

The Role of the Insurance Industry

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Munich Reinsurance Company

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The Insurance Industry as an Early Alerter to Global Warming

Flood Inundation

2.1 Climatic Variations

Investigations into the overall trend of claims experience are indispensable, and here climatic variations become most significant. Such investigations involve a study of thermodynamic processes such as, for example, the rising temperature of the earth's atmosphere (as a result of which glaciers and the polar caps recede, surfaces of lakes are reduced and ocean temperatures rise); changes in the earth's atmosphere due to the large-scale increase in areas irrigated and cultivated and increases in humidity resulting therefrom; and lastly the pollution of the earth's atmosphere, e.g. rise of the CO₂ content of the air causing a change in the absorption of solar energy. We wish to enlarge on this complex of problems in greater detail, especially as—as far as we know—its conceivable impact on the long-range risk trend has hardly been examined to date.

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MR-Publication Flood / Inundation (August 1973)

**Geo Risks Research Department of Munich Re -
Analyses of natural disasters since 1974**

Staff: 28

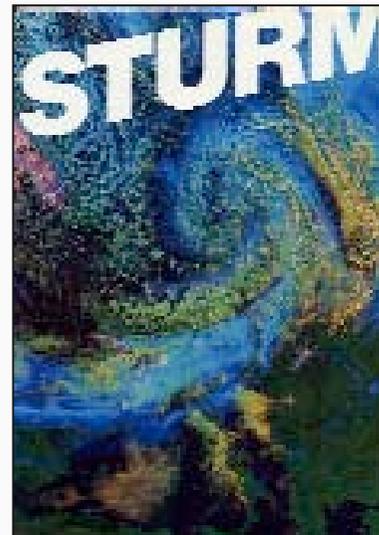
**Communication on climate change
as a relevant risk in insurance industry
for many years**



The Insurance Industry as an Early Alerter to Global Warming

If water temperatures increase by 0.5 or 1 degree in the course of the next few decades, we can expect an extension of the hurricane season by several weeks and a considerable increase in the frequency and intensity of hurricanes.

Facing the anticipated change in climate, insurers will have to shoulder substantial risks and burdens not only on account of natural disasters, but also due to the continuous change in environmental conditions.



(Brochure Storm (1990), p.110ff)

Insurance Industry Pays for Part of the Increasing Losses caused by Global Warming

August 2005 – Hurricane Katrina 6th strongest hurricane, largest losses of a single event



source: AP

25.-30.8 Hurricane Katrina, USA (1.322 fatalities)

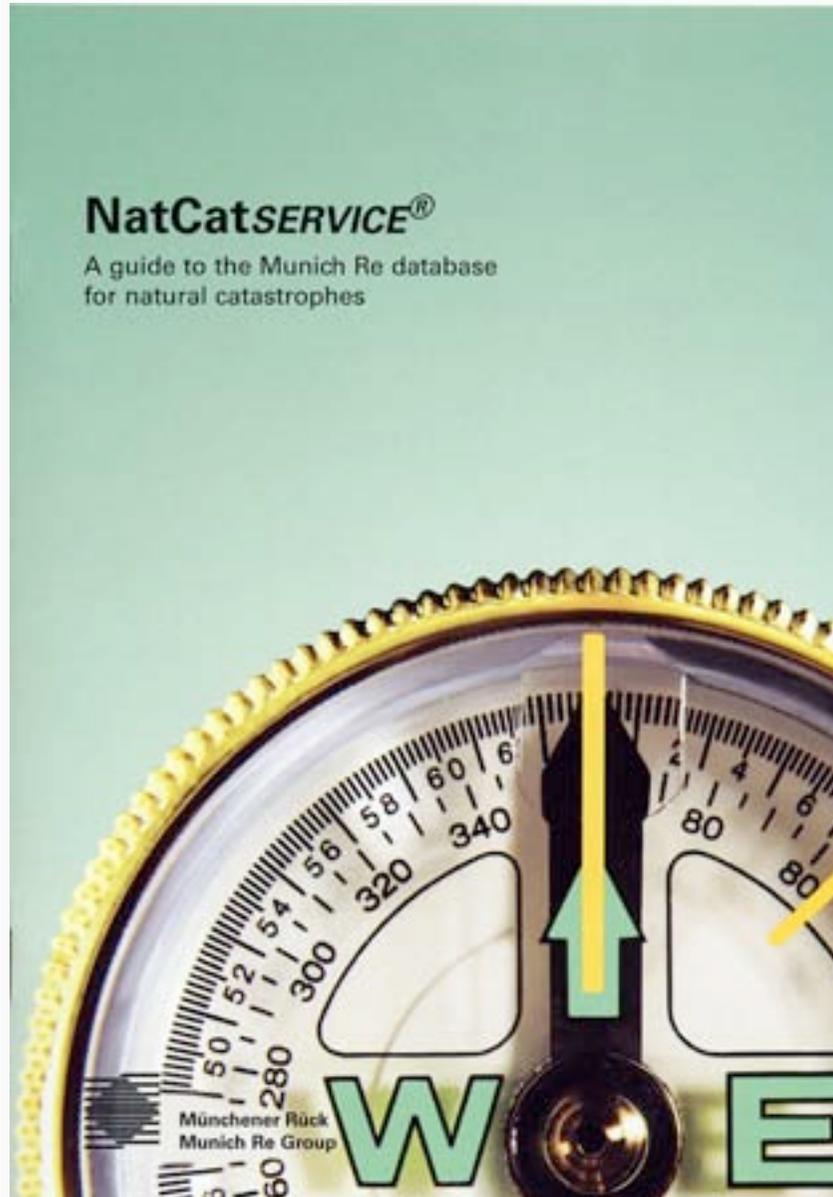
Economic losses (US\$ m):	125.000
Insured losses (US\$ m):	61.000 (NFIP included)

Insurance Industry Pays for Part of the Increasing Losses caused by Global Warming



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- Increase in weather variability
- New levels of weather extremes
- New kinds of weather risks
- Higher loss potentials
- Lacking experience in new kinds of damages
- Increased capacity demand due to larger accumulation risks
- Prospective premium calculation becomes necessary
- Due to increased coverage of climate change by the media and own perception of changes in weather patterns higher demand for nat cat covers
- New insurance products can be developed



MR NatCatSERVICE®

One of the world's largest databases on natural catastrophes

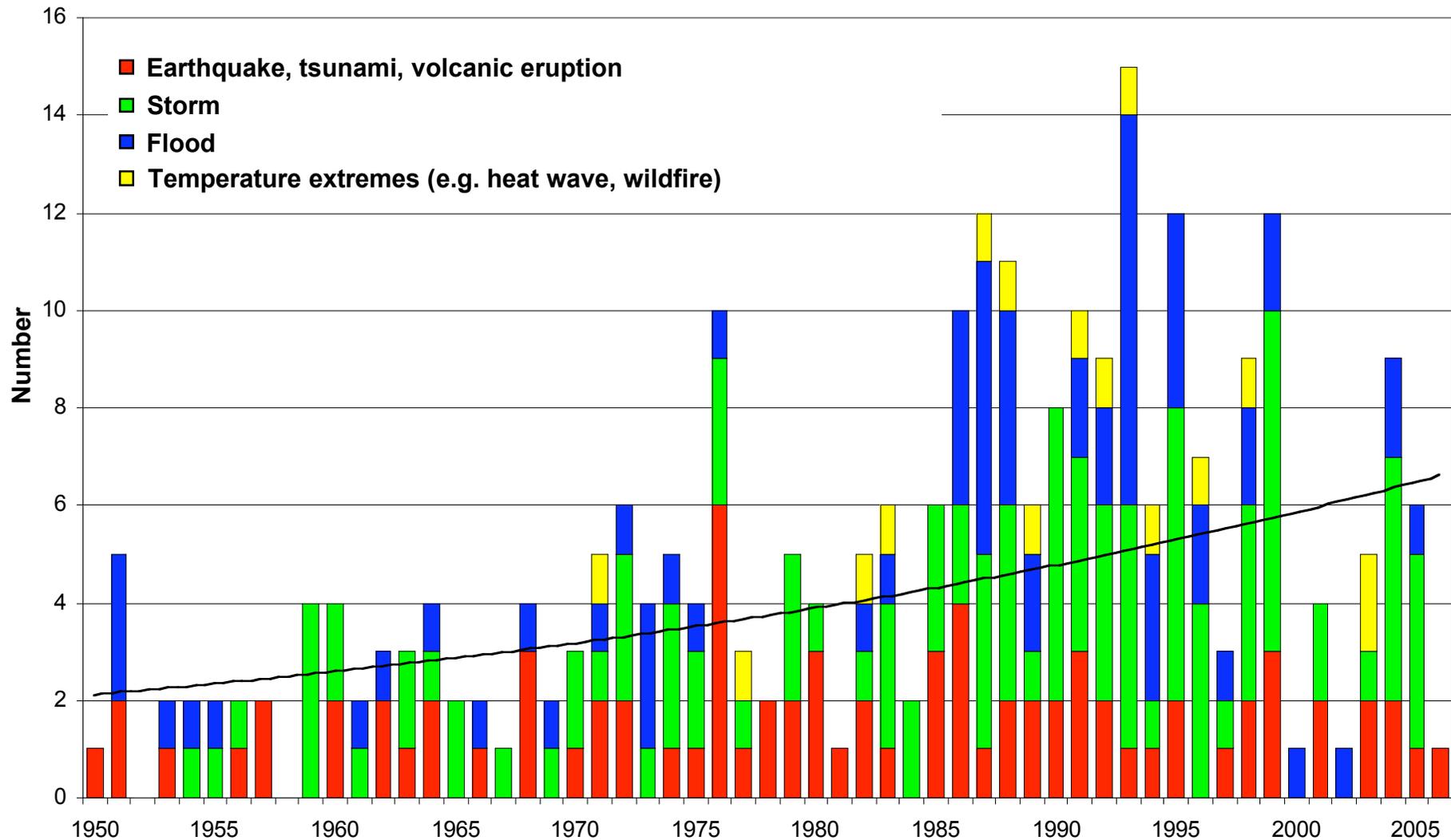
The database today:

- From 1980 until today all loss events have been analysed and entered, for USA and selected countries in Europe all loss events since 1970
- Retrospectively all Great Disasters since 1950 have been analysed and entered
- In addition all major historical events starting from 79 AD – eruption of Mt. Vesuvio (3,000 historical data sets)

more than 23,000 events

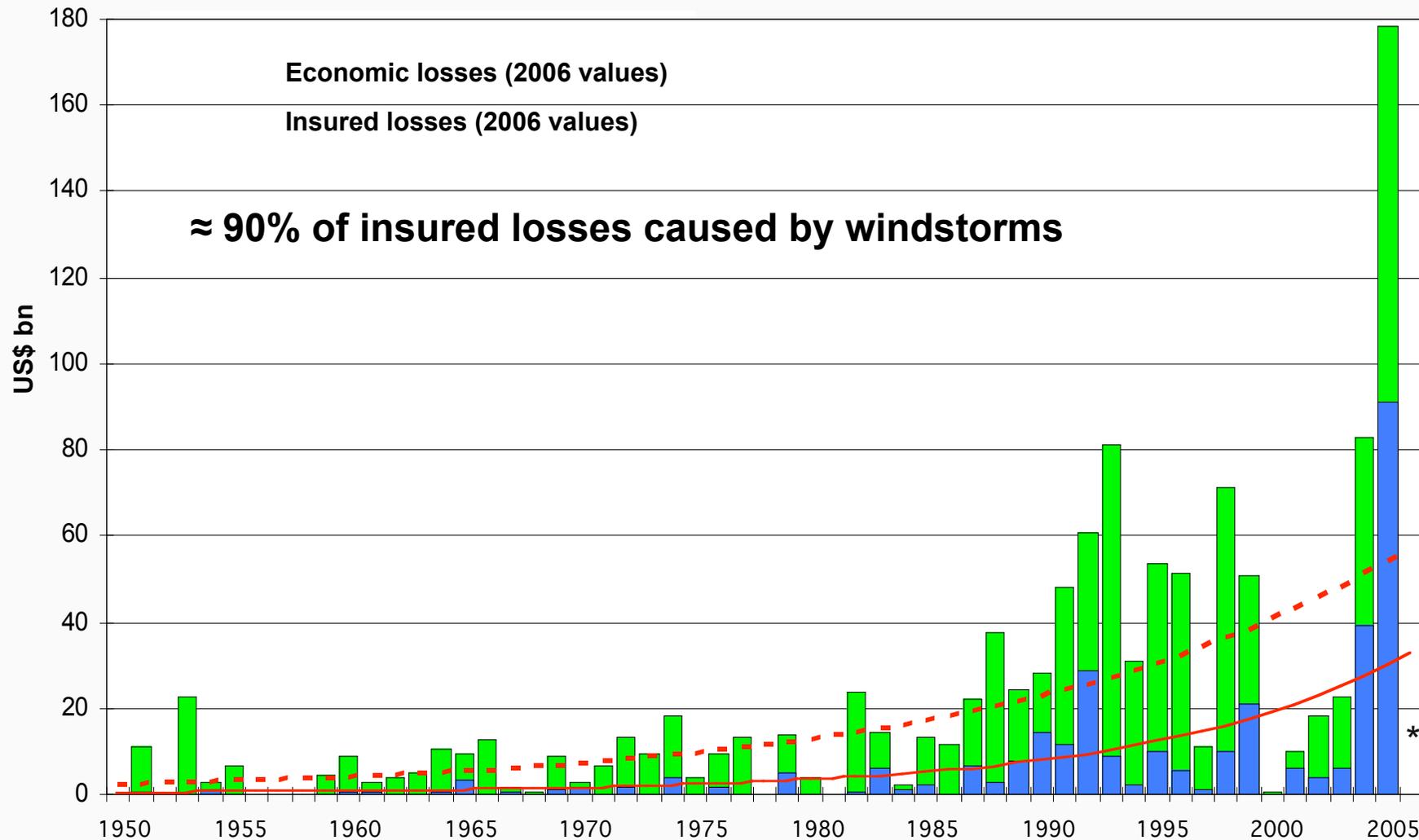
The Insurance Industry as Data Provider

Great Natural Disasters 1950 – 2006 - Number of events



The Insurance Industry as Data Provider

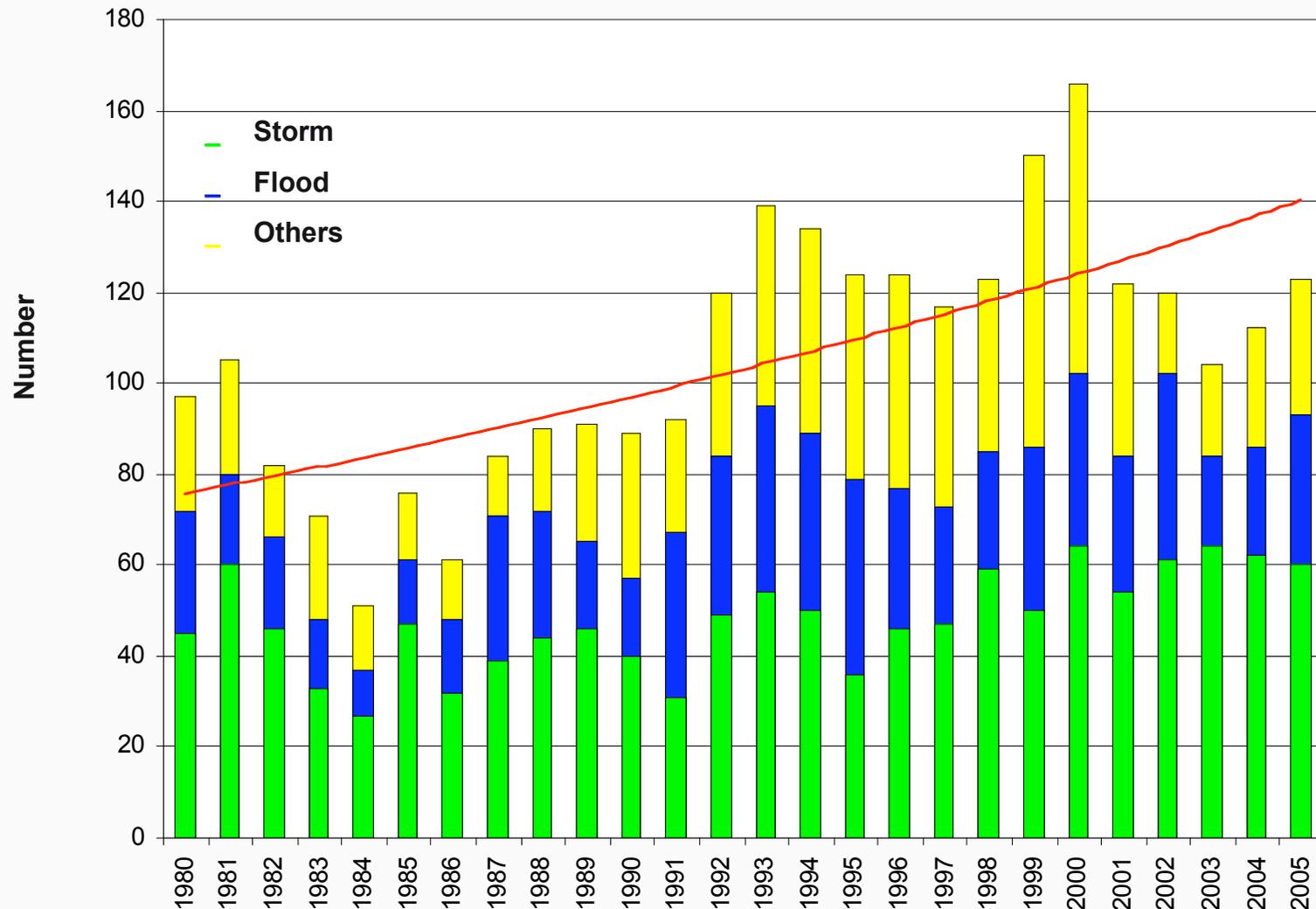
Great Weather Disasters 1950 – 2006 - Overall and insured losses



* According to the definition criteria there was no Great Weather Disaster in 2006.

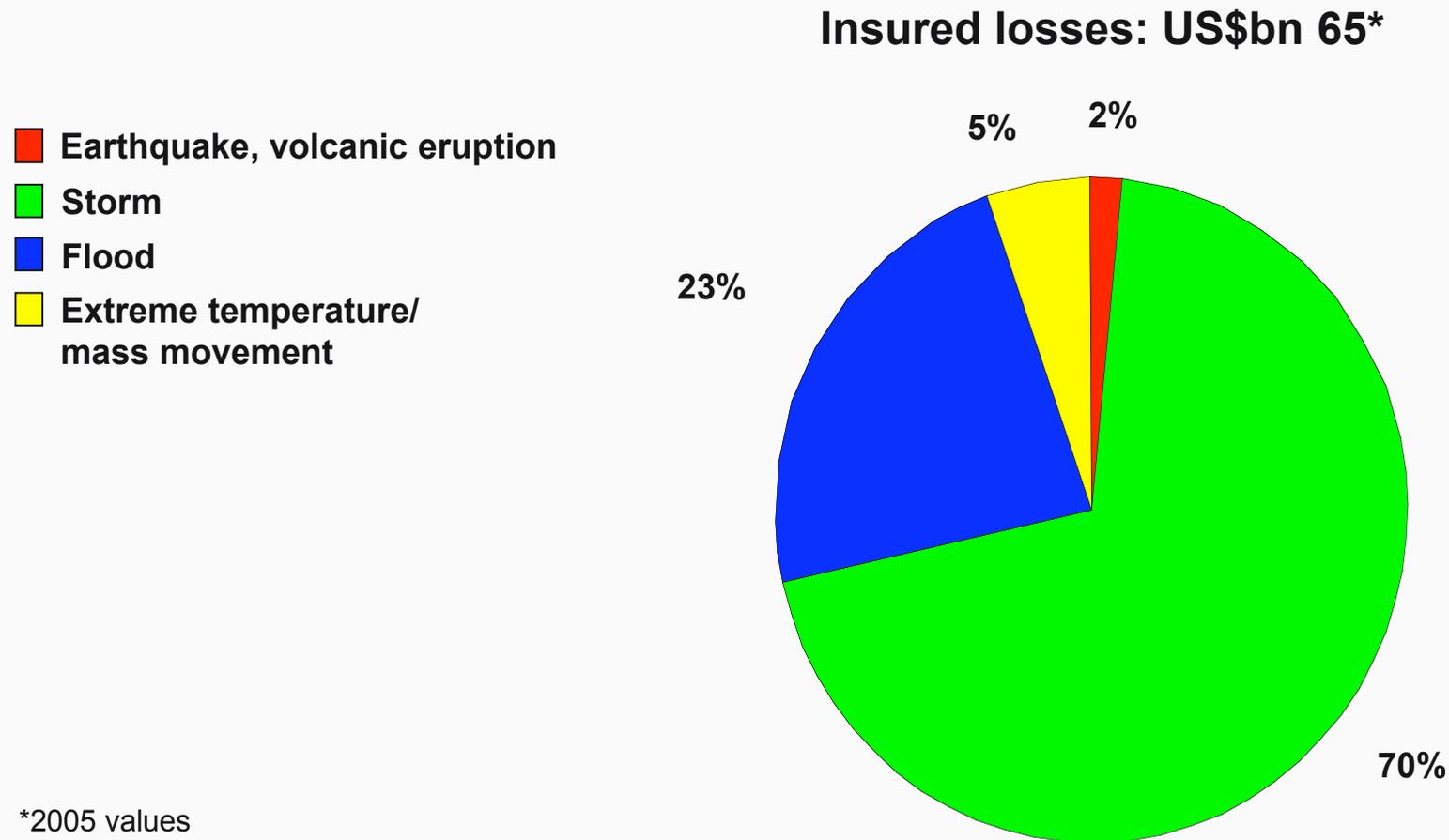
The Insurance Industry as Data Provider

Europe: Weather Disasters 1980 – 2005 - Number of Events



The Insurance Industry as Data Provider

Europe: Natural Disasters 1980 - 2005



*2005 values
As at December, 2006

The Insurance Industry Develops Special Products to Promote Climate Protection



- Covers for new renewable energy projects; e.g. MR insurance of geothermal drilling in Unterhaching
- Insurance for predicted energy savings or renewable energy technology performance (Lloyds of London)
- Pay as you drive premium (GPS based) of car insurance (GMAC Financial Services) - results in 10% lower mileage
- 10% lower car insurance premium for hybrid cars (Travelers)
- Premium credits for „Green Building“ features (Fireman’s Fund)

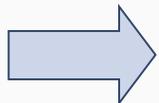
The Insurance Industry Develops Special Products to Promote Climate Protection

A new product of Munich Re supporting climate protection The "Kyoto Multi Risk Police"

Target group: Institutions engaged in generating carbon credits from CDM* or JI** projects

Objective: The investor will be compensated for the loss, if carbon credits are not delivered according the plan

Advantage: Traditionally separated lines (e.g. physical damage, counterparty risk or country risk) are combined by adopting a holistic approach.



The concept provides support for investors in carbon markets and contributes to the acceptance and feasibility of the Kyoto mechanisms.



* CDM: Clean Development Mechanism

** JI: Joint Implementation

The Insurance Industry Develops Special Products to Promote Climate Protection

Munich Climate Insurance Initiative (MCII)



MCII strives to fulfill four objectives

Munich Climate Insurance Initiative

1. **Develop insurance-related solutions to help manage the impacts of climate change especially for developing countries.**
2. **Conduct and support pilot projects for the application of insurance- related solutions.**
3. **Promote insurance-related approaches in cooperation with other organisations and initiatives.**
4. **Identify and promote loss reduction measures.**

The MCII was founded in 2005 by representatives of

Germanwatch, IIASA, Munich Re, the Potsdam Institute for Climate Impact Research (PIK), the Swiss Federal Institute of Technology (SLF), the Tyndall Centre, the World Bank and independent experts.

Munich Climate Insurance Initiative

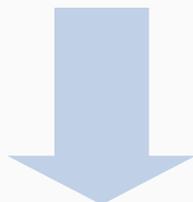
Mission statement



 MCII

The Insurance Industry as an Important Player in Investments and Asset Management

Activities of Munich Re



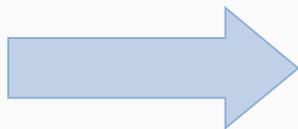
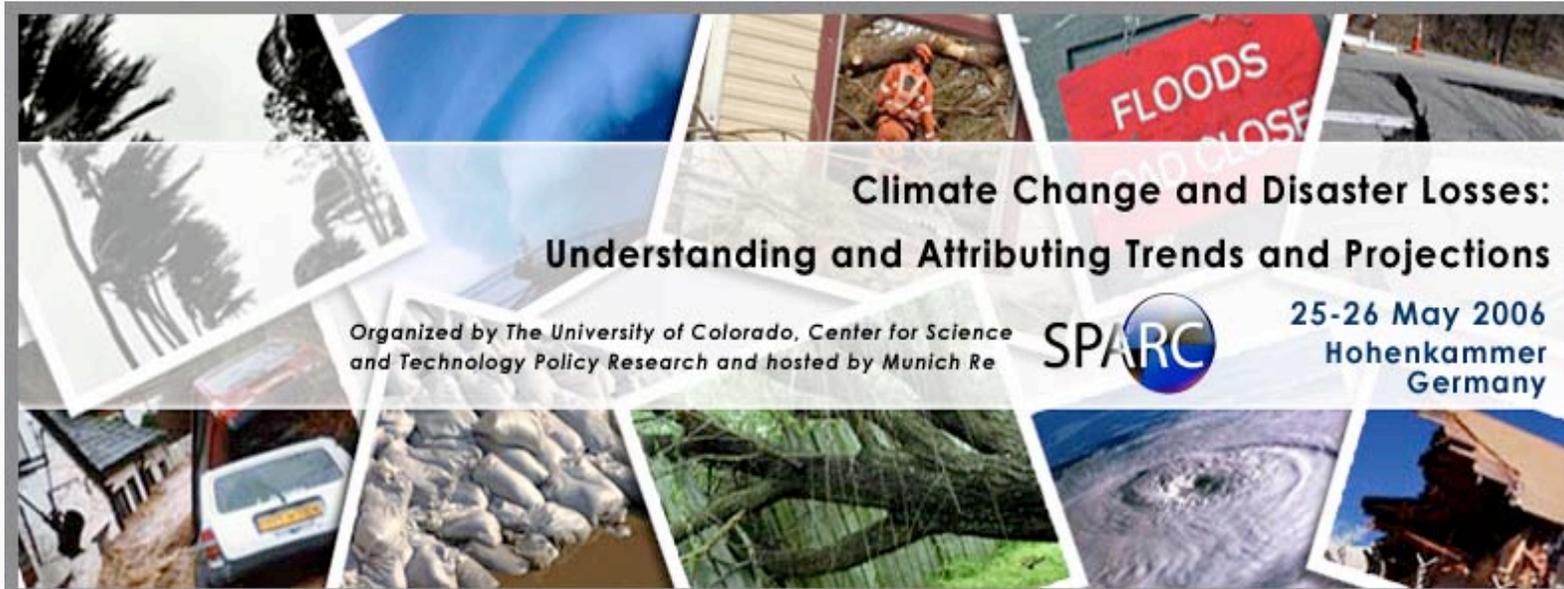
- At least 80% of investments in shares and corporate bonds have to meet sustainability criteria
- Integration of sustainability criteria in managing the capital of the Munich Re Foundation
- Offer of an SRI retail fund by MEAG, Munich Re's asset manager
- Supporting the development of the SRI market, participation at the development and one of the first signatories of the UN Principles for Responsible Investment

Munich Re is member of several sustainability indexes, e. g.



The Insurance Industry as Basic Researcher of Global Warming Effects

Munich Re: Initiator of international scientific workshops



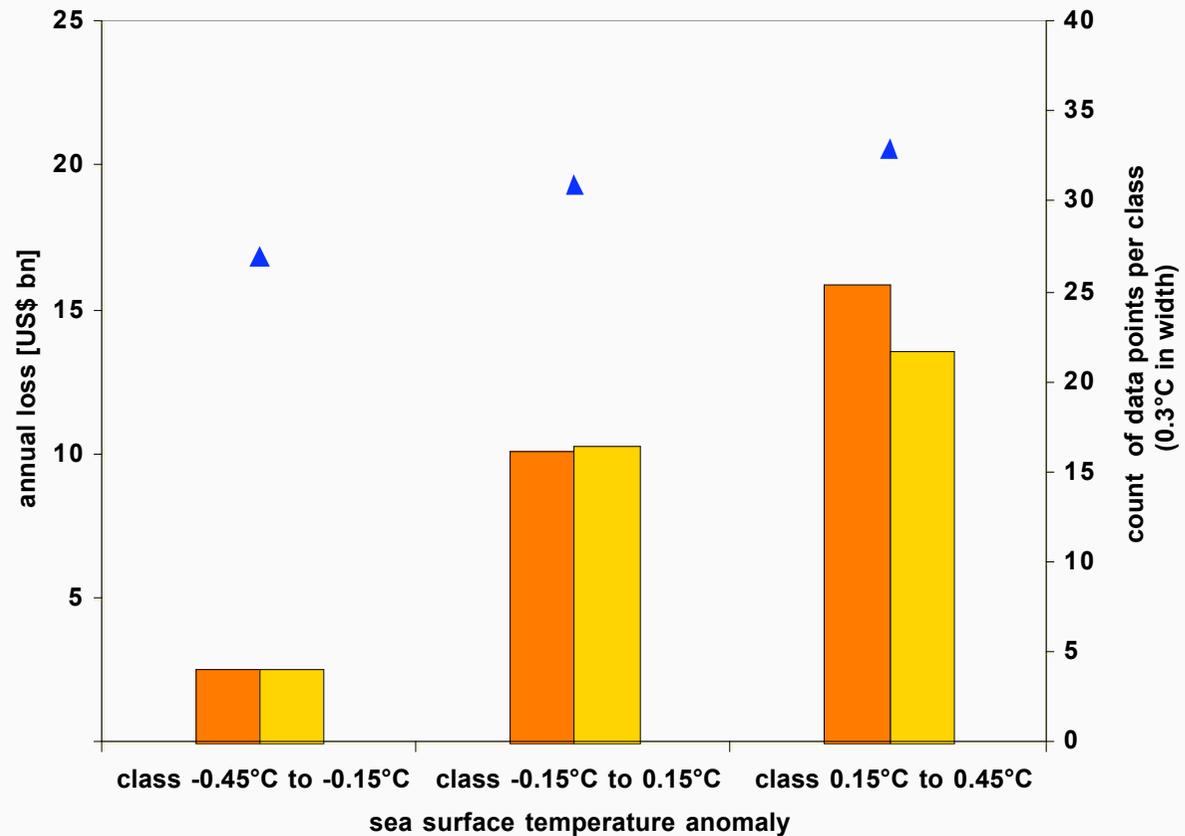
To discuss the attribution of increasing losses to climate change with a high level group of participants from science and insurance industry

The Insurance Industry as Basic Researcher of Global Warming Effects

Relationship between annual US TC losses and SSTA

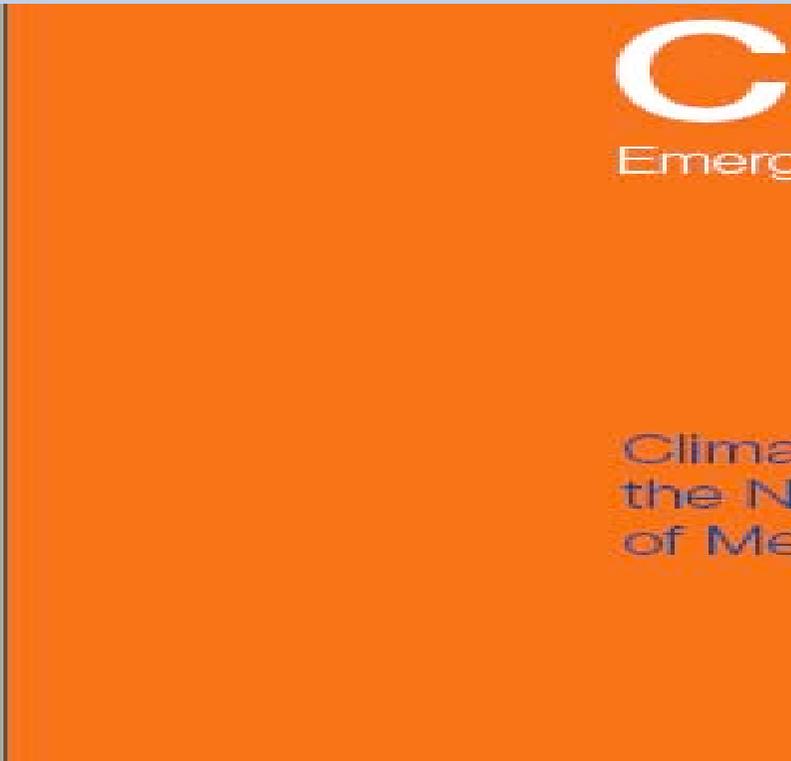
Mean annual normalized US hurricane losses in dependence on SST-anomalies

2004, 2005 and 2006 were beyond the +0.45°C anomaly.



Yellow bars: mean annual losses according to R. Pielke's loss figures;
 Orange bars: similar as above, but since 1954 Munich Re's annual loss figures were used
 Blue triangles: number of data points per class (right-hand axis).
 Source: Faust, Munich Re 2006.

Insurance Industry Issues Publications to Raise Awareness to Global Warming



Raj Singh Chief Risk Officer Allianz	Tony Coleman Chief Risk Officer AG	
Sue Keen Chief Risk Officer Aviva	John C. R. Hale Deputy Chief Financial Officer, IRO Group	
François Robinet Chief Risk Officer AXA	Charlie Shomish Chief Risk Officer Munich Re	
Peter Bolter Chief Risk Officer Convatum	David Paige Chief Risk Officer Royal & Sun Alliance	
Luc Hennard Chief Risk Officer Forsis	Jean-Luc Besson Chief Risk Officer Scor Group	
Fred Depiret Chief Risk Officer Generali	Christian Mumenthaler Chief Risk Officer Swiss Re	
Eberhard Müller Chief Risk Officer Hannover Re	Andreas Grünbichler Chief Risk Officer Zurich	

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 Hurricane Katrina/DL Louis Bridge
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 Page 10: FEMA, La. Post, 4 Septem-
 ber 2005, New Orleans houses re-
 maining under floodwaters follow-
 ing Hurricane Katrina

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**To raise awareness of global warming
as a relevant factor of insurance industry**

CRO briefing published on 20 June 2006

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Insurance Industry Issues Publications to Raise Awareness to Global Warming

Publications and strategic board game



The Insurance Industry Promotes Climate Protection

Munich Re: many activities to promote climate protection

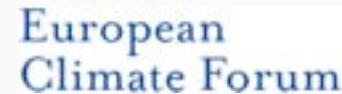
- Member of The Climate Group



- Member of the Global Roundtable on Climate Change (Jeff Sachs)



- Board member of the European Climate Forum



- Hosting side events at the annual global climate summits of the UNFCCC (COP)



- UNEP-Financial Initiative



- Carbon Disclosure Project

Conclusions

- Insurance is the world's largest industry with yearly premium income of US\$ 3.4 trillion (world oil market US\$ 1.9 trillion)
- The insurance industry has been the first branch of business to alert decision makers on climate change
- The insurance industry is directly affected by global warming as it has to pay part of the increasing damages from extreme weather events
- The insurance industry has high quality data on trends of natural disasters and contributes to the research of global warming effects
- The insurance industry has a high potential to support climate protection and adaptation measures by developing new insurance products and directing their investments to climate friendly companies and projects
- MR also in the future will follow its long tradition to be one of the key players in the industry to promote climate protection

Thank you for your interest!



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