

CLIMATE RESILIENCE PATHWAYS

Catalyzing Private
Sector Action



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Key Terms

ADAPTATION

Actions taken to reduce risks from today's changed climate conditions and to prepare for further impacts in the future. Various types of adaptation exist, e.g., anticipatory and reactive, private and public, and autonomous and planned.

PHYSICAL CLIMATE RISK

Threats to life, livelihoods, health and wellbeing, infrastructure and services, business operations, social, cultural and economic assets, ecosystems and species from potential impacts of climate change.

RESILIENCE

The ability of interconnected social, economic and ecological systems to prepare for threats and hazards, adapt to changing conditions, and withstand and recover rapidly from adverse conditions and disruptions.

Please see the Appendix for a full glossary of terms.



Foreword

Climate change poses an unprecedented challenge to humanity, one that demands urgent and concerted action. And indeed, amidst the daunting task ahead, individuals, organizations, and communities worldwide are working to confront this threat head-on.

The private sector plays a key role to accelerate the transformation needed. As the engine driving our global economy, businesses wield immense power to drive change and foster resilience in the face of climate impacts. By innovating, investing, and collaborating, companies can not only adapt to a changing climate but also mitigate its worst effects, safeguarding lives, livelihoods, nature, and economies.

With this objective in mind, three leading organizations – Resilience First, a key partner of the Race to Resilience, Resilience Rising, and the Center for Climate and Energy Solutions (C2ES) – have embarked on a groundbreaking effort: The development of a set of guiding principles for robust private sector action, building upon the efforts of the Race to

Resilience Campaign and the Sharm El-Sheik Adaptation Agenda, to mobilize Non-Party Stakeholders towards clear 2030 global adaptation targets and galvanize leadership and investment.

This initiative aims to empower companies to enhance their resilience, scale up investment in adaptation, and drive systemic transformation toward a sustainable future. Leveraging the expertise and resources of nearly 70 leaders in climate, sustainability, strategy, and risk management, they seek to catalyze private sector action on climate resilience by showcasing leading practices and fostering collaboration.

This initiative stands as an important signal to businesses, investors, and policymakers across all government levels that there exist companies deeply committed to advancing climate resilience. It is not just a demonstration but a resounding call to action, urging the private sector to contribute its expertise, voice, and leadership to continue further in this transformative journey towards a resilient future.



H.E Razan Al Mubarak

UN Climate Change High Level
Champion for COP28 UAE

Executive Summary

As climate-related risks loom large over the global economy, no business remains untouched. The compounding impacts of climate change are reshaping the global business landscape and will continue to do so even with significant cuts in greenhouse gas (GHG) emissions, demanding immediate and strategic action from the private sector.

The innovations and investments businesses make can be pivotal in fortifying and transforming operations, supply chains, and communities to prepare for and adapt to climate threats. However, recent research reveals a stark gap: only one in five companies has prepared an adaptation plan that helps to prepare for physical climate risk.¹ While companies across sectors have made significant strides in reducing their GHG emissions as part of climate mitigation efforts, the absence of a unified framework for climate resilience leaves resilience-focused efforts fragmented and unable to effect change at the necessary scale. Businesses are important engines of the global economy; they, and the communities on which they depend, must be better prepared to adapt to changing conditions.

Leading climate and private-sector organizations have begun to define the core actions businesses can take to reduce risks and advance their adaptive capacity to climate change in an effort to enhance corporate resilience. In parallel, recent regulatory and climate risk disclosure

changes such as the EU's CSRD and the ISSB's integration and evolution of TCFD* are impacting businesses globally and driving more companies than ever to not just set adaptation targets, but also report on their risks and strategies. Currently, however, today's language of climate resilience remains esoteric, with no global consensus guiding corporate action. The lack of a standardized playbook stymies collective private sector efforts, posing a formidable barrier to cohesive, decisive, and coordinated climate resilience measures. As a result, the economy's vulnerabilities and resilience needs remain unaddressed – and the capital and expertise of the private sector remain untapped. There is an urgent need for a globally recognized and utilized corporate framework that supports companies in responding to regulatory requirements, coalesces localized and sector-specific approaches, defines a role for businesses to contribute to global ambitions such as the 2030 Sustainable Development Goals (SDGs) and offers a pathway to demonstrating corporate leadership.

Addressing the challenge, C2ES, Resilience Rising, and Resilience First are spearheading a multi-year initiative to craft a comprehensive climate resilience framework for businesses focused on climate risk management and disclosure and collaborative approaches to building resilience to the physical impacts of climate change as a complement to efforts to reduce transition risks to a low-carbon future.

*CSRD: Corporate Sustainability Reporting Directive; ISSB: International Sustainability Standards Board; TCFD: Taskforce for Climate-Related Financial Disclosure

This initiative will craft a comprehensive framework for businesses and build a global community of practice to enable broad investment and leadership.



This innovative program aspires to chart a course for meaningful corporate action, catalyzing investment in adaptation and resilience, and igniting systemic transformation for a robust global economy. Launched at the Climate Week NYC in September 2023, the Corporate Climate Resilience Pathways initiative has united nearly 70 sustainability and climate experts from across a range of industries, in public and private forums around the world. Through these discussions, we have cultivated a nascent community of practice, identified the barriers to and drivers of corporate climate resilience, and explored what is needed to accelerate action from the private sector as set out in this report.

With input from numerous stakeholders from businesses, NGOs, and other climate resilience experts, we have developed a working set of **“Principles for Corporate Climate Resilience Leadership,”** which reflect a current view of the role of companies and a definition of leadership, particularly for major corporations.

Climate resilience isn’t just a goal—it’s an ongoing journey demanding unwavering leadership, innovation, and shared ambition. This Corporate Climate Resilience Pathways initiative marks a critical stride towards a more

resilient future, underscoring the indispensable role of businesses in shaping a sustainable future. It’s a proactive measure against escalating challenges, seeking a transformative alliance for a secure, brighter tomorrow.

Through our efforts to date, we have identified five key strategic elements required to successfully achieve these outcomes:

- **Visionary leadership**
- **A robust, universally recognized framework for meaningful action**
- **Practical implementation guidance**
- **Insightful tracking to manage impact and foster healthy competition, and**
- **Radical collaboration and knowledge sharing across sectors and at all levels.**

These stages represent a commitment to creating enabling resources and fostering the collaborative environment necessary to bring into reality our vision of a resilient future for all.

We extend an invitation to the private sector and other interested stakeholders to join us in this initiative – and to embrace and advocate for the principles shaped through this collaborative effort.



Nat Keohane

Nat Keohane

President
Center for Climate and Energy
Solutions (C2ES)



Seth Schultz

Seth Schultz

CEO
Resilience Rising Global

WORKING PRINCIPLES FOR CORPORATE CLIMATE RESILIENCE LEADERSHIP

Companies leading on climate resilience are:

1 SCIENCE-BASED & PROACTIVE

They acknowledge and assess the acute and chronic risks presented by the physical impacts of climate change and implement best practices and investments that enhance resilience across the value chain.

2 TRANSPARENT & ACCOUNTABLE

They regularly measure and report assessed climate risks, adaptation actions, and their impacts in a consistent and transparent manner.

3 SAFEGUARDING & ENHANCING

They employ practices that safeguard against maladaptation and increased vulnerability to physical climate hazards and strive to enhance the adaptive capacity of communities and natural ecosystems.

4 INCLUSIVE & EQUITABLE

They strive to collaboratively engage value chains and local communities to understand and improve decision-making, contribute to systemic needs and priorities, and drive the implementation of equitable climate adaptation and resilience investments.

5 TRANSFORMATIVE

They support and pursue climate adaptation solutions that enable positive systems-level transformations within their organizations, industry sectors, and value chains, and in communities and natural ecosystems.

1. Introduction

Businesses' ability to adapt to climate change is a strategic imperative. Yet, despite the growing need to manage and respond to climate risks, a staggering 80% of companies lack a comprehensive plan for climate adaptation.¹ This gap is a call to action—businesses must mobilize their considerable influence, resources, and partnerships to forge a resilient future.

The drive for decarbonization has demonstrated the private sector's power to coalesce around best practices, attract investment, and shape policy.² There is an urgent need for similar dynamism to accelerate climate resilience. The lack of a unifying language and framework for corporate climate action is a missed opportunity—without a collective approach, we leave the true potential of the private sector untapped, the economy's resilience vulnerable, and vital resources underutilized.

To address this time-critical gap between opportunity and risk, Resilience Rising and its consortium partner Resilience First, in partnership with the Center for Climate and Energy Solutions (C2ES), jointly engaged with senior leaders from over 45 organizations in a series of virtual and in-person meetings over the course of 2023. These sessions brought together sustainability and climate change experts from across all major economic sectors, representing a combined annual revenue of more than \$2.1 trillion USD, to dissect evolving climate challenges and the essential role of businesses in fostering societal

resilience to climate and compounding impacts. The collaborative insights gathered from these discussions, alongside the latest research and expert analysis, informed the development of this position paper and the working "Principles for Corporate Leadership on Climate Resilience."

In the pages ahead we detail the key findings from our consultations – the case for private sector action, the drivers of and barriers to accelerating investment, and a first look at the pioneering principles to guide corporate climate leadership for climate resilience. Together with this accompanying position paper, the working Principles set the foundation for defining a new narrative for the private sector—one that underscores the necessity of robust resilience measures and establishes a community of practice committed to fostering a resilient, inclusive, and thriving global economy.

The Corporate Climate Resilience Pathways initiative aims to define a path toward a climate-resilient future where businesses and communities, especially the most vulnerable, can prosper amidst the uncertainties of a changing climate.



2. Global Business in a World Challenged by Climate Change

With increasing evidence that global warming may have already exceeded the 1.5°C threshold,³ businesses must confront the inevitable environmental shifts threatening their operations, value chains, and communities they serve. Climate-driven shocks and stresses such as sea level rise, extreme weather, and ecological degradation pose significant risks to the viability of operations, assets, supplies, and services.

The 3.3 to 3.6 billion people currently living in vulnerable areas play diverse and important roles in the global economy and face profound, immediate disruptions to their livelihoods from climate change.⁴ Extreme weather events like heatwaves, windstorms, and wildfires are already disrupting critical infrastructure, production cycles, and supply chains, causing substantial challenges to operations, business safety outlooks, and more. Companies dependent on agriculture are grappling with the unpredictability of resource availability, directly impacting their output and bottom line.⁵ As repeatedly emphasized during the recently concluded Conference of Parties in Dubai (COP28) by businesses, scientists, and policymakers alike, a clear consensus is emerging: climate-induced disturbances are expected to intensify, necessitating immediate and strategic responses to safeguard operations, ensure worker safety, and manage emerging regulatory pressures. Proactive adaptation and investment in resilience can no longer be seen as optional – it is now absolutely essential

INDUSTRY VOICES

 Meta

“Climate change impacts each of us. At Meta, our mission is to help people build community and bring the world closer together. The communities we are part of can only thrive in a safe and healthy world. Operating sustainably and addressing climate change through bold, meaningful action and technological advances are paramount to our mission and essential to help the world avoid the worst effects of climate change.”

Emily Wasley

Head of Climate Resilience and Biodiversity, Meta

for business continuity in the face of climate change.

Swiss Re’s projections of significant economic losses⁶ and CDP’s estimated financial impacts on S&P 500 companies⁷ signal an urgent call for businesses to develop comprehensive strategies that enhance adaptability, recalibrating operations and embracing resilience strategies to mitigate impacts on critical areas including agriculture, water resources, and human health. The potential

cost of inaction is likely to be substantial, not only in financial terms but also in terms of human capital and societal stability. By strengthening their resilience to these impacts, businesses can navigate the complexities of climate risks, ensuring not only survival but also the ability to thrive in a rapidly changing world. This strategic evolution is not just about preparing for various risks but also about capitalizing on new opportunities that arise from a transition to more sustainable and resilient operating practices, services, and products.

Despite the success of early initiatives to adopt resilience practices and build local adaptive capacity, as reiterated by various leaders across our consultations, the private sector's resilience efforts do not match the scale of climate change threats. A dynamic shift in business practices is necessary — one that incorporates long-term climate projections in strategic planning and decision-making, diversifying and partnering with supply chains to reduce risk, and investing in sustainable and adaptive infrastructure. Resilience is not only crucial to withstand physical climate risks, but also for enabling companies to navigate evolving geopolitical contexts, which will continue to shift alongside changing climate conditions and political landscapes.*

In an era of intensifying climate challenges, the viability of entire business models will hinge on systems and assets that are prepared for the future. Forward-thinking business



*Insights drawn from 1st Roundtable convening of senior leaders led by RF, RR, and C2ES

leaders already see the opportunities for innovation, strategic advantage, and growth that can be accessed by investing in greater climate preparedness and resilience. They understand that, increasingly, organizational success will require proactively mitigating risk, adeptly navigating deep uncertainty, addressing emergent climate and societal demands, and collaborating on the development and scaling of new solutions in regions most at risk.

The private sector's progress towards climate resilience is stymied by the absence of a cohesive framework, which is critical for standardizing best practices, coordinating sector-wide actions, and scaling investment and solutions. A lack of uniformity in climate risk management approaches results in overlooked opportunities, inefficient resource allocation, and siloed practices that hinder knowledge sharing and progress assessments. There is growing evidence that investments in resilience can yield significant economic benefits, despite the estimated \$194-366 billion⁸ annual shortfall in global funding for adaptation and mitigation. For instance, the World Bank highlights the cost-effectiveness of flood prevention, emphasizing substantial potential financial savings.⁹ Businesses that invest in developing resilient and adaptive infrastructure not only gain a competitive advantage but also ensure the sustainability of their operations and the welfare of the communities they serve in the face of escalating climate challenges.

INDUSTRY VOICES



"Businesses are already grappling with the effects of climate change – adaptation must be top of the agenda. Crucially, climate risks increasingly extend beyond a company's own assets to their supply chains and the infrastructure on which they depend. Companies must consider how assets in their value chain might be affected by a changed climate whether by the potential for damage, e.g. from flood or fire; the need for changes to operational systems and controls, e.g. the need for more frequent asset inspection in areas with extreme heat; and finally, an organization's ability to respond when things do go wrong – e.g. will they still have access to fire water in a drought.

Once the risks are understood, organizations can identify resilience measures and the adaptation. Marsh is working with clients to help them quantify their risks and understand the return-on-investment of resilience measures to make better informed decisions. window in which action should be taken."

Amy Barnes

Head of Climate & Sustainability
Strategy, Marsh

Proactive adaptation and investment in resilience can no longer be seen as optional – it is now absolutely essential for business continuity in the face of climate change.



3. The Case for Private Sector Action: Current and Emerging Drivers

Our extensive research and private sector stakeholder consultations have outlined a series of pivotal benefits that underscore the business rationale for climate resilience initiatives, including return on investment, mitigating systemic vulnerabilities, meeting disclosure and regulatory requirements, managing risks and corporate reputation, and gaining a competitive edge. These benefits are explained in further detail below.

Investing in resilience is paying dividends

The imperative to protect physical assets, supply chains, and operational processes is central to the business case for climate resilience. A recent study from Boston Consulting Group found that contrary to some misconceptions, climate adaptation investments by corporations can yield high benefit-to-cost ratios. On average, resilience measures can return ratios from 2:1 to 15:1.¹⁰ Climate adaptation offers a pathway to manage physical risks, bolster sustainability and mitigation efforts, and promote resilience in future operations.

Systemic vulnerabilities are driving collaborative solutions

Companies operate within and depend on larger interconnected systems and networks. Corporate measures that also enhance these broader systems can be more efficient and effective. For example, the resilience of community activities and assets, such as critical public transportation services and water supply, are inextricably linked to

business resilience. Companies engaging and investing beyond their fence lines and immediate operational scope benefit from more informed decisions, a stronger value chain, and enhanced community resilience.

Disclosure, policy, and regulation are accelerating improved corporate governance and transparency on climate change

With increasing regulatory and stakeholder expectations, businesses must stay vigilant in appropriately and accurately disclosing their climate risks and resilience building efforts. Progress in measuring and reporting on corporate climate action is notable, especially regarding physical climate change impacts. The Task Force on Climate-related Financial Disclosures (TCFD), which is now housed within the International Sustainability Standards Board (ISSB), and the related Taskforce for Nature-related Financial Disclosures (TNFD) have become essential in guiding both private and public sectors.

Regulatory landscapes are rapidly evolving, with directives like the European Union's Corporate Sustainability Reporting Directive (CSRD) and the U.S. Securities and Exchange Commission's (SEC) climate disclosure rule setting new precedents for more companies than ever to implement (and publicly report on the effectiveness of their) climate risk management strategies.

Stakeholder expectations and reputational concerns are influencing corporate practices

Stakeholder expectations and brand equity are emerging drivers, compelling businesses to proactively engage in climate risk management through adaptation and enhanced resilience.¹¹ Early adopters stand to gain a competitive advantage by being better prepared for climate impacts and benefiting from cost savings through damage prevention and avoided losses.¹² Investor awareness of corporate resilience indicators and attributes, and an increase in the development of innovative financing mechanisms such as blended finance and micro-insurance solutions indicate a shift towards more investment strategies that value resilience.¹³ Beyond shareholders, consumers and employees are increasingly demanding more transparency and accountability as highlighted in a recent study by Deloitte which found climate change to be a top concern for Millennials and Gen Z¹⁴, two groups that together make up the bulk of the workforce globally.

Climate resilience is also emerging as a reputational issue for companies. Businesses that are unprepared for climate hazards can exacerbate local climate-related impacts with far-reaching consequences (including costly litigation), while those that demonstrate community stewardship, climate preparedness, and provide support in the aftermath of such events can protect and enhance their public image.

INDUSTRY VOICES



“At AT&T, building resilience is about using the best available climate data to help guide decisions about how to best protect its telecommunications network and spur adaptation efforts in local communities.

When the company couldn’t find the kind of forward-looking data it needed to understand its climate risks, we worked with Argonne National Laboratory, using one of the world’s largest supercomputers to model how hazards such as flooding, wind speeds, wildfire risk and drought could change at the neighborhood level and over the next 30 years under different climate scenarios. These projections are now integrated into the systems and processes that AT&T planners and engineers use to identify the best locations for new assets, allowing them to take climate risk into consideration. The data also helps the company identify existing locations in need of resilience enhancements such as floodgates. To help other businesses and communities become more resilient, we worked with Argonne and FEMA to create the Climate Risk and Resilience Portal (ClimRR). ClimRR offers free access to granular, forward-looking climate data, empowering anyone charged with building resilience for their organization to better understand and act on climate-related hazards.”

Jessica Filante

Director, Global Environmental Sustainability

INDUSTRY VOICES



“Adaptation measures that lead to climate resilience must be understood and integrated across private sector value chains as a core element of one’s business strategy. Today, business leaders recognize they need to address both climate mitigation and adaptation to maintain viable business and to lead. As we prepare to conduct business in a 1.5°C world, we know climate shocks will increasingly impact the private sector, its markets, supply chains, stakeholders, and customers. Therefore, adaptation that leads to resilience is now essential for business success. Companies that incorporate adaptation into their operations and services will become market leaders – and drive the innovation and impact the world requires.

At Resonance, we recognize the essential role adaptation and resilience is playing in private sector success. We know that partnerships are required to resource, drive adaptation, and transform business sectors to create ROI for all stakeholders and their businesses. We define and implement partnerships at scale that allow organizations (including public, private, NGOs and multi-laterals) to collaborate for common implementation outcomes that can put people at the center.”

Peter Hall

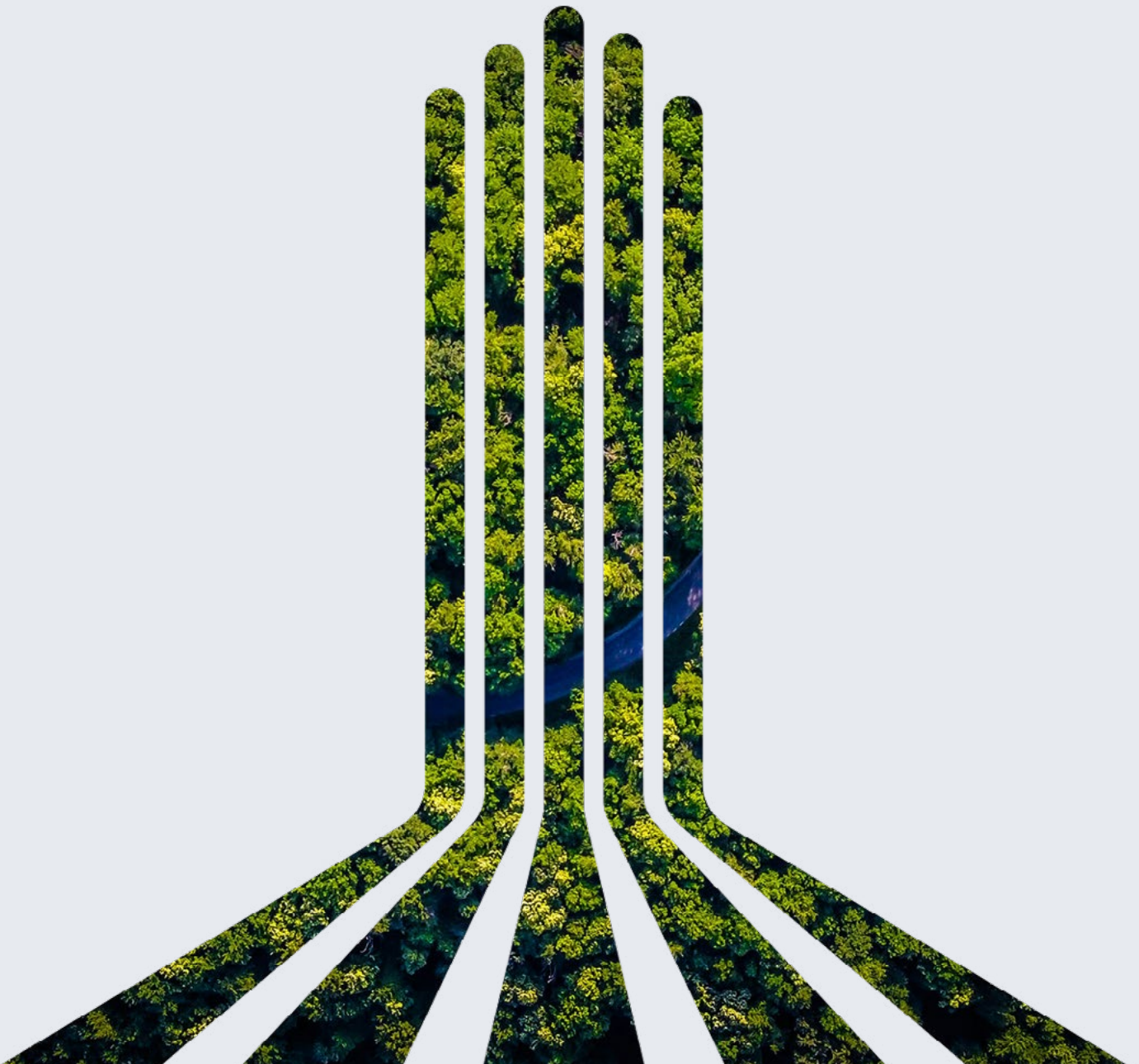
Managing Director, Impact Advisory,
Resonance

Leading companies are evolving to meet this challenge by including climate impacts within the broader spectrum of more traditional risk management practices, strategic, long-term decision-making, and corporate stewardship activities.

New opportunities for gaining market share are fostering innovation

Early movers that channel capital towards promising adaptation solutions¹⁵ can increase their market share. Investing in climate-ready services or new products (for instance climate resilient seed varieties¹⁶ in the food and agricultural sector) can allow companies to tap into new revenue streams as demand grows and supply chains come under pressure. More than half of a recently surveyed group of CEOs are investing in developing products, services, and technologies that support climate resilience¹⁷ marking a rapidly evolving market. Significant advancements in generative artificial intelligence are further contributing to an explosion of advanced technologies in response to society’s growing need for building adaptive capacity.¹⁸

Investing in climate-ready services or new products can allow companies to tap into new revenue streams as demand grows and supply chains come under pressure.



4. Barriers and Challenges

Despite the clear case for climate resilience action by companies and the successful deployment of pilot projects, key barriers continue to hinder progress at scale. These include:

Competing C-suite priorities lead to insufficient accountability for resilience

A complex and rapidly changing geopolitical environment, coupled with inconsistent reporting and measurement approaches, means that climate resilience is not an immediate priority for most executives. Although the World Economic Forum places climate and conflict at the top of the list of near-term risks to the global economy¹⁹, it also finds that CEOs view climate change as a mid- to long-term risk. This is backed up by the latest research from PwC which found only 30% of CEOs viewed climate change as a key driver of company strategy in the next three years.²⁰ This lack of prioritization suggests that most of the corporate leadership has yet to establish the clear internal accountability and governance structures that are essential for serious climate action. As we heard repeatedly during our conversations with key stakeholders, this tone from the top translates into a lack of accountability within companies, resulting in a lack of focus on and financial support for resilience action.

Lack of knowledge and awareness stymies ownership

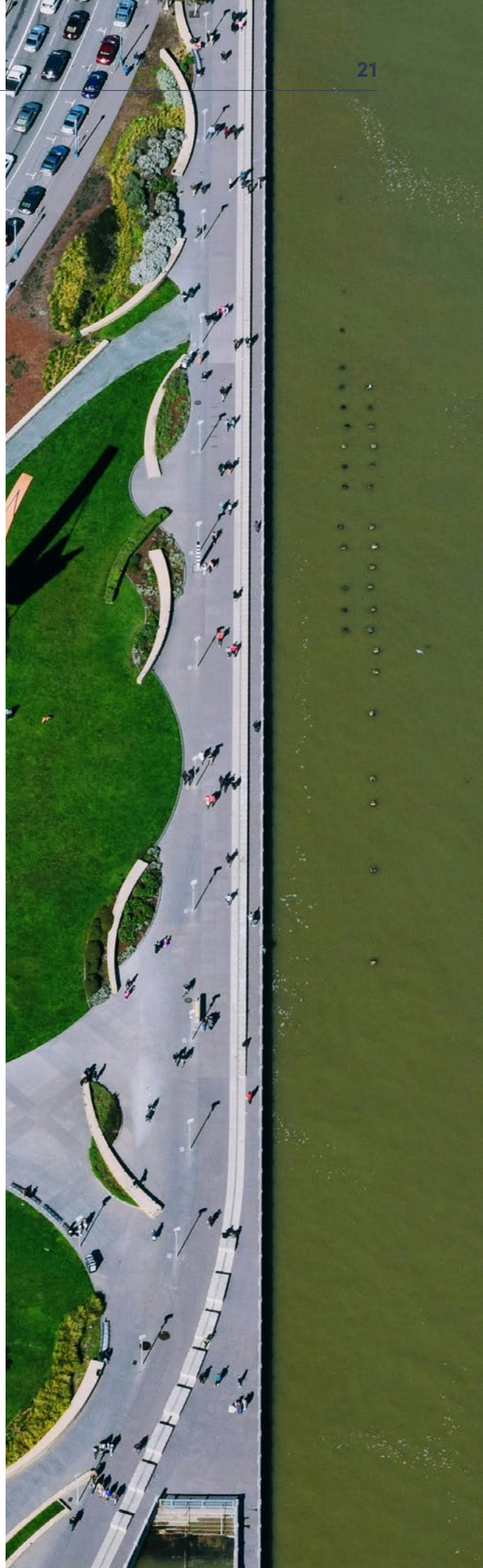
Many companies still perceive climate change narrowly as a marketing or compliance issue, or one that rests solely with government, lacking a deep understanding of its looming risks to company finances, operations, and supply chains. In some cases, companies that are undertaking resilience actions may not be correctly categorizing these efforts.⁹ Improved knowledge of climate impacts, new resilience market opportunities, comprehensive risk assessment approaches, and a consistent understanding of what corporate resilience measures look like are crucial for private sector action.

Siloed approaches and evolving regulations hinder transparency

Experts and practitioners across sectors agreed that the absence of universally accepted corporate frameworks and lack of clarity on business-relevant resilience metrics presents challenges for businesses preparing for climate change impacts. Nascent regulation and varying policies across sectors and regions can create confusion and inefficiencies as businesses and investors try to navigate an increasingly complex and regionally varied regulatory landscape.

Costs - real and perceived - deter proactive and scaled investments

The upfront costs associated with climate adaptation, coupled with traditional accounting practices that do not capture resilience value, can deter investment, particularly for small and medium-sized businesses or those with slim margins. However, as climate impacts accelerate, the cost of inaction continues to grow. Throughout all our convenings, experts and investors agreed that revisions to investment models and internal accounting practices that more accurately value resilience benefits are urgently needed to overcome this hurdle.



5. Landscape of Current Efforts

Corporate strategies for decarbonization are well-defined, with many companies setting 2030 or 2050 net zero targets in line with the Paris Agreement. Business-centric tools like the GHG Protocol and Science-Based Targets provide companies with clear guidelines for emissions measurement, reporting, and disclosure, enabling accelerated uptake and measurable progress across industries. This transparency also allows stakeholders to easily spot leaders in climate mitigation.

Meanwhile, there is growing recognition of adaptation needs across the globe and the role of the private sector in driving investment to accelerate resilience building. The Race to Resilience campaign was launched in 2021²¹ followed by the Sharm El-Sheik Adaptation Agenda in 2022, which set clear 2030 global adaptation targets to galvanize leadership and investment. Alongside these UNFCCC efforts, the United States government launched the President's Emergency Plan for Adaptation and Resilience (PREPARE) initiative to challenge businesses to build resilience in developing countries.²² The evolution of a global agenda for climate adaptation has resulted in several successful efforts establishing the growing business case and call to action for resilience investment by the private sector.

However, the private sector still lacks a comprehensive framework and common toolkit for climate resilience to match the strategic guidance available for

decarbonization. Outside of ISO standards that provide general definitions (ISO 14090)²³ and process guidelines (ISO14091)²⁴ for adaptation, companies often look to the TCFD (now ISSB) for guidance on integrating physical climate risk assessment and management practices into their financial disclosures. However, only a select few “best-practice” resources or sector-specific resilience frameworks exist to guide them further.

During our research, we identified several current and forthcoming efforts to develop the frameworks, guidance, and other tools to guide private sector companies, a selection of which have been summarized in the table on the following page.

Example Resources to Support Corporate Decision-making on Climate Resilience

RESOURCE NAME	LEAD ORGANIZATION	SUMMARY
Business Action for Adaptation and Resilience: Bridging gaps for businesses to deliver the Sharm el-Sheikh Adaptation Agenda - Discussion Paper	UN Climate Change High-Level Champions in collaboration with PwC (UK) (March 2024)	This discussion paper aims to highlight the connections between business adaptation and resilience actions and the Sharm el-Sheikh Adaptation Agenda outcome targets, the synchronicity of this relationship, and why businesses should act. To illustrate this in a way to help inform and inspire others, it presents examples from a range of organizations across the six impact systems and two cross-cutting enablers.
Adaptation and Resilience: A Guide for Business Leaders	World Business Council for Sustainable Development (WBCSD) (2024 – forthcoming)	WBCSD’s Guide for Business Leaders supports senior decision-makers to integrate adaptation and resilience into organizational strategy, governance, and operations. The guide offers nine standalone modules each containing tools, frameworks, and case studies to catalyze action across different adaptation challenges.
Climate Bonds Resilience Taxonomy (CBRT)	Climate Bonds Initiative (CBI) (Forthcoming)	CBI’s Climate Bonds Resilience Taxonomy aims to establish a robust classification system for climate resilience investments to provide a consistent, transparent and systematic approach in defining and identifying adaptation and resilience investments. CBI has convened the Resilience Taxonomy Advisory Group (RTAG), a group of 26 key stakeholders to refine and advance resilience definitions, with plans to launch a prototype CBRT categorizing resilience investments under seven themes in July 2024.
Applying the Three Horizons” Framework to Adaptation and Resilience	World Business Council for Sustainable Development with Leader’s Quest (2023)	WBCSD and Leader’s Quest offers a conversation-based approach for businesses to engage in conversations and work collaboratively to understand assumptions around the current context and conditions of their operations, identify emerging trends where businesses hope to be, and brainstorm solutions for arriving at the desired future state. This framework can be applied to a variety of contexts.

RESOURCE NAME	LEAD ORGANIZATION	SUMMARY
Accelerating Business Action on Climate Change Adaptation	World Economic Forum (January 2023)	This white paper, prepared in collaboration with PwC, presents the case for adaptation and a framework that businesses can use to develop their climate change adaptation approach. The paper provides a high-level and sector-agnostic strategy for businesses to take action on resilience.
Engaging businesses for action on climate and health equity	Kaiser Permanente (June 2023)	Kaiser Permanente is partnering with leading business organizations to raise awareness about the impacts of climate change on health and health equity. The goal is to drive urgent climate action and new solutions, and to build a community of practice for businesses addressing the intersection of health and climate.
An Emerging Blueprint for Companies to Advance Local Climate Resilience	Center for Climate and Energy Solutions (C2ES) (September 2022)	This report outlines how corporate resources, funding, and expertise can support local resilience, with a particular focus on communities in the US. It identifies seven leadership strategies that companies are employing to help communities assess climate risks, build local capacity, and accelerate resilience projects.
Value Chain Risk to Resilience Initiative	Business for Social Responsibility (BSR) (March 2021)	The Value Chain Risk to Resilience Platform developed a resilience metrics framework to measure the outcomes of corporate climate resilience-related projects and actions at the business, community, and system levels. This risk assessment framework is best suited for the food and agriculture sector.
Principles for Sustainable Infrastructure and Resiliency	Wood Plc, Rockefeller Foundation and Resilient Cities Network (2021)	These principles aim to raise awareness around infrastructure resilience and outlines the key features and characteristics of a resilient infrastructure project. This framework is intended for any stakeholder working towards national infrastructure resilience goals.

These resources cater to a wide array of businesses across different industrial sectors and regions, incorporating elements like risk identification and operational resilience. They account for various levels of company readiness to prepare for climate impacts, with certain guidance being more industry-specific.

Based on research and consultations with companies, the core challenges limiting the broad adoption of the existing frameworks stem from a lack of standardization, consistency, and communication. No unified global framework or agreed-upon process exists for measuring and demonstrating corporate leadership in climate resilience. These varied approaches to how companies assess their risks and build resilience can lead to inconsistencies in measurement and reporting, reducing transparency and hindering collaborative efforts.

While the available resources are valuable and critical to help mainstream corporate action on resilience, there is still a need for an overarching framework, endorsed by businesses and policymakers alike, to align action and outcomes, scaling collective private sector efforts and impact. Further, there is a noticeable absence of corporate champions at the most senior and board levels who can clearly communicate and advocate for private sector contributions to the broader community. This lack of streamlining across executive, c-suite and board level entities is a significant barrier to coordinated climate efforts and economic resilience.



6. The Path Forward: A Strategy to Galvanize Corporate Action and Innovation

Drawing on insights from 47 diverse companies and leading organizations across multiple sectors and geographies, we have gained a clear understanding of the strategic direction needed to advance corporate climate resilience action. Our research confirms that companies are in search of clear, implementable strategies that seamlessly integrate with their core operations and align to emerging global regulatory and disclosure requirements, and indicates that they favor industry-driven, practical frameworks that can adapt to specific sector demands and deliver co-benefits for communities and ecosystems.

The development of a comprehensive climate resilience framework and collaborative global community of practice will be essential to catalyzing and accelerating business action that will not only strengthen corporate climate resilience but also boost investment in local communities and key infrastructure. To be transformative, this effort should:

- Provide a **unified direction** for climate resilience efforts by businesses, integrating the insights and needs of diverse industries and communities to establish a common goal and terminology.
- Establish a **harmonized, foundational approach** for corporate assessment and action through which sectors can develop specific implementation guidance that reflects the unique challenges and strengths of each industry.
- Coalesce around **clear taxonomies, benchmarks, and metrics** relevant to the private sector, offering businesses tangible means to monitor and assess their progress and align with global standards.
- Compile and share **best practices across a spectrum of business activities**, allowing companies to emulate successful strategies and adapt them to their specific contexts.
- Enhance **risk management** capabilities, empowering businesses to proactively address and navigate climate-related risks by first leveraging existing integrated or enterprise risk management processes.
- Provide a means for companies to **boost investor confidence** by transparently showcasing commitment to climate and business resilience, attracting sustainable investments.
- Promote greater **transparency and accountability** through standardized reporting and enable tracking and impact assessment across sectors and value chains.
- Support **policy evolution** by empowering businesses to meaningfully engage with policymakers and providing a model for governments seeking to drive better decision-making across sectors.

- Foster **collaborative opportunities** across sectors and communities, catalyzing partnerships that leverage the strengths of businesses, government agencies, and civil society.

This approach will drive a comprehensive and cohesive response to the climate crisis, fostering a resilient ecosystem that not only endures the challenges of our changing climate but also prospers within it. The leadership principles (detailed below) should act as a cornerstone standard, laying the foundations for the creation of resources and a cooperative environment essential for transforming businesses into proactive agents of change—entities that not only react to the current climate conditions but stand at the helm, actively shaping and collaborating to influence what comes next.



Working Principles for Corporate Climate Resilience Leadership

To establish a foundational and shared vision for corporate leadership on climate resilience, C2ES, Resilience Rising, and Resilience First, have engaged cross-sector stakeholders—including businesses, NGOs, and resilience-focused organizations—to develop guiding principles that reflect how companies can demonstrate leadership in advancing resilience to the physical impacts of climate change.

The partners developed a first draft of leadership principles by drawing on stakeholder input gathered between July and September 2023 and existing resilience principles designed for other audiences such as those included in the United States National Climate Resilience Framework²⁵ and the Living Guide to the Principles of Climate Change Adaptation.²⁶ We collected feedback on two iterations of draft principles throughout November and December 2023. The principles below reflect the written and verbal feedback provided by fourteen leaders within companies and relevant NGOs. They reflect a current view of the role of companies in advancing climate resilience and the definition of leadership, particularly for major corporations. As we anticipate that more engagement and discussion in this space will generate additional insights and clarity to incorporate into future iterations, they represent an initial set of “working” principles.

The working Principles provide an organizing frame to guide our work and to establish a global framework for corporate leadership on climate resilience. They are designed for broad endorsement and use by private enterprises around the globe to assert a common view that companies leading on climate resilience are science-based and proactive; transparent and accountable; work to safeguard and enhance/strengthen communities and ecosystems; strive for inclusive and equitable decision-making; and enable systems-wide transformations.

We envision a business landscape where climate resilience is ingrained in every decision, where every investment considers its impact on sustainability, and where companies lead as pioneers of innovation, protecting communities and the global economy from climate vulnerabilities.



Companies leading on climate resilience are:

1 SCIENCE-BASED & PROACTIVE

Companies acknowledge and assess the acute and chronic risks presented by the physical impacts of climate change and implement best practices in their planning and investments that enhance resilience across the value chain.

Explanation: As physical climate impacts increase and compound across interconnected systems, risks to private sector activities are rising and present the need for proactive and science-based risk management. Resilience-focused companies recognize the latest scientific consensus articulated by the Intergovernmental Panel on Climate Change (IPCC) and other leading scientific studies that demonstrate the effects of climate change on every region across the globe. In tandem with efforts to reduce greenhouse gas emissions and manage transition risks, companies integrate physical risk assessment and reduction approaches across corporate activities and investments to enhance resilience to these impacts.

2 TRANSPARENT & ACCOUNTABLE

Companies regularly measure and report assessed climate risks, adaptation actions, and their impacts in a consistent and transparent manner.

Explanation: Companies can improve awareness of systemic risks, inform best practices, and enable collaborative action by appropriately measuring and disclosing their material and non-material physical climate risks, sharing their resilience activities, and proactively participating in voluntary reporting regimes where reporting regulation is less advanced.

3 SAFEGUARDING & ENHANCING

Companies employ practices that safeguard against maladaptation and increased vulnerability to physical climate hazards and strive to enhance the adaptive capacity of communities and natural ecosystems.

Explanation: Resilient communities and natural ecosystems are a necessary input to sustainable economies and thriving businesses. It is incumbent on companies to ensure that their business practices do not reduce the resilience of communities and ecosystems; instead, corporate activities should seek to protect and enhance the health and adaptive capacity of these systems.

4 INCLUSIVE & EQUITABLE

Companies strive to collaboratively engage value chains and local communities to understand and improve decision-making, contribute to systemic needs and priorities, and drive the implementation of equitable climate adaptation and resilience investments.

Explanation: A climate-resilient system is built on healthy and thriving communities and ecosystems. By embedding principles of inclusivity and equity across corporate resilience planning and operations, companies can more fully understand their climate risks and opportunities and assess a broader set of strategic options with internal and external stakeholders. These practices will enable companies to design and develop solutions that create shared value and co-benefits for a broader spectrum of stakeholders and promote more just outcomes.

5 TRANSFORMATIVE

Companies support and pursue climate adaptation solutions that enable positive systems-level transformations within their organizations, industry sectors, and value chains, and in communities and natural ecosystems.

Explanation: The private sector is uniquely positioned to develop, adopt, and deploy innovative solutions and services at scale. Companies can support transformative change by engaging in radical collaboration, creating new business models, and pursuing net positive and regenerative outcomes.

7. A Climate Resilient Future

In the face of escalating climate-related risks, it has become clear that no business can afford to remain passive or agnostic toward resilience challenges. Despite efforts to reduce greenhouse gas emissions, the ongoing impacts of climate change are reshaping the global business environment today, necessitating immediate, strategic responses from the private sector.

Yet only 20% of companies have adaptation plans in place for physical climate risks.²⁷ This is not just a gap—it's a significant oversight in corporate strategy. The call for a standardized, globally recognized corporate framework and ecosystem – one that complies with regulatory demands, unifies varied sector-specific approaches, and aligns with global ambitions like the Sustainable Development Goals – is loud and clear. With the right resources and a unified approach, businesses can substantially contribute to a sustainable future through strong climate resilience strategies.

Leveraging learnings from the corporate decarbonization efforts, we propose the creation of a corporate climate resilience ecosystem that embodies the same values of innovation, collaboration, and commitment to change. Such an ecosystem would include a comprehensive framework and corresponding library of assets developed through collaboration with the very companies it aims to serve. This by business, for business solution would build on the leadership principles defined above—with input from resilience

experts across NGOs, academia, and governments—and would be crafted to meet different industry sectors' specific needs, thereby equipping businesses with the tools and insights necessary for effective climate adaptation.

Our strategy has five main components:

1. Visionary leadership:

Engage leaders who can inspire and unite businesses under a common goal to invest in resilience from the top down. Our Corporate Climate Resilience Principles, highlighted in the previous section, outline key aspects of leading action.

2. Robust framework:

Develop a comprehensive and globally recognized corporate approach that delineates clear criteria for business action on climate resilience, driving consistency in assessment, measurement, monitoring, and reporting practices.

3. Practical guidance:

Create detailed implementation playbooks that offer businesses practical, actionable strategies to navigate the complexities of climate resilience and case studies that help bring the guidance to life.

4. Insightful tracking:

Establish the conditions for competitive advancement and deeper collaboration. Broad and consistent reporting will enable the ongoing assessment of the global state of corporate climate resilience that provides insights on industry trends and needs, and that can inform corporate goal setting and strategies. This will also foster a competitive spirit among businesses, encouraging them to strive for excellence in climate resilience and share their successful strategies and innovations.

5. A dynamic community of practice:

Cultivate and facilitate a new cross-sectoral network of leaders, practitioners, and influencers committed to scaling climate resilience investment and best practices through knowledge sharing, piloting and scaling, and policy advocacy.

We envision a business landscape where climate resilience is ingrained in every decision, where every investment considers its impact on sustainability, and where companies lead as pioneers of innovation, protecting communities and the global economy from climate vulnerabilities.

This is an opportunity for corporate leadership in a critical area of global need and we are extending an invitation to industry peers, stakeholders, and leaders to collaborate on closing this gap.



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Disclaimer: The views and conclusions outlined in this document reflect consolidated insights drawn from a combination of group discussions and consultations with over 70 experts, (some of whom are listed here), research, and literature reviews, and should not be attributed to any individual or company mentioned below.

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Appendix: Glossary of Terms

Recognizing the richness of the existing dialogue on climate action, we have compiled a glossary of key terms used in this document to ensure a common understanding and application across sectors.

Adaptation: Actions taken to reduce risks from today's changed climate conditions and to prepare for further impacts in the future. (NCA5, 2023) Various types of adaptation exist, e.g., anticipatory and reactive, private and public, and autonomous and planned. (IPCC 4AR)

Adaptive Capacity: The ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities or to respond to consequences. (IPCC Climate Change 2022: Impacts, Adaptation, and Vulnerability, 2022)

Physical Climate Risk: Threats to life, livelihoods, health and wellbeing, infrastructure and services, business operations, social, cultural and economic assets, ecosystems and species from potential impacts of climate change. (Adapted from NCA5, 2023; SB261, 2023 and IPCC AR4).

Climate Risk Management: Plans, actions, strategies or policies to reduce the likelihood and/or magnitude of adverse potential consequences, based on assessed or perceived risks. (The concept of risk in the IPCC Sixth Assessment Report, 2020)

Co-benefit: A positive effect that a policy or measure aimed at one objective has on another objective, thereby increasing the total benefit to society or the environment. Co-benefits are also referred to as ancillary benefits. (IPCC Climate Change 2022: Impacts, Adaptation, and Vulnerability, 2022)

Climate Risk Disclosure: In recognition of the risks climate change could pose to businesses, there is a growing expectation for companies to disclose the risks they are facing from both the physical impacts of climate change and the transition to a low-carbon economy. Disclosure may help companies prepare for climate change impacts, and help investors understand risks so that they can make more informed investment decisions (Science, 2018). Reputable reporting frameworks include the Task Force on Climate-related Financial Disclosures (TCFD) and the EU's Corporate Sustainability Reporting Directive (CSRD).

Exposure: The presence of people, livelihoods, species or ecosystems, environmental functions, services, and resources, infrastructure, or economic, social, or cultural assets in places and settings that could be adversely affected by climate change (ISO 14090:2019; NCA5, 2023).

Extreme Weather Event: An event that is rare at a particular place and time of year. Definitions of 'rare' vary, but an extreme weather event would normally be as rare as or rarer than the 10th or 90th percentile of a probability density function estimated from observations. The characteristics of what is called extreme weather may vary from place to place in an absolute sense. (IPCC Climate Change 2022: Impacts, Adaptation, and Vulnerability, 2022).

Hazard: The potential occurrence of a natural or human-induced physical event or trend that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, ecosystems, and environmental resources (NCA5, 2023).

Maladaptation: Occurs when actions are taken that may lead to increased risk of adverse climate-related outcomes, including via increased greenhouse gas emissions, increased or shifted vulnerability to climate change, more inequitable outcomes, or diminished welfare, now or in the future. Most often, maladaptation is an unintended consequence (NCA5, 2023).

Mitigation: A human intervention to reduce greenhouse gas emissions or enhance the sinks of greenhouse gases. (IPCC Climate Change 2022: Impacts, Adaptation, and Vulnerability, 2022)

Physical Risk: The term 'physical risk' involves risks from climate change including risk to facilities and infrastructure, impact on operations, water and raw material availability and supply chain disruptions arising from climate change impacts and climate-related hazards. (The concept of risk in the IPCC Sixth Assessment Report, 2020)

Resilience: The ability of interconnected social, economic and ecological systems to prepare for threats and hazards, adapt to changing conditions, and withstand and recover rapidly from adverse conditions and disruptions. (IPCC, 2022, NCA5, 2023) In the context of this initiative, a resilient business is one that can adapt to climate-related hazards to maintain business continuity and identify and build upon opportunities from the low carbon transition while collaborating with surrounding communities in the context of local environments to create value and ensure no negative impacts. (Adapted from WEF, BSR, WBCSD)

Transition Risks and Opportunities: The term 'transition risk/opportunity' typically refers to risks or opportunities associated with transition to a low carbon economy. Transitioning to a lower-carbon economy can entail extensive policy, legal, technology and market changes to address mitigation and adaptation requirements related to climate change. Depending on the nature, speed, and focus of these changes, transition risks may pose varying levels of financial and reputational risk to organizations. (The concept of risk in the IPCC Sixth Assessment Report, 2020)

Vulnerability: The propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements, including sensitivity or susceptibility to harm and lack of capacity to cope and adapt. (IPCC Climate Change 2022: Impacts, Adaptation, and Vulnerability, 2022)

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Convening partners



The Center for Climate and Energy Solutions (C2ES) is an independent, nonpartisan, nonprofit organization working to secure a safe and stable climate by accelerating the global transition to net-zero greenhouse gas emissions and a thriving, just, and resilient economy.

c2es.org



Resilience First is the world's largest business network setting the standard for resilience leadership in the private sector for a safe, secure, and sustainable future. It serves as a platform for businesses to adapt, respond, and innovate in the face of converging crises and a rapidly changing world by facilitating collaboration and knowledge-sharing, and co-creating solutions.

resiliencefirst.org



Resilience Rising is a platform for collective impact, bringing together global and local mission-driven organizations, initiatives, and other entities to work in partnership and achieve systemic resilience to the world's most pressing challenges. We face an increasingly complex and interconnected future intensified by multiple converging crises. Driven by a purpose to drive widespread, rapid transformation, Resilience Rising galvanizes leaders, advances thought leadership, and builds capability and momentum for a safer and more sustainable future with a proven, cross-cutting solution – resilience.

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