Howden Climate
Risk & Resilience

The insurability imperative

Using insurance to navigate
the climate transition

HOWDEN

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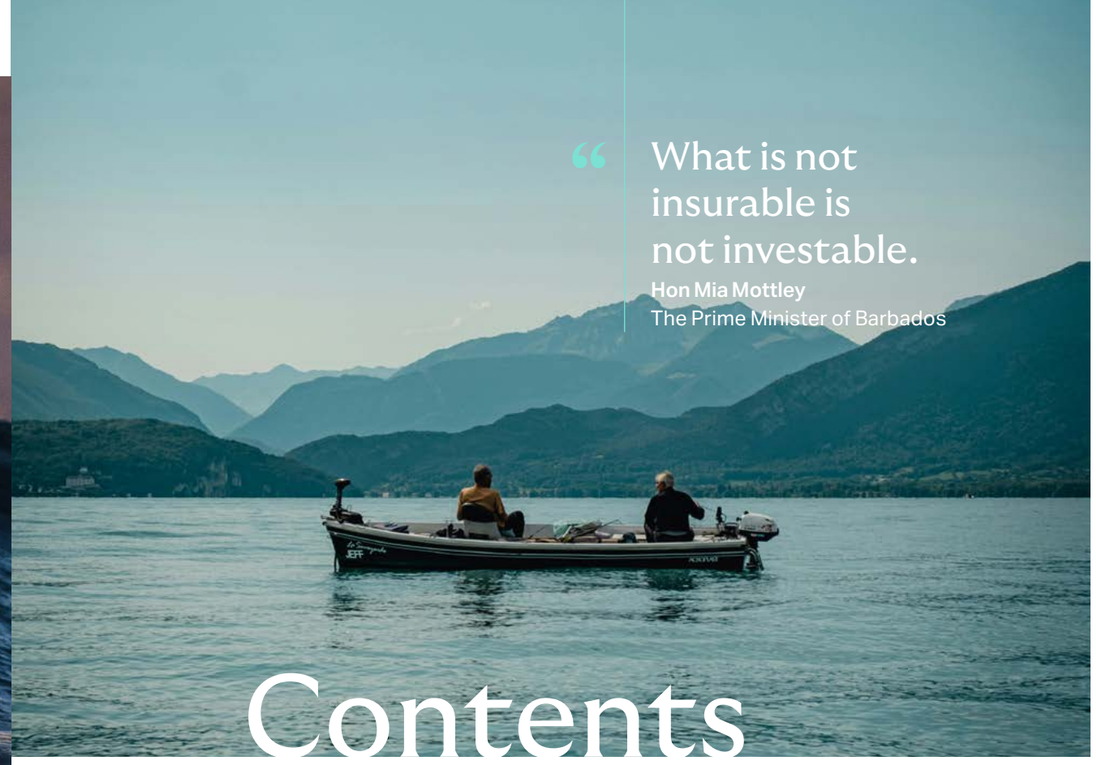

> “What is not insurable is not investable.
>
> **Hon Mia Mottley**
> The Prime Minister of Barbados

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Key messages

01.

Insurability is a strategic indicator of financial health

Insurers are gatekeepers of capital allocation. If a project or asset can't secure cover, it likely won't secure funding.

Implications for leaders

Elevate insurance to the boardroom. Use it as an early test of financial viability – and a red flag for systemic weaknesses in resilience or governance.

02.

Insurers and brokers are key innovation partners

The best insurance relationships go beyond coverage – they unlock growth. Being open to co-create solutions with insurance partners is critical.

Implications for leaders

Shift the conversation. Invite insurers into early-stage planning for new projects. Push for new products, demand innovation, and share your climate transition plans.

03.

Resilience delivers a competitive edge

The most insurable organisations are those that actively reduce their vulnerability. Insurers aren't just pricing risk – they are rewarding risk management leadership.

Implications for leaders

Treat resilience as a value driver and seek advice from your insurers and brokers when looking to retrofit facilities, design future assets or processes, or invest in protection.

04.

There is more capital for the prepared

Underwriting capacity may be tight in some areas, but it flows to those who understand the insurability rules. Speaking the language, puts organisations at the front of the queue.

Implications for leaders

Share data openly, aligning with underwriting logic, and show how climate strategy reduces vulnerability and enhances returns.

05.

Think in models - or be modelled out

Insurance is not priced on intuition. It's driven by data. Not understanding how Annual Average Loss (AAL) or Probable Maximum Loss (PML) impacts premiums, puts organisations at a disadvantage.

Implications for leaders

Build internal capability to engage with insurer logic. Use the same models they do to guide investment, design, and procurement decisions.

06.

Regulation can kill or catalyse insurability

Poorly aligned policies – like miss priced subsidies or outdated zoning – don't just distort markets. They make risks uninsurable.

Implications for leaders

Engage with policymakers. Push for standards that match the science and unlock private coverage – not just delay the reckoning.

Foreword

Insurance underpins our modern world. Not only did it enable the industrial revolution, electrification, and global trade but it will also be critical in helping industry to make the transition to a low-carbon economy.

And behind insurance lies the concept of insurability. This isn't just about our capacity to secure insurance but about our ability to send a signal to the market about the nature of risk itself. A signal that allows clients and consumers to understand their future risk landscape.

In other words, insurance has long been the great enabler. Arming people with the knowledge they need to look before they leap and unlock future opportunities.

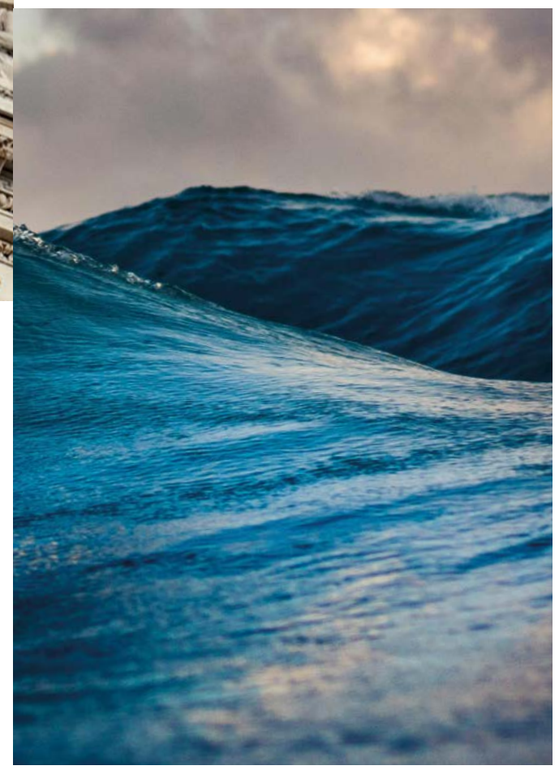
Yet, as the climate crisis worsens, global risk systems are being stretched to their limits. Floods in Europe, fires in California, crop failures across Asia are no longer rare occurrences. Indeed, they are increasingly happening in places where insurance was once taken for granted.

The result? A widening protection gap. Assets, communities, and business models becoming uninsurable. And growth stymied. After all, you can't invest in what you can't insure. But while this should ring alarm bells in every boardroom and every department of state, it also points us towards a solution. Since insurability effectively acts as barometer of long-term viability across industries and geographies. It is a true measure of how well risks are understood, managed, and mitigated. And, as this whitepaper makes clear, harnessed correctly it becomes a strategic asset.

Inside you'll find proposals for how we can make the most of insurability. It will mean embracing risk intelligence as a core capability. It will mean aligning with underwriters early – not after the fact. And it will mean reshaping partnerships between governments, industries and insurers to unlock investment in resilience and adaptation.

The good news is we're not starting from scratch. Across the world people are waking up to the value of insurance – from the growth of global carbon markets to the adoption of innovative agricultural risk-sharing.

But we don't have the luxury of delay. Risks are compounding, consequences escalating, and the cost of inaction is clear. So this is the moment of reckoning and now is the time for insurers, businesses, and governments to act collaboratively. Ultimately there is huge opportunity here to give our customers the security they need. It's up to us to emulate the example of our forebears in those days of the industrial revolution and turn a crisis into the foundation for a stronger, more resilient world.

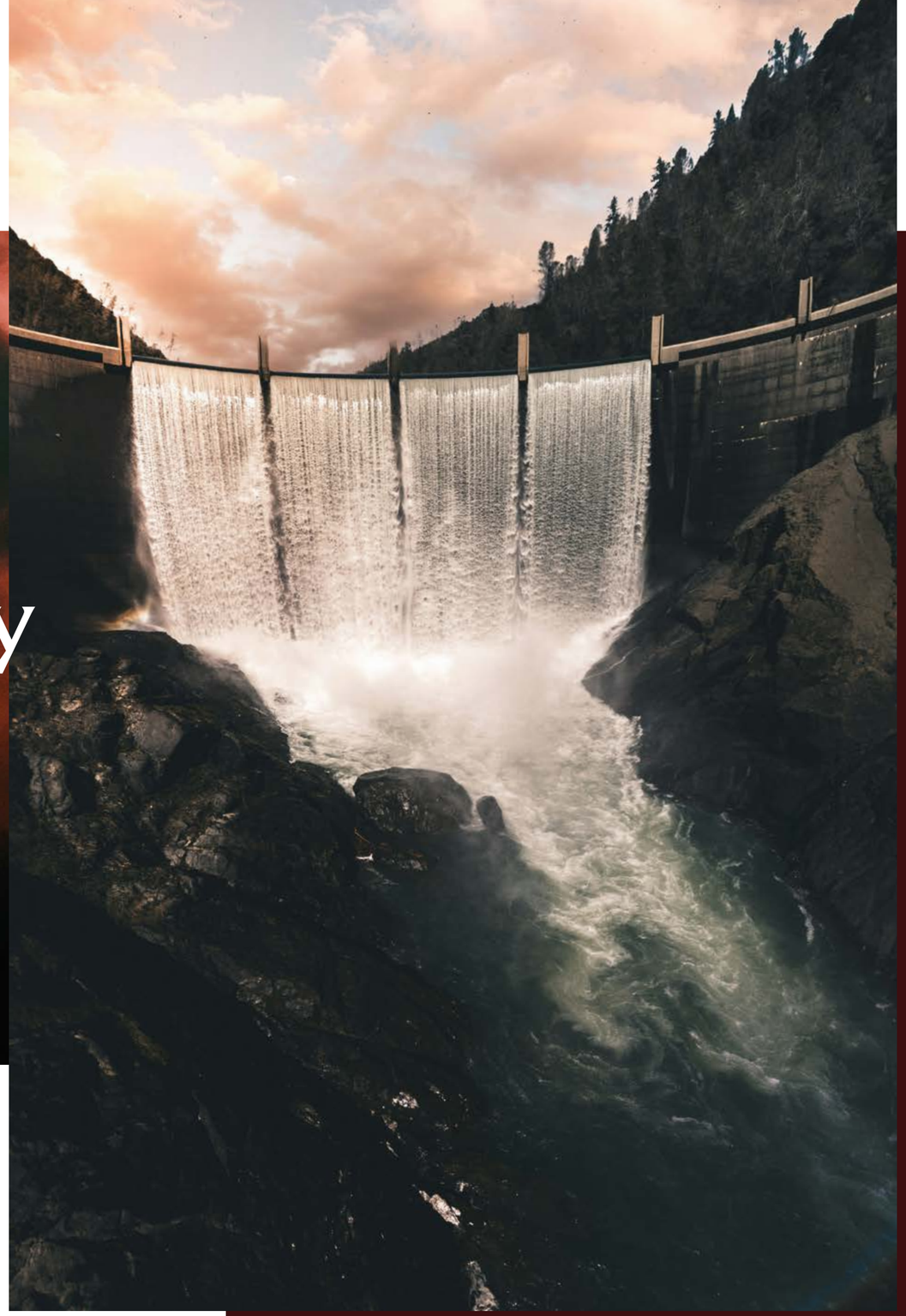


David Howden CBE

Howden Group CEO

Executive summary

The question facing business and government leaders is no longer, “will this be insurable in the future?” but “what will it take to make it so?”



For many, the risk of becoming uninsurable looms larger and more immediately than physical climate threats themselves.

From record-breaking floods to unrelenting wildfires, the rising tide of climate shocks has intensified the demand for stability. Communities seek protection, industries seek predictability, and investors seek clarity. Yet, as losses rise, what was once readily insurable is now under reassessment.

Headlines worldwide foretell a new climate financial reality: ‘insurability’ - whether a risk can be insured at an affordable cost’– is the lens to view future risk, liquidity, valuation, investor appetite and financial stability.

Sudden climate shocks can shift the boundaries of insurability, pushing assets and operations towards the edges of collective protection. Over time, without intervention, these can slip further towards economic fragility and, ultimately, becoming stranded.

As markets and societies grapple with the shift in risk landscape from climate change, insurance is no longer just a back-office transaction, but a strategic imperative and a marker of resilience. It offers an objective lens to view systemic climate risk, a disciplined framework for governance, and a contingent asset that enables access to credit and capital.

From record-breaking floods to unrelenting wildfires, the escalating tide of climate shocks has triggered an urgent demand for stability.

This paper is written to help decision-makers understand the logic and importance of insurability and, critically, how it can be integrated into strategies, relationships and actions.

Throughout history when insurability has been challenged, only the collaboration between asset owners, insurers and governments have helped overcome these crises. Consider how steam boilers that powered the Industrial Revolution but posed significant risks due to frequent explosions, were made viable by insurers' innovation in safety protocols to scale and accelerate an earlier new energy transition; or, how building code changes, zoning, and the creation of fire departments helped manage the devastating city fires in the 19th century to enable a previous resilient transition.

We present a framework to help leaders of government agencies, financial institutions, and corporate decision-makers understand what enables insurability, and therefore, how to use it as a dynamic, strategic, and competitive asset.

Insurability is enabled by four factors; when one or more missing, insurability is challenged. We explore these key factors:

01. **Risk modelling:** A critical tool to quantify and understand risks, define solvency, and guide capital flow. Used strategically, it shapes market access and credit worthiness.

02. **Risk management:** The variable most within control of asset owners, and the key determinant of long-term insurability – adjusting governance and internal frameworks to de-risk critical vulnerabilities.

03. **Risk sharing:** Longer-term, cross-border, growing demand for climate risk solutions meets expertise limitations and finite capital supply – a constraint to both public and private sectors.

04. **Public policy and financial regulation:** Often a force multiplier for or against insurability, depending on alignment with climate science and financial governance.

We also identify four key strategies for leveraging insurability:

01. **Drawing lessons from past challenges:** Recognise insurability as a signalling tool for whether transitions can be financed, scaled, and sustained. Past crises in insurability didn't just reflect technical failures – they exposed flaws in system design, governance, and public support. They also showed that enduring progress depends on collaboration, strong relationships, and resilient institutions.

02. **Thinking like an insurer:** Treat insurability as a live diagnostic of intrinsic risk, resilience, and financial viability. Apply portfolio-level risk modelling to guide investment in resilience, accounting for both climate vulnerability and a shifting, compound risk environment.

03. **Anticipating and adapting to insurability signals:** Use insurability as a forward-looking guide to track evolving vulnerabilities. Build institutional capabilities that ensure access to capital is not only preserved but actively aligned with emerging risk profiles.

04. **Embedding insurability into strategy:** Integrate insurability into long-term planning to shape the foundations of tomorrow's economy. This includes urban development, agricultural systems, energy transition pathways, and the future of credit and financial access.

Insurability is a strategic priority to protect asset value

Maintaining insurability requires enduring relationships

Once insurability is recognised as a strategic priority, it fundamentally shifts how risk is understood and managed.

It provides a radar for climate risk and risk governance disciplines; as well as an asset that delivers contingent finance to enable credit and investment flows. This change in perspective allows leaders to engage with insurance as a vital component of long-term financial planning. This realisation of insurance as a strategic financial asset is the first vital step to maintaining insurability.

Much like someone deciding it's time to take their health seriously and getting a medical check-up, organisations that prioritise insurability acknowledge that something of value is at stake. Short-term costs, adjustments, or discomfort may be necessary to protect long-term outcomes and avoid sudden crises or chronic decline.

This shift requires more than a change in mindset; it requires the development of new expertise. Most leadership teams are well versed in their organisation's equity arrangements, capital structure, and investor relationships. Yet far fewer have a comparable grasp of their insurance programmes, underlying vulnerabilities, or underwriting dependencies.

That knowledge gap matters. In an increasingly climate-exposed world, understanding how insurance markets function, and what influences insurability, will be central to operational continuity and access to finance. In this context, maintaining insurability depends on building strong, lasting relationships, founded on strategic, mutual collaboration and trust. The insurance sector itself offers a valuable parallel. Insurers manage their own exposure through reinsurance, drawing on long-standing partnerships designed to endure market volatility. For most insurers, access to appropriate reinsurance is essential to meet solvency requirements and sustain competitive positioning. These relationships – often formalised through multi-year "treaties" – are built on shared outcomes, trust, and mutual support. Many have persisted across decades, borders, and systemic crises.

This model reveals a critical insight: in contexts of extreme risk and uncertainty, insurability depends less on discrete transactions and more on sustained, trusted relationships. Informed risk-sharing and mutual confidence are often the foundations of continued coverage. Businesses seeking long-term resilience and transition readiness will need to adopt a similarly strategic approach – developing deeper, more invested relationships with (re)insurers. Where this model succeeds, it depends on reciprocal commitment: insurers must treat clients not just as policyholders, but as true risk partners.

In sectors with complex or systemic risk exposures, we may see a return to collaborative solutions; organisations joining forces to co-develop insurance mechanisms, much like the insurance cooperatives and mutuals that shaped social, industrial and agricultural history. These models often emerge where technical expertise, shared risk, and market innovation intersect.

This is the moment to elevate the conversation, to move beyond transactional negotiations. Shifting to think creatively about new models, longer time horizons, and shared risk mechanisms – with a strong focus on building enduring relationships. Don't just ask, "What's the premium?" Ask, "What's driving the risk – and how can we solve it together?"

A framework for understanding insurability

In the context of accelerating climate disruption, there is no single driver of insurability.

It is the interplay between factors including risk modelling and management, risk sharing, and policy and regulation (including public subsidies and backstops), which determines whether assets, sectors, and communities remain insurable at affordable levels. Considered together, these levers assist leaders to move from reactive protection to proactive, long-term resilience.

01.

Risk modelling: a driver of market access

Insurability depends on risk quantification. At its core lies a powerful – often opaque – tool: catastrophe (CAT) risk modelling. This applied science enables insurers to estimate the financial impact of extreme climate events before they occur. These models do more than price insurance – they shape portfolios, define solvency requirements, and direct capital flows. In effect, they help make markets.

Originally developed for natural catastrophes, these methodologies have become central to how (re)insurers evaluate and manage risk across their entire portfolios. Today, they underpin decisions made by underwriters, regulators, investors, corporates, and increasingly, the public (e.g., Future valuation risks for properties developed in flood-prone or high-risk areas). As climate risk intensifies, understanding these models and metrics will become a core element of business literacy – on par with credit ratings, bond yields, or equity pricing.

For the past three decades, insurers have operated under solvency frameworks requiring them to withstand the financial impact of a 1-in-200-year event. Meeting this standard has driven a transformation in risk modelling, combining hazard simulations, exposure data, and vulnerability functions to assess potential loss. These models now define the terms of trade.

Leaders who understand and engage with these tools can turn them into strategic planning instruments – integrating metrics like Annual Average Loss (AAL) and Probable Maximum Loss (PML) into risk management and investment decisions.

Organisations that master these models can communicate with insurers in their own language, ensuring risk is represented as accurately – and favourably – as possible. Projects that align with modelled thresholds are more likely to secure insurance capacity, attract capital, and proceed at scale. Risk modelling – used to assess insurability – also provides a foundation for comparing projects, thereby sharpening capital allocation decisions, and it further enables self-insurance by providing a clear understanding of the underlying risks.

02.

Risk management: derisking critical vulnerabilities

Among all the forces shaping insurability, vulnerability is usually the most directly controllable. Insurers are increasingly retreating from regions and sectors where exposure to climate hazards like fire, flood, or storm is high and unmanaged. What determines their willingness to stay isn't only the hazard, but how well prepared the asset is to withstand it.

This is because insurance is most viable where risks are well-understood and visibly managed. It responds positively to data, planning, and foresight. The better an asset owner, and insurance buyer, can demonstrate tangible, measurable reductions in vulnerability, the more attractive the risk becomes.

Reducing vulnerability requires proactive investment: strengthening infrastructure, reinforcing supply chains, and retrofitting assets. It also involves collaboration with municipalities, suppliers, and regulators to reduce vulnerabilities to critical services.

Leaders must view this investment in resilience not as an expense, but as a strategic investment in the longevity of operations and access to capital – preventing losses and allowing operations to continue uninterrupted.

In turn, the material impact of these risk reduction interventions must then be recognised. Both by insurers through reduced premiums and better coverage terms, and by lenders and investors through improved access to capital at lower costs and more favourable conditions. Howden analysis shows that strategic investments in enhanced risk management of $6 billion could have cut economic losses from the 2025 LA wildfires of $75 billion by half.

03.

Risk sharing: bridging the protection gap

Even well-prepared projects may face a constrained supply of underwriting capacity. As shown in our report, The Great Enabler*, the reality is sobering; there is a growing protection gap, and volatile insurance capacity has the potential to hinder trillions in future transition investments.

In some contexts, insurance operates within open and competitive markets, subject to regulatory oversight on solvency, conduct, and broader systemic factors such as market sentiment, investor confidence, and macroeconomic shocks. In others, pricing and terms are more tightly regulated, constraining the flexibility of insurers to respond to changing risks. These market structures have a direct impact on the availability, pricing, and adaptability of insurance products.

While technical risk rating establishes a baseline, real-world pricing is influenced by a broader set of factors: supply-demand imbalances, uncertainty loadings, capital and reinsurance costs, operational expenses, and profit margins.

Capacity constraints arise from multiple sources: predefined underwriting budgets, risk appetite thresholds, siloed risk categories, and insurers' own ESG policies and transition strategies. Reinsurance – the critical backstop that supports insurers during catastrophic years – has been under pressure, driven by record claims over the past decade, and stringent solvency tests, which further shapes risk appetite and tightens the supply chain.

New technologies and sectors frequently face additional barriers to insurability due to limited historical loss data and lagging product development. Emerging climate-transition innovations – such as hydrogen, carbon removal, or long-duration battery storage – may remain under insured because underwriting methodologies have yet to evolve in line with technological progress and deployment scale.

The implications are clear: strengthening insurability demands an ongoing dialogue with insurers and capital providers to track their risk appetite and capacity. By continuously engaging the market, organisations can align emerging risks with existing products, co-create solutions spanning multiple capital sources, and keep insurability firmly strategic. Regular market conversations ensure shifting capacity constraints – and opportunities – are identified before they impact future transition plans.

* The great enabler: A collection of insurance solutions powering $10 trillion of climate finance: https://www.howdengroup.com/uk-en/news-insights/the-great-enabler

04.

Public Policy and financial regulation: a force multiplier (or undercutter)

Insurability is not determined by markets alone. It is shaped – and often enabled or disabled–by the regulatory and policy context.

Building codes, zoning laws, infrastructure standards, and even tax policy all affect exposure, preparedness, and affordability. When these systems align with climate science and risk models, they support insurability. When they lag, they exacerbate uninsurable conditions.

Public sector tools like sovereign insurance, risk pools, and premium subsidies can play vital roles in maintaining access to coverage, but these need to be managed appropriately to avoid distorting market dynamics. However, more fundamentally, governments should treat insurance as a barometer of resilience and a component of national climate and economic development strategy.

Case study

Safeguarding agricultural insurability in Europe

A reimagined agricultural risk framework, based on Howden's Climate Insurability framework, has helped the European Investment Bank develop an action plan for Europe's agricultural insurability challenges.

Solutions proposed are rooted in better data, smarter financial instruments, adaptation and stronger coordination – which can ensure that Europe's farms remain insurable, rural economies and communities can flourish, and food security is strengthened in the decades ahead.

A complex challenge

Europe's agricultural sector is confronting an escalating climate risk crisis that threatens the future of its food systems. With crop and livestock losses intensifying due to droughts, floods, frost, and heatwaves, the cost of insurance is rising while coverage remains limited. Today, only 20 – 30% of climate - related agricultural losses are insured. The remainder is absorbed by farmers or covered by unplanned government relief, creating unsustainable fiscal pressure and systemic risk to rural economies and food security.

If left unaddressed, this growing insurability gap risks undermining the viability of European farming and destabilising agricultural credit markets and rural investment.

The sobering reality

Annual average agricultural losses are expected to rise from €28 billion today to around €40 billion by 2050, or from around 6% of yields to around 9%. In catastrophic years, losses could exceed €90 billion across the EU by 2050. Drought is the primary driver, but hail, frost, and excess rainfall are also increasing in frequency and severity. Many frequent attritional climate losses fall below traditional insurance thresholds, but their cumulative impact is steadily eroding farm margins.

Smaller, frequent losses strain day-to-day farm viability, while catastrophes risk overwhelming national insurance systems. As insurability weakens, farm-level risk grows – and so does risk for lenders, governments, and insurers.

This is a summary of the Insurance and Risk Management Tools for Agriculture in the EU report published by the European Commission (DG AGRI) and the European Investment Banking May 2025 produced by Howden Group.

> "The findings of this analysis will guide our future action as we step up support to bolster the resilience of the EU's agricultural system
>
> **Gelsomina Vigliotti**
> EIB Vice-President

Insufficient post-catastrophe funding

Proactive, pre-arranged risk management is far more effective than unplanned and reactive crisis funding. In practice, this means bolstering insurance and financial preparedness ahead of disasters rather than relying on ad-hoc government bailouts after the events. For example, when farmers have access to well-subsidised crop insurance or mutual risk pools, they and their lenders gain confidence that losses will be covered without jeopardising farm viability.

To maintain insurability in agriculture, Europe must shift from reactive disaster aid to proactive, layered risk management.

Key enablers include:

- **Improved risk intelligence:** Investing in consistent, EU-wide data and modelling to support better risk pricing and forecasting.
- **Smarter risk transfer:** Expanding tools like catastrophe bonds and public-private reinsurance to share catastrophic, low-frequency losses, into the wider risk capital markets so that major funds can be available when needed.
- **Farm-level and landscape area adaptation:** Encouraging regenerative agriculture, water efficiency, and other practices that lower exposure and increase resilience.

These efforts not only improve insurability – they reduce the actual risk burden, benefiting both farmers and insurers.

Action plan

Addressing the growing insurability gap in European agriculture requires coordinated, high-level action from both the public and private sectors.

Key actions include:

- **Modernise risk infrastructure:** Build an open-access EU platform for agricultural climate risk data and modelling to enable transparent pricing and better forecasting. Scale risk financing: Use EU-level funds like the CAP agricultural reserve to develop reinsurance programs and catastrophe bonds for major systemic events.
- **Strengthen public-private partnerships:** Align government subsidies with private and mutual market capacity to maintain affordability and expand coverage, especially in high-risk regions.
- **Link insurance to resilience:** Reward farmers who adopt climate-adaptive practices with better insurance terms, creating a feedback loop between risk reduction and coverage.
- **Preserve acess to finance:** Ensure that evolving climate risk disclosure and prudential rules for lenders do not restrict credit to agriculture. Promote financial tools that blend insurance with working capital and long-term investment products.

Case study

Howden's climate insurability framework used to structure a coordinated response

This is a summary of the Insurance and Risk Management Tools for Agriculture in the EU report published by the European Commission (DG AGRI) and the European Investment Banking May 2025 produced by Howden Group.

Signals

Understand evolving regional risks, risk data, and policy frameworks, shaping risk portfolios

Policy and regulation

Challenge

Insufficient regulatory interventions directed at enhancing insurability of agriculture risks

Action plan

- Enabling new instruments (e.g., pooling)
- Coverage mandates to reinforce resilience
- Ensure adequate risk management to uphold insurability (e.g. zoning laws, building codes, infrastructure standards)

Risk modelling

Challenge

Poorly understood quantification of AAL and modelled loss performance at regional level

Action plan

- Enhanced modelling to forecast climate impact on food security
- Produce detailed understanding of risk profiles by country and crop types
- Provide decision-makers with actionable data to improve insurability

Solutions

Coordinated blended-finance solutions to improve access to insurance and reliance investment capital

Risk management

Challenge

Undermanaged vulnerabilities softening impact of resilience plans

Action plan

- Co-create risk transfer solutions, with (re)insurers, specific to European food systems
- Direct investment to proactive risk mitigation based on climate science
- Improved access to investment funding with better de-risking protocols and recovery plans

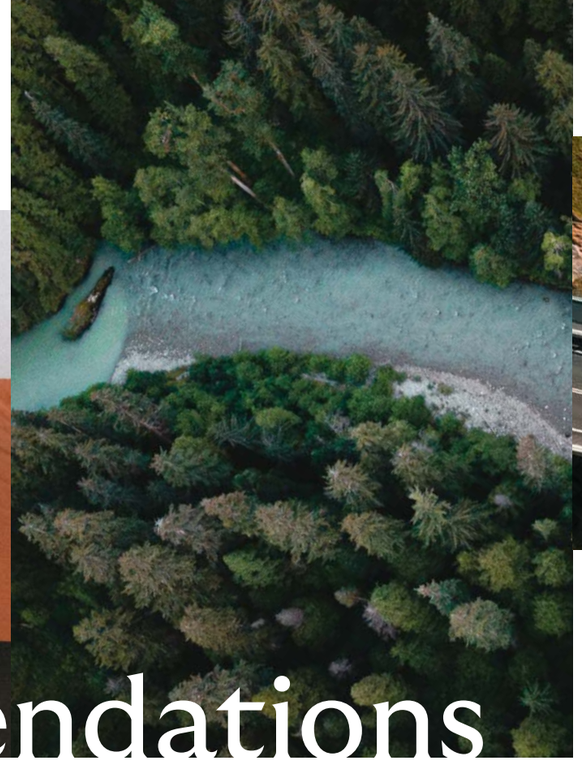
Risk sharing

Challenge

Growing underinsurance risk and lack of solutions to address complexity

Action plan

- Improve risk transparency for carriers via enhanced data collection and sharing
- Use risk sharing structures that leverage multiple sources of diversified capacity (e.g. MGAs, captives, capital markets)
- Use public solutions where private market unwilling or unable to absorb risk (e.g. sovereign insurance, risk pools and premium subsidies)

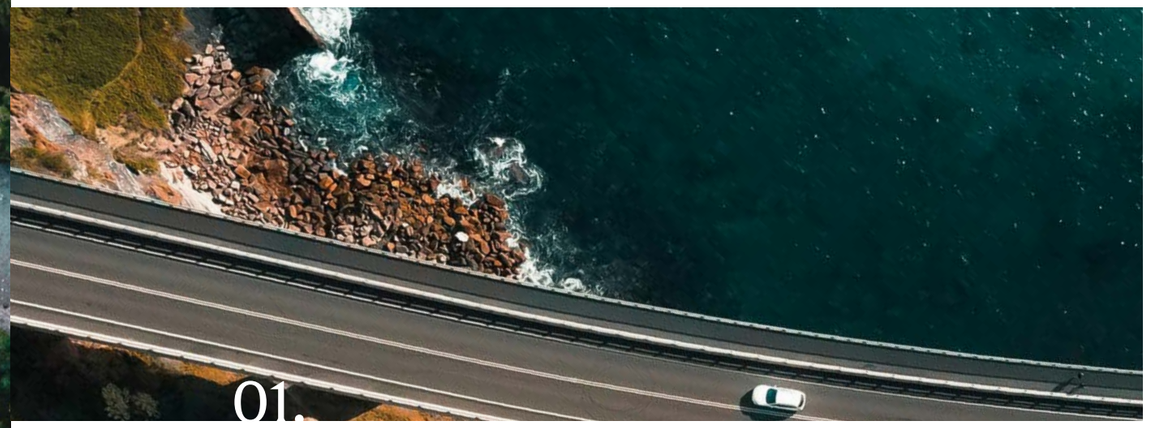


Recommendations to capitalise on insurability

Insurability has become a strategic lens through which resilience, viability, and investment readiness are judged.

In the face of escalating climate risks, leaders across public and private sectors must embed insurability into core decision-making. This means not only understanding the framework of insurability but also using it as an asset to influence outcomes and secure long-term continuity.

On the following pages, are four recommendations for unlocking the value of insurability:



01.

Drawing lessons from past challenges: innovating the way into sustained insurability

Throughout history, insurance has not merely protected progress; it has enabled it. From the rebuilding of U.S. cities after 19th-century urban fires to the scaling of industrial steam power, insurance has underwritten innovation by enforcing standards, reducing uncertainty, and unlocking credit.

Consider two examples:

a) Urban fires of the 19th century: creating safer cities

- **The problem:** Explosive urban growth in the U.S. during the 1800s led to sprawling, unregulated cities. Wooden buildings, poor infrastructure, and no fire codes resulted in massive fires; most infamously the Great Chicago Fire of 1871. Insurance claims soared and insurers retreated.
- **What changed:** To regain insurability, cities introduced modern building codes, zoning rules, and fire departments. These reforms were enforced by insurers who conditioned coverage on compliance.
- **What this enabled:** Insurance returned, credit flowed, and cities rebuilt with confidence. Urban growth resumed, now on a safer and more resilient foundation.
- **Lesson for leaders:** When insurers withdraw, it's a powerful signal that risk management has failed. Rebuilding trust through enforceable standards is the first step to regaining insurability and capital access.

b) The steam boiler era: engineering risk into innovation

- **The problem:** Steam powered the industrial revolution, but early steam boilers were unstable and deadly. Explosions were common and insurers refused to cover the risk, which led to financing drying up.
- **What changed:** In 1866, insurers, engineers, and manufacturers formed the Hartford Steam Boiler Inspection and Insurance Company. They set safety standards, conducted inspections, and only insured compliant systems.
- **What this enabled:** Confidence was restored, which meant that credit resumed, and industrial growth accelerated. Standards allowed this technology to scale.
- **Lesson for leaders:** Without standards there is no insurance, and without insurance, credit will not flow. Emerging technologies, from hydrogen to regenerative agriculture; as well as new ventures like carbon markets, need early engagement with the insurance market to set the standards.

These precedents demonstrate that:

- Insurance is a collective governance system, not just a product.
- It provides the rules of risk engagement, driving safer, more resilient design.
- Insurers can serve as partners in innovation, not just gatekeepers.

Drawing lessons from past challenges

Insurability crises appear when more than one failure to risk frameworks occurs

1666
Great fire of London

Notable innovations:
Creation of new insurance solution Shift towards fire prevention and suppression – leading to development of first private fire brigades – made way to creation of fire insurance coverage.

1858
Frequent steam boiler explosions

Notable innovations:
Launch of specialty insurance companies – New engineering insurance companies specializing in boiler risks were created (e.g, HSB), regulatory bodies introduced legislation to ensure safer boiler operation – granting insurance access.

1871
Great US city fires

Notable innovations:
More purposeful regulatory role – While insurers raised premiums, and new fire insurers were created, state regulators acted more purposefully towards creation of more fire brigades, enforcing building codes, and acted to prevent fraud.

1906
Great San Francisco EQ

Notable innovations:
Implementation new, sophisticated approaches – Industry vulnerabilities were exposed, leading to creation of Excess-of-Loss reinsurance, stricter accounting practices, and improved EQ exclusions into policy wordings.

1980s
General liability crisis

Notable innovations:
Development of new risk transfer options – While tighter policy wordings and new claims management policies were introduced, Alternative Risk Transfer (ART) mechanisms, like captives and self-insurance programmes gained popularity.

1992
Hurricane Andrew

Notable innovations:
Introduction of sophisticated CAT tools – Event spurred the launch of sophisticated catastrophe modelling, development of CAT bond market, introduction of hurricane deductibles, and led creation of Citizens (a state-backed insurer) in Florida.

2001
9/11 attacks in NYC

Notable innovations:
Government-backed pooling for man-made events – Insurers reacted by excluding terrorism coverage, raising systemic insurability questions, and leading to creation of TRIA – many other markets followed on the US example.

2005
Hurricane Katrina

Notable innovations:
Improved Solvency checks and claims management – Ratings Agencies and regulators stepped-up solvency scrutiny, while insurers improved claims protocols (e.g., rapid response teams) and required insureds to follow pre-loss catastrophe management and established protocols for funding claims.

2018-2025
CA wildfires

Notable innovations:
Too early to tell, but increased insurability will require... innovations in pricing regulations, adoption of sophisticated risk modelling, and improved risk mitigation practices (and enforcement), to attract capacity back.

Observed failures

- Risk management
- Risk sharing
- Risk modelling
- Policy and Regulation

02.

Thinking like an insurer: adopting a portfolio-level risk perspective

To navigate the shifting nature of insurability, leaders must step into the mindset of an insurer. Insurers operate not as one-off evaluators but as managers of aggregated risk, assessing how each new policy affects their overall exposure and solvency.

This is not merely a theoretical exercise. It is a daily operational reality, enforced by regulators and central to every underwriting decision.

Insurers assess each risk in two primary ways:

- **What is the correct premium?** This requires not just an estimate of expected losses but a buffer for losses in the worst-case scenario such as a North Atlantic hurricane season, a megafire, a black swan climate event. Premiums must reflect the cost of rare or very rare catastrophic events.
- **How does this risk interact with the broader portfolio?** Does it help diversify or does it concentrate exposure in a way that could endanger the entire portfolio's solvency? For instance, insuring one asset in a flood-prone area may be feasible, but insuring many such assets may overwhelm the portfolio.

Moving beyond asset-level thinking to a portfolio-level perspective enables clearer insight into climate exposures, systemic vulnerabilities, and potential leverage points for resilience. This approach supports more strategic allocation of capital, improves engagement with insurers, and positions the organisation to proactively shape its insurability over time.

03.

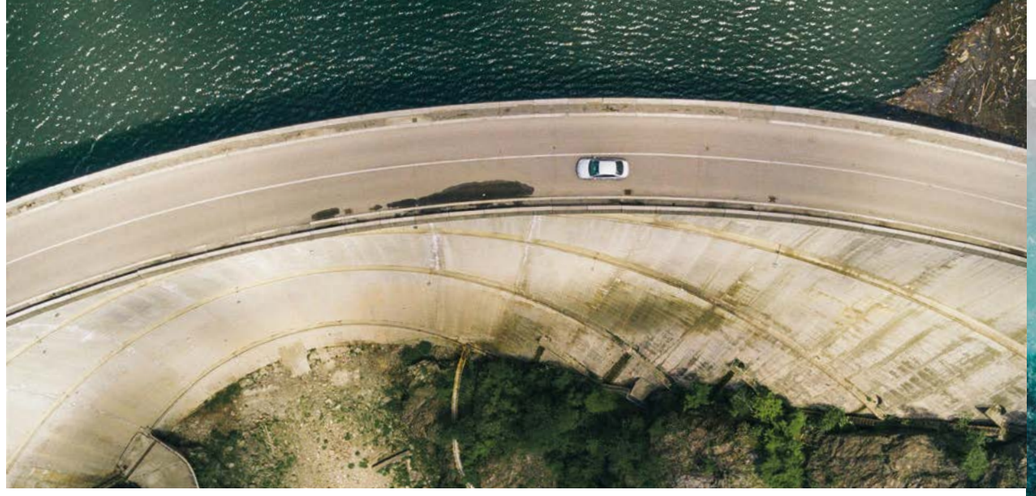
Anticipating and adapting to insurability signals: if insurers withdraw, listen

Insurability is dynamic and conditional. A sudden spike in premiums or reduced insurance availability is rarely just a pricing issue – it's a signal of deeper vulnerability. Insurability challenges often surface before broader market or regulatory consequences. Leaders who treat these as early indicators can position their organisations ahead of the curve.

Developing internal capabilities to detect, interpret, and respond to signals of declining insurability. This includes understanding which factors – physical exposure, operational fragility, supply chain dependencies – are triggering insurer concerns. Integrate these insights into resilience upgrades, adaptation planning, and transition strategies.

By acting early, organisations can protect access to insurance – or, where necessary, pivot to alternative forms of contingent capital such as parametric insurance, catastrophe bonds, public-private risk pools, or structured resilience-linked finance. These tools not only bridge coverage gaps, but they also send strong market signals about risk maturity and climate-readiness.

Treat insurance availability as an early read on resilience; a de facto viability test that can guide better investment decisions.



04.

Embedding insurability into strategy

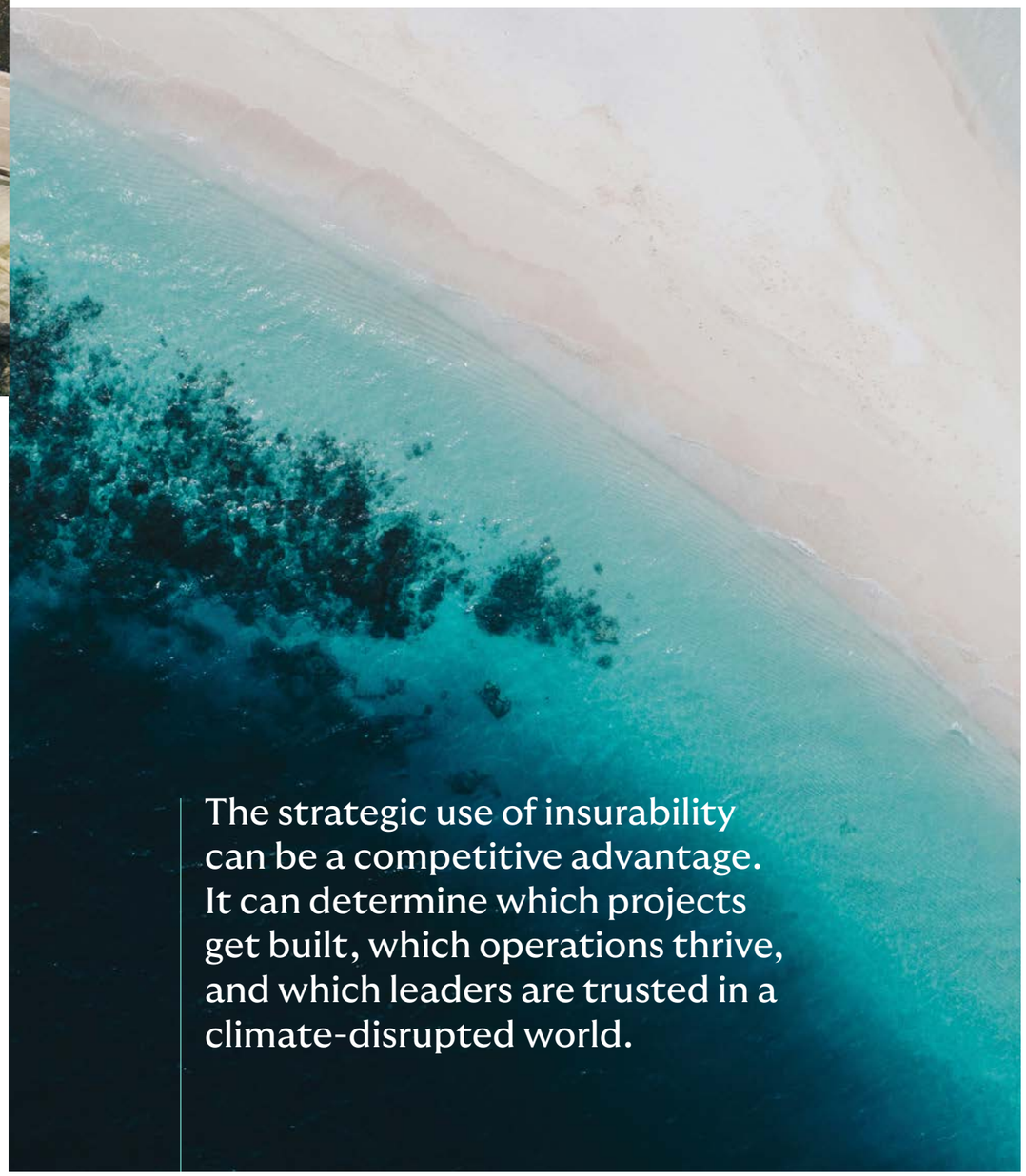
Finally, leaders must move from reactive to proactive integration of insurance thinking across planning horizons. This means building insurability into everything from infrastructure and supply chain strategies to finance, procurement, and ESG disclosure.

A forward-looking framework should consider:

- **Quantifying risk with insurance-grade analytics:** Use catastrophe models to understand Annual Average Loss (AAL) and Probable Maximum Loss (PML). These metrics are critical for evaluating trade-offs and negotiating terms.
- **Tracking market dynamics:** Monitor insurance capacity, pricing trends, and product innovation. This ensures strategy remains aligned with available coverage.
- **Planning for structural change:** Understand long-term shifts, such as climate policy transitions and regional risk profiles. These shape insurability beyond the asset level.
- **Collaborating across sectors:** In high-risk sectors, consider joining forces with peers to co-develop mutual insurance models or advocate for public-private risk-sharing mechanisms.

Insurability should be treated as an ongoing strategic process, as opposed to a late-stage box to tick. By embedding it early and often, organisations can de-risk investments, increase their attractiveness to capital, and enhance their climate resilience.

The strategic use of insurability can be a competitive advantage. It can determine which projects get built, which operations thrive, and which leaders are trusted in a new economy. Businesses and government should consider building internal capabilities to effectively leverage insurance and other contingent capital solutions.



Shaping business decision-making for insurers:

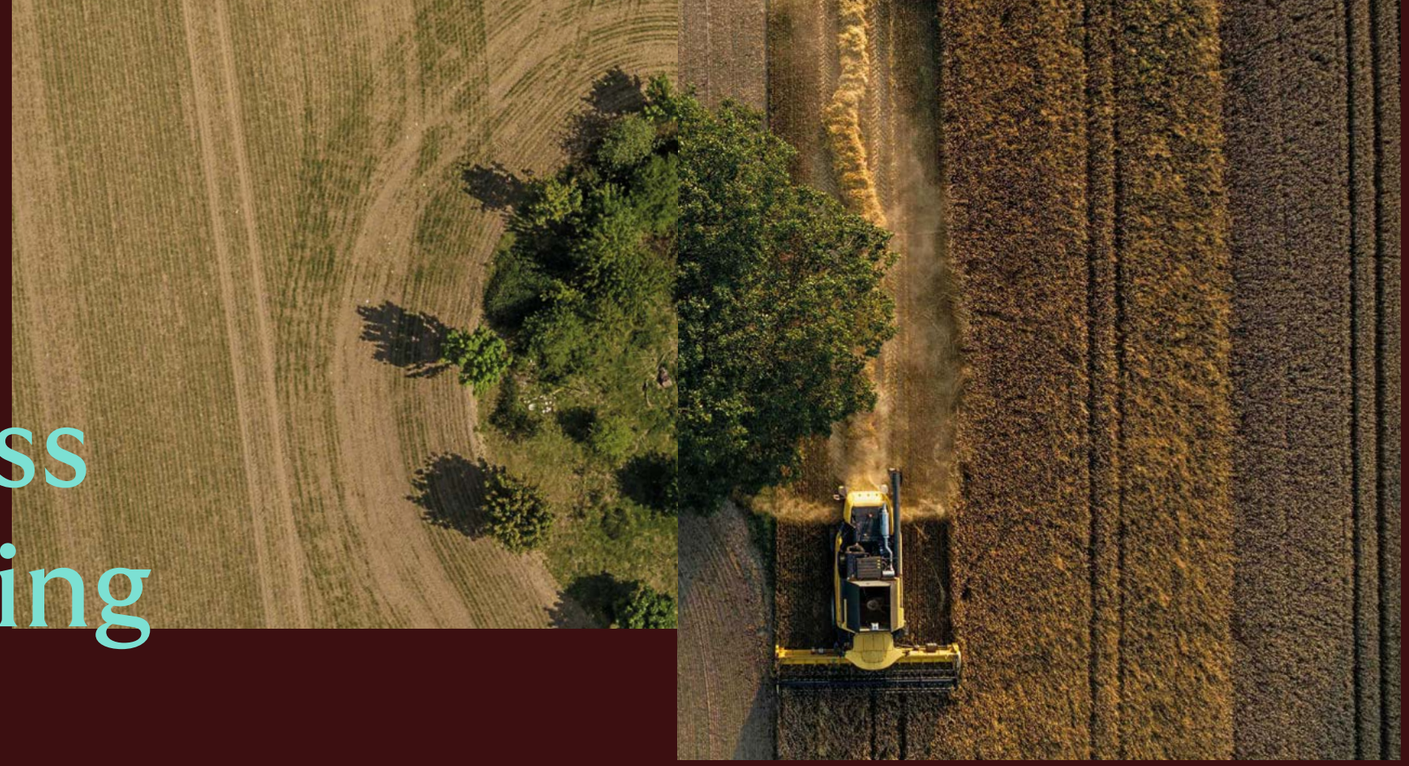
Prudential supervision, solvency and stress tests: financial resilience from 1-in-200-year catastrophic events.

This is the most influential of all the regulations and influences so much of how insurers address climate-related risks. Insurers must demonstrate to their regulators that they have sufficient funds (or solvency) to meet the annual Probable Maximum Loss (PML) across their portfolios for the costliest combination of events that can be expected to occur once every 200 years, or the 0.5% annual probability. This solvency framework governs how insurers price each risk they consider underwriting; how they distribute and diversify their portfolios by geography, risk type and class of business, and how much capital they must maintain access to via underwriting reserves or reinsurance arrangements.

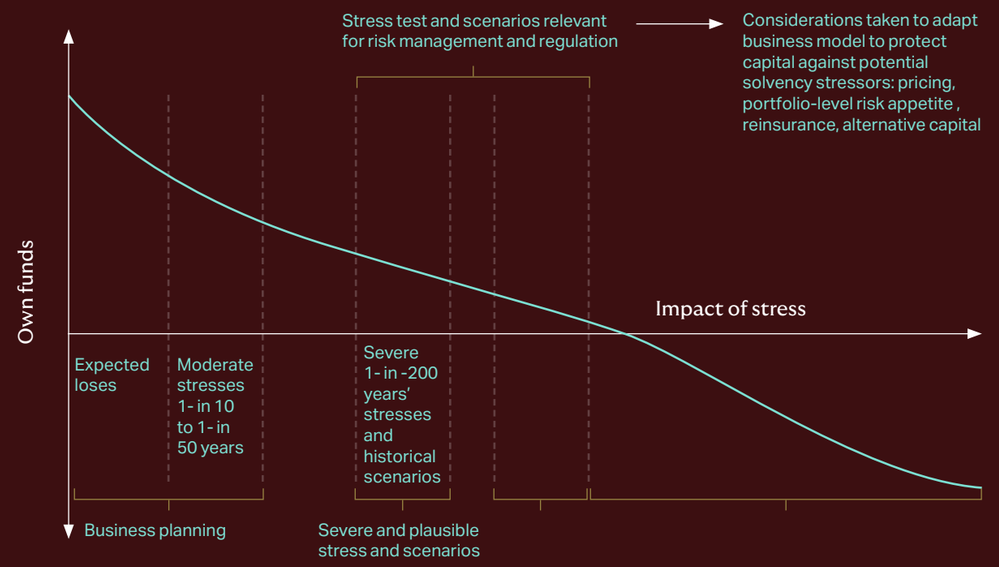
When an underwriter is presented with a climate risk to insure, they will be focussed on two key questions:

01. What is the correct price (premium) for this risk-taking account of the extreme events (PML) that could occur at a 1 in 200-year frequency.

02. How does this risk affect my overall portfolio risk? Does it diversify my portfolio, or does it accumulate further concentration in a peak zone that could increase the overall PML if a catastrophe occurred in that area. If it does, that will disproportionately increase the number of reserves or reinsurance that will be required to be held to ensure the solvency of the company.



Stress-testing business portfolio informs decision making



Source: Howden, Institute of Risk Management (IRM)

Conclusions

Insurability shapes the path to future sustainability

Climate volatility is reshaping how risk is priced, perceived, and financed. What was once seen as a distant threat has become immediate and material, with extreme weather driving rising insurance costs, reduced coverage, and growing exclusions for individuals, business and governments – even before physical losses occur. Insurability is now one of the clearest, earliest signals of the climate crisis in economic terms.

Insurance is no longer a passive reflection of risk – it is a forward-looking indicator of financial viability. Underpinned by sophisticated modelling and solvency regulations, it influences which assets are financed, which projects move forward, and which communities remain resilient. When insurability is lost, consequences follow quickly: projects stall, credit tightens, asset values fall, and liquidity evaporates.

Insurability provides a diagnostic of systemic exposure and a basis for decision-making under uncertainty. Like a climate "credit rating," it reflects both current vulnerability and long-term readiness.

This paper sets out why and how leaders must elevate insurability in their risk, investment, and policy strategies. It shows that insurability can be strengthened – by aligning with underwriting logic, engaging early with insurers, investing in resilience, and embedding insurance thinking into planning. It is not static, but responsive to the decisions organisations make today.

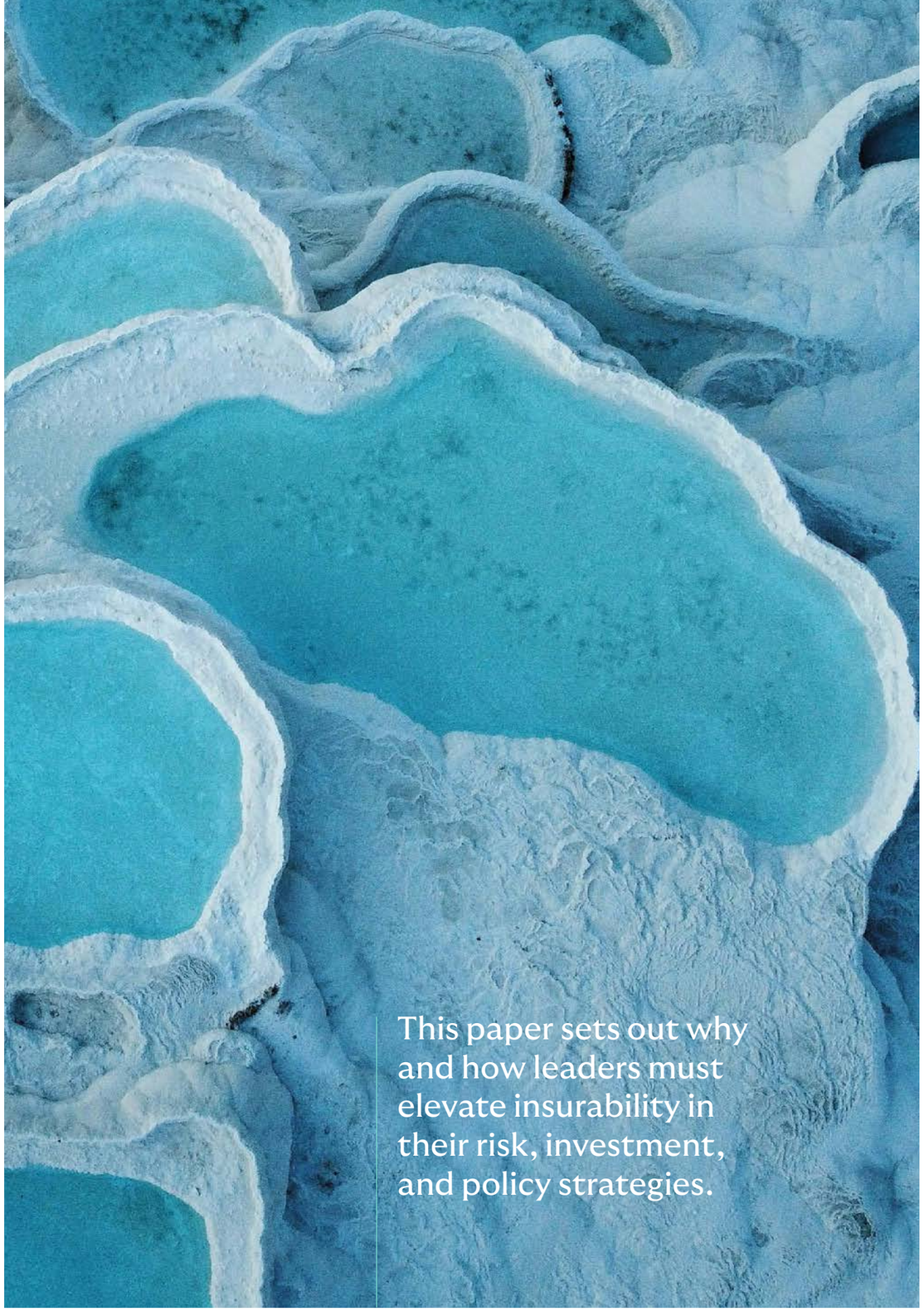
For corporates, this means treating insurance as a core financial function – not a procurement exercise. And a need to change the conversation and co-create solutions.

For insurers, it means innovating to meet new types of risk, supporting clients who act early, and building products with longer time horizons.

For policymakers, it requires aligning regulation and risk governance with the realities of climate exposure and financial vulnerability.

Insurability is becoming a gating issue: a determinant of market access, operational continuity, and transition credibility. Those who fail to engage will find themselves increasingly exposed. Those who lead will use insurability to unlock investment, drive resilience, and build trust in a fast-changing world.

The message is clear: insurability is no longer just about protection – it is about access to capital. It is a lever of transformation – and a signal of who is ready for what comes next.



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Front cover image features the production of renewable Geothermal energy at the Blue Lagoon in Grindavík, Iceland

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