



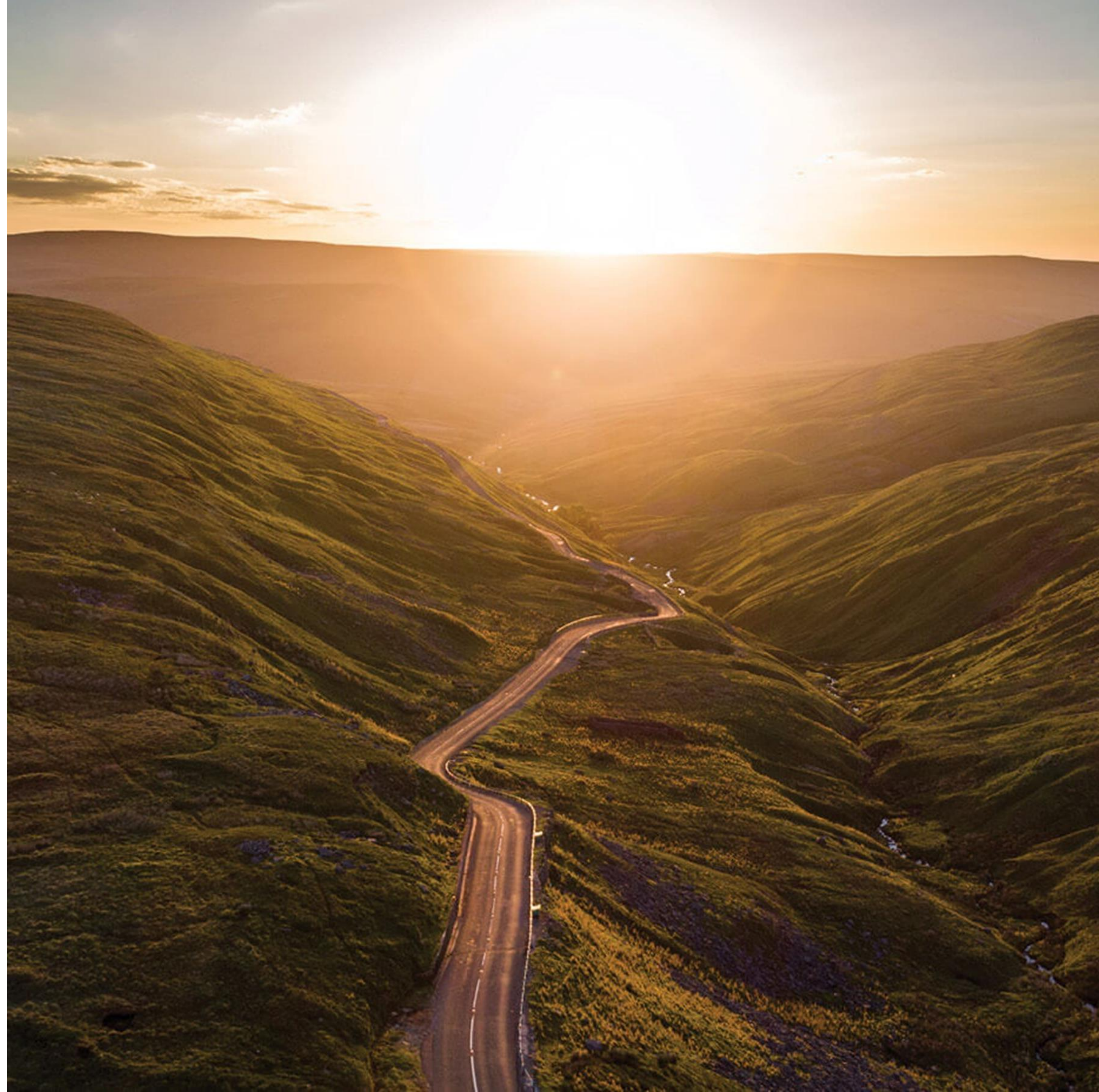
# Managing the catastrophe risk by reducing the insurance protection gap

Challenges and business opportunities

Ohrid, September 17, 2022

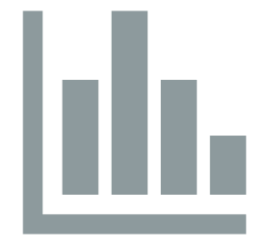


**First  
Annual  
Conference**





# Agenda



## The protection gap

- Concepts
- Worldwide and EMEA trends
- Key challenges



## Aon's approach

Natural Catastrophes:  
How Can We Close  
the Billion-Dollar  
Global Protection  
Gap?



## Beyond traditional catastrophe modelling

Aon Impact  
Forecasting  
catastrophe model  
development centre of  
excellence



## The way forward Empowering Public Private Partnership



1

The protection gap

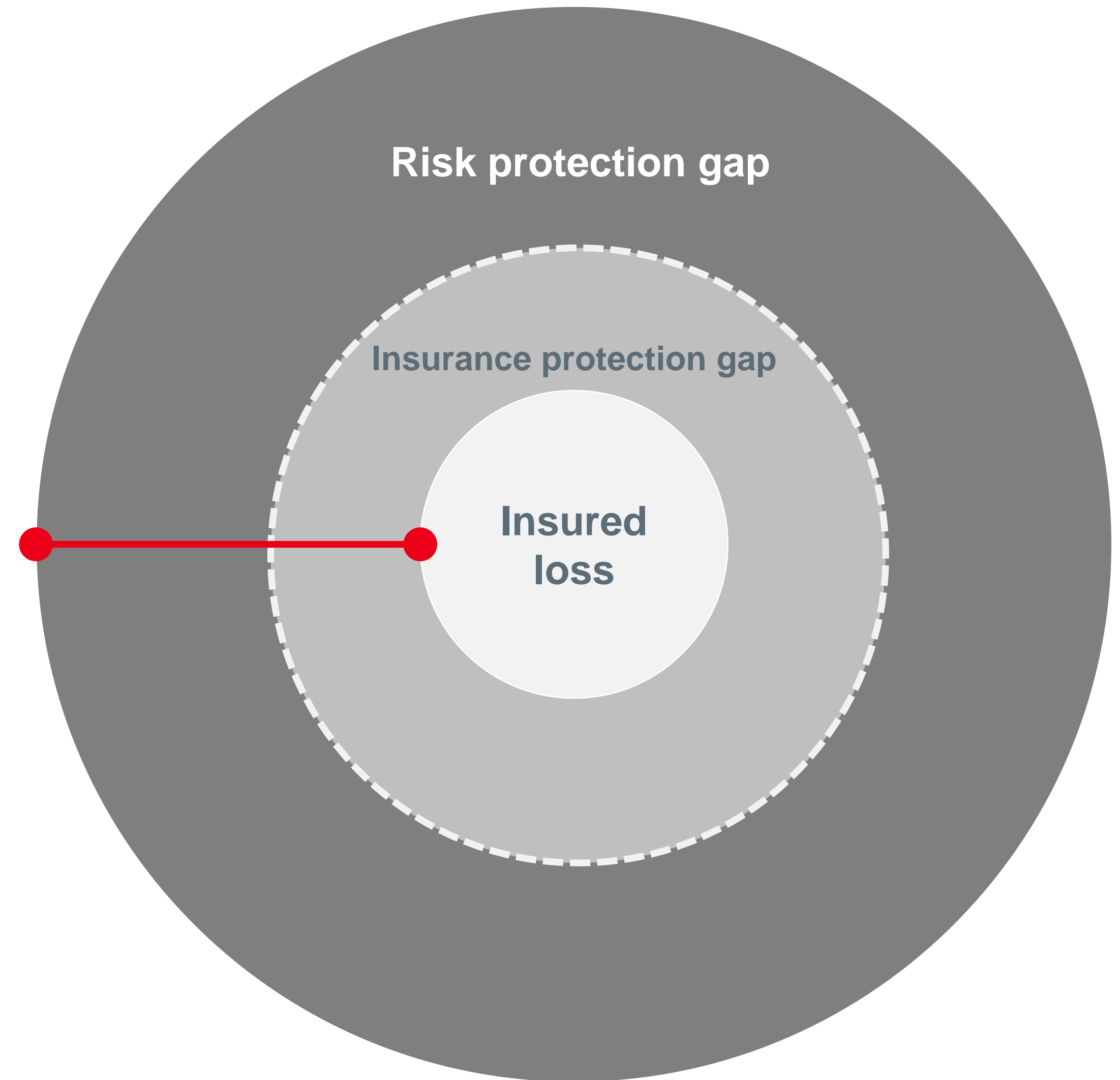




# Concepts

**Risk protection gap** represents the difference between total losses and insured losses.

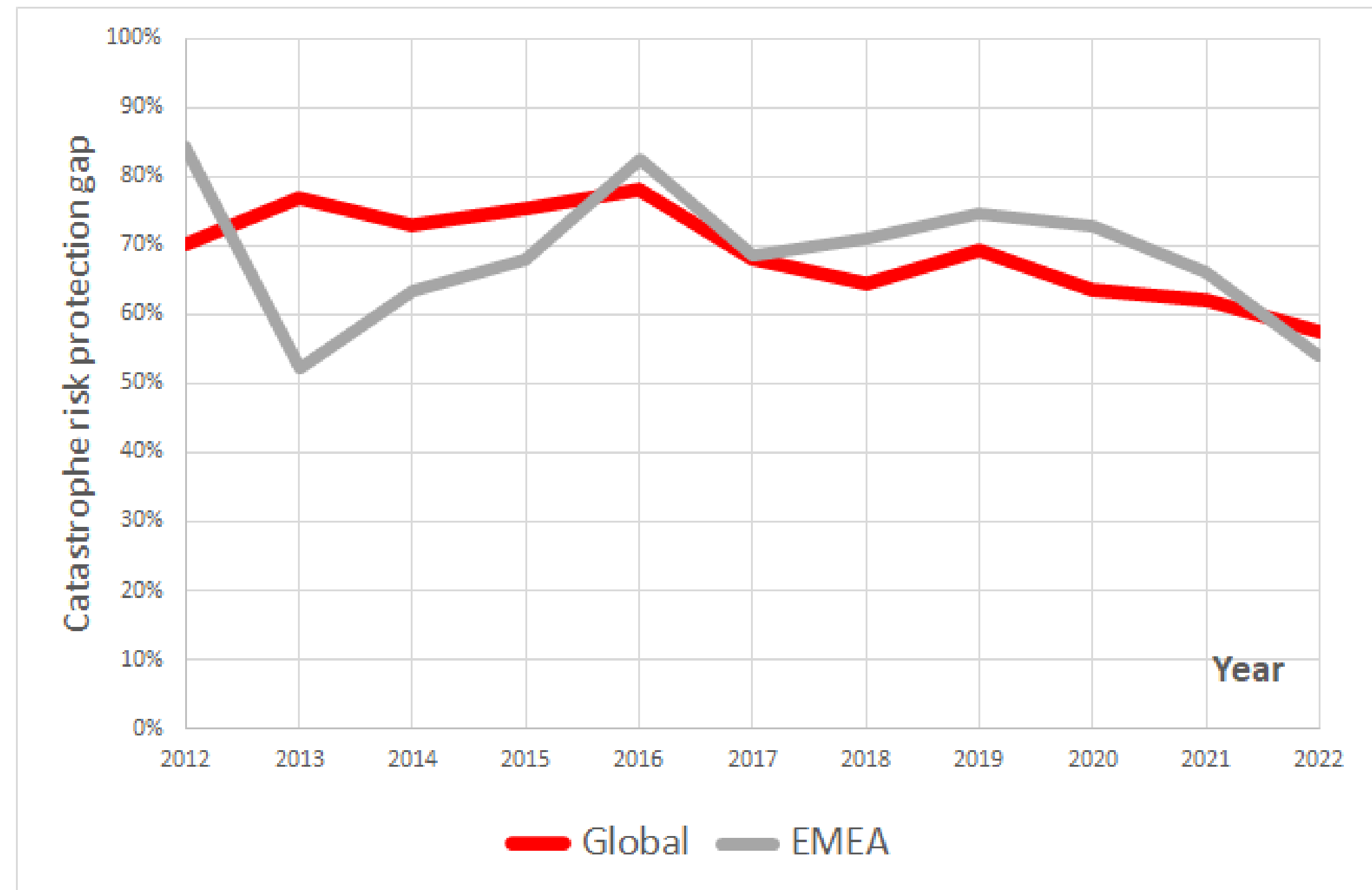
**Insurance protection gap** is the difference between the amount of insurance that is economically beneficial, and the amount of coverage actually purchased (insurance penetration). Defined as such, the insurance protection gap is hard to measure and can be subjective.



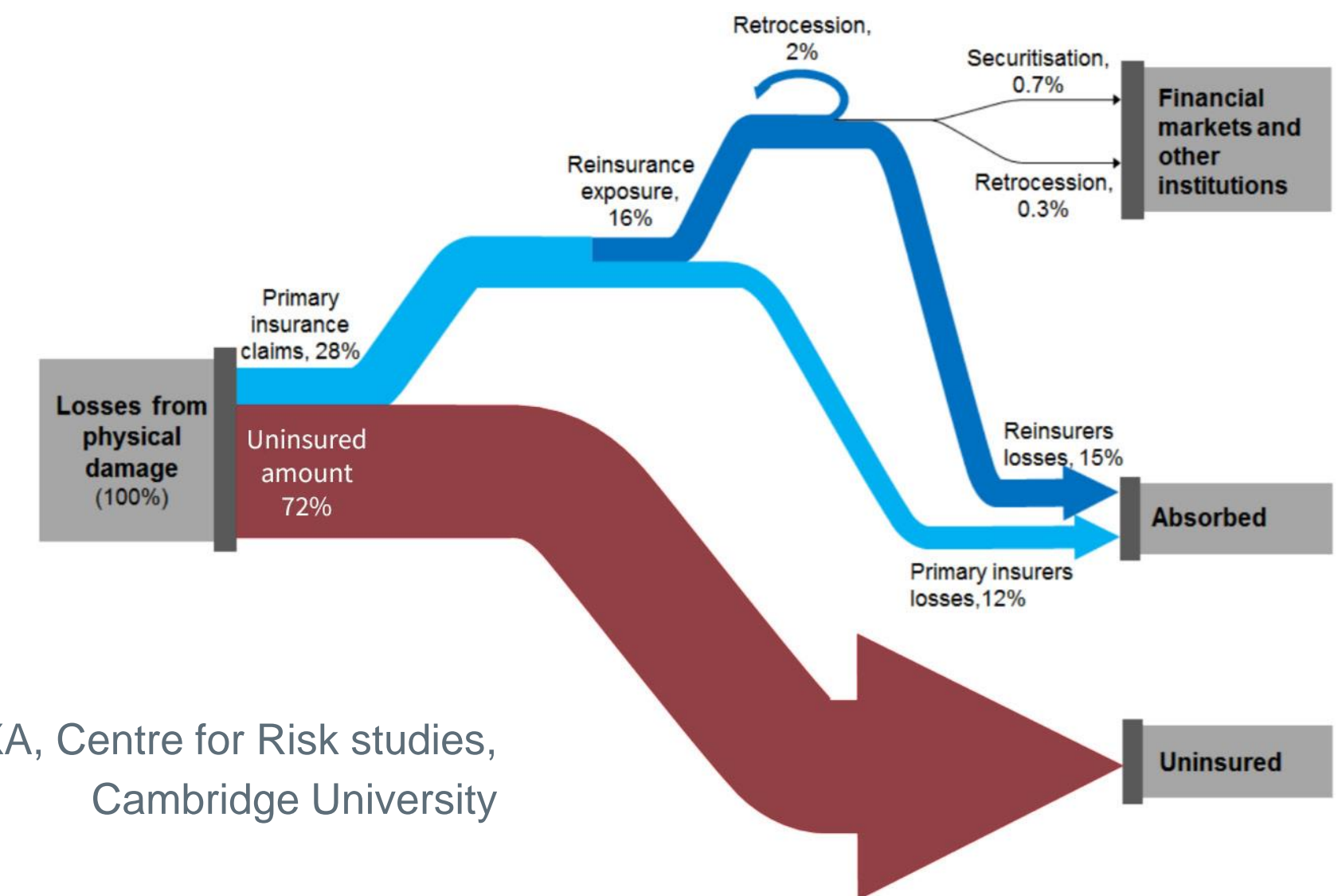
Source: The Geneva Association

# Catastrophe protection gap

1. The financial management of catastrophe perils presents a serious public policy challenge for governments across the world
2. The potential of these perils to lead to even larger correlated losses as well as the complexity and relative infrequency often do not satisfy the traditional criteria for an “insurable risk”.
3. In the last decade the total catastrophe losses are estimated at USD 3,210 bil out of which USD 990 bil were insured (70% protection gap). For the first half of 2022 the estimate is USD 92 bil vs USD 39 bil

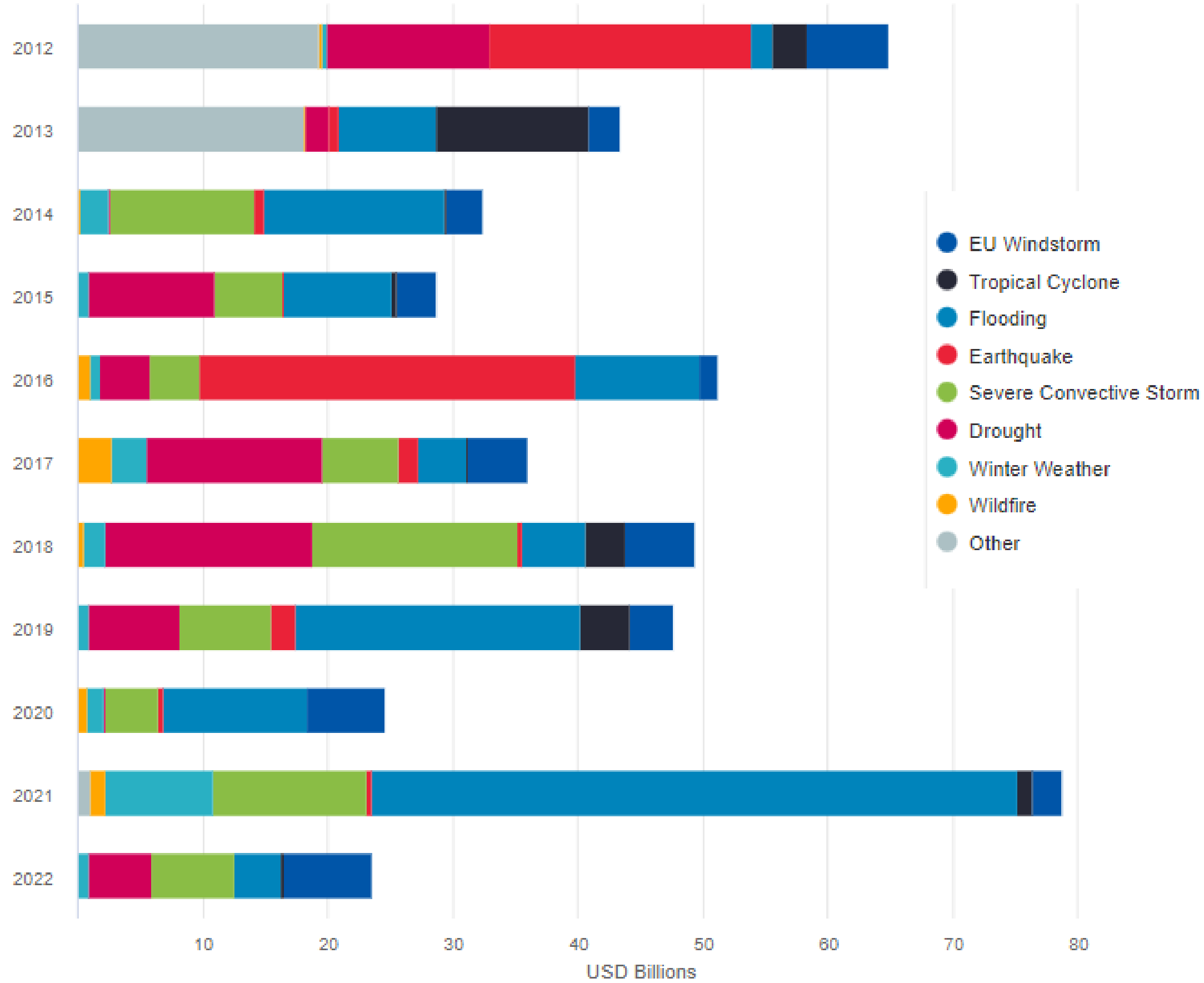


Source: Impact Forecasting



Source: AXA, Centre for Risk studies, Cambridge University

# Economic and insured losses in EMEA (by peril)

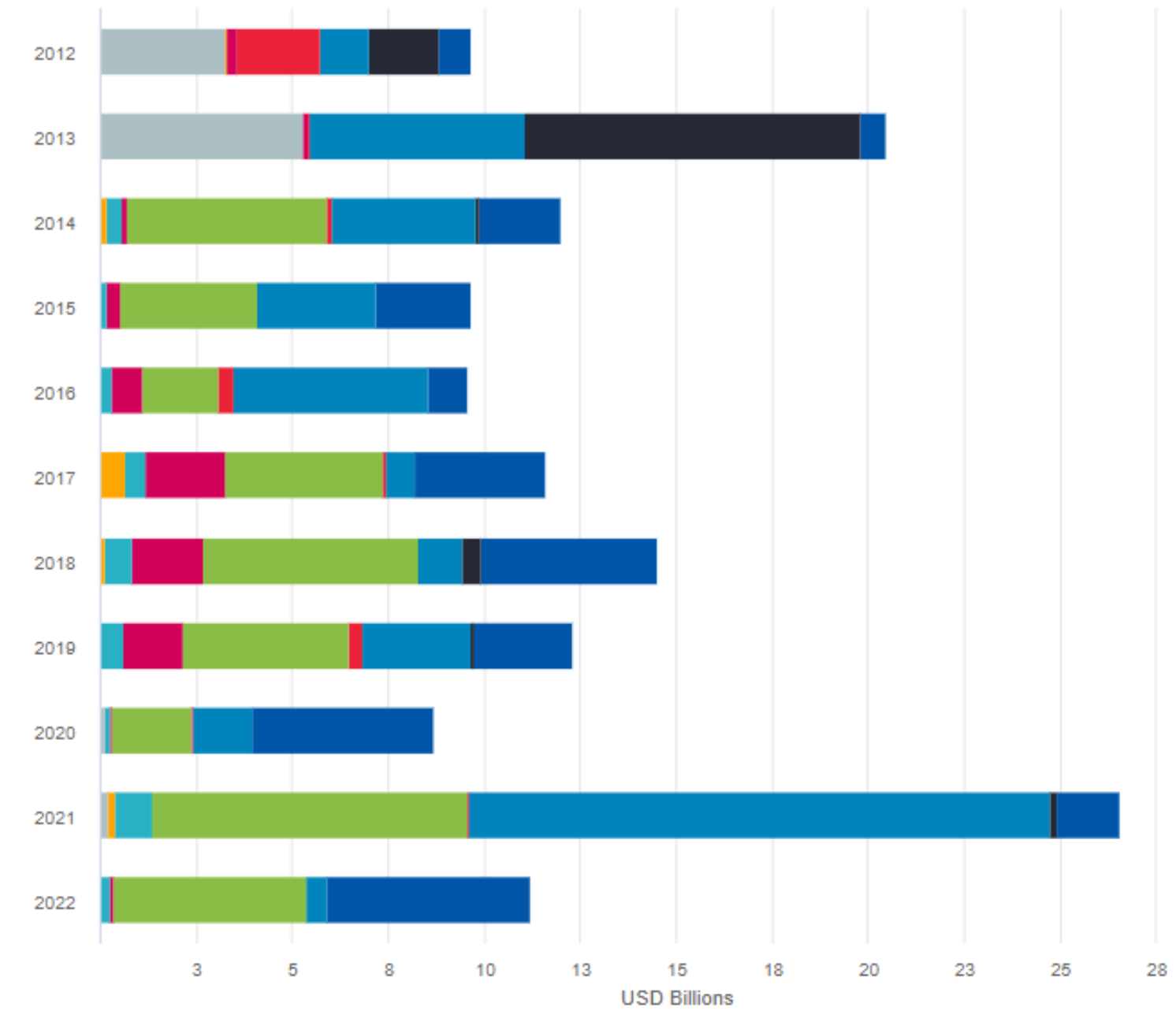


## Economic

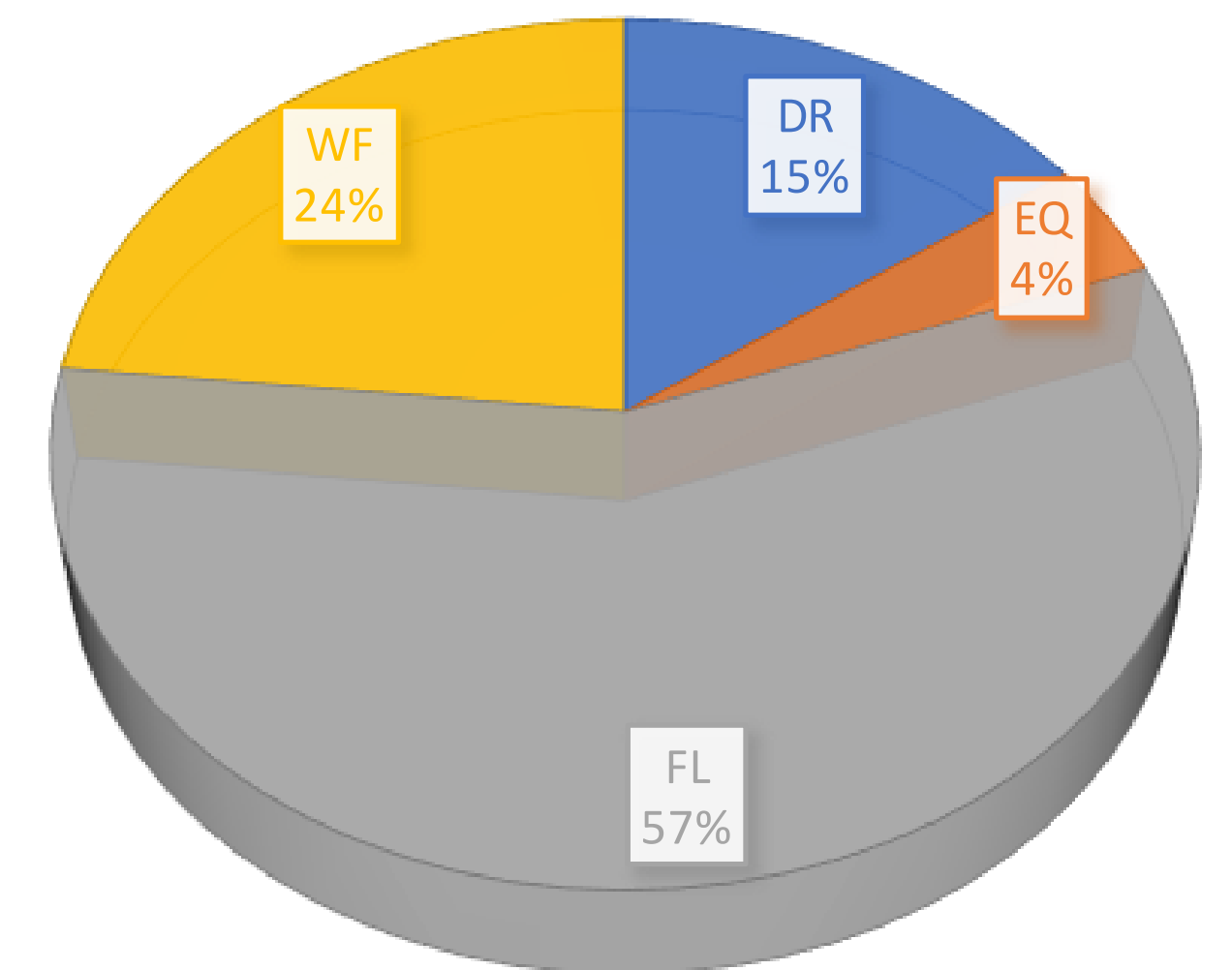
Source: Impact Forecasting



## Insured

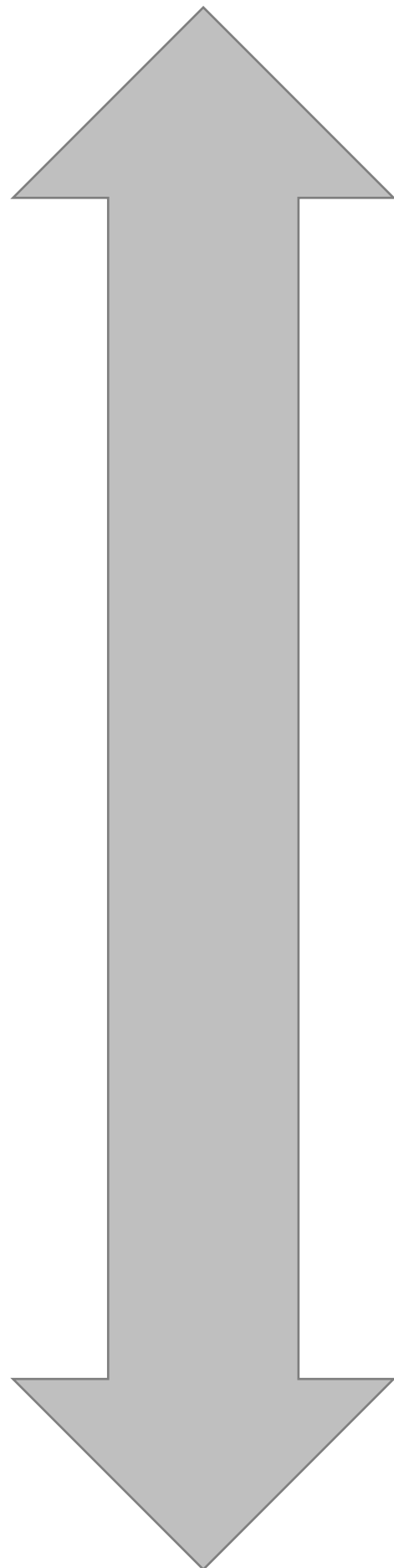


Economic losses in Macedonia since 2000 by natural peril. Total losses estimated at USD 280 mil



# Insurance penetration: Key challenges

Examples	
<i>Societal</i>	<ul style="list-style-type: none"> <li>▪ Education, awareness, and cultural limitations</li> <li>▪ Lack of trust in insurance</li> <li>▪ Expectations that the government would step in</li> <li>▪ Short-term thinking (peril frequency)</li> </ul>
<i>Economic</i>	<ul style="list-style-type: none"> <li>▪ Insurance (protection) affordability</li> <li>▪ State of the economy</li> <li>▪ Perceived benefits</li> <li>▪ Complementary risk-financing tools</li> </ul>
<i>Technical</i>	<ul style="list-style-type: none"> <li>▪ Lack of data / modelling</li> <li>▪ Uncertainty</li> <li>▪ Product design and complexity</li> </ul>
<i>Political</i>	<ul style="list-style-type: none"> <li>▪ Legal and regulatory framework</li> <li>▪ Compulsory public insurance</li> <li>▪ Lack of incentives</li> <li>▪ Competing budget priorities / justification of premium spending</li> </ul>





# 2

## Aon's approach





# Collaborating to close the protection gap

Huge global protection gap means that a **large portion of the loss** in major disasters often goes uninsured

People and local communities are therefore **dependent on governmental or international assistance** for recovery

Governments without enough funding in place have to start **complicated and time-consuming process of raising more money** during complicated emergency response and recovery process

[On February 5<sup>th</sup> 2020 Aon hosted an event in London to examine how the private and public sector can build resilience at scale](#)



In collaboration with **British Red Cross**, partners **City of London**, **ClimateWise** and **Insurance Development Forum** plus sponsors **AXA XL**, **MSAmlin**, **Pool Re** and **RenaissanceRe**, we hosted a day of discussion and inspiration. Read the [agenda](#) and [press release](#)



WATCH: When private and public sectors came together to close the protection gap (2.32 min):

## Thought Leadership

[The seismic impact on the protection gap](#) – Aon

[Weather, Climate & Catastrophe report: evaluating 2019 natural disasters](#) – Aon

[Overcoming barriers to close the protection gap](#) – new report from Aon, OECD and IDF

[The Role of Trust in Narrowing Protection Gap](#) – Geneva Association

[Understanding and Addressing Global Insurance Protection Gaps](#) – Geneva Association

[The protection gap and large volcanic eruptions \(GIMO\)](#) – Russel Blong

[Closing the protection gap \(GIMO Article\)](#) – Liz Henderson



# Aon's approach

- There is an urgent need for **collaboration between the public and private sectors** to create financially viable solutions that can be replicated around the world
- Businesses, communities, and governments need **insights on their exposures** and help in quantifying their financial, physical and business risk
- Aon is committed to [build resilience on a global scale](#). By using [private-sector solutions to transfer risk](#), Aon can help create value for governments and non-governmental organizations by providing alternative (re)insurance protection products
- [Aon's Impact Forecasting team creates catastrophe models to help clients understand and quantify their financial exposure to natural catastrophes \(Nepal five years after 2015 Gorkha earthquake\)](#)
- [Download the Weather, Climate, and Catastrophe Insight: The Latest Annual Report](#)



# 3

Beyond traditional  
catastrophe modelling

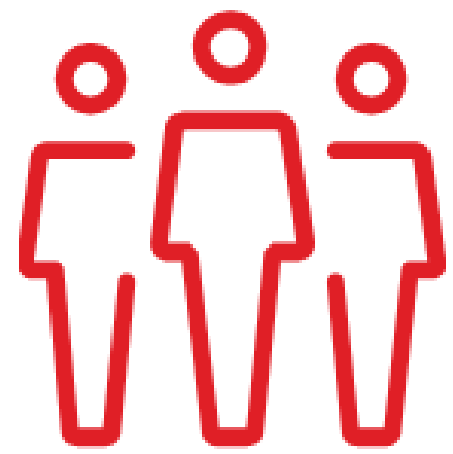
**IMPACT  
FORECASTING**  
Powered by Aon

**AON**

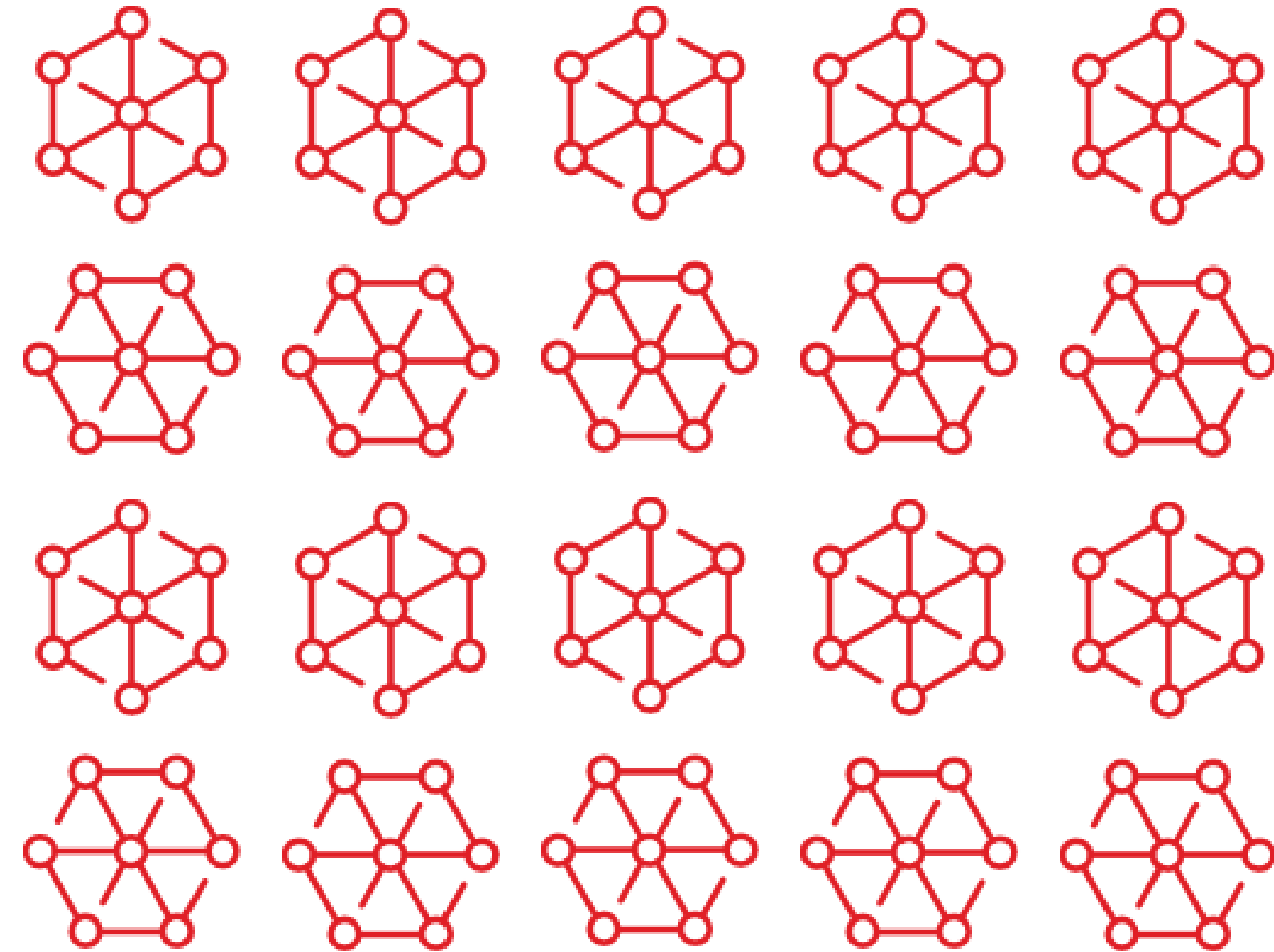




# Impact Forecasting intro

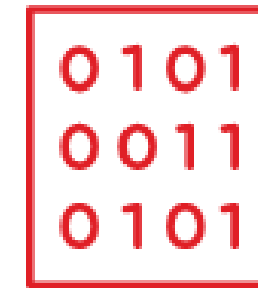
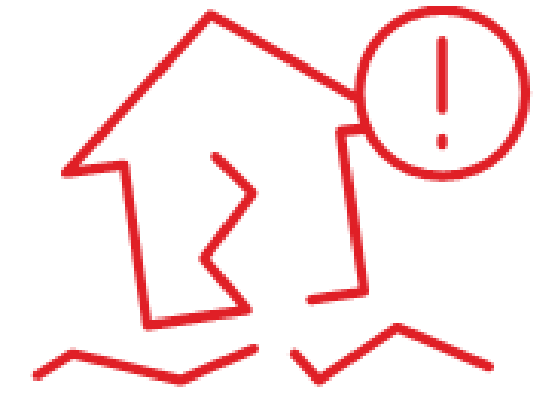


**130+**  
modelling experts over  
5 time zones



**125+**  
models

**12**  
Perils

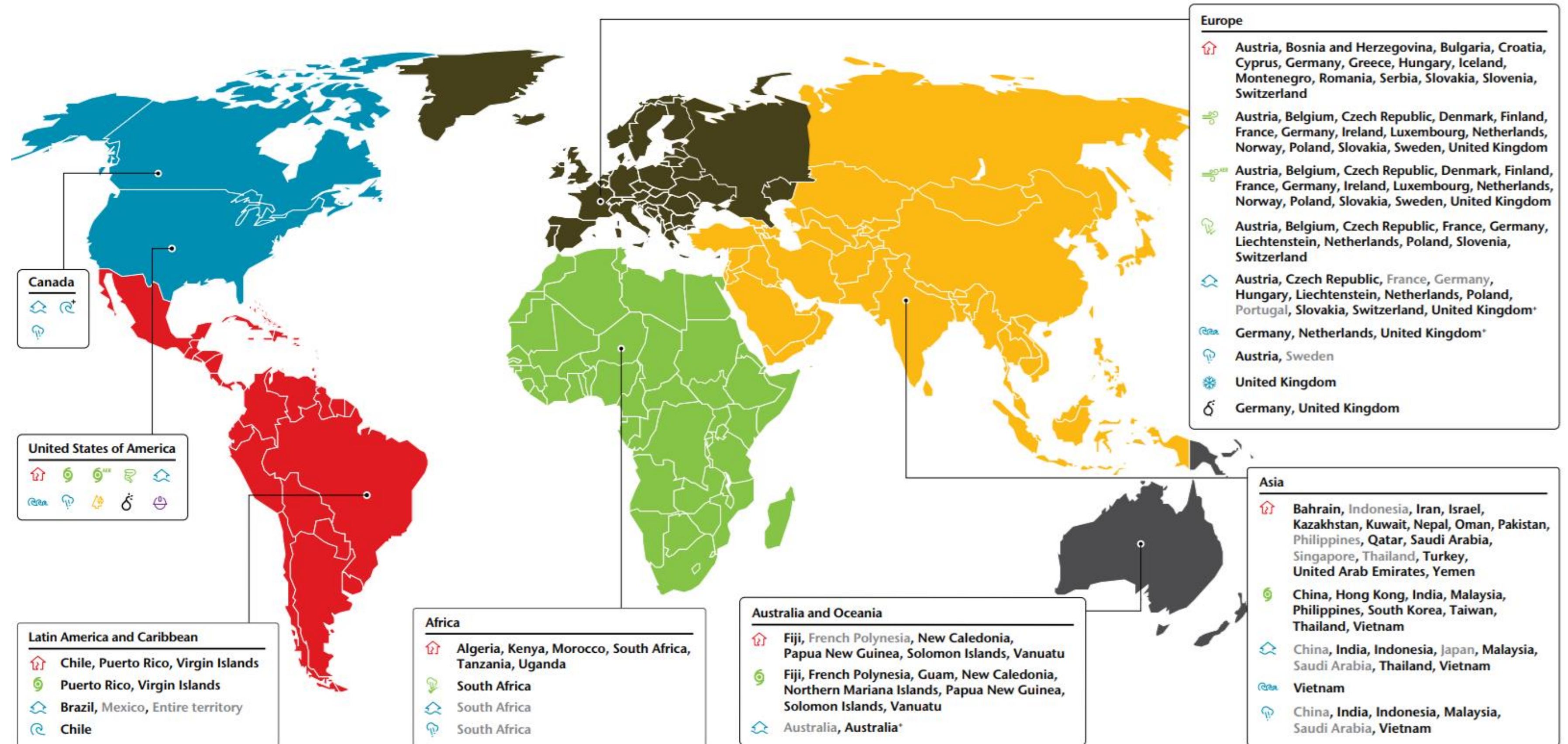


**30,000**  
events  
in Cat Insight  
database



# Impact Forecasting model coverage

- Global coverage
- Peak and emerging territories
- Probabilistic and scenario models
- Market and custom models
- In ELEMENTS and Oasis based platforms

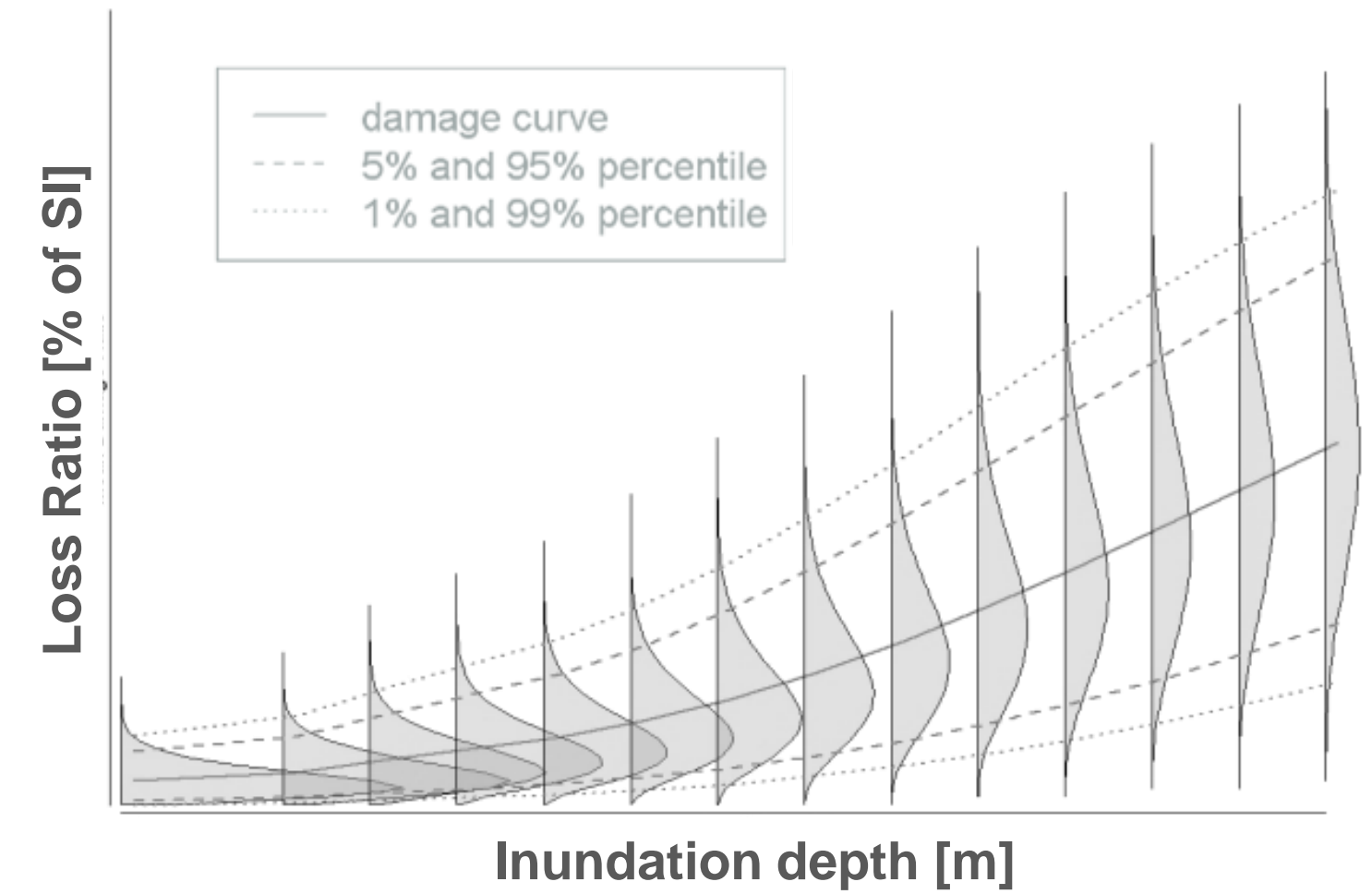
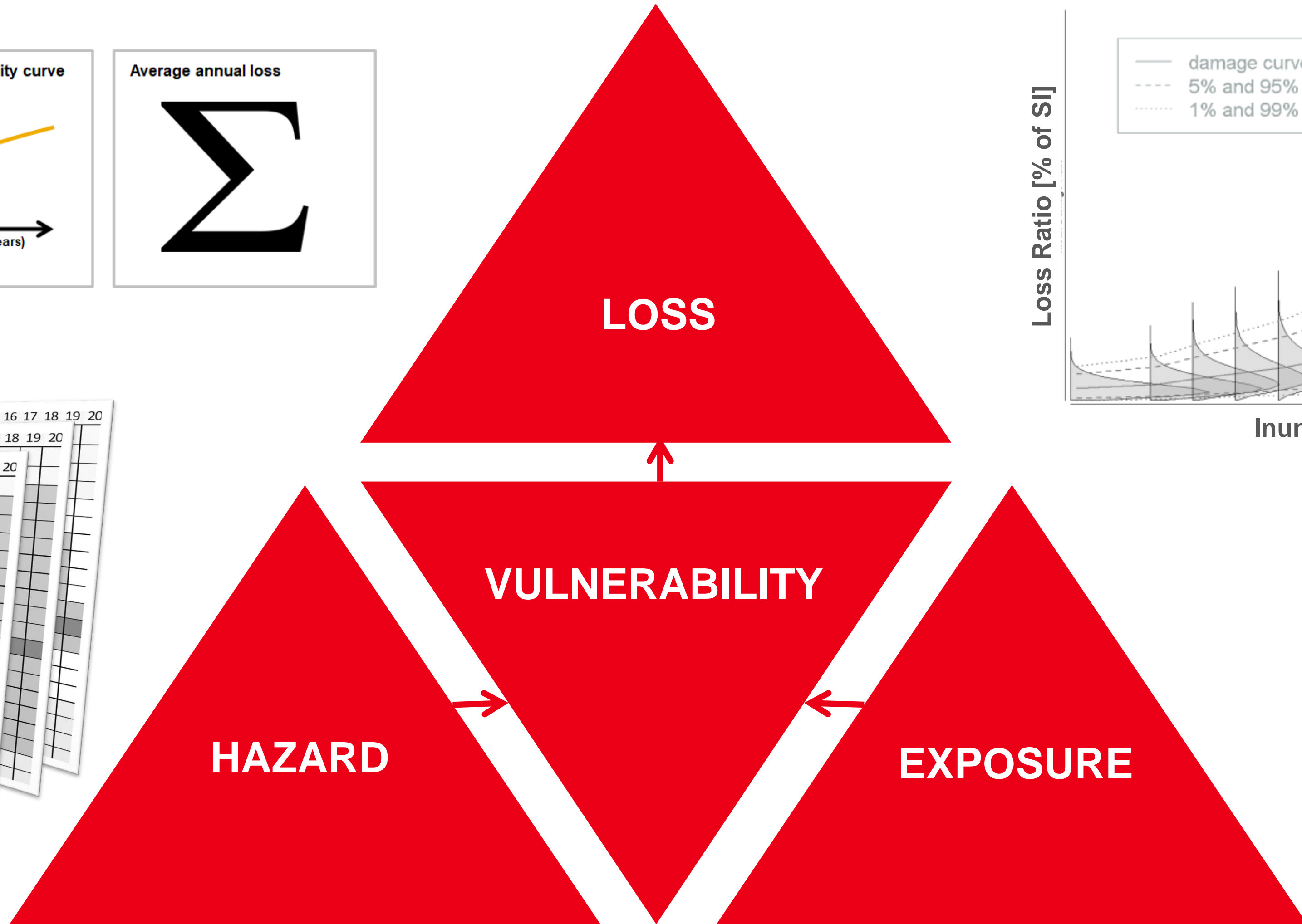
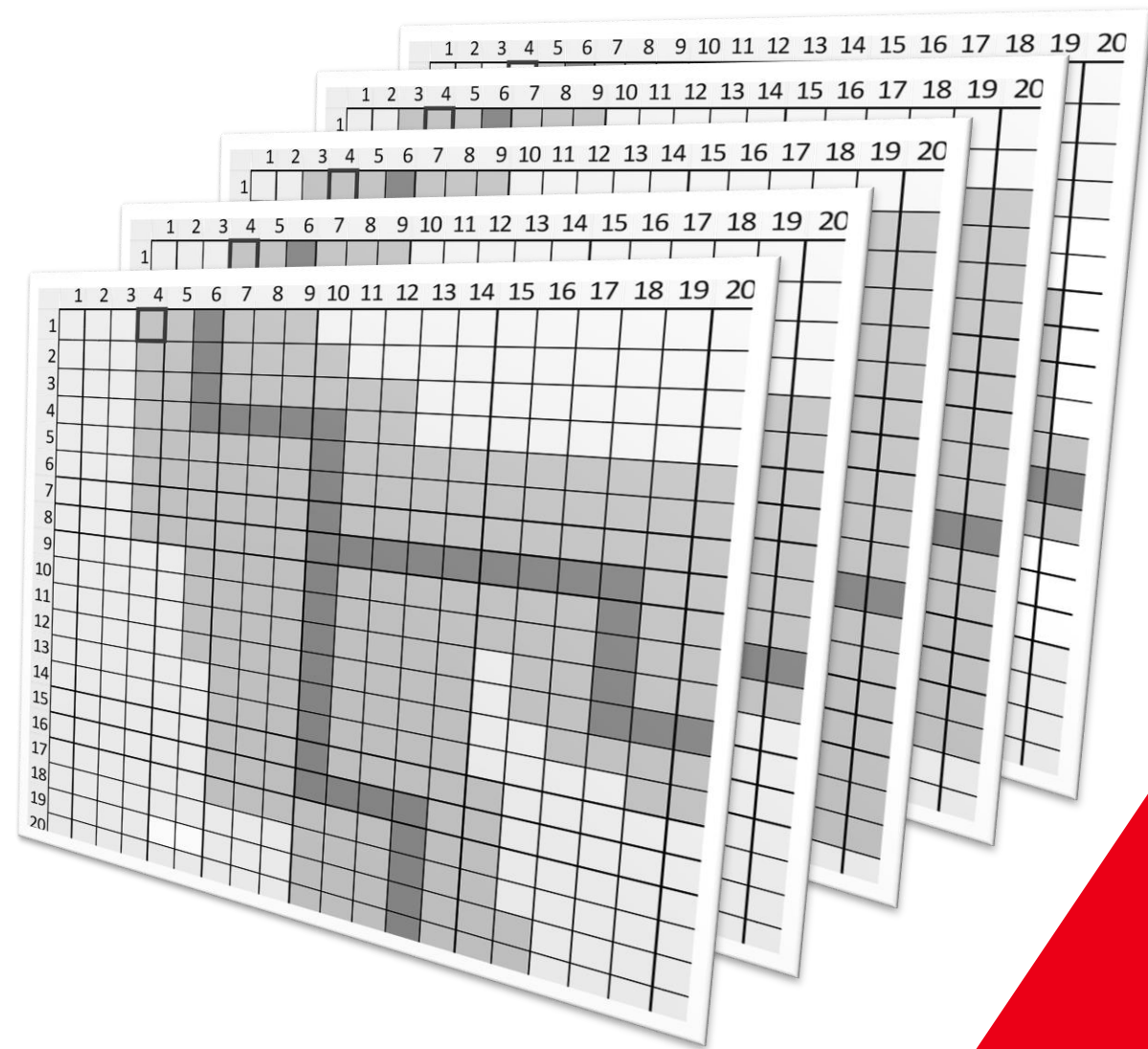
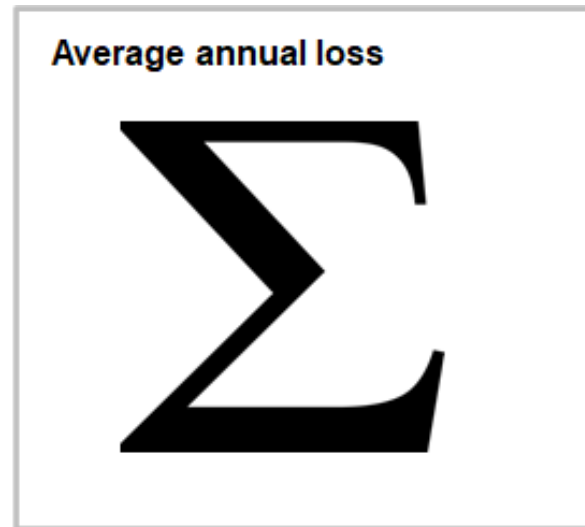
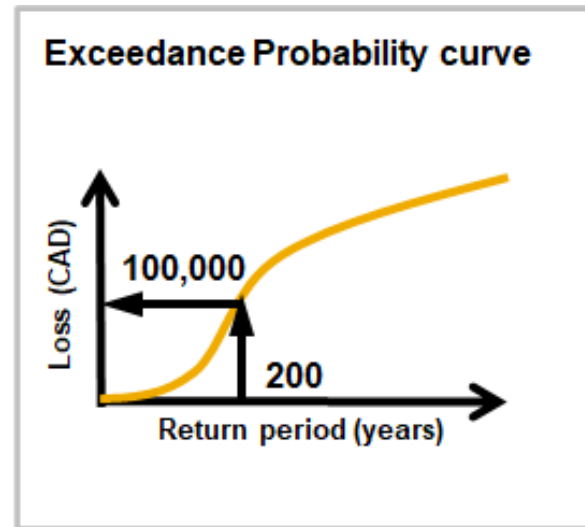




# Catastrophe model anatomy

**Event loss table**

Event ID	Loss (EUR)
1	98,000
2	3,000
3	55,000
...	...
120,000	12,300



- Location**  
51°04'52.0"  
15°24'39.3"
- Building characteristics**  
Wood construction  
Finished basement
- Policy conditions**  
TIV = 200,000 EUR  
Deductible = 500 EUR



# Pillars of the Open Catastrophe Modelling Landscape

Impact Forecasting is taking an active role in all 4

## 1. Models

**Independent** from modelling platforms

Using **established open model definition formats**

**Modelling climate** for atmospheric perils

First **man-made perils** model on Oasis

## 2. Platforms

**Hosting models** from multiple providers in ELEMENTS

Supporting **open loss calculation engines** e.g. Oasis LMF and Nasdaq NRMC

**Integrating** with underwriting, pricing and DFA tools

## 3. Data Formats

**Standardised** model input and model output

Store and exchange exposure and results data

Supporting **multiple exposure formats including OED** with Impact Workbench

## 4. Community

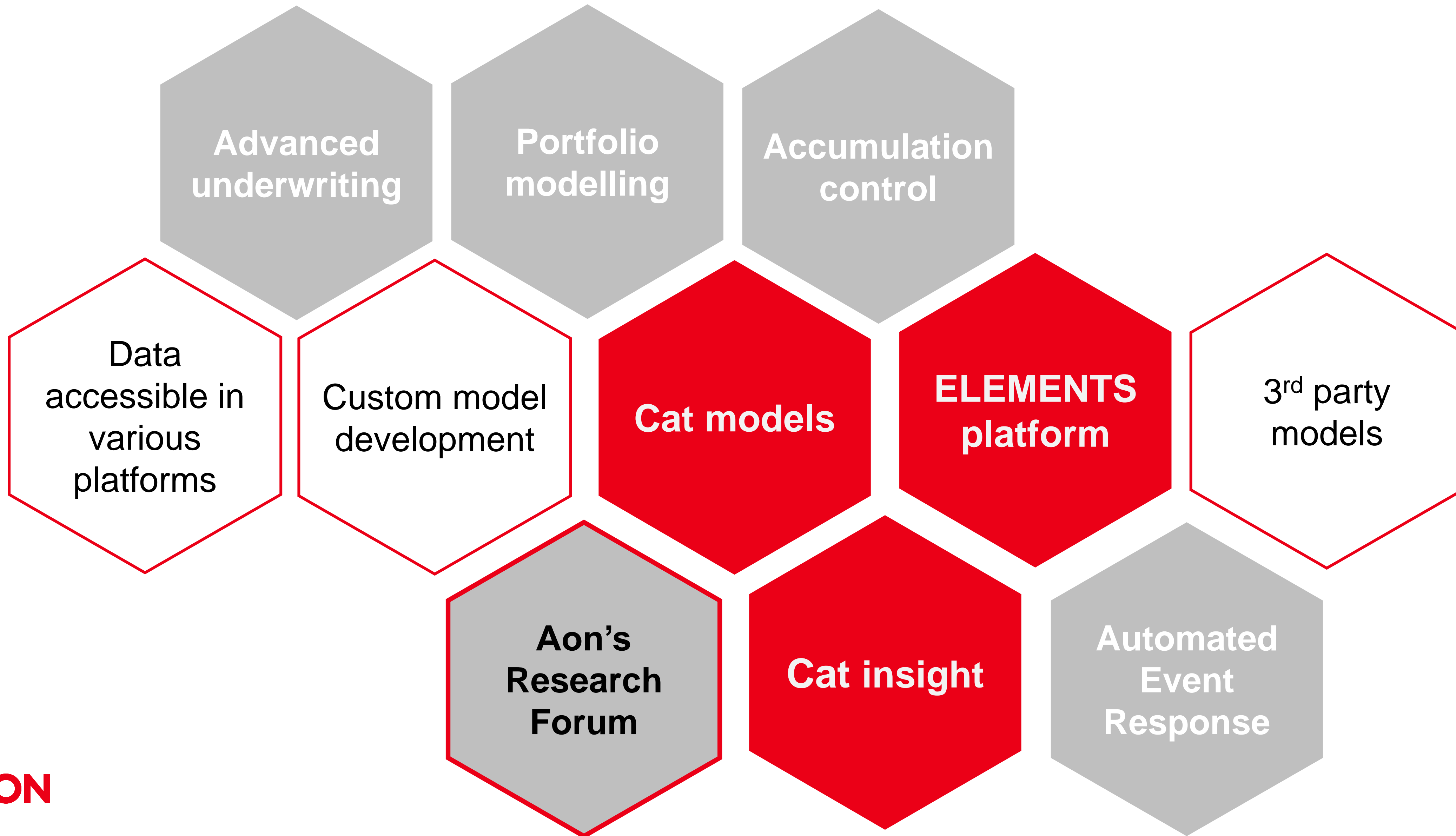
A **long-term sustainable community** is essential

**Active collaboration** with market owned initiatives

**Helps influence development** of other market players



# Impact Forecasting's products and services



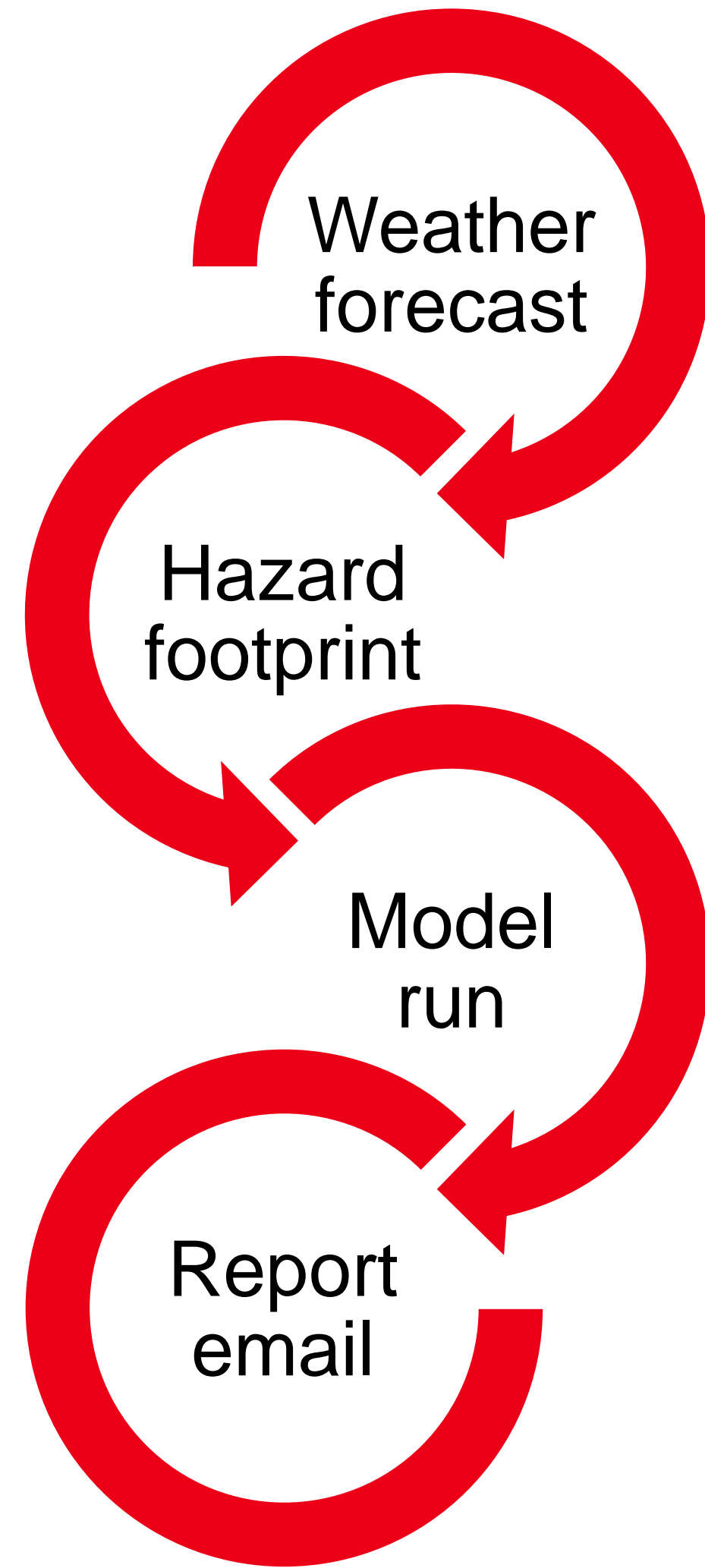


# Aon's Research Forum





# Automated Event Response



**Aon**  
 Impact Forecasting  
 Automated Event Response

Dear Aon Client,

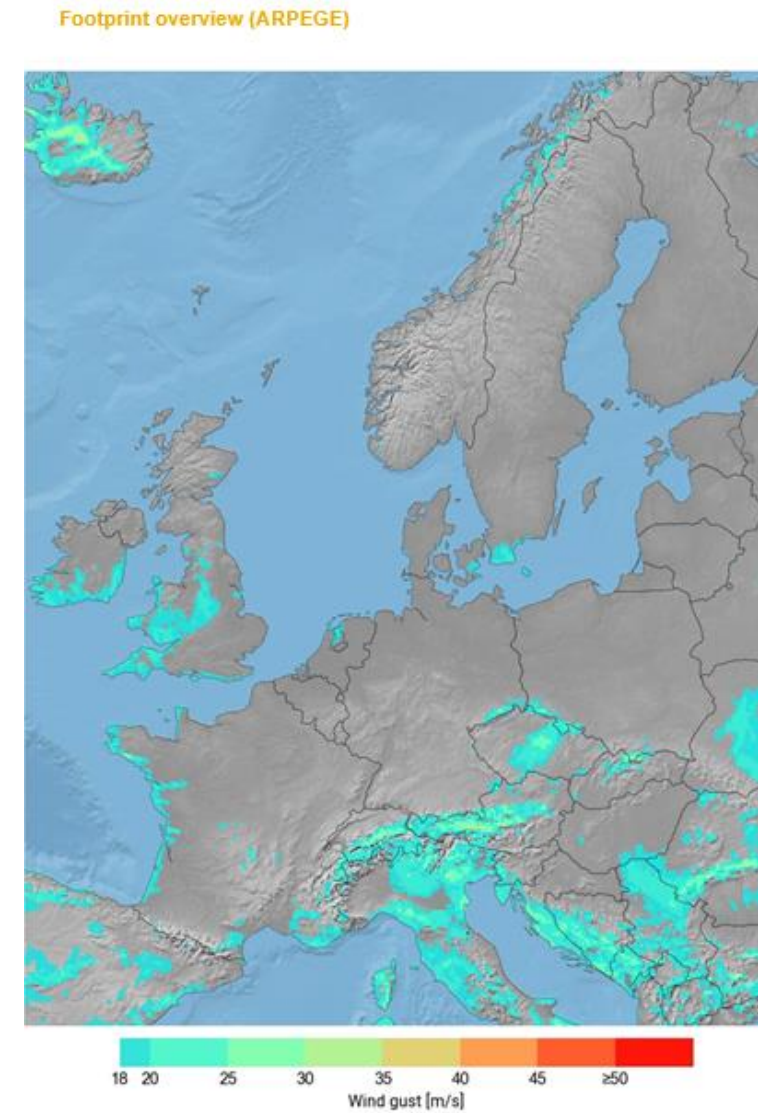
We would like to inform you, that based on the results of the European Windstorm automated ELEMENTS analysis, losses incurred to your portfolio are likely to exceed the chosen threshold value.

PORTFOLIO NAME  
**PERILS European Wind 2019**

TRESHOLD	MODEL RUN	FORECAST
EUR 1,000	12 Nov 2019 12:00 UTC	12 Nov 2019 18:00 UTC + 72 h

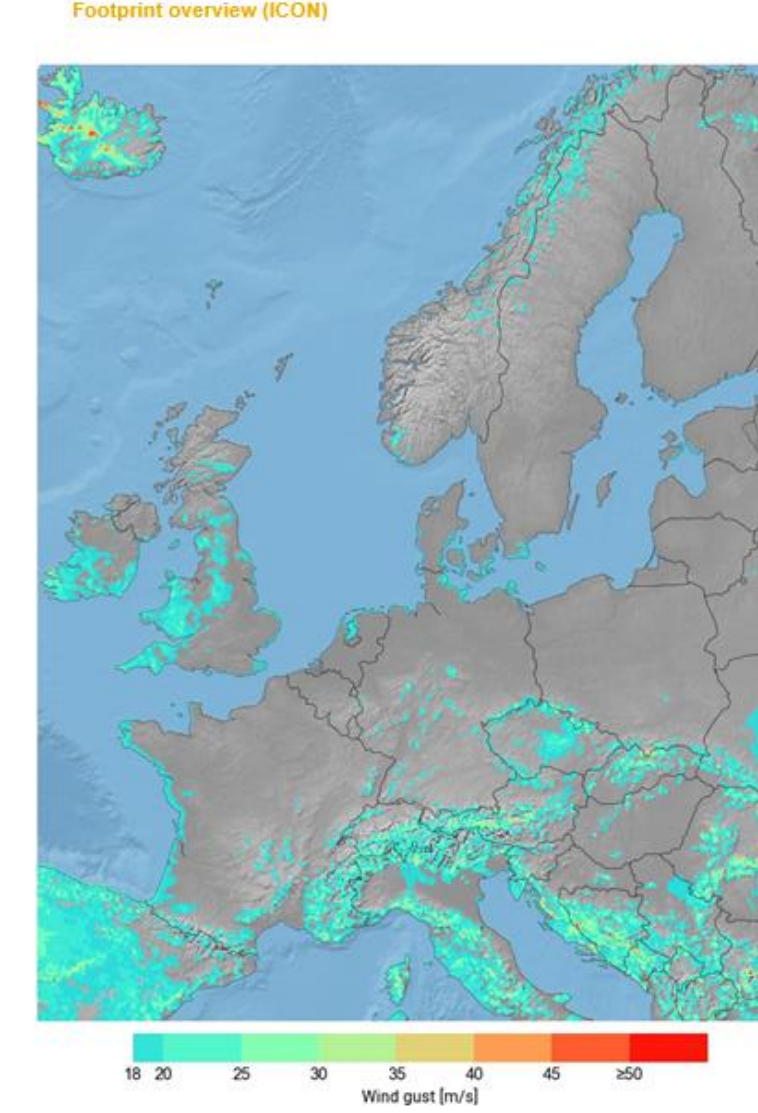
**Loss Analysis**

PREDICTION MODEL	GROUND-UP	GROSS	NET	CLAIMS
ARPEGE	8,429,000	7,873,000	7,873,000	N/A
ICON	5,323,000	4,805,000	4,805,000	N/A
GFS	6,670,000	6,148,000	6,148,000	N/A
ARPEGE (24h)	1,486,000	1,197,000	1,197,000	N/A
ICON (24h)	665,000	555,000	555,000	N/A
GFS (24h)	1,672,000	1,449,000	1,449,000	N/A



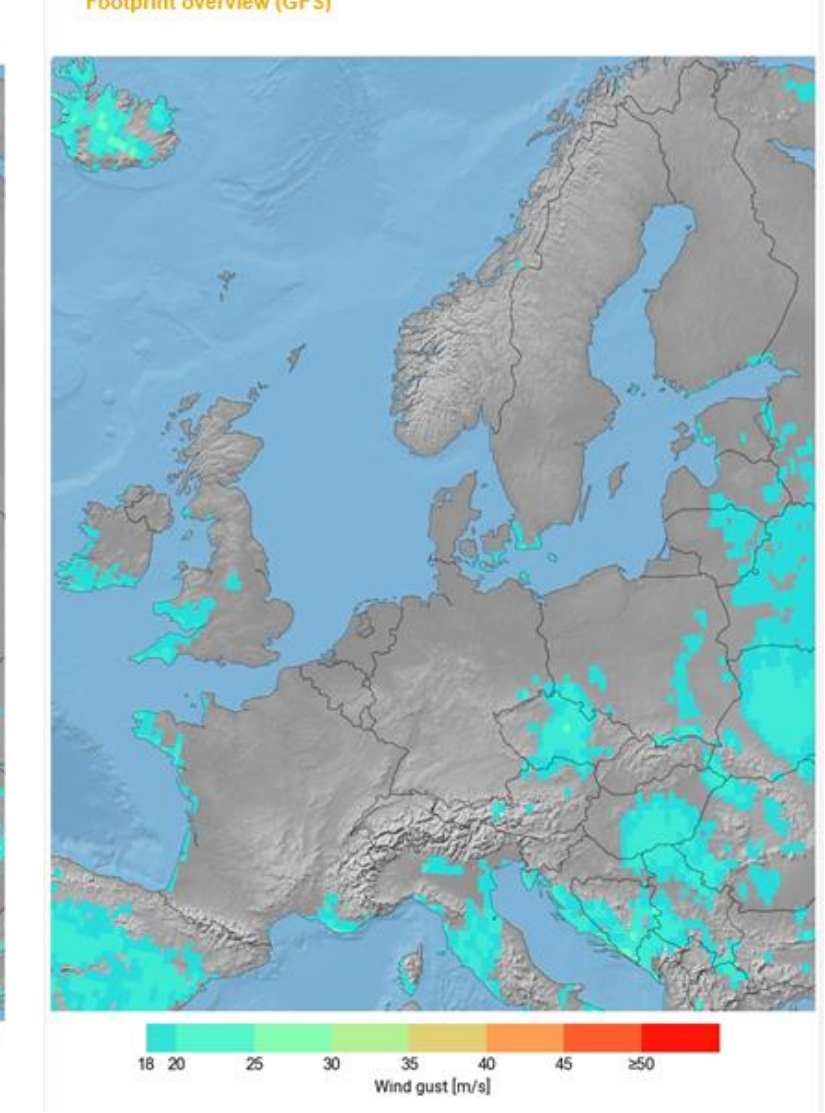
Split of losses by country (ARPEGE)

COUNTRY	GROUND-UP	GROSS	NET	CLAIMS
Austria	3,961,000	3,832,000	3,832,000	N/A
France	2,010,000	1,663,000	1,663,000	N/A
United Kingdom	1,451,000	1,273,000	1,273,000	N/A
Ireland	492,000	443,000	443,000	N/A
Sweden	397,000	366,000	366,000	N/A
Germany	49,000	45,000	45,000	N/A
Norway	37,000	31,000	31,000	N/A
Finland	19,000	11,000	11,000	N/A
Denmark	9,000	6,000	6,000	N/A
Netherlands	4,000	3,000	3,000	N/A



Split of losses by country (ICON)

COUNTRY	GROUND-UP	GROSS	NET	CLAIMS
United Kingdom	1,734,000	1,522,000	1,522,000	N/A
France	1,744,000	1,420,000	1,420,000	N/A
Austria	610,000	591,000	591,000	N/A
Germany	426,000	409,000	409,000	N/A
Ireland	388,000	339,000	339,000	N/A
Denmark	160,000	112,000	112,000	N/A
Finland	136,000	99,000	99,000	N/A
Sweden	99,000	89,000	89,000	N/A
Netherlands	26,000	23,000	23,000	N/A



Split of losses by country (GFS)

COUNTRY	GROUND-UP	GROSS	NET	CLAIMS
France	3,583,000	3,250,000	3,250,000	N/A
Austria	1,975,000	1,913,000	1,913,000	N/A
United Kingdom	645,000	585,000	585,000	N/A
Sweden	224,000	199,000	199,000	N/A
Ireland	99,000	88,000	88,000	N/A
Denmark	88,000	79,000	79,000	N/A
Finland	35,000	16,000	16,000	N/A
Germany	19,000	15,000	15,000	N/A
Netherlands	2,000	1,000	1,000	N/A



# 4

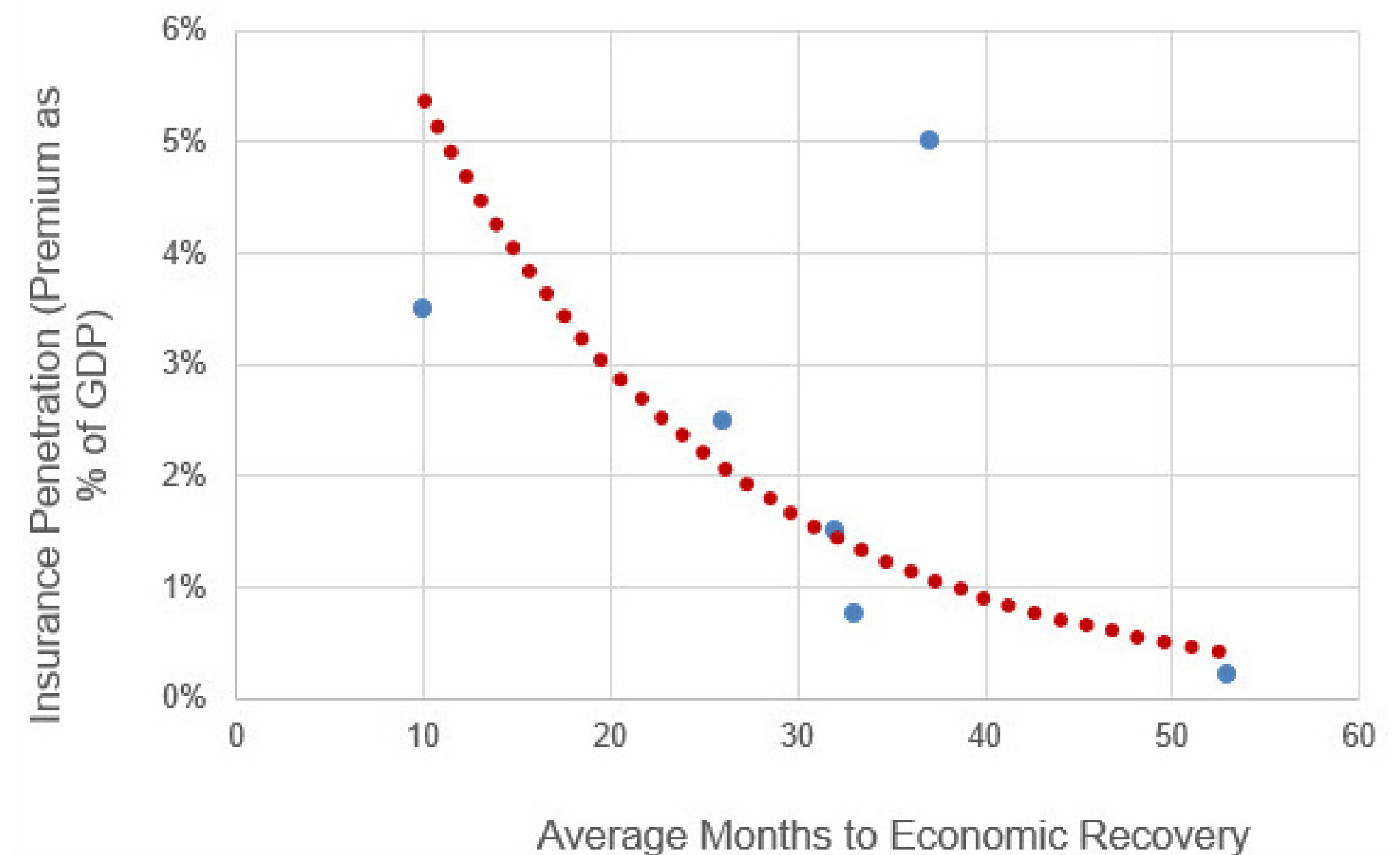
The way forward





# Empowering public-private partnership

- Focusing insurance industry **efforts on governments and non-profit entities** rather than consumers in order to provide protection to taxpayers by lowering the potential financial burden. IDF states that 1% increase of the insurance penetration can reduce the disaster recovery burden on taxpayers by 22%
- In addition to de-risking government balance sheets, insurers can also increase penetration by (1) participating in **risk-pooling opportunities** or (2) creating **new products like a seismic resilience bond**, thus expanding the risk/capital marketplace
- Increase general **risk awareness** and influence **smart regulation** in pre-event risk management activities
- All above will help to build resilience, promotes sustainable, less risky societies, and ultimately help save lives
- Reducing the protection gap should be an immediate priority for any insurer wishing to stay relevant in a global economy that is becoming riskier



Source: AXA, Centre for Risk studies, Cambridge University



# Reducing the catastrophe protection gap in CEE / WB

## Research and development

- Incorporating topics in the current academic curricula
- Collaboration with local / regional academic partners
- Collaboration with international / global academic partners (Aon Research Forum)
- Joint research projects: academia and industry R/D centers (Impact Forecasting)
- Data collection and sharing

## Public-private partnership

- Risk awareness
- Promote catastrophe modelling, technology and product innovation
- Promote alternative risk-transfer mechanisms
- Advisory to governments and international relief organizations



**AON**

**Thank You**





# Contacts



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