Swiss Re

Climate risks – where are we headed?

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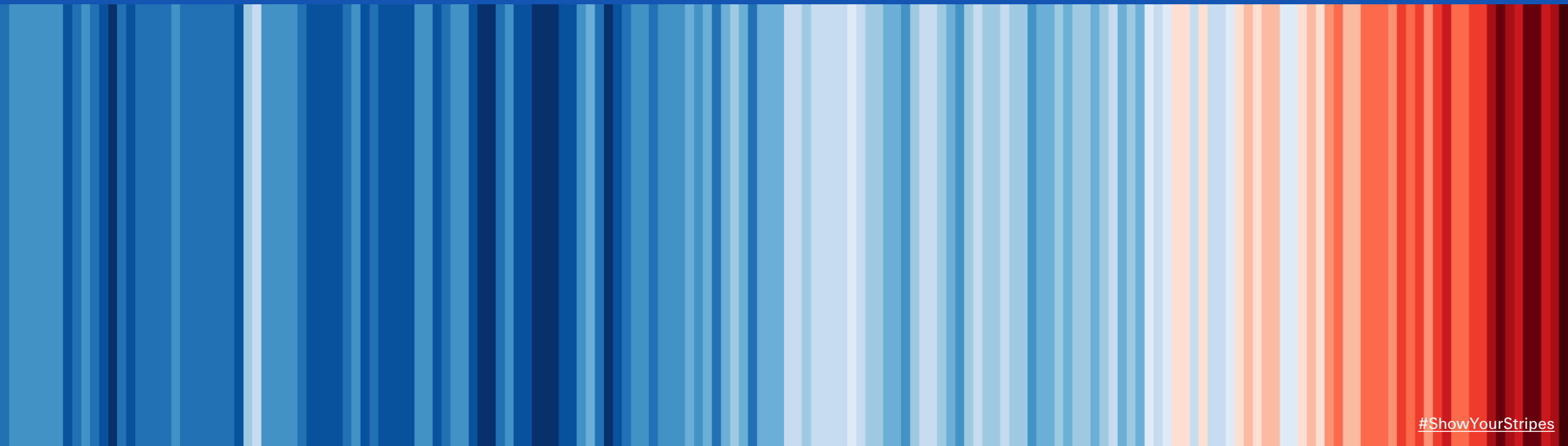

Climate change – a “hot” topic

How many years in the past decade were among the warmest on record (globally)?

a. 4
b. 7
c. 8
d. 10

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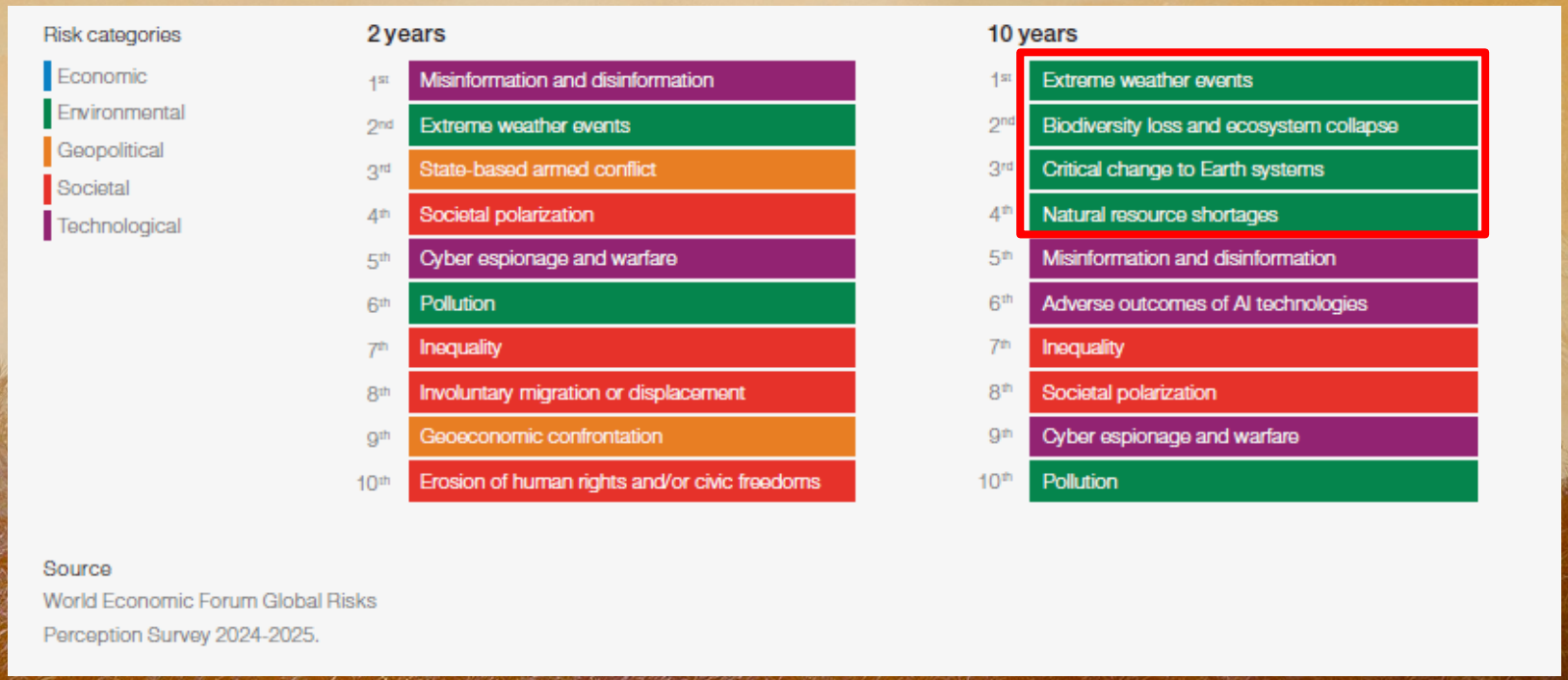
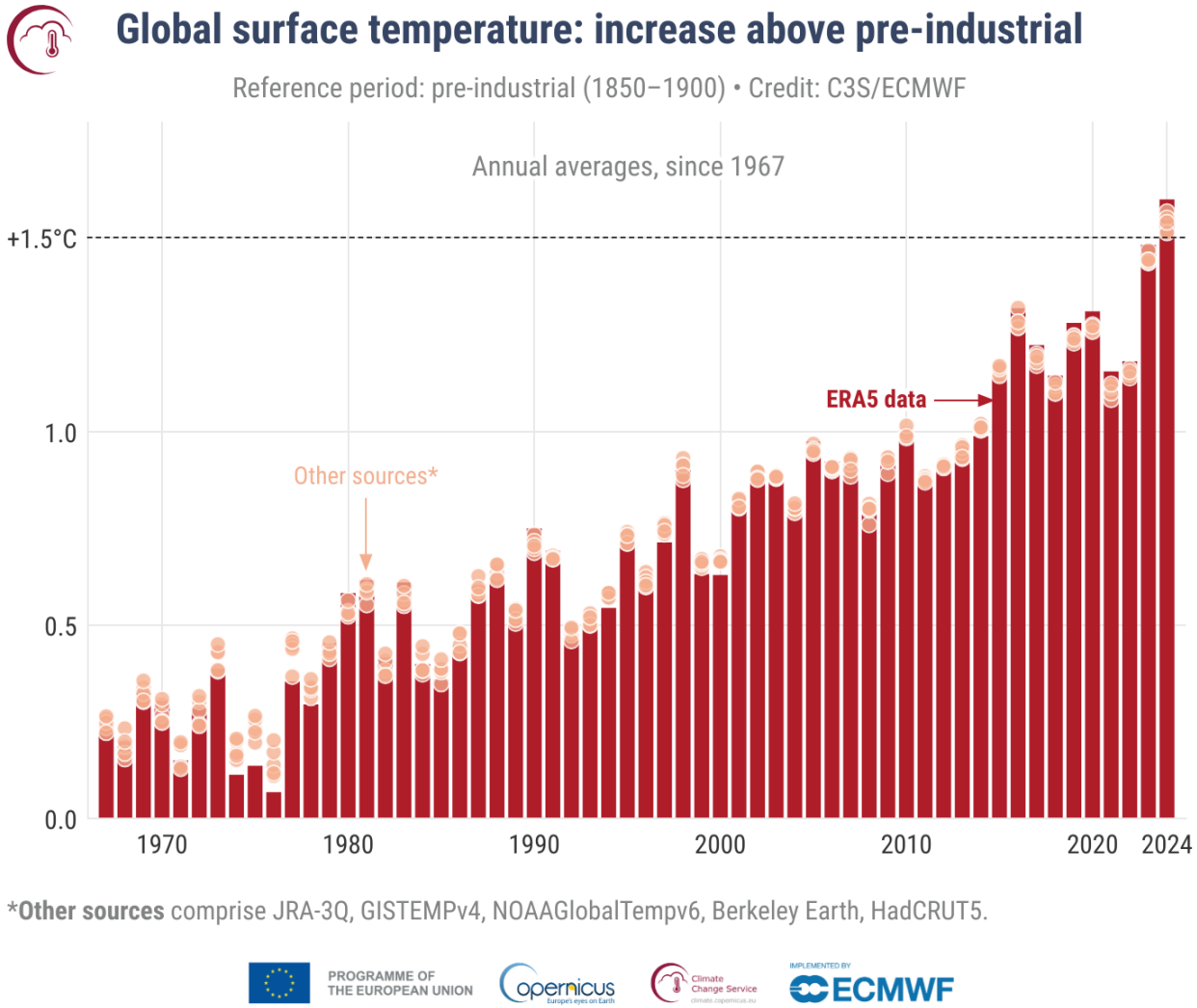




Climate Change: Global Temperature | NOAA Climate.gov

Global view – the inconvenient truths

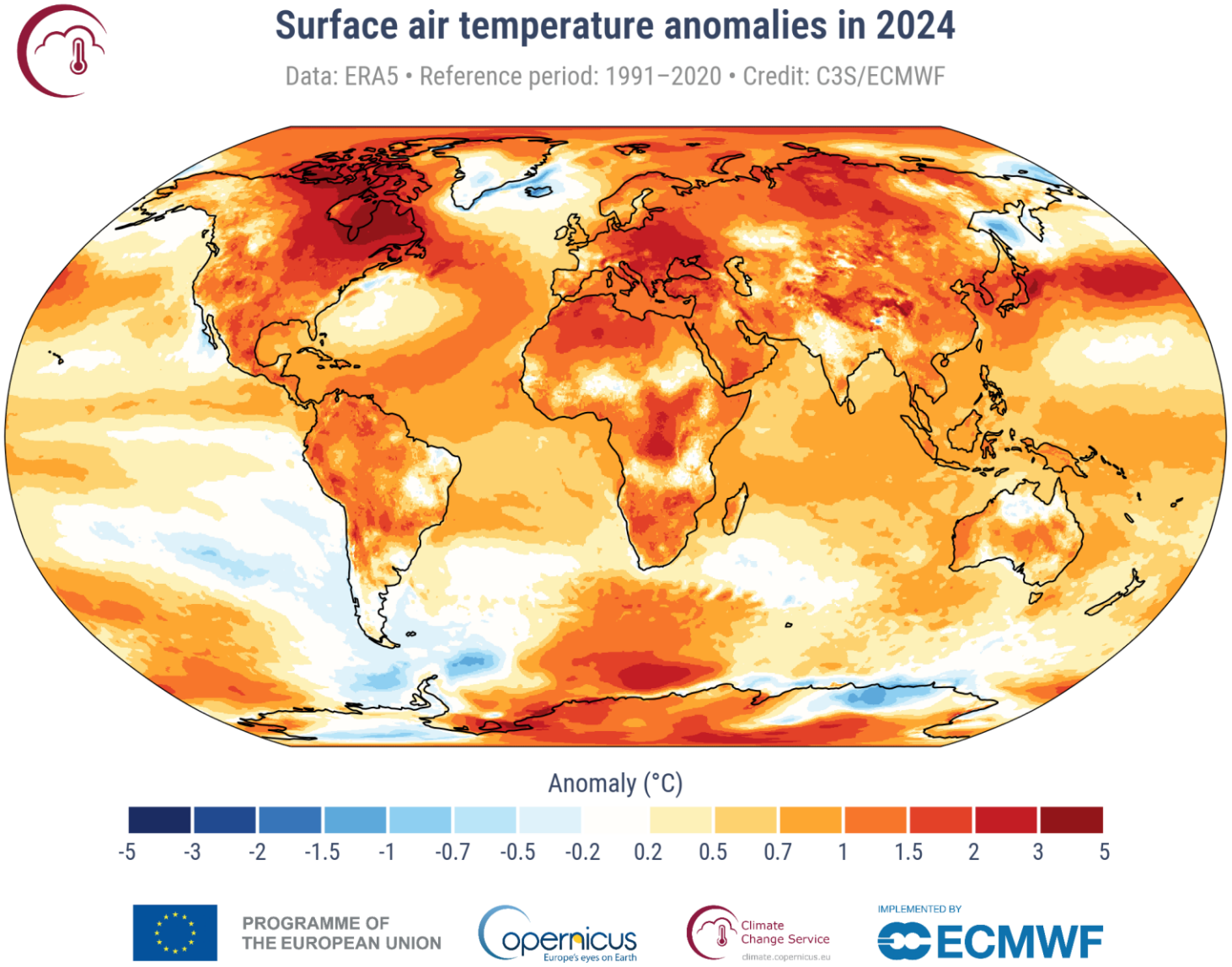
2024 was the warmest year in a multi-dataset record of global temperature going back to 1850.

2024 had a global average temperature of 15.10°C; 0.12°C higher than the previous highest annual value in 2023.

2024 was 0.72°C warmer than the 1991–2020 average, and 1.60°C warmer than the pre-industrial level, making it the first calendar year to exceed 1.5°C *(Paris agreement)* above that level

The last ten years have been the warmest ten years on record.

On 22 July 2024, the daily global average temperature reached a new record high of 17.16°C.



Global view

In 2024, as in 2023, the tropics (20°S–20°N) and the northern mid-latitudes (20°–60°N) contributed the most to the record global temperature anomalies.

What is the impact of rising temperatures on the risk landscape?

Which country has faced the largest increase in economic losses with climate change?

a. China
b. Poland
c. Philippines
d. Australia

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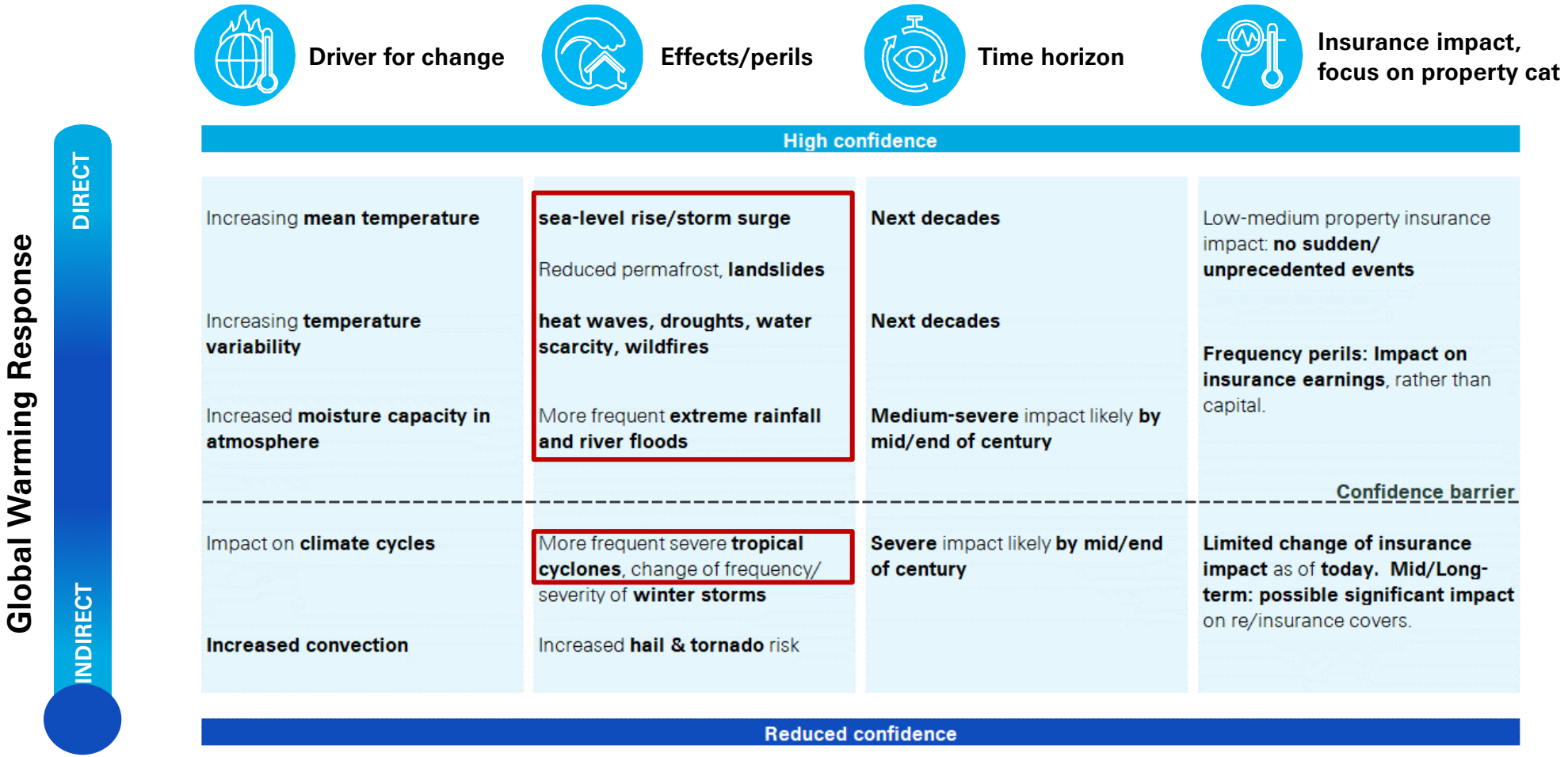
Climate change impact is peril-specific



Swiss Re Institute, 2023

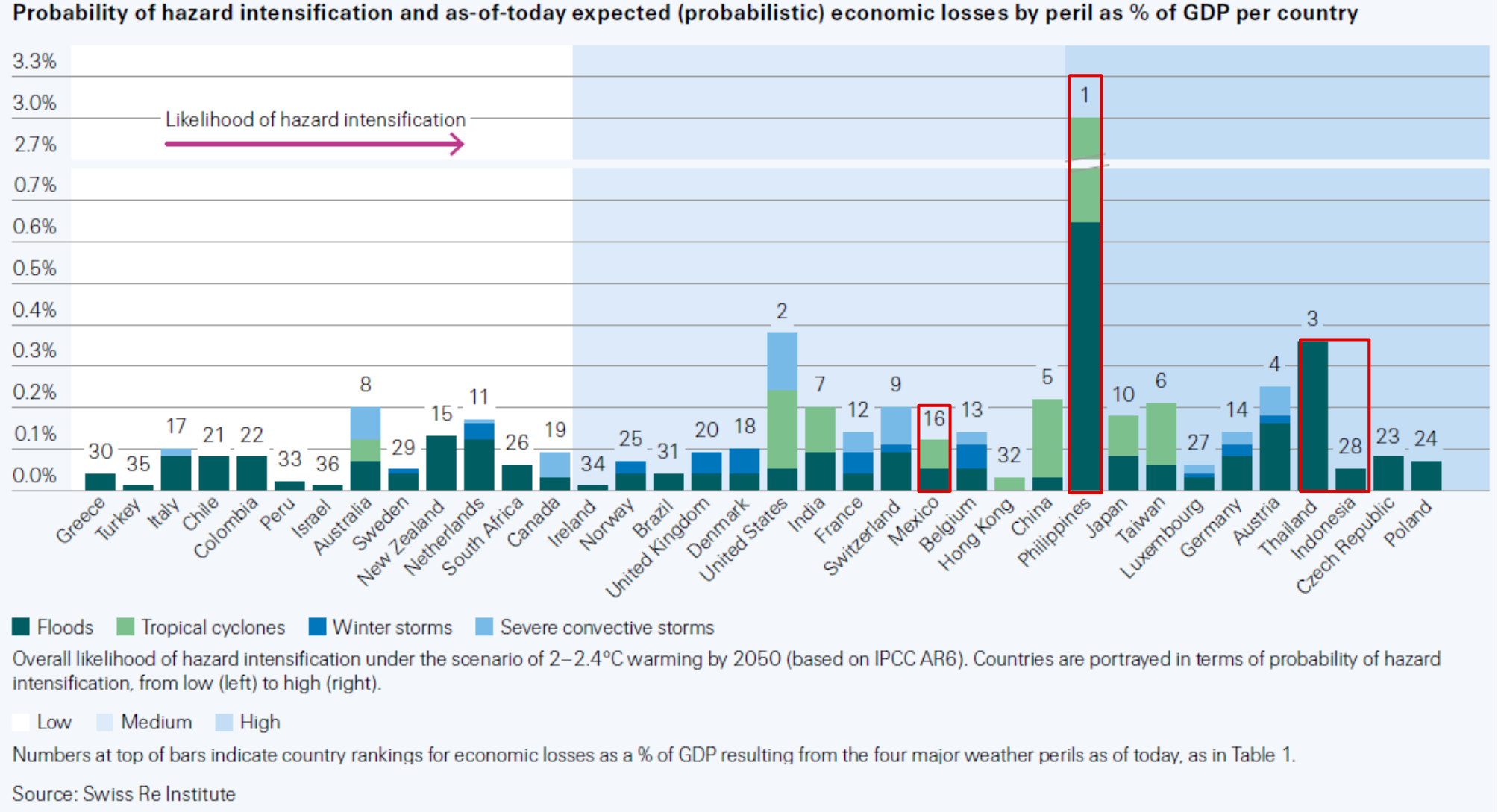
	A glimpse of 2050	Global scientific projections	Socio-economic impact
Extreme heat	300m+ people could be affected by heatwaves in India[1]	1-in-1,000-day hot extremes 5x as likely with 0.85°C warming[7]	~60k deaths in European heatwave (2022)[8]
Flood	5x increase in annual flood losses expected in EU[2]	70% of population could face 5x surge in flood impacts at +4.0°C[9]	2021 flooding losses were $18.4bn in China & $3.2bn in India[10]
Drought	80% chance of decade-long droughts in the US starting 2050[3]	Current 1-in-100-year droughts could occur every 2-5 years[11]	Food lost to drought can feed 81m people daily[12] (= population of Germany)
Sea-level rise	~1.3m Bangladeshis could forced to migrate due to sea-level rise[4]	Global mean sea level expected to rise 1m by 100 per RCP8.5[13]	Jakarta is sinking ~28 cm yearly[14] & facing $186m p.a. in flood damage[15]
Storm	3x increase in annual probability of typhoons in Tokyo[5]	Hurricane frequency could double by 2050[16]	~8,500 FTE jobs & $1.5bn of value lost in Cyclone Debbie (2017)[17]
Wildfire	~35% increase in area burnt yearly by bushfires in Sydney[6]	Wildfires likely to increase by a third[18]	Canadian wildfires displaced 230k people & claimed 8 lives (2023)[19]

Climate hazards are continuing to disrupt the way we are living as a society

Global impact but more pronounced in developing regions

The Risk of inaction, WEF report 2024

Hazard intensification varies by region



Overall likelihood of hazard intensification under the scenario of 2–2.4°C warming by 2050 (based on IPCC AR6). Countries are portrayed in terms of probability of hazard intensification, from low (left) to high (right).

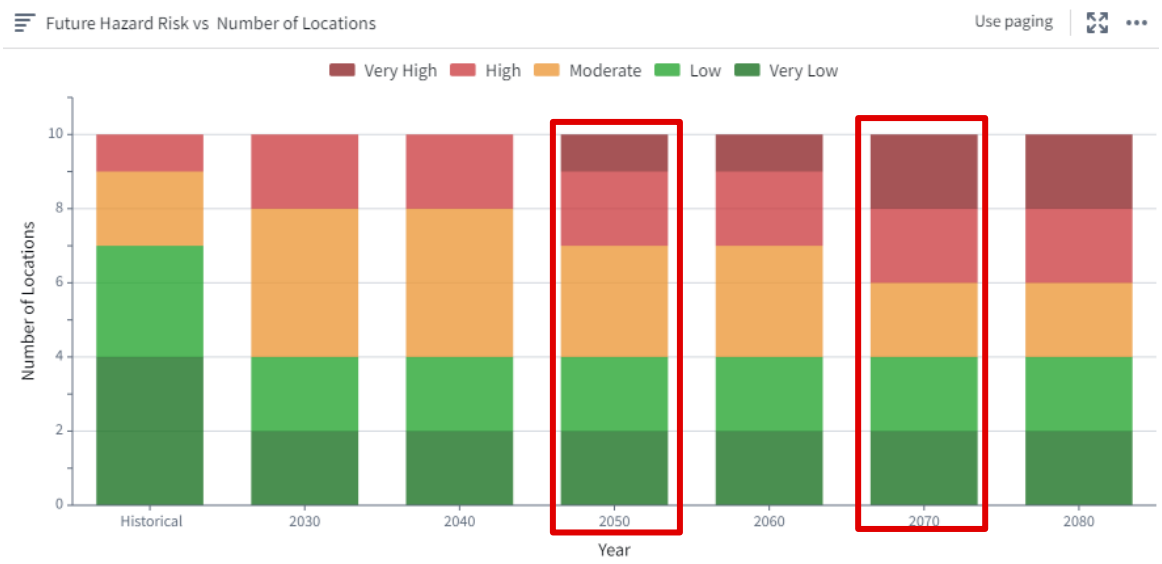
Low Medium High

Numbers at top of bars indicate country rankings for economic losses as a % of GDP resulting from the four major weather perils as of today, as in Table 1.

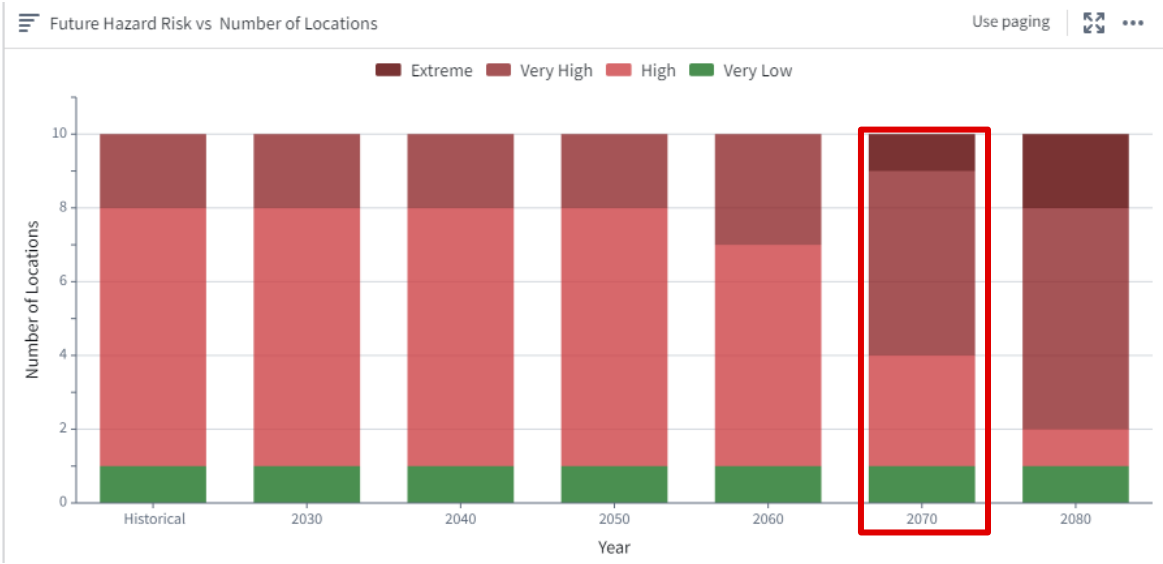
Source: Swiss Re Institute

Swiss Re has some in-house tools to analyse future climate risks

Combined analysis for 10 cities: Dhaka, Jakarta, Phonm Penh, Vientiane, Ho Chi Minh City, Managua, Panama City, Tegucigalpa, Port-au-Prince, Sucre



Increase in drought risk



Increase in heat stress

[Climate Risk Services | Swiss Re]

What are the socio-economic impacts?

By which factor have climate-related economic costs change over the past 20 years?

a. 1.2
b. 1.5
c. 2
d. 3

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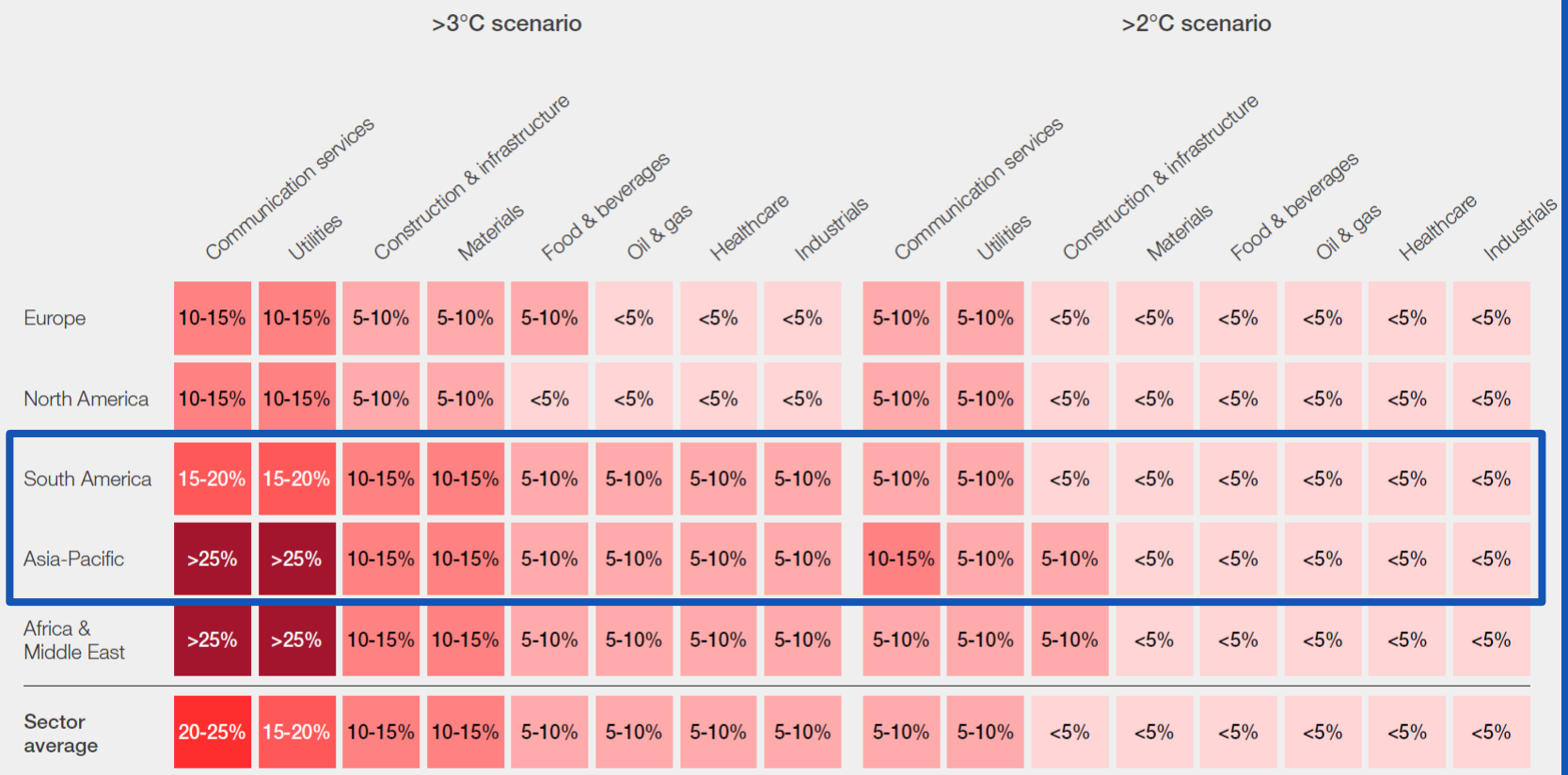
Financial impact of physical risks

Average financial impact of physical risks by 2050

% yearly EBITDA at risk vs. today in a >3°C (current trajectory) vs. <2°C (Paris-target) scenario



	>3°C scenario								>2°C scenario							
	Communication services	Utilities	Construction & infrastructure	Materials	Food & beverages	Oil & gas	Healthcare	Industrials	Communication services	Utilities	Construction & infrastructure	Materials	Food & beverages	Oil & gas	Healthcare	Industrials
Europe	10-15%	10-15%	5-10%	5-10%	5-10%	<5%	<5%	<5%	5-10%	5-10%	<5%	<5%	<5%	<5%	<5%	<5%
North America	10-15%	10-15%	5-10%	5-10%	<5%	<5%	<5%	<5%	5-10%	5-10%	<5%	<5%	<5%	<5%	<5%	<5%
South America	15-20%	15-20%	10-15%	10-15%	5-10%	5-10%	5-10%	5-10%	5-10%	5-10%	<5%	<5%	<5%	<5%	<5%	<5%
Asia-Pacific	>25%	>25%	10-15%	10-15%	5-10%	5-10%	5-10%	5-10%	10-15%	5-10%	5-10%	<5%	<5%	<5%	<5%	<5%
Africa & Middle East	>25%	>25%	10-15%	10-15%	5-10%	5-10%	5-10%	5-10%	5-10%	5-10%	5-10%	<5%	<5%	<5%	<5%	<5%
Sector average	20-25%	15-20%	10-15%	10-15%	5-10%	5-10%	5-10%	5-10%	5-10%	5-10%	<5%	<5%	<5%	<5%	<5%	<5%

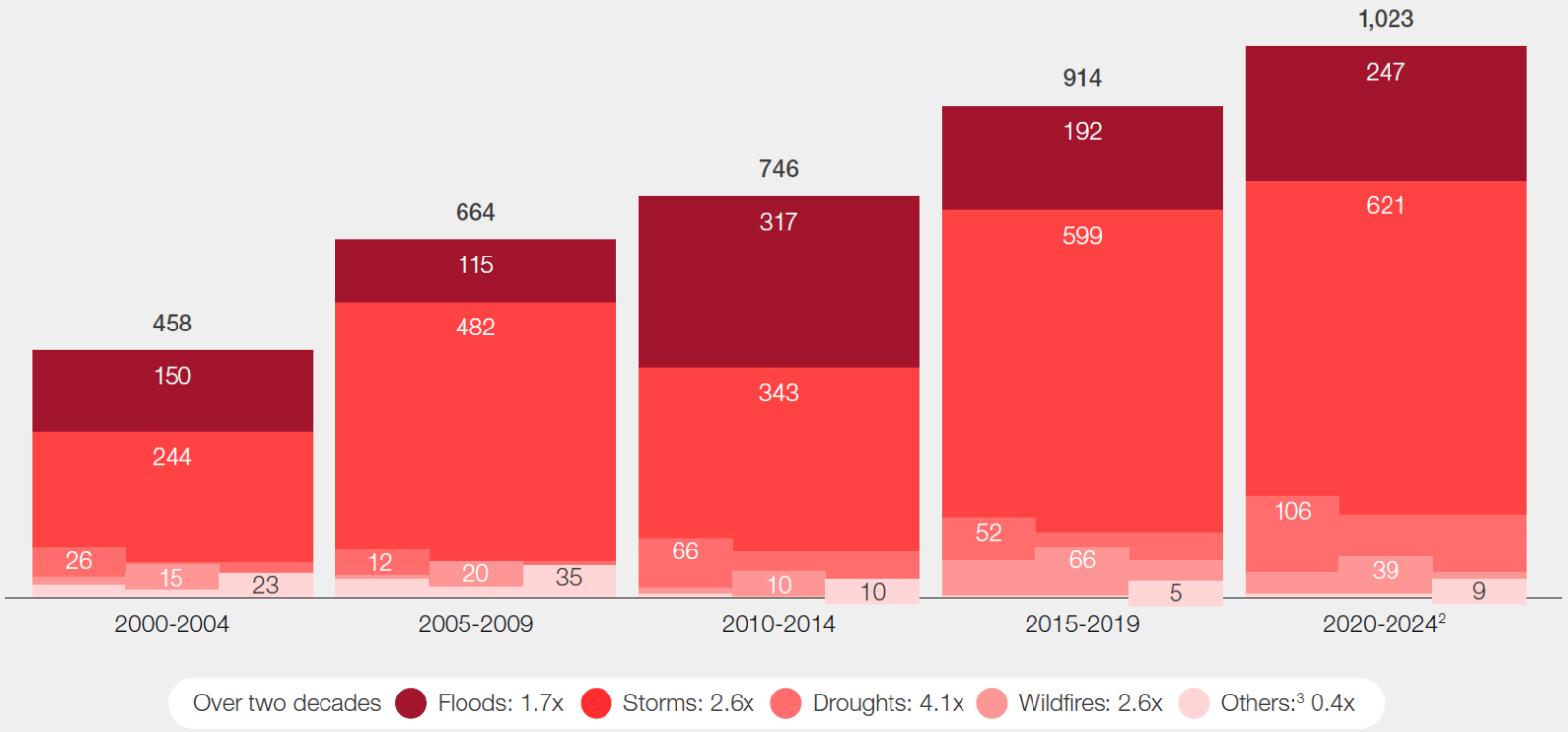
Notes: Estimates include economic impact from asset damage and business interruption from wildfire, heat, coastal flooding, fluvial flooding, cyclones, water stress and droughts vs. historical baseline normalized to today; >3°C scenario is based on SSP3.7-0, which is a moderate- to high-emissions scenario projecting temperature increases of 1.7-2.6°C by 2050 and 2.8-4.6°C by 2100. Translation of impact from % of asset value to EBITDA margin is carried out using sector benchmarks on median fixed asset turnover ratios (FAT) and EBITDA margins assuming sector and regional composition in 2050 is identical to current levels. Individual company impact estimates can vary vs. sector estimates shown here depending on differences in e.g. share of fixed assets and EBITDA margins vs. benchmarks. See Appendix for methodology and sources.

Sources: Swiss RE, S&P Global Sustainable, Oxford Economics, Capital IQ, BCG analysis.

The Risk of inaction, WEF report 2024

Economic costs of climate related disasters are on the rise

Economic cost of climate-related disasters[1]
($ billion) five-year sum of reported cost of disasters from 2000-2024[2]



1. EM-DAT's database categorizes and shares economic data across: floods; storms; extreme temperature events; droughts; "mass movement (dry and wet)" – i.e. landslides & mudslides; wildfires; volcanic activity; and earthquakes. Disasters related to volcanic activity and earthquakes are excluded here as they are not directly linked to climate or climate change. **2.** Data is extrapolated for 2024's disasters, based on 2020-2023 averages, to show the trend for five years from 2020-2024. **3.** "Others" include extreme temperatures and mass movement (dry and wet); data for these fluctuates due to reporting.

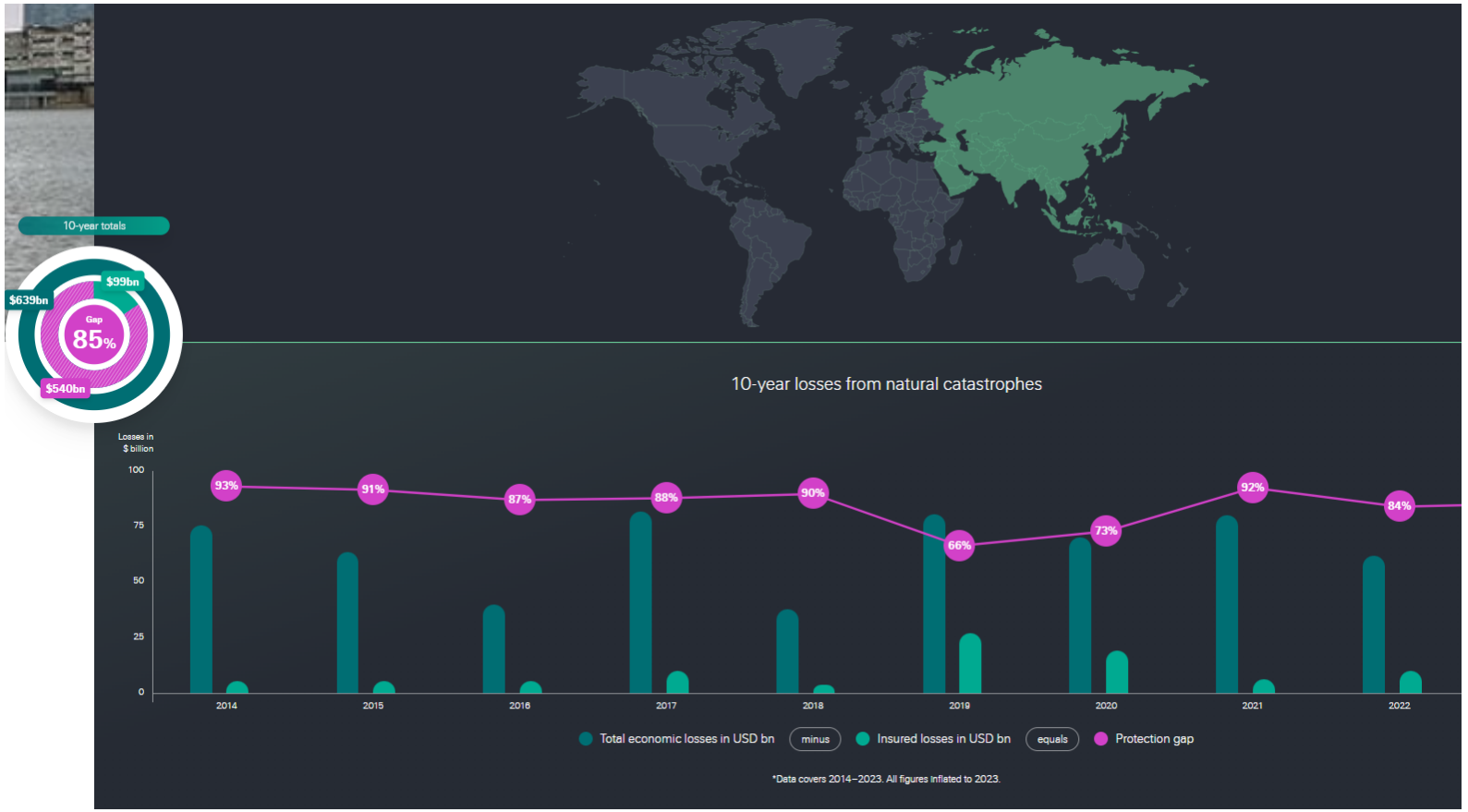
Notes: Graph uses 2023 adjusted dollar figures across the analysis for parity; pre-2000 figures have reporting biases, hence excluded from analysis. These costs are only a subset of total damage from physical risks and hence underestimate likely total impacts and costs.

Sources: EM-DAT's international disaster database, hosted by the Centre for Research on the Epidemiology of Diseases (CRED), UCLouvain; BCG analysis.

Climate-related economic costs have more than doubled over the past 20 years

The Risk of inaction, WEF report 2024

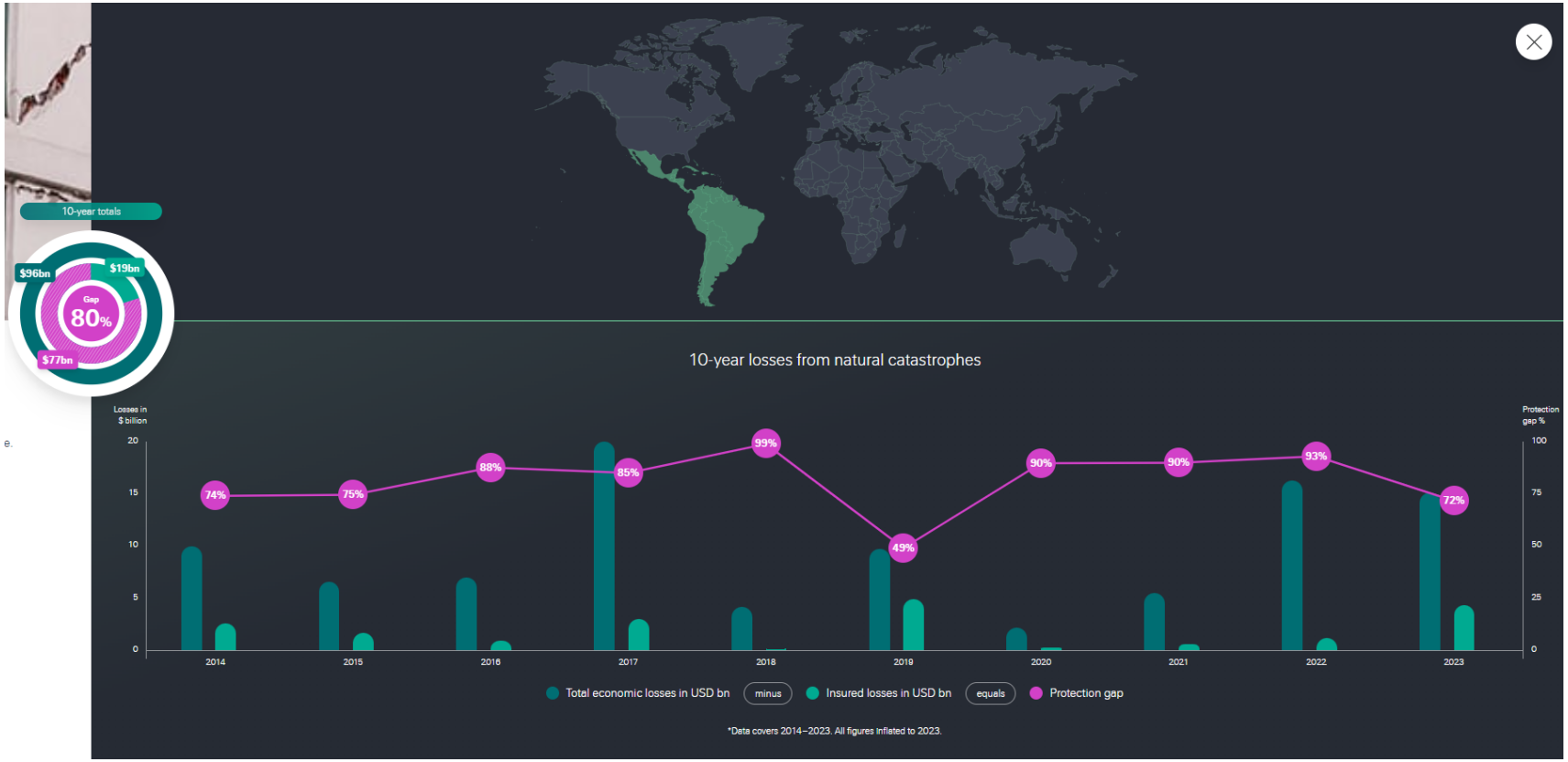
Insurance protection gap for Asia



Large insurance gap in Asia – recovering from a natural catastrophe only possible via third-party funding

How big is the protection gap from natural catastrophes where you are? | Swiss Re

Insurance protection gap for Latin America



Large insurance gap also in LatAm – recovering from a natural catastrophe only possible via third-party funding

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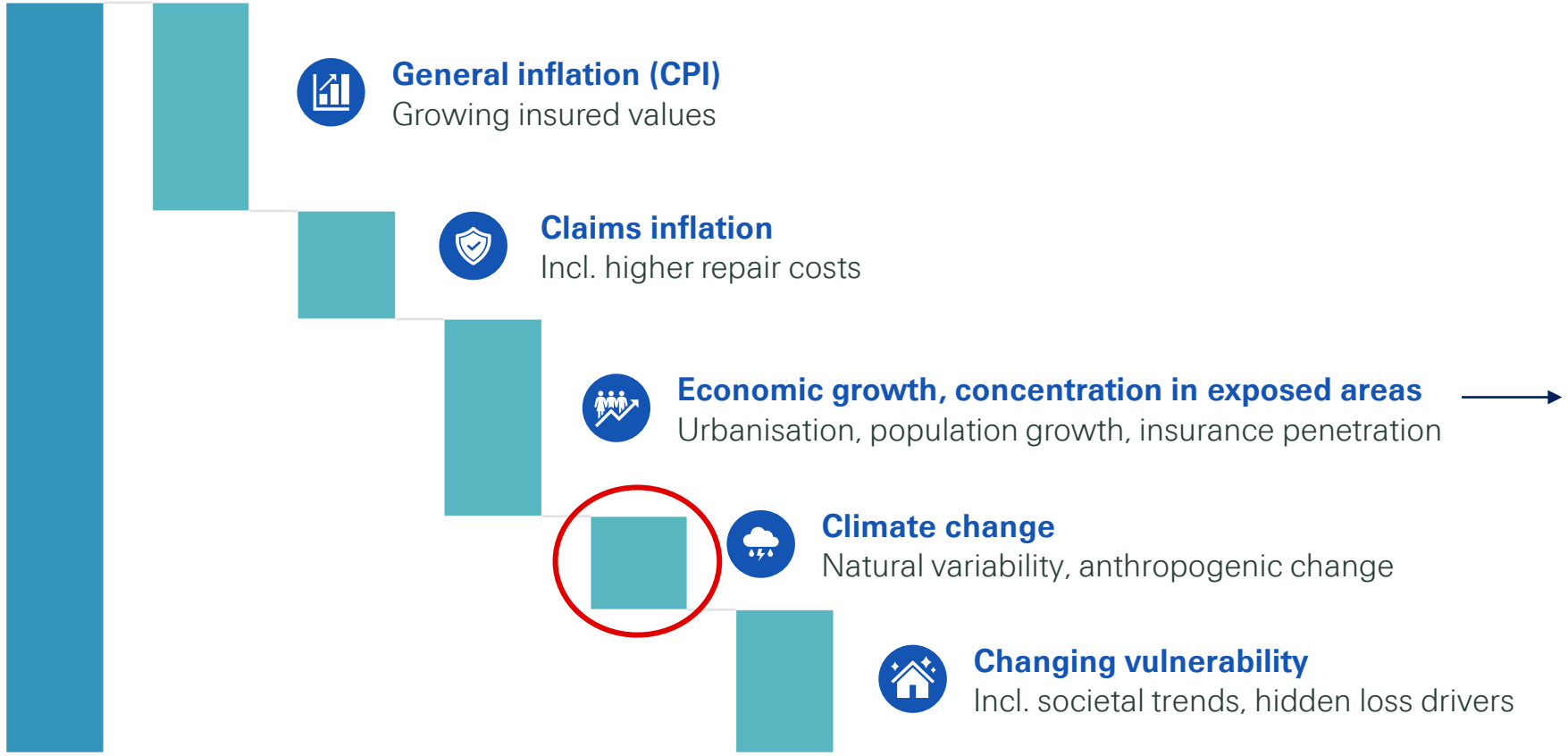
...but the observed trend in catastrophe impacts is not only due to climate change



Summary

1. **The warming continues**
   Changing climates will continue to have widespread and intensifying impacts on weather conditions and economies.
2. **Countries facing high economic exposure and hazard intensification are most at risk**
   Understanding how natural hazards shape risk landscapes is critical to advancing preparedness for climate change.
3. **No alternative to climate adaptation...**
   As the planet warms, property losses from extreme weather events will likely continue to rise. Adaptation is key to curb this growth.
4. **...and risk mitigation**
   So too is climate change mitigation, to curb underlying risk accumulation potential. This requires significant investments and joint action across all stakeholders.

Measure	Actions	Primary stakeholders			Role of the insurance industry and other or primary stakeholders
		Government/ public sector	Private sector	Insurance industry	
Risk reduction					
Mitigation	Reduce GHG emissions	✓	✓		Governments are in the lead to drive GHG emission reductions at scale, with the entire private sector also involved as every area of the economy needs to decarbonise.
Adaptation	Loss reduction, loss prevention and adaptation	✓	✓	✓	The insurance industry, together with governments, households and businesses, plays an important role in establishing and enforcing risk reduction standards.
Investment in mitigation and adaptation	Public and private	✓	✓	✓	As part of mitigation and adaptation actions, the public and private sectors have a role in direct financing of climate action. Mobilising private sector investment requires government support in the form of policies that create incentives and lower investment barriers. Insurers, meanhwhile, can catalyse investments, either directly as a long-term investor, or indirectly by underwriting climate-positive projects and sharing risk knowledge.
Risk transfer	Private insurance	✓		✓	Where loss potential has been reduced (through mitigation and adaptation actions), the residual risk for both private and public assets can be transferred to the insurance industry. Government can support insurance take-up via tax reduction incentives. Other risk transfer solutions involving both the public and private sectors include microinsurance schemes for low-income, vulnerable households; mandatory insurance programmes; government-backed programmes for risks that are not fully insurable; and public-sector insurance programmes.

Source: Swiss Re Institute

Via investing in mitigation and adaptation, climate action can be accelerated

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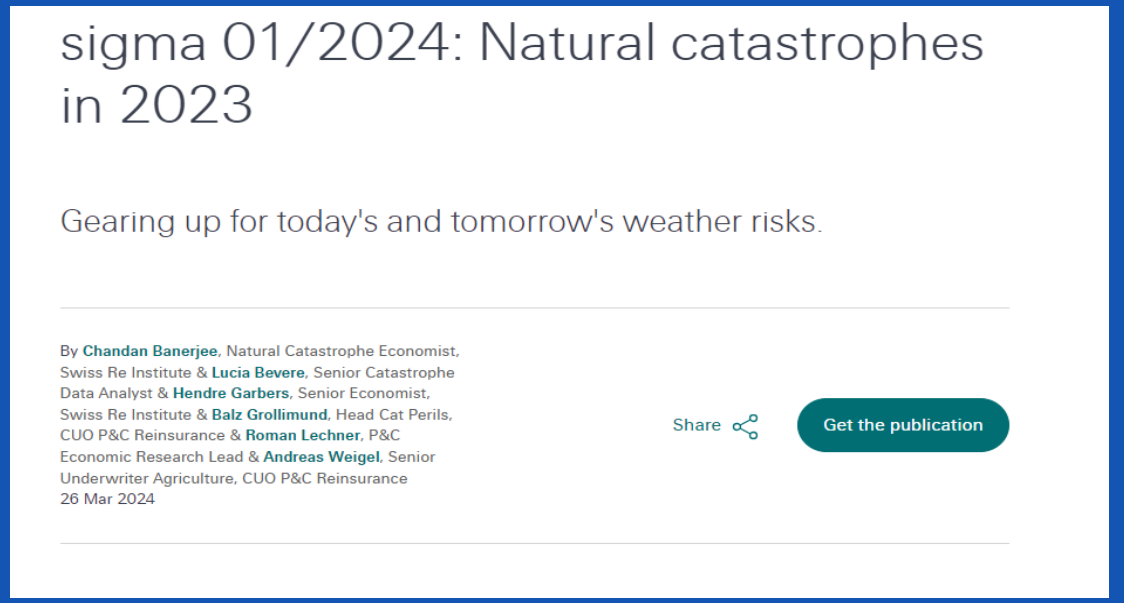

Thank you!

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