

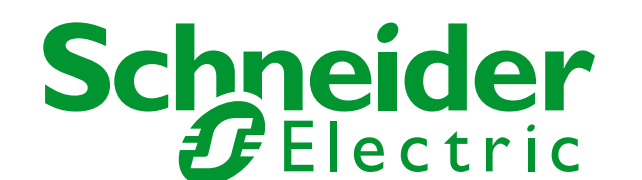


# Creating Sustainable Impact: Building Resilience Through Climate Adaptation

December 2024



Life Is On





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# Foreword





# Foreword

This report highlights the importance of corporations addressing climate change risks and adaptation planning amidst escalating climate change impacts.

This report not only outlines the challenges and opportunities faced by corporations, but also provides best practices and recommendations to foster climate adaptation actions.

Additionally, Nature-based Solutions are also highlighted as a means to enhance resilience, while assisting communities and ecosystems in adapting to a changing climate.

The data presented stems from both quantitative and qualitative studies involving companies across a range of industries. Perspectives from industry stakeholders such as financial insurers, financial institutions, governments, and others, are also shared throughout the paper.

The IPCC's Synthesis Report of the Sixth Assessment Report (AR6) emphasizes the urgent need for immediate action to limit the global temperature rise to 1.5°C compared to pre-industrial levels. This action requires both climate mitigation and climate adaptation. While climate mitigation takes precedence in most corporate agendas, climate adaptation efforts are falling behind.

It is with great pleasure that **Women Action Sustainability (WAS)** has collaborated with **Schneider Electric** to bring this report to the market: "Creating Sustainable Impact: Building Resilience through Climate Adaptation."

Adaptation is highlighted as a major emerging trend, given the increasing frequency and intensity of extreme weather events, and corporations are experiencing the impacts of climate change.

At the time of this report, a devastating natural disaster has happened in Valencia (Spain). We would like to remember all those impacted, send our condolences to all the families affected, as well as thank all of the volunteers who have worked in the field to restore infrastructure and support saving lives.

Through this report, we aim to **inspire action in climate adaptation** at the corporate level. We invite not only corporations but all stakeholders, including policymakers, financial institutions, and insurers, to engage in collaboration to drive and enable action in adaptation.

**Mónica Chao**

President, Women Action Sustainability (WAS)





# Foreword

Climate change constitutes one of the biggest threats to human well-being and to the planet's capacity to sustain us. It is a threat that is already being felt across all regions and presents urgent challenges.

We need to **share responsibilities and better coordinate efforts** to manage current and future damages resulting from climate change, and provide a preventive and adaptive response. Climate change affects all areas of public management and all territorial scales. This means that **we must build governance that ensures horizontal and vertical coordination**, involving all regional and local governments and with the active participation of society and its businesses, ultimately aiming to build a safer and more resilient economy and society.

As governments, we need to **provide coherent regulatory frameworks, strategic tools, incentives, and training** so that all key actors have the knowledge, skills, and resources necessary to manage climate risks. Creating a sense of competence and confidence in their own contributions to adaptation will be part of the success.

Finally, we **need a financial system that prioritizes the management of climate risks**. This requires careful assessment of physical risks, as well as their impact on the economy and employment. This work has already begun at the European and national levels and should help establish a new logic, a positive narrative that helps understand and measure the value of all preventive and adaptive actions to climate change, which are still considered costs today, as investments. This is a key trigger to incentivize action in the public and private sectors and to close the vulnerability gap to which we are exposed.

**Valvanera Ulargui Aparicio**  
Director of the Spanish Climate Change Office





# Foreword

It is with great pleasure that we present this report resulting from the ongoing partnership between WAS and Schneider Electric.

Schneider Electric's Sustainability Business division has observed that companies are increasingly aware of the threat that climate change poses on their operations, and the potential financial impacts of not taking climate action. The monetary impacts of climate risks range from the destruction of physical assets to higher interest rates for those companies less prepared to prevent such risks. We developed this paper to **provide guidance and actionable recommendations to improve business resilience in the face of a changing climate.**

One key takeaway from this report is that **effective climate adaptation plans are grounded at a local scale.** This involves examining local risks and crafting adaptation measures to alleviate specific challenges faced within specific regions or communities. This is why the EcoAct Climate Risk (ECLR) platform was developed by Schneider Electric's new consultancy arm, combining projections from the world's most precise climate models to map the exposure of assets under various scenarios and time horizons. High geographical resolution is paramount for companies to act locally and communicate tangible data with site teams.

We hope this report inspires ACTION by helping corporations develop robust climate adaptation and climate risk strategies.

**Raquel Espada**  
Vice President, Strategy & EMEA Sustainability Consultancy,  
Schneider Electric Sustainability Business

Women Action Sustainability is a non-profit association whose main purpose is to promote sustainability as a strategic priority for companies, institutions, and society.

In pursuit of this goal, we created this report in collaboration with Schneider Electric to tackle the urgency to improve climate adaptation within companies, and how to achieve it.

While businesses around the world are showcasing efforts to mitigate their impacts on the environment, including reducing their GHG emissions, it is scientifically proven that climate trends will evolve, and **current ways of operating will need to change accordingly to ensure the resilience of activities.**

**This transformation requires investments.** The involvement of the banking and financial services sectors is key to supporting companies in the implementation of their adaptation plans.

In addition, **WAS calls on the public administration and scientists globally,** to help companies on this path by providing the necessary standardized guidance, tools, and resources.

**Ana Peña**  
President, Climate Change Group, Women Action Sustainability (WAS)



# Executive Summary





# Executive Summary

This report delves into how businesses across diverse industries and regions are responding to the pressing need for climate adaptation. Drawing on qualitative and quantitative research, the findings not only unveil the **progress achieved in adaptation strategies** but also illuminate **opportunities** and persisting **gaps**.

When discussing climate adaptation, understanding climate risk is crucial. Climate risk is a financial risk that will have a significant impact on corporate P&Ls. According to the UN, **\$4tn in losses were attributed to extreme weather events over the last 50 years**. The frequency and severity of climate-related disasters are expected to increase year over year — reinforcing the urgency to develop climate adaptation plans and actions.

This study specifically focuses on **physical climate risks**. Climate insurance is vital for mitigating financial risks from climate impacts; however, **30%** of surveyed companies lack insurance coverage due to challenges in assessing future climate impacts. The study also reveals that respondents lag on implementing **Nature-based Solutions**.

The results from our survey highlight that **only 38%** of respondents have clear climate adaptation plans, and just **6%** have fully implemented all outlined measures. Moreover, **only 12%** have detailed methods to assess the financial impact of physical climate risks. This report spotlights six key challenges and shares business opportunities to drive action in adaptation. Additionally, it identifies five key enablers crucial for successful adaptation.

Finally, this report presents a set of **recommendations** that companies can take to proactively lead climate adaptation, including integrating climate risk into business strategies, conducting a climate risk assessment to identify and quantify material risks, building a financial business case, and collaborating with different stakeholders across the ecosystem. These recommendations aim to guide companies in effectively addressing climate-related risks and opportunities, fostering resilience, and paving the path for long-term, sustainable business growth. Additionally, the report provides recommendations for regulators and public administrations to drive action in adaptation efforts.



- Enablers
- 1. Stakeholder Engagement
  - 2. Nature-based Solutions
  - 3. Technology
  - 4. New Financing Mechanisms
  - 5. Physical Assets





# Introduction





# Introduction

## The escalating impacts of climate change require stronger adaptation measures

Climate change is no longer a distant threat - it is a reality that is impacting every aspect of human life. In 2023, the Earth experienced its **warmest year on record**, with temperatures soaring 1.45°C above pre-industrial levels.<sup>1</sup> The increasing temperatures are resulting in rising sea levels and extreme weather events, causing businesses to face significant risks to their operations, supply chains, and long-term viability. The **economic losses** from these events are substantial and the global toll of **climate inaction** continues to rise.

Despite **warnings** from climate experts, studies still show **critical discrepancies** between current adaptation plans and the measures needed to avoid the increasing physical impacts of climate change. Reinforced by the IPCC's latest AR6 report<sup>2</sup>, industries worldwide must **rapidly adapt to the accelerating pace of climate impact** to sustain a low-carbon, climate-resilient future.

Climate risks and the need for resiliency are gaining wide attention from policymakers as well. **Climate adaptation** is identified as a main pillar in the EU-Taxonomy and Corporate Sustainability Reporting Directive (CSRD). At COP27, a significant milestone was marked with the approval of the Loss & Damage Fund<sup>3</sup>, a first step in minding the **huge gap in climate adaptation financing**.



"Integrating climate risk and adaptation strategies enhances the resiliency of businesses. Unmitigated impacts of climate change contribute to financial loss in the near and long-term, from destruction of physical assets to higher interest and insurance rates. Schneider Electric is a dedicated leader in sustainability innovation and supports collaboration for impactful climate-friendly business solutions."

**Steve Wilhite**  
President of Schneider Electric Sustainability Business

# 240

Climate-related events recorded globally in 2023<sup>4</sup>

# +1.45°C

Increase in the mean global temperature in 2023, the warmest year ever recorded<sup>5</sup>

# 80%

Companies without an adaptation plan in place yet<sup>6</sup>

# \$4T

Losses attributed to extreme weather events over the last 50 years<sup>7</sup>

# \$194-366B

Current Adaptation Finance Gap per year<sup>8</sup>

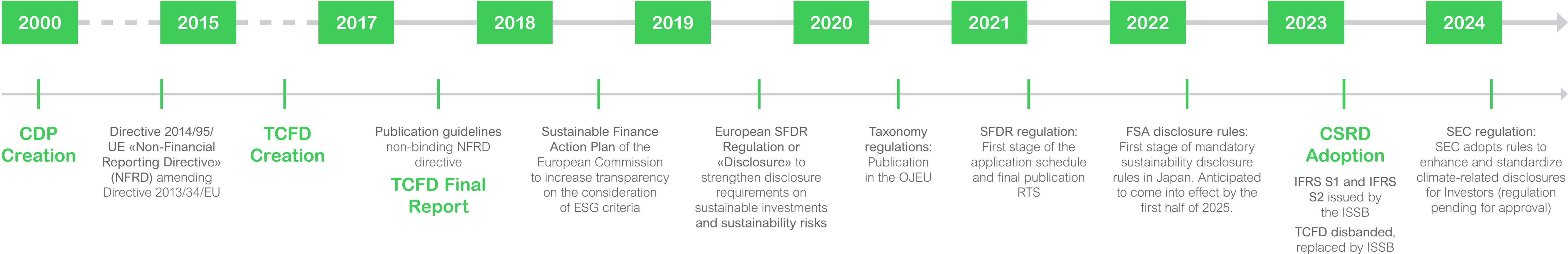




# Introduction

## From voluntary disclosure to compliance

### Timeline



### Climate Rules & Disclosure Requirements

<p><b>TCFD Recommendations</b></p> <ul style="list-style-type: none"> <li>Processes for identifying, assessing, and adapting to climate-related risks</li> <li>Impacts on the organization’s businesses, strategy, and financial planning</li> <li>Resilience of the organization’s strategy</li> </ul>	<p><b>EU Taxonomy</b></p> <ul style="list-style-type: none"> <li>Economic activities that contribute to climate change mitigation and adaptation</li> <li>Promotes sustainable investments</li> </ul>	<p><b>CSRD Disclosure</b></p> <ul style="list-style-type: none"> <li>Double materiality assessment</li> <li>Climate related risks and opportunities</li> <li>Adaptation strategy, resilience of business model</li> </ul>	<p><b>ISSB’s IFRS S1 and IFRS S2</b></p> <ul style="list-style-type: none"> <li>Voluntary standards on sustainability (S1) and climate (S2)</li> <li>Source of information for investors</li> <li>Adaptation strategy and resilience of business model</li> </ul>	<p><b>SEC’s Climate Rule</b></p> <ul style="list-style-type: none"> <li>Processes for identifying, assessing and managing material climate-related physical and transition risks and opportunities</li> <li>Scenario analysis</li> </ul>
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# Current Landscape



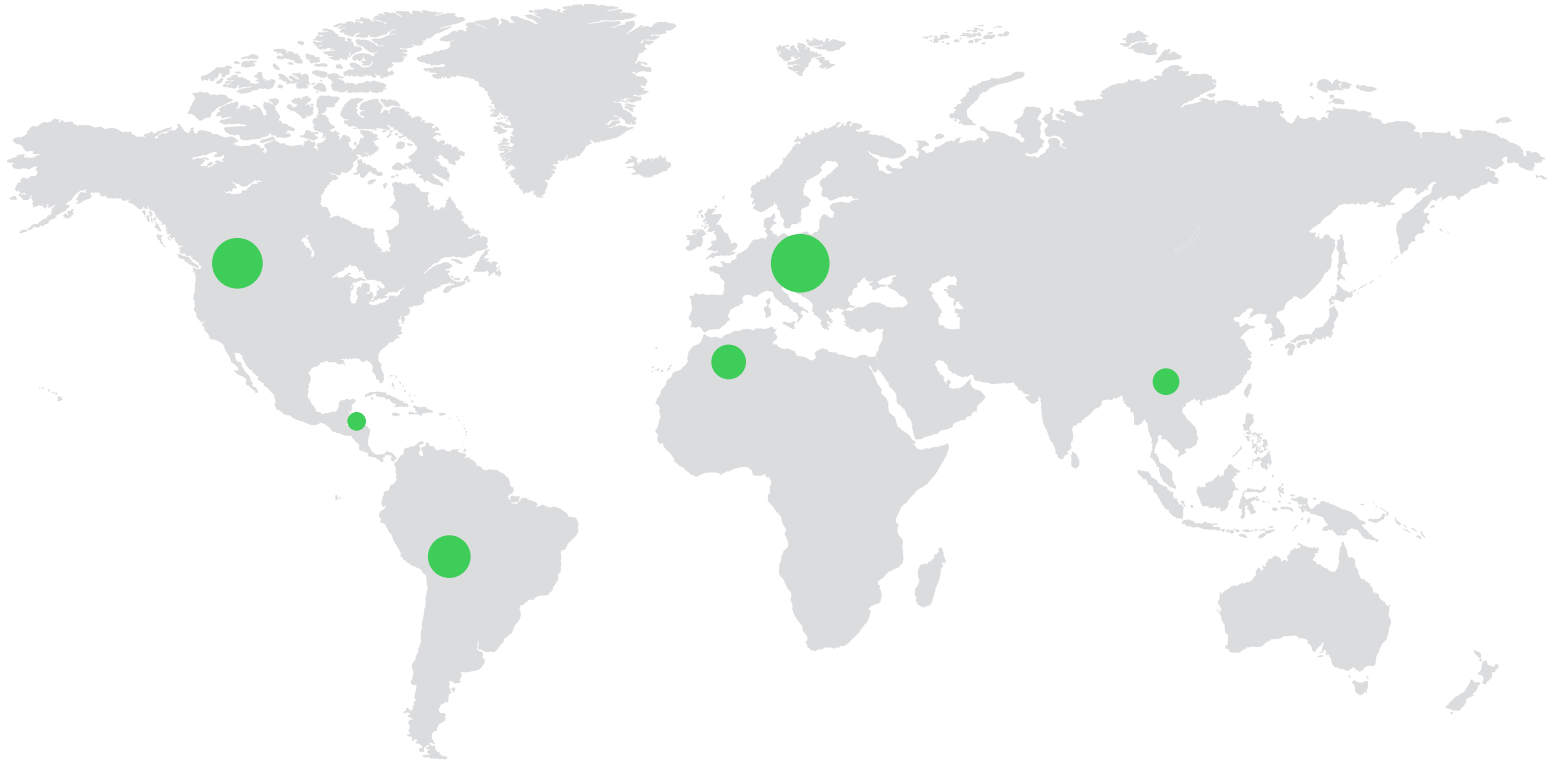


# Profile of Companies Surveyed

This study explores how businesses across diverse industries and regions are addressing the urgent need to adapt to climate change. Based on qualitative and quantitative research, results reveal not only the progress made with adaptation strategies, but also the gaps and opportunities that remain.

Over 60 market-leading companies and stakeholders contributed to this research, providing quantitative data through an online survey and qualitative insights via interviews. This approach offered unique and comprehensive perspectives to understand the challenges and opportunities in this landscape.

The companies surveyed have both a **global** and **sectoral** presence (representing **15** different industries around the world)



## 78%

of respondents are from large enterprises (500+ employees)

## 34%

will report to CSRD in 2025

## 62%

of respondents hold the position of Head of Sustainability, and also include leaders from cross-functional teams, including Climate Risk and Adaptation, Finance, Quality, and HR.





# Bracing for the Inevitable Risks of Climate Change with Climate Adaptation

Climate risk is defined as the potential for climate change to create adverse consequences for human or ecological systems<sup>9</sup>. While two types of climate risks exist — physical and transition — **this research exclusively focuses on physical climate risks**.

Companies can proactively prepare for physical climate risks through **climate adaptation measures**. Unlike mitigation, which focuses on reducing the causes of climate change (mainly greenhouse gas emissions), climate adaptation addresses the impacts of climate change that are already occurring or are inevitable. The aim of climate adaptation is to minimize impact and to gain potential benefits through preparedness.

From a regional perspective, companies are addressing climate adaptation with varying degrees of progress and success. While there are significant advancements in the number of adaptation projects underway with dedicated funding, there is still a significant gap in implementation and impact<sup>10</sup>.



## What are Physical Risks?

Physical risks are directly caused by weather and climate phenomena. They are divided into:

- **Physical acute risks** – refers to the increased severity of extreme weather events, such as cyclones, hurricanes, heat or cold waves, or floods.
- **Physical chronic risks** – refers to longer-term shifts in climate patterns (e.g., sustained higher temperatures, changing precipitation patterns) that may result in sea levels to rise or chronic heat waves.



## What are Transition Risks?

Transition risks are caused by the transition of society towards a 1.5°C - aligned future. They are divided into:

- **Policy and legal risk** – new climate regulations impacting the company, and litigation risk in case of non-compliance.
- **Technology risks** – failed investments or lack of access to technologies that contribute to the reduction of the GHG footprint.
- **Market risk** – shifts in supply and demand due to the transition to a lower-carbon economy.
- **Reputation risk** – loss of reputation due to climate commitments or action perceived as insufficient by the public.





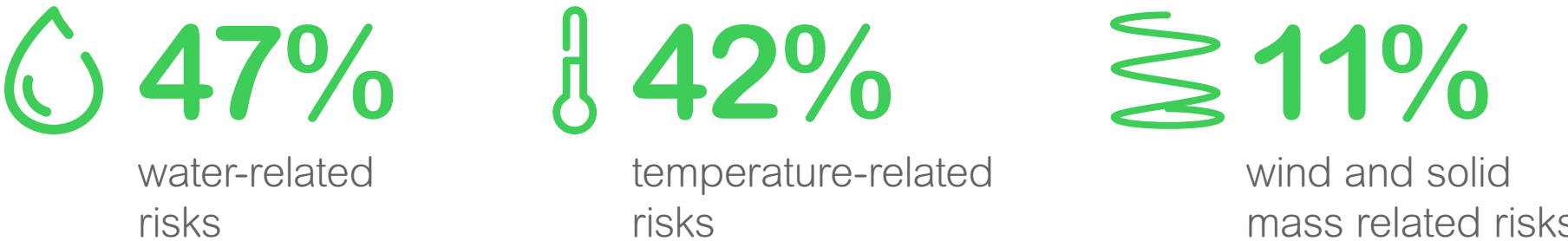
# Climate Change Impacts Local Communities, Businesses and Value Chains

The companies surveyed are already experiencing the accelerating consequences of climate change, with impacts particularly concerning water and temperature. In many cases, the impacts have affected local communities, business activities, and the value chain — resulting in direct and indirect effects on economic stability and community well-being<sup>11</sup>:


- **Droughts and floods** not only devastate crops, but they also impact water-intensive industries like chemicals, textiles, and food processing.
- Within the energy sector, **reduced water availability** can impact hydropower generation, while **higher temperatures** can restrict the use of nuclear reactors, resulting in significant implications for electricity production. Additionally, **heatwaves** can stress energy grids, causing power outages and increased energy costs.
- Severe weather events such as **hurricanes and storms** can harm physical assets, damaging infrastructure, buildings, equipment, and inventory.
- **Extreme temperatures, poor air and water quality**, and severe weather events also pose serious health risks.

As Antonio Guterres, UN Secretary General, mentioned in his address for the [Adaptation Gap Report Launch \(November 2023\)](#) **we are in an adaptation emergency**. We must act like it, and take steps to close the adaptation gap, now.

## Most critical risks identified by companies surveyed:



## To what degree have climate hazards impacted:

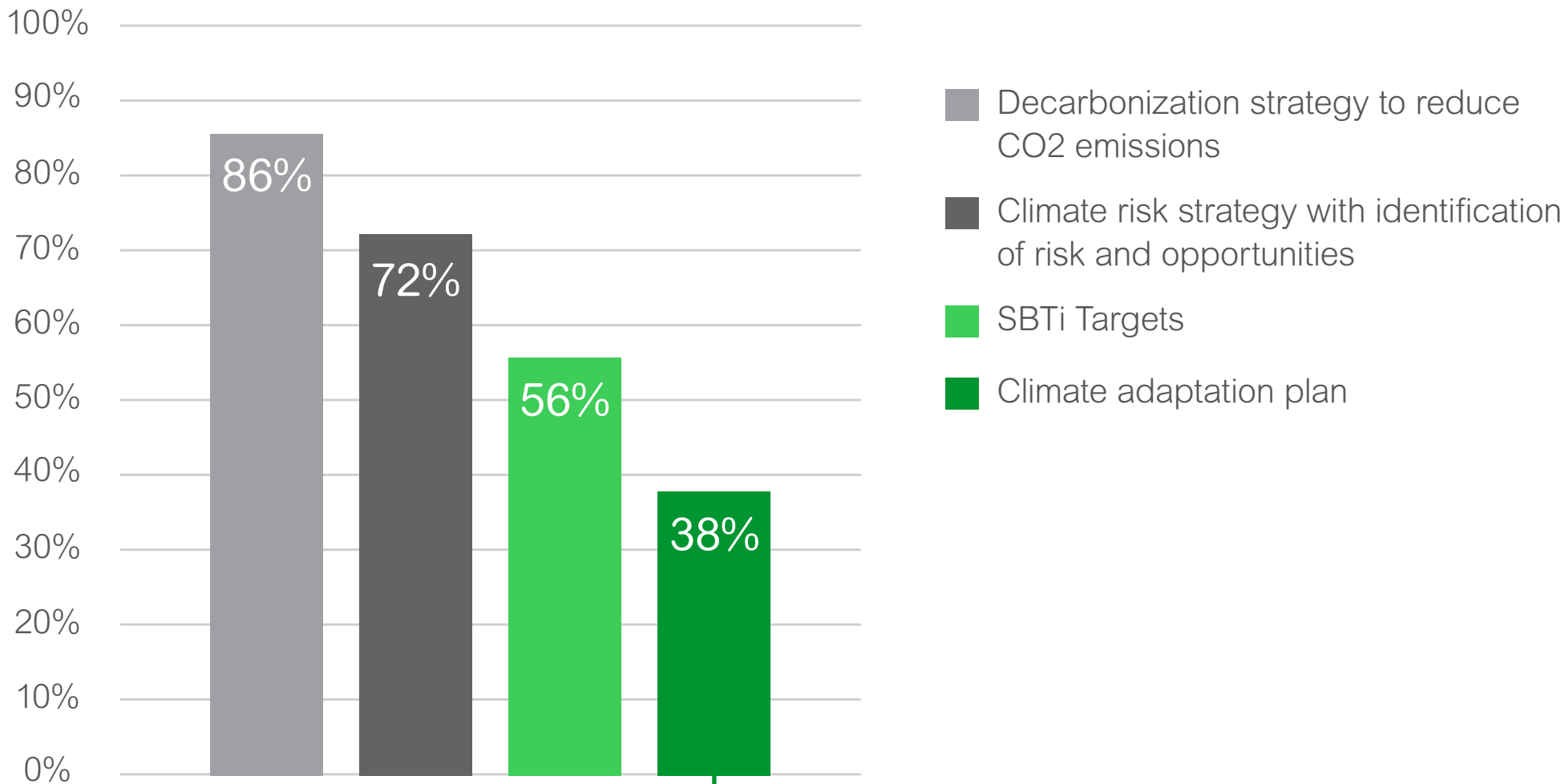
If you want to know more about water risk: [Water risk management](#) report





# Companies Have Historically Prioritized Mitigation Efforts Over Adaptation, But a Shift is Underway

## Actions companies have taken to respond to climate change



While 86% of the companies surveyed have a mitigation strategy in place, **only 38%** have established a clear climate adaptation plan, and among them, **only 6%** have implemented all measures outlined in their adaptation strategy.

Companies have historically focused more on mitigation efforts because they may seem easier to quantify and regulate, while climate adaptation has been perceived as more complex, uncertain, and expensive.

These findings align with a recent study from S&P Global indicating that while 94% of businesses recognize the risks associated with climate change, only one-in-five have publicly disclosed an adaptation plan<sup>12</sup>.

**Indeed, the research also shows that a change is underway.** The urgency around climate adaptation is growing, with more stakeholders recognizing its importance and investing in adaptation measures<sup>13</sup>.

**29%**  
Have not implemented their adaptation plan yet

**65%**  
Have started implementation, but have not finalized it yet

**6%**  
Have implemented all adaptation measures

Among the sample surveyed, companies in the **chemical industry** had the highest relative number of adaptation plans, followed by companies in the **energy and the construction sector**. These results suggest stronger proactivity in sectors with high exposure to physical risks and stricter regulatory pressures.

**70%**  
of surveyed companies distinguish their climate actions in terms of **mitigation and adaptation**



# Companies Have Different Drivers and Tools for Assessing Climate Risk

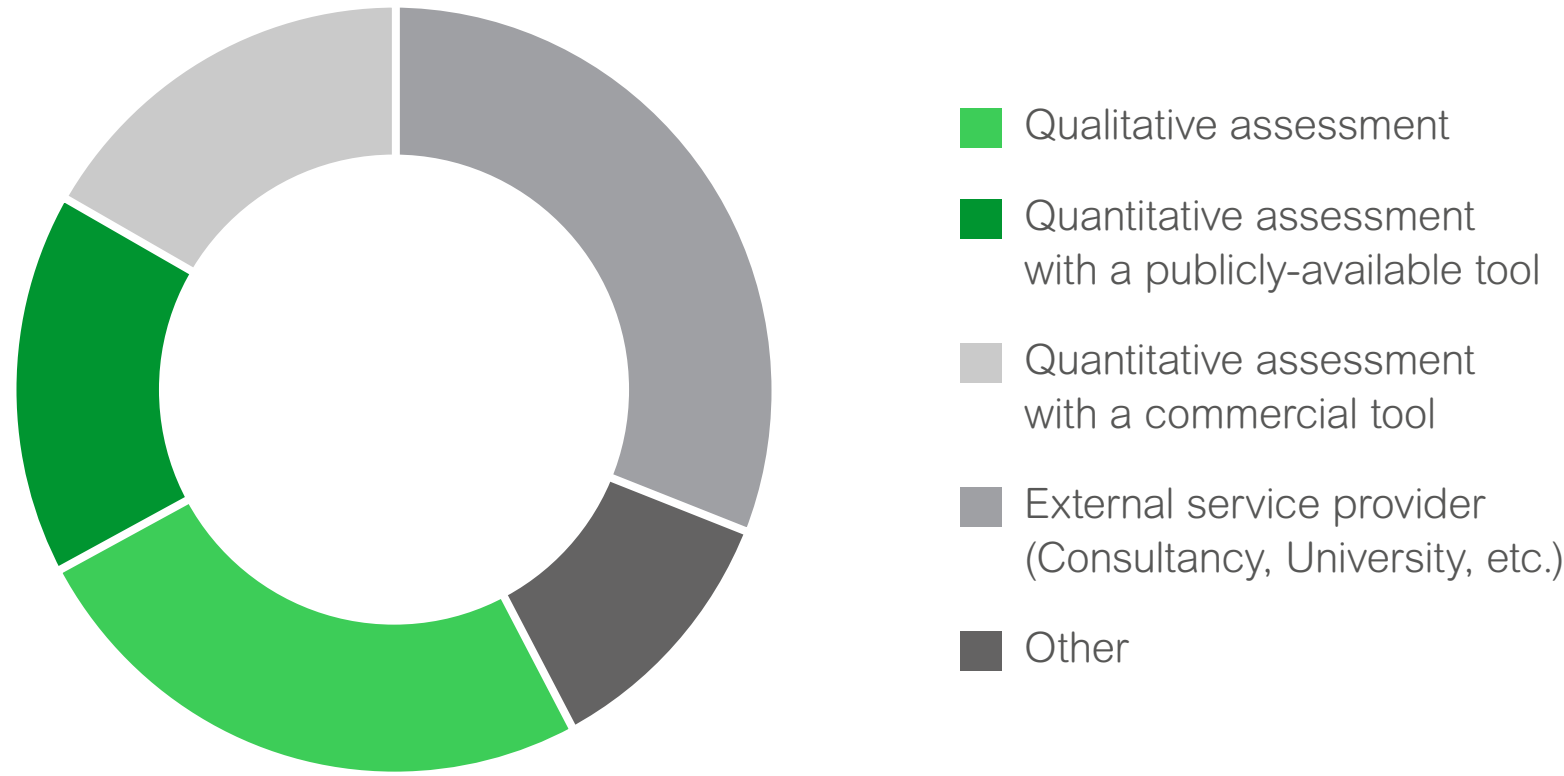
It is crucial to understand the motivations corporations have when developing their adaptation strategies. Based on the survey analysis, four drivers stand out: the internal need to **protect assets and ensure business continuity (29%)**, creating **competitive advantage (25%)**, and responding to **compliance requirements (22%)**. Companies are also driven by **stakeholder expectations**, including investors, NGOs, and customers who demand robust climate risk strategies and adaptation plans.

According to survey data, companies employ a **wide variety of tools** to evaluate climate risk. At present, there is no established standard among companies, leading to potential overlap or inconsistency, which can complicate the formulation of effective adaptation strategies.

## Why do companies have risk strategies?



## Methodologies to assess climate risk



**Only 12%** of the companies surveyed have very detailed methods to quantify the financial impact of physical climate risks. This financial impact assessment translates, on average, to **15-17%** of total revenues of the companies surveyed.

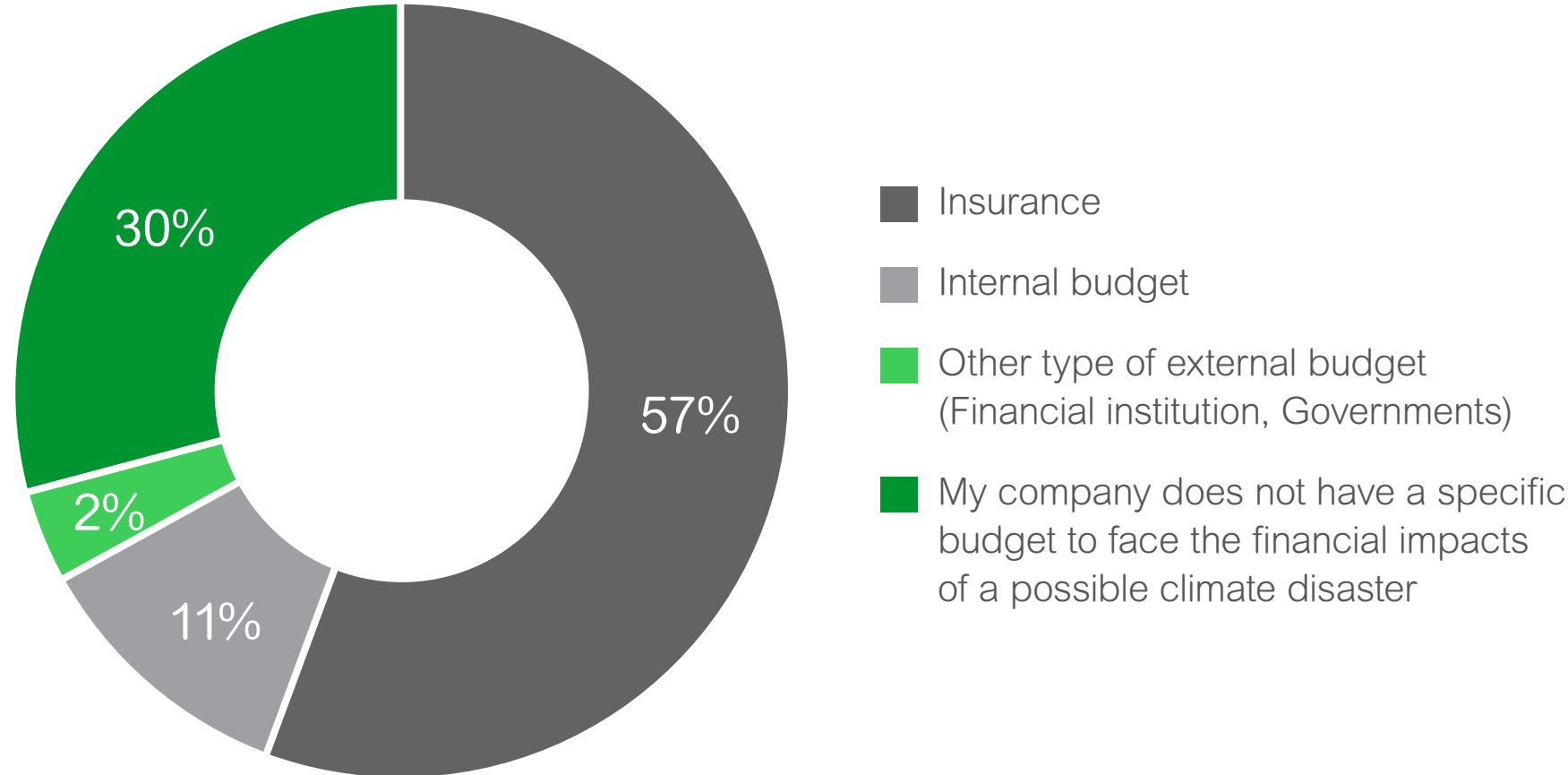


# Climate Insurance Supports Businesses in Managing Financial Risks and Implementing Effective Climate Adaptation Measures

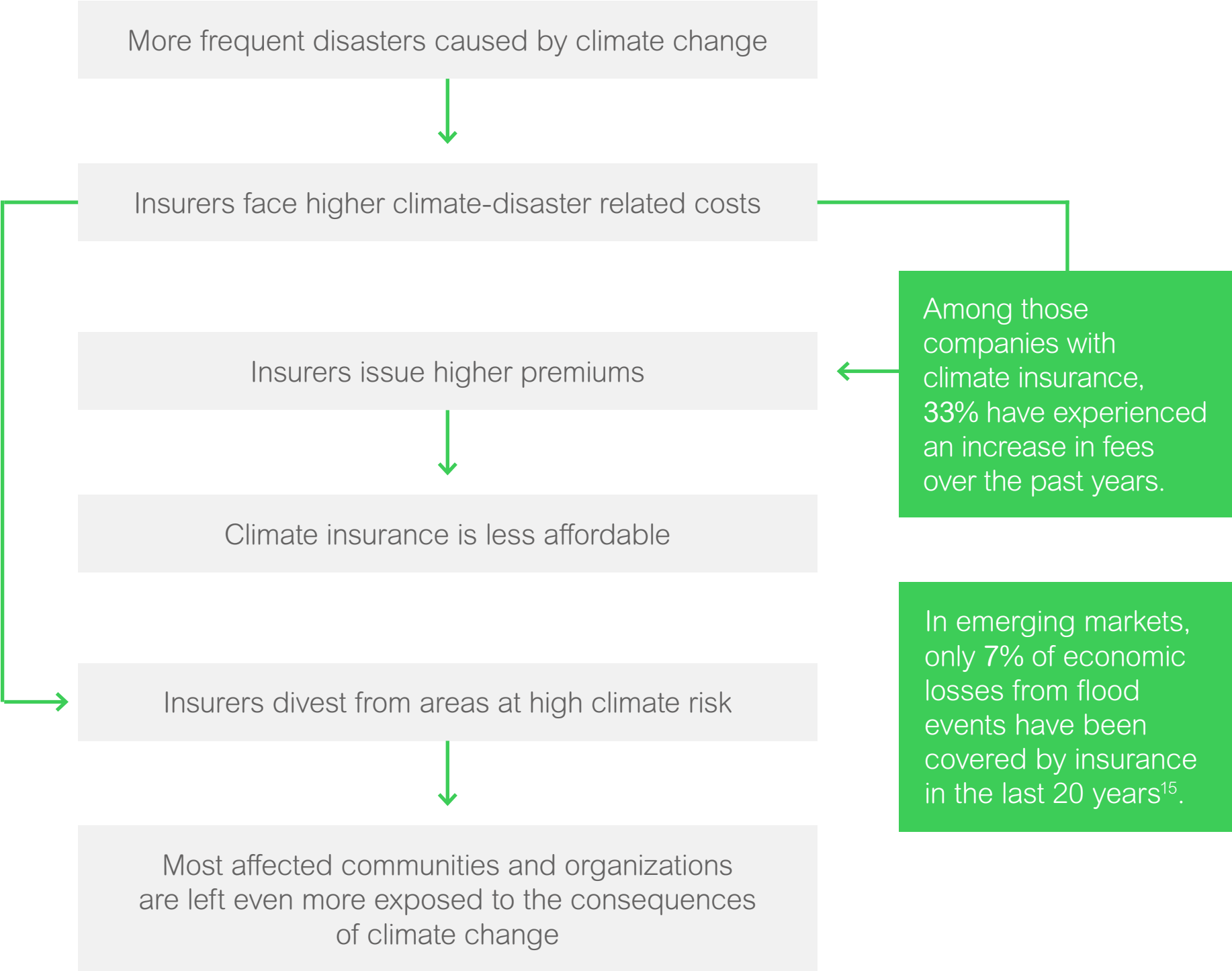
Climate insurance plays a crucial role in managing the financial risks associated with climate impacts. By transferring risk to insurers, companies can protect themselves against significant financial losses due to extreme weather events and other climate-related hazards. Interestingly, 30% of companies surveyed in our research sample are not insured against physical climate risks. This vulnerability stems from a combination of factors, including difficulty in assessing future climate impacts.

Indeed, climate insurance not only provides a financial safety net but also incentivizes businesses to implement proactive adaptation measures<sup>14</sup>, as they often offer lower premiums to companies that demonstrate robust risk management practices. This creates a direct financial incentive for businesses to prioritize adaptation, reducing their risk exposure and operational costs.

## How are companies prepared for the financial consequences of a possible climate disaster?



## Climate change impact on climate insurance





# Private Companies Have Not Fully Embraced Nature-based Solutions for Climate Adaptation Planning

The EU Commission defines Nature-based Solutions (NbS) as strategies that simultaneously provide environmental, social, and economic benefits while building resilience. These methods offer practical solutions to protect companies' activities from climate threats, enhance biodiversity, and safeguard ecosystems.

When asked about the use of Nature-based Solutions, **more than half** of all respondents said they have **not implemented or invested in any form of Nature-based Solutions** to adapt to climate change.

Despite the significant benefits of NbS, there is a shortfall for the global financing of nature conservation that exceeds \$700 billion. Currently, the majority of NbS projects are funded by public and philanthropic sources, with the **private sector** contributing **only 14%** of the capital<sup>16</sup>.

**Of the 34% respondents who have implemented Nature-based Solutions, most are focused on forests, agriculture and water**

### Forests

- Forestry and ecological restoration
- Reforestation and forest conservation projects
- Afforestation
- Financing reforestation
- Natural space preservation

### Agriculture

- Regenerative agriculture
- Promote biodiversity to improve pest control in crops

### Water

- Water balancing projects
- Rainwater harvesting

## Implementation of Nature-based Solutions Among Survey Respondents



# 55%

of surveyed companies have not implemented **Nature-based Solutions**

By investing in Nature-based Solutions, companies contribute to their business' resilience and the long-term sustainability of our planet.



# Best Practices: Turning Challenges into Opportunities





# Key Challenges and Opportunities

In the process of evaluating climate risks and creating adaptation strategies, survey participants often mentioned that the most significant challenges were:

- 1. Absence of a universally-standardized methodology
- 2. Complexity of climate models
- 3. Data scarcity
- 4. Regulation
- 5. Internal and external collaboration
- 6. Financing

In this chapter, we delve into **these six challenges** and the resulting **opportunities** in greater detail. Moreover, we offer **best practices** to motivate companies to take action in adaptation.

# 50%

of respondents said that navigating the complexity of climate science and risk analysis methodologies is one of the main challenges they face on their climate adaptation journey.



“The key to boosting climate adaptation efforts within the corporate world is to consider it from a positive standpoint and switch our focus towards the great opportunities generated by climate change available for companies to seize. These can be identified and built upon through adaptation actions to benefit businesses in many ways.”

**Iñigo Losada**  
Director of Research, IHCantabria





# 1. Developing a Unified Methodology and Fostering Greater Dialog to Steer Companies Along Their Adaptation Journey

### Challenge

#### Missing guidance and a standardized global methodology

Many survey respondents cited the **lack of a standardized global methodology** or framework as a major challenge. With requirements for companies to establish adaptation plans, such as the Sharm-El-Sheikh Adaptation Agenda, and regulations such as the CSRD or the Spanish Plan Nacional de Adaptación<sup>17</sup>, there is no standardized methodology on how to do so. Furthermore, there is no benchmark for what constitutes a successful adaptation plan. This leaves companies without benchmarking guidance, making them feel isolated in their adaptation efforts due to the lack of clear direction.



### Opportunities

#### Embrace the development of a global methodology

Having a **global standardized methodology to support companies** in their adaptation planning and implementation journey is critical to promoting action. This methodology should include input from different stakeholders and offer comprehensive guidelines on steps to follow, including:



#### The Sharm-El-Sheikh Adaptation Agenda (SAA)

- Launched at **COP27**
- **30 global** adaptation outcome **targets** to be achieved by 2030
- Enhance the resilience of **4 billion people**
- Drive transformation across **five impact systems**: food and agriculture, water and nature, coastal and oceans, human settlements, and infrastructure
- Includes **enabling solutions for planning and finance**<sup>18</sup>.





# 2. Leveraging Double-Materiality Analysis and Building Knowledge to Navigate the Complexity of Climate Scenario Assessments

## Challenge

### Complexity of climate scenario assessments

When looking at developing adaptation plans and strengthening business resilience, companies might not know where to begin. A first critical step is to assess the climate risks that apply to the company and identify which risks are most material. This can seem daunting when delving into the **complexity of climate model datasets** — but it doesn't need to be.

Companies in sectors such as infrastructure or energy often have specialized teams dealing with physical risks as those are critical for their business. However, in many other sectors, companies have only started to explore the climate adaptation topic by initiating the assessment of their climate risks and opportunities. In those cases, **understanding scientific climate data and manipulating climate models** to accurately project potential impacts on asset portfolios is a **challenge**.



### Case study: Ferrovial's ADAPTARE tool

Ferrovial, in collaboration with the Environmental Hydraulics Institute of the University of Cantabria, has developed a **unique methodology** to **identify, analyze, and assess the physical risks related to climate change** and to **propose adaptation measures** to mitigate the impacts they may cause on infrastructure. The analysis is carried out in the short, medium and long term in various climate scenarios. It takes into account the risk framework defined by the IPCC, as well as the adaptation criteria set out in the EU Taxonomy Regulation. **ADAPTARE** automates this methodology and facilitates the analysis and interpretation for project managers and developers.





# 2.<sup>(continued)</sup> Leveraging Double-Materiality Analysis and Building Knowledge to Navigate the Complexity of Climate Scenario Assessments

### Opportunities

#### Explore your company's most material topics

To mitigate the complexity of climate scenarios assessments, companies can conduct a **double-materiality analysis**, following the guidelines set out in the regulation. It will provide a clear picture of their main risks, opportunities, and impacts related to climate — and help decide where to place focus for possible deep-dive assessments and adaptation.

#### Prioritize risks and opportunities

Companies should **focus on a few key climate risks and opportunities** that are likely to have a substantive effect on their business, instead of getting lost in technical intricacies. These can be identified based on scenario assessment results but also their experience and knowledge of their activities.

#### Enhance your technical know-how

Enhancing the company’s technical capabilities can be achieved by **combining internal upskilling with external expert guidance**. This involves training the current workforce and recruiting skilled professionals, while leveraging external consultancies to stay abreast of industry trends.



“Climate adaptation has been embedded into Iberdrola’s ways of operating for many years and is a pillar of our business’ health. As an energy producer, we need to make sure our installations are resilient to climate hazards to avoid service interruptions. This aspect is taken into account at the design stage, as we continuously develop and implement innovative protection measures for our assets.”

**Mónica Oviedo**  
Head of Sustainability, Iberdrola





# 3. Facilitating Access, Affordability, and Usability of Data by Leveraging both Existing and New Data Sources while Seeking Guidance

## Challenge

### Difficulty in obtaining necessary data

Identifying a company's most critical climate-related physical risks, the likelihood of occurrences, and calculating financial impacts all hinge on the availability of accurate data.

Unfortunately, many companies often **have limited access to consistent, historical, and affordable data** that represents substantial challenges. The absence of reliable data makes the task of identifying and quantifying risks onerous, hindering effective decision-making in risk prioritization. This challenge is even more pronounced for smaller companies.

## Opportunities

### Leveraging existing data and seeking guidance on how to use it

Fostering knowledge and data sharing among diverse stakeholders is paramount. Access to affordable, consistently-detailed data across regions is vital. Given the volumes of data held by various stakeholders like the IPCC, insurers, companies, the marine industry, or national weather agencies, leveraging data from these channels and **facilitating data sharing could enable widespread adaptation efforts**.

In addition to data accessibility, companies require support and **guidance on utilizing this data**. There is an increasing demand from companies for equal access to climate scenarios, along with clear instructions on evaluating the potential impacts of common hazards.





# 3.(continued) Facilitating Access, Affordability, and Usability of Data by Leveraging both Existing and New Data Sources while Seeking Guidance



### Case study: Iberdrola's weather predictor

The Renewables Division of Iberdrola, the third largest electricity company in the world, developed the Meteoflow Forecasting System to **predict changes in climate that could affect renewable energy generation**. Originally designed to estimate the quantity of energy the group's infrastructure produced based on sun and wind patterns, the tool can now anticipate extreme weather events and **can plan adaptation actions in the face of physical risks and threats**. This helps mitigate the impact on renewables generation, ensuring business continuity and a stable service to customers.



"Improving knowledge and data sharing among diverse stakeholders, with standardized tools, is crucial. A high-quality global climate risk database with sufficient granularity would greatly benefit financiers by providing a unified platform and avoiding disparate data estimates. This unified database would serve as a global public good, ensuring equitable access, benefiting businesses and communities alike. Stakeholders with substantial data have a responsibility to facilitate public access for the common good in addressing climate challenges."

**Madeline Ojakovoh**  
Manager Climate Adaptation Lead,  
World Business Council for Sustainable Development





# 4. Embracing Regulation as an Opportunity to Prioritize Sustainability and Realize Business Benefits

## Challenge

### Regulation: a double-edged sword?

Regulation not only **encourages companies to act**, but also **fosters uniformity**, enabling effective communications. Some companies recognize these as the prevailing circumstances and view short-term regulatory items as essential for long-term corporate initiatives. In any case, businesses are currently identifying their needs while formulating their climate risk and adaptation plans to comply with existing regulations.

Many companies interviewed for this report stressed the difficulties arising from the **abundance of regulatory** requirements. They highlighted the **tight timelines, resource allocation**, and **complexity** of implementing current regulations, such as the CSRD, as significant concerns. Furthermore, they pointed out limitations and the **lack of representation** of certain industries in the EU Taxonomy. Nevertheless, companies acknowledged the opportunities of being at the forefront of regulation and the competitive advantage it offers for more effectively capitalizing on sustainability-related opportunities.

## Opportunities

### Embrace regulation as an opportunity to be more resilient, not as an obstacle

Companies that proactively navigate the evolving regulatory landscape and integrate ESG reporting into their business strategies can gain a significant **competitive advantage** and become early-movers. Complying with regulation can directly drive revenue growth and cost savings. Companies that have made substantial strides in implementing regulations are more likely to see positive business results across the whole company.

### More dialog is needed

While there are several global forums for adaptation and resilience practices, including the Conference of Parties, the business community is often not included in policy discussions and global think tanks on adaptation strategies and methodologies. This missed opportunity prevents companies from sharing valuable knowledge and tools that can influence and support policy development. Establishing a **two-way dialog between regulators and businesses** is crucial for describing the implications and facilitating progress in adaptation planning.



“In the realm of regulations, it is crucial to foster collaboration both at a political level and throughout the intricate international value chain. This is essential because the focus can be highly specific, and at times, regulations may be formulated without adequate input from the entities responsible for their implementation, or with only minimal involvement. There is a pressing need for greater collaboration between industry and politics. Companies can provide valuable insights and highlight the day-to-day challenges they face. Through collaborative efforts, we can identify solutions that are suitable for all stakeholders.”

**Dr. Thomas Becker**  
VP, Corporate Sustainability  
and Mobility, BMW Group





# 5.1. Internal Collaboration: Empowering Site Teams and Cross-Functional Collaboration to Drive Company-Wide Climate Adaptation Efforts

### Challenge

#### **Boost knowledge sharing at the regional, sectoral, and cross-sectoral levels through strategic collaboration**

For climate adaptation plans to be effective, they must translate into tangible measures. The implementation of adaptation plans across the company should be overseen by a centralized governance system monitoring its alignment with the overall adaptation strategy. In parallel, site managers and local teams play a crucial role in bridging the company's centralized strategy with the specific needs of local communities. They need to be involved to act at the site level to address regional considerations and ensure the success of adaptation measures, such as (dependent on the sector) changes in crop species, buildings insulation, early weather warning systems, water efficiency, etc.

### Opportunities to embrace internal collaboration

For adaptation to be successful, it is important to gain **internal support and engagement to drive local actions**. This begins with building awareness about the importance of climate adaptation for businesses and what strategies your organization has developed that local teams will help lead. The conversation must go both ways as local teams often have best practices they have implemented in response to local situations, which can inspire other locations and become embedded into the company's adaptation plan.

At the start of climate risk assessment and adaptation planning, it is important to create a **cross-functional working group** with representatives from various departments such as finance, operations, procurement, strategy and sustainability. It is also important for plans to be periodically reviewed at the board and management level for governance and visibility.



“Given that adaptation occurs primarily at the local level, it is important for us to integrate a bottom-up view from our sites into our global strategy to manage physical and transition-related climate risks. Sandoz's technical operations team plays an integral role in shaping and implementing our strategy, and building a close partnership with them is essential to harmonize corporate strategy with practical on-site conditions.”

**Kate Ahern**  
Head ESG, Sandoz





## 5.2. External Collaboration: Engaging at Regional, Sectoral, and Cross-Sectoral Levels to Accelerate Action in Adaptation

### Challenge

#### Poor collaboration among external stakeholders

Most companies currently **plan their adaptation actions in isolation** from one another and often have little visibility on the adaptation actions taken by their peers.

### Opportunities

#### Boost knowledge sharing at regional, sectoral, and cross-sectoral levels through collaboration

**Collaboration** plays a crucial role in climate adaptation. By working together, organizations, communities, and governments can **share knowledge, leverage technology, and implement sustainable practices** to build resilience against climate change impacts. This collective effort can lead to more effective and innovative solutions, better resource allocation, and ultimately, a more resilient and sustainable future for all.

Additionally, when addressing adaptation, collaboration that is specific to sectors and regions is crucial due to the common challenges faced and the shared strategies developed to tackle them.

Some collaborative forums:

- [COP Resilience HUB](#)
- [WEF Centre for Nature and Climate](#)
- [EU Climate ADAPT](#)
- [WBCSD](#)
- [WeADAPT](#)





# 5.2.(continued) External Collaboration: Engaging at Regional, Sectorial, and Cross-Sectorial Level to Accelerate Action in Adaptation



### Case study: Freixenet

Freixenet, a leading producer of cava sparkling wine in Spain, is grappling with the intensifying impacts of climate change, particularly related to water scarcity. The company has recognized the **growing threat of drought and extreme weather events** to its operations and has taken steps to mitigate these risks, such as the installation of a **cutting-edge SBR reactor** at its facility, resulting in a reduction of processed water contamination and a 73% decrease in liquid waste generated by the grinding treatment plant. However, the specific challenges faced by the wine industry, such as reliance on natural rainfall and the delicate balance of terroir, present unique hurdles. By **collaborating** with other industry players, policymakers, research institutions, and by **leveraging Nature-based Solutions** like afforestation, Freixenet, and the wine industry as a whole, can develop more effective strategies to address climate change.



“The future of sustainability lies in collaboration. L’Oréal’s success in creating industry-wide ecolabels created in partnership with other major players of the sector which more than 70 stakeholders currently use, and finding innovative uses for waste products showcases the power of partnerships in addressing pressing environmental challenges.”

**Delia Garcia Gómez**  
Chief Sustainability Officer, L’Oréal



“Danone is an innovative and collaborative leader working on the generation of impactful alliances to address the challenge of climate risk management. Promoting and participating in nature-based climate adaptation projects to combat the threats arising from climate change, such as regenerative agriculture for raw materials production, is the path we follow to generate significant change.”

**Charo Saavedra**  
Sustainability Manager, Danone





# 6. The Comprehensive Benefits of Investing in Climate Adaptation

## Challenge

### Financing climate adaptation

Insurers and financial institutions face several common challenges in climate adaptation. One major issue is **risk assessment** difficulties due to insufficient advanced data and evolving regulations, making it hard to predict and price climate impacts accurately. There's also a critical need for **expanding affordable and innovative insurance products** to address diverse client needs. Additionally, insurers need to maintain **solvency and profitability** as climate events become more frequent and severe. On the other hand, this causes companies to encounter **rising premiums** and cost of capital. To this day, many businesses still **underestimate** the importance of insurance for managing climate risks, leading to underinsurance and greater vulnerability to climate impacts.

## Opportunities

### Investing in climate adaptation to achieve a triple dividend

- **Direct cost savings** for financial institutions and insurers by reducing expenses associated with climate-related damages.
- **Economic benefits** for companies implementing adaptation measures, helping to mitigate future risks and enhance resilience.
- **Social benefits** for local communities, including improved public health, job creation, and overall community well-being.





# 6.(continued) The Comprehensive Benefits of Investing in Climate Adaptation



“The transition to a sustainable economy requires major investment and joint action by companies, financial institutions and the public sector. However, the cost of not undertaking an orderly transition will be much higher for companies and for the economy. At Banco Santander, we want to help and accompany our clients in this transition, providing them with the necessary investment and advice to enable them to adapt their businesses to a more sustainable economic model and better respond to the new demands of customers and society.”

**Marta Aisa Blanco**  
Sustainability Director of Santander España, Banco Santander



“The banking sector plays a key role in financing climate resilience, not only by providing the necessary capital, but also by incentivizing the integration of climate adaptation into project design and strategic decision-making.”

**Elvira Calvo Adiego**  
Sustainability Business Transformation Head, BBVA

While global mitigation spending is generally shared evenly between the public and private sectors, **98%** of adaptation finance comes only from the public sector<sup>19</sup>





# Five Key Enablers to Navigate Climate Adaptation

In today’s rapidly-evolving business landscape, the ability to adapt is not just a competitive advantage, but a necessity for survival. Through discussions with the companies interviewed, we recognized that successful adaptation hinges on **five key enablers** that organizations must leverage to navigate change effectively.

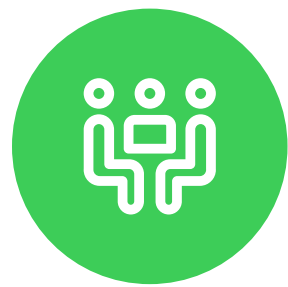


 “Companies in the agriculture sector must avoid phrases like 'it has always been done this way.' We are going to have to update and evolve. We must all get out of our comfort zones as these are unprecedented situations.”

**Gloria Martí**  
Head of Sustainability and Environment, Freixenet

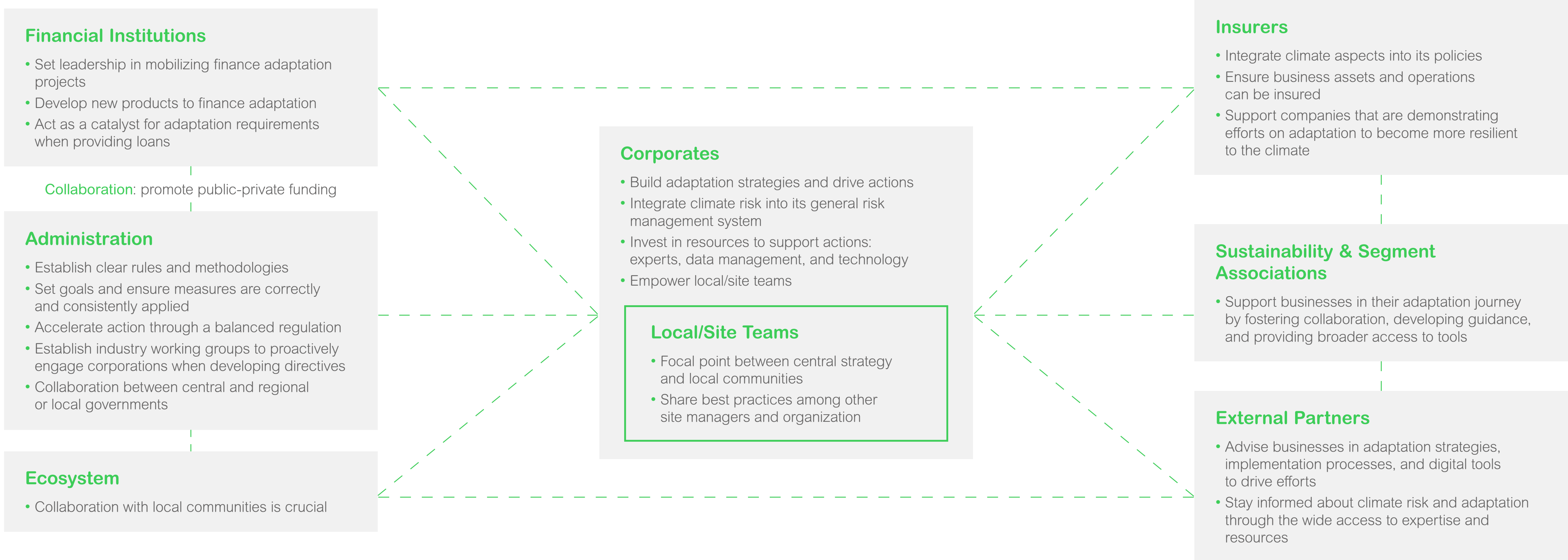






# Enabler 1: Accelerating Climate Adaptation Through Stakeholder Engagement

Each stakeholder plays a crucial role in climate adaptation planning. Fostering a sense of community with strong collaboration and engagement is essential to accelerating progress and action.





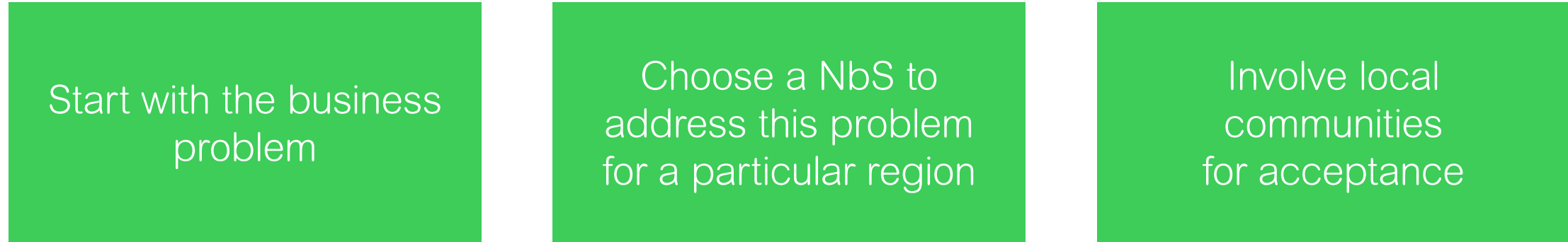


# Enabler 2: Nature-based Solutions Play a Key Role in Climate Adaptation

Nature-based Solutions (NbS) are widely considered a versatile approach that often yield greater co-benefits than conventional technical measures. Not only do NbS play a pivotal role in **mitigation**, but also in **adaptation**. They offer a cost-effective means of tackling climate change while also addressing biodiversity and land degradation, allowing for the simultaneous resolution of multiple issues<sup>20</sup>.

The **effectiveness of NbS is highly dependent on local context**. Implementation will be enhanced through technical standards, collaborative governance, knowledge transfer, capacity building, and sufficient funding.

### To be implemented locally on a case-by-case basis



### Guidance & Initiatives on the use of Nature-based Solutions

- [EcoAct Nature-based Solutions](#)
- [Oxford University - The Nature-based Solutions Initiative](#)
- [WBCSD Blueprint - Building Business Cases for Nature-based Solutions](#)
- [EU Climate ADAPT - Nature-based Solutions](#)



“Ecosystem services are essential for destinations, driving us to develop coastal research and protection projects that benefit both people and the planet. By caring for ecosystems like coral reefs, dunes, mangroves, and Posidonia Oceanica, we can preserve biodiversity and reduce risks by creating a defense against climate phenomena. Other key benefits provided by these ecosystems include water filtration, improved water quality, and carbon capture. Investing in these Nature-based Solutions is crucial to ensuring the future of tourism and the well-being of the communities that depend on it.”

**Erika Harms**  
Global Director of Sustainability - Science, Innovation and Destinations



“Our development has always been linked to regions with strong environmental constraints, which is why we have made a great effort to protect and improve nature as the main source of wealth and quality of life for the population.”

**Roberto García**  
Director of Sustainable Development, Cajamar Group



# Case study: Coastal Restoration and Regenerative Agriculture: Examples of Building Resilience Through Nature-based Solutions



## Case study: The Prioritization of Nature-based Solutions

Iberostar Group, a leading family-owned Spanish hotel chain championing responsible tourism, acknowledges the impact of shifting weather patterns on the travel and tourism sector. Coastal regions in certain countries face heightened risks from hurricanes and storms, which pose major challenges to communities, infrastructure, and biodiversity. Yet, specific coastal ecosystems have the ability to act as natural barriers, and **the use of Nature-based Solutions helps lessen the impact of climate change.**

Today, Iberostar is working to limit the risk of such events by **protecting and restoring natural ecosystems around its properties** — such as coral reefs, mangroves, coastal dunes, and seagrasses — so that they receive significantly less damage from extreme weather events.

Grounded in **science, data, and innovation**, the company’s initiatives include **reef restoration** across eight nursery locations in Mexico, the Dominican Republic, and Jamaica, as well as **mangrove conservation and reforestation**, with over 19,000 mangroves planted in hotels across the Dominican Republic. **Coastal dune restoration** is also underway in Mexico. This work is backed by the company’s Wave of Change hub, a team of scientists who collaborate with leading research institutions to enhance coral reef resilience in the face of climate change and support the protection of the Posidonia oceanica seagrass in the Mediterranean.



## Case study: Cajamar's Success in Implementing Nature-based Solutions in Agriculture

Cajamar has been at the forefront of implementing nature-based solutions in agriculture for the past 20 years, recognizing **the significant impact of agricultural activities on biodiversity and the local community.** The organization has consistently prioritized its highly-responsive capability, allowing both individuals and businesses to **swiftly respond to extreme climate events.**

Embracing the idea that biodiversity can be a powerful ally, Cajamar developed methodologies that utilize nature-based solutions to address various agricultural challenges. By promoting the use of **cover crops**, they have supported companies in the agribusiness to effectively control pests and improve soil quality. These methods have proven effective also in water management, allowing for water storage during rainfall and carbon sequestration, thereby mitigating the impact of agriculture on climate change.

By striving for ecological balance, Cajamar has **not only reduced costs, but also enhanced market benefits for agricultural producers.** Their philosophy of facilitating preferential financing for companies adopting innovative technologies, such as those related to the circular economy, reflects their active commitment to supporting novel and sustainable agricultural practices and environmental stewardship.





# Enabler 3: Leveraging Digitalization and Technology to Facilitate Data-driven Decision-making

The first step in making informed, data-driven decisions is to ensure the availability of accurate and relevant data. Data can be harnessed through various **technologies**, including emerging solutions like **remote sensing technologies** (which utilize satellites for data capture and monitoring) and **IoT-based devices**. Additionally, Artificial Intelligence (AI) can also play a role in predicting hazards by leveraging data to provide early warning signals and enabling companies to take proactive climate adaptation measures.

Informed decision-making becomes feasible when data is readily accessible<sup>21</sup>. There are several **climate tools** that provide digitized access to data, such as:

- [Global Resilience Index](#)
- [ECLR](#)
- [First Street](#)
- [Risk Management | Jupiter \(jupiterintel.com\)](#)
- [EarthScan](#)
- [Riskthinking.AI](#)
- [Altitude by AXA Climate](#)
- [Climate X](#)
- [Flood Hub Google](#)

### Water-specific Tools

- [Climate Smart Water](#)
- [Aqueduct by WRI](#)
- [Water Risk Filter by WWF](#)
- [Climate Smart Water](#)
- [Ecolab Smart Water Navigator](#)



### Case study: EcoAct Climate Risk Platform

Leveraging data from over 130 climate risk projects, EcoAct's **ECLR** platform allows companies to **visualize site-level and global-scale vulnerabilities to all climate hazards** included in the EU Taxonomy, based on various climate scenarios. At the forefront of climate science, ECLR uses CORDEX regional climate models that have a resolution of up to 12 km and are based on IPCC scenarios. ECLR also integrates supplementary datasets from the World Resources Institute, the National Oceanic and Atmospheric Administration, and the European Soil Data Center. ECLR empowers organizations to adopt **proactive adaptation strategies** to stay ahead of climate-related disruptions.







# Enabler 4: Companies are Leveraging New Financing Mechanisms

As the urgency to address the risks posed by climate change increases, **innovative financial mechanisms and tools are emerging**. This offers new opportunities for businesses to embrace innovative instruments to fund their climate adaptation strategies. Below is a snapshot of the diverse landscape of financial instruments available to companies to invest in climate resilience:

### Policy-driven funding:

#### Government Funding

Grants & subsidies for climate-resilient infrastructure

#### Market-based Instruments

Green bonds for projects that are building climate resilience like water management systems

### Privately-driven funding:

#### Private Sector Finance

Sustainable loans, e.g., for enhancing supply chain resilience

#### Insurance Products

- Climate risk insurance, protecting businesses from extreme weather impacts
- Catastrophe bonds, for recovery from major climate events

#### Blended Finance

- Public-Private partnerships
- Collaboration with development finance institutions
- Multilateral development bank investments





# Case study: Companies are Leveraging New Financing Methods and Methodologies



## Case study: Banco Santander’s Comprehensive Physical Risk Assessment

Banco Santander has made significant progress in **the assessment of physical risks**. Collaborating with an expert insurance vendor, they evaluated 13 physical hazards, including eight acute risks and five chronic risks. The analysis covered over 1,250 regions and encompassed all economic activities under their Risk Taxonomy, as well as key business lines.

They **continuously monitor each region to gauge associated physical risks**, categorizing them on a 5-point RAG scale from low to very high. In evaluating the frequency and intensity of natural hazards, Banco Santander employed **various atmospheric greenhouse gas scenarios** (Representative Concentration Pathways - RCPs) and considered multiple **time horizons** (current, 2030, 2040, 2050, and 2100). These scenarios encompass severe (RCP 8.5), intermediate (RCP 4.5), and moderate (RCP 2.6) projections. Their methodology for calculating physical scores aligns with the fundamental guidelines outlined by UNEP-FI Working Groups.

The scores are determined by the **frequency and intensity of hazards**, while vulnerability factors moderate the impact of physical events on each economic activity or collateral values.

### Physical Risk = Frequency / Intensity x Vulnerability





# Case study: Investing in Climate Adaptation Fosters Resilience



## Case study: BBVA Integrates Physical Risk Analysis into Customer Support Strategy, Offering Tailored Adaptation Recommendations

As part of their customer support strategy, BBVA is starting to integrate the analysis of the physical risk of their clients' assets, complementing the analysis of their transition risk. BBVA assess the vulnerability of these assets to climate hazards based on customers' geographical location and their importance in generating income or production capacity.

Additionally, BBVA reviews the adaptation plans published by the customers and compares them with their own analyses. Based on this, BBVA offers specific recommendations on adaptation measures for them to consider in their future planning. In this way, they provide a comprehensive and proactive view on physical risk, aligned with the clients' business strategy.

## Over \$200 Billion

According to the [World Economic Forum](#), an annual investment three times the current funding is necessary to achieve adaptation and resilience targets in areas like water, energy, agriculture, and early-warning systems.



"Investing in climate adaptation is just as important as climate mitigation, as both are essential for building resilience against climate change. Strengthening infrastructure and protecting vulnerable populations help communities, economies, and ecosystems endure, recover and better cope with inevitable climate impacts."

**Marisa Aguilar Villa**  
Managing Director, Allianz Global Investors

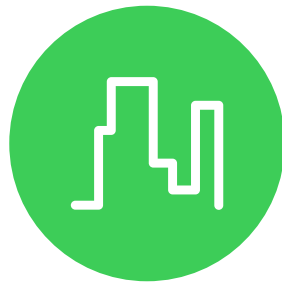


"As part of our ESG policy, Coface's commitment is to be a responsible insurer. With this in mind, we aim to provide coverage for operations to minimize environmental impacts worldwide. This is why, in the two variables that Coface considers when granting export credit insurance (amount and term), sustainability considerations and criteria are taken into account. If the analysis of the operation to be covered includes environmental considerations, the coverage amount, and term will be higher. These considerations have been part of Coface's criteria for a long time."

**Mikel Aguirre**  
Head of Political and Single Risk, COFACE IBERICA







# Enabler 5: Ensuring the Climate Change Resilience of Physical Assets

The impact of climate change will affect all forms of physical assets. Therefore, **building resilient physical assets** to withstand these effects is crucial for safeguarding not only corporate operations, supply chains, and local communities, but also for minimizing financial losses caused by damages.

Businesses must not only **adapt existing** physical assets, but also proactively **design future** physical assets to be more resilient and capable of withstanding the impacts of climate change. The construction sector will play a pivotal role in this journey to climate adaptation efforts, much like the energy sector has in mitigation.

 “In a world where demands and conditions change rapidly, infrastructure adaptation strategies are crucial to ensure their resilience and efficiency. The ability to anticipate and respond nimbly to new challenges and opportunities ensures that infrastructure can not only withstand the present, but are also future-proof.”

**Ana Peña**  
Head of Quality, Climate Change and Environment,  
Ferrovial

## 237,000 Km

Estimated distance of roads that will be exposed to climate change impact by 2050<sup>22</sup>

## US\$ 80 Trillion

Estimated investment needed for new and existing infrastructure worldwide over the next 15 years<sup>1</sup>

### Approaches to build resilience for physical assets

**Build adaptation in design phase of assets, products and services:** Design your assets, taking into consideration climate and water risks, insulation, cooling systems, and the use of alternative raw materials to promote circularity and regenerative agriculture.

**Enhance water management systems:** Improving water supply and drainage systems to manage the increased variability in water availability. This includes building reservoirs, enhancing stormwater management systems, and implementing advanced irrigation techniques. Example: [EcoStruxure Water Advisor](#)

**Microgrids:** Localized energy grids that can operate independently from the main grid during power outages, providing reliable electricity to critical facilities and resilience. Example: [EcoStruxure Microgrids](#)

**Active supplier management:** Ensure sustainability criteria is adopted in supplier selection, and continuously monitor climate risks, specific to suppliers.

**Active monitoring of transportation routes,** both downstream and upstream, aiming for alternative routes, should there be a disruptive climate event.







# Recommendations to Drive Action




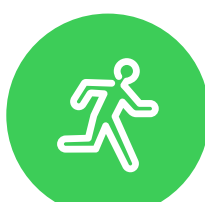


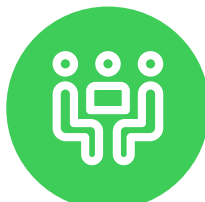
# Recommendations to Drive Action - Corporates


-  **Integrate climate risk into your business strategy**

Identify climate risks and opportunities and incorporate them into your company's overall risk management strategy, while also considering financial impacts.
-  **Balance in-house expertise with external consultancies**

Support employees with upskilling, hire new talent, and trust external expertise to access technology and digitalization.
-  **Perform a solid climate risk assessment to identify material risks, leveraging digital tools, and external support, if required**

Identify both physical and transition risks by utilizing available data and collaborating with an external service provider to guarantee data accuracy. Conduct financial assessments to quantify these risks effectively.
-  **Prioritize adaptation efforts by tackling the most material risks first**


Begin by addressing sites and segments of the supply chain with the most significant climate-related risks. By learning from these initial steps, gradually expand the initiative. Maximize the benefits and cost savings derived from adaptation efforts.
-  **Build a financial business case for action to share at the board level**


Demonstrate the business justification for your adaptation efforts to streamline decision-making around investing in adaptation. Present the anticipated risks and costs of actions, alongside expected returns and benefits.
-  **Be proactive rather than reactive, and flexible to manage impacts of climate change**


Allocate technology resources like early warning systems, to be prepared for the impacts of climate change. However, be ready to execute ad-hoc actions when damage has already occurred.





# Recommendations to Drive Action - Corporates


-  **Invest in adaptation measures, taking into account future climate risks**

Identify measures that can make your operations, supply chains, and local communities more resilient, including investments in solutions for infrastructure, technology, digital tools, and nature-based solutions.
-  **Insure your business and operations against climate hazards**

Trust in the insurance sector as an external partner to protect your company against the financial consequences of climate change.
-  **Embrace collaboration within your ecosystem of stakeholder**

Engage with the different actors of your company's ecosystem to share tools, data, knowledge, and best practices.
-  **Empower your local, site managers to propose and implement tailored adaptation measures**

Empower local managers to serve as focal points, bridging the central adaptation strategy and local communities. Entrust them to share best practices with other site managers and the organization, fostering a collaborative approach to adaptation.
-  **Embrace new public-private financing mechanisms**

Explore new and existing financial instruments to support your climate adaptation strategies, including those driven by the public sector (e.g., government funding, market-based instruments) as well as those driven by the private sector (e.g., private sector funding, blended finance, insurance).
-  **Understand regulatory requirements and stay informed about new potential legislations**

Ensure that you have adequate resources to meet all reporting regulatory requirements and stay informed about current and upcoming regulations. Rely on external partners when necessary.



# Recommendations to Drive Action - Regulators/Administration

## Prevent

### Building resilience

- Conduct **comprehensive risk assessments**.
- Protect the **resilience of local infrastructure** to withstand regional climate impacts.
- Consider local implications to infrastructure **maintenance** and natural environments when developing climate adaptation plans.
- Avoid building new infrastructure in **areas susceptible** to high climate risk exposure.
- Engage communities, businesses, and stakeholders to foster **collaboration** on adaptation measures.
- **Monitor** regional climate risks regularly and **update policies** accordingly.

### Protecting communities

- Establish **standard protocols** and procedures for different levels of warning systems.
- Define clear **rules and expectations** for each level, including:
  - Roles and responsibilities between central and regional governments.
  - Who to mobilize for each warning system level e.g., international aid organizations, armed forces, and local public safety agencies.
  - When to warn communities and what actions they are expected to take.
- **Promote education** and awareness to support local communities (schools, businesses) in vulnerable areas on what actions they can take to stay protected.
- **Invest in technologies** (e.g., early warning systems, IoT devices).

## Act

### Activating protocols and adapting quickly

- Identify **levels of warning system** according to natural disaster.
- Execute plans quickly as stated in the defined protocol for each level.
- For needs beyond the defined protocol, it's essential to **quickly adapt and take urgent action**. Here, collaboration and agility are crucial.

## Restore

### Enabling restoration through funding

- **Define public funding** according to the level of natural disaster.
- Promote advancement of public-private funding, including **new financial mechanisms**.
- **Facilitate request for financial aid**, and improve bureaucracy to local communities and corporates.
- Collaborate with **NGOs and volunteers** to support local communities.

### Rebuilding with nature

- **Restore infrastructure**, cities, and urban spaces to be better designed to manage the risks of natural disasters.





# Appendix





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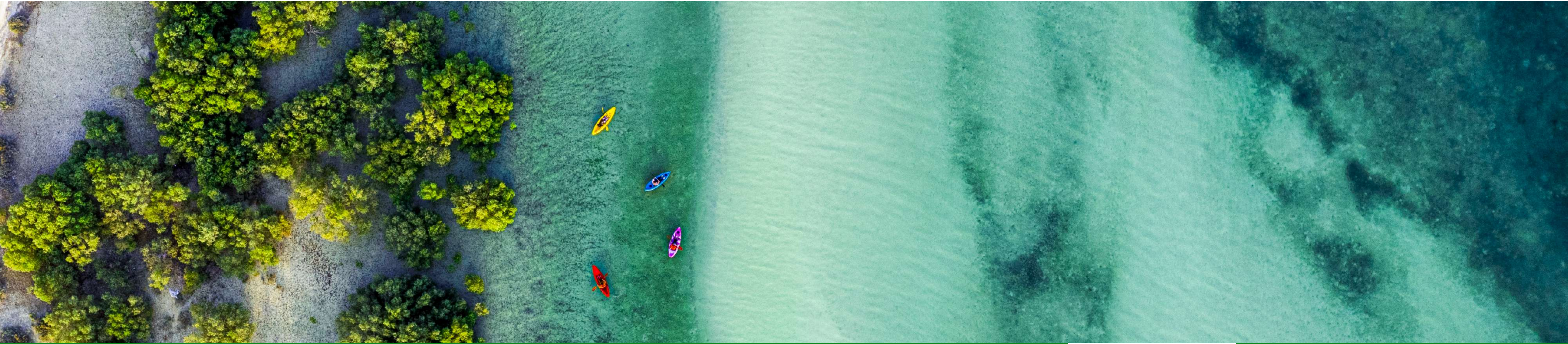
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