

SAV SUSTAINABILITY IN (RE-)INSURANCE CONFERENCE 2026

What Comes *After* Climate?

The next sustainability risks frontiers?

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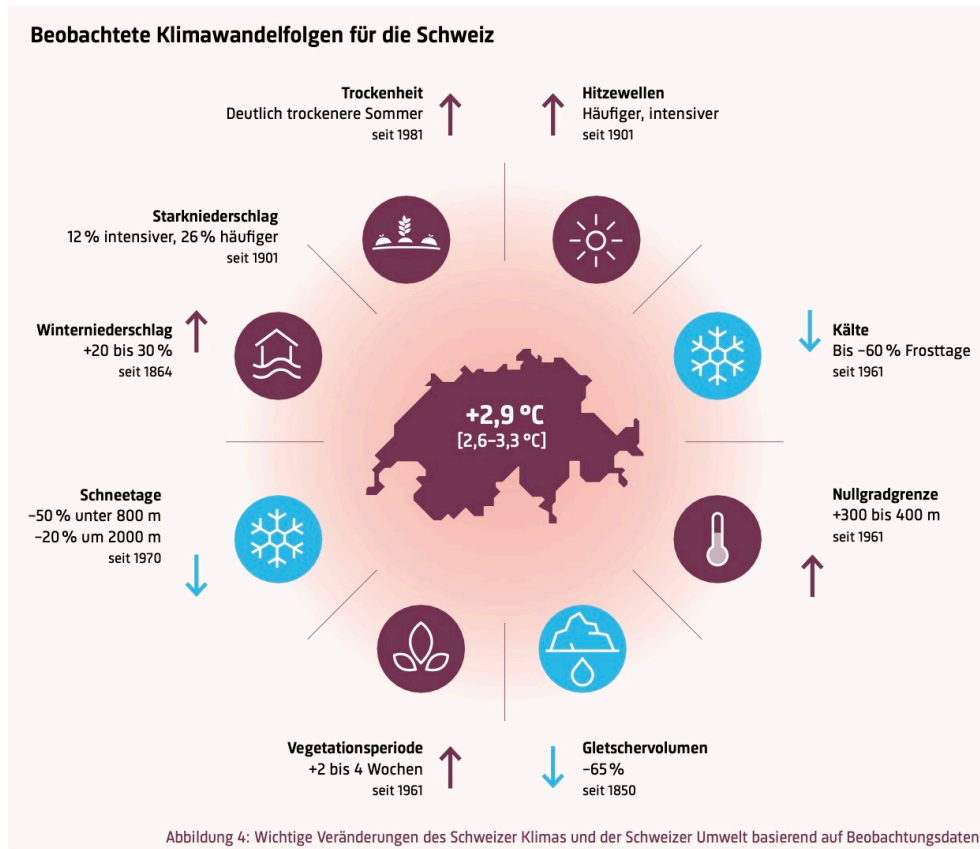
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2.9 °C of warming has moved every Swiss climate indicator



+2.9 °C

mean temperature rise, observed range 2.6–3.3 °C

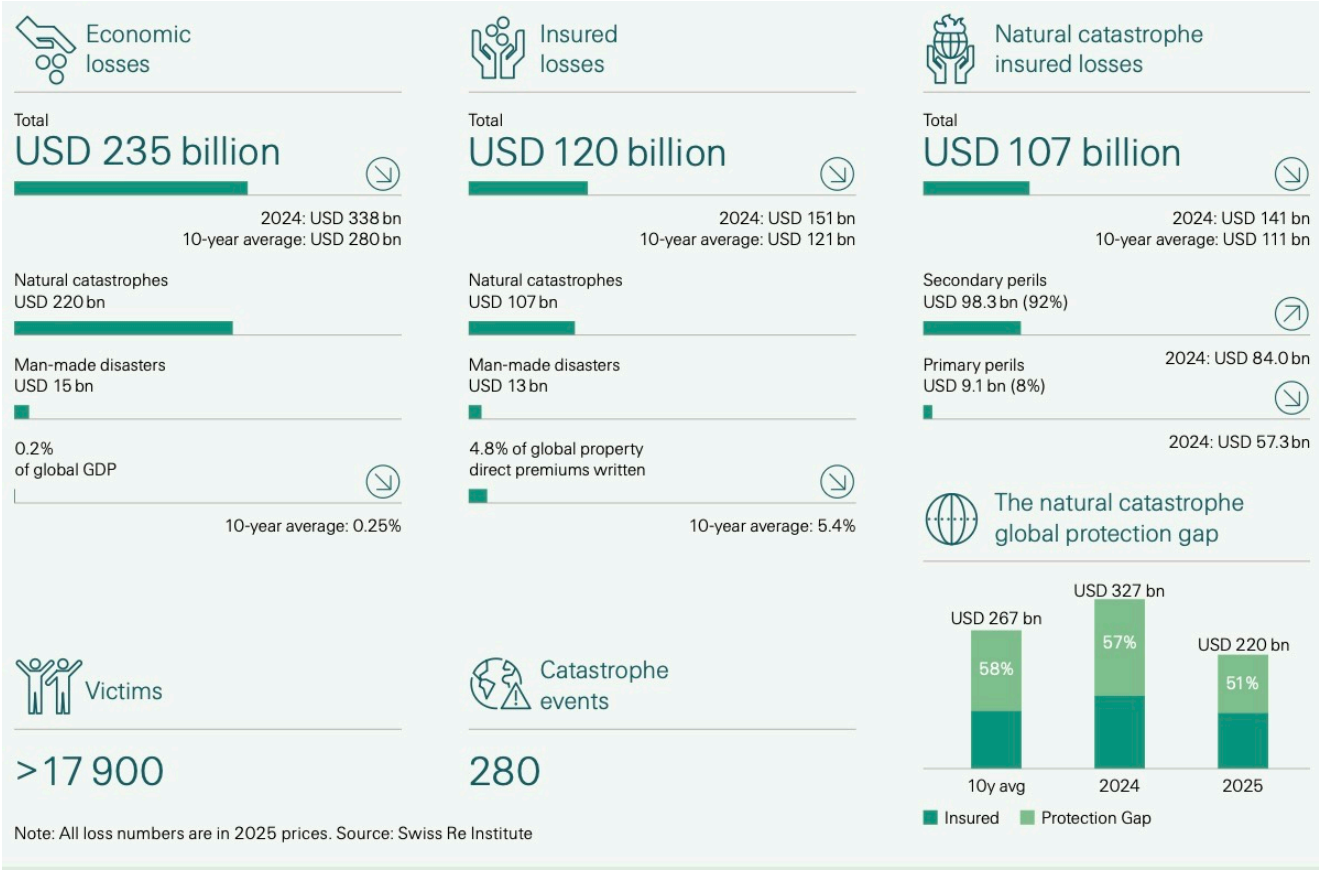
Intense rainfall	+26% more frequent since 1901
Heatwaves	more frequent, more intense
Cold days (<0 °C)	-60% since 1961
Glacier volume	-65% since 1850
Vegetation period	+2 to +4 weeks since 1961
Snow days	-50% below 800 m since 1970



Persistent rise in wildfire and storm risk in 2025

Insured
Nat Cat
107bn

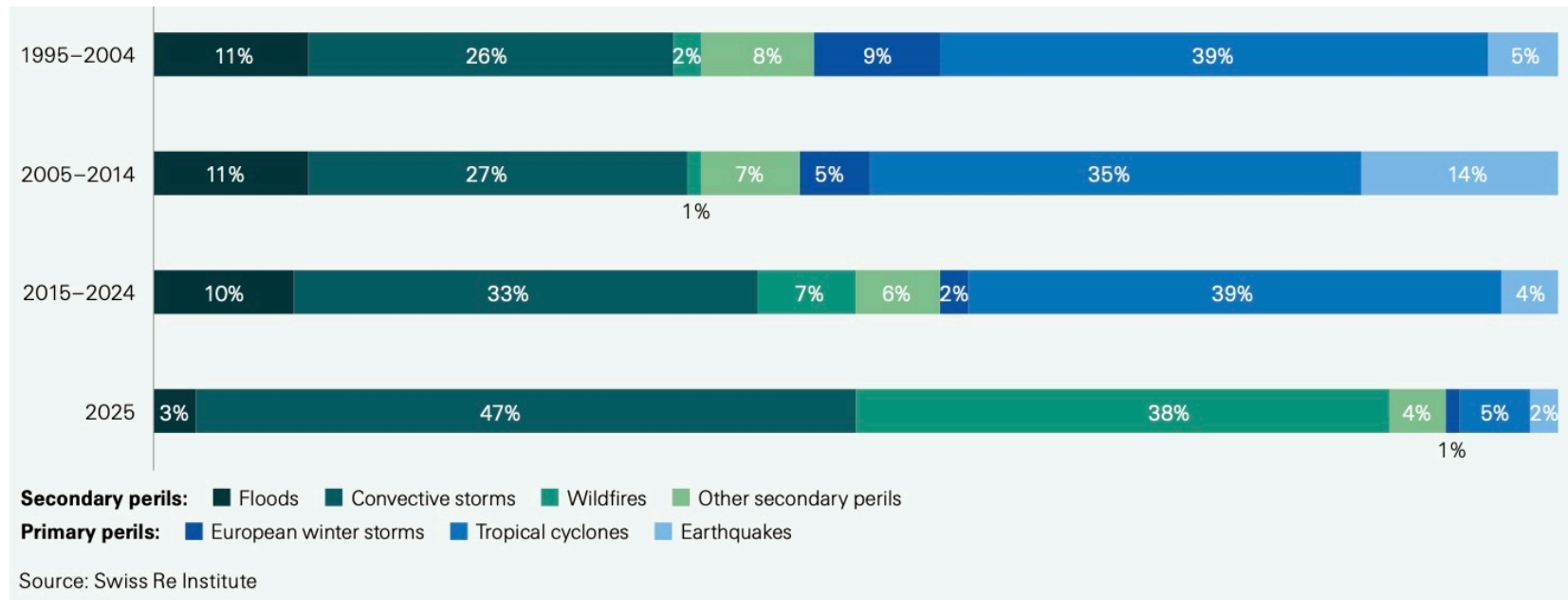
Protection
gap
51%





Significant Nat Cat losses despite no major hurricane

2nd perils
92%



Global natural catastrophe insured losses were USD 107 billion in 2025, driven by **severe convective storms** and **wildfires**. Wildfire stands out as the fastest-growing risk, with insured losses increasing by an estimated **12% per year**.



Peak loss scenario can reach USD 320 bn




5-7%
p.a.

The absence of a major US hurricane landfall kept the 2025 insured loss below the level implied by the long-term **5-7% annual average growth trend**.

THE PREMISE



Climate provides a foundation for broader sustainability risk assessment

Climate has established governance, data and modelling practices across insurance.

Nature, pollution, resource use and climate-health require different combinations of these capabilities.

The challenge is to connect each exposure to a decision.

THE GAP

From

Disclosure

to

Decision

Which exposures matter—and what evidence is sufficient to act?



What the reviewed disclosures establish

Insurer	Reporting basis	Climate / strategic focus	Nature · pollution · circularity
Swiss Re	2025 Group DMA	Climate mitigation & adaptation	Nature outside material list; environmental policies apply.
Zurich	2025 review of 2024 DMA	Climate mitigation & adaptation	2024 watchlist: biodiversity drivers · resource scarcity.
Allianz	2025 CSRD DMA; reasonable assurance	Climate & transition finance	Pollution · water · nature · circularity: portfolio-specific materiality.
AXA	2025 Integrated Report; DMA summary	Climate mitigation & adaptation	Nature and circularity impacts material in relevant portfolios
Generali	2024 DMA; confirmed 2025	Climate, demographics, workforce	Nature impacts material in investments and P&C; pollution/circularity non-material.
Munich Re	2025 ESRS reporting; HGB/NFRD	Climate mitigation & adaptation	Biodiversity impacts material in investments

Climate is material across all six re-insurers; other topics and assessment methods vary.



Risk radars point to the next actuarial challenges

1

Swiss Re 2025 SONAR

Heat · chemicals/plastics
· recycling liabilities · AI
incidents

2

Generali 2026 Emerging Risks

Climate · pandemics/AMR
· biodiversity · AI tech-risks

3

Zurich 2024 Watch list

Heat in A&H · biodiversity
drivers · resource scarcity ·
responsible AI

4

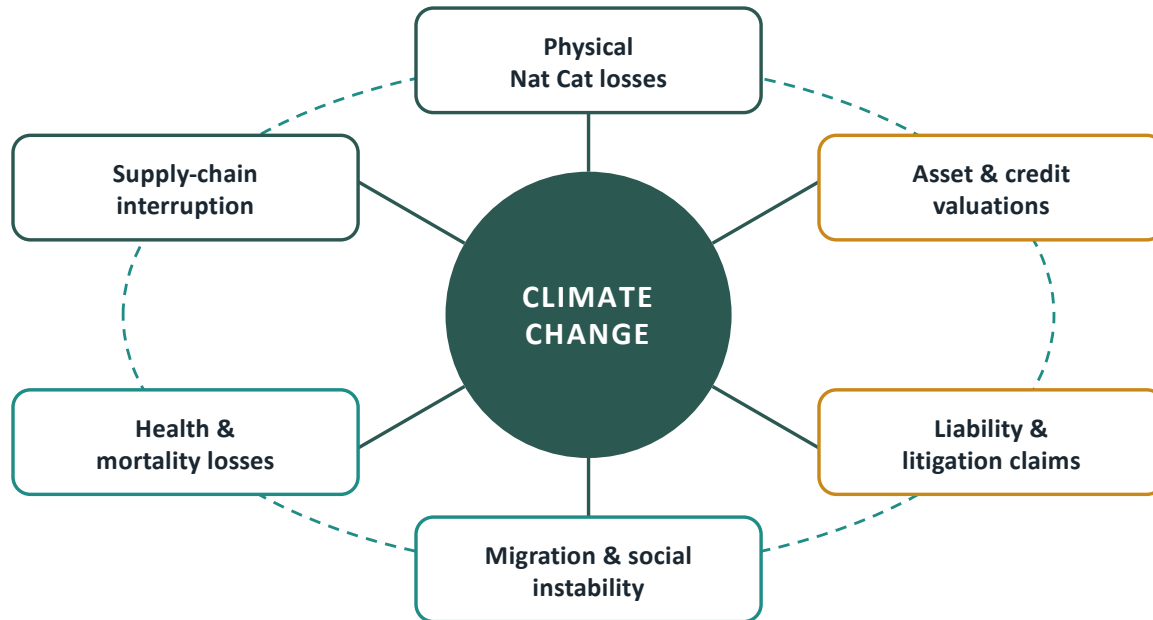
Allianz 2026 Risk Barometer

Climate · nature/water
scarcity · health · pollution ·
AI liability (#2)

A signal to investigate—not a modelling-maturity score.



Climate change compounds every ESG risk, not just Nat Cat



Source: RiskInsight illustrative map

READING THE MAP

Environmental: Nat Cat and supply-chain losses

Social: health, mortality, displacement

Governance: liability and asset-value exposure

Solid lines: climate change raises frequency or severity.

Dashed ring: the risks reinforce one another, so losses arrive together across lines of business.

Illustrative map: the same warming that lifts Nat Cat frequency also feeds liability, health, supply-chain and asset-value losses. Correlation across ESG risks, not any single peril, is what threatens capital.



Four development areas, with AI cutting across all of them



Nature & biodiversity

01

Dependencies, accumulation and loss prevention.



Pollution & PFAS liability

02

Latent claims, coverage and reserves.



Circularity, traceability & supply chain

03

Repair economics and supplier exposure.



Climate-driven health

04

Mortality, morbidity and product effects.

Cross-cutting

AI and algorithmic liability: model governance, responsible AI, data-centre accumulation

05

Note: RiskInsight's proposed areas, informed by the disclosures.



FRONTIER 01

Nature & biodiversity

A developing field connecting ecosystem dependencies with financial risk.

THE LANDSCAPE

Nature dependencies can transmit into claims and investment losses. Assessment is developing; the challenge is translating ecological change into portfolio decisions.

500+

organizations had committed to TNFD-aligned reporting by June 2025.

50%

of surveyed re/insurers consider nature risk material to underwriting (CISL 2022).

Limited

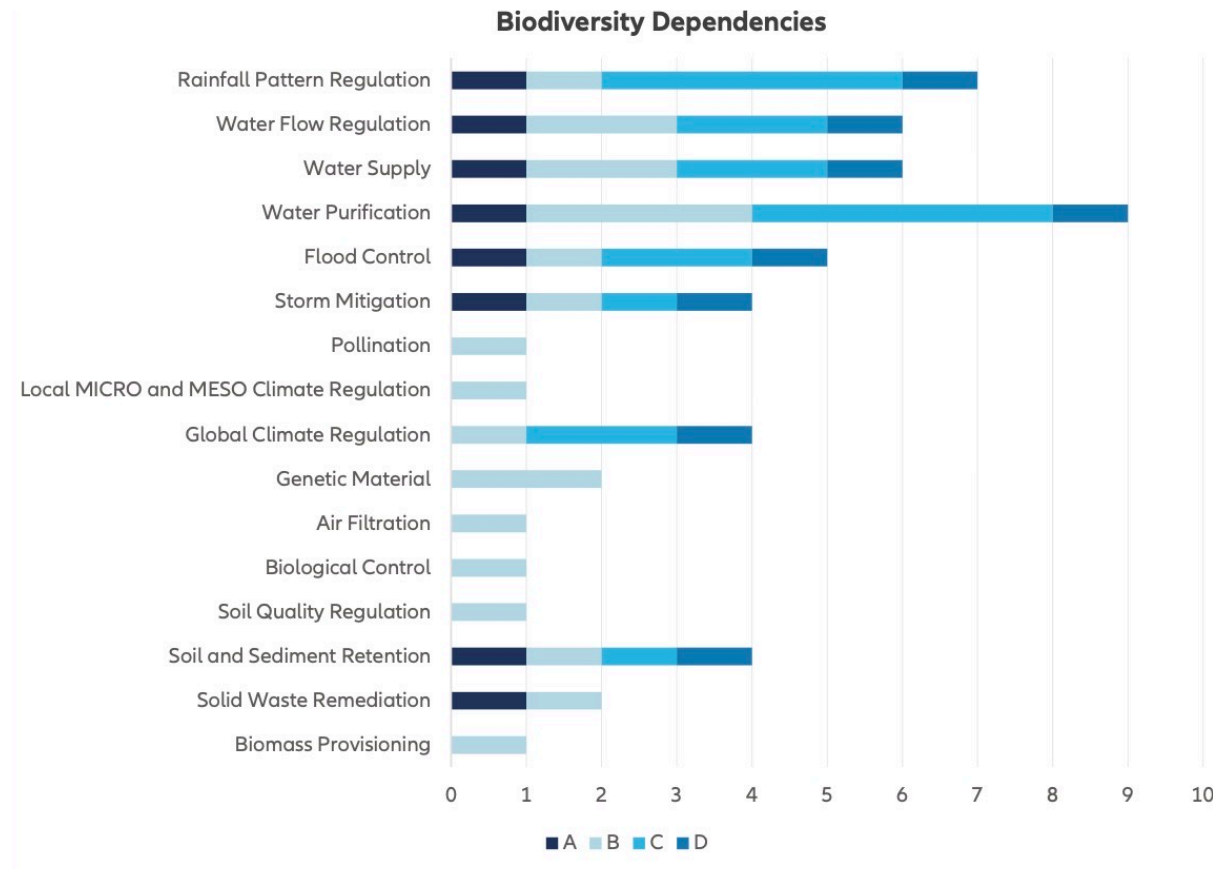
Published pilots and portfolio metrics demonstrate progress, while decision-use and coverage gaps remain (Allianz LEAP case study).

Sources: TNFD; UNEP-FI Nature-Positive Insurance; NATURE-INSURE (Jun 2025); Historical survey CISL 2022 report.

BIODIVERSITY DEPENDENCIES



Corporate biodiversity dependencies concentrate in water



THE FOUR PILOT COMPANIES

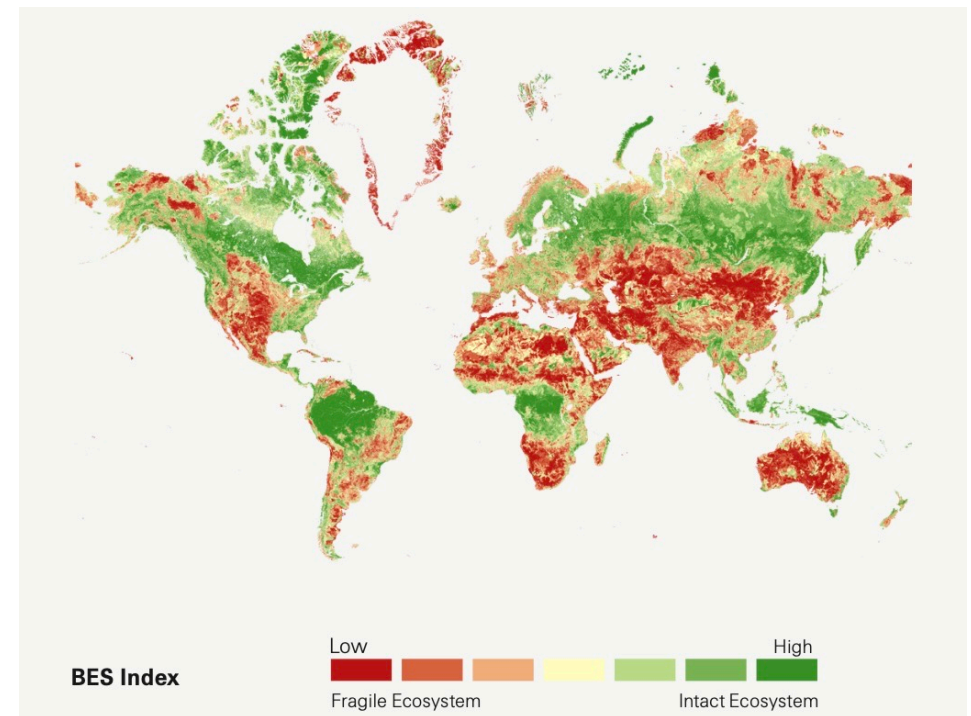
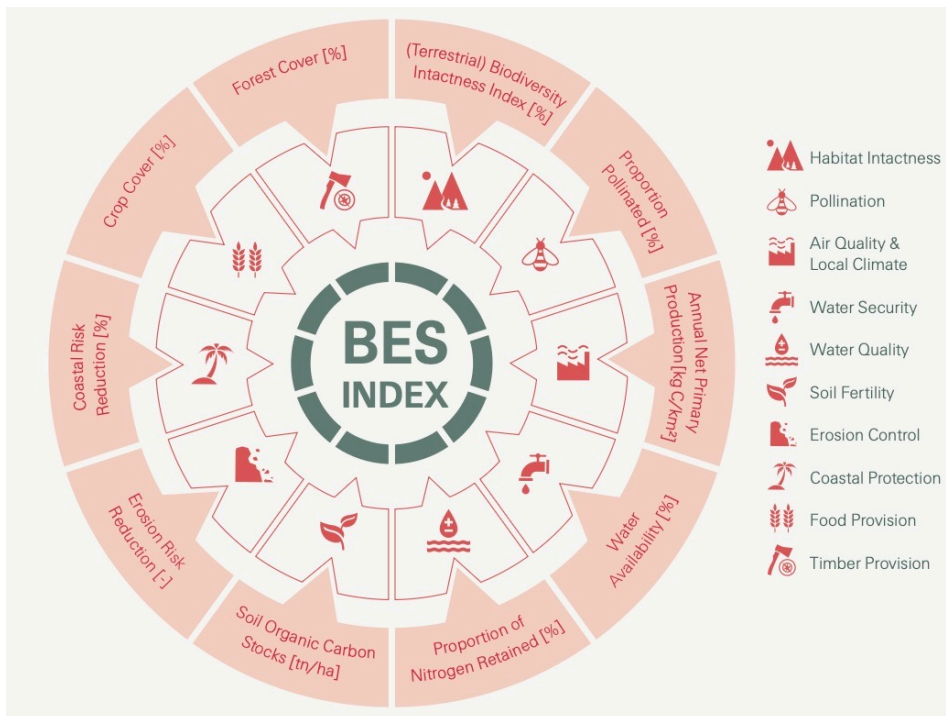
- A. Chemicals
- B. Biotechnology & Pharmaceuticals
- C. Metals
- D. Mining

All four depend most on water-related services; supply, flow regulation and purification; the services most exposed to water stress in their operating regions.

Relative dependency score (0–10) from expert knowledge and sector-level data; not a monetary or physical unit.



Ten ecosystem services aggregate into one index, scored fragile to intact



WATER FIRST



Water is the one service that enters production directly, so it binds first

HOW THE TEN SERVICES REACH A BUSINESS

Direct physical input

Water · timber

Restrict it and output stops.

Indirect condition

Water quality · habitat · pollination · soil · air quality

Degradation raises cost and failure rates.

Protective

Erosion control · coastal protection

Loss shows up as higher Nat Cat severity.

WHAT IS AT STAKE

55%

of global GDP is moderately or highly dependent on BES services: 29% high, 26% moderate.

EUR 510bn or 36% of Dutch financial institutions' investments sit in activities highly dependent on one or more of these services (DNB 2020).

Share of global GDP by dependency on ecosystem services, 2018





Heat restricts withdrawal – no damage, no named peril

- 1 Heat and rainfall deficit**
Level 4, extremely dry, across most of Switzerland.
- 2 Water consumption is restricted**
151 municipalities-imposed bans, fines to CHF 2,000.
- 3 Process water is rationed**
Cooling and irrigation give way to drinking supply.
- 4 Output stops – no physical damaged**
Axpo shut both Beznau reactors on 26 June 2026 as Aare hit 25 °C and cooling breached environmental limits.

WHAT IT TESTS IN THE COVER

Trigger

Wordings need physical damage; a cut is neither.

Peril

Sits between Nat Cat and utility interruption.

Contingent BI

A supplier's water limit halts an undamaged site.

Accumulation

One dry summer hits a whole canton at once.

Result: BI claim with no physical damage and no named peril.



FRONTIER 02

Pollution & PFAS liability

An established exposure with evolving long-tail claims.

THE LANDSCAPE

PFAS litigation creates potentially significant long-tail exposures for insured companies and insurers. Insured losses depend on liability outcomes, policy periods, wording, exclusions and jurisdiction.

Chapter 11

Kidde-Fenwal entered Chapter 11 in May 2023 amid disputed contingent AFFF liabilities.

Long-tail

Legacy coverage: triggers, allocation, aggregation and exclusions require policy-specific review.

Exclusions

PFAS-specific exclusions are used in parts of the market; legacy coverage remains contested.

Sources: Milliman (PFAS actuarial reserving); Munich Re; Clyde & Co; Hinshaw & Culbertson.



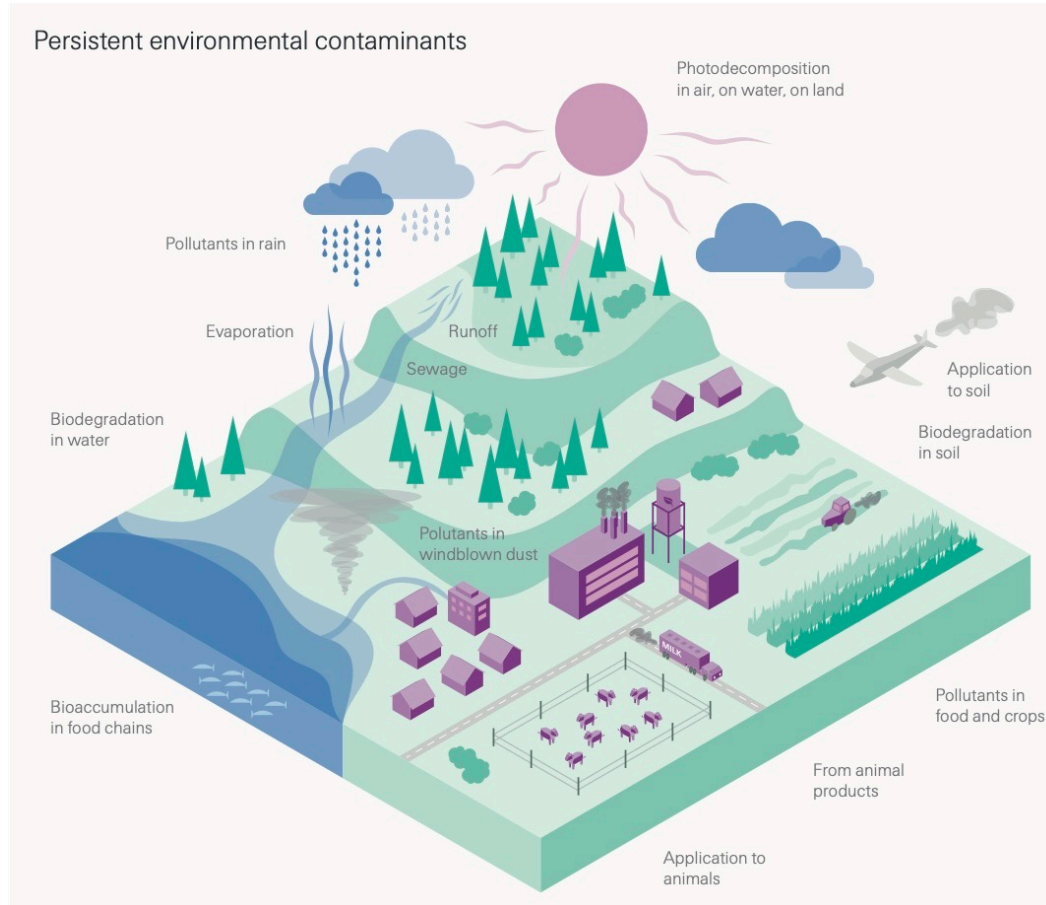
Toxic chemicals – contamination claims on the horizon



- **Attribution has caught up:** AI now ties chemicals back to a point source.
- **Regulation follows:** EU reform opens general liability, D&O and workers' comp.
- **Long-tail risk:** one finding reaches many policy years.



Contaminants concentrate as they move up the food chain



THREE TERMS THAT DRIVE THE EXPOSURE

1. Exposure

Contact with a harmful agent, physical or chemical.

2. Accumulation

Mercury settles in soil, then washes into rivers and oceans.

3. Bioconcentration

Organisms absorb faster than they excrete, so levels magnify.



FRONTIER 03

Circularity, repair costs & supply chain

Resource use and supplier dependencies can affect claims and liability exposure.

THE LANDSCAPE

Repair and reuse can change claim severity, repair times and quality risk. Supplier concentration can amplify disruption. Assess insurance coverage and regulatory duties separately.

Repair costs

ESRS E5 in force; +55% recycling by 2040 needed (SRI, 2023).

Supplier concentration

CSDDD duties; recycling-facility insurability is a live issue (SRI, 2023).

Supplier dependencies

Supplier disruption: test covered business-interruption dependencies.

Sources: EU ESRS / CSDDD; White & Case; Normative.



Sustainable recycling: new liabilities in the circular economy



- **Liability handover is unclear:** the producer's safety duty may not end at disposal.
- **Non-recyclable design becomes a defect:** product liability and recall losses follow.
- **Workers and investors gain routes:** dismantling injuries, plus D&O disclosure claims.



FRONTIER 04

Climate-driven health risk

Climate physical risk crossing onto the life & health book.

THE LANDSCAPE

Heat, wildfire-smoke / air pollution and shifting infectious-disease patterns drive mortality and morbidity. Actuarial implications depend on data, causal assumptions, adaptation and the composition of the insured portfolio.

≈63,000

Estimated heat-related deaths across 35 European countries in 2022 (95% CI: 37,935–88,780).

Mortality

Portfolio-specific financial effects: assess geography, insured lives, adaptation and contract duration.

Scenario analysis

Three drivers: heat, air pollution, vector-borne disease (SRI 2023).

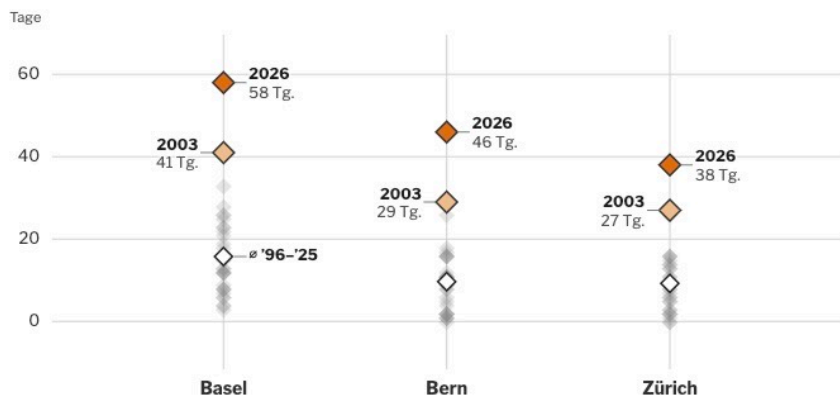
Sources: Ballester, Nature Medicine 2023; Swiss Re SONAR 2025; Munich Re Life Science Report 2025; Geneva Association; SOA.



Duration broke records in 2026, not peak temperature

Hitzetage

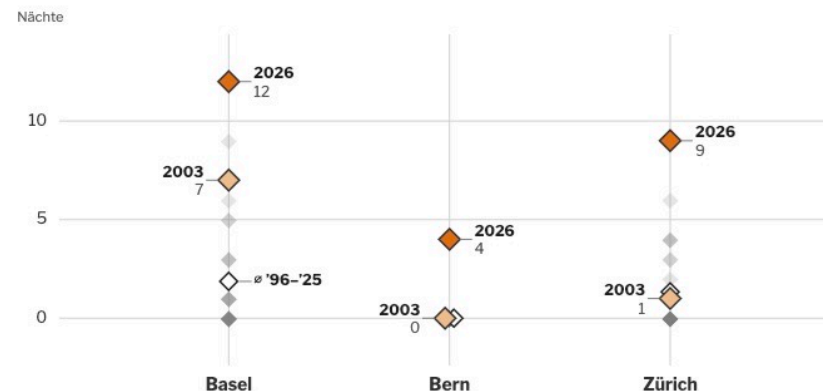
Anzahl Tage pro Jahr mit einer Höchsttemperatur von 30°C oder mehr seit 1996.



Grafik: pvo; Quelle: MeteoSchweiz, Messstationen Basel-Binningen, Bern-Zollikofen und Zürich-Fluntern; Jahr 2026 mit Stand 30. August.

Tropennächte

Anzahl Nächte pro Jahr, in denen die Temperatur nicht unter 20°C fiel seit 1996.



Grafik: pvo; Quelle: MeteoSchweiz, Messstationen Basel-Binningen, Bern-Zollikofen und Zürich-Fluntern; Jahr 2026 mit Stand 30. August.

Days: the load accumulates

Cumulative strain on circulation, worst for the old and ill.

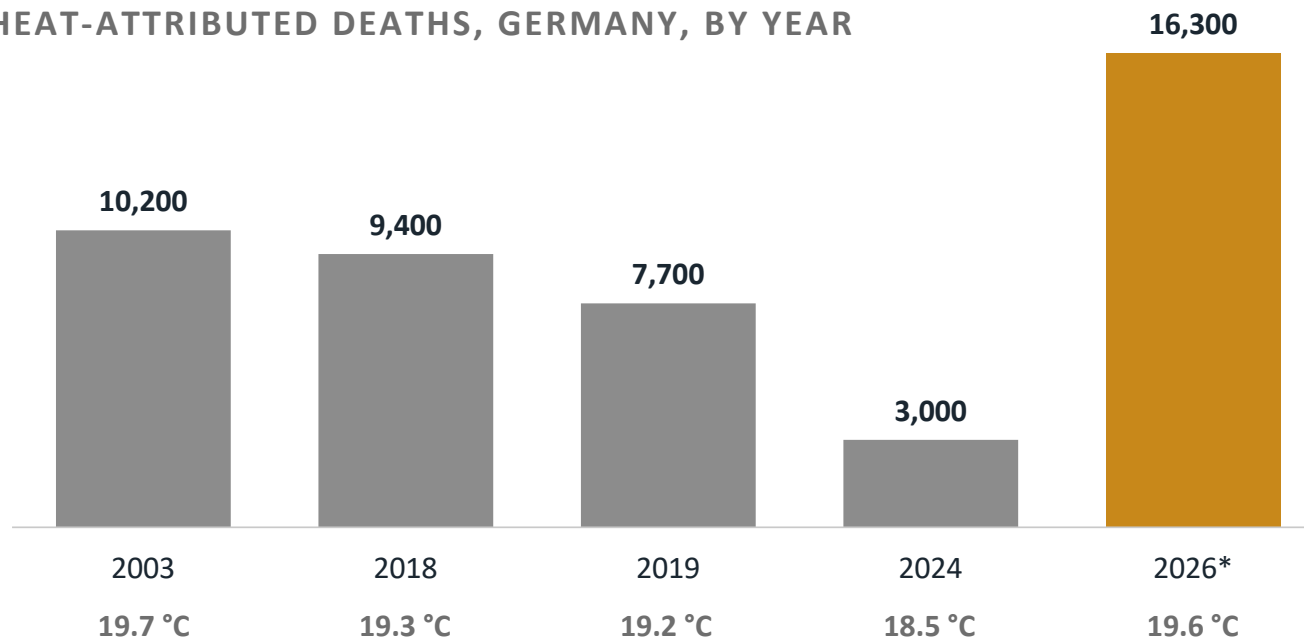
Nights: no recovery

Lost sleep raises cardiovascular and mental-health risk.



16,300 heat deaths in Germany in 2026, 60% above 2003

HEAT-ATTRIBUTED DEATHS, GERMANY, BY YEAR



10,200

previous peak, 1994 and 2003

90%

of the dead were over 65

20°C

weekly mean, deaths climb

Summer mean (June–August, DWD) under each year. 2026 deaths to 23 August.

The health exposure sits in group life, health and care covers.



Heat-related deaths is a fastest-moving health risks

PROJECTED CHANGE BY MID-CENTURY, UNDER JUST UNDER 2°C

+370%

Heat-related deaths

+50%

Heat-related labour loss

+37%

Dengue transmission
potential

+25%

Coastline warm enough
for Vibrio (cholera
included)

WHERE IT STARTS FROM, TODAY

546,000

heat deaths a year, 2012–2021 average

+63%

heat deaths since the 1990s

\$1.09tn

labour lost to heat in 2024

Vibrio includes V. cholerae, the cause of cholera. Dengue +36–37%, Vibrio coastline +17–25%; upper bounds, no adaptation assumed.

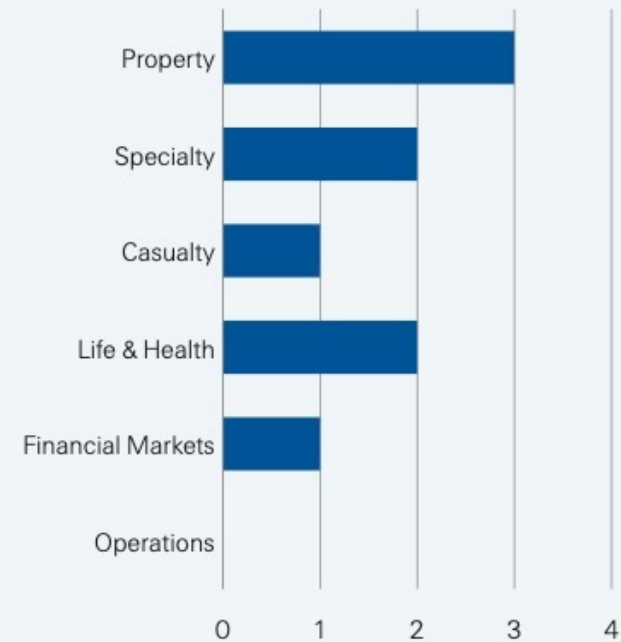
Health, life and care portfolios are priced on today's frequency, not on this trajectory.



Extreme heat: the insurance fallouts

Potential insurance impacts

Impact rating (0 = no impact; 4 = high Impact)



489,000

annual deaths from extreme heat, the deadliest natural peril

Property

Building damage and business interruption; wildfire adds severity.

Specialty

Power, transport and water disrupted; crop and livestock losses.

Life & Health

Medical, life and workers' comp claims; 71% of workers exposed in 2020.

Casualty & Assets

Employers' liability where duty of care is missing; asset values erode.



CROSS CUTTING 05

AI is a sustainability risk

The same E, S and G lenses insurers already use — a new exposure, not a new framework.

READING AI THROUGH ESG

AI risks map onto every letter of ESG however, under 5% of insurers disclose an AI financial impact today.

E • Environment

Data-centre power draw and cooling water, hardware minerals, e-waste — a rising insurable asset class (sigma 01/2026).

S • Social

Algorithmic fairness and bias, deepfake fraud eroding social trust, workforce and skill displacement from automation.

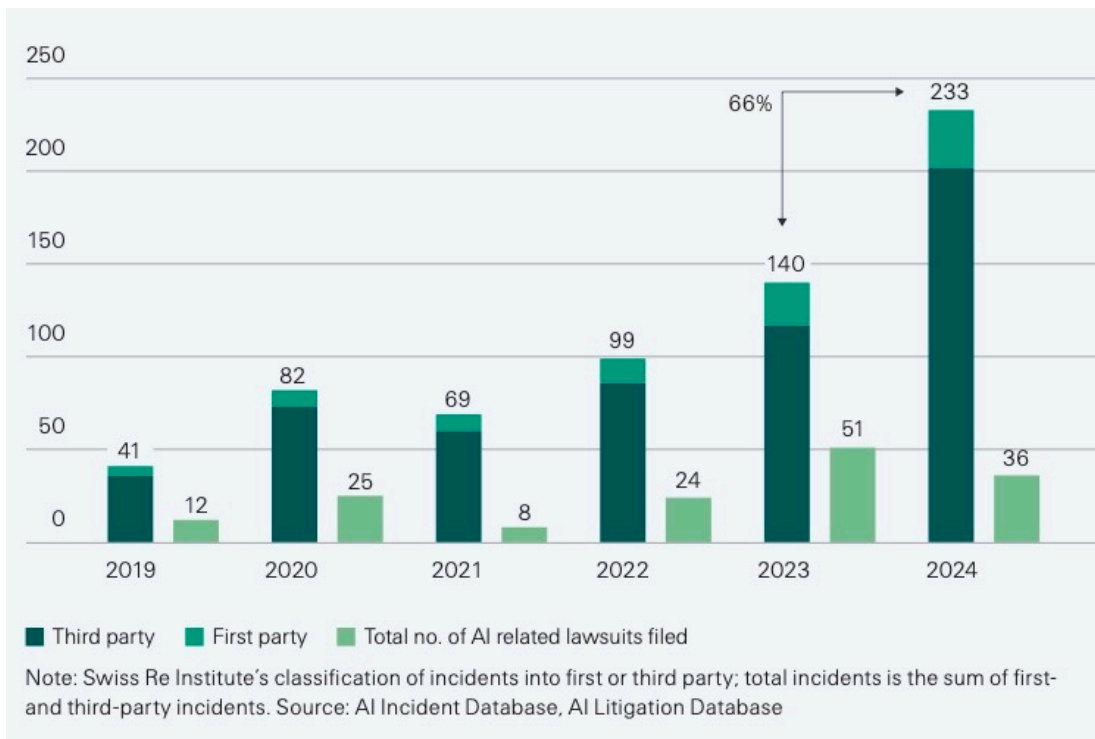
G • Governance

Board oversight, model risk and responsible-AI policies — the same G1 topic in ESRS-aligned sustainability statements.

CROSS-CUTTING INCIDENTS



AI incidents rose 66% in 2024



WHAT THE CURVE MEANS FOR INSURERS

A third are failures, not misuse

Malfunction, not attack: an E&O pattern.

Malicious use is displacing bias

Bias claims shrink as misuse grows.

Litigation is the transmission channel

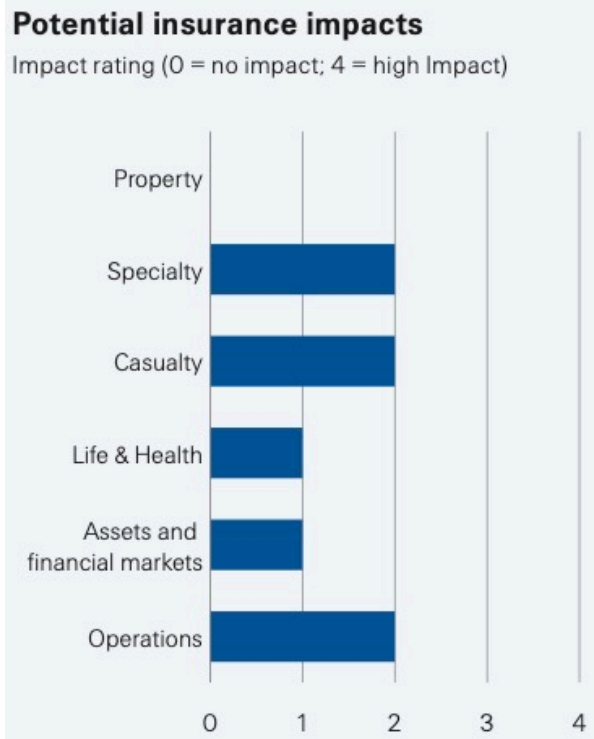
36 AI lawsuits filed in 2024.

Cover is still unsettled

Coverage, exclusions and wordings still pending.



Deepfakes make claims evidence harder to trust



SPECIALTY, CASUALTY AND OPERATIONS CARRY IT

Claims verification breaks down

Altered video and documents, rising fast in UK motor claims.

Casualty gains a private right of action

New Hampshire lets victims sue; General Liability and homeowners exposed.

Operations absorb the cost

Detection and triage cost, plus reputational risk.



Each frontier ends in a decision today's data cannot support

WHAT WE SHOWED

THE DECISION IT LANDS ON

NATURE

55% of global GDP leans on ecosystem services.

BI wording: an abstraction cut is not damage.

CHEMICALS

USD 11.5bn already settled with US water utilities.

Latent-exposure reserving on legacy books.

CIRCULARITY

The producer's safety duty may not end at disposal.

Repair-versus-replace and supplier build-up.

HEALTH

16,300 German heat deaths in 2026 vs 10,200 in 2003.

Claim frequency in health, life and care.

AI

Losses land in wordings that never mention AI.

Accumulation limits and E&O scope.

Sources: as cited on the frontier slides. PFAS settlements: 3M, up to USD 12.5bn (USD 10.3bn present value), and DuPont, Chemours and Corteva, USD 1.185bn, both 2023; 15,240 personal-injury cases pending in MDL 2873 as of June 2026.

SUMMARY



Five frontiers, ranked by how ready the data is

STATE OF THE DATA		
01 Health	Attributable deaths are published every year, with projections to 2050.	Measured
02 Nature	The BES Index scores ten services per square kilometre; loss translation is still bespoke.	Mappable
03 AI	Incidents are counted, losses are not; a third are system failures.	Emerging
04 Chemicals	USD 11.5bn settled with US water utilities, with the injury tail still open.	Litigated
05 Circularity	Liability handover and recyclability duties are untested in claims.	Unpriced

Which decision in your portfolio is least well supported by today's risk data?

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Thank you & Questions?

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