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Adaptation & Resilience Takes Larger Role in the Climate Change Industry

The climate change industry emerged and evolved principally as an effort to control and minimize greenhouse gas emissions. Renewable energy, energy efficiency, low-carbon transportation, green buildings, energy storage, carbon markets and, more recently, carbon capture have consequently accounted for the overwhelming majority of revenues historically associated with the climate change industry. However successful those mitigation efforts ultimately prove to be, the physical effects of climate change today and in the decades ahead are being driven largely by the cumulative stock of greenhouse gases already emitted to the atmosphere. The consequence is that adaptation is a distinct and unavoidably growing dimension of the climate change industry: reducing future emissions remains essential, but governments, businesses and communities simultaneously have to prepare for the climate conditions they will experience.

That transition is still at an early stage when measured against the enormous scale of the mitigation economy. CCBJ estimates the global climate change industry at $3.59 trillion in 2024, up 14% from $3.14 trillion in 2023. Adaptation & Resilience accounted for $34.6 billion, or just under 1% of total global climate-industry revenues, compared with hundreds of billions of dollars each in renewable power, efficiency, green buildings and more than $1.6 trillion in transportation (as quantified in the Q2 2026 edition of CCBJ). Nevertheless, the A&R segment grew 18% in both 2023 and 2024, faster than the overall global climate industry in 2024 and considerably faster than mature categories such as efficiency technology, green buildings and mitigation consulting and climate research.

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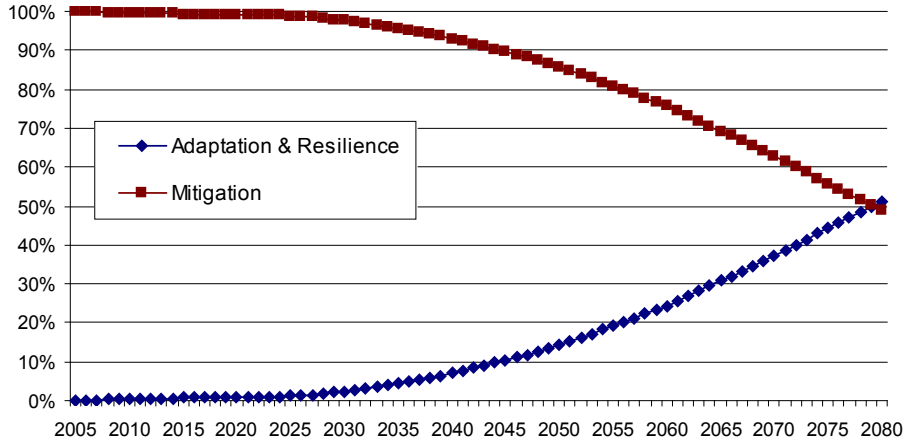
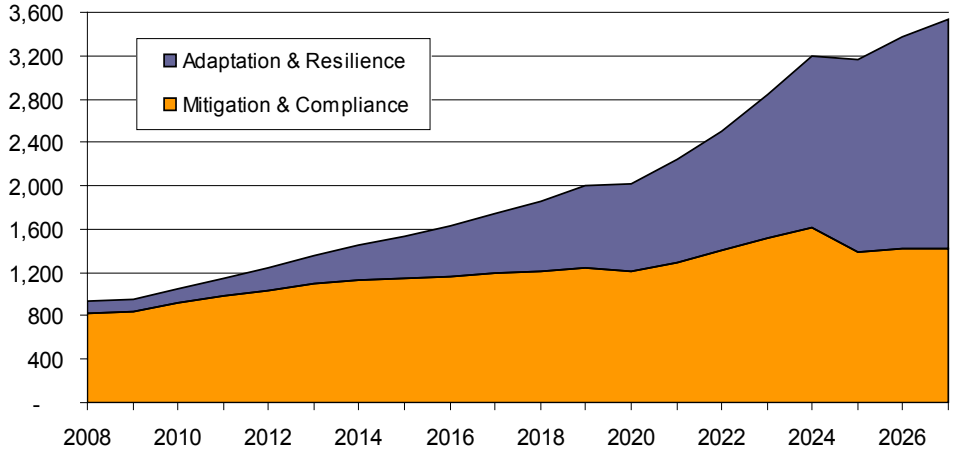
Climate Change Industry: Percentage of Revenues in Mitigation vs. Adaptation & Resilience, 2005-2080



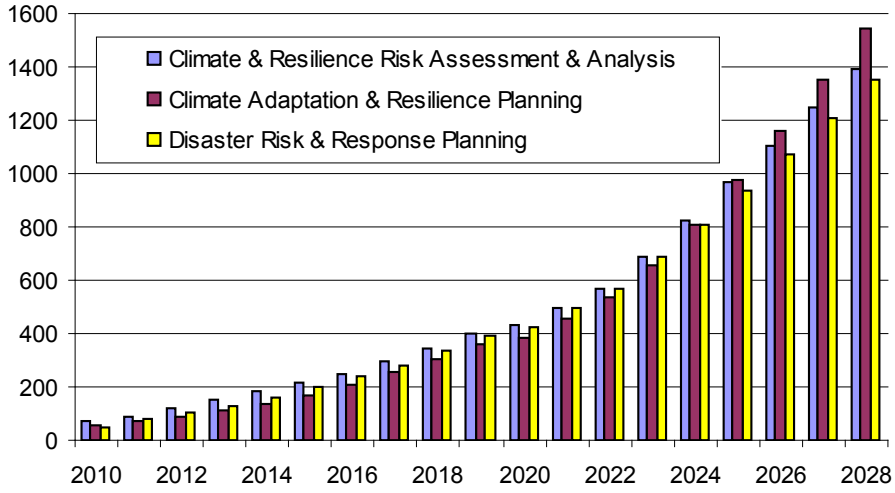
Source: Climate Change Business Journal long-range theoretical forecast for the climate change industry

USA Climate Change A&R Consulting & Engineering, 2010-27 ($mil)



Source: Climate Change Business Journal model of the climate change consulting & engineering industry. CCBJ estimates derived from surveys, interviews, government statistics and compiled secondary data and reports

USA Mitigation vs. Adaptation & Resilience Growth 2004-2028



Source: Climate Change Business Journal climate change adaptation & resilience industry model, Environmental Business International, Inc.; Includes only Climate & Resilience Risk Assessment & Analysis, Climate Adaptation & Resilience Planning and Disaster Risk & Response Planning subsegments

GSI Environmental Connects Sustainability Strategy With Applied Environmental Science and Engineering

GSI Environmental Inc. is a privately held, employee-owned environmental engineering and science consulting firm headquartered in Houston, Texas. Founded in 1986 as a two-person company, GSI has grown to more than 250 employees and is celebrating its 40th anniversary in 2026. The firm maintains offices across California, Colorado, Georgia, Montana, New York, North Carolina, Texas, Virginia, and Washington, with additional professionals working remotely throughout the United States and supporting projects globally. GSI helps clients measure, analyze, and solve complex environmental and business challenges. Its services encompass sustainability and climate, site investigation and remediation, water resources, stormwater, groundwater, environmental modeling and analytics, regulatory compliance and permitting, due diligence, toxicology and risk assessment, PFAS and emerging contaminants, litigation support, mining, carbon capture and sequestration, food-product safety, and environmental services for data centers and other major infrastructure. GSI serves a diverse mix of industrial, energy, minerals, real estate, government, legal, retail, manufacturing, healthcare, technology, and infrastructure clients. This customer diversity allows the firm to understand climate and sustainability issues from multiple perspectives—including those of asset owners, operators, investors, municipalities, regulators, communities, and legal counsel.

Dr. Becky Twohey, Principal Scientist, GSI Environmental Inc. Dr. Twohey specializes in sustainability strategy, climate risk management, climate scenario analysis, and climate-related financial reporting. She advises companies and public agencies on translating climate science, regulatory requirements, and sustainability objectives into practical business strategies. Her experience includes climate risk and vulnerability assessments, climate scenario analysis, climate action and adaptation planning, greenhouse gas management, sustainability reporting, transition planning, materiality assessments, and compliance with frameworks and requirements such as IFRS S2, the Corporate Sustainability Reporting Directive, and California's climate disclosure laws.

CCBJ: Tell us about GSI's Sustainability and Climate practice. How does GSI differentiate from competitors and what are your strengths?

Twohey: GSI's Sustainability and Climate practice helps organizations understand and respond to the regulatory, operational, financial, and strategic implications of climate change. Our work includes greenhouse gas inventories and assurance, climate risk assessments, climate scenario analysis, climate action and transition planning, sustainability reporting, science-based targets, life-cycle analysis, emissions-reduction planning, municipal climate planning, and compliance with emerging climate disclosure requirements. We support both private companies, private equity and public agencies.

GSI's principal differentiator is that we connect sustainability strategy with applied environmental science and engineering. Climate consulting is often approached primarily as a reporting, accounting, or communications exercise. Those disciplines are important, but a credible climate strategy also requires an understanding of how physical systems operate.

GSI can bring climate specialists together with engineers, hydrogeologists, water-resource professionals, modelers, geologists, toxicologists, permitting specialists, and environmental risk experts. As a result, we can move beyond identifying a climate risk to evaluating how it could affect a facility, water supply, waste-management system, remediation remedy, supply chain, or major capital project.

Q&A Summary

GSI sees climate consulting evolving beyond disclosure and compliance toward multidisciplinary business decision support. GSI's Sustainability and Climate practice combines climate strategy with environmental science and engineering, bringing together climate specialists, engineers, hydrogeologists, modelers and other technical disciplines to determine how climate risks affect facilities, water supplies, remediation systems, supply chains and major capital projects. GSI says climate reporting should ultimately improve decisions about siting, design, insurance, capital allocation and long-term strategy. Once mostly a sustainability and disclosure exercise, climate scenario analysis increasingly tests whether business models, assets and investment plans remain viable under changing physical conditions and a lower-carbon economy. The practice is becoming more asset-specific and financially oriented, with hydrologists, engineers, operators and finance teams connecting climate hazards to operational consequences, costs and capital requirements.

Organizations are using scenario analysis to reconsider facility locations, alter drainage and cooling systems, elevate equipment, build redundancy, sequence capital investments and establish thresholds that trigger additional adaptation. GSI sees enterprise risk management as the bridge between analysis and implementation, assigning ownership, comparing climate risks with other enterprise risks and determining acceptable levels of exposure. Successful companies will treat adaptation as an ongoing discipline using forward-looking information, scenarios and adaptive pathways to preserve flexibility, reduce vulnerabilities and identify investments or strategies that can strengthen long-term competitiveness.

We do not view compliance as the endpoint. A climate disclosure should be supported by an analytical process that improves decisions about capital allocation, siting, design, insurance, supply chains, resource management, and long-term strategy.

Additionally, GSI has the ability to work across regulatory and voluntary frameworks while maintaining a consistent analytical foundation. Organizations are being asked to respond to California climate laws, IFRS-aligned reporting, the European Union's sustainability requirements, CDP, customer questionnaires, investor requests, and industry-specific expectations. We help clients develop a coherent underlying climate program that can support multiple reporting obligations rather than creating a separate analysis for every framework.

CCBJ: What distinguishes companies that are successfully turning climate uncertainty into business strength from those that simply view it as another reporting requirement?

Twohey: A useful way to understand the difference is to look back at Y2K. In the years leading up to 2000, companies faced a series of regulations issued to ensure that their IT systems could handle the date change. Globally, organizations spent over $300 billion dollars addressing the problem—but they did not all approach it in the same way.

Some companies tread Y2K as a compliance "check the box" exercise and performed tactical, short-term code patching (treating it as overhead) to ensure compliance. Nothing more. They viewed the work primarily as overhead.

Other companies saw the same requirement as an opportunity to modernize aging systems, improve data management, connect business functions, and build technology infrastructure suited to the emerging digital economy. When the dot-com era accelerated, those companies were often better positioned to compete- not because they had predicted exactly what would happen, but because they had used uncertainty as a reason to strengthen the business.

Climate uncertainty presents a similar choice today. Companies that treat climate change as another reporting requirement typically assign the work to a small sustainability or disclosure team. That team may collect data, run a risk screen, prepare a polished narrative, and satisfy the applicable reporting requirement. But the findings often remain disconnected from budgeting, operations, procurement, site selection, insurance, acquisitions, product strategy, and capital planning. That is the equivalent of carefully mapping the Titanic's trajectory toward the iceberg without giving anyone the authority or resources to turn the wheel.

Companies that turn climate uncertainty into business strength behave differently. Several characteristics distinguish them:

They use climate information to test decisions, not simply describe risks. They do not expect scenario analysis to predict one correct future. Instead, they ask the following questions: What assumptions must remain true for our strategy to succeed? Where is our business model most sensitive? Which decisions could lock in exposure for decades? Under what conditions would a facility, supplier, product, acquisition, or investment stop performing as expected? Which actions would make sense across several plausible futures? What should we monitor so we know when to change course?

Successful companies distribute ownership beyond the sustainability team. Climate considerations become part of enterprise risk management, capital review, acquisition due diligence, facility design, procurement, supplier management, business continuity, insurance discussions, financial planning, and board oversight. The sustainability team may coordinate the analysis, but the people who control budgets, assets, contracts, and operations own the resulting actions.

They give reporting and climate teams enough authority and resources to influence decisions. A company cannot expect a small team with limited access to operational and financial information to drive meaningful change. Strong organizations create governance structures that connect climate expertise with engineering, finance, legal, procurement, operations, strategy, and executive leadership.

They are comfortable making decisions without pretending uncertainty has disappeared. They distinguish among what is known, what can be reasonably estimated, what is based on professional judgment, and what remains unresolved. They use ranges, thresholds, sensitivity analysis, scenarios, and adaptive pathways rather than relying on a single confident-looking number. Instead of waiting for perfect data, these companies build the ability to learn and adjust.

They look for ways to convert compliance spending into strategic investment. Energy efficiency, water security, resilient infrastructure, supply-chain diversification, improved data systems, and emergency preparedness may reduce current costs and downtime while protecting the company against future disruption. A required climate assessment can become the business case for capital improvements that were already needed but had not yet been prioritized.

These companies understand that better climate intelligence can create competitive advantage. It can help them avoid vulnerable sites, make stronger acquisitions, negotiate more effectively with insurers and lenders, respond credibly to customer requirements, protect important suppliers, and develop products and services for emerging market needs.

The companies most likely to turn climate uncertainty into business strength are not necessarily those with the most sophisticated models or the longest disclosures. They are the ones that use uncertainty to

ask better questions, modernize their systems, challenge strategic assumptions, invest with greater foresight, and build the flexibility to change course

CCBJ: How has enterprise risk management evolved because of climate change?

Twohey: Climate change has challenged several traditional assumptions within enterprise risk management. Historically, many risk-management systems relied heavily on past experience, relatively short planning horizons, and risks that could be assigned to a single department. Climate change does not fit comfortably within those conventions.

Historical information is becoming a less reliable guide to future conditions. Enterprise risk management therefore must incorporate forward-looking climate information rather than relying exclusively on historical loss data.

Climate change introduces multiple time horizons. A company may face an immediate risk from extreme weather, a medium-term risk from insurance costs or water constraints, and a longer-term risk from policy, technology, market, or ecosystem change. These risks can evolve at different speeds but still affect decisions being made today—particularly decisions concerning long-lived infrastructure and capital assets.

Climate risk is also highly interconnected. A drought is not only a water issue. It can affect power availability, production capacity, input prices, community relationships, permitting, biodiversity, and employee safety. Enterprise risk management is evolving to examine these pathways and dependencies rather than treating hazards as isolated events.

Organizations are beginning to consider compound and cascading risks. Heat and drought can occur together; wildfire can subsequently increase erosion and flood risk; a storm can simultaneously interrupt power, transportation, communications, and supplier operations. Conventional risk registers often underestimate these interactions.

Leading ERM programs are becoming more forward-looking, cross-functional, location-specific, and financially oriented. Climate-related risks are increasingly being assessed using the same concepts applied to other enterprise risks: likelihood, magnitude, velocity, persistence, controllability, risk appetite, financial impact, and ownership. The goal is not to build a separate climate-risk system, but to ensure that climate considerations are integrated into the organization's existing governance and decision-making processes.

CCBJ: What departments should now be involved in climate planning that historically weren't?

Twohey: Climate planning was historically led by environmental, sustainability, or corporate-responsibility teams. Those teams remain important, but meaningful climate planning now requires participation from a much broader group in order to make those insights actionable across the business.

Finance should be involved because climate risks can affect revenue, operating expenses, capital expenditures, asset values, impairment, insurance costs, financing, and contingent liabilities. Finance is also essential for translating physical and transition risks into forms that can influence budgets and investment decisions.

Enterprise risk management should help integrate climate risks into the corporate risk taxonomy, scoring criteria, escalation process, and risk appetite. Internal audit and controls teams may also need to evaluate the governance, data, methodologies, and controls supporting climate-related disclosures.

Operations and facilities teams possess critical knowledge about asset performance, maintenance, production constraints, backup systems, and operational tolerances. Without their involvement, a climate analysis may identify exposure but misunderstand the actual consequences or overlook existing controls.

Engineering, capital planning, and real estate teams should participate because decisions about site selection, design standards, equipment, drainage, cooling, water systems, and asset life can lock in climate exposure for decades. Climate considerations are most cost-effective when incorporated before a site is acquired or a project is designed.

Procurement and supply-chain teams are needed to identify dependencies on critical materials, transportation routes, contract manufacturers, utilities, and geographically concentrated suppliers. They can also incorporate resilience expectations into supplier qualification, contracting, and monitoring.

Legal and compliance teams should evaluate evolving disclosure requirements, liability, contractual responsibilities, green claims, fiduciary considerations, and the consistency of public statements. Investor relations, communications, and sales teams should help ensure that climate information communicated to investors and customers is accurate, consistent, and supported by evidence.

Human resources, occupational health and safety, information technology, cybersecurity, and emergency-management teams are also increasingly important. Heat, smoke, severe weather, displacement, power interruptions, data-center dependencies, and remote-working requirements can all affect workforce safety and business continuity.

The specific participants will vary, but climate planning is no longer a specialized environmental exercise. It is an enterprise-wide planning function.

CCBJ: Climate scenario analysis has evolved tremendously over the past decade. What has driven that transformation?

Maturation of climate science and data. Climate models, downscaled projections, geospatial tools, and hazard datasets have become more accessible. Organizations can now evaluate potential conditions at scales relevant to individual assets, watersheds, infrastructure systems, supply chains, and communities. The challenge is no longer simply finding climate information; it is selecting appropriate evidence and translating it into decisions without overstating its precision.

Emergence of widely recognized disclosure frameworks. The Task Force on Climate-related Financial Disclosures helped establish scenario analysis as a central element of climate-risk management. That approach subsequently influenced IFRS S2 and reporting requirements in multiple jurisdictions. Scenario analysis has therefore moved from a largely voluntary leading practice toward a formal expectation for many organizations.

Growing recognition that climate change has direct financial and operational consequences. Extreme-weather losses, changing insurance markets, supply-chain disruption, water constraints, energy-system transformation, litigation, and policy changes have made climate risk much more tangible to boards and executives. Scenario analysis is increasingly viewed as a way to test business resilience—not simply as a sustainability exercise.

The shift from emissions reporting toward strategic transition and resilience planning. An emissions inventory tells an organization where it stands today. Scenario analysis asks whether its business model, assets, infrastructure, and investment plans will remain viable under changing physical conditions and a lower-carbon economy. That is a more complex and consequential question.

This evolution has also required sustainability practitioners to up our game. Early analyses could often be led by a small sustainability team using high-level scenarios and qualitative risk descriptions. Today, meaningful analysis requires us to work across disciplines. Depending on the decision, that may mean bringing in geologists, hydrologists, climate scientists, engineers, ecologists, economists, financial analysts, insurance specialists, supply-chain professionals, land-use planners, and community-engagement experts. For example, a CSA may identify water scarcity as a potential climate risk. But a hydrologist may be needed to evaluate watershed conditions, recharge, competing demands, and future water availability. A geologist or geotechnical engineer may assess how changing precipitation, flooding, erosion, or groundwater conditions could affect a facility or long-term environmental liability. Engineers and operators then determine what those conditions mean for asset performance, while finance teams translate the effects into costs, capital requirements, or potential disruption.

Practitioners have learned from early applications. Initial scenario analyses were often qualitative, high-level, and disconnected from business planning. The field is now moving toward asset-specific evidence, clearer causal pathways, financial translation, multidisciplinary participation, and direct connections to adaptation, capital allocation, and operational decisions.

The transformation has therefore been about more than better models or additional reporting requirements. Climate scenario analysis has grown from a sustainability-led disclosure exercise into a multidisciplinary decision-support practice. Sustainability professionals still play an important role, often by framing the questions and connecting the disciplines, but the strongest work now depends on bringing the right technical experts into the analysis and translating their findings into practical business decisions.

CCBJ: How have you seen organizations fundamentally change strategic decisions because of climate scenario analysis?

Twohey: The most meaningful changes occur when climate scenario analysis reveals that a seemingly stable business assumption may not remain reliable over the life of an investment.

On the physical-risk side, we have seen organizations reconsider where to locate facilities after evaluating future flood, wildfire, heat, water-supply, utility, infrastructure, and community risks. Others have retained a location but changed the design—adding drainage or storage capacity, selecting a different cooling technology, elevating critical equipment, building in redundancy, or designing infrastructure that can be expanded as conditions change.

Scenario analysis can also change how capital is sequenced. Instead of applying the same resilience standard across an entire portfolio, a company may accelerate investment at highly exposed or strategically important assets while monitoring lower-priority locations. Some organizations establish decision triggers, such as implementing another adaptation measure when a physical threshold, insurance cost, regulatory requirement, or operating constraint is reached. This allows them to act now without pretending they know exactly how conditions will unfold.

We have also seen scenario analysis broaden an organization's understanding of risk. A water-risk assessment, for example, may begin with a narrow question: Will enough water physically be available? The analysis may reveal that the more consequential vulnerabilities involve competition with community needs, future permitting constraints, rising treatment costs, ecosystem effects, infrastructure capacity, or public opposition. That broader understanding can change technology selection, facility design, community engagement, and long-term growth plans.

Transition risks can be equally influential. Organizations may revise supplier criteria, diversify critical inputs, adjust manufacturing processes, invest in more efficient

technology, or reconsider products that could face changing customer expectations, policy requirements, energy costs, or market demand. The goal is not simply to reduce climate risk. It is to avoid locking the business into assets, technologies, suppliers, or operating models that may become increasingly expensive or difficult to change.

At the corporate level, we have seen climate scenario analysis inform supplier diversification, inventory practices, insurance strategy, acquisition due diligence, research and development, product strategy, and transition planning. It can reveal where an organization has underestimated shared.

Sometimes the most valuable result is identifying an investment that should not proceed. Avoiding a vulnerable site, acquisition, technology, or business strategy can create substantial value, even though the avoided loss will never appear as a new revenue line.

But climate scenario analysis is not only defensive. Companies can use it to identify emerging customer needs, prioritize resilient products, improve acquisition decisions, direct R&D, and build greater flexibility into their operations. The strongest organizations use the findings to become more adaptable and competitive, not merely less exposed.

That is what makes climate scenario analysis such a valuable strategic tool: it does more than shine a light on physical and transition risks. It helps organizations decide where to invest, what to redesign, which assumptions to challenge, what options to preserve, and when to change course.

CCBJ: Data quality continues to be one of the biggest challenges in climate analysis. How is that evolving?

Twohey: The data challenge is evolving from simple data availability to data fitness, governance, and transparency. Organizations now have access to an enormous volume of climate projections, hazard maps, geospatial tools, vendor scores, and asset-level datasets. The harder question is no longer, "Do we have data?" It is, "Is this the right evidence for this decision?"

A global screening tool may be appropriate for identifying potentially exposed assets across a large portfolio. It may be insufficient for selecting a site, approving a major investment, designing drainage infrastructure, or determining whether an asset can operate safely over its intended life. Different decisions require different levels of spatial resolution, technical review, and confidence.

Data also becomes useful only when it is connected to a credible causal pathway. A projection of increasing extreme precipitation is not, by itself, a business impact. The analysis must connect precipitation to local topography, soil conditions, drainage capacity, surrounding infrastructure, equipment location, operational tolerances, potential downtime, and financial consequences. Weaknesses can occur anywhere along that chain.

Organizations are gradually improving their internal data as well. Asset coordinates, replacement values, operating thresholds, supplier locations, water use, utility dependencies, historical losses, insurance coverage, and business-interruption costs are increasingly being compiled in centralized systems. But important gaps remain, particularly for leased properties, older facilities, shared infrastructure, indirect suppliers, and dependencies outside the organization's control. This is where a disciplined process for evidence and assumptions becomes critical. Not every uncertainty can be resolved with more data. A credible analysis should distinguish among observed or independently supported information, modeled results, calculated or transformed data, pro-

Climate Scenario Analysis: Planning for an Uncertain Future

Climate scenario analysis (CSA) provides organizations with a structured way to explore how different plausible climate futures could affect their businesses. Rather than attempting to predict what will happen, scenario analysis considers alternative pathways to help organizations understand potential exposures and evaluate strategic options. Originally used as a forward-looking planning tool by energy companies, CSA expanded as climate science and economic modeling advanced and financial institutions increasingly recognized climate change as a systemic risk. Its adoption accelerated further with the emergence of TCFD and, more recently, climate-related disclosure requirements across several major jurisdictions.

Approaches to CSA can vary considerably in sophistication. Qualitative analyses use narratives to describe plausible futures and identify the potential implications for an organization. Quantitative approaches go further, incorporating climate, economic, financial and sector-specific models to estimate potential changes in variables such as energy use, costs, demand or physical impacts. Many organizations ultimately use a hybrid approach, combining established climate scenarios with company-specific assumptions and financial or operational information.

The appropriate approach depends on the organization, its exposure to climate risk, the quality of available data and the decisions the analysis is intended to support. Smaller or less mature organizations may begin with qualitative scenarios, while companies with greater climate exposure and analytical capabilities may progress toward more detailed quantitative analysis. The objective is not necessarily to develop the most sophisticated model, but to create an analysis appropriate to the organization's circumstances that helps management examine how different futures could affect the business and identify strategic options that may otherwise have been overlooked.

fessional judgment, management assumptions, proxy data, information provided by vendors or third parties, and important uncertainties that remain unresolved.

Those distinctions should remain visible rather than being blended into a single score or definitive-looking number. If supplier locations are incomplete, a model uses a proxy, or local climate information is unavailable, the organization should state that clearly and explain how the limitation affects the conclusion.

Assumptions deserve the same attention as datasets. Organizations should document what they have assumed about asset life, technology performance, insurance availability, water access, utility reliability, customer demand, regulatory timing, adaptation effectiveness, and future costs. They should also identify which assumptions are consequential (meaning that a reasonable change could alter the decision) and what evidence would cause them to be reconsidered.

Methodological transparency is therefore becoming as important as data sophistication. A defensible analysis should document its sources, scenarios, time horizons, spatial resolution, transformations, limitations, uncertainties, assumptions, review procedures, and intended use. It should also preserve the chain from original evidence to analytical conclusion and ultimately to the decision.

The standard of evidence should be proportionate to the decision. Preliminary screening, corporate disclosure, portfolio prioritization, capital allocation, financial valuation, and engineering design do not require identical levels of precision. The consequence of error matters. An approximate screen may be entirely appropriate for prioritizing further analysis, but dangerous if it is presented as sufficient evidence for a major design or investment decision.

We are also seeing climate data move into more formal control environments. As climate information enters regulated disclosures, financial planning, investment decisions, and assurance processes, organizations will need clearer data ownership, version control, calculation documentation, review procedures, evidence retention, and audit trails. They will also need to distinguish analytical review from model validation, management approval, internal control, and external assurance, as each serves a different purpose.

Artificial intelligence will likely help organizations organize datasets, identify inconsistencies, classify evidence, and accelerate analysis. But it does not eliminate the need for scientific judgment, source verification, quality control, or documented human oversight.

Ultimately, better climate analysis will not come from accumulating the largest possible dataset. It will come from using evidence that is fit for the decision, making assumptions visible, preserving uncertainty, and documenting how the information supports or limits the conclusion.

CCBJ: In what other ways do you expect climate scenario analysis to evolve over the next five years?

Twohey: We expect scenario analysis to become more quantitative, integrated, and decision-oriented.

There will be greater translation of climate risks into financial impacts. Organizations will move beyond statements that an asset is exposed to a hazard and estimate potential effects on revenue, operating costs, capital requirements, downtime, insurance, asset values, and liabilities. These estimates will often be expressed as ranges rather than false precision.

Scenario analysis will become more closely connected to capital planning and enterprise risk management. Climate analysis will increasingly be incorporated into acquisition screens, asset-management systems, budgeting, project-design criteria, and investment approval processes.

Analyses will pay greater attention to dependencies and cascading effects. Water, energy, ecosystems, transportation, telecommunications, workforce availability, suppliers, and communities will be assessed as interconnected systems. This will be particularly important for data centers, manufacturing, energy, mining, and other resource- and infrastructure-intensive sectors.

Physical and transition scenarios will be evaluated together more often. A rapid low-carbon transition may create policy, market, technology, and cost pressures, while a slower transition may lead to more severe physical impacts. Organizations need to understand the tradeoffs and interactions among those futures.

Scenario analysis will increasingly support adaptation pathways rather than one-time recommendations. Companies will identify measures that are justified now, measures that should be preserved as future options, indicators that should be monitored, and thresholds that trigger additional investment. This is a more flexible response to uncertainty than attempting to select one fixed adaptation plan today.

Scenario analysis will expand beyond direct company assets. Supply chains, communities, natural systems, workforce impacts, and cumulative regional pressures will become more prominent. The strongest analyses will combine improved technology and data with multidisciplinary expertise and structured engagement with the people who operate the business.

CCBJ: What role will enterprise risk management play in the future of climate adaptation?

Twohey: Enterprise risk management will be the bridge between climate analysis and implementation.

Climate specialists can identify hazards, scenarios, and potential impacts, but ERM provides the governance structure needed to determine whether a risk is material, who

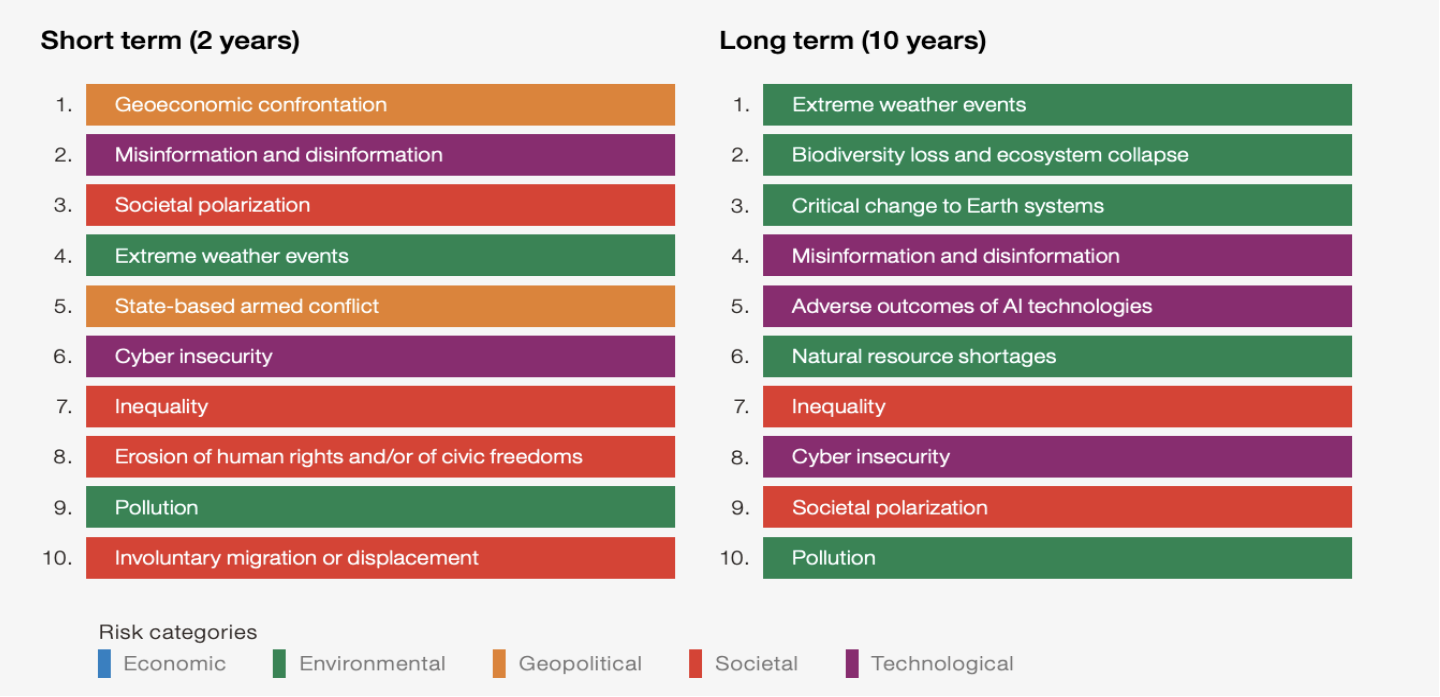
owns it, how it compares with other risks, what level of exposure the organization is willing to accept, and when action should be escalated.

In the future, effective ERM programs will help organizations maintain a portfolio view of adaptation. They will identify concentrations of exposure across assets, suppliers, geographies, and business units; evaluate interactions among climate and non-climate risks; and direct resources toward the measures that provide the greatest reduction in enterprise risk.

ERM will also play an important role in monitoring. Because climate conditions, regulations, markets, and scientific information continue to evolve, adaptation cannot be treated as a one-time project. Risk owners will need indicators, thresholds, review cycles, and escalation procedures. These might include changes in hazard projections, facility downtime, water availability, insurance terms, supplier performance, regulatory requirements, or community concerns. Ultimately, the role of ERM is to make adaptation part of normal business management. The objective should not be to eliminate all climate risk, which is neither possible nor economically rational. It should be to understand the organization's exposure, reduce unacceptable vulnerabilities, preserve strategic flexibility, and ensure that the business can continue to operate and create value under changing conditions. The organizations that succeed will treat climate adaptation not as a defensive environmental program, but as an ongoing discipline of informed risk-taking, investment, and organizational resilience. ☼

GSI has the ability to work across regulatory and voluntary frameworks while maintaining a consistent analytical foundation.

Global Risks Ranked by Severity: Short Term (2 years) and Long Term (10 years)



Source:The Global Risks Report 2026 - The World Economic Forum

The World Economic Forum's Global Risks Report 2026 highlights an important tension in the current risk landscape. While geopolitical and social concerns have pushed environmental issues somewhat lower on the short-term agenda, environmental risks remain the most severe threats over the longer term. For companies, these risks are increasingly translating into immediate operational and financial consequences rather than distant sustainability concerns. Extreme heat, flooding, storms, water scarcity and other climate impacts can damage assets, interrupt logistics and supply chains, strain energy and water infrastructure, affect workforce safety and increase insurance and operating costs.

The Global Risks Report raws on insights from over 1,300 global experts, the report underscores how geopolitical, societal, environmental, and technological disruptions are converging. Executives can use this report to evaluate what it means for their organizations for the near-term and long-term This annual report is issued in tandem with the annual Davos Conference hosted in Davos, Switzerland each January. The report highlights experts' insights about emerging systemic risk challenges on the horizon that, "if they occur, would negatively impact a significant proportion of global GDP, population, or natural resources."