

# Climate Resilience

A Guide for the CEO



WBCSD Leadership Program 2015



wbcsd education



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## Introduction

*“Climate change has happened because of human behavior, therefore it’s only natural it should be us, human beings, to address this issue. It may not be too late if we take decisive actions today.”*

**Ban Ki-moon,  
Secretary-General, United Nations**

### What is climate resilience?

Climate resilience is the ability to prepare for, mitigate and recover from the costs of climate impacts. It includes not only episodic weather events, but also long-term climate effects.<sup>1</sup>

### What does climate change mean for business? What does it take to build resilience?

The scientific evidence and the impacts occurring in social, environmental and economic systems demonstrate that climate change is real and is underway.<sup>2</sup> Many companies are already tackling climate change and have started to incorporate it into their business strategy and decision-making processes. Ninety percent of the companies in the S&P Global 100 Index acknowledge that current or future physical risks are likely to be caused by changes in climate.<sup>3</sup>

Building resilience to climate change is the capacity of social, economic and environmental systems to cope with a hazardous event, trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity and structure, while also maintaining the capacity for adaptation, learning and

transformation.<sup>4</sup> For business, this means the ability to prepare for, mitigate and recover from climate risks and impacts with minimum damage to social well-being, the economy and environment while pursuing commercial opportunities. It includes episodic weather events—which can be disruptive and impact production, sales, available market and continuity of business—as well as long-term climate effects.<sup>5</sup> Cumulative changes in climate may also result in reduced production capacity, higher operational costs and higher capital expenditures.

It is critical that CEOs and C-suite executives ensure that the potential risks and opportunities afforded to their business models have been identified and assessed in order to be aware of the consequences of their decisions and how they could affect the long-term sustainability of the company.

This report is designed to be a practical toolkit for CEOs and C-suite executives to begin the journey of building climate resilience into their businesses. The approach was achieved through literature reviews and interviews of key personnel in a number of different industries.

We propose a three-step approach to building a climate resilient business strategy—as shown in figure 1.

### Step 1. Understand the situation

Recognize that climate change is happening and increase awareness, identify critical climate change scenarios related to the business, understand their potential effects in order to determine possible impacts on the entire value chain.

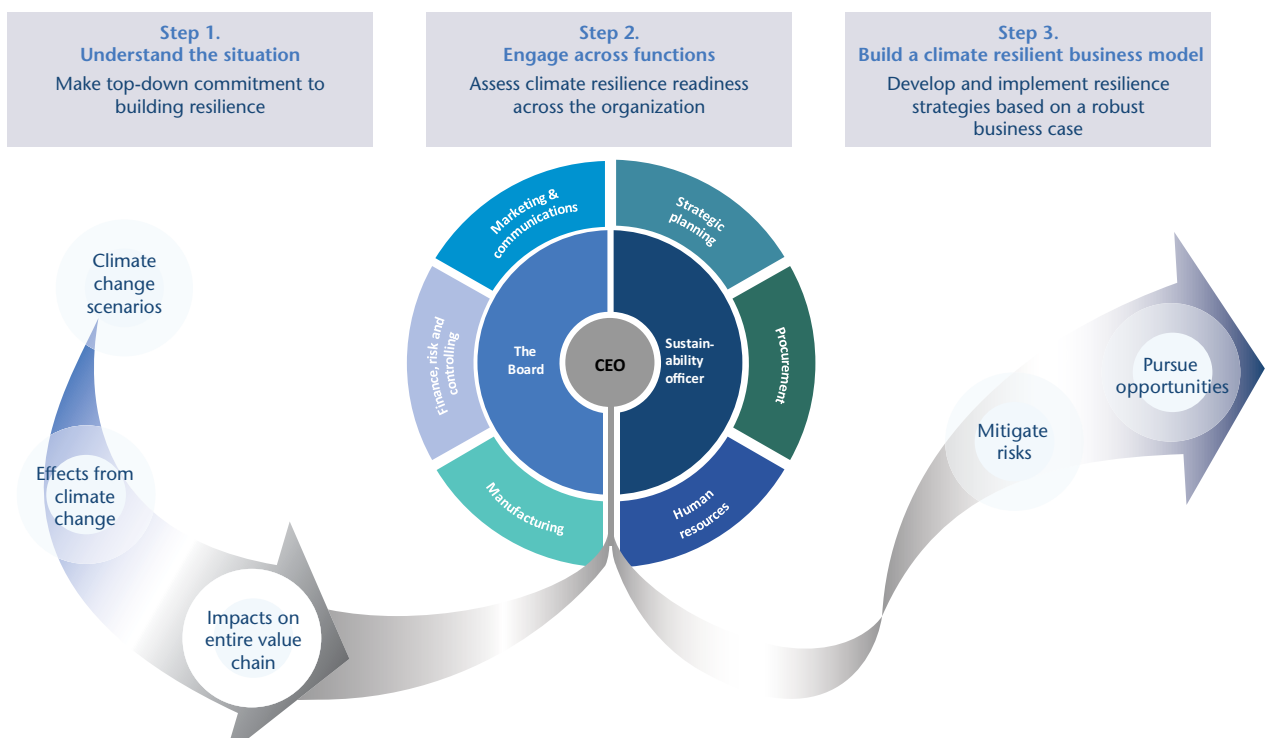
### Step 2. Engage across functions

Connect with various departments across the organization to assess their readiness in terms of climate resilience and challenge the leadership team to identify potential risks and how they can contribute to building climate resilience.

### Step 3. Build a climate resilient business model

Following the initial steps, consolidate the insights gained from the engagement across the organization to define and communicate the strategic path and implement measures to build climate resilience based on a clear business case.

Figure 1: A three step approach to building a climate resilient business strategy





## The time to act is now

Ninety seven percent of scientists who publish in the field of climatology agree with recent estimates that anthropogenic greenhouse gas emissions are the highest in history.<sup>6,7</sup> Recent changes to the climate have had widespread impacts on human and natural systems.<sup>8</sup> Changes in climate have disrupted business, impacting on its efficiency, profitability and stability. Globally, extreme weather has resulted in over US\$175 billion in losses and damage annually over the past decade.<sup>9</sup>

Experts predict that exceeding a two degree rise in average global temperatures is the tipping point for the climate beyond which irrevocable changes will occur.<sup>10,11</sup> The two degrees scenario ("2DC") therefore has been agreed to be the maximum desired level.<sup>12,13</sup> Achieving the 2DC scenario will require urgent and collaborative efforts by business, government and civil society.<sup>14,15</sup>

Controlling climate change would require substantial and sustained reductions in greenhouse gas emissions that, together with adaptation, can limit climate change risks.<sup>16,17</sup>

While the climate change impacts increase, the risks for business also increase. These risks are related to natural resource availability, supply chain disruptions, damage to infrastructure and utilities, disruption in the logistics process, heightened price and market volatility, and unpredictable impacts on the workforce and consumers.<sup>18</sup> Numerous reports highlight the global impacts and costs associated with climate change,<sup>19,20</sup> with some studies estimating that the cumulative global cost of climate change impacts could be as high as US\$4 trillion by 2030 if we continue a business-as-usual approach.<sup>21</sup> This scenario demands a

reappraisal of climate risk and a comprehensive strategy for resilience.<sup>22</sup>

Climate change caused by human activity is well accepted within the scientific community and, as a result, forward-looking companies are going beyond mitigation and adapting their business models to build resilience to ensure long-term survival.<sup>23,24</sup>

Resilience must include action on two fronts simultaneously: avoiding the upcoming challenges by proactively reducing emissions to slow the rate of climate change and managing the unavoidable risks of climate change by enhancing adaptive capacity (adaptation).<sup>25</sup> Both are required to achieve a low-carbon, climate resilient economy.<sup>26</sup> Companies that rigorously assess their risks and opportunities and implement solutions that build long-term resilience will create business value while making important contributions to sustainable development.<sup>27,28</sup>

It is important that businesses evaluate the potential costs of climate change impacts and compare those to resilience costs and the potential benefits provided by resilience actions. This type of analysis is essential for business planning and investment.<sup>29</sup>



## Why the CEO is key to building climate resilience

CEOs can have a significant impact by making their business models future-fit, not just in traditional financial terms but by considering the physical environment in which the business will be operating in the years to come. Committing to and building climate resilience is founded on sound business strategy as it minimizes risks and aids in the pursuit of new opportunities.

These opportunities include reduced capital costs, increased demand for existing and new products or services, premium price opportunities, increased production capacity for carbon-advantaged products, increased capital availability, increased market valuation, new product and investment opportunities and wider societal benefits.<sup>30</sup>

## A framework to build a climate resilient business strategy

From the literature review, we understand that different industries are increasingly aware of the need to build climate resilience. However, we observed a requirement for a simpler approach and an actionable framework to incorporate building climate resilience into business strategies.

To validate our hypothesis, ten industry experts from five companies representing various functions including corporate sustainability, strategy and planning, operations and environment, and health and safety were identified for interviews as primary research.

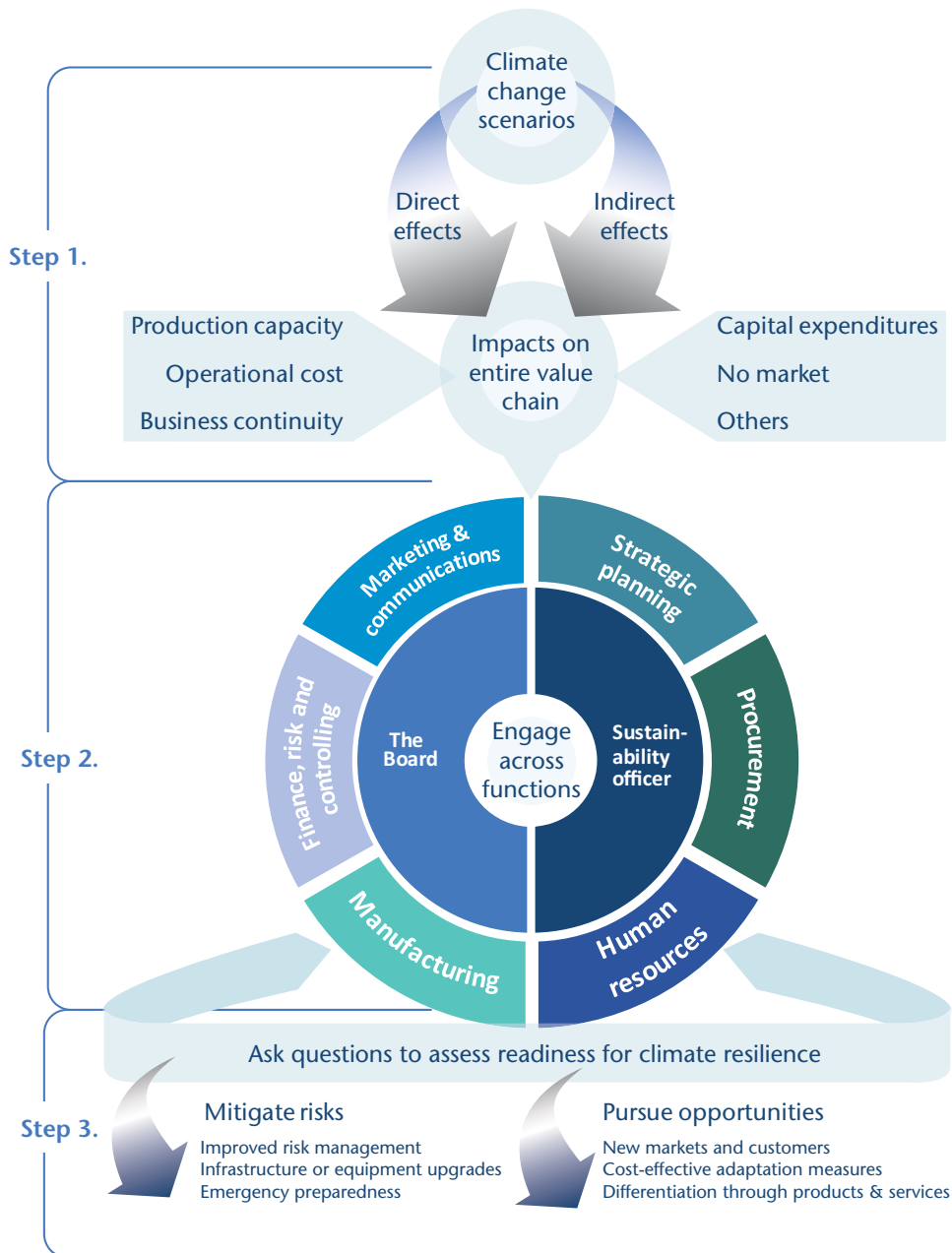
These insights helped us develop an actionable framework for CEO's to address climate resilience issues. (see figure 2).

### **Step 1: Understand the situation**

Identify the most critical climate change scenarios (for the sector/business) and analyze their effects on the value chain, such as reduced production capacity, higher operational cost, business continuity, higher capital expenditure and market availability.



Figure 2: Framework for building a climate resilient strategy



## Step 2: Engage across functions

Connect with key internal stakeholders in the various business functions in order to assess gaps and readiness.

The following graphic highlights some of the key questions for different business functions to consider when building a climate resilient business model.

### Marketing & communications

As employees and customers see the impacts of climate events affecting the world around them increase, so will their demands on and expectations of business.

The opportunities for marketing rest in communicating with stakeholders—engaging employees (both new recruits and existing employees), customers and regulators in solutions, products and messages.

- Q.** How can climate resilience activities be communicated effectively to a wider audience, positioning the company as part of the solution and not the problem?
- Q.** What are climate-related benefits of the business model and how can these be used as a differentiator in the marketplace?
- Q.** What are the customer and consumer expectations, both today and in the future? Where is there room for disruptive product and service innovations?
- Q.** How can climate resilience be communicated effectively to suppliers? How can they become integrated in joint initiatives?

### Finance, risk and controlling

Building resilience must be grounded on a solid business case. Analytical and quantitative capabilities are essential for understanding challenges and enabling better decision-making. This is achieved by weaving climate aspects into existing processes and instruments, such as risk evaluation, capital expenditure budgeting and management reviews.

- Q.** How can value-at-risk in different scenarios be determined considering the severity of hazards, value of assets, cost and revenue streams and their vulnerability to climate change?
- Q.** Which risk management instruments can be applied to evaluating risks arising from climate change? Do new methods need to be implemented?
- Q.** How and where can capital expenditure budgeting incorporate long-term impacts from climate change? Which amendments need to be adapted to better understand value-at-risk for various investments?
- Q.** How can climate resilience be effectively integrated into capital market communication in order to gain lower interest rates and/or risk premiums?
- Q.** How can climate resilience measures and action with internal management reviews be combined? How can the most effective incentive for different lines of business be set?
- Q.** How can a loss aversion portfolio be optimized along the value chain? Does the climate risk portfolio balance cost-effective measures?

### The Board

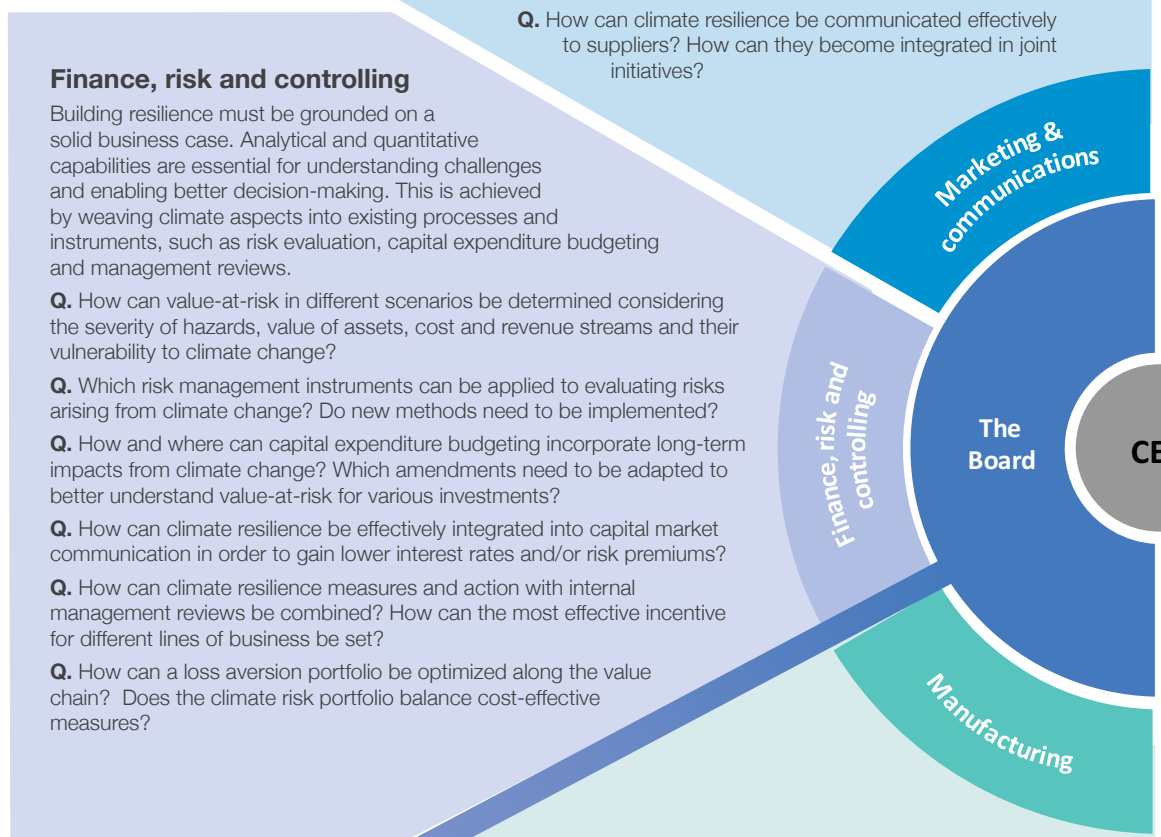
The Board has the fiduciary duty to oversee and supervise the long-term success of the company. Accordingly, it is also held accountable for enabling forward-looking measures and stimulating a climate resilience culture.

- Q.** Which climate change risks may affect continuity of the business considering both short- and long-term impacts?
- Q.** What are the fiduciary duties related to building climate resilience and to external reporting?
- Q.** How and where do climate resilience approaches need to be embedded into the organization?
- Q.** How is climate resilience, including actions and goals, implemented within the governance structure?
- Q.** What measures are appropriate in assessing progress and how could these be linked with management remuneration?

### Manufacturing

Building climate resilience into manufacturing units means ensuring business continues but can change risks into opportunities by making operations more competitive and robust.

- Q.** Which manufacturing facilities are at risk due to the direct and indirect effects of climate change?
- Q.** How can high-risk operating assets be reconfigured or moved elsewhere in order to increase resilience either upstream (e.g. use alternate commodities) or downstream (manufacture products adaptive to future climate and weather scenarios)?
- Q.** How suitable are the emergency preparedness systems in light of the changing climate and its effects? Are they reviewed with sufficient frequency, taking into account catastrophic events as well as long-term climate change impacts such as rising sea levels?
- Q.** How are climate change risks and opportunities considered in OPEX/CAPEX decision-making processes (e.g. purchase insurance, discontinue operations or upgrade infrastructure)?







## Strategic planning

Strategic planning can be an ambassador by weaving climate resilience considerations into company-wide decision-making and centrally coordinating the execution.

- Q.** What are the unique climate change challenges for the business model? Where is the company part of the solution or part of the problem?
- Q.** What are the risks and opportunities under different scenarios? Are any of these already considered in medium and long-term strategic planning compared to the likely timing of climate-based impacts?
- Q.** What are the direct and indirect climate change effects on the business? Where in the value chain will these occur? What are the influence levers?
- Q.** What costs and benefits derived from incorporating climate resilience need to be considered in strategic planning and decision-making?
- Q.** What kinds of solutions have been put in place to manage the known impacts? Which innovations have disruptive potential?



## Procurement

Assuring the best value is the task of the procurement department. Linking the “best value” strategy with climate change impacts is crucial.

Procurement functions will have higher exposure to and opportunities for screening and selecting the appropriate supply chain vendors to help build resilience.

- Q.** To what extent does the procurement function take climate change into consideration?
- Q.** What is the vulnerability to supply interruptions or price increases from suppliers due to climate-related events?
- Q.** What values are at risk and what are the de-risking potentials and costs of various adaptation options?
- Q.** How can the selection and diversification of suppliers mitigate the risk of interruptions?
- Q.** What are the procured goods and services carbon hotspots in the supply chain? What are the lower carbon intensity alternatives and are there any positive cost effects that could arise from substituting?

## Human resources

Employees and customers can be a company’s greatest assets in building climate resilience. Idea creation, innovative thinking and skill building are ways in which employees can help to make changes.

Importantly, good practice also shows that empowering employees to make change creates buy-in and helps to further develop the behaviors needed for a sustainable business.

- Q.** Are asset-protection systems prepared for climate disaster scenarios and are employees made aware of these?
- Q.** To what extent are business continuation processes adaptable if operations are stalled or surrounding infrastructure is weakened (e.g. how can employees get to work and return home safely in cases of extreme weather events)?
- Q.** How can employees be educated, motivated and incentivized to act on climate resilient behaviors?
- Q.** What are the skills and capabilities needed to build a climate resilient business model? How can these skills and capabilities be leveraged to support customers, suppliers, local governments and communities in enhancing resilience for their own operations and lives?
- Q.** To what degree do these skills and capabilities already exist within the organization? How can gaps be closed and existing skills capitalized on?

## Sustainability

Sustainability departments help to advise, coordinate and sometimes lead the collaborative inputs and actions by all core functions. Its role is facilitator and knowledge sharer.

- Q.** How is the department positioned within the organization to affect and influence change?
- Q.** What experience, knowledge and understanding of the various parts of the business is existent within the department?
- Q.** Which external networks and contacts can be utilized to exchange climate resiliency expertise and stimulate learning?
- Q.** What information can be gathered from environmental, social and governance related ratings to help with benchmarking, as well as forecasting for future requirements and regulation?

### Step 3: Build a climate resilient business model

- Develop a risk mitigation plan covering risk management, budgeting upgrades of infrastructure and equipment, and improved emergency preparedness.
- Identify opportunities such as access to newer markets, cost-effectiveness in adaptation efforts and differentiation through products and services.

Carrying out a cross-functional readiness assessment is an essential step in creating a robust business case. This requires buy-in and a clear, grounded understanding of the potential risks and opportunities that climate change brings for each department.

Insights gained from the readiness assessment can be consolidated into a strengths, weaknesses, opportunities and threats (SWOT) analysis to help reach a robust climate change strategy.

This analysis will form the basis of focus and help:

- Determine both gaps and strengths to derive the next steps
- Define, agree on and implement adaptation measures
- Define clear ownership and responsibilities
- Form a basis for how to monitor progress.

A business can create opportunities and counter climate change threats by making the most of its strengths and both recognizing and addressing its weaknesses. It is also essential to involve the sustainability department to help coordinate efforts and provide specific climate change subject matter expertise throughout the process.

Strengths	Weaknesses
Opportunities	Threats



## Case studies

Leading companies have adopted approaches to help create their climate resilience business case.

### **EDF**

A weather monitoring and modelling tool called Geriko enables ERDF, EDF's distribution network subsidiary, to evaluate the weather risks for the network two or three days in advance (storms, winds, wet snow, ice, etc.) For instance, Geriko warned about Storm Joachim in December 2011, allowing ERDF to put staff on stand-by. The storm left 700,000 customers without power but the advanced warning meant that 95% of them had service restored within 24 hours.<sup>31</sup>

### **Royal Dutch Shell**

Royal Dutch Shell has identified a management process to assess the threats that climate change creates throughout its worldwide oil and gas operations, including exploration, production, pipelines and communities. In 2014, Royal Dutch Shell adopted a dynamic management plan that can be evolved as needed. The plan includes modelling climate impacts on assets, management of climate risks within operating procedures and addressing impacts outside its own operations. The company uses modelling of future scenarios to help inform investments in and the design of new projects. For existing assets, Shell uses climate forecasts to conduct a screening approach and rank assets.<sup>32</sup>

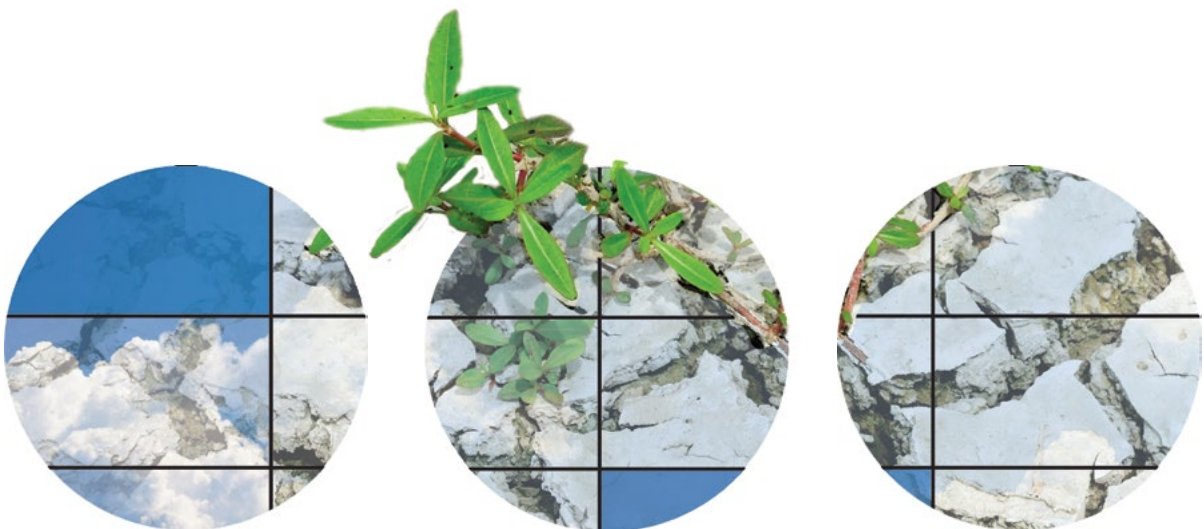
### **Water scarcity**

For companies that rely on water for their operations, drought can be an important stressor, as can other stressors that affect water supply and demand, such as flooding, changing precipitation patterns or reduced snowpack. For example, one of the cement companies interviewed indicated that it has used its strength of having multiple production locations in different areas around the world to balance the water scarcity issue that has been challenging production throughout 2015 in Brazil, where it has major operations. Taking the climate change risk into consideration in production planning, the company has successfully created counter-balancing opportunities to use its broad global footprint to tackle climate change risks.



## Conclusion

Climate change is a fact and it is happening now. Building climate resilience through business strategy development will help reduce risks and uncover new opportunities. CEOs can have a significant impact by making their business models future-fit by considering the physical environment in which they will be operating in the years to come. This CEO guide proposes a simple and actionable three-step process and a conceptual framework to build climate resilience: understand the situation; engage across functions; build a climate resilient business model.





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### About the World Business Council for Sustainable Development (WBCSD)

The World Business Council for Sustainable Development (WBCSD), a CEO-led organization of some 200 forward-thinking global companies, is committed to galvanizing the global business community to create a sustainable future for business, society and the environment. Together with its members, the council applies its respected thought leadership and effective advocacy to generate constructive solutions and take shared action. Leveraging its strong relationships with stakeholders as the leading advocate for business, the council helps drive debate and policy change in favor of sustainable development solutions.

The WBCSD provides a forum for its member companies - who represent all business sectors, all continents and a combined revenue of more than \$8.5 trillion, 19 million employees - to share best practices on sustainable development issues and to develop innovative tools that change the status quo. The council also benefits from a network of 70 national and regional business councils and partner organizations, a majority of which are based in developing countries

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