

What the market thinks

A corporate resilience survey

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October 2025

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About



Foreword

Companies are operationalizing resilience to extreme weather and other physical impacts of a warming world.

That's among findings that come through our survey of risk, operations and finance officers at 550 listed and unlisted companies globally.

As you'll read in this report, companies are approaching physical risks with their eyes wide open. Many have folded physical risks into their overall risk management and business-continuity planning. Large majorities of companies are factoring resilience into business planning and capital spending. If your company has been impacted by flooding that disrupts operations or heat that endangers employees, you're even likelier to make resilience to physical risk a priority.

Management of physical risk takes place on the front lines of commerce — in manufacturing plants, warehouses, retail stores and at utilities, where the costs of extreme weather unfold with immediate impact. It takes place in the C-suite and boardroom as well, with a majority of companies in our survey linking the pay of officers and directors to physical risk management. It also is taking place in the present, with most companies saying they are focused chiefly on physical risk arising within the next five years, not in some far-off future.

Companies think that physical risk will get worse before it gets better. Most companies, like most investors and climate scientists, say they anticipate warming of about 2.8°C degrees above preindustrial levels this century, well above the scientific threshold for constraining the costliest impacts.

We hear from companies in this study how resilience can benefit their bottom line, with more than two-thirds of companies reporting that investments in resilience have boosted their access to capital or lowered their insurance bill. We see the range of actions that result once companies have decided to strengthen their resilience. Yet only a handful of companies have looked further beyond risk, to see the unavoidable business opportunities that will come from helping their customers withstand the impacts of a warming world.

The study holds a series of insights for policymakers and investors who harbor concern about the rise of physical risk. Chief among them: Companies share your concern and are doing something about it. The evidence adds to an evolving body of research suggesting that the risks of a changing climate are financially relevant, while highlighting that such risks are not stand-alone. In short, physical risk is financial risk, based on how most companies say they are confronting it.

Risk managers are on the lookout for anything that could disrupt their business, physical risk included. If they're not already, investors who aim to make resilience part of the conversation with portfolio companies may engage these risk managers to learn more about their preparedness. We've mapped our study approach to the Physical Climate Risk Appraisal Methodology developed by the Institutional Investors Group on Climate Change (IIGCC), to demonstrate how one approach can be put to practice to help investors better measure and mitigate rising physical risk throughout their portfolio.

Physical risks are intensifying. Companies may be exposed but are leaning in to the challenge.



Linda-Eling Lee Founding Director, MSCI Institute









Executive summary

Physical risk has entered the realm of enterprise risk management

→ Our study shows that listed and unlisted companies globally are confronting the rise in physical risk head-on. In industries at highest exposure to extreme weather, the overwhelming majority of companies are prioritizing plans to withstand such impacts as a key part of risk management.

Nearly all companies surveyed are quantifying physical risk

- → Most companies (85%) estimate potential losses from extreme weather events, saying that acute hazards such as severe storms (67%), natural disasters (61%) and flooding (52%) pose the highest risk of disruption to operations.
- → Nearly all (94%) companies say they have conducted or are in the process of conducting site-specific risk assessments.
- → Companies that have been recently impacted by extreme weather events (32%) are twice as likely as companies not impacted (14%) to have completed infrastructure upgrades, highlighting how direct experience accelerates action.
- → Corporate physical risk horizons skew toward the short term. Most companies (68%) say they assess risks likely to arise within two to five years.

Most companies surveyed are impacted by physical risk

- → More than 80% of companies say their operations, including supply chains, have been impacted by extreme weather events such as severe storms (62%), dangerous heat (49%) and flooding (47%) in the past five years.
- → Two-thirds of companies say the effects of extreme weather have affected employee well-being, damaged critical infrastructure or reduced revenue. Roughly onethird (34%) of companies say that physical risk has led to an increase in insurance premiums.

Physical risk management is becoming formalized

- → Three-quarters of companies (76%) say they have instituted a framework for managing physical risk, ranging from **real-time monitoring systems** that track hazards to climate scenario analysis. Adoption of such frameworks is highest (81%) among companies recently impacted by extreme weather events.
- → A majority of companies (61%) link director and executive compensation to physical risk management. Another 19% tie resilience to the pay of senior management. A small share (5%) extend such incentives more broadly in the company.

Companies are seeing a return on resilience investments

- → Eighty-two percent of companies report that investing in resilience led to positive financial or reputational outcomes, with over two-thirds citing increased interest from investors and lower insurance costs.
- → Business opportunities from servicing resilience are not yet a focus. Only one in five companies currently offer products or services that help their customers mitigate the impacts of extreme weather. Among companies that do not currently offer resilience-enhancing products, only 3% say they plan to offer such products in the future, while 93% have no plans on introducing such an offering.

Companies expect a warmer (and costlier) future

→ Sixty-three percent of companies say that climate-induced physical risk is currently having a significant impact on the global economy, while 36% expect a significant impact at some point in the future. That parallels a 2024 MSCI Institute survey of global investors, 57% of whom who said that climate-related physical risk is impacting the global economy currently and 36% who said they anticipate such impacts in the future.











Key findings

Corporate Resilience Survey 2025

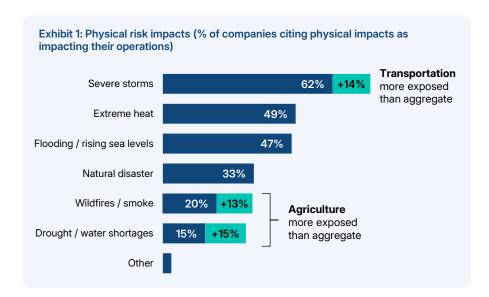
October 2025



Organizational exposure and vulnerability

Key findings

More than 80% of companies surveyed say their operations have been impacted by extreme weather events in the past five years – evidence that disruption from such events has become systemic rather than episodic. Severe storms are the most frequently cited impact (62%), followed by extreme heat (49%) and flooding (47%), with sectoral patterns reflecting underlying exposure (Exhibit 1). Transportation companies are disproportionately affected by severe storms (76%), which can disrupt logistics networks, while agricultural firms face heightened risks from drought (33%) and wildfires (30%) that threaten productivity.



Among companies impacted by extreme weather, nearly all (98%) report experiencing weather-related disruptions to operations that span both their own activities and supply chains. Reported impacts included higher operational costs, delays in delivery of critical inputs, infrastructure damage and revenue loss. Two-thirds also cite negative effects on employee well-being and safety, especially firms with employee housing (88%), agricultural sites (82%), retail stores (79%) or offices (79%).

MSCI data in context

Not all natural disasters are climate-driven. Geophysical hazards such as earthquakes present significant sources of operational risk, particularly for firms with assets in highly exposed regions. MSCl's data shows that assets situated in Indonesia and Japan – countries where 60% or more of surveyed firms reported recent impacts from natural disasters – are among regions most exposed to hazards such as earthquakes, tsunamis and volcanic ashfall (Exhibit 2). These exposure levels far exceed those of assets in other countries represented in the survey.

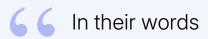
Exhibit 2: Current hazard intensity values for geophysical hazards (MSCI intensity scores)

	Indonesia	Japan	Average of surveyed countries
Earthquake bedrock conditions	5.6	7.9	2.3
Earthquake local soil conditions	6.4	8.5	2.5
Tsunami	0.4	1.4	0.1
Volcanic ashfall	2.3	1.4	0.1

Values are on scale from 0 to 10, where 10 indicates high hazard exposure. Source: MSCI Sustainability & Climate research, GeoSpatial Asset Intelligence, data as of Oct. 2, 2025.







"We prioritize employee health and safety during pipeline construction under extreme heat conditions – providing shaded structures and enforcing work/rest schedules to reduce the risk of heat stress."

Large publicly listed gas utility company, U.S.

"In the last five years we have seen a downturn in production in hurricane exposed regions. You can't move a plant out, so you prepare as best you can and learn from every event."

Large publicly listed health care company, Germany

For more information, see:

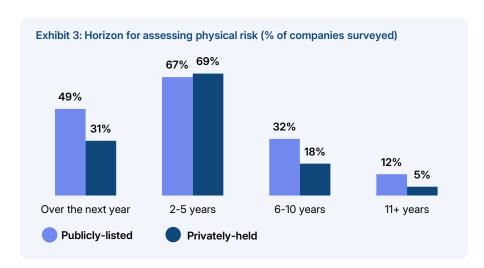




Preparedness and risk perception

Key findings

Nearly all companies surveyed (99%) say they assess risks from extreme weather. On average, companies assess four primary hazards – severe storms (87%), flooding (78%), natural disasters (76%) and extreme heat (67%) – while wildfires (36%) and drought (31%) receive comparatively less attention. Most companies focus on short-term horizons of two to five years (68%), indicating a focus on acute risks over longer-term chronic exposures (Exhibit 3). Listed companies are more likely than unlisted companies to assess risks across all horizons, both within the next year (49% listed vs 31% unlisted) and beyond 11 years (12% listed vs 6% unlisted).



Most companies (85%) say they estimate potential losses from extreme weather. More than half rank acute hazards – including severe storms (67%), natural disasters (61%) and flooding (52%) – as posing high financial risks, underscoring the link between physical disruption and financial performance. In contrast, chronic hazards such as extreme heat (37%) and drought (58%) are more often classified as medium financial risks, despite their potential to erode value over time. Companies report assessing not only risks to their own sites and operations, but also the resilience of local governments and infrastructure, and how these factors may affect employees and business continuity.

MSCI data in context

Acute risks can cause sudden operational shocks, yet their volatility and limited predictability make them difficult to anticipate. MSCI GeoSpatial Asset Intelligence shows that across surveyed industries, 200-year tropical cyclones and flooding from heavy rain (pluvial flooding) – events that have a one-in-200 chance of occurring each year – can cause the greatest losses, 2.0% and 1.8% per asset, respectively, in asset value from direct asset damage. By comparison, chronic hazards that develop gradually, such as extreme precipitation or heat, can drive annual losses in revenue of 1.0% and 0.9%, respectively, compared with under 0.08% from tropical cyclones and pluvial (heavy-rain) flooding. This indicates that chronic hazards are steadily eroding productivity and output in ways many companies may not yet be preparing for 1.

1. Values reflect conditions in the current climate, defined as those for the year 2024.



"Through one of the insurance providers we have access to datasets to understand where our assets could potentially be more prone to physical climate risk."

Large privately held global logistics company, UAE

"In addition to our internal assessments, we worked with a third-party risk management organization on a city assessment to understand local government resilience measures. We use both quantitative data from a third party and qualitative questionnaires to understand if facilities have been impacted by historic events and what resilience measures are in place."

Large publicly listed financial services company, U.S.

For more information, see:

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Q5

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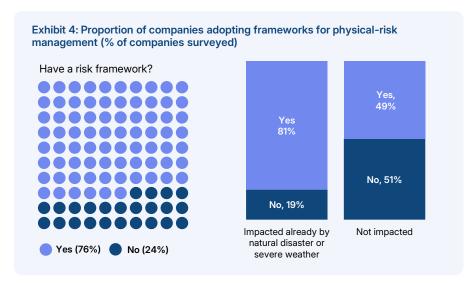




Governance and decision-making

Key findings

Three-quarters of companies (76%) surveyed report having a framework for monitoring and managing risks from extreme weather, with adoption highest among companies recently impacted by such events (81%) (Exhibit 4). These frameworks take various forms – from real-time hazard monitoring systems to scenario modeling that stress-tests operations against different climate outcomes. The findings indicate that companies are moving from compliance-based risk management toward integrated, data-driven resilience strategies that leverage predictive analytics, internet-of-things monitoring, and real-time dashboards to improve early detection and operational decision-making.



A majority of companies (61%) link director and executive compensation to physical risk management. Another 19% tie resilience to the pay of senior management. A small share (5%) extend such incentives more broadly in the company. Oversight of physical risk is increasingly shared between boards and executives, highlighting that companies view resilience as a strategic priority and a core element of corporate governance and leadership.

MSCI data in context

Research by MSCI on <u>climate expertise of directors</u> at 164 listed companies targeted for engagement by the investor alliance Climate Action 100+ finds that expertise varies by region and industry, with listed companies domiciled in Europe, the Middle East and Africa (EMEA) having a higher proportion of climate expertise among directors compared with their counterparts domiciled in the Americas or the Asia-Pacific region (48% in EMEA vs. 36% in Americas and 20% in APAC).

Just over half (55%) of listed companies link sustainability management (including management of climate risk) to executive pay, according to MSCI data as of Oct. 8, 2025 ¹. That compares with the 61% of companies in our survey that say they link executive compensation to resilience outcomes.

MSCI collects data on compensation practices of listed-companies. The sustainability-linked pay
metric reflects companies' reporting and considers whether one or more sustainability metrics are
used to determine annual and/or long-term incentive pay. The metric is holistic and does not focus
on resilience or physical risk exclusively.



"We have a special task force for risk management and preparedness. It involves staff from different departments coordinating on their preparedness. Each department is responsible for their action plan. The task force creates the (consolidated) final work plan, which is reviewed by the management periodically."

Medium-sized privately held healthcare company, India

"Our (climate risk management) framework is all about visibility, through GIS mapping, real time weather alerts, and historical risk data, we can see which projects are exposed and where contingency plans need to kick in, it turns abstract risks into actionable plans."

Small publicly listed construction and engineering company, China

"A structured business continuity plan framework is being deployed across all operations outlining preventive controls, disaster recovery and emergency communication procedures during severe weather."

Medium-sized publicly listed energy company, U.K.

For more information, see:















Strategic and operational response

Key findings

Eighty-two percent of companies surveyed report that investing in operational resilience have delivered positive financial or reputational outcomes, with more than two-thirds citing increased investor interest and improved insurance terms. Most companies say they are insured against acute hazards such as severe storms (83%) and flooding (73%). Coverage gaps remain, however, for chronic hazards such as extreme heat (37%) and drought (11%), exposing firms to long-term risks. Companies also report that resilience measures have improved lending conditions, adding to evidence that climate adaptation strengthens financial stability and investor confidence ¹.

Nearly all (94%) companies say they are conducting or planning site-specific risk assessments, with most (95%) saying they have upgraded infrastructure, such as enhancing drainage or access to transportation networks (Exhibit 5). Companies in

physical operations-intensive industries are leading these efforts: Sixty percent of utilities and construction and engineering companies have invested in hardening their infrastructure, compared with 44% of companies surveyed overall.

Companies recently impacted by extreme weather (32%) are twice as likely as those not impacted (14%) to have completed such upgrades, highlighting how direct experience accelerates action and sharpens focus on protecting core physical operations. At the same time, companies are increasingly adopting digital and nature-based resilience strategies. Half report deploying enhanced weather monitoring or simulation tools to anticipate and respond to events in real time. Nearly half (49%) say they are considering nature-based solutions, such as vegetation for land stabilization or stormwater management, that can also help reduce carbon emissions.

Exhibit 5: Corporate investments in strengthening resilience (frequency cited by respondents)

Digital / virtual solutions

geospatial mapping
simulation platforms
Al-driven forecasting
mobile emergency apps

digital twins
cloud backups
loT sensors

predictive analytics

satellite monitoring

risk dashboards

Engineering / infrastructure solutions

backup generators
wildfire protection
elevated foundations
fire suppression
drainage upgrades
stormwater management
storm barriers
flood defenses
hurricane resistant design
HVAC upgrades

Nature-based solutions rain gardens agr

rain gardens agroforestry
permeable pavements
wetland creation
biodiversity corridors
watershed protection
mangrove restoration
reforestation
bioswales heat island mitigation
green roofs
urban greening

MSCI data in context

Research by MSCI finds that investments in resilience are <u>linked to financial performance</u>. From August to October 2022, nearly 58% of the largest listed companies had at least one asset impacted by a hurricane, while firms with a higher concentration of assets or revenue in hurricane-affected areas tended to underperform their peers over the period 2022 to 2024. Companies that proactively identified and assessed physical climate risks outperformed their industry peers with similar exposure to hurricanes, demonstrating that resilience investments can mitigate financial losses and enhance long-term returns.

 A study of 2,900 companies found that companies with a 10% higher physical risk exposure, as measured by the potential cost of repairing or replacing a company's assets, had a weighted average cost of capital 22 basis points higher than their counterparts with less exposure, while accounting for differences in sector, region and company size. "Does physical climate risk carry a financing premium?," Bloomberg Professional Services, Oct. 15, 2025.



In their words

"We applied earthquake proof foundation engineering to strengthen buildings."

Small publicly listed construction and engineering company, Indonesia

"We use fluid dynamics simulation software to model flooding from extreme rainfall events and predictive landslide modeling software using soil moisture sensors."

Small publicly listed hospitality and real estate company, Japan

"Nature-based solutions are part of our low-carbon plan."

Large publicly listed building materials company, Peru

For more information, see:

Q12 Q14 Q16 Q13 Q15 Q17





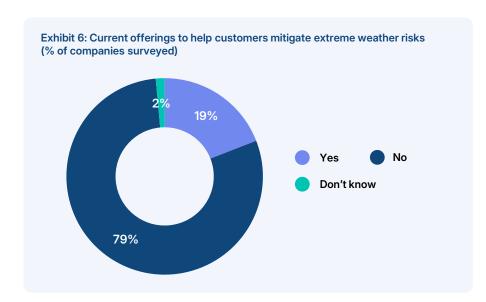




Opportunities for growth & value creation

Key findings

While most companies surveyed say they see the growing frequency and intensity of extreme weather as a business opportunity, **only 20% say they offer products and services that help customers mitigate these impacts (Exhibit 6).** Among those that do, resilience-enhancing products typically supplement existing product lines. Infrastructure and construction firms, for example, are embedding extreme-weather risk into project design and planning, while suppliers of building materials are experimenting with weather-resistant materials to meet rising demand.



Given that nearly half of companies (49%) say they've considered such investments, (with 24% saying they've implemented or are implementing them), product solutions to improve resilience appear to address a sizable market demand. Among those pursuing innovation, products tend to focus on localized forecasting tools and nature-based solutions such as coastal green buffers and watershed restoration. Only a small share of companies (3%) that do not currently offer resilience solutions say they are developing new offerings.

MSCI data in context

Research by the MSCI Institute and the Global Adaptation & Resilience Investment Working Group finds that roughly 10% of listed companies offer products that help customers anticipate and prepare for extreme weather events. Infrastructure resilience, including measures such as building retrofits and grid hardening, is among the largest projected areas of growth in adaptation spending, according to McKinsey ¹. MSCI patent data for resilient infrastructure–related categories show that companies in the consumer discretionary sector have higher average low-carbon patent scores (an indicator of innovation) across buildings, infrastructure adaptation and industrial products ². This suggests their intellectual property may give them a stronger foundation to develop and commercialize climate–resilient technologies.

- "Climate resilience technology: An inflection point for new investment," McKinsey & Company, Sept. 29, 2025.
- Sectors referred here are denoted the global industry classification standard (GICS®), jointly developed by MSCI Inc. and S&P Global Market Intelligence. The GICS structure comprises 11 sectors, 24 industry groups, 69 industries and 158 subindustries.



"We offer microgrid solutions that keep critical facilities operational during natural disasters."

Large privately held utility company, Thailand

"We offer durable construction material that can withstand extreme weather like heat storms and flooding."

Small publicly listed construction and engineering company, Spain

"We offer smart-tire solutions and fleet management tools that help customers stay safe and keep operations running during bad weather. Our products are built to perform in extreme conditions and reduce downtime."

Large publicly listed automobile manufacturer, Brazil

For more information, see:



Q19









Exhibit 7: Types of product offerings cited by survey respondents that enable or enhance resilience

- → Innovations that improve resilience spans multiple domains, from engineered infrastructure and digital monitoring systems to nature-based and financial risk solutions, reflecting the breadth of corporate approaches to climate adaptation (Exhibit 7).
- → Sector participation varies by product type:
 Construction, utilities and energy firms lead in
 physical and digital resilience, while agriculture, real
 estate and consumer sectors focus on
 environmental and community-based solutions.
- → Emerging commercial opportunities center on integrating technology, infrastructure design and ecosystem restoration to enhance business continuity and protect assets from climate-related disruption.

Product category	Sector(s)	Description / example offerings	Industries offering these products
Engineering & infrastructure resilience	Buildings, electricity systems, ground transportation, water Infrastructure	Flood barriers, earthquake-resistant designs, storm-resistant roofing, green infrastructure, modular foundations, reinforced materials, resilient building retrofits.	Construction & engineering, real estate, oil & gas, utilities
Digital & predictive solutions	Information and Communication Technology (ICT) infrastructure, electricity systems, urban & community planning	Real-time weather tracking, Al analytics, IoT sensors, early warning systems, smart meters, predictive routing, energy management software, digital twins for monitoring.	Energy equipment & services, transportation (air, ground, marine), utilities, retail, automobile
Energy & power continuity systems	Electricity systems, energy infrastructure, water infrastructure	Backup power systems, microgrids, hybrid renewables, emergency generators, waste-to-energy, mobile energy units.	Independent power producers, electric utilities, automobile, healthcare
Supply chain & logistics resilience	Ground transportation, maritime transportation, air transportation, food systems	Alternative transport routes, rerouting systems, cold chain logistics, emergency delivery, inventory continuity solutions.	Retail, air freight & logistics, ground transport, food & beverage distribution
Insurance, financial, and risk solutions	Financial services, Employment and livelihoods	Customer protection and recovery services such as flexible rebooking, franchise protection, or property insurance bundles.	Hospitality, real estate
Nature-based & environmental resilience	Terrestrial ecosystems, freshwater ecosystems, marine ecosystems, forestry & logging, agriculture & food Systems	Mangrove restoration, reforestation, regenerative agriculture, sustainable materials, water reuse systems, ecosystem protection.	Independent power producers, food & beverage, real estate, agriculture, utilities
Consumer safety & community support	Health care services & medical facilities, urban & community planning, employment and livelihoods	Emergency kits, safe shelters, disaster recovery support, health monitoring systems, telemedicine and mobile aid networks.	Consumer retail, healthcare, Household products, logistics

Source: Synthesis of survey responses. Sectoral mapping based on Tailwind Futures Taxonomy for Adaptation and Resilience Investments

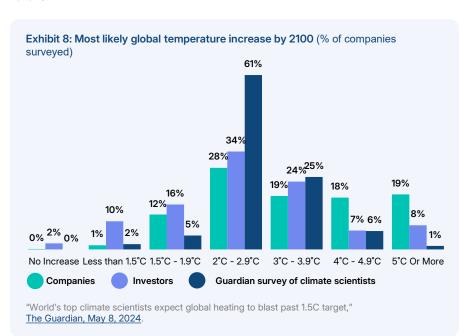




Perceptions on physical risk and global temperature increase

Key findings

Nearly all (99%) companies surveyed say that climate change poses a significant economic threat, with most already feeling its effects. Sixty-three percent report that climate-induced physical risks are currently having a significant impact on the global economy, while 36% expect such effects in the future. By comparison, in a 2024 MSCI Institute survey of global investors, 57% said physical risks are already affecting the global economy currently and 36% saying they anticipate such impacts in the future.



Most companies and investors say they anticipate average global temperatures to rise 2–3°C above preindustrial levels this century, though 18% of companies say they anticipate warming of 4°C or higher, compared with 7% of investors (Exhibit 8). Companies and investors, however, give more weight to lower temperature rises relative to the scientists, and a greater number of investors expect temperatures to rise by more than 5°C.

The findings suggest the companies are preparing for a future in which extreme weather may prove more frequent than either companies or investor anticipated. Hence, investment in resilience could increasingly be viewed as a cost of doing business essential for mitigating disruption.

MSCI data in context

The emissions trajectories of the world's listed companies imply warming of 2.7°C (5°F) above preindustrial levels this century, based on their aggregate emissions, sector-specific carbon budgets and climate targets as of Sept. 30, 2025, according to the latest quarterly edition of the MSCI Institute's Transition Finance Tracker.



"We've been impacted by extreme weather events ... but for a company our size, the damages don't change the balance sheet. Smaller companies, however, could be wiped out by such events"

Large publicly listed health care company, Germany

For more information, see:











Survey alignment with emerging investor frameworks for assessing resilience of investee companies and assets Case example of IIGCC

- → Global investors are turning their attention to assessing the risk exposure of their portfolio assets and companies. For example, the Institutional Investors Group on Climate Change (IIGCC) - an investor-led organization with 400+ members across 20+ countries - has enhanced a framework, Physical Climate Risk Appraisal Methodology (PCRAM), to help investors, asset managers, infrastructure owners and developers systematically integrate physical climate risks into asset valuation, planning and resilience decisions.1
- → Our Institute has mapped our questionnaire onto corresponding stages defined in the framework. The aim of the mapping exercise is to demonstrate one approach investors can take to put IIGCC's framework into practice. Applying these questions to projects or companies can help systematize the inputs investors use to inform risk screening and engagement. Answers to these questions can also supplement the information gathered on portfolio vulnerability to a range of physical risks, based on physical risk models and scenario analysis.

PCRAM Stage MSCI survey questions

Hazard and operations-specific impacts

1. Scoping & data gathering

- Impact assessments
- 2. Materiality assessment

Exposure to Climate Hazards Identify Severity of Impacts on Assets

3. Resilience building

Identify Adaptation Options

Cost Benefit Analysis

4. Value enhancement

1. The methodology was initially developed by the Coalition for Climate Resilient Investment. See, "Consultation: The Physical Climate Risk Appraisal Methodology

(PCRAM) 2.0." IIGCC. June 25, 2023.

Enhancing Resilience and Insurability

Translate Resilience into Financial Value

- Have your company's operations (including supply chains) been impacted by any natural disasters or severe weather events in the past five years?
- How have your company's operations been affected by natural disasters or severe weather events in the past five years?
- Which natural disasters or severe weather events have you assessed for risk or vulnerability across operations and/or supply chain?
- On what time horizon(s) do you conduct your risk/vulnerability assessment for natural disasters or severe weather events?
- · How would you rate the level of risk for severe weather events in terms of their likelihood to adversely impact your company's operations?
- Does your organization quantify the financial impact of potential business interruptions from natural disasters or severe weather events (e.g., downtime, maintenance, revenue loss)?

reduce exposure to natural disasters or severe weather events?

Which measures or strategies has your company implemented or considered to

How does your company integrate resilience against natural disasters or severe weather events into capital planning or investment decisions for physical assets?

Does your organization have a specific framework you use to monitor risks from

Who does your organization consult to assess its operational vulnerability to

- How investors can use this data
- Identify which portfolio companies operate in hazard-prone regions or lack risk governance.
- Spot data gaps and target company engagement for better disclosure on exposure and time horizons.
- Compare corporate self-assessment of hazard likelihood/severity with physicalrisk model outputs to gauge data credibility
- Quantify potential revenue, maintenance, or lifecycle cost shocks at company or sector level.
- Benchmark how companies are moving from risk identification to adaptation action.
- Estimate the cost-benefit ratio of common resilience options.
- Identify investees with high vulnerability but no adaptation plan
- Is remuneration tied to business interruption mitigation, risk reduction and recovery related to natural disasters or severe weather events?
 - Does the board or senior management have oversight for natural disasters or severe weather events risk management?
 - Does your organization offer products that enhance resilience?

- Evaluate maturity of corporate governance and incentives for resilience
- · Assess integration of insurance and risktransfer practices.

Source: IIGCC's Physical Climate Risk Appraisal Methodology (PCRAM) 2.0, June 2025 and MSCI survey







severe weather events?

severe weather events?



Survey purpose and approach

How are companies preparing for extreme weather events? The findings in this report address that question.

Companies make decisions about the impacts of physical risk on operations, supply chains and capital investment without knowing fully how their peers are assessing and responding to such risks. The study examines:

- Recent exposure of business operations to extreme weather events
- How companies view and assess their climaterelated risks
- Adaptation and resilience measures being implemented
- The impact and effectiveness of these actions in protecting operations and assets

Taken together, the findings offer a snapshot of corporate planning and action on climate resilience posed by extreme weather events globally. By capturing real-world experiences of disruption, assessment and adaptation, the report provides a practical perspective on how companies are building capacity to withstand the growing impacts of extreme weather and other physical hazards.

Methodology

The findings set out in this report come from a survey conducted by the MSCI Institute between August and September 2025 of risk, operations and finance officers at 550 listed and unlisted companies in nine industries that have the highest exposure to physical risk. The survey respondents spanned 15 markets to ensure responses reflected regional differences across geographies and sectors. We supplemented the questionnaire with interviews of corporate risk, operations and finance officers who provided insights from their experiences.

The Institute selected for the survey industries exhibiting high vulnerability to physical risk as measured by MSCI's Climate Value-at-Risk (VaR), a forward-looking climate-risk metric. We computed aggregate Climate VaR for each industry; those with the highest median VaR formed the target set of industries for the survey. We selected companies across geographies and size from the target set for cross-section of views.

The survey was designed to elicit a range of views held by companies on physical risk and resilience, with questions that touched on:

- → Decarbonization trajectories
- → Organizational exposure and vulnerability
- → Preparedness and perceptions of risk
- → Governance and decision-making
- → Strategic and operational responses
- → Opportunities for growth and value creation
- → Perceptions on physical risk and global temperature increase

The questionnaire aimed to balance completeness with the time necessary for participants to answer questions. Hence in some parts of this report we needed to infer and estimate reasons or rationale for a view expressed.











Results

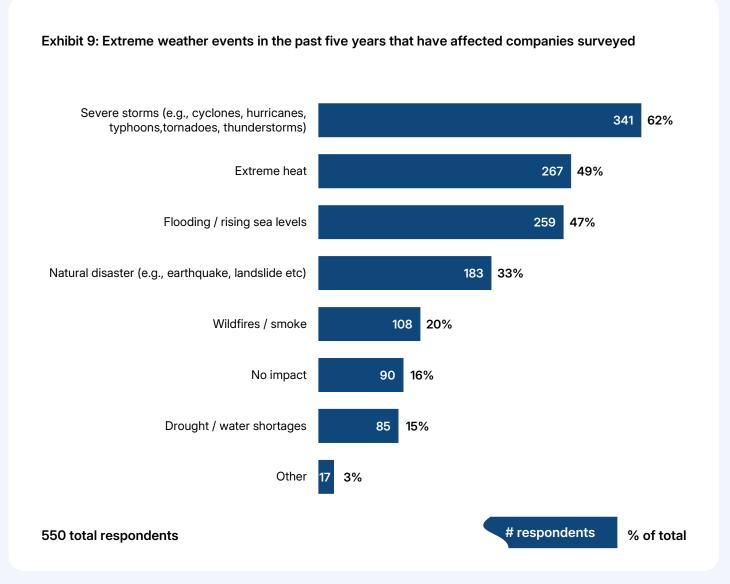
Corporate Resilience Survey 2025

October 2025



Have your company's operations (including supply chains) been impacted by any of the following extreme weather events in the past five years?

- → Severe storms (62%), extreme heat (49%) and flooding (47%) top the list of extreme weather events that companies surveyed say have affected them over the past five years (Exhibit 9). Natural disasters, such as earthquakes and landslides, have impacted about one-third of companies over the same period.
- → Smaller shares of companies report being affected by wildfires or drought, highlighting that these hazards are typically more sector-specific, particularly in industries such as agriculture.



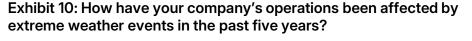




How have your company's operations been affected by extreme weather events in the past five years?

- → Over four-fifths of companies surveyed report that extreme weather has disrupted their operations or increased their operating costs (Exhibit 10). Equal shares (66%) cite negative impacts on employee well-being, infrastructure damage and revenue loss, while fewer report higher insurance premiums or reduced coverage.
- → Supply chains appear especially vulnerable. Three-quarters of companies say extreme weather has delayed delivery of critical inputs (Exhibit 11).

 Over 60% report input shortages or price spikes, and a majority also note rerouted supply chains or disrupted market access.



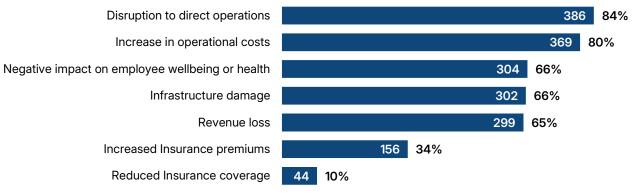
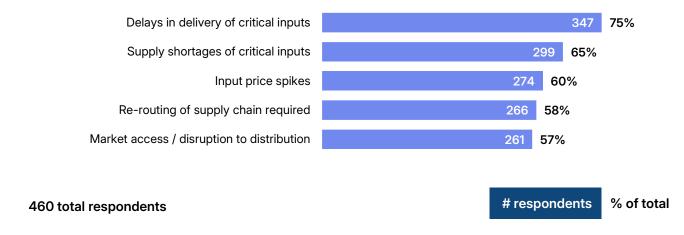


Exhibit 11: How have extreme weather events disrupted your supply chains in the past five years?







Which of your facilities or assets were impacted by extreme weather events in the past five years, and what was the impact?

- → Business interruption is the most common consequence of extreme weather. Companies surveyed most frequently report utility outages, temporary closures, access and safety issues, and infrastructure damage (Exhibit 12).
- → Retail and office locations are most prone to closure: Temporary closures affect 70% or more of retail stores, warehouses, offices, R&D facilities and manufacturing plants (well above other categories). While permanent shutdowns remain rare (under 10% across all facility types), even short-term operational halts highlight business continuity as a key vulnerability for companies facing disruption from extreme weather.
- → Facility vulnerabilities vary by site type. Companies say data centers and IT infrastructure experience moderate utility and infrastructure problems but fewer safety concerns, while agricultural and warehouse sites face the broadest range of concurrent disruptions.

Exhibit 12: Impact of extreme weather events on facilities/assets (% of companies reporting impacts)

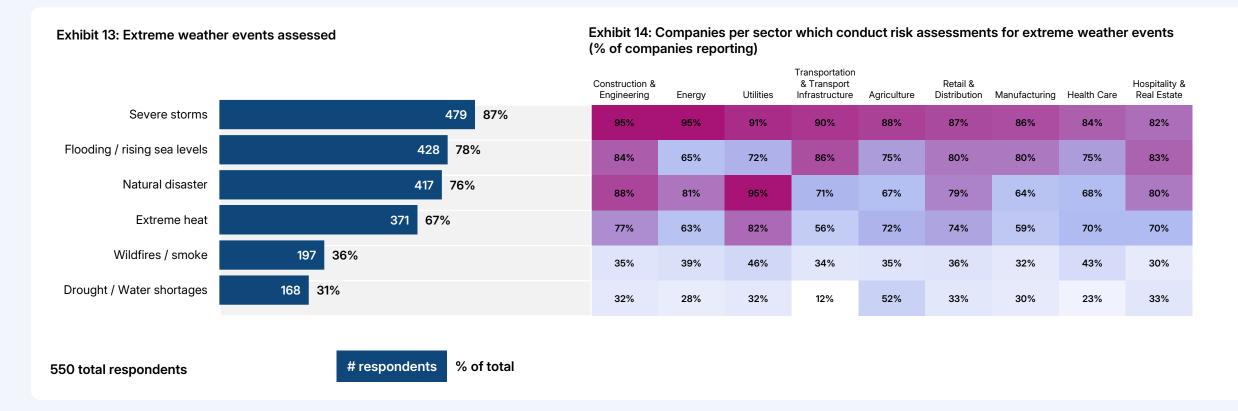
				Type of impact on facility (based on % of impacted facilities) ————————————————————————————————————					
	no. of companies with facilities owned	no. of companies with facilities impacted	% of companies with facilities impacted	Employee access or safety issues	Utility outage (power, water, etc.)	Temporary closure	Infrastructure damage	Loss of inventory or equipment	Permanent shutdown
Warehouse / Logistics Centers	376	323	86%	63%	71%	74%	67%	66%	1%
Agricultural Sites	13	11	85%	82%	27%	55%	73%	82%	0%
Manufacturing Plants / Industrial Facilities	226	178	79%	70%	77%	70%	71%	40%	1%
Stock / Cargo	300	227	76%	35%	41%	41%	36%	87%	1%
Retail Stores / Customer Facing Branches	136	102	75%	79%	51%	77%	57%	50%	9%
Utilities / Energy Infrastructure	138	102	74%	66%	93%	57%	72%	27%	1%
Extraction Sites	47	33	70%	73%	67%	67%	73%	33%	0%
Company Offices	434	202	47%	79%	77%	73%	39%	11%	2%
Data Centers / IT Infrastructure	239	88	37%	50%	73%	55%	56%	18%	1%
Employee Housing	48	17	35%	88%	76%	41%	59%	12%	0%
Research & Development Facilities	162	49	30%	67%	65%	73%	51%	49%	4%





Which of the following extreme weather events have you assessed for risk or vulnerability across operations and/or supply chains?

- → Severe storms, flooding and natural disasters top the list of hazards that companies surveyed say they assess their vulnerability to (Exhibit 13).
- → Severe storms, flooding and extreme heat are top of mind for companies in most sectors when conducting hazard-specific vulnerability assessments (Exhibit 14). By contrast, drought and water scarcity are assessed least frequently.

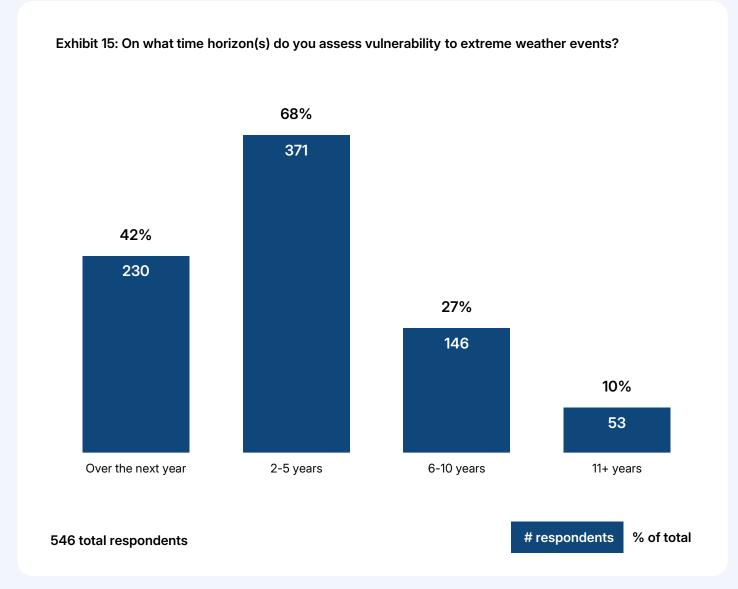






On what time horizon(s) do you conduct your risk/vulnerability assessment for extreme weather events?

- → The largest share of companies surveyed (68%) say they assess physical risk over a two- to five-year horizon, while 42% focus on the next year (Exhibit 15).
- → Fewer companies (27%) assess risks that could arise six to ten years out, while 10% take a long-term view, evaluating climate risks 11 years or more into the future.



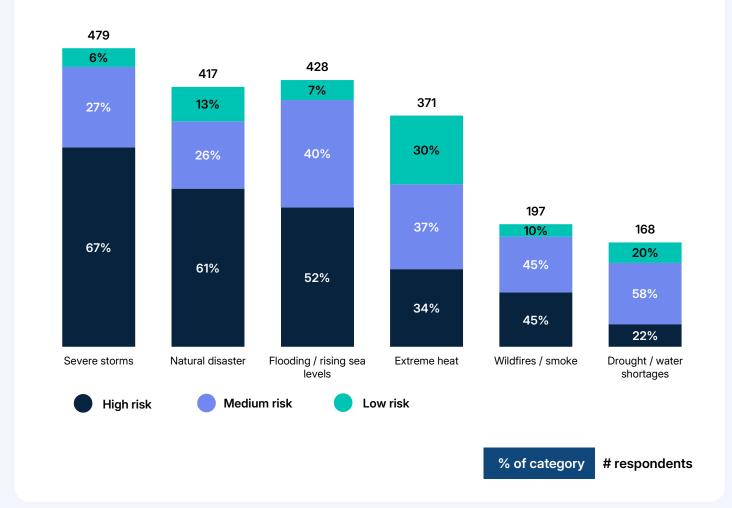




How would you rate the level of risk for each of the extreme weather events in terms of their likelihood to adversely impact your company's operations/having a financial impact on your company?

- → Companies surveyed consistently rank acute hazards, particularly severe storms, natural disasters, and flooding, as the highest risks to both operations and finances, underscoring the link between physical disruption and economic loss (Exhibit 16).
- → Chronic hazards such as extreme heat and drought are more often rated medium rather than high risk, despite their potential to build over time.

Exhibit 16: How would you rate the level of risk to your company from each of the following extreme weather events?

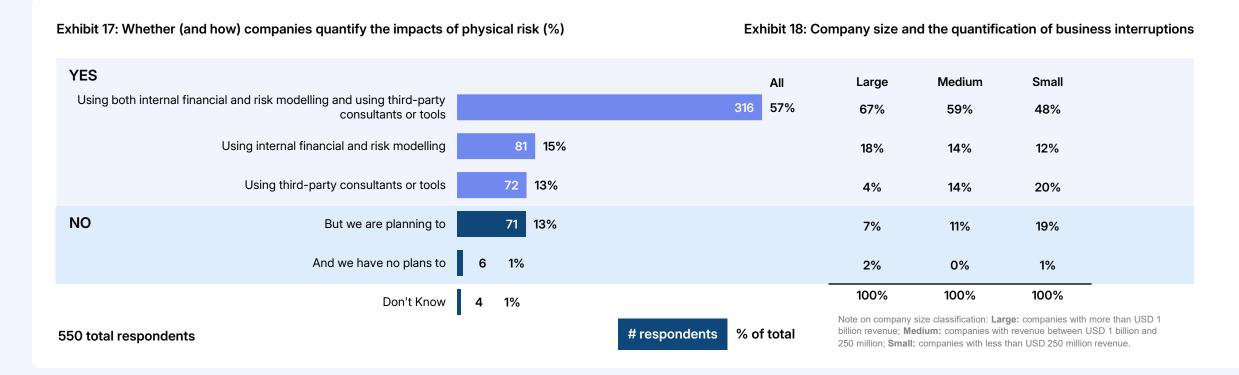






Does your organization quantify the financial impact of potential business interruptions from extreme weather events (e.g., downtime, maintenance, revenue loss)

- → Most companies (85%) surveyed quantify the financial impact of potential business interruptions from extreme weather events, with 57% using both internal modeling and third-party tools, 15% relying only on internal modeling and 13% on third-party tools (Exhibit 17). Another 13% of companies say they plan to quantify the financial impacts of physical risk but have not yet done so.
- → Larger companies are more likely to use a combination of third-party tools and internal risk modeling while smaller companies are more likely to rely on third-party tools (Exhibit 18).

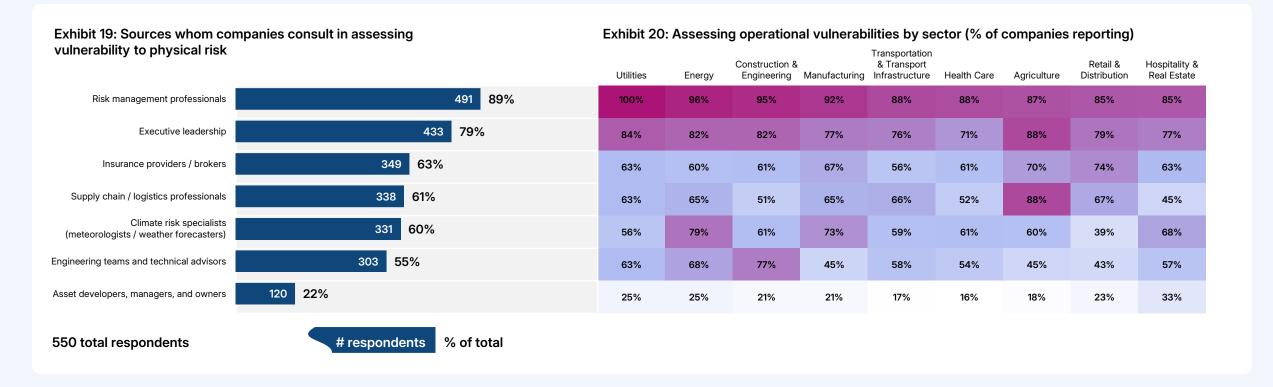






Who does your organization consult to assess its operational vulnerability to extreme weather events?

- → Nearly 90% of companies surveyed say they consult risk management professionals for help in assessing vulnerability to physical risk, while 79% say they rely on their own company's leadership (Exhibit 19).
- → Sixty-three percent consult with insurance providers or brokers, while similar shares of companies (60%) say they consult with specialists in logistics or climate risk (Exhibit 20).
- → These patterns suggest that resilience planning is not a onesize-fits-all exercise but shaped by each sector's specific vulnerabilities and dependencies.









Does your organization have a specific framework you use to monitor risks from, or exposure to, extreme weather events?

- → Technology and enterprise resilience dominate organizational approaches (Exhibit 21). Around 60 respondents report using technology-driven tools, such as predictive analytics, GIS mapping, and AI modeling, while 45-50 rely on enterprise and operational resilience frameworks like business continuity planning and crisis management.
- → Between 30 and 40 respondents use standardized risk frameworks (e.g., ISO 31000, COSO ERM), while a similar number adopt hybrid or customized models that integrate internal audits, supplier mapping, and external climate data.
- → Fewer organizations employ climate and sustainability frameworks (≈25– 30), governance mechanisms (≈20–25), or financial and disaster risk reduction models suggesting these approaches are still emerging compared with technology-led and operational strategies.

Exhibit 21: Frameworks used to monitor extreme weather risk

Category	Frameworks / methods used	Respondents (approx.)	Examples
Technology-driven approaches	Predictive analytics, GIS mapping, IoT sensors, AI modeling, simulation platforms, real-time dashboards	≈60+	"GIS-based climate mapping"; "Real-time dashboards tracking hazard alerts"; "Al-driven weather simulations"; "IoT-based monitoring of facilities"
Enterprise & operational resilience	Business continuity planning (BCP), crisis management teams, operational resilience frameworks, cross-functional task forces	≈45–50	"BCP activated during severe storms"; "Cross- departmental risk task force"; "Operational resilience integrated with facility engineering and supplier monitoring"
Formal risk management standards	ISO 31000, COSO ERM, ISO-based risk modeling, enterprise risk management platforms	≈35–40	"ISO 31000-based model linking operational and financial risk"; "COSO ERM for board-level oversight"; "ERM systems used for step-by-step risk assessments"
Hybrid / custom models	Multi-layered frameworks (site + regional + enterprise), integrated systems combining internal audits, supplier mapping, and external climate data	≈30–35	"Layered framework integrating local risk maps and centralized oversight"; "Blended internal and third-party risk models"
Climate & sustainability frameworks	TCFD, ISSB, SASB, ESG-aligned resilience frameworks, resilience benchmarking	≈25–30	"TCFD-based climate risk approach"; "Integrated ESG and risk management system"; "Resilience benchmarking against peers"
Governance & oversight	Risk committees, resilience councils, sustainability boards, board-level oversight mechanisms	≈20–25	"Risk committee led by board of directors"; "Quarterly reviews of climate and operational risk"; "Resilience index reporting to governance committees"
Insurance & financial models	Catastrophe modeling, reinsurance structures, parametric insurance overlays	≈15 – 18	"Reinsurance market for catastrophe coverage"; "Parametric overlay models for earthquake and flood risk"
Disaster risk reduction frameworks	Sendai Framework, PIEVC Protocol, AWWA J100, FEMA/OSHA alignment	≈10–12	"Sendai Framework for disaster preparedness"; "PIEVC protocol for engineering resilience"; "FEMA/OSHA standards integrated with weather monitoring"

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Does the board or senior management have oversight for management of risks from extreme weather?

Q11

Is remuneration tied to business interruption mitigation, risk reduction and recovery related to extreme weather events?

- → Oversight of risks from extreme weather is increasingly formalized at the leadership level. 73% of companies surveyed report both the board and senior management oversee the risk management of physical risk, while an additional quarter have oversight at either the senior management (21%) or board (5%) level (Exhibit 22).
- → Resilience is increasingly tied to incentives. A majority of companies surveyed link compensation to physical risk management, with 61% tying incentives to both the board and senior management, while only 5% extend such measures company-wide (Exhibit 23).

Exhibit 22: Does the board or senior management have oversight for managing the risk of extreme weather events?

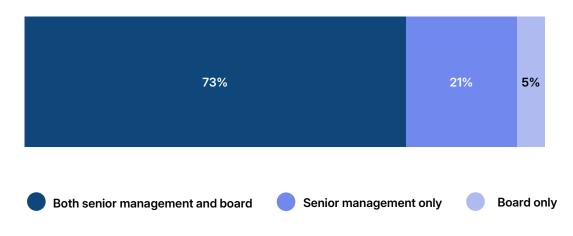
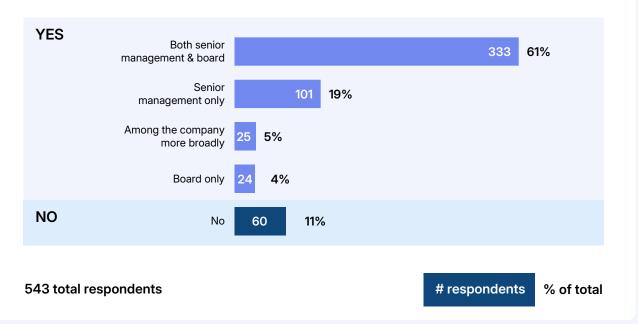


Exhibit 23: Is remuneration linked to resilience and risk mitigation?

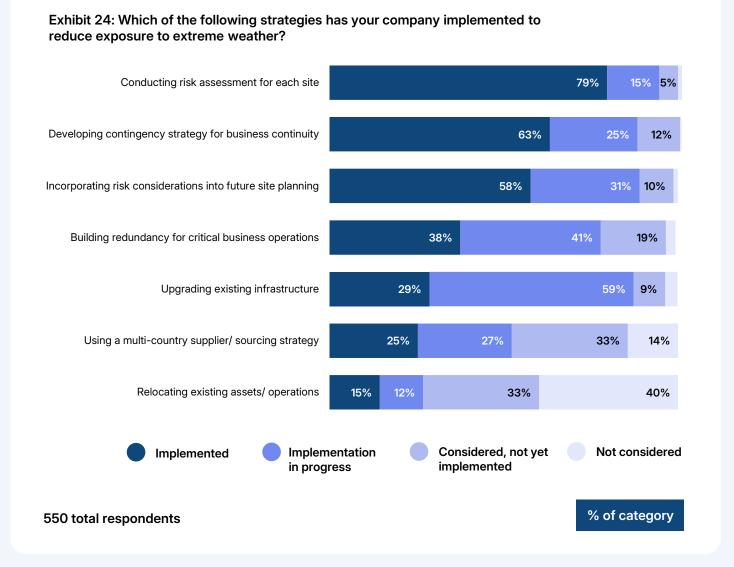






Which of the following measures or strategies has your company implemented or considered to reduce exposure to extreme weather events?

- → Most companies surveyed report adopting, considering or advancing a range of resilience measures to reduce their exposure to extreme weather events.
- → Conducting site-specific risk assessments (79%), developing contingency plans (63%) and incorporating risk considerations into future site planning (58%) are the most widely implemented measures (Exhibit 24). Upgrading infrastructure (59%) and building redundancy for critical operations (41%) are also well underway.
- → Multi-country sourcing (33%) is largely under consideration but not yet implemented, while relocating assets or operations remains a last resort strategy, with 40% of companies not considering it at this time.

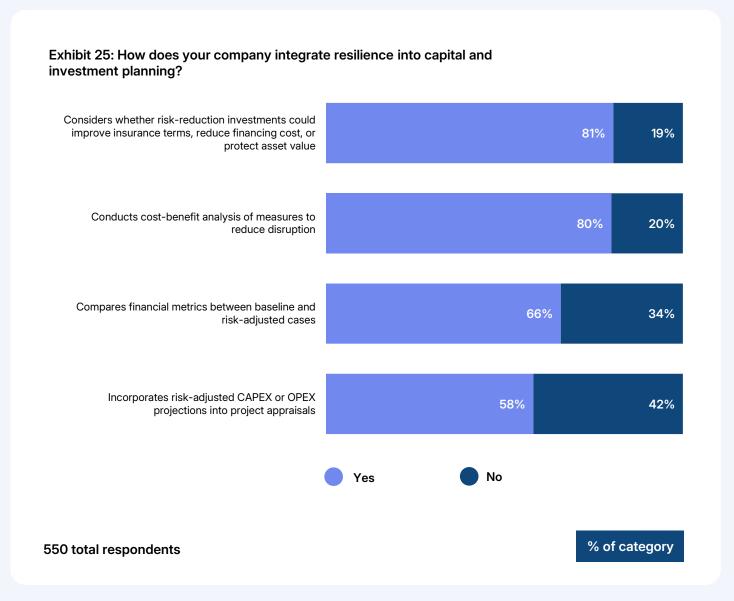






How does your company integrate resilience against extreme weather events into capital planning or investment decisions for physical assets?

- → Most companies (93%) surveyed are embedding resilience into their investment planning through various strategies. Two approaches are most widely adopted – evaluating how risk-reduction measures affect insurance, financing, and asset value (81%) and conducting cost-benefit analyses to reduce disruptions (80%) (Exhibit 25).
- → While less common, a majority of companies also compare financial metrics between baseline and risk-adjusted cases (66%) and incorporate risk-adjusted capital expenditure (CAPEX) or operating expenditure (OPEX) projections into project appraisals (58%).

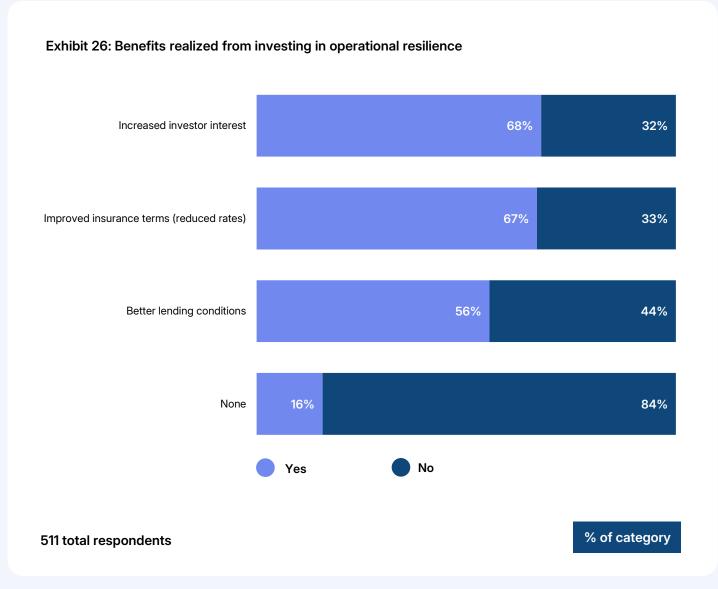






Has investing in operational resilience led to any of the following?

- → Eighty-two percent of companies surveyed report financial or reputational benefits from investing in operational resilience. The most common outcomes include increased investor interest (68%), improved insurance terms (67%), and better lending conditions (56%) (Exhibit 26).
- → A small minority (16%) have yet to see any kind of similar positive result from investing in operational resilience.

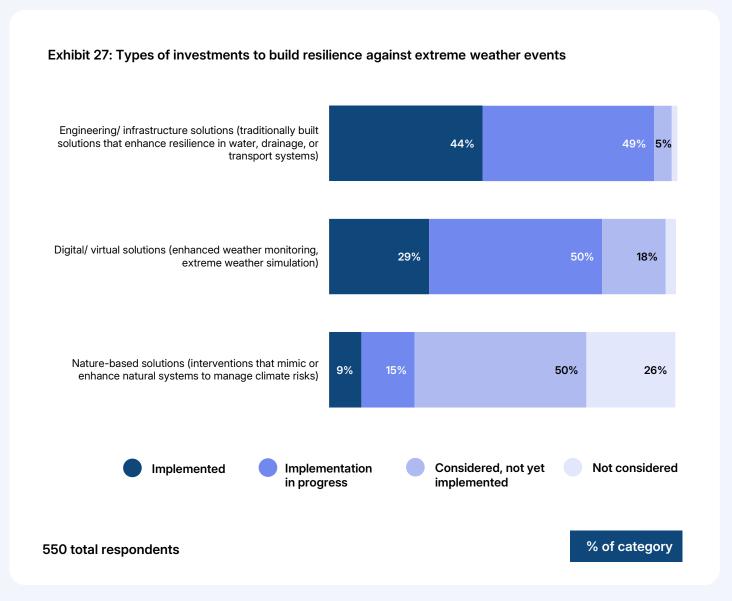






What kinds of investments have you made to build resilience against extreme weather events?

- → Companies surveyed are pursuing a mix of engineering, digital and naturebased solutions to strengthen their resilience, though adoption levels vary.
- → Engineering and infrastructure upgrades are the most established approach, with nearly all companies having implemented (44%) or currently undertaking (49%) such measures, and only 2% yet to consider them (Exhibit 27).
- → Digital and virtual solutions such as enhanced weather monitoring and simulation tools are gaining traction, with half of companies (50%) currently implementing them and 29% have already done so.
- → Nature-based solutions which leverage natural systems to manage climate risks remain at an earlier stage of adoption, with 15% currently implementing, 50% considering and 26% not yet considering such measures.







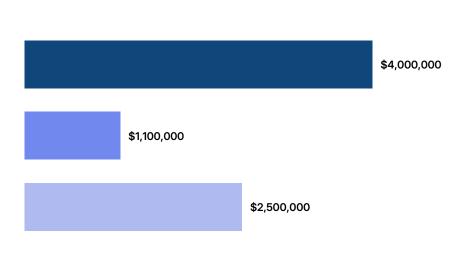
Can you briefly outline what investments were made and the approximate value in USD?

- → Investments in resilience solutions reflect the varied nature and maturity of each approach (Exhibit 28). Engineering and infrastructure measures attract the highest median spend (~ USD 4 million) among companies surveyed, reflecting the capital intensiveness of such measures and focus on largescale physical upgrades such as flood defenses, stormwater systems and structural retrofitting (Exhibit 29).
- → Nature-based solutions also represent a meaningful allocation (~ median spend of USD 2.5 million), though approaches differ between large-scale capital-intensive projects such as wetland restoration and reforestation investments and smaller site-based measures such as rain gardens or green roofs.
- → Digital and virtual solutions receive a median investment of approximately USD 1.1 million, supporting technologies such as predictive analytics, weather monitoring and simulation tools to enhance forecasting and operational resilience.

Exhibit 28: Investments in resilience solutions (number of survey mentions)

Type of solution **Description / typical investments** Approx. mentions Flood defenses and drainage upgrades; stormwater management; elevated Engineering / foundations; seismic isolation and retrofitting; slope stabilization; reinforced ≈120 infrastructure solutions roofing and walls; HVAC and fire suppression upgrades; backup power stations; resilient data centers and road infrastructure. Advanced weather monitoring and predictive analytics; Al-driven risk modeling; IoT sensors for real-time environmental tracking; digital twin Digital / virtual solutions ≈85 simulations; cloud-based dashboards; outage forecasting; GIS-based asset mapping; automation and remote diagnostics. Green roofs, bioswales, rain gardens, and vegetated stormwater systems; reforestation, regenerative agriculture, mangrove and wetland restoration; Nature-based solutions ≈35 biodiversity corridors and soil health programs to reduce flooding and erosion.

Exhibit 29: Median investment size by type of solution (USD million)

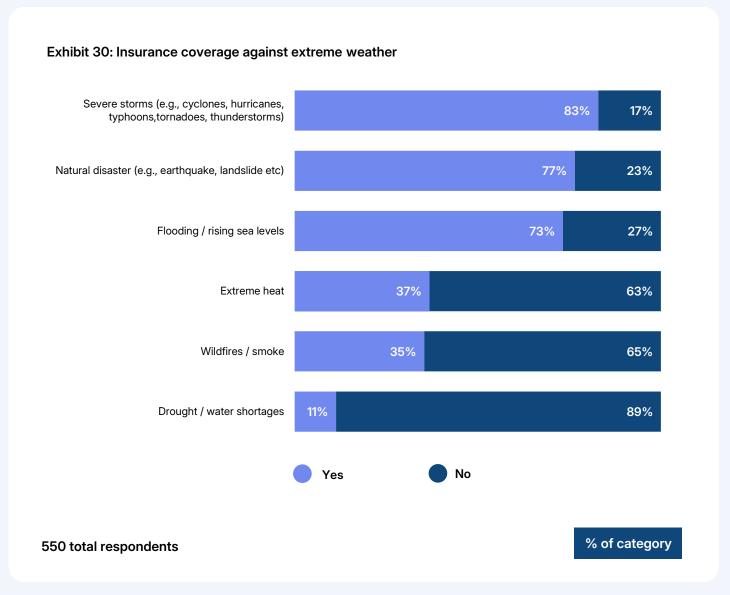






Which, if any, extreme weather events are your operations insured against?

→ While most companies surveyed say they insure against extreme weather events, coverage varies. Severe storms (83%), natural disasters, such as earthquakes (77%) and flooding (73%) are heavily insured. Coverage for extreme heat (37%), wildfires (35%) and drought (11%) remains limited (Exhibit 30).







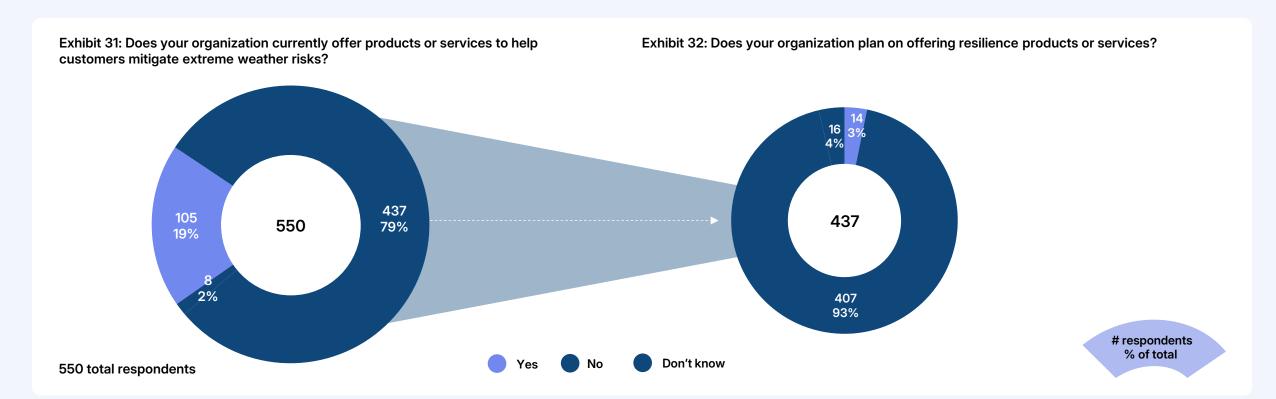
Does your organization currently offer any products or services that can help your customers mitigate extreme weather event risks?

→ Only 19% of companies surveyed say they currently offer products or services aimed at helping customers mitigate the effects of extreme weather, underscoring the limited development of external-facing resilience solutions (Exhibit 31).

Q19

Does your organization plan on offering products or services that mitigate extreme weather event risks in the future?

→ Few companies say they plan to expand in this area, with 93% reporting no plans to offer such products or services, suggesting that for many companies, resilience remains focused on business continuity rather than as a customer-facing offering (Exhibit 32).

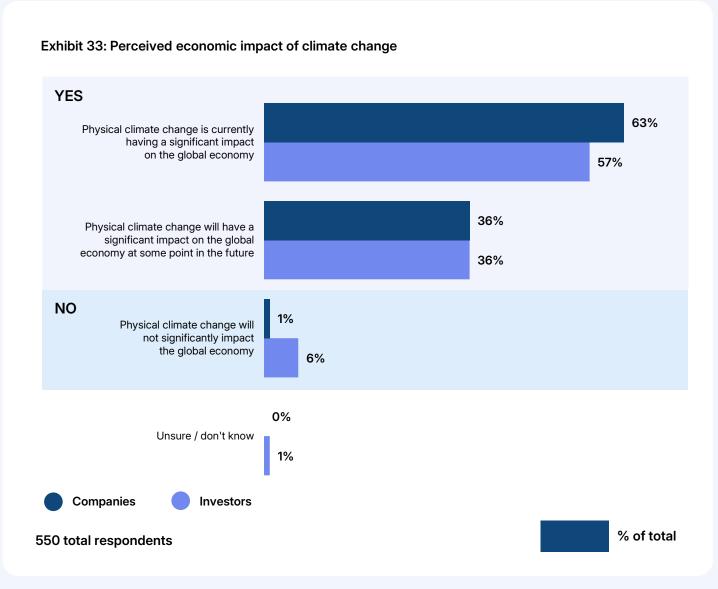






Do you believe changes in our physical environment due to global temperature rise will have a significant economic impact?

- → Nearly all companies say that climate change will have a significant global economic impact, with 63% reporting that it is already having such an effect and another 36% expecting the impacts to emerge in the future (Exhibit 33).
- → The finding reflects an even stronger consensus than among investors surveyed by the MSCI Institute in 2024, when 93% recognized the risk, but just over half said the impacts were already being felt. The difference likely reflects the direct exposure companies face in their day-to-day operations and supply chains compared with investors' financial perspectives.

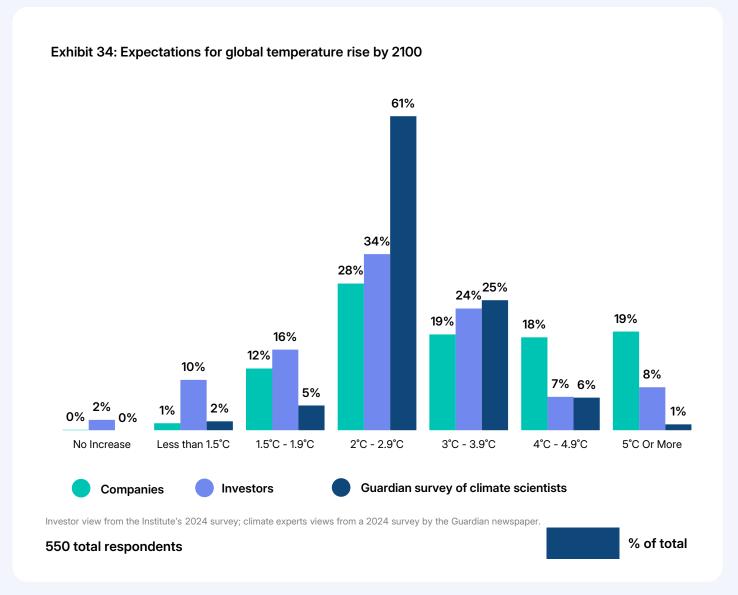






What do you believe is the most likely global temperature increase by the year 2100 (compared to pre-industrial levels)?

- → Companies (28%) and investors (34%) alike say they expect average global temperatures to rise 2–3°C above preindustrial levels this century, broadly aligned with climate experts surveyed from a Guardian newspaper survey (61%)¹ (Exhibit 34).
- → However, companies appear more pessimistic, with 37% anticipating warming of 4°C or higher, compared with just 15% of investors expecting such outcomes.
- → Only a small minority of companies (13%) believe warming can be limited to less than 2°C, while investors (28%) express slightly more hope in this regard.







 [&]quot;World's top climate scientists expect global heating to blast past 1.5C target," The Guardian, May 8, 2024.

Appendix

Industry selection

The Institute selected for the survey both listed and unlisted companies in industries exhibiting high levels vulnerability to physical risk as measured by MSCI's Climate Value-at-Risk (VaR), a forward-looking climate-risk metric. We computed aggregate VaR for each industry. Industries with the 25 highest median Climate VaR formed the target set of industries for the survey. We selected companies across geographies and size from the target set for cross-section of views.

Survey respondents

Survey respondents represent a mix of senior leadership and functional experts spanning operations, finance, sustainability, and corporate governance roles. The largest share - just over half of respondents – are operations-focused leaders such as chief operating officers, heads of supply chain, engineering, and plant or facilities directors.

Key terms

Acute risks: Short-term, event-driven risks arising from extreme weather events such as tropical cyclones, floods or wildfires.

Adaptation: Refers to actions and investments aimed at reducing climate vulnerability or enhancing resilience.

Chronic risks: Long-term, gradually evolving risks that result from sustained shifts in climate patterns, such as changes in temperature or precipitation.

Exposure: Represents the presence of people, infrastructure, resources and economic activity in locations subject to acute and chronic risks.

Hazard: Refers to the frequency or intensity of acute and chronic risks.

Loss: Quantifies expected damages, financial losses or operational disruptions based on the interaction between hazard, exposure and vulnerability.

Physical risk: Risk stemming from the direct physical impacts of climate change, including both acute risks and chronic risks. These risks can affect supply chains, property values, infrastructure resilience and overall economic productivity.

Readiness: Assesses the strength and effectiveness of existing strategies to manage and withstand physical risk (e.g., resilience planning).

Resilience: Refers to the ability of people and infrastructure to withstand the impacts of acute and chronic risks.

Vulnerability: Describes the susceptibility of an asset to adverse impacts from chronic and acute risks, including financial harm (or opportunity) and capacity to cope and adapt.

Category	Example roles	Respondents (% of total)
Operations-focused	Chief Operating Officer (COO), Chief Supply Chain Officer (CSCO), VP of Engineering / Technical Operations, Director of Manufacturing / Plant Operations, Director of Business Continuity & Resilience, Director of Risk, Crisis & Emergency Management, Director of Health, Safety & Security, Chief Infrastructure & Facilities Officer	≈290 (53%)
Finance-focused	Chief Financial Officer (CFO), Chief Investment Officer (CIO), Chief Risk Officer (CRO), Head of Investor Relations, Controller / Director of FP&A, Head of Treasury & Capital Planning, Head of Corporate Risk & ERM, Head of Insurance & Risk Transfer	≈150 (27%)
Sustainability-focused	Chief Sustainability Officer (CSO), Head of ESG / Corporate Responsibility, Other Sustainability Roles	≈70 (13%)
Other	Chief Administrative Officer (CAO), Chief Strategy / Transformation Officer, Head of Corporate Development / M&A, Communications / Brand Executives, Other	≈40 (7%)









Appendix

Exhibit 35: Respondent region and company type Publicly traded Privately held Americas 104 99 Australia & Asia 139 38 Europe, Middle East, Asia 104 65 None of the above 1 0

Exhibit 36: Respondent country domicile and revenue

n =	Respondent location	\$10 billion+	\$5 - 9.9 billion	\$1 - 4.9 billion	\$500m - \$999m	\$250m - \$499m	\$200m - \$249m	\$150m - \$199m	\$100m - \$149m	\$50m - \$99m	than \$50m
147	United States	16%	7%	23%	10%	7%	7%	7%	11%	12%	0%
78	United Kingdom	10%	5%	8%	15%	4%	9%	13%	14%	22%	0%
53	Germany	19%	13%	13%	8%	8%	8%	11%	8%	13%	0%
49	India	2%	2%	10%	4%	19%	15%	17%	19%	13%	0%
42	Japan	7%	21%	29%	17%	7%	5%	2%	7%	0%	5%
40	Australia	10%	8%	28%	13%	5%	10%	13%	8%	8%	0%
38	Spain	11%	0%	21%	18%	8%	11%	13%	13%	5%	0%
37	Canada	5%	3%	22%	24%	22%	8%	5%	5%	5%	0%
19	Brazil	5%	0%	26%	26%	16%	0%	5%	5%	16%	0%
16	China	6%	0%	25%	25%	6%	6%	6%	6%	19%	0%
7	Thailand	0%	29%	14%	14%	0%	29%	14%	0%	0%	0%
7	Singapore	14%	0%	14%	14%	14%	0%	29%	14%	0%	0%
6	Malaysia	0%	17%	0%	0%	33%	0%	17%	0%	33%	0%
5	Vietnam	0%	20%	0%	40%	0%	0%	0%	0%	40%	0%
5	Indonesia	20%	0%	0%	0%	40%	20%	0%	0%	20%	0%
1	None of the above	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Exhibit 37: Respondents - Industry mapping to GICS

n =	Sectors referenced In the survey	GICS sector	GICS industry
60	Agriculture	Consumer staples	Food products
		Consumer staples	Beverages
57	Construction & engineering	Industrials	Construction & engineering
57	Energy	Energy	Oil, gas & consumable fuels
		Energy	Energy equipment & services
56	Health care	Health care	Health care providers & services
60	Hospitality & real estate	Real estate	Real estate management & development
		Consumer discretionary	Hotels, restaurants & leisure
66	Manufacturing	Consumer staples	Household products
		Consumer discretionary	Automobiles
		Consumer staples	Personal care products
		Consumer discretionary	Automobile components
		Consumer discretionary	Broadline retail
		Consumer discretionary	Textiles, apparel & luxury goods
61	Retail & distribution	Consumer staples	Consumer staples distribution & retail
		Consumer discretionary	Distributors
		Consumer discretionary	Specialty retail
		Industrials	Trading companies & distributors
59	Transportation & transport infrastructure	Industrials	Air freight & logistics
		Industrials	Marine transportation
		Industrials	Passenger airlines
		Industrials	Ground transportation
57	Utilities	Utilities	Gas utilities
		Utilities	Independent power & renewable electricity producers
		Utilities	Electric utilities
		Utilities	Multi-utilities
		Utilities	Water utilities
17	Other	n/a	n/a





Less

About

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