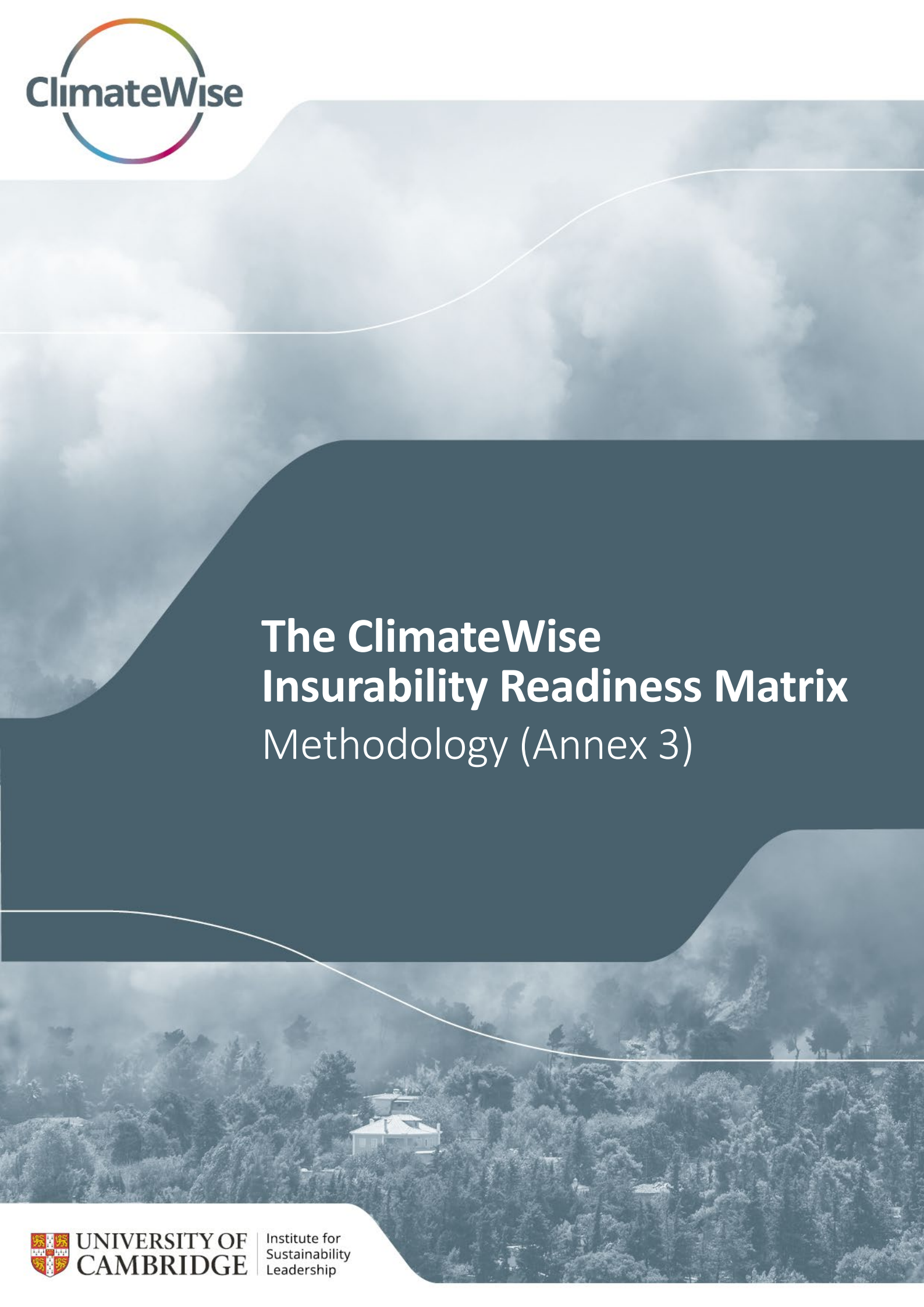
ClimateWise

The ClimateWise Insurability Readiness Matrix

Methodology (Annex 3)



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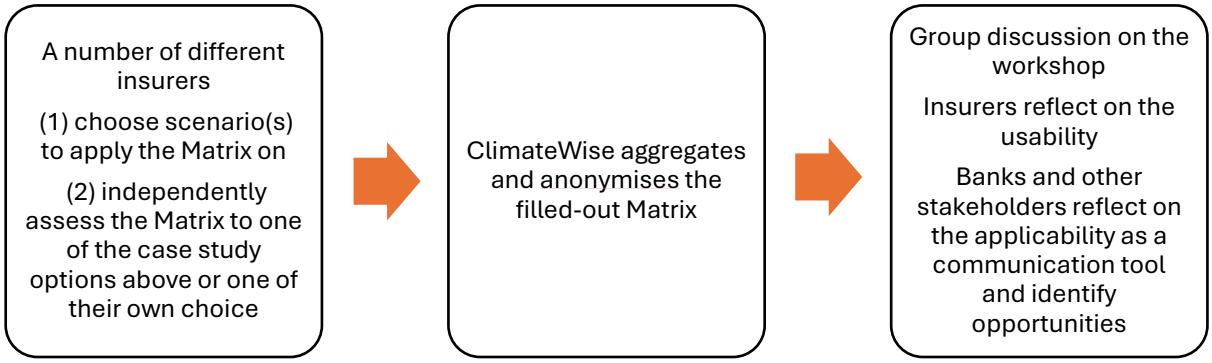
About this annex

This annex provides methodology information relating to the ClimateWise Insurability Readiness Matrix.

A. Methodology

This research was developed through a multi-stage process to ground the tool in both evidence and practice, combining expert convening, structured literature review, stakeholder surveying and a pilot exercise.

- Expert convening: The work was developed through the convening of institutions spanning the insurance and reinsurance industry, banking, academia, industry associations, international organisations and civil society. The convening process allowed the research to stress-test definitions, surface points of contention, and build towards a shared framework that could work across institutional contexts. In parallel, we also held stakeholder consultations with policymakers and regulators, acknowledging their important roles in maintaining insurability.
- Literature review: Convening was supported by a structured review of academic and grey literature, covering research on insurability, physical climate risk, protection gaps, and the relationship between insurance and broader financial stability. The review drew on industry research, international organisation publications and peer-reviewed work to establish the evidentiary basis for the design of the Matrix.
- Survey: A survey was conducted to capture a range of perspectives on the components of the Matrix and how it could be effectively operationalised within existing workflows. Respondents were drawn predominantly from the insurance (55 per cent) and reinsurance (14 per cent) industry, alongside academia, research institutions and NGOs (18 per cent), professional services firms (9 per cent), and brokers and intermediaries (5 per cent). Half of the respondents represented a global perspective, followed by European (41 per cent) and North American (23 per cent), and one respondent represented an African perspective (multiple selections permitted). Sector coverage was broad, with multiple selections permitted, the highest representation from commercial and industrial property (67 per cent), residential property (62 per cent), speciality lines (62 per cent) and infrastructure (52 per cent). The majority of respondents identified sustainability, ESG or climate policy as their primary area of responsibility (57 per cent), with underwriting and risk appetite and public policy and regulatory affairs each representing 14 per cent. Full demographic detail is provided in B1. Respondent statistics.
- Piloting: A draft version of the Matrix was piloted with two distinct user groups: (re)insurers as the primary stakeholders responsible for completing the Matrix, and project financiers and other stakeholders as the primary audience for its outputs. Two scenarios were suggested – flooding in Tenbury Wells and wildfires in Los Angeles – based on their familiarity to the working group, and one scenario based on (re)insurers' own choices. Participants were asked to complete the Matrix independently before a group workshop in which individual assessments were aggregated and discussed to identify points of consensus, friction and divergence.



From this process we received ten different assessments: four on LA wildfires, two on Tenbury Wells floods, and four other scenarios on flood in Hull, flood in Europe, wildfires in Yorkshire and agriculture in Sub-Saharan Africa.

- **Workshop:** The workshop was designed as a testing session for the completed Matrix from the pilot exercise. The purpose of the workshop was to gather insight on whether the Matrix outputs are understandable and actionable for those receiving them, and whether the process of completing the Matrix is feasible and clear for those filling it in. The session was not intended to assess or debate the policy or market issues reflected in the case study, but rather how the Matrix functions as a tool. Breakout groups were used to test feasibility and legibility, and actionability. The workshop produced a positive validation of the Matrix's core design alongside specific and consistent feedback on where the tool needed to be strengthened. Discussions from this workshop informed the version of the Matrix presented in this report and the guidance accompanying it.

At all times, the activities were undertaken in strict compliance with applicable laws and regulations. Supporting institutions were not asked to, and did not, share any commercially sensitive information.

B. Survey findings

B1. Respondent statistics

1) Organisational type

The respondent pool was weighted towards the insurance industry, reflecting the Matrix's primary intended user group. Insurers accounted for the majority of responses (55 per cent, n=12), followed by academia, research institutions and NGOs (18 per cent, n=4), reinsurers (14 per cent, n=3), professional services firms including construction, engineering and legal (9 per cent, n=2), and brokers and intermediaries (5 per cent, n=1).

This composition is broadly appropriate for a tool designed to be completed by insurers and reinsurers, while the inclusion of academic, research and professional services respondents provides a degree of external perspective on the framework's conceptual rigour and practical applicability.

2) Geographic representation

Half of respondents indicated that their perspective primarily represents a global view (50 per cent, n=11), reflecting the international scope of many participating institutions. European perspectives

were the most represented regional viewpoint (41 per cent, n=9), followed by North America (23 per cent, n=5). One respondent represented an African perspective (5 per cent, n=1).

The relative underrepresentation of Africa, Asia-Pacific, Latin America and other emerging market regions is a notable limitation of the survey sample. Given that low- and middle-income countries' drivers and dynamics of insurability differ substantially between advanced and emerging economies, future iterations of the validation process should seek broader geographic coverage, particularly from practitioners with direct experience in high-protection-gap markets.

3) Sector and asset class expertise

Respondents indicated expertise across a wide range of sectors, with multiple selections permitted. Commercial and industrial property attracted the highest representation (67 per cent, n=14), followed by residential property (62 per cent, n=13), speciality lines including cyber and marine (62 per cent, n=13), and infrastructure covering energy, transport and water (52 per cent, n=11). Agriculture and forestry were represented by 33 per cent of respondents (n=7), public sector risk by 24 per cent (n=5), and other sectors by 19 per cent (n=4).

The breadth of sector coverage supports the Matrix's aim to function across asset classes and lines of business, though the relatively lower representation of public sector risk and agriculture is worth noting for future validation rounds.

4) Primary area of responsibility

The majority of respondents identified sustainability, environmental, social and governance (ESG) or climate policy as their primary area of responsibility (57 per cent, n=12). Underwriting and risk appetite, public policy and regulatory affairs, and other functions each accounted for 14 per cent (n=3) of responses.

This distribution has important implications for interpreting the survey findings. The dominance of sustainability and ESG professionals, rather than underwriters, among respondents means that the validation exercise reflects how the Matrix is perceived by those responsible for climate strategy and external engagement, rather than those making day-to-day underwriting decisions. This is consistent with the operationalisation findings, which identified strategy and product innovation as the highest-impact applications and highlighted friction at the underwriting level as a barrier to adoption. It also suggests that future trials and validation could deliberately engage underwriting and risk appetite functions to test the Matrix's applicability closer to the point of coverage decisions.

B2. Component validation

To test whether the seven components in the Matrix adequately capture the drivers of insurability, survey respondents were asked to rate the relevance of each component on a scale of one to five, identify any critical missing components, and assess whether the framework applies across different geographies and perils.

1) Relevance ratings

All seven components were rated above the midpoint of the scale, confirming broad support for the component selection. These ratings should be read in light of the survey's demographic profile: respondents were predominantly insurers and reinsurers operating in advanced economy markets,

with sustainability and ESG as the dominant functional background rather than underwriting. This means the scores reflect how the components are perceived by those working at the strategic interface of climate risk and insurance.

Data and Modelling received the highest average relevance score of 4.53, with a low standard deviation of 0.70, indicating both high importance and strong consensus across respondents. *Physical Resilience* (4.12) and *Market Capital and Capacity* (4.00) also scored strongly, with moderate variance. These three components, spanning the technical, physical and financial dimensions of insurability, form the core of what survey respondents consider most fundamental to underwriting appetite.

The remaining four components scored in the range of 3.24 to 3.59, indicating solid but more varied relevance. *Stakeholder Awareness and Financial Literacy* received the lowest average score (3.24) and relatively high variance. This may be best understood in the context of survey respondents. For insurers and reinsurers operating in advanced economy property and speciality markets (the majority of this survey's respondents) demand-side literacy may potentially be a distal rather than proximate driver of underwriting decisions. The component's relevance is substantially higher in the contexts of low- and middle-income country insurance penetration and parametric product design, which were underrepresented in the respondent pool. This score, therefore, may not be read as a signal to reduce the weighting of the *Stakeholder Awareness and Financial Literacy* component in the Matrix, but as a reflection of the sample's geographic and functional composition. *Accessibility and Affordability* (3.59), *Policy Alignment* (3.47) and *Recovery Ecosystem* (3.47) showed similarly high variance, with minimum scores of one across all three – suggesting that for some respondents, working in specific geographies or lines of business, these components fall outside their direct underwriting considerations.

This pattern of variance is itself analytically significant. It reflects the diversity of institutional contexts in which the Matrix could be applied: a respondent focused on high-income property markets will weight *Policy Alignment* and *Recovery Ecosystem* differently from one working on parametric products in emerging markets, for whom *Accessibility and Affordability* and *Stakeholder Awareness and Financial Literacy* may be more central. The Matrix is designed to accommodate this variation; the relevance of each component will differ by geography, peril and asset type, and the RAG assessment should reflect those contextual differences rather than applying uniform weights across components.

2) Missing components

When asked whether any critical component was missing, more than half of the respondents answered none. For those who answered otherwise, the topics covered peril-specific differentiation: one respondent noted that flood, wildfire, windstorm and convective storm risks behave very differently and should not be treated uniformly, and that volatility and tail risk (the magnitude of unpredictable losses relative to the average year) is a distinct consideration from the components currently captured.

A second theme concerned the underwriting cycle itself. One respondent observed that annual underwriting cycles make markets inherently reactive, while longer cycles allow for market shifts and resilience improvements to be incorporated. Related suggestions included portfolio optimisation (an insurer's individual ability to increase appetite depending on its wider portfolio mix), product and class maturity (how new or experimental a class is within the broader market), and the rule of law and jurisdiction of policy wording as distinct from policy alignment at the planning and regulatory level.

Geopolitical environment was raised by two respondents as an absence. One respondent also raised the question of whether capital requirement frameworks, specifically solvency and capital charge regimes, could be adjusted to encourage risk-taking in higher-risk areas, framing this as distinct from capital availability per se.

These suggestions could be deepened through future iteration, particularly around peril-specific variants, portfolio-level dynamics, and the intersection of geopolitics and insurability in cross-border contexts.

3) Geographic applicability

The large majority of respondents considered the components applicable across different geographies, though several qualifications were offered. One respondent observed that the social and cultural dimensions of insurance vary significantly across geographies, and that this sociological dimension should be more explicitly captured. Another raised the need to capture contextual systemic risks, particularly around socioeconomic conditions and infrastructure, in geographies where these represent structural rather than cyclical constraints on insurability.

One respondent drew a distinction between the nature of the insurability challenge across geographies: in current advanced economy markets, reinsurance perils are the most proximate driver of losing insurability, while in emerging markets the challenge is more fundamental, the structural absence of insurance rather than its withdrawal. This distinction, developed in the Why this matters section, has direct implications for how the Matrix is applied: the components and their relative weights are likely to differ systematically between contexts of market retreat and contexts of structural under-penetration.

4) Peril applicability

Respondents broadly confirmed that the components apply across different perils, with a majority indicating the framework is sufficiently generic to flex across hazard types. Several qualifications were raised. One respondent suggested that the Matrix has an implicit focus on physical climate perils, particularly through the Physical Resilience component, and recommended either ensuring it works for transitional impacts or explicitly scoping it to physical perils. Another proposed that climate peril data be treated as a standalone component rather than subsumed within Data and Modelling, given how specifically it drives underwriting appetite. A third noted that greater granularity at the level of individual perils or hazards would be needed for the tool to inform precise underwriting decisions, echoing the broader finding that the Matrix operates most naturally at a strategic rather than transactional level.

5) Other observations

Two respondents raised questions about aggregation and scoring that have direct implications for the Matrix's design. One noted uncertainty about assessing insurability holistically across components and how individual RAG ratings could be combined into an overall view of insurability readiness. Another asked whether a generic scoring methodology embedded in the RAG criteria would be feasible. These are important design questions that the current iteration of the Matrix intentionally leaves open, given that the appropriate aggregation logic will depend on context, and that premature quantification risks false precision. However, they point to a clear user need for guidance on how to move from component-level assessments to an integrated view, which should inform the next iteration of the tool and is addressed in the Call for action section.

B3. Operationalisation

The survey asked respondents how they would use the Matrix, who they would use it with, where it would have the most impact within their operations, at what level it should be applied and what barriers they anticipated. The findings reveal a tool that is understood primarily as a strategic and engagement instrument, with implications for how it should be positioned, trialled and embedded going forward.

1) Intended use

The most common intended use of the Matrix was as a stakeholder engagement tool, selected by 65 per cent of respondents, followed by strategic market entry into new territories or sectors (47 per cent), diagnostic assessment (41 per cent) and client consultation to improve risk profiles (29 per cent). A further 24 per cent indicated other uses, with open responses referencing advocacy, policy influence and internal board-level communication.

This suggests alignment where respondents see the Matrix's primary value in creating a shared language that can structure conversations with stakeholders who sit outside the insurance market, including governments, regulators, developers and asset owners, around what is driving insurability pressure and what would need to change to address it. The diagnostic and consultative uses, while less frequently cited, are complementary: they point to the Matrix functioning as a starting point for engagement rather than an end product in itself.

2) Stakeholder engagement

When asked which stakeholders they would use the Matrix to engage with, 82 per cent of respondents selected internal executive leadership or board. Government and regulatory bodies were selected by 59 per cent, clients and large asset owners by 41 per cent, reinsurance partners by 35 per cent, and community or civil society organisations by 24 per cent.

The prominence of internal leadership is notable. It suggests that respondents see the Matrix as a tool for making insurability understandable to senior decision-makers within their own organisations, translating a complex, multi-dimensional risk condition into a structured framework that can inform strategic direction. This internal advocacy function may be as important as the external engagement function in practice, particularly in organisations where climate risk and insurability are not yet embedded in strategic planning. The high appetite for government and regulatory engagement reflects the findings from the literature that policy alignment is one of the most consequential levers for insurability and that insurers see the Matrix as a vehicle for structuring that conversation.

3) Operational impact

Respondents were asked where within their current operations the Matrix would be most impactful. Strategy and product innovation were joint leaders at 76 per cent each, followed by sustainability and underwriting at 53 per cent, client advisory and risk engineering at 41 per cent, and public policy and external affairs and portfolio management at 35 per cent each.

The equal weighting of strategy and product innovation points to two distinct but related applications. In a strategy context, the Matrix provides a forward-looking framework for assessing where markets or sectors are heading, informing decisions about where to write risk, where to build capacity, and where to engage with policymakers. In a product innovation context, it identifies the specific conditions that need to shift to make new insurance products viable, supporting the design of parametric instruments,

blended finance structures or subsidy mechanisms calibrated to the bottlenecks a given market faces. The strong showing for underwriting (53 per cent) is worth noting given respondents' qualitative comments, discussed below, which suggest tension between the Matrix's strategic register and the quantitative requirements of underwriting decisions.

4) Level of application

Respondents were asked at what level the Matrix could be used to assess insurability. Asset-level application was selected by 82 per cent, regional by 65 per cent and sector by 47 per cent. This suggests the Matrix is seen as most tractable when applied to specific, bounded contexts (such as a particular infrastructure asset, a coastal region or an urban flood zone) rather than at the level of an entire sector or economy. The strong showing for regional application alongside asset level reflects the Matrix's dual function: as a tool for assessing individual assets and as a framework for understanding the conditions that determine insurability across a geography.

5) Barriers to adoption

Respondents identified a range of barriers to adopting the Matrix in daily operations. Several themes emerge from the responses.

The most substantive barrier is the tension between the Matrix's qualitative, strategic register and the quantitative requirements of underwriting and operational decision-making. Multiple respondents noted that underwriting decisions are increasingly algorithm driven, that in-house data modelling and pricing methodology will always take precedence, and that the Matrix would need to be converted into quantitative loadings to be integrated into existing systems. This points to a fundamental positioning question: the Matrix is most naturally a macro-level strategic tool that informs decisions about whether to write risk in a country or sector, or how to engage policymakers, rather than a binding or individual risk assessment instrument. Respondents who understood it in this way found the fit clear; those approaching it from an underwriting perspective found it harder to operationalise at the asset level.

A second theme is the need for tailoring. Several respondents noted that the Matrix in its current form is broad and would need to be adapted to specific business areas, geographies or audiences to add practical value.

A third theme is organisational and cultural resistance. Respondents cited potential ownership ambiguity, limited organisational appetite for innovation and difficulty embedding new frameworks in existing processes as barriers. One noted that it is difficult to be prescriptive about product innovation, even where the strategic case is clear. Another pointed to the challenge of demonstrating a clear pathway from a Red or Amber rating to a Green one. This is addressed in the report in section 3.2, which shows possible ways of movement between the ratings.

Finally, data quality and availability were identified as constraints, particularly for applying the Matrix across multiple dimensions simultaneously in data-sparse geographies. This is consistent with the findings on the *Data and Modelling* component, where Red conditions are characterised by the absence of the information that would be needed to complete a robust assessment.

Pilot and workshop results

C1. Feasibility of completion

Completing the draft Matrix was not considered onerous at the level of detail required for a strategic assessment. Participants who completed it with cross-functional internal teams, drawing on underwriting, sustainability and CEO office perspectives, reported that the process of completion was itself valuable, surfacing internal disagreements and assumptions that had not previously been made explicit. One insurer noted that the exercise had prompted engagement across public affairs, sustainability and the CEO office simultaneously, and that the use of the Matrix for consistent portfolio review across different risks and regions was something the institution intended to explore further.

The trend column generated the most discussion during completion, with participants noting significant internal debate about direction of travel for components where different aspects of the same condition are moving simultaneously in different directions. The consensus view was that trend assessments are more informative and more defensible once aggregated across multiple submissions than when produced by a single institution, confirming the collaborative completion model as the most accurate deployment mode where for example, multiple views on insurability are sought by government in response to a Call for Evidence.

Participants confirmed that the Matrix operates most naturally at a strategic and portfolio level rather than at the level of individual risk or contract decisions. This positioning is consistent with the validation survey findings.

C2. Understandability for non-insurer audience

Non-insurer participants found the Matrix outputs helpful in understanding what drives insurability. The RAG structure communicated the essential picture clearly, and the component-by-component breakdown provided diagnostic specificity that generic risk assessments do not. Participants noted that the Matrix represents a significant opportunity to provide a consolidated industry view in a format accessible to a non-specialist audience, as also reflected in C1 above.

The primary understandability gap was the absence of a clear ‘so what?’. Non-insurer participants could read the Matrix and understand the diagnosis but found it difficult to determine overall severity, prioritise their response or identify what specifically they would need to do. A summary section was therefore added to the latest version of the Matrix to provide a headline signal, most urgent component and priority quick win.

A secondary understandability concern was the visual equality of components. Participants observed that while all seven components are presented in equivalent format, in practice some are binding constraints on insurability while others are secondary.

Stakeholder granularity was also identified as insufficient. Listing government as a stakeholder does not tell a policymaker whether the ask falls to national government, a specific regulatory body, a planning authority or a local council. This level of specificity was described as critical for the Matrix to function as a policy engagement tool rather than a general diagnostic.

C3. Actionability

The most substantive actionability feedback concerned lever prioritisation. Non-insurer participants noted that it is important that the *Pathways to Green* appear as a differentiated list, with clear signals about which to pursue first, how difficult each is to activate, or what comparative impact each would have. An unprioritised lever list risks generating paralysis rather than action. Adding an *ease* and *impact* rating for each pathway, with labelling of *quick wins*, was identified as one of the most important structural improvements needed.

The workshop surfaced a concern about unintended consequences that warrants explicit treatment in how the Matrix is framed. One participant noted the risk that a lender receiving a Matrix with multiple Red ratings might interpret this as a signal to reduce exposure before peers do, an outcome that would accelerate the market retreat the Matrix is designed to prevent. This is not a reason to suppress findings but a strong argument for the responsible use guidance: the Matrix should always be shared in the context of a conversation about what can be done, with *Pathways to Green* always accompanying status and trend ratings.

Participants also identified the Matrix as a potential tool for aligning multiple institutional voices behind a shared policy ask. This coalition-building function was described as one of the Matrix's most important uses, particularly in contexts where government is aware of the problem but has not yet been given a clear, prioritised ask from the financial sector as a whole.

The University of Cambridge Institute for Sustainability Leadership

CISL is an impact-led institute within the University of Cambridge developing industry leadership, sector pathways and commercially-viable solutions to transform markets for a sustainable future.

For over three decades we have worked with leaders and innovators across business, finance and government to accelerate action.

We believe wide-scale change can happen through markets and take an evidence-based approach to transition pathways which inform strategy, action and investment to enable an inclusive and resilient economy.

Through our hubs in Cambridge, Cape Town and Brussels, and a global network of leaders and partners, we bring together insight, influence and action to accelerate market-wide transformation.

The Centre for Sustainable Finance

CISL's Centre for Sustainable Finance's focus is to collaborate, co-create research and tools, and build narratives and the human skills and capacity required to accelerate the rewiring of the global financial system to support a sustainable economy. The Centre works closely with international financial organisations and, in particular, hosts three membership groups for private financial institutions – the Banking Environment initiative for banks, ClimateWise for insurers and the Investment Leaders Group for investors.

ClimateWise

ClimateWise brings together the insurance industry into a member network convened by CISL, which integrates sustainable leadership with world-leading research capability to address the impacts of climate change. ClimateWise is uniquely placed to bring together business, government and academic expertise; it provides a collective voice for the industry; a forum to interact with other stakeholders, and it enables the transition of the insurance industry through a defined set of Principles aligned to disclosure requirements.

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