

## The Munich Climate Insurance Initiative (MCII)

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**We are taking climate action now** by discussing and suggesting ways to make increasing damages caused by weather related disasters also in developing countries insurable!



## Hurricane records 2005



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Never before since the beginning of records (1850) have so many (7 by end of July) named tropical storms occurred in the North Atlantic basin so early in the season.

By 3 December already 26 named tropical storms of which 14 hurricanes have been counted – old records were 21 named storms (1933), 12 hurricanes (1964)

Hurricane Wilma was the strongest, Rita the 4th strongest and Katrina the 6th strongest hurricane since beginning of measurements

Hurricane Katrina was the largest insured loss due to a single event (both natural and man made) and probably also the largest economic loss

In 2004 and 2005 hurricanes appeared in regions by then having been regarded as “hurricane free”: 2004 Catarina in the Southern Atlantic, 2005 Vince and Delta with landfalls in Spain and Morocco.

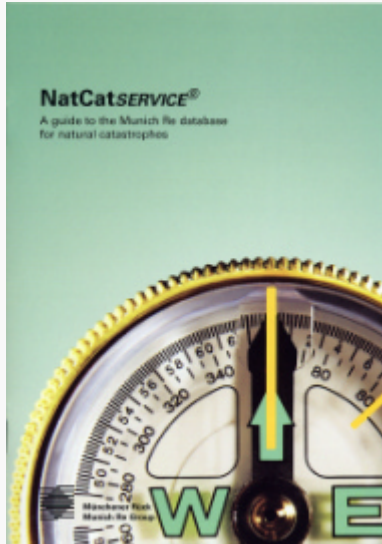
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## MR NatCatSERVICE®

One of the world's largest databases on natural catastrophes



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Information on natural catastrophes or loss events worldwide

- Reflects the natural hazard situation worldwide
- Complete data set of all events since 1980, of great disasters since 1950
- Documents more than 20,000 events
- Is the basis of numerous analyses

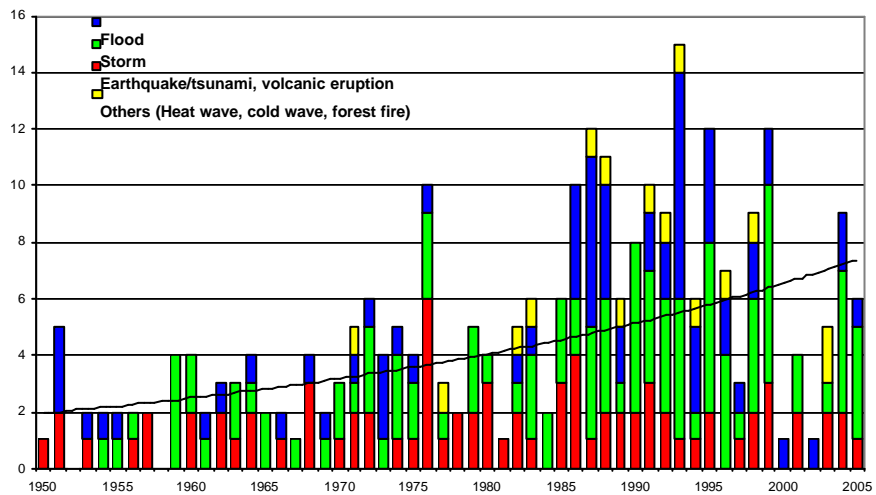
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## Great Natural Disasters 1950 – 2005

Number of events  
(as at November 30, 2005)



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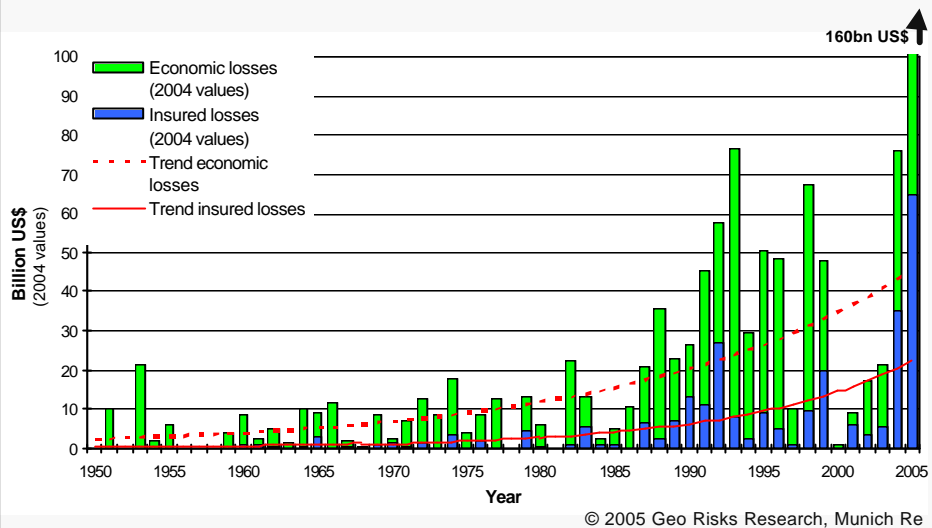
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## Great Weather Disasters 1950 – 2005

Economic and insured losses  
(as at November 30, 2005)



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## The Scientific Evidence



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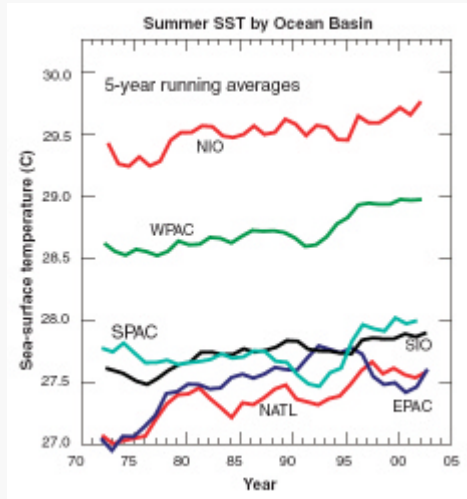
- It is very likely (confidence level >90%) that human influence has already at least doubled the risk of a heat wave exceeding the magnitude of the European heat wave 2003 (Stott et al., Climate Research 2004).
- Climate change will intensify the maximum wind speed by 0.5 on the Saffir Simpson scale and precipitation by 18% in hurricanes until 2050 (Knutson et al., 2004).
- Major tropical storms both in the Atlantic and the Pacific region have already increased since the 1970s in duration and intensity by about 50 percent. The projections are, that this trend induced by global warming will continue in the future (Emanuel, Nature 2005; Webster, Science 2005)
- Due to climate change the sea surface temperatures have increased already by 0.5°C (Barnett, Pierce, Science 2005)

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## Changes in Sea Surface Temperatures



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NATL = North Atlantic

WPAC = West Pacific

SPAC = South Pacific

EPAC = East Pacific

NIO = Northern Indian

SIO = Southern Indian

SH = Oceans of the Southern Hemisphere

Source: Webster et al. (2005), Science Vol. 309.

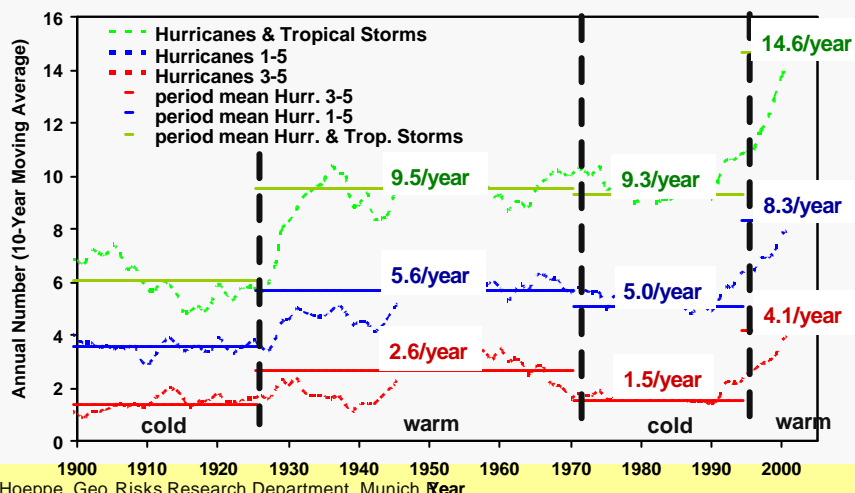
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## Global Warming and hurricanes forming in the North Atlantic



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Data source: NOAA, reanalyzed by Munich Re 2005  
Atlantic warm and cold phases according to Goldenberg (2001), Science

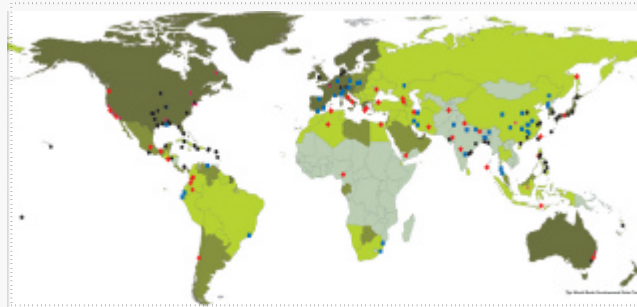


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# Great natural catastrophes in economies at different stages of development



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### Great Natural Disasters 1980 - 2004

- ◆ Earthquake, Tsunami
- Windstorm
- Flood
- ▲ Others

### GDP per capita

- > 9385 US\$
- > 3036 - 9385 US\$
- > 765 - 3035 US\$
- < 765US\$

Source: Munich ReNatCaSERVICE, The World Bank Development Data Center © 2005 NatCaSERVICE, Geo Risks Research, Munich Re

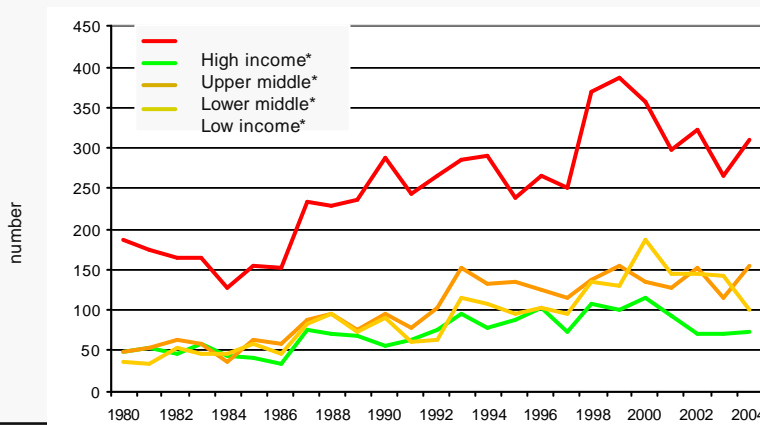
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# Development of weather catastrophes 1980 - 2004 in economies at different stages of development



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### Number of events



\*Classification as per World Bank, 2004

GDP per capita > 9385 US\$

GDP per capita > 765 - 3035 US\$

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GDP per capita > 3036 - 9385 US\$

GDP per capita < 765

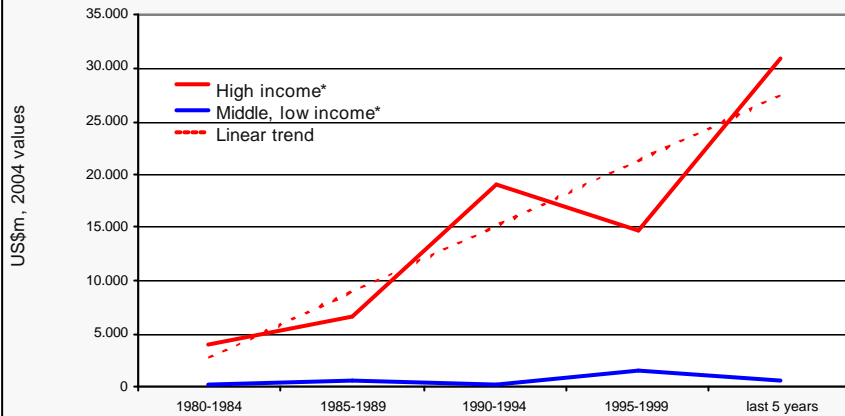
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## Development of weather catastrophes 1980 - 2005 in economies at different stages of development



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### Insured Losses (in 5-year-average)



\*Classification as per World Bank, 2004  
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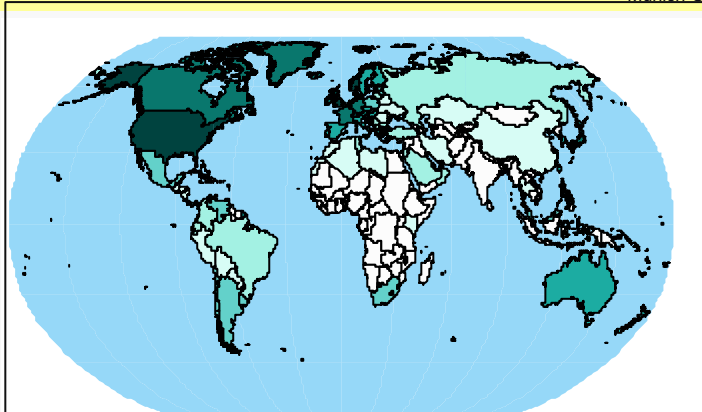
GDP per capita > 9385 US\$  
GDP per capita < 9385 US\$

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## Global distribution of insurance premiums per capita



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Inadequately insured group		Well insured group	
0-5 US\$	6-25 US\$	51-100 US\$	101-500 US\$
26-50 US\$		501-1000 US\$	>1000 US\$

While in the industrialized countries in Northern America, Europe and Australia there is a high saturation of insurance in the developing countries of Africa, and Asia there are many countries with hardly any insurance available.

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## Foundation of MCII in April 2005 in Munich Institutions represented in MCII



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- Germanwatch
- IIASA
- Munich Re and Munich Re Foundation
- Potsdam Institute for Climate Impact Research (PIK)
- Swiss Federal Institute of Technology (SLF)
- Tyndall Centre
- UN-ISDR
- World Bank
- Independent experts

**Contact email address of MCII: [warner@slf.ch](mailto:warner@slf.ch)**

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## Conclusions



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- There is hardly any doubt anymore that climate has been changing already and will do so even faster in the near future
- The Munich Re NatCatSERVICE data show significant trends of increasing frequencies of weather related disasters worldwide and the losses caused by them
- Recent scientific studies provide more and more evidence that there is a causal link between global warming and increasing natural catastrophe hazard
- In reference to the findings above further increasing weather related losses have to be expected in the future

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## Conclusions contd.



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- Almost all regions on this globe will be affected by the increase of natural catastrophes. While the wealthy countries will be able to cope with this by means of insurance solutions and state funding, the poorest countries will suffer most
- The increasing natural catastrophe damages in poor countries will consume increasing ratios of the donor money of development funding, delaying their further development
- New insurance related systems are necessary to get these countries, where currently almost no insurance is available, out of the global warming trap
- MCII is working on solutions to provide expertise on insurance related mechanisms to cover losses due to climate change, especially in developing countries

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# Thank you for your interest!

