



# Building resilience for sustainable growth and development

Willis Towers Watson

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## Who are Willis Towers Watson?

A leading global advisory, broking and solutions company that helps clients around the world turn risk into a path for growth

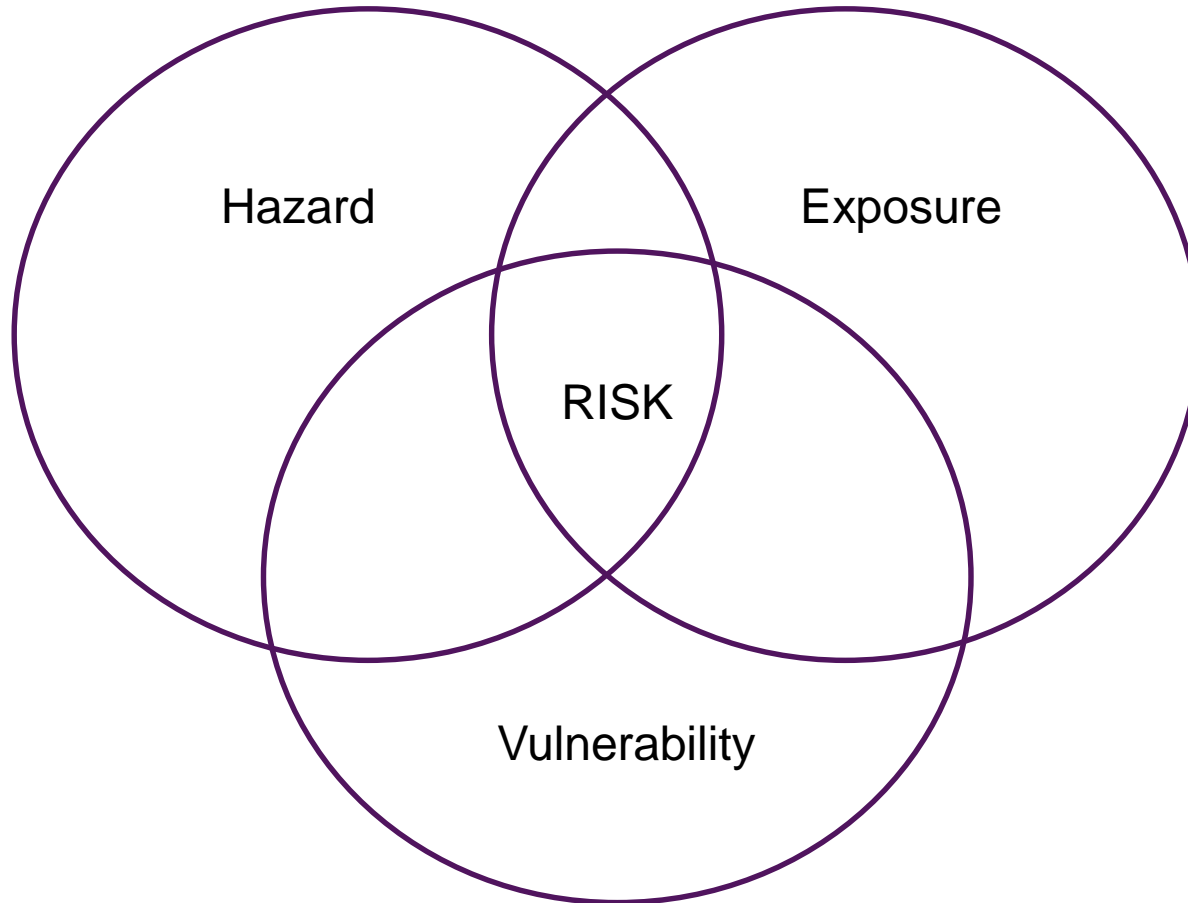
## The Capital, Science & Policy Practice

We devise innovative ways to use risk and insurance-related mechanisms to build resilient societies and economies

## Risk Management is...

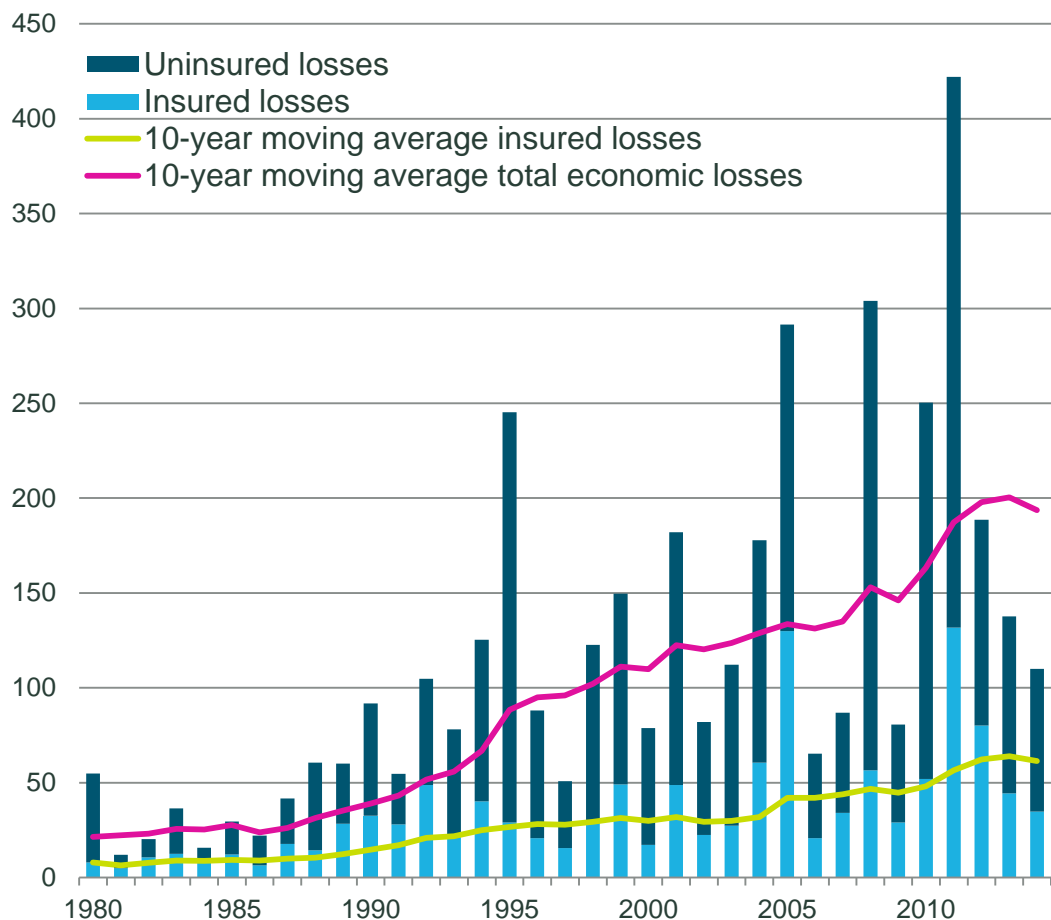
Understanding your risk exposure and making educated decisions about how to manage it, including mitigation and transfer

# Risk Evaluation



## Most current climate losses are not insured, let alone current climate related risks

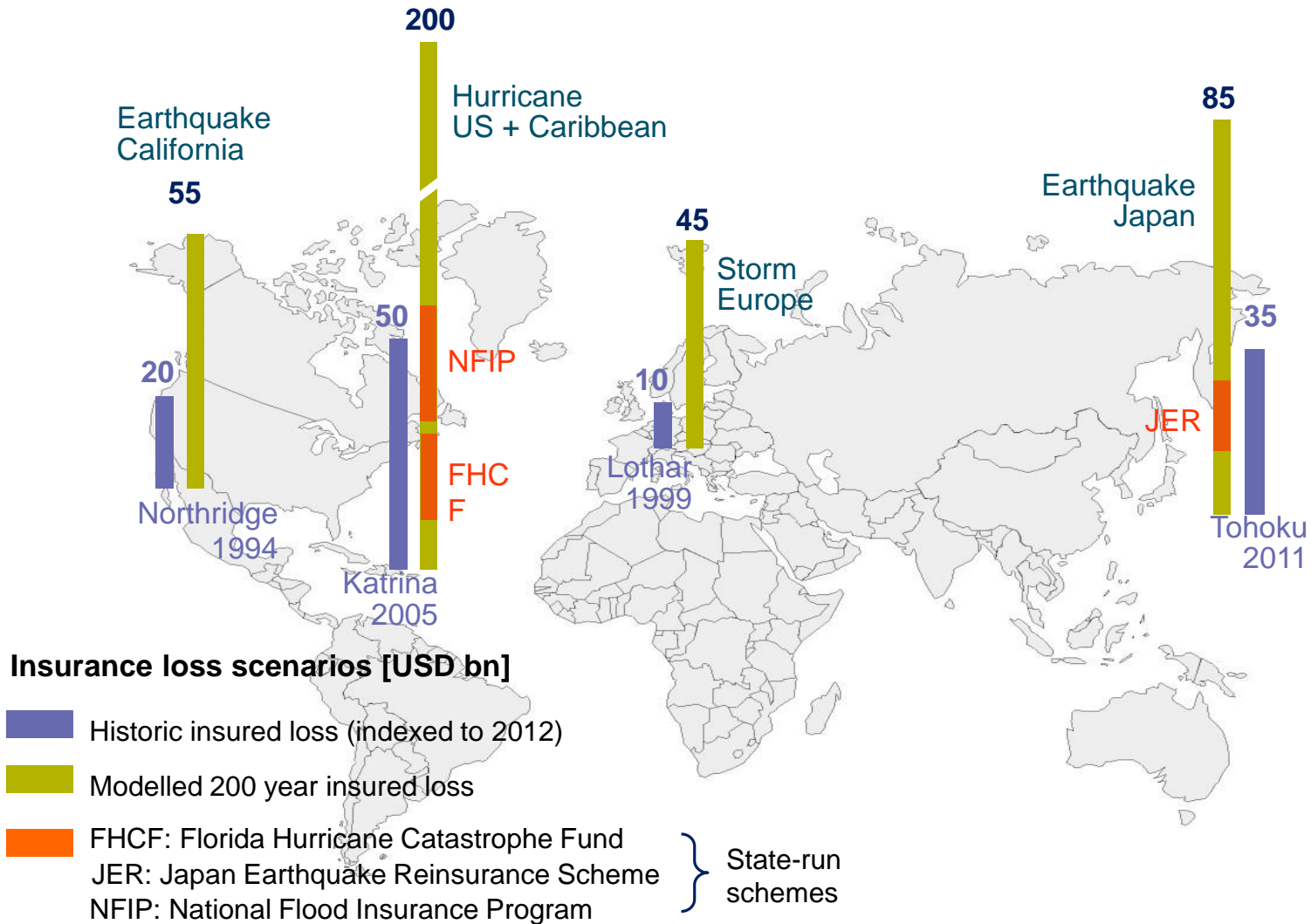
Global natural catastrophe losses 1980-2014, in USD billion (2014 prices)



- The majority of natural disaster losses are not covered by insurance, leaving society with a resilience gap
- The resilience gap in 2014 amounted to USD 75bn
- Resilience gap growth, due to climate change, economic development, population growth and a higher concentration of assets

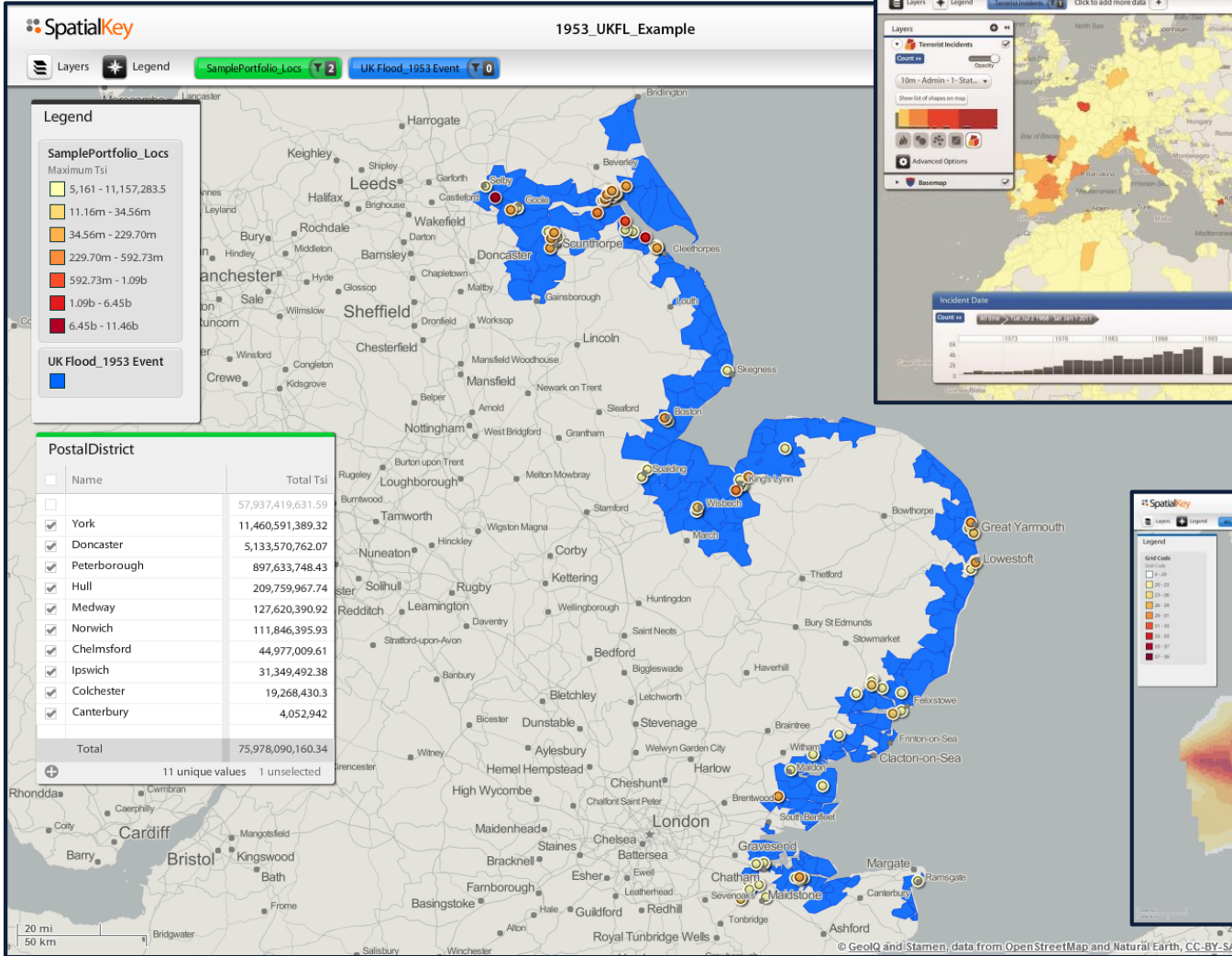
Source: Swiss Re Economic Research & Consulting and Cat Perils, Sigma on natural catastrophes and man-made disasters

# Managing Extremes: The history of experience is not an understanding of current risk

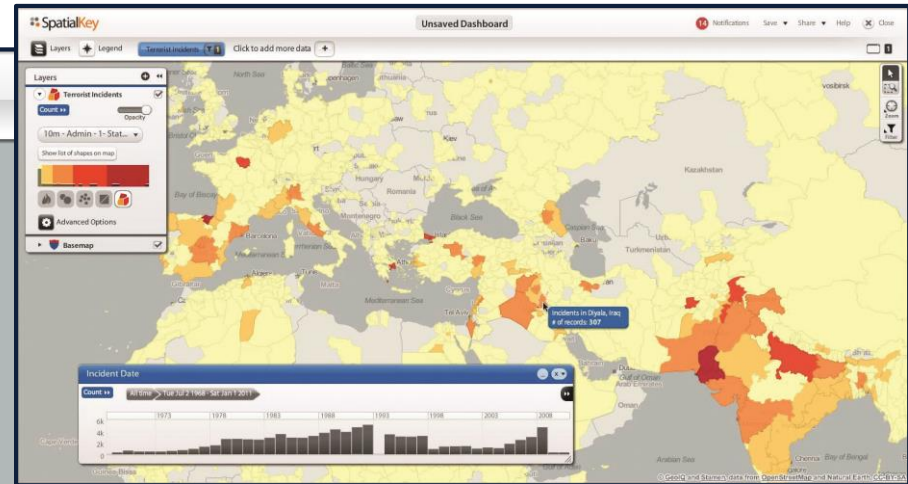


# Risk Modelling

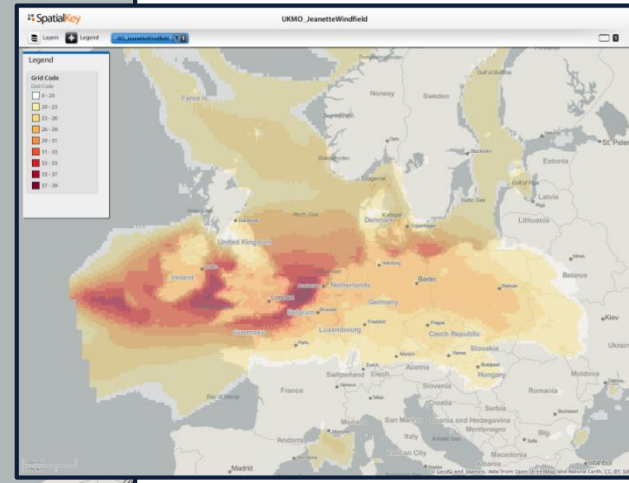
## North Sea Storm Surge



## European Terrorism Incidents

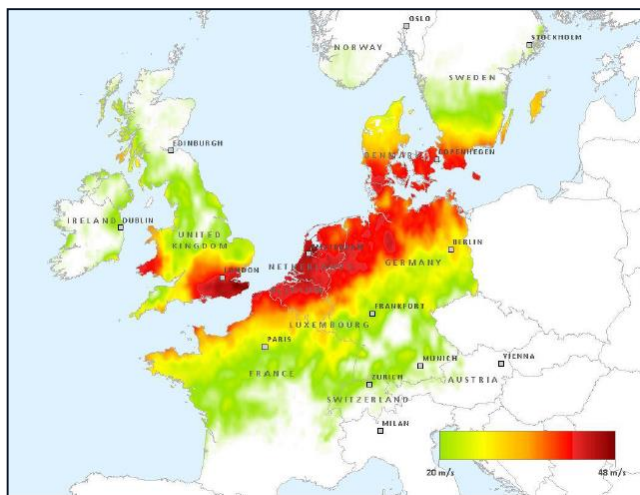
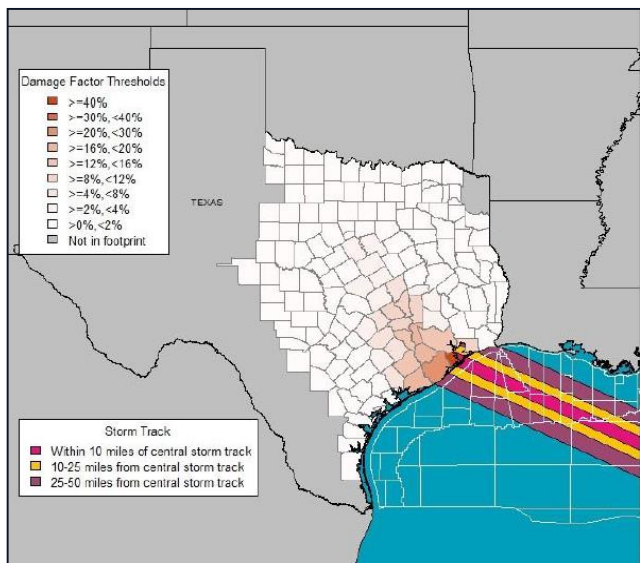


## European Windstorm





# Realistic Disaster Scenarios - evaluating risk where there is no data



RDS	Industry Loss	Lloyd's damage-factors provided?	Lloyd's property distribution tables provided?	Scenario ID
Two events – North-East windstorm	USD 78bn	Yes	No	41
Two events – South Carolina windstorm	USD 36bn	Yes	No	42
Florida Windstorm – Miami-Dade	USD 125bn	Yes	No	2
Florida Windstorm – Pinellas	USD 125bn	Yes	No	3
Gulf of Mexico Windstorm	Onshore USD 107bn	Yes	No	12
	Offshore USD 4.5bn	No	n/a	
European Windstorm	€ 23bn	Yes	Yes	8
Japanese Typhoon	¥ 1.5tm	Yes	Yes	13
California Earthquake – Los Angeles	USD 78bn	Yes	Yes	4
California Earthquake – San Francisco	USD 78bn	Yes	Yes	5
New Madrid Earthquake	USD 47bn	Yes	Yes	6
Japanese Earthquake	¥ 5tm	Yes	Yes	9
UK Flood	GBP 6.2bn	No	No	51
Terrorism – Rockefeller Center	n/a	No	No	43
Terrorism – Exchange Place	n/a	No	No	44

Further Information: Lloyd's Realistic Disaster Scenarios available [here](#)

Lloyd's Emerging Risks Research : Food System Security (Multi-bread basket failure and related shocks ) available [here](#)

Source: Lloyd's, Realistic Disaster Scenarios, January 2015 with grateful thanks to Trevor Maynard, Lloyd's

# Integrating research into risk management



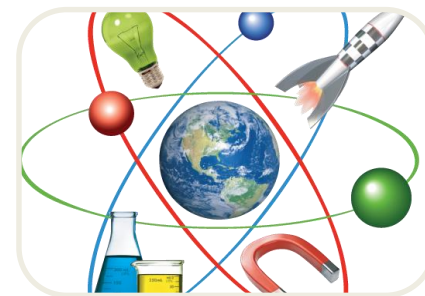
Building partnerships to develop a shared agenda on best practice in risk modelling, mapping and integration with business and public agencies.



Development of shared standards, metrics and modelling techniques.



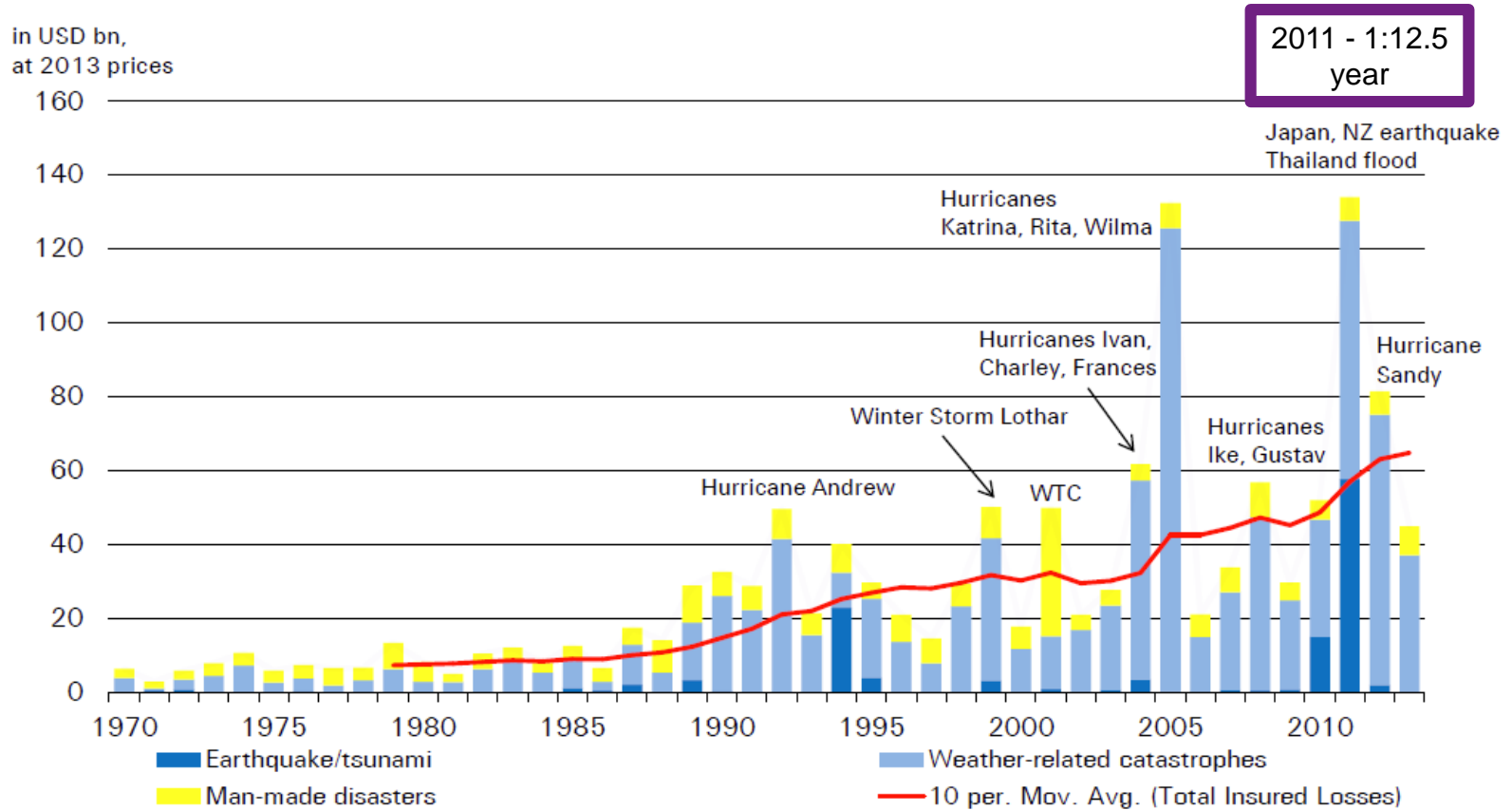
Cooperation of the development of shared modelling platforms and tools to effectively integrate information into the industry, regulators and consumers.



Ensuring that the best science and research is influencing and supporting the global insurance and reinsurance industry.

# Global Re/Insurance Sector 1992 – 2015

## from Ruin to Resilience: the story of climate risk stress tests and industry reform



Source: *sigma* 1/2014

## The “1 in 100 Initiative”

- Integrating natural disaster risk into the financial system
- The last 25 years of (re)insurance experience provides a method to achieve structural resilience to natural disaster risk in the decades ahead
  1. Smart capital: allocated against risk and resilience parameters
  2. Data and analytics: to underpin capital allocation and management
  3. Regulation: the implementation of regulatory requirements and use of stress tests within mainstream business operations and assessment
- The lessons from (re)insurance can be applied to wider capital markets and accounting in private and public sectors
- Organisations can adopt the insurance approach and report on their 1:100, 1:20 and annual average loss to natural disaster risk

## The “1 in 100 Initiative”

- Disclosure of risk exposure creates a financial incentive to manage it
- Risk exposure is a contingent liability meaning that mitigation and transfer measures are contingent assets
- Resilience is rewarded
- Mainstreaming quantitative risk understanding outside the insurance/engineering
- Policy and regulatory approach is key to effective implementation
- FSB/G20 Climate Risk Disclosure Task Force

## How is this relevant to natural infrastructure?

- Provides a framework to educate organisations about the benefits they gain from it
- Makes disaster risk visible and tangible to stakeholders
- Demonstrates the reduction in financial risk exposure created by it
- Creates a financial incentive for organisations to protect and cultivate it

# Market Development

- Data
- Assets
- Demand
- Policy & regulations – organisations held liable for failing to act where there is an identified risk. Quantitative analysis and modelling of the natural environment facilitates this.

# Insurance innovation is needed across communities and industries



How can we build resilient agricultural supply chains and support the life and livelihoods of our rural communities?



How can we support the needs of urban dwellers and the businesses and municipal services upon which they depend?



Natural disasters often occur at a city scale, how we ensure that municipal finances are resilient to deal with these shocks?



We depend on key industries and infrastructure - how can insurance capabilities support the resilience of transportation, energy and wider utilities?



How can insurance support and risk reduction increase investment in these key sectors?



# Emerging Solutions

- Parametric (rather than indemnity based) products, such as African Risk Capacity
- Resilience bonds
- Risk engineering
- Capital structure advisory

# Protecting Natural Infrastructure

- Educate organisations about the services provided
- Quantify the value of these services
- Create incentives to protect natural infrastructure

# Questions?

Thank you!

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