



Adaptation and Resilience

How business can thrive
in a changing climate

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Executive Summary

Climate impacts are affecting workforce safety and productivity, supply chains, investment decisions, and overall business performance. Because further change is locked into the climate system, companies will need to prepare for continuing disruption and shifting operating conditions.

This paper shows that climate impacts are creating significant consequences and opportunities for business, with many impacts already unavoidable and expected to remain material concerns for years to come.

The scale of the human and financial cost of climate impacts is increasingly clear. The 2026 European heatwaves are estimated to have cost the EU economy USD 200 billion, equivalent to total forecasted economic growth for the year. Nepal's devastating flooding this August, which killed more than 1,300 people and cost a minimum of USD 4-5 billion in damage, is now being described as the result of a "compound crisis" of climatic and other factors. And ongoing climate shocks in sub-Saharan Africa are estimated to cause USD 10-15 billion in annual losses.

As these impacts compound existing pressures, the cost of inaction becomes increasingly visible, moving adaptation from a peripheral sustainability consideration to a mainstream business topic. Businesses need to embed adaptation into the decisions that shape performance, value, and growth.

The implications are clear: adaptation has become an urgent issue requiring investment, leadership, and broader systemic change. Importantly, adaptation does not replace mitigation — businesses should continue to support efforts to reduce emissions and limit future climate change as they prepare for impacts that can no longer be avoided.



Adaptation can help organizations maintain near-term results, protect long-term value, build competitive advantage, and spark innovation. Businesses that understand their exposure and act early can protect workers and assets, preserve access to critical resources, insurance, and capital, and respond more effectively to changing conditions. Adaptation can also strengthen strategic flexibility and help businesses identify new and more adaptable products, services, and approaches, ultimately supporting more resilient growth.

Trust is central. Adaptation decisions often involve choices about priorities, resource allocation, and trade-offs. The choices made determine who and what receives protection, how costs and benefits are distributed, and whether measures are understood, supported, and sustained over time. Trust is built through the way decisions are taken, including whether priorities are transparent, how affected stakeholders are engaged, how trade-offs are acknowledged, and whether benefits are extended beyond protecting corporate assets. Where these conditions are absent, even technically sound measures may be more difficult to implement or sustain.



The paper also outlines a practical leadership agenda comprising seven actions businesses can take to strengthen climate adaptation decision-making:

- 1 Build climate intelligence.
- 2 Address immediate material risks.
- 3 Evaluate adaptation through a long-term value lens.
- 4 Embed adaptation into business decisions.
- 5 Make the distribution of costs and benefits explicit.
- 6 Engage stakeholders to build trust.
- 7 Strengthen adaptive capacity and protect credible mitigation commitments.

The leadership challenge is no longer whether businesses need to adapt, but how quickly, effectively, and responsibly they can do so.

Introduction:

The urgency of adaptation

Multiplying climate impacts

Climate impacts are affecting workforce safety and productivity, supply chains, investment decisions, and overall business performance across sectors and geographies. The recent United Nations Environment Programme report '[Limiting Overshoot](#)' concludes that exceeding 1.5°C is now widely accepted as unavoidable under current trajectories, meaning businesses should prepare for worsening social, financial, and physical climate impacts.

Exceeding 1.5°C will have drastic implications. By 2100, glaciers could lose more than a quarter of their mass, raising sea levels by nine to 12.5 centimeters under warming up to 3°C and permanently altering water availability in many regions. Similarly, global food production could decline by as much as 14 percent by 2050 in the absence of adequate adaptation. As these effects and others compound existing pressures, businesses will face growing disruption and costs.



Recent events illustrate the scale, breadth, and interconnected nature of these impacts:

Europe

Extreme heat is now an economy-wide challenge to productivity and insurability. The 2026 European heatwaves are estimated to have cost the EU economy USD 200 billion, negating the bloc's total forecasted economic growth in 2026. In France, extreme weather events and higher fertilizer costs resulting from conflict in the Middle East caused an eight percent decrease in economic value created by the agricultural sector in 2026. In Germany, record-low levels in the Rhine have severely constrained inland shipping, limiting barge capacity to about 20 percent of normal capacity and more than doubling freight costs since late June. Across Romania, Hungary, and France, low river levels forced nuclear plant closures. For businesses, the impacts extend beyond heat exposure to include transport, supply-chain disruptions, and broader economic performance, with most losses falling outside traditional insurance coverage.

Africa

Agriculture contributes anywhere from 15-30 percent of GDP across much of sub-Saharan Africa, where climate shocks are already causing an estimated USD 10-15 billion in annual losses. In Mozambique, flooding during the 2025-2026 agricultural season affected approximately 1.6 million hectares of land (including 300,000 hectares of cropland), putting almost 900,000 people and some 600,000 livestock at risk. For agribusinesses, food importers, and insurers, this translates into reduced supply, higher price volatility, and greater exposure for communities unable to self-finance recovery.

Asia

Extreme heat and compound climate events are disrupting lives, workforce productivity, and business activity across the region. In Nepal, a catastrophic flood in August, described as the result of a "compound crisis" of climatic and other factors, killed more than 1,300 people, left at least 4,000 missing, and is projected to cost a minimum of USD 4-5 billion in damage. In Bangladesh, heat exposure in 2024 cost an estimated 29 billion potential labor hours, while 78 percent of garment workers surveyed in 2026 reported heat-related illness affecting their ability to work. For businesses, these impacts translate into workforce disruption, reduced productivity, business interruption, and wider economic losses.

North America

In the first half of 2026, severe thunderstorms remained the largest single loss driver for the U.S. insurance industry, causing around USD 30 billion in total losses and USD 22 billion in insured losses. Across the Midwest in early August, storms cut power to over one million homes and businesses, forcing ground stops and mass flight cancellations at Chicago's O'Hare and Midway airports. For manufacturers, logistics firms, and retailers, the same storms that damage buildings also disrupt transport, utilities, suppliers, and employees, creating downtime and lost revenue even for facilities that are not directly hit.

Latin America and the Caribbean

Wildfires, drought, flooding, and hurricanes are disrupting livelihoods and food systems in the region. Some 15 million hectares burned across the Amazon in 2024. In 2025, Hurricane Melissa caused an estimated USD 12 billion of damage in Jamaica. Agriculture in the region is expected to face significant economic losses, with more than 70,000 farmers affected, operations disrupted across more than 40,000 hectares of farmland, and approximately 1.25 million animals lost. For agribusinesses, food processors, and retailers, these events can reduce available supply, increase price volatility, and create wider recovery needs in the communities and ecosystems on which business activity depends.

Climate impacts do not stop at the point of impact

Climate impacts do not remain confined to an affected asset, operation, or community. Their effects can cascade across supply chains, insurance and financial markets, and communities, reshaping business performance, value, and growth. As climate impacts compound existing business pressures, the cost of inaction is becoming increasingly visible.

These pressures are likely to intensify. Many future climate impacts are locked into the climate system because past and present emissions will persist in the atmosphere long after their release. Even under more optimistic emissions pathways, additional warming, sea-level rise, and changes in weather patterns are expected to continue unfolding for decades. Climate variability, driven by factors such as El Niño, can further amplify these effects and increase the likelihood of disruption cascading across regions, sectors, and value chains. This converts adaptation from a peripheral sustainability consideration to an urgent business issue requiring investment, leadership attention, and action from boards, executive teams, and business-unit leaders.

Adaptation can help businesses maintain performance and strengthen the resilience of the systems on which they depend. This requires addressing unavoidable current and near-term impacts in addition to ongoing mitigation efforts. However, effective adaptation to climate change is dependent on the resilience of the wider systems that governments, communities, and institutions provide. While boards, CEOs, and business leaders play a critical role in directing capital and embedding adaptation into decision-making, long-term resilience also depends on collaboration with governments and other institutions. Businesses rely on public infrastructure, services, and policy frameworks, including transport networks, flood defenses, early warning systems, and incentives that help de-risk adaptation investments.

Without resilient societal systems, corporate adaptation measures to protect operations, supply chains, workforce productivity, and communities may be constrained. Adaptation and mitigation must remain balanced. As warming increases, many adaptation measures are expected to become less effective and more costly, making continued mitigation critical to preserving the effectiveness of adaptation efforts.

Adaptation investments should be assessed based on the value they deliver to business and the systems on which markets depend. Companies should apply normal investment discipline to adaptation decisions while accounting for avoided disruption, asset protection, insurability, and other material benefits. Adaptation is not always a discrete or clearly labeled category of investment; depending on the measure, it may sit within operational, capital, procurement, health and safety, innovation, or sustainability budgets. Because adaptation and mitigation may compete for capital and management attention, leaders should identify and manage trade-offs explicitly rather than assume them away.

The importance of building trust

Adaptation decisions often involve choices about which assets, operations, communities, or supply chains receive protection, how finite resources are allocated, and how costs and benefits are shared. These choices can create winners and losers, transfer risk, or leave some stakeholders more exposed than others.

Adaptation is therefore not solely a technical, operational, or financial challenge. Measures are more likely to be understood, supported, and sustained when prioritization is transparent, affected stakeholders are engaged meaningfully early on, and benefits extend beyond protecting corporate assets alone. Companies build trust through the kind of choices they make about adaptation, including who has a voice in decisions and who shares the benefits, not simply through how changes are communicated.

The business case for adaptation

Climate adaptation can protect and create value through multiple overlapping pathways. Here we focus on three: maintaining near-term performance, protecting long-term value, and building competitive advantage and innovation. These pathways encompass both adapting a company's own operations and investments, and developing products, services, and capabilities that help customers and wider systems adapt. Together, these pathways can support more resilient growth and capture benefits including operational continuity, worker safety and productivity, asset and resource security, insurability, and preparedness for changing market conditions.

- 1. Maintain performance**
Reduce disruption to day-to-day operations, productivity, supply chains, infrastructure, and customer service.
- 2. Protect long-term value**
Safeguard assets, critical resources, insurability, financing access, and the long-term viability of investments.
- 3. Build competitive advantage and spark innovation**
Improve reliability, develop products and services for changing conditions, and respond to emerging market opportunities.

These pathways cut across the decisions that shape how a business operates, invests, procures, manages its workforce, and serves its customers. The question for business leaders is not whether adaptation affects strategy, but where and how to incorporate its impact into business decisions and actions.





1.

Maintain performance

Adaptation efforts can reduce disruption to critical business functions, helping organizations maintain performance amid greater climate volatility. This includes strengthening the reliability of essential systems and services so that climate shocks do not cascade into prolonged operational, social, and economic disruption, and ensuring that buildings and workplaces – and the people in them – remain safe, productive, and operational under local climate conditions.

Case Study

Coca-Cola Consolidated

Exposure and business consequence

In 2010, Coca-Cola Consolidated experienced significant flooding at its bottling facility in Nashville, Tennessee when over 13 inches of rain fell over two days. The flooding caused severe damage to the property and its equipment, resulting in a USD seven million insurable loss and a three-week production downtime. The facility is located in a low-lying, high-hazard 100-year flood zone beside Browns Creek. Relocating the plant was considered too expensive, and nothing could be done to redirect the waterway given its protected status. So, Coca-Cola Consolidated turned to insurance provider FM Global to design a solution around the plant.

Action and documented value

FM Global developed an engineered flood-protection plan, which created a controlled route for water to move through the plant while protecting critical equipment. This required a different approach to conventional flood defense. The objective was not to keep all water out of the site, but to understand how floodwater would move through it and design the facility around that reality. Investment could then be targeted toward protecting the assets and processes whose failure would cause the greatest operational disruption. Measures included engineered floodwalls, flood doors, and removable flood planks, alongside concrete floors, tiled walls, and business-continuity planning.

In 2021, another 100-year flooding event occurred. However, the adaptations designed by FM Global protected key equipment and prevented serious damage, with minimal loss and only a few days of downtime.

Strategic lesson

The case shows how targeted, site-specific adaptation can convert a known physical hazard into a manageable operational risk. Rather than attempting to eliminate the flood exposure, Coca-Cola Consolidated protected the systems most critical to production and planned for rapid recovery. When a comparable hazard returned, impacts were limited and the company could return to normal operations after just a few days. The measures worked as an integrated resilience system rather than isolated physical upgrades. Permanent protections reduced exposure, removable barriers (flood planks) could be deployed ahead of an event, and continuity planning helped the business prepare for disruption and restart production more quickly.





2.

Protect long-term value

Adaptation lets organizations preserve asset value, maintain access to insurance and capital, and build resilience against future financial shocks. It can also protect access to the critical natural resources and infrastructure on which the long-term viability of investments and surrounding communities depends.

Case Study

Anglo American, Los Bronces

Exposure and business consequence

Central Chile has experienced prolonged drought, making water availability a major operating challenge for Anglo American's Los Bronces copper mine. Longer-term forecasts indicate continued lower precipitation as climate change intensifies. Los Bronces already reuses about 90 percent of the water used in its mining process, but securing alternative water supplies is important to its **goal** of becoming water resilient and eliminating freshwater intake for mining processes by 2030.

Action and documented value

Anglo American partnered with Aguas Pacífico to secure up to 500 liters per second of desalinated seawater from a multipurpose, multi-client desalination plant. The first phase, expected to supply Los Bronces from 2026, will **provide** more than 45 percent of the mine's water requirements and support the goal of zero freshwater intake for mining processes by 2030.

The project is designed to extend benefits beyond the mine. Anglo American will provide 25 liters per second of clean water to approximately 10,000 people in the neighboring communities of Colina and Til Til. The multipurpose desalination project is also intended to contribute to water security for around 40,000 people.

The desalination plant and its 105 km pipeline corridor is expected to source 100 percent of electricity through a 10-year renewable electricity supply agreement covering up to 280 GWh annually, which will be supported by International Renewable Energy Certificates (I-RECs). The plant also **incorporates** energy-recovery

technology designed to keep electricity consumption below 3.6 kWh per cubic meter of water produced.

Implementation has required coordination with communities, rural water systems, government authorities, and other local stakeholders, alongside permitting and infrastructure planning. The project addresses water scarcity while creating additional demands around infrastructure, energy, environmental management, and stakeholder engagement. The use of renewable electricity addresses the source of the project's electricity but does not eliminate its underlying energy requirements.

Strategic lesson

The Los Bronces case demonstrates how businesses exposed to resource scarcity can move beyond site-level efficiency toward shared infrastructure and multi-user adaptation. Combining high water reuse with desalinated supply can reduce dependence on a constrained freshwater resource while contributing to water security for neighboring communities facing the same water-scarcity pressures. The example also shows that effective adaptation requires businesses to manage the infrastructure, energy, environmental, and stakeholder implications of the solution itself.





3.

Build competitive advantage and innovation

Organizations that adapt earlier and more effectively may be better positioned to maintain reliability, strengthen customer and investor confidence, capture market opportunities, and create new products and services. Climate information can also support faster decisions, better-targeted investment, and products and services designed for changing operating conditions.

Case Study

Advanta Seeds

Exposure and business consequence

Advanta Seeds, a global agricultural-solutions company that supports farmers across Asia-Pacific, Africa, and Latin America, reported that increasing weather variability was making it harder to predict which seed varieties would be needed in a given season. Because bringing a new variety to market can take seven to ten years, a mismatch between products and future growing conditions creates significant commercial risk. Advanta reported 30 to 50 percent annual revenue volatility depending on whether the right product was on the market.

Action and documented value

Advanta Seeds adopted an AI forecasting platform to inform seed production, research and development, capital allocation, sales planning, and market selection. The company also began using climate information to identify the attributes future products would need, where to test them, and whether existing seed-production locations would remain viable.

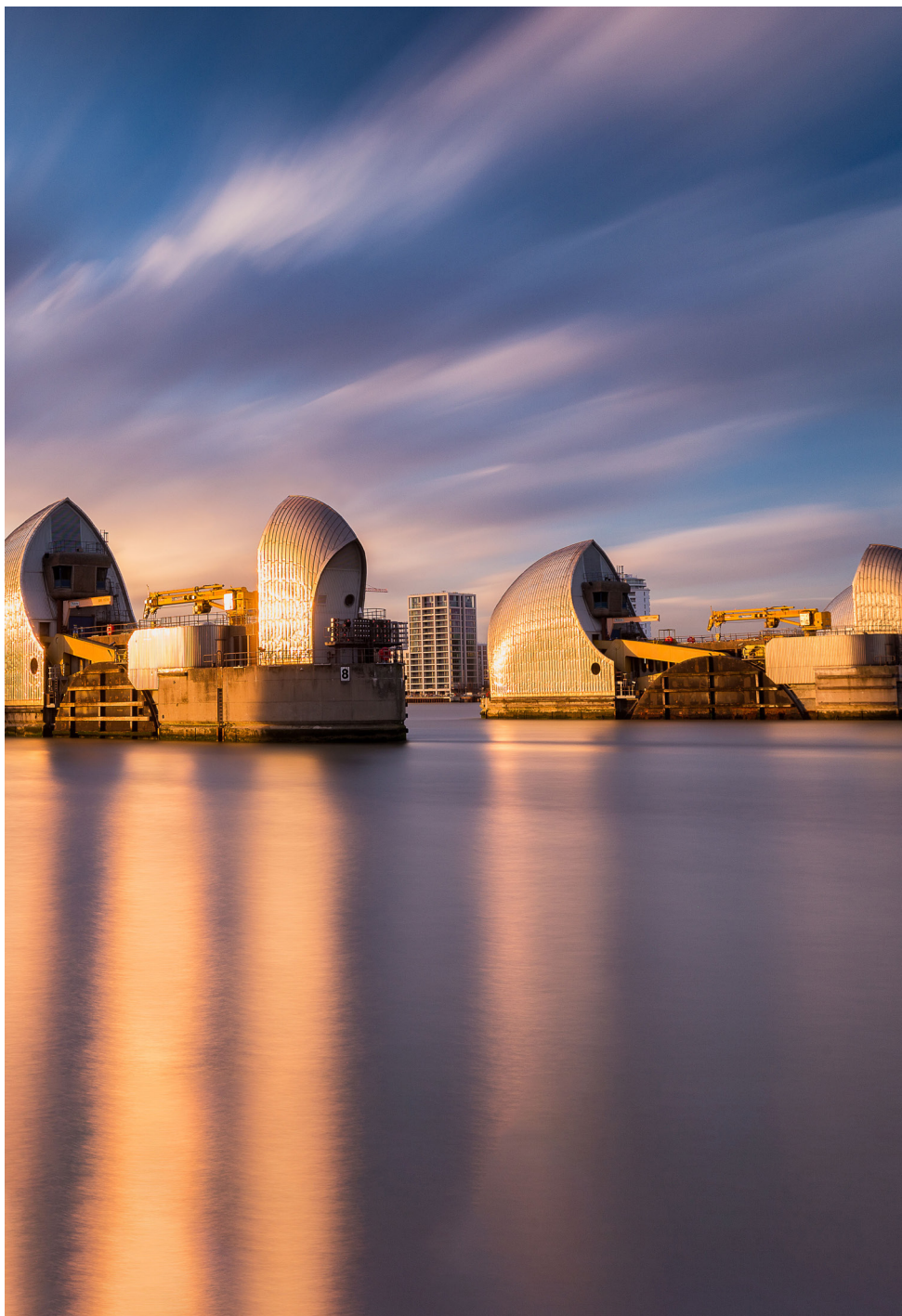
The approach produced concrete operational and commercial benefits. In 2021, forecasts of wet harvest conditions prompted earlier harvesting to preserve seed quality, avoiding potential losses estimated at hundreds of thousands to millions of dollars. In a key sorghum-growing region of northern New South Wales, advance warning of a likely rainfall event two months ahead enabled Advanta to move inventory into the market before competitors. Advanta estimated that the faster response contributed to a five to ten percent increase in sales.

Better alignment between seed availability and local growing conditions can also support growers. Advanta made a version of the platform available to partner growers and agronomists, allowing them to assess seasonal planting scenarios and adjust planting dates based on forecast risks.

Strategic lesson

Climate intelligence creates competitive advantage when it changes a time-sensitive business decision, such as when to harvest, where to position inventory, or which products to develop. The benefits can extend beyond the company itself. Better information can help growers manage risk and protect livelihoods, while climate-informed seed development can support more resilient agricultural production and strengthen food security over time.





Conclusion: A leadership agenda for action on adaptation

Adaptation is now urgent, but many companies are ill-prepared for impending climate change impacts. Climate impacts are already affecting business performance, and the pressures they create will increase. The leadership challenge is no longer whether businesses need to adapt, but how quickly, effectively, and responsibly they can act.

Delivering effective adaptation requires action across multiple levels of the organization and the wider ecosystem in which the business operates. Boards and CEOs should set direction, oversee interconnected risks, and guide capital allocation. They should also designate specific adaptation responsibilities to board and executive committees to ensure a strategic balance between mitigation and adaptation actions. Business-unit leaders should embed adaptation into operational and investment decisions, while sustainability, risk, and finance teams should provide the analysis and oversight needed to support implementation. Because many adaptation outcomes depend on the resilience of wider systems, companies should also work with governments, communities, suppliers, customers, and other stakeholders to strengthen the infrastructure, institutions, and partnerships on which long-term resilience depends.

Here are seven actions every company should consider when developing an adaptation strategy.

1.

Build climate intelligence

Companies should develop the climate understanding needed to provide strategic foresight on future risks, opportunities, and operating conditions. This includes using tools such as climate scenario analysis, stress testing, and digital twins to assess how assets, operations, and supply chains may perform under different climate and extreme weather scenarios. Quantifying identified exposures is a crucial step in enabling informed decision-making. Businesses can use these insights to identify material climate exposures and inform capital allocation, integrated decision-making, and adaptation investments that strengthen resilience and maintain competitive advantage.

2.

Address immediate material risks

Act where exposures threaten worker safety, operational continuity, or critical infrastructure. Appropriate measures may include cooling and hydration measures, climate-responsive building design and renovation, flood barriers, backup water supplies, strategic inventory or supplier diversification, and other actions that make sense even when they do not also reduce emissions. Businesses need to account for local climate conditions when selecting, designing, or refurbishing premises, particularly where climate impacts such as rising heat are likely to affect worker health, productivity, energy demand, or the continued usability of facilities. Businesses should also look beyond climate risk in isolation to understand how climate, nature, supply chains, societal expectations, geopolitics, and financial and insurability pressures interact, and translate the resulting combined view into practical decisions around operations, investment, and long-term value.

3.

Evaluate adaptation through a long-term value lens

Companies should evaluate adaptation investments using normal investment discipline while taking a sufficiently long-term view of the value they can create and protect. This includes considering avoided losses, operational reliability, insurability, worker safety, revenue potential, innovation, and wider stakeholder benefits. Businesses should identify material longer-term risks and benefits and incorporate them into investment decisions rather than relying solely on short-term financial returns.

4.

Embed adaptation into business decisions

Do not assume adaptation will appear as a discrete or clearly labeled investment, or that it belongs only within a fixed sustainability budget or function. Instead, identify the business decisions where climate impacts could materially affect outcomes and integrate adaptation considerations into those decision-making processes. This includes decisions related to operations, capital allocation, procurement, health and safety, innovation, and other issues that shape business performance, while recognizing real competition for finite capital and management attention.

5.

Make the distribution of costs and benefits explicit

Adaptation decisions should account explicitly for how their costs, benefits, and risks are distributed across affected stakeholders. Businesses should identify who is exposed, who benefits, who bears the costs, who may remain unprotected, and who has the authority to act. They should also consider whether an adaptation measure genuinely reduces risk or instead transfers it to another part of the value chain or community.

6.

Engage stakeholders to build trust

Involve affected stakeholders early in adaptation decisions and be transparent about priorities, trade-offs, and how costs and benefits will be distributed. Where appropriate, create opportunities for stakeholders to help shape decisions rather than simply communicating outcomes after they have been made. Adaptation measures are more likely to be credible and durable when responsibilities are clear, affected groups have a meaningful voice, and benefits extend beyond corporate assets to workers, customers, suppliers, communities, and the wider systems on which business performance depends.

7.

Strengthen adaptive capacity and protect credible mitigation commitments

Companies should build the capacity needed to reassess and adjust adaptation priorities as climate exposures, technologies, economics, and stakeholder needs evolve. This requires continuously reevaluating adaptation investments and actions as conditions change. Companies should also recognize that adaptation and mitigation will often compete for resources and make those trade-offs explicit without allowing urgent adaptation needs to displace long-term mitigation commitments. Credibility also depends on companies supporting the broader policy and market conditions needed to deliver mitigation objectives.

Climate adaptation has become an urgent business issue requiring leadership, investment, and action. As climate impacts intensify, leaders will need to make explicit choices about risk, investment, resilience, growth, and the distribution of costs and benefits across stakeholders. The organizations best positioned to succeed will be those that embed adaptation into the decisions that shape business results, use climate intelligence to act decisively despite uncertainty, and remain transparent about trade-offs. The question is no longer whether to adapt, but how adaptation decisions are made and who is prepared to make them.

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