Impacts of Natural Catastrophes in Changing World and

Lessons Learned from EIOPA's Recalibration of Standard Formula

Forum poistovnictva 2025

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Agenda

1

Recent catastrophes

2

How to address catastrophes in changing climate: lessons from EIOPA

3

How to prepare for future catastrophes

4

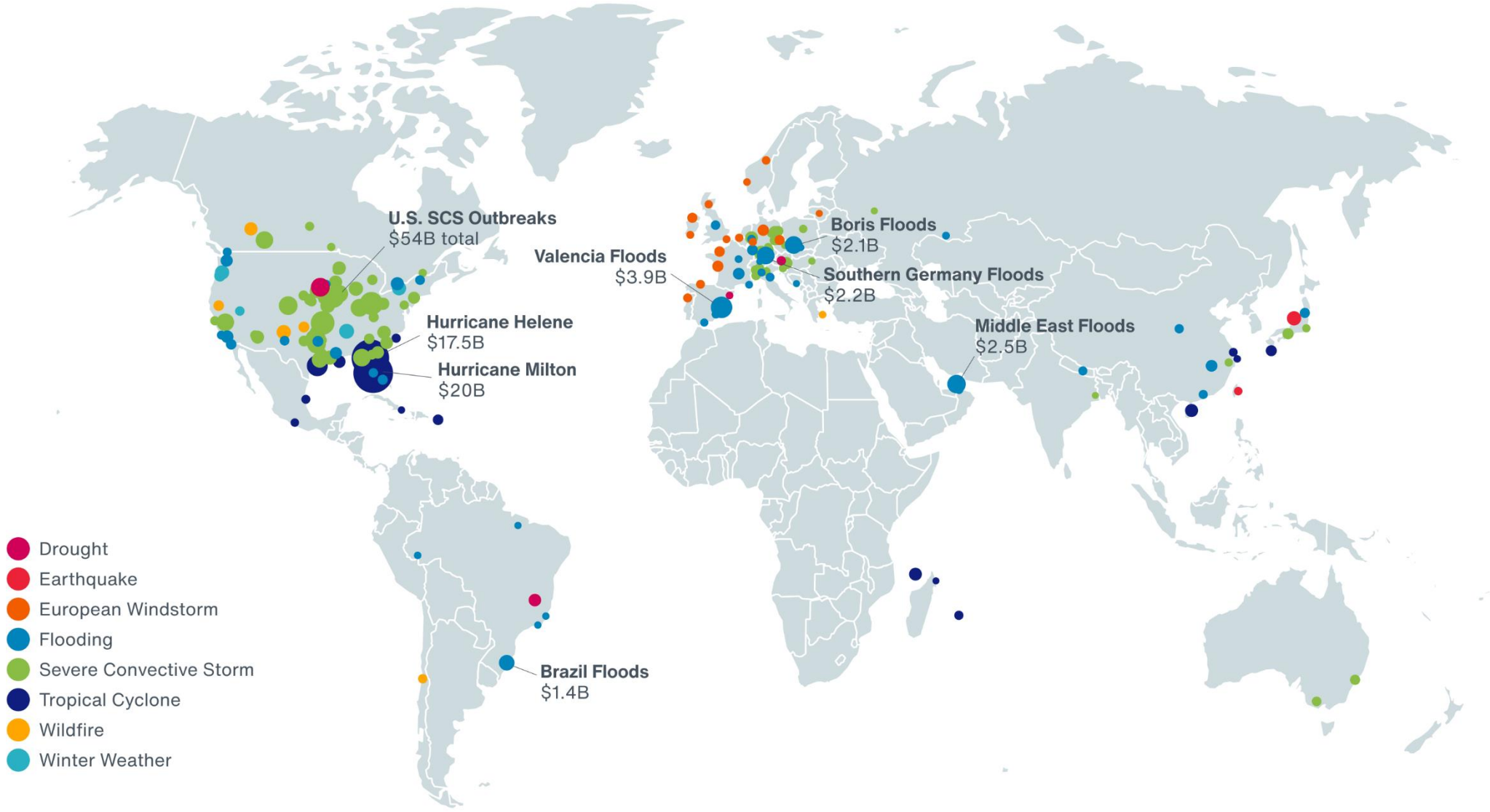
Final remarks and discussion

1

Recent Catastrophes

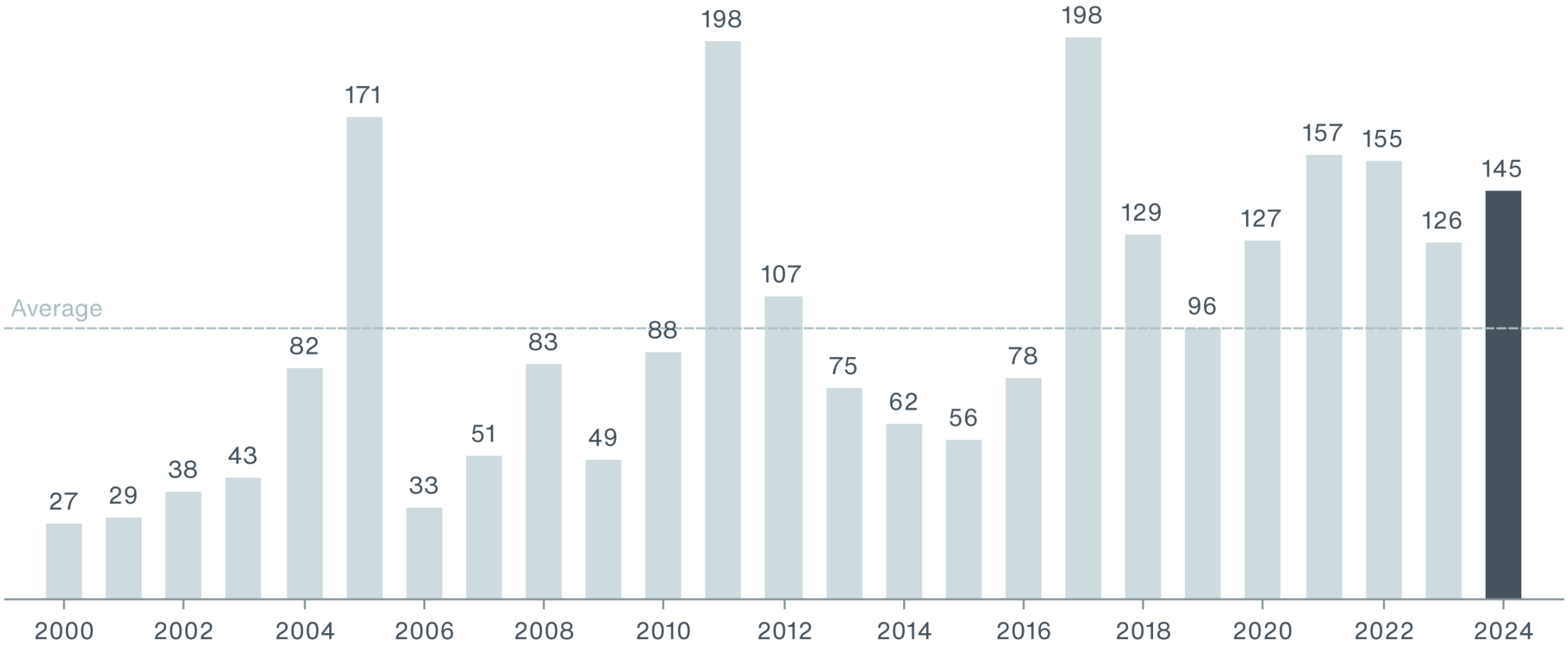
Catastrophes in 2024

Insured Loss Events



Data: Aon Catastrophe Insight

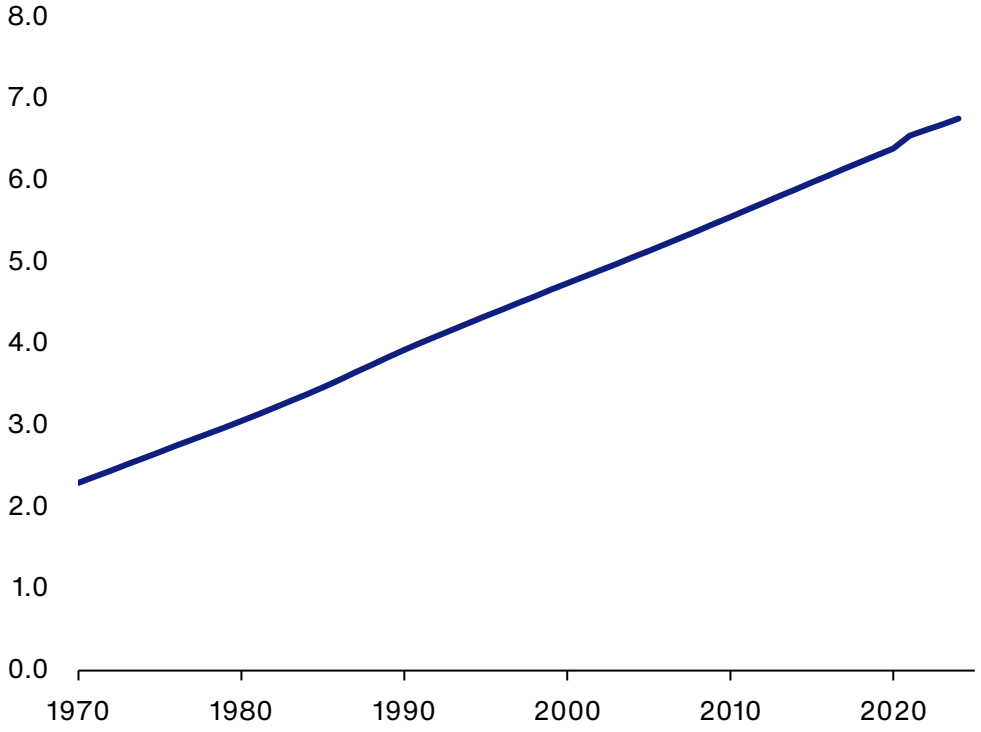
Global Insured Losses from Natural Disasters (2024 $B)



Data: Aon Catastrophe Insight

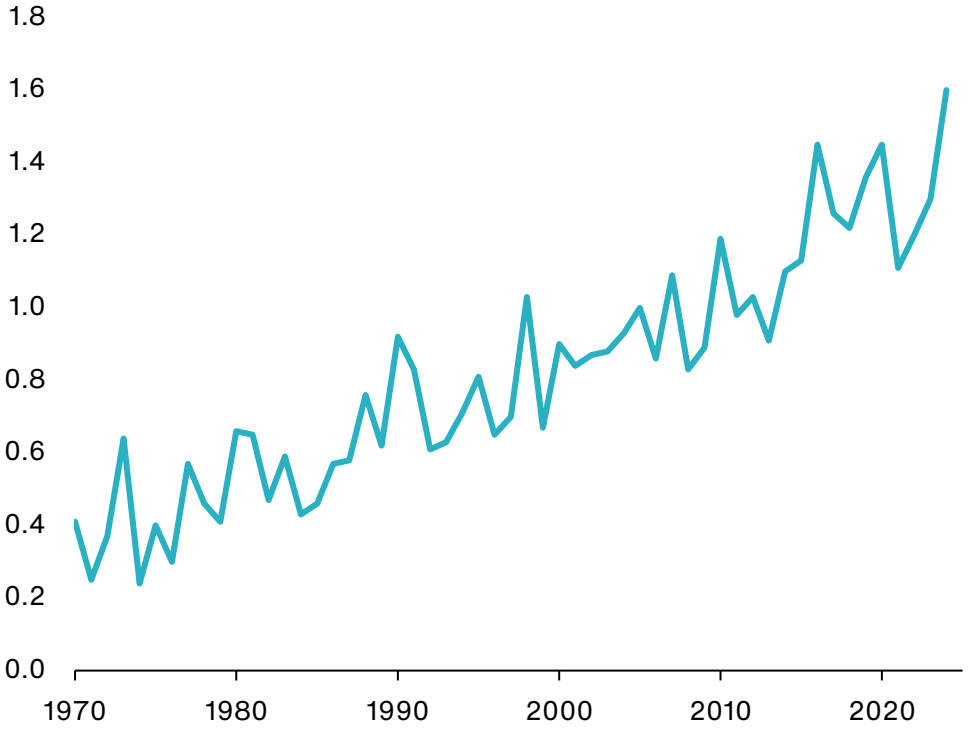
World is Changing

Global **Population** **Anomaly vs. 1875 [bn people]**



Source: worldometers.info

Global **Temperature** **Anomaly vs. 1850-1900 [°C]**



Sources: NOAA, IPCC (2021)

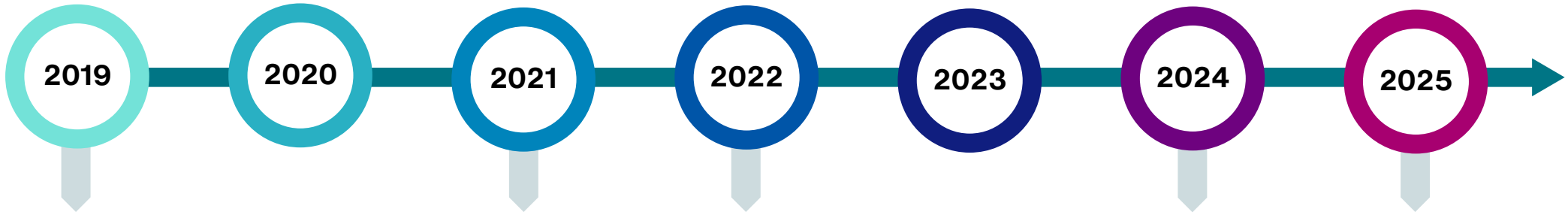
How climate change impacts catastrophes?

2

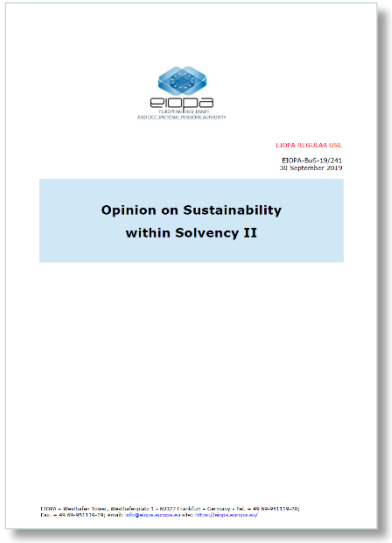
How to Address Catastrophes in Changing Climate: Lessons from EIOPA

EIOPA's Position to Catastrophic Physical Risk under Climate Change

Evolution of opinion, driven by losses, data, evolving science and models

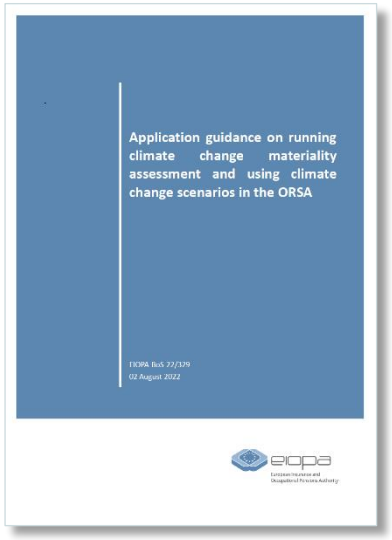


"Impact of climate change too uncertain to take action"

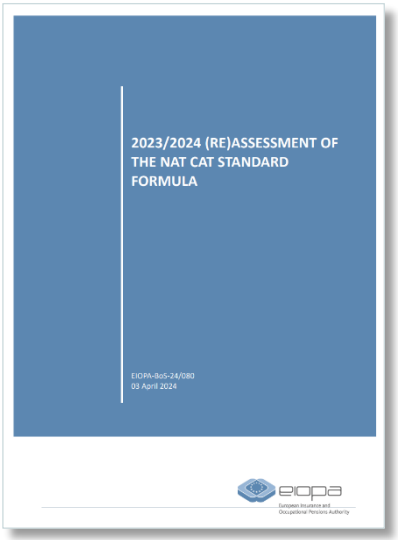


"Action needed, but how exactly to modify Standard Formula?"

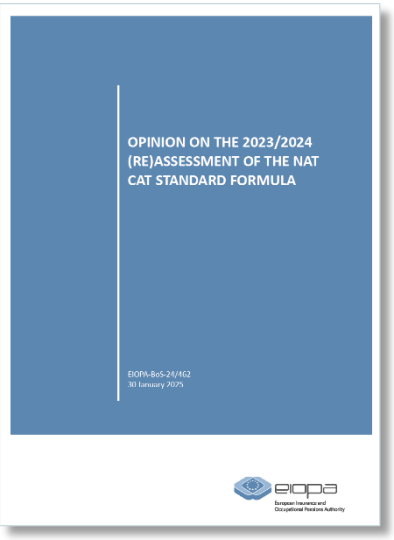
"Consider impacts of climate change in ORSA using EIOPA guidance"



"Collecting information and feedback"



"Proposed updates to Standard Formula regardless climate change"



The Reassessment of Standard Formula

EIOPA's Opinion from 1/2025

Several perils/regions updated or newly introduced

Reasoning behind the updates of standard formula

- Recent **loss** experience
  - Flood: BE*, DK, LU*, NO, SE
  - Hail: BE*, FR, DE, LU, NL*
  - Subsidence: FR, BE
- New **catastrophe modelling** insights
  - Flood: CZ, NL, IE*
  - Windstorm: PL
  - Hail: PL
- Other modelling, **expert judgement**, and cross-country consistency
  - Flood: FI
  - Windstorm: IS
- New **national schemes**
  - Quake and flood in RO (PAID)

* Combination of reasons

Standard Formula Country Factor Change

Country	Windstorm	Hail	Flood	Earthquake	Subsidence
Austria					
Belgium		+17%	+20%		New
Bulgaria					
Croatia					
Cyprus					
Czechia			-17%		
Denmark			New		
Estonia					
Finland			New		
France		+100%			+20%
Germany		+50%			
Greece					
Hungary					
Iceland	+50%				
Ireland			New		
Italy					
Latvia					
Lithuania					
Luxembourg		+233%	New		
Malta					
Netherlands		+50%	New		
Norway			New		
Poland	-25%	New			
Portugal					
Romania			-57%	-41%	
Slovakia					
Slovenia					
Spain					
Sweden			New		
Switzerland					
UK					

Legend: No change | Updated | New | N/A

Where is climate change?

Why Is Climate Change Not Visible in The Proposed Updates?

Key challenges

a) Time horizon

b) Confidence

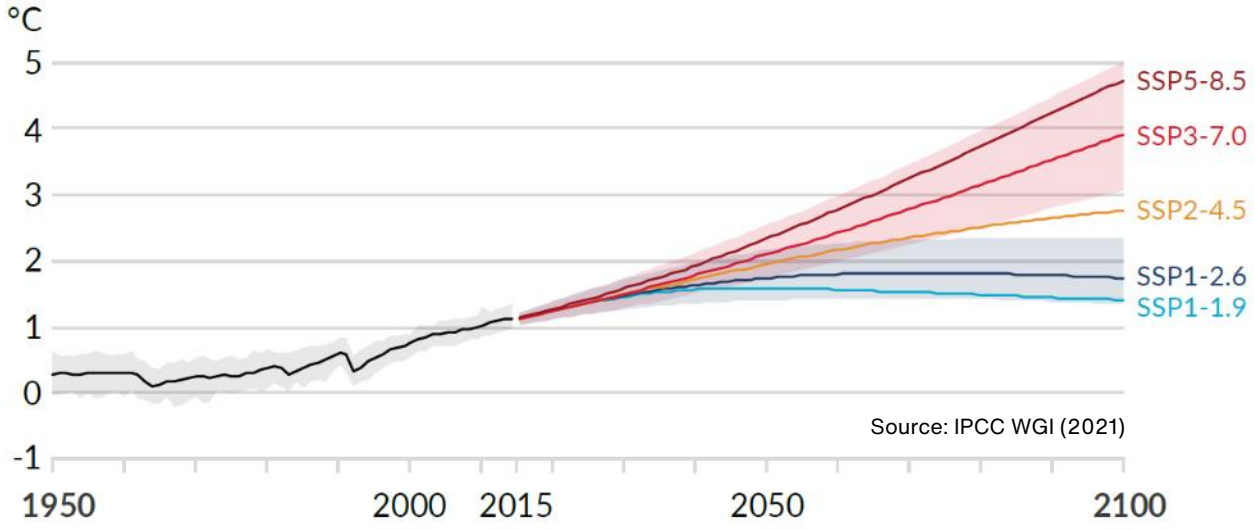
c) Materiality

d) Context and consistency

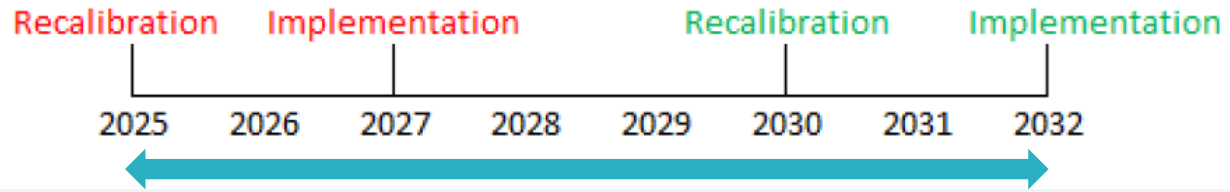
Climate vs. Regulation for Next 5-10 Years

a) Time horizon

Global Surface temperature change relative to 1850-1900



EIOPA's example of timeframe for standard formula recalibrations

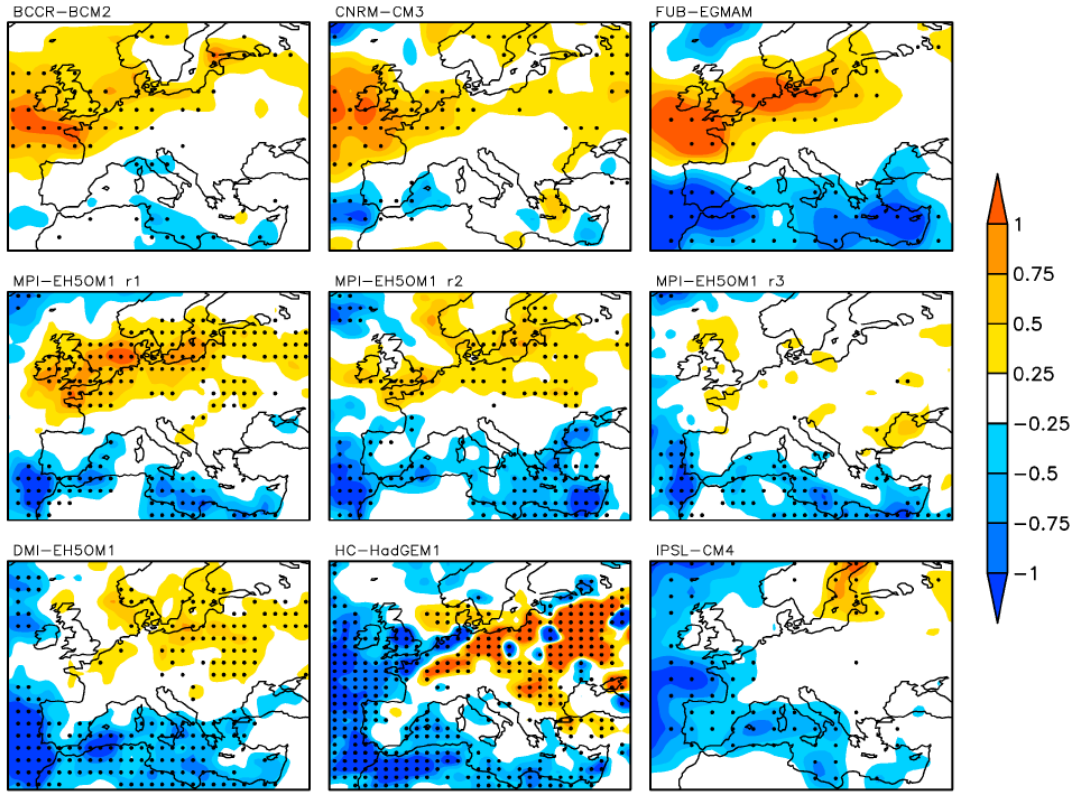


- Climate vs. seasonal weather forecast
- Natural oscillations (NAO, ENSO,...) overlay climate change signal in short term
- Non-linear nature of climate change

How Certain Are We about Impacts of Climate Change on Each Peril?

b) Confidence

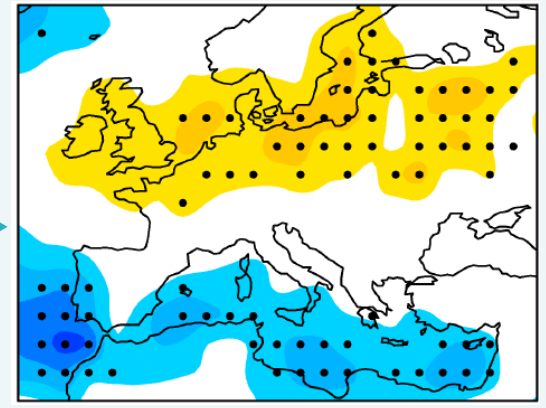
Changes in daily max wind speeds - CC in 9 GCM simulations



98th percentile of WIMAX, 2071-2100 rt 1961-2000. Source: Donat et al. (2011)

- Need to reach good level of confidence before setting new rules
- Different levels of confidence by peril
  - Flood / Windstorm / Hail / Heatwaves
- Uncertainties driven by
  - Which climate change scenario can materialize
  - Future climate differences across models
  - Future climate modelling resolution

Ensemble Mean



“The change needs to be sufficiently material to justify recalibration”

EIOPA’s Opinion 1/2025

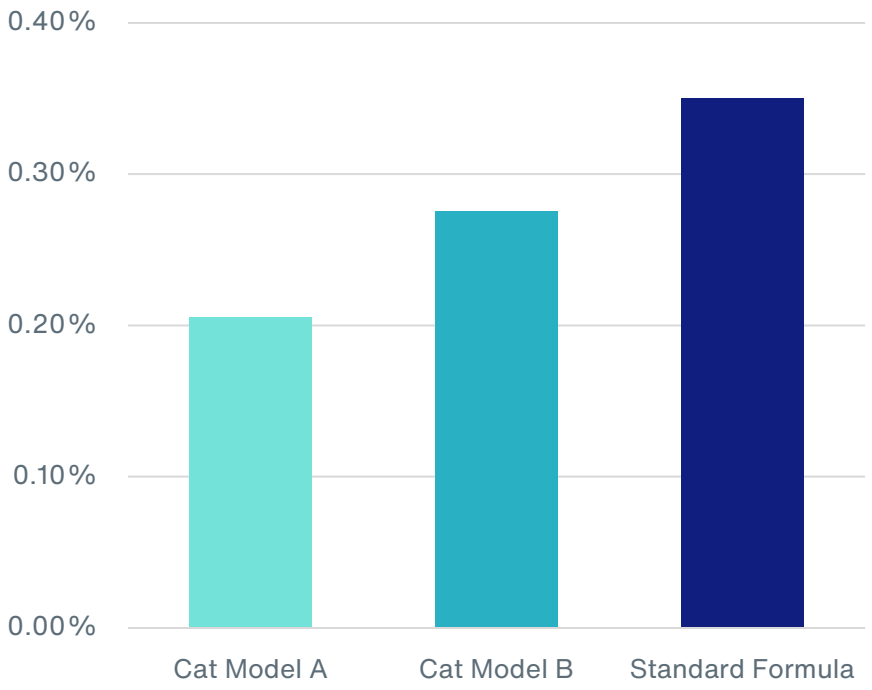
c) Materiality

It would make no sense if all the regulation changes and further implementation have negligible impact.

Consistency Across Perils and Regions and Time within The Context

d) Context and consistency

1 in 200 Years Flood Loss
Slovakia Market Portfolio
[Expressed as Percentage of Total Sum Insured]



Context

- Materiality in context of other challenges
  - Differences between current-climate cat modelling results
  - Inherent simplifications in SF (TSI/CRESTA as input)
  - SF to ensure resiliency against 1in200 loss
  - Exposure data quality and granularity
  - Development of exposure and adaptation measures

Consistency

- Across perils within a country
- Across regions for certain peril
- In time to avoid frequent dramatic changes unless there is high confidence to do so
- Science vs. Insured loss modelling
- Historical experience

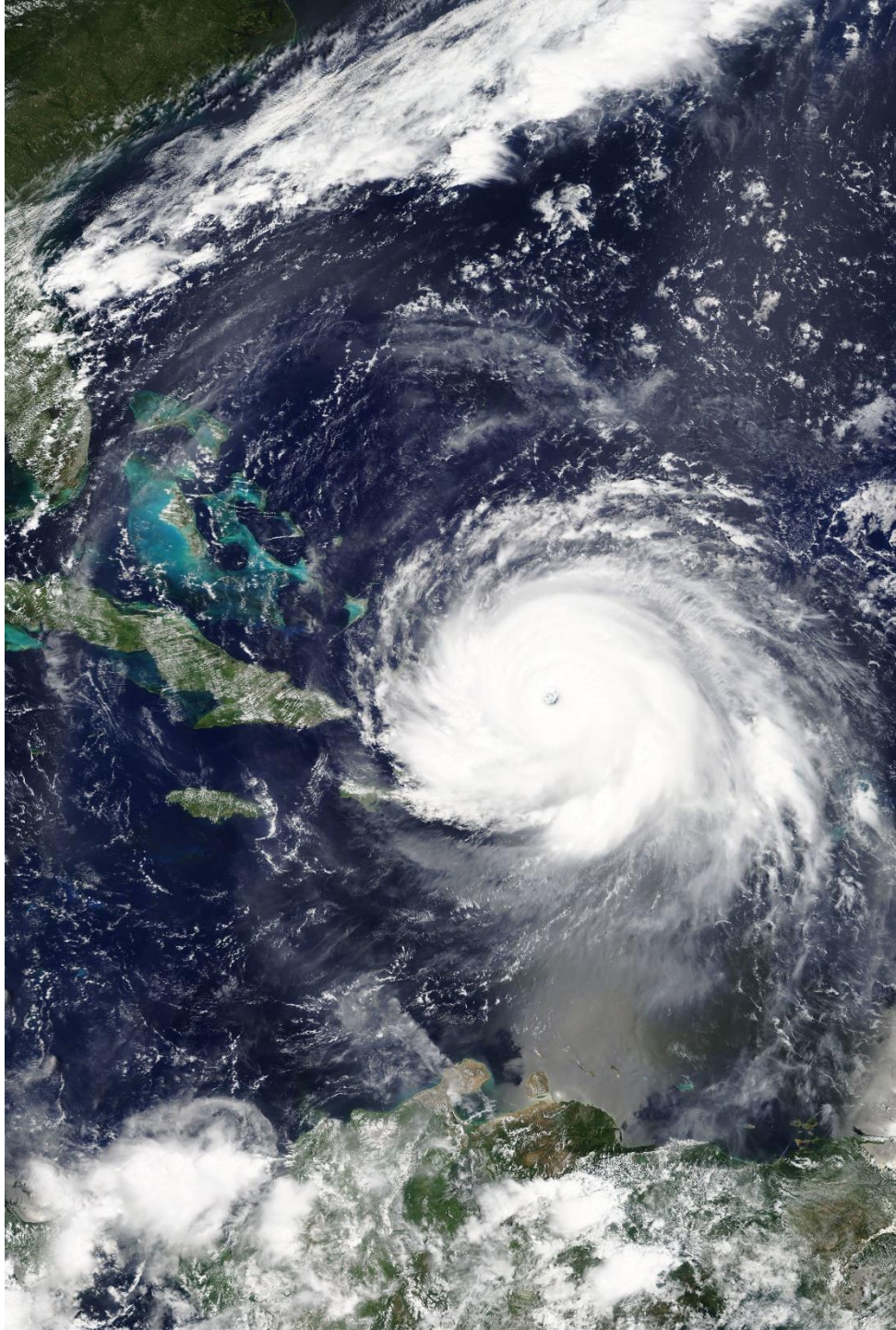
What Have We Learned from EIOPA's Experience When Updating SF?

EIOPA has faced similar issues as anyone else would have

1. It is a serious challenge to assess impact of climate change, isolated from other issues, on several perils/regions

2. Over the next few years, climate change may be a minor issue when estimating catastrophe risk

3. Need to stay informed as science and modellers are continuously progressing and higher confidence may be reached in near future



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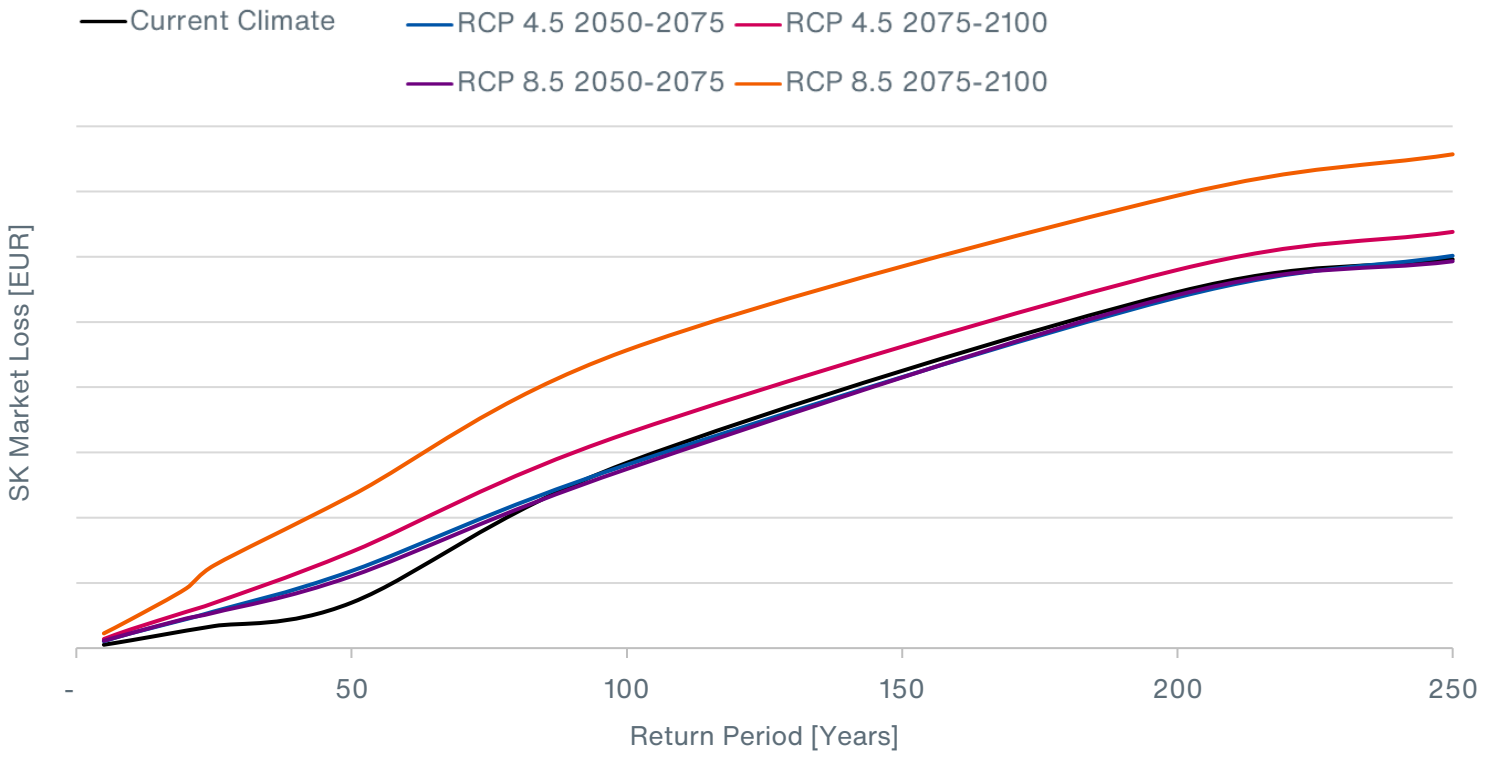
How to Prepare for Future Catastrophes

Stay Informed

And be ready to take action when needed

Slovakia Flood for Future Climate Change Scenarios

Impact Forecasting modelling results



- Slovakia market portfolio
- 2-time horizons
  - 2050-2075
  - 2075-2100
- 2 scenarios
  - RCP 4.5 (mid scenario)
  - RCP 8.5 (bad scenario)
- No improvement of future adaptation measures considered
- Projected increased flood losses at shorter return periods
- Projected limited impact on 1in250 loss for both scenarios for period 2050-2075

Adaptation

To further increase our resilience to catastrophes in any case

It works

- Raciborz polder operational since 2020
- Developed in a response of 1997 and 2010 floods
- Protection for 2.5m people downstream
- Critical protection of city of Wroclaw
- Performance proven by Boris 9/2024

4

Final Remarks

Final Remarks

On catastrophic risk

Climate change is not the only challenge, especially near term.

Lessons learned from EIOPA's recalibration of standard formula are also relevant to insurers.

Slovakia hasn't been hit by very extreme catastrophe over the past few decades but still needs to be prepared.

Thank you!

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