state of affairs has been exacerbated by a recent and deliberate policy of riverside development in Europe. Furthermore, since 1950 global analyses of 'great natural catastrophes' (i.e. those that significantly overtax a region, cause thousands of deaths and cause substantial economic losses), of which in 2002 only the European floods qualify, have shown a clear increase both in number of events (70 in the last 10 years versus 27 in the 60's), especially flood and windstorm, and in resulting economic losses (US\$ 550.9bn versus US\$ 75.5bn, adjusted). They have also demonstrated that insured losses have not kept pace with the ever-increasing economic losses as a whole. If one important conclusion can be drawn from all this it must be that the effects of climate change must be taken very seriously

by everyone from house owners through company managers to world leaders.

As loss trends worsen so the insurance industry is gearing up to face previously unheard of loss dimensions in terms of natural catastrophes. Equally, both individuals and corporate concerns who once took lightly such insurance considerations are now thinking again. This is especially the case in Germany and neighbouring countries where the worst-case scenario of simultaneous flooding on the major central European waterways occurred in 2002. Although the European floods were exceptional they do seem to be part of a worsening trend that must be confronted by national risk partnerships between state, insurance industry and individuals. The same people must realise that hundred year events may start to occur every ten years, and that the 'modernisation surge' that often follows natural catastrophes in the developed world, may not necessarily keep pace.

Most frightening of all is the scientific consensus that the 0.7°C temperature rise over the last century, attributable largely to human activity, will be matched this century by a rise of up to 6°C. A rise in temperature means the atmosphere can absorb more water vapour - and that means more rain! An increase in weather-related extreme events and the resultant economic losses will be an inevitable by-product of a warmer climate. It falls to the international community to continue working to curb global warming despite the well reported faltering of the Kyoto Protocol. One way ahead is through Emissions trading which will be introduced into Europe in 2005, rewarding energy-conscious nations and thus encouraging innovation and investment in climate protection. Another response to the increase in losses caused by natural catastrophes since 1950 has been the creation of a hazard index providing risk-management data to large urban centres (megacities) vulnerable to extreme weather and man-made catastrophes. Ironically growing global economic integration means that the effects of a major urban catastrophe can now reverberate throughout the entire developed world.