Global Risk and Resilience Fellowship

Summary report, 2025

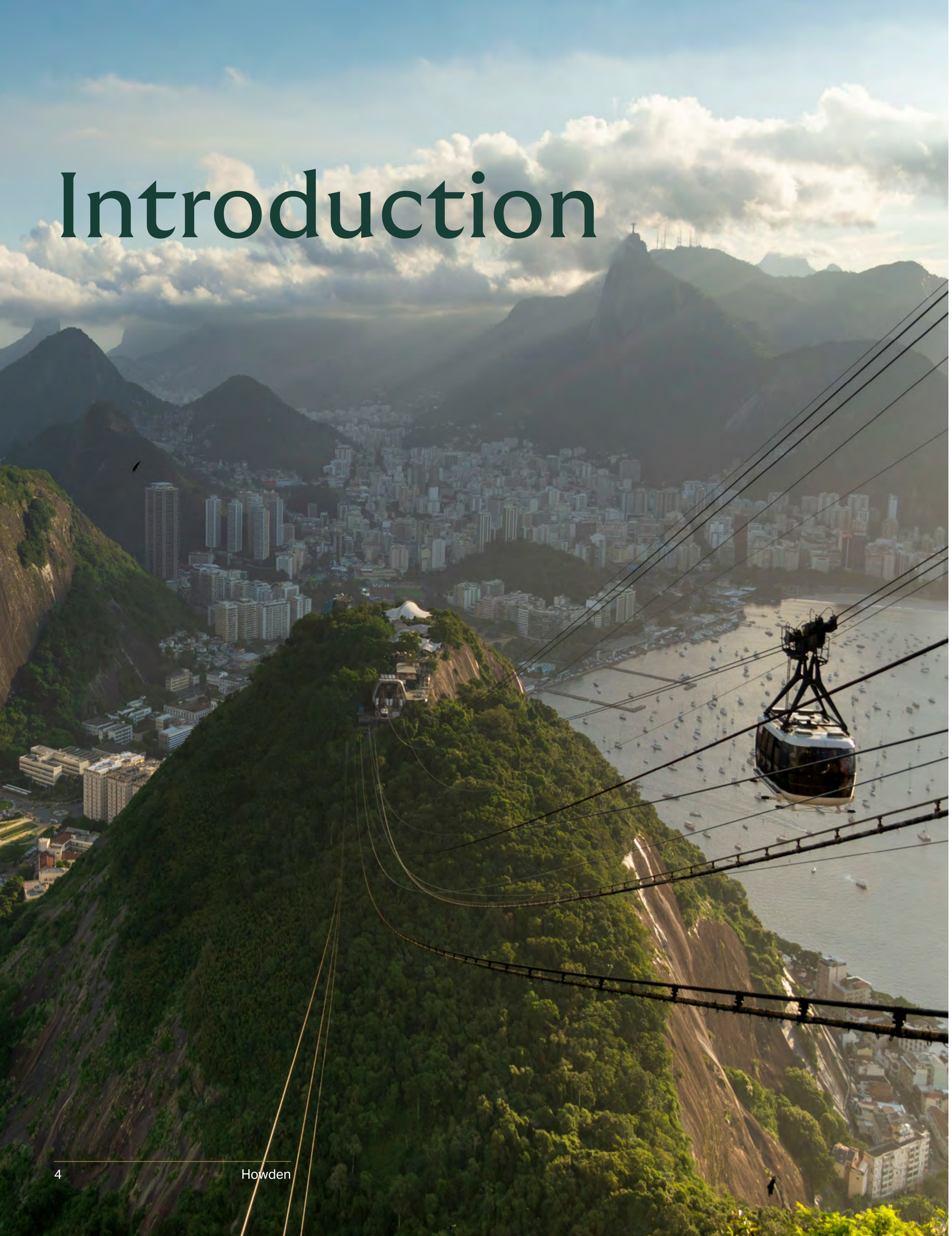
HOWDEN

RESILIENT CITIES NETWORK

Sustainable Markets Initiative

Contents

Introduction



David Howden

CEO, Howden

Our third cohort of Global Risk and Resilience Fellows have made a huge impact on the world around them. Working alongside our new city partners, they've been capturing the benefits of coastal protection in New York following city's significant investment in coastal resilience following Hurricane Sandy. They've been on the ground in Mexico City seeing how parametric insurance can help the vulnerable recover from the impact of earthquakes and other natural disasters. And they've been using their expertise and experience in Rio to help communities guard against the perils of extreme rainfall. Together, the class of 2025 have shown how insurance tools and products can be part of the solutions to solve some of the biggest challenges facing our cities today. I'm hugely proud of the job our fantastic Fellows have done. They're not just protecting cities and the lives of the people who live in them, but powerfully demonstrating how insurance is a true force for good. And their insights and impact will help take the programme for 2026 to even greater heights.

Lauren Sorkin

Executive Director, Resilient Cities Network

As we look ahead to the next year of the Fellowship, I am encouraged by the expanding community of leaders who are turning the principles of resilience into measurable progress. Each Fellow and chief resilience officer (CRO) has demonstrated that when cities, the private sector and global partners collaborate effectively, they can generate pathways that strengthen our response to risk and build layers of financial resilience into the urban fabric. The year ahead will focus on scaling these achievements through stronger partnerships, broader engagement with finance and insurance sectors, and deeper integration of resilience within city planning and investment strategies. By working together, we are showing that resilience is not only a response to risk, but a cornerstone of long-term prosperity and stability for urban communities worldwide.

Jennifer Jordan-Saif

CEO. Sustainable Markets Initiative

The Sustainable Markets Initiative (SMI) convenes the private sector to ackle the toughest sustainability and climate challenges, including advancing urban resilience. By bringing together entrepreneurs, investors and corporate leaders, SMI catalyses practical, scalable solutions that align innovation, finance and local leadership, so cities can withstand shocks, protect livelihoods and build more inclusive, sustainable futures. Next year, it will be important to focus on deepening the partnerships developed under this programme, and bringing in new collaborators to turn ideas into market action; unlocking blended finance and directing innovation toward nature-based and data-driven solutions that accelerate equitable, city-level resilience.

In 2025, Howden, Resilient Cities Network and the Sustainable Markets Initiative delivered the third year of the Global Risk and Resilience Fellowship ('the Fellowship'). This built on the successful delivery of the previous two years, when municipal leaders in ten cities worked with the private sector to address urban resilience challenges, such as how cities can access the capital required to advance climate mitigation and adaptation.

The 2025 Fellowship worked with three cities across two continents: New York, US, and the programme's first two Latin American cities – Rio de Janeiro, Brazil, and Mexico City, Mexico. This report provides a detailed overview of the outcomes of the 2025 Fellowship projects, as well as a reflection on the key learnings from delivering the Fellowship over the last three years.

Connecting insurance expertise and city leadership

What is the Fellowship?

To explore solutions for urban climate resilience challenges, the Fellowship connects the risk expertise of the global insurance industry and the wider private sector with city leaders on the climate front line.

Practically speaking, this means that insurance professionals are selected as 'Fellows' and seconded to work with a city's chief resilience officers (CROs) and other city leaders, for example, those involved in budgeting and strategic long-term planning.

Additional technical expertise – typically from the finance and engineering sectors – is brought in to support the projects, demonstrating a collaborative approach to urban resilience financing.

Together, municipal leaders and Fellows address a specific area for building urban resilience, for example, how insurance can be strategically used to derisk investment in adaptive infrastructure.

A diverse range of stakeholders are involved in each Fellowship project, bringing together the collective expertise of the insurance industry, the wider private sector and municipal leaders.

This broad stakeholder engagement is critical for addressing the most pressing resilience challenges for cities, and increasing the potential for solutions developed to be implemented.

From left to right: Javier Garduno, Head of Engagement, Latin America and the Caribbean Resilient Cities Network; Myriam Urzua, Secretary of Civil Protection and Risk Management, Mexico City Government; Rowan Douglas, CEO, Howden Climate Risk and Resilience at the launch of the Mexico City Fellowship roject.

The case for public-private collaboration for urban resilience

The human and financial toll of more severe and frequent climate hazards in cities is immense. In the first six months of 2025 alone, economic losses from global climate events are estimated to have reached around $162m.[1] Public and private assets, and most of the global population, are clustered in cities, putting them at the heart of the global climate agenda. While cities are highly vulnerable to extreme climate shocks, the bulk of carbon emissions are emitted from urban areas, contributing to the worsening climate reality. For investors and executives, this risk is a direct threat to their assets, the future security of which would be strengthened by the acceleration of investments in preventing or reducing the negative impacts of climate hazards.[2]

Private sector investment in climate adaptation and resilience (A&R) is still relatively nascent. But, for cities around the world, attracting capital for adaptation and risk reduction is a top priority. Cities can't fully realise their A&R objectives without targeted collaboration and support from the private sector. Strengthening collaboration requires a recognition that the most effective way for the private and public sectors to respond to shared risk is to leverage interdependencies.

In 2023 Howden (through the SMI Insurance Task Force) partnered with the Resilient Cities Network (R-Cities) – a global, city-led coalition active in over 100 cities across 46 countries – to launch the Global Risk and Resilience Fellowship (the Fellowship). Since then, we have engaged private-sector partners in 13 cities across four continents. This initiative has piloted insurance-backed solutions to urban climate challenges, while advancing research and development into solutions that help cities and communities withstand shocks.

The Fellowship was built on a simple premise; that cities can manage climate risk more effectively when they have the tools, partnerships and financial strategies to understand, quantify and transfer risk. Over three years, the Fellowship has developed and refined a multi-level methodology for private-public collaboration. This enables resilience building that combines city priorities, technical data analysis and modelling, and cross-sector collaboration to create actionable pathways for risk-reduction and resilience. Each cohort builds on the lessons of the last, expanding the network of private sector partners who are engaging with cities to address risk, and explore technical solutions for advancing urban resilience.

Each year of delivering this programme has brought new learnings for cities and the private sector. Nevertheless, certain lessons remain consistent across cohorts. Two of the most relevant relate to (i) the urgency of addressing the urban A&R funding gap, and (ii) the need to generate new models for convening cross-industry private sector stakeholders and city officials, resulting in a shared language for how to prioritise and sustainably finance urban climate risk.

[1] McKinsey. 2025. Access here.
[2] McKinsey Sustainability. 2025. Access here.

2024 Fellowship cities: a year later in Cape Town and Greater Manchester

Flooding emerged as a cross-cutting theme in the 2024 Fellowship projects, with each city exploring context-specific questions on quantifying flood costs, risk-sharing and building the investment case for adaptation.

The Fellowship project in Greater Manchester strengthened the Greater Manchester Combined Authority's (GMCA) understanding of the cost of failing to adapt to flooding.

These insights have directly informed the city's approach to convening stakeholders (e.g. regional utility providers, businesses and community members) to understand the current and future impacts of floods on people and assets. Notably, the project's outcomes were shared with the Greater Manchester Integrated Water Management board to directly inform and strengthen regional water management planning, which leads delivery of a region wide strategy for water resilience.

GMCA's commitment to broad dissemination has seen the Fellowship's work promoted across regional, national and international platforms. This has included global webinars; an international podcast; participation in an urban resilience conference panel; a regional training event centred on planning for climate change and resilient environments; facilitated international visits; and knowledge exchanges.

In Cape Town, the Fellowship produced a methodology for quantifying the direct and indirect cost of flooding, informed by extensive stakeholder engagement. This approach directly informed the development of Cape Town's flood management action plan, which incorporates risk-reduction measures and policies for addressing flood risk across the city.

Thirteen cities in three years – key learnings and impact

Three years of building partnerships

Investing in urban resilience requires effective collaboration that leverages public and private resources and expertise.

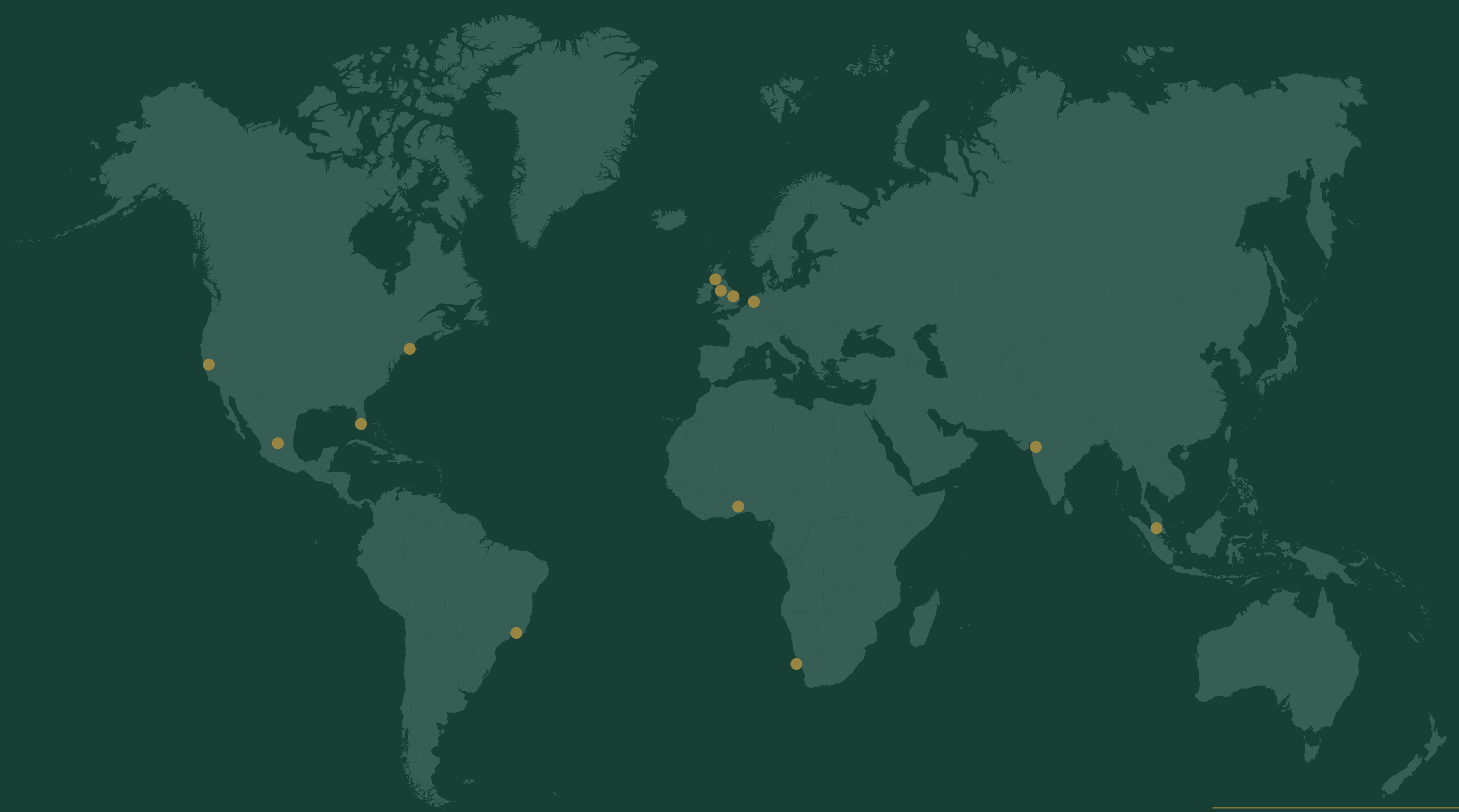
Since launching the Fellowship, we have engaged with stakeholders and partners from across the urban resilience ecosystem, aligning complementary efforts. We've explored the roles of different stakeholders, the opportunities for quick wins, and continuously refined the delivery model to break down ecosystem silos and focus resources where they're needed most.

25+ partners

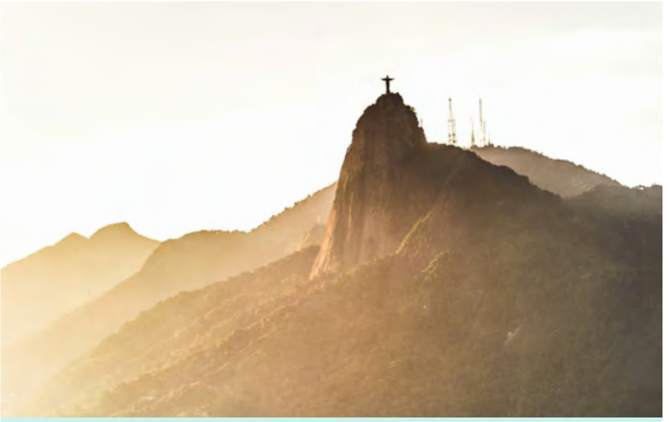
- Howden
- MiCRO
- Arup
- Moody's Analytics
- JBA Consulting
- JBA Risk Management
- BCG
- Financial Sector Deepening Africa – (FSD Africa)
- Resilient Water Accelerator
- Cities Climate Finance Leadership Alliance (CCFLA)
- Resilient Cities Network
- Sustainable Markets Initiative
- Skyline Partners
- CDPQ
- Descartes
- UNDP
- University of Cape Town
- First Bank Nigeria Insurance Brokers
- Lloyd's of London
- Sigma7
- Alliant
- Rebalance Earth
- NormanMax Syndicate
- Climate Bonds Initiative
- Krutham
- Intensel
- United Utilities
- AXA XL
- Bank of America
- Beazley
- InsuResilience
- LeoPanthera
- Munich-Re

13 cities

- Lagos
- Cape Town
- Greater Miami
- Oakland
- Norfolk
- Rio de Janeiro
- New York City
- Malacca
- The Hague
- Surat
- Glasgow
- Greater Manchester
- Mexico City



Four key lessons



Actors across the urban resilience ecosystem must strengthen coordination to optimise scarce urban climate capital and avoid duplication of efforts.

1

Pricing risk and driving resilience investment requires a deep, quantitative understanding of the urban risk landscape.

2

A strong enabling environment is essential to unlock urban climate investment and build market confidence.

3

Insurance has a key role to play in de-risking resilience investments – cities can use insurance more strategically to enable finance to follow.

4

Actors across the urban resilience ecosystem must strengthen coordination to optimise resources and avoid duplication of efforts.

What practical strategies can cities and the private sector use to collaborate on advancing urban resilience? Which private-sector stakeholders should be engaged at each stage of the resilience planning and implementation process? How can incentives be structured to align interests across partner organisations and maximise impact?

Over the last three years, we have sought to answer these questions through the Fellowship. What we've learned is that true urban resilience requires cross-sector collaboration – cities alone can't provide the funding needed for A&R that protects both public and private assets, and insurers and financiers alone can't underwrite or finance the scale of A&R needed.

Other city networks, institutions and programmes offer critical lessons on connecting public and private stakeholders to quantify climate risk, develop investable project portfolios and attract capital for adaptive infrastructure. Below, we have compared the Fellowship with a handful of complementary programmes, all of which we actively engaged with in 2025 to understand what is working and how collaboration can be improved.

Supporting cities to adapt to weather extremes and build resilience against shocks and stresses is at the core of these initiatives. However, each takes a different approach:

- To date, the Fellowship has been focused on using insurance sector data and tools to build risk management expertise and price risk, supporting city leaders to take action to strengthen financial and climate resilience.
- The SDSN Global Commission for Urban SDG Finance has a policy and advocacy focus, using research and engagement to push for reforms in the global financial architecture and multilateral development banks.

- Cities Climate Finance Leadership Alliance (CCFLA) is focused on stakeholder coordination and capacity-building, providing a platform for knowledge exchange across a diverse set of private and public stakeholders, and clarifying strategies for bridging the urban climate finance gap.
- European Bank for Reconstruction and Development (EBRD) Green Cities has an investment focus, supporting cities to develop strategic plans for priority adaptation projects, providing capital, and supporting blended finance models for investment.
- Urban Infrastructure Insurance Facility (UIIF) is primary risk-finance-focused. It supports participating cities to leverage insurance, and transfer natural disaster risk to a risk pool that pays out quickly after a disaster. This enables quick rehabilitation of infrastructure and capacity to respond to the needs of the most vulnerable.
- Green Municipal Fund (GMF) is focused on investment that supports implementation of climate resilience projects. It aims to ensure that municipalities have access to the financial and technical resources required to deliver tangible climate and sustainability outcomes.

Comparison of urban climate finance focused initiatives connecting city leaders and private sector stakeholders

Initiative	Focus	Key partners	Objective/s	Approach	Geographic scope
HOWDEN Global Risk and Resilience Fellowship Access here	Capacity building	• Howden, R-Cities and the wider private sector through the SMI	• Support cities' understanding of how risk transfer can be strategically used to complement existing efforts to make them more resilient to climate change	• Embed insurance professionals in city leadership teams to co-develop insurance-industry-informed risk management approaches that align with city resilience objectives. Bring in additional expertise from private sector partners (e.g. finance/engineering) to provide knowledge on specific challenges in each city. • Projects in each city delivered over three to six months.	• Global • Through R-Cities' network of 100+ cities
SDSN GLOBAL COMMISSION FOR URBAN SDG FINANCE SDSN Commission for Urban SDG Finance[3] Access here	Policy and advocacy	• High-level group of 80+ members, including mayors, finance experts, scholars and city networks • Co-chaired by Jeffrey Sachs (SDSN), Anne Hidalgo (Mayor of Paris), and Eduardo Paes (Mayor of Rio de Janeiro)	• Increase financial flows to cities and regions for SDG implementation, by developing and advancing a portfolio of solutions that support current and proposed reforms • It aims to bring together current and ongoing work of existing city networks, coalitions and research entities to develop realistic, but innovative recommendations	• Commission is comprised of six task forces, each focused on analysing barriers to urban SDG finance; evaluating existing proposals to improve urban finance access; and developing new strategies and mechanisms to strengthen alignment between the global financial architecture and urban needs. • Focus themes for each task force are: (1) reforming multilateral development banks; (2) augmenting existing and/or creating new funds/institutions; (3) attracting private sector participation; (4) developing an advocacy strategy; (5) recognising geography and context; and (6) balancing mitigation and adaptation finance.	• Global • Focus on cities in Asia, Africa, and Latin America
URBAN INFRASTRUCTURE INSURANCE FACILITY Urban Infrastructure Insurance Facility (UIIF) Access here	Risk finance	• ICLEI (and its member cities) • KWF • German Federal Ministry for Economic Cooperation and Development (BMZ) (funder)	• Provide cities with risk assessment for key assets; develop risk-transfer products; and create a risk pool between participating cities to leverage economies of scale, reducing the premium costs for cities	• Structured facility offering financial instruments (e.g, credit enhancement, risk pooling) • Backed by development banks and donors • Focused on de-risking infrastructure projects	• Targeted at emerging markets and developing cities. Initial focus on ten cities across Latin America

[3] Organisation name in full is the Sustainable Development Solutions Network (SDSN) Global Commission for Urban Sustainable Development Goals (SDG) Finance.

Initiative	Focus	Key partners	Objective/s	Approach	Geographic scope
European Bank for Reconstruction and Development (EBRD) Green Cities Access here	Urban climate investment	• EBRD • Municipal governments	• Address urban environmental challenges by combining investment insustainable infrastructure (e.g. transport water, waste water, energy and buildings) with policy reforms	• Each participating city develops a Green Cities Action Plan (GCAP) – a strategic roadmap identifying priority investments and policy measures to reduce pollution, improve energy efficiency and enhance resilience. • Framework funded by EBRD and other donors to support cities through deliver strategy and policy support; facilitating and stimulating Green Cities Infrastructure investment; sharing knowledge and connecting through Green Cities Network; and supporting access to green finance.	• 50+ cities in EBRD regions of operation (Central/Eastern Europe, Balkans, Central Asia and Southern and Eastern Mediterranean [SEMED])
Cities Climate Finance Leadership Alliance (CCFLA) Access here	Coordination and advocacy	• Secretariat sits under climate policy initiative (CPI) • Has over 80 members spanning public/private finance institutions, governments, NGOs and city networks	• Close the investment gap for urban climate projects and accelerate city-level climate action	• Works through multi-stakeholder collaboration to mobilise finance for low carbon, climate-resilient infrastructure. • Knowledge platform that generates analysis and recommendations. Notably, publishes annual report called the State of Cities Climate Finance, providing a comprehensive assessment of urban climate flows and needs globally.	• Global • Headquartered in London with local hubs in Central Asia, Brazil and Mexico
Green Municipal Fund (BMF) Access here	Climate and resilience investment	• National fund managed by the Federation of Canadian Municipalities (FCM). The FCM represents over 2,000 Canadian municipalities on behalf of which it advocates for resilience building resources and policies. • Funded by Government of Canada.	• Support municipal governments to leverage investments in sustainability projects through funding and capacity building	• Provides direct financial support (grants and loans) for municipal sustainability and climate resilience projects. • Funding covers projects at all stages (e.g. plans and studies, pilots or capital projects). Capacity building is delivered through workshops, training programmes and peer-to-peer learning. It also involved building partnerships between municipalities.	• Canada only

Eugenie Birch

Co-director of the Secretariat, SDSN
Global Commission on Urban SDG Finance

Insurance plays a key role in the assessment and management of risks, helping to make investments possible. Including the sector early in the design of urban projects supports financial flows by encouraging sound economic planning. This, in turn, helps to ensure solutions fit local needs and proactively address future challenges.

Jessie Press-Williams

Senior Analyst CCFLA

Private capital remains largely untapped for urban climate investments. Cities need to be able to effectively mobilise private capital, which involves understanding its sources; increasing engagement with the private sector; and presenting projects of sufficient scale and sophistication to investors. Increased urban climate investment presents an economic opportunity for private investors, especially in sustainable infrastructure. CCFLA has a clear mandate to strengthen collaboration with private investors and lower barriers to climate-aligned investment in cities. This reflects the feedback from CCFLA members at the 2023 and 2024 CCFLA assemblies, which called for CCFLA to increase the engagement of the private sector to empower cities to mobilise private financing more effectively.

Pricing risk and driving resilience investment requires a deep, quantitative understanding of the urban risk landscape.

While cities across the R-Cities network have mapped key shocks and stresses shaping their risk landscape, anticipating how these risks will evolve demands sophisticated data insights and advanced analytics.

Data analysis enables financial modelling to quantify exposure, vulnerability and potential losses across assets and communities, providing a strong foundation for informed decision making and effective policy design. Comprehensive financial modelling requires access to historical loss data, which is typically inaccessible to cities, but is held by insurance companies across the globe in large volumes. The Fellowship has opened channels for participating cities to access this data. This, along with sophisticated insurance sector analysis, has bridged the gap in baseline risk modelling and analysis, while embedding a data-driven approach to urban risk management.

In Lagos – a Fellowship city in 2024 – our collaboration with the Lagos State Resilience Office (LASRO) focused on supporting city officials to quantify and prioritise water-related risk, assess which risks were insurable, and consider how to manage those risks that were not. In addition to improving risk management, the aim of the project was to enable city officials to strengthen efforts to attract investment for water infrastructure.

The Fellowship project supported city officials to firstly understand the complex water-related risks that Lagos faces, and to secondly explore how to effectively manage these risks. The outcomes were connected directly into efforts led by Financial Sector Deepening Africa (FSDA) and Boston Consulting Group (BCG), and their support for Lagos to develop and implement a comprehensive approach to mobilising private sector investment in climate adaptation infrastructure, including in the water sector.

This work is part of a collaboration between FSDA and the Lagos State Government since 2022, the aim of which is to develop and implement the Lagos Climate Adaptation and Resilience Plan (LCARP).

Jonathan Israel

Senior Programme Manager, Adaptation and Finance, FSDA

Bringing climate resilience to Africa's populous, productive and growing urban environments is one of the greatest challenges of our age. FSD Africa – through our mandate to make finance work for Africa's sustainable future – is focused on leveraging in private capital to meet the pressing climate resilience needs of Africa's growing metropolises. Addressing the threats of sea and river level rise, drought and extreme heat, pollution and water scarcity is not only an economic and financial challenge – it's also an intrinsic prerequisite for sustainable development. We have been proud to collaborate with the Resilient Cities Network and Howden in bringing together both public sector policy and decision makers, with private sector financiers, project developers and investors, alongside the wide networks of civil society and development partners acting in this space. In both Lagos and London, we have seen a deep exploration of the theories of change and influence needed to address this challenge, with a singular ambition to reach implementation on high-impact projects that do not burden African sovereign actors with the heavy anchor of unsustainable debt. We are committed to this space and look forward to our ongoing partnership.

Adebayo Ade-Ojo

Head, Environment and Ecology, Lagos State Resilience Office (LASRO)

The Global Risk and Resilience Fellowship has helped solidify the need for Lagos to consider insurance tools in risk management. The state, through the Office of Sustainable Development Goals, the insurance department of the Ministry of Finance, Lagos State Emergency Management Agency in partnership with UNDP, IDF and other organisations, has moved this forward through the Flood Risk Insurance Project to utilise parametric insurance to address flood risk in Lagos. Seven local government areas have been chosen as pilot for the project.

A strong enabling environment is essential to unlock urban climate investment and build market confidence.

The absence of robust data and asset management systems is a barrier to cities attracting and scaling rivate and blended finance. Many municipalities lack the ability to quantify the economic value of resilience investments, or demonstrate avoided losses from mitigating or adapting to climate risk. Without credible data on asset condition, performance and exposure, investors struggle to assess risk or justify pricing.

Weak and inconsistent regulatory frameworks are also major obstacles to attracting climate finance for urban infrastructure, especially in developing economies. In many cases, national and municipal regulations don't have the flexibility for innovative or long-term financing models. Institutions such as Climate Policy Initiative (CPI) and FSDA highlight the need for regulatory frameworks that are truly fit for purpose and allow for blended finance, project aggregation and innovation through collaborative approaches.

Addressing these constraints requires regulators, financial institutions and city leaders to collectively create pathways for risk sharing, standardisation and scalable instruments. Regulatory reform must align with clear policy direction and institutional capacity building to unlock private sector participation at scale. Addressing regulatory barriers is not within the scope of the Fellowship. But the nature of the projects requires an understanding of what is possible within the sub-national regulatory framework. For example, regulation that doesn't allow sub-national governments to borrow from private finance reinforces reliance on national governments for capital, which often moves slowly.

Insurance has a key role to play in de-risking resilience investments – cities need to use insurance more strategically to enable finance to follow.

Insurers have been early movers in recognising and innovating around climate risk, compared to other financial actors.[4] By incorporating emerging and rising risk into premium pricing, or withdrawing coverage from high-risk customers and geographies, the insurance industry signals to the market the rising cost of climate vulnerability.

Insurability – the degree to which a person, asset or risk qualifies for insurance coverage – is another critical signal the insurance industry uses. Risk quantification, the foundation of insurance, enables insurability by making it possible to estimate the financial impacts of climate and other risks before they occur.[5] When assets are deemed insurable, it indicates a level of vulnerability that can be managed or mitigated – this is a key factor for attracting investment.

Cities and insurers face mounting pressure to innovate in how they are protecting communities and assets against an uncertain future. This demands a shift in how insurance is used; not just to close coverage gaps, but to de-risk investments and unlock private capital for critical adaptation and mitigation infrastructure. Insurability of assets will change over time in response to drivers, such as climate risk or geopolitics. But, the insurance sector can generate a view of insurability now and in the future, enabling cities to be more proactive and data-driven risk management.

The collaborative and exploratory approach of the Fellowship has enabled cities to explore the value of innovative insurance that meets the needs. For example, Greater Miami and Beaches, Lagos, Norfolk and Mexico City have all explored different uses for parametric insurance products to improve access to capital for disaster response or to incentivise investment in risk reduction. Crucially, the Fellowship views insurance not only as a financial product, but as a strategic tool for investment in resilience.

An emerging insight from the Fellowship is the strong potential to translate technical risk knowledge into financial solutions. The tools developed and applied during the Fellowship (e.g. strategic risk assessments, risk perception analyses and resilience diagnostics) can directly support the design of practical financial instruments that enable cities to address climate-related risks more proactively. For example, in 2024 following the conclusion of the 2023 Fellowship project in Miami, The Miami Foundation purchased a hurricane parametric policy covering some of the most vulnerable businesses and low-income households across the city. This was one of the first parametric insurance policies on behalf of a US philanthropic organisation. In 2025, the Foundation renewed the policy for a second year.

[4] McKinsey. 2025. Access here.
[5] Howden. 2025. Access here.

2025 Fellowship projects

Across Rio de Janeiro, New York City and Mexico City, the Fellowship has demonstrated how innovative partnerships between cities, the private sector and insurers can transform risk understanding into actionable resilience approaches. Each project addresses a specific hazard, from floods and landslides to storm surge and earthquakes. Yet, they all share a common goal: to strengthen financial preparedness and protect communities through data-driven insights and bespoke risk transfer approaches.

By combining local expertise with advanced modelling, these cities are turning climate and disaster risks into opportunities for sustainable urban development. They showcase how integrated insurance and financial resilience tools can enhance a city's ability to anticipate, absorb and recover from shocks, while advancing equity and long-term prosperity.

> “When faced with intensifying climate risks, building resilience is as much a matter of financing as it is of planning. Developing innovative financial mechanisms is fundamental for cities to manage urban risk, protect their populations and ensure continuity.
>
> **Javier Garduño**
> Head of City Engagement for Latin America & the Caribbean, Resilient Cities Network

Rio de Janeiro

Strengthening Rio's response to intense rainfall, through risk awareness and capacity building.

The challenge

Due to a combination of geographical, climatic and socio-economic factors, Rio de Janeiro is acutely vulnerable to intense rainfall.[6] The city is also largely built on steep hills and mountains, where several of the poorest neighbourhoods are located. Paired with a tropical climate, seasonal heavy rains on the city's slopes often trigger landslides and mudslides, and an Extreme Rainfall Vulnerability Index for the city (developed by climate resilience initiative Rio 60º) found that around 21% of all households in the city are at high risk.[7] Flooding caused by extreme rainfall not only disrupts critical services, but it threatens urban infrastructure and public services. It can also result in injury or death, threatening the livelihoods of informal or low wage workers who miss several days or weeks of work.

The city has made major strides in disaster preparedness, driven by the Centro de Operações Rio (COR), which translates as the Rio Operations and Resilience Center. COR coordinates emergency response, risk monitoring and resilience planning across municipal agencies, and it's enforces city-wide protocols for diverse risks, including severe weather and extreme rainfall. These protocols aim to minimise the impacts of risk through clear public communication and swift, coordinated action.

The Fellowship response

Through the Fellowship project, COR aimed to strengthen Rio's capacity to manage flood risks from extreme rainfall. The project assessed how insurance sector climate data and models could: (i) improve understanding of current and future rainfall risk; (ii) identify gaps in the city's flood vulnerability assessment; and (iii) inform adjustments to protocols based on more accurate risk levels.

The Fellowship project convened an interactive workshop with key city agencies (including disaster risk management, water management and municipal meteorology) to assess opportunities and challenges in protecting public assets from flooding.

[6] Mongabay. 2025. Access here.
[7] RioOnWatch. 2025. Access here.

Integrating insurance into disaster response

Frequent floods caused by extreme rainfall put a strain on municipal and national government resources. But efficient protocols, such as those developed by COR, can mitigate immediate impacts. The Fellowship project explored how COR's protocols, wider city level disaster response approaches and Rio's existing disaster response budget could be complemented by prearranged disaster financing. Parametric and climate-linked insurance offers tools to close critical funding gaps, ensuring quicker access to financing post-disaster and reducing reliance on limited emergency budgets. Yet, deploying these mechanisms requires supportive city-level regulations and strong coordination between municipal leaders and insurers to align risk reduction and financial objectives.

The Fellowship project in Rio has laid the groundwork for mutual learning and capacity building, surfacing shared priorities and actionable pathways. Through this work, Rio de Janeiro reinforced its position as a leader in climate risk-informed urban planning, showing that combining operational preparedness with innovative financial instruments can materially enhance the city's ability to anticipate, respond to, and recover from extreme weather events.

> "As Latin America's largest facility, the Rio de Janeiro Operations and Resilience Center relies on data integration for resilience planning and disaster prevention. The Fellowship broadened the city's perspective on using data and resources, including risk transfer instruments, to address various risks.
>
> **Thiago Curvello**
> CEO, Centro de Operações Rio

21%

of all households in Rio de Janeiro are at high risk of flooding or landslides.

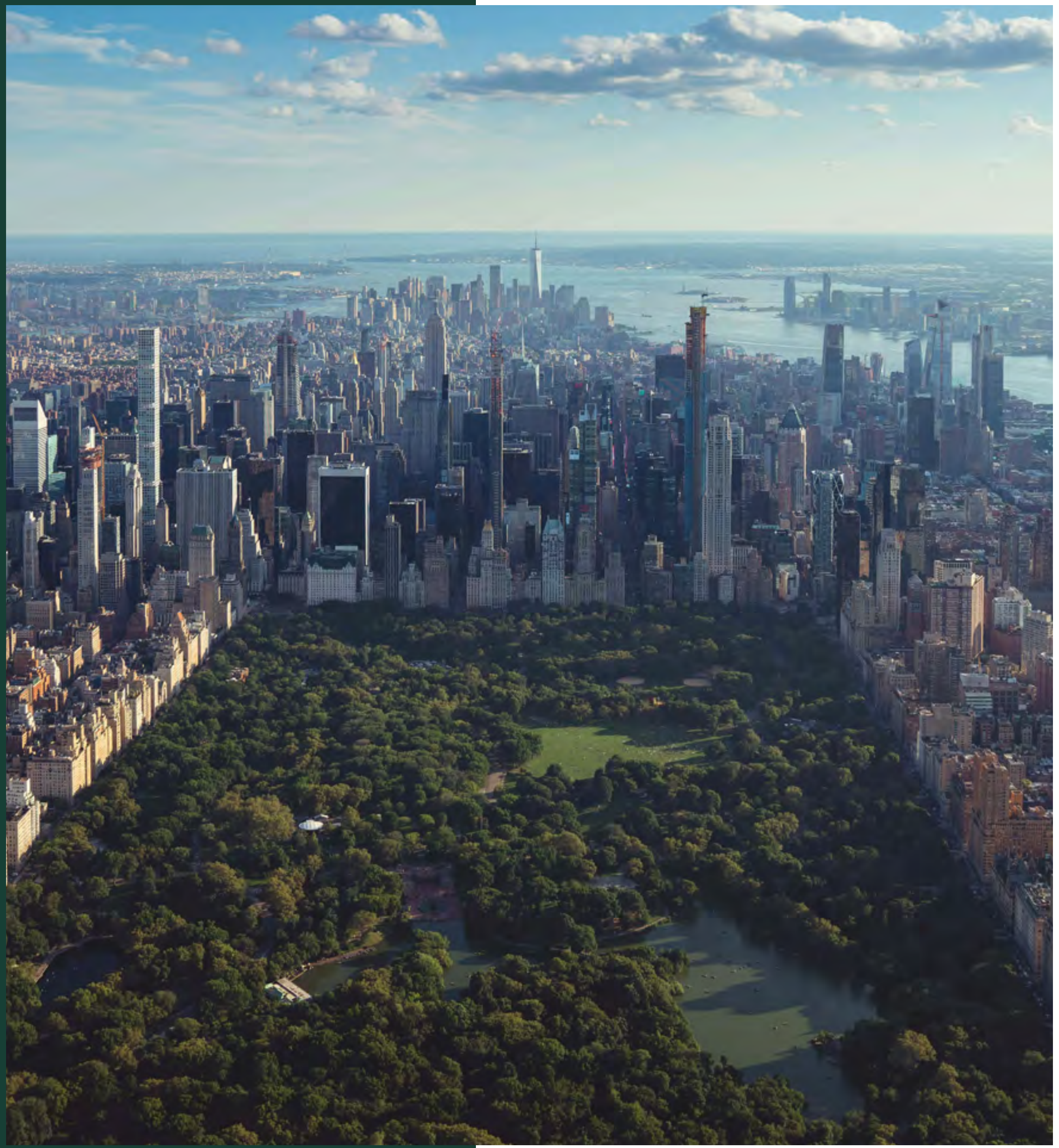
Antonio Jorge da Mota Rodrigues
Head, Howden Re Brazil

As a reinsurance broker, and also being born in Rio de Janeiro, one of the most beautiful cities in the world, we understand the critical role of collaboration in addressing the growing climate challenges faced by cities like the one we love so much. By leveraging the expertise of our in-house meteorologist expert and the broader capabilities of Howden's CRR Team, we aim to provide innovative solutions that enhance resilience against flooding.

Yves Lima
Director, Howden Brazil

Over the past few months, I've had the privilege of working with the city of Rio de Janeiro, and it has been very interesting to gain a deeper understanding of the challenges that climate change brings to a city with such a complex geography. In addition to being able to help with risk-related issues, it's fascinating to see how the public infrastructure of the city where you were born and raised is adapting, and how the insurance market can offer solutions aligned with society's needs.

New York City, United States



Capturing financial benefits of coastal protection through insurance modelling.

The challenge

Hurricane Sandy caused an estimated $19 billion in economic losses across New York City (NYC), severely impacting infrastructure, housing, and essential services.[8] The storm surge flooded large parts of the city, killed 44 New Yorkers, and disrupted transit and electric service for hundreds of thousands. Sandy exposed critical vulnerabilities to coastal flooding, and since then NYC has invested heavily in building the city's coastal resilience.

One such investment is East Side Coastal Resiliency (ESCR), designed to protect over 110,000 residents along Manhattan's East River waterfront from future storm surge even as sea-levels rise.[9] ESCR is a complex system of engineered risk mitigation measures including floodwalls, elevated parkland, flood gates, and upgraded drainage systems. These provide both physical protection and community benefits, including new open spaces and improved waterfront access.

The protection provided by ESCR also reduces the financial risks posed to communities. Quantifying these benefits in terms of reduced insurance premiums and protections would allow a local government like NYC to better articulate the benefits of resilient infrastructure and incentivize further investments in resilience.

[8] PlaNYC 2013 City of New York. 2013. Access here.
[9] East Side Coastal Resiliency Access here.

The Fellowship response

The goal of the fellowship was to demonstrate how public investments in risk reduction like ESCR shape insurers' premium pricing and perceptions of risk. Howden's Climate Risk and Resilience team, with support from Moody's/RMS, partnered with the NYC Department of Environmental Protection's Bureau of Coastal Resilience. Together, they analyzed how a reduction in coastal flood risks from the construction of ESCR translates into measurable financial benefits for protected property owners, particularly in terms of potential reductions in insurance premiums.

The Fellowship project team modelled reductions in annual average losses (AAL) and probable maximum losses (PML) across the parts of Manhattan protected by ESCR. Quantifying these losses through catastrophe modelling is a foundational part of how insurers assess risk, set coverage, and size insurance premiums. The catastrophe modelling conducted assessed changes in PML across hundreds of public and private buildings located in the protected area and also accounted for projected impacts of climate change on storm surge height. The analysis combined state-of-the-art industry catastrophe modelling with open-source data on exposure, including building typologies, population demographics, and asset values to estimate economic losses both before and after the construction of ESCR.

In January 2026, the Fellowship project team will take results from the modelling and convene a workshop with City officials, insurance partners, and other stakeholders. The goal of the workshop is to share the model outputs, discuss the other factors that inform insurers' views of risk, and identify gaps and chances for better alignment. Grounded in the results of the catastrophe modelling, the discussion will focus on how complex resilience projects can be credibly interpreted into financial indicators that insurance markets can respond to. The workshop will also bring public sector investment rationale and private-sector risk transfer services closer together, enhancing visibility of the return on resilience for policymakers, investors, and the insurance industry.

Demonstrating the financial value of adaptation through existing data and modelling

Through modelling and data-driven analysis, this Fellowship project demonstrates how quantifiable reductions in losses can strengthen NYC's ability to measure the financial benefits of resilience. The analysis shows that well-designed coastal protection projects can lower expected losses under extreme events.

$19bn

Estimated economic loss across New York City, caused by Hurricane Sandy.

Peter Adams

Associate Director, Howden Climate Risk and Resilience

New York's bold action to reduce flooding has fundamentally altered the city's risk landscape. Through this fellowship, our team was able to deepen NYC's insight into how the insurance industry assesses and quantifies changes to surge risk after construction of a major protection like ESCR. This insurance sector perspective is a critical data point for NYC as it prioritises and designs resiliency projects going forward.

Laurian Farrell

Deputy Commissioner, Bureau of Coastal Resilience NYC Department of Environmental Protection (DEP)

Investments in coastal infrastructure, like New York City's East Side Coastal Resiliency Project, safeguard our neighborhoods and strengthen confidence in our city's long-term economic stability. Through this Fellowship, we're exploring the nexus of public investment with private risk and broadening our understanding of the financial tools that play an important part of the resilience equation. We are exploring how investments in protection translate into measurable financial benefits for residents, businesses, and insurers alike – with the aim of building a more resilient and insurable future for all New Yorkers.

Mexico City

Using parametric insurance to improve resilience to seismic risk for vulnerable communities.

The challenge

Mexico City faces a unique blend of acute and chronic risks. The city is vulnerable to major earthquakes, floods and other climate-related stresses, and is especially vulnerable to seismic risk due to its geographic location at the intersection of five tectonic plates. Historic earthquakes have had extreme impacts – both financial and social – but, even with alert systems and robust building codes, the impacts of seismic risk remain a significant threat to the financial resilience of the city and its most vulnerable inhabitants. For example, the earthquake in 2017 resulted in $2.47 billion in damages.

The Fellowship response

Through the Fellowship, the Ministry of Comprehensive Risk Management and Civil Protection (SGIRPC) sought to explore how parametric insurance could strengthen Mexico City's financial capacity to manage seismic risk and protect vulnerable communities. The Fellowship project team convened city and federal officials, insurers and community representatives through workshops that informed the design of a parametric insurance solution linked to property taxes, to provide rapid post-disaster relief for low-income households and small businesses.

Using combined historical seismic data, property tax records and reconstruction costs from the 2017 earthquake, a concept was developed with tailored policy triggers and payout levels – one that met city and community risk profiles. A cost–benefit analysis evaluated financing mechanisms, such as public-private partnerships, bonds and grants, to identify viable strategies for ensuring protection from future earthquakes. The results informed recommendations and a practical roadmap for SGIRPC and other stakeholders for operationalising an insurance mechanism that enhances financial resilience a while supporting equitable reconstruction and response.

Workshop 1

A common understanding – stakeholders, including scientists from the National Seismological Service, the National Autonomous University of Mexico (UNAM) and reinsurers, were invited to a technical discussion to achieve a common understanding of seismic risk, its challenges and the role of insurance as an instrument for shoring up financial resilience.

Workshop 2

Understanding beneficiary needs – a multi-stakeholder roundtable with civil society organisations involved in post-earthquake response, was held to gather insights around post-disaster response and the experiences of those worst affected by previous earthquakes. These insights were used to develop a concept for a potential emergency response parametric structure.

The Fellowship project team also held interviews with the insurance sector to determine the best structure for two separate parametric insurance policies – one that pays out directly to the city to enable rapid access to post earthquake emergency response funds, another that pays out directly to the worst-affected households to enable recovery.

[10] Forbes. 2017. Access here.
[11] United Nations Office for Disaster Risk Reduction (UNDRR). 2024. Access here.

$2.47bn

damages caused by the catastrophic earthquake in 2017.

Linking insurance to municipal financing systems

Insurance is a critical tool for supplementing post-disaster recovery resources. Emerging mechanisms, like parametric insurance, offer significant potential to accelerate recovery efforts. Co-designing insurance solutions with public agencies, insurers and communities fosters trust and ensures that financial instruments are equitable and operationally viable. Mexico City's Fellowship project illustrates how data-driven risk modelling can bridge disaster management and financial protection, offering a scalable framework for other urban city centers exposed to seismic risk. The project highlights the role of financial resilience tools in complementing hazard mitigation, positioning Mexico City as a leader in integrating risk-informed investment, social equity and innovative financing to strengthen urban resilience.

Local governments are uniquely placed to facilitate implementation and scale, through existing governance mechanisms and municipal agendas. Throughout the Fellowship project, it became increasingly evident that local governments should not only be viewed as beneficiaries of technical or financial support, but as strategic partners in co-designing resilience solutions. Empowering cities to take leadership in identifying risks, integrating local knowledge and contributing to the development of financial tools ensures greater contextualisation, legitimacy and sustainable resilience strategies.

Norlang Marcel García Arróliga
Director General of Resilience, Mexico City

Our long-standing experience in managing seismic risk in Mexico City has shown us that resilience is built not only through infrastructure, but through coordination, information and trust between institutions and communities. These lessons are highly relevant as we now face the growing challenges of climate-related risks – such as flooding, extreme heat and droughts. Strengthening early warning systems, improving inter-agency protocols and promoting public participation are key steps to ensure that cities can anticipate, respond and recover more effectively from any type of hazard.

Beatriz Vaca Dominguez
Chief Operating Officer, MiCRO

Between March and November, we worked together as a true team, with each person contributing their expertise to design an insurance framework that addresses the concerns of the Secretariat for Comprehensive Risk Management and Civil Protection of Mexico City. We designed earthquake coverage for the city and its inhabitants, along with a targeting index to select beneficiaries and distribute the insured amount across the different municipalities. We are pleased with the outcome, but even more valuable than the product itself was the enriching process for all parties involved, as we learned from one another, while working toward the common good.

Juan Carlos Mateo
Risk Engineer, Howden Mexico

It has been a true honour to collaborate on this important project for Mexico City. Working with the General Directorate of Resilience and various seismic risk specialists has been truly rewarding and exciting. Seismic risk in Mexico City is an issue that resonates with its inhabitants, especially those who are most vulnerable. However, working together with great specialists and combining different ideas, experiences and perspectives has made it possible to create a project aimed at benefiting the residents of this great city.

Scaling the Fellowship impact – 2026 priorities

As the Fellowship moves into 2026, it will enter a phase focused on strengthening delivery and impact. We are committed to ensuring cities have access to coherent support to address climate risk challenges, while scaling solutions that protect people, ecosystems and economies. Our delivery approach will have two main priorities:

1. We will align the capacity-building and knowledge transfer offered by the Fellowship with an existing urban resilience initiative that works directly with cities, and has secured investment for implementing resilience solutions. This will ensure that capital is available from the outset to translate concepts developed through Fellowship projects into tangible implementation, even once the Fellowship concludes.

2. We will deepen engagement with previous Fellowship cities where strong foundations exist, building on earlier outcomes to deliver practical, measurable results.

This shift from concept to action will demonstrate how public–private collaboration can unlock real investment and resilience on the ground.

Central to this approach is deeper collaboration and alignment across the global resilience ecosystem. By connecting with complementary initiatives and harmonising tools and methodologies, the Fellowship will work to avoid duplication and create multiplier effects.
This collective effort will accelerate learning, innovation and delivery.

Acknowledgments

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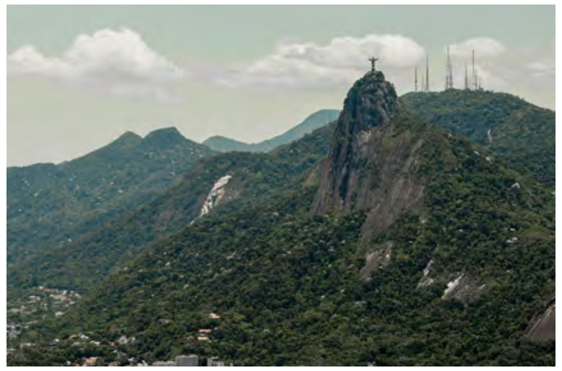

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Mexico City
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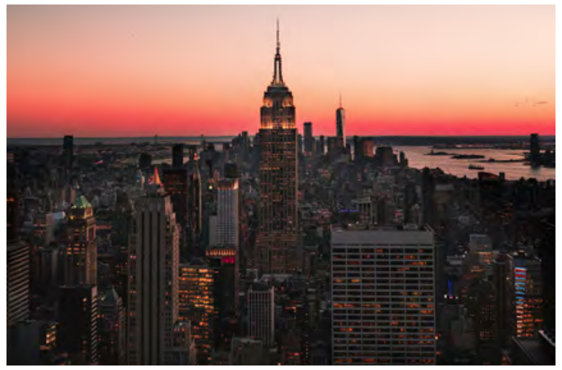


New York City
Laurian Farrell, Jessica Colon

About the Fellowship coordinators

About Howden

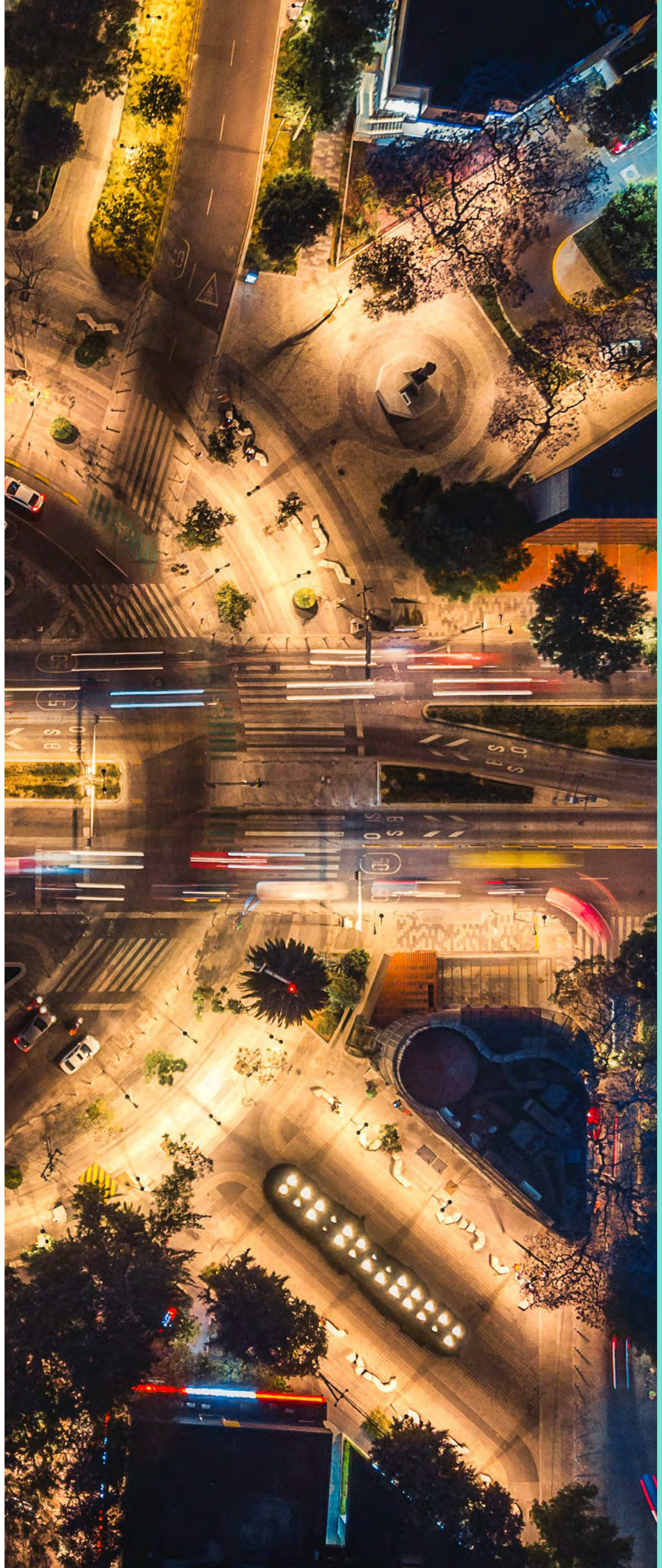
Howden is a leading global insurance group with employee ownership at its heart. Founded in 1994, it provides insurance broking, reinsurance broking and underwriting services and solutions to clients, ranging from individuals to the largest multinational companies. The group operates in 55 countries across Europe, Africa, Asia, the Middle East, Latin America, the US, Australia and New Zealand, employing 23,000 people and handling $38bn of premium on behalf of clients. **For more information, please visit,** howdengroup.com **and** howdengroupholdings.com

About Resilient Cities Network (R-Cities)

Resilient Cities Network is the world's leading urban resilience network. It brings together global knowledge, practice, partnerships and funding to empower its members to build safe and equitable cities for all. Its unique city-led approach ensures cities drive the agenda to benefit the communities they serve. At work in over 100 cities worldwide, the Resilient Cities Network supports on-the-ground projects and solutions to build climate resilient, circular and equitable cities, while also facilitating connections and information-sharing between communities and local leaders. **For more information, please visit** resilientcitiesnetwork.org

About the Sustainable Markets Initiative

Founded by His Majesty King Charles III in 2020, as Prince of Wales, the Sustainable Markets Initiative has become the world's 'go-to' private sector organisation on transition. Launched in 2021, the Terra Carta serves as the Sustainable Markets Initiative's mandate with a focus on accelerating positive results for nature, people and planet through real economy action. **For more information, please visit:** sustainable-markets.org



Let's connect

We are keen to connect with potential new collaborators for the Global Risk and Resilience Fellowship. We are eager to hear from you if you are interested in learing more about opportunities to strengthen private sector involvement in building urban resilience through the Fellowship.

To get in touch, or get involved, please contact:

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