

The Climate Intelligence Advantage:

Turning Risk into Resilience

BDO India
2026

BDO

Today, climate risk has evolved from an **environmental issue into a strategic business risk**, with direct implications for operational resilience, financial performance, and long-term enterprise value. Organizations that proactively integrate climate considerations into business strategy are better positioned to manage uncertainty, strengthen stakeholder confidence, and create sustainable competitive advantage.



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THE CLIMATE RISK RESET: A New Playbook for a Changing World

Till recently, climate risk assessments were primarily conducted to support sustainability disclosure, responding to investor expectations and demonstrating regulatory preparedness. While these objectives remain important, they no longer capture the 360 degree business implications of climate change. Climate-related events are no longer isolated disruptions; they are increasingly affecting asset performance, supply chain continuity, workforce productivity, insurance costs, financing conditions and investment decisions.

The growing urgency is reflected in the World Economic Forum's Global Risks Report 2026, where environmental risks continue to dominate the long-term global risk landscape. Extreme weather events remain among the most significant risks over both short- and long-term horizons, while critical changes to Earth's systems, biodiversity loss and natural resource shortages continue to rise as interconnected strategic concerns.

Business can lose up to 7% of annual earnings by 2035 if they fail to adapt to climate risks like extreme heat¹

¹ Source: WEF Global Risks Report 2026

Key shifts reshaping climate risk assessment

01 Changing Climate

Climate hazards have become more frequent, more intense and increasingly interconnected. Human activities have unequivocally caused global warming, with global surface temperatures already reaching approximately 1.1°C above pre-industrial levels, contributing to more frequent and severe heatwaves, floods, droughts and other extreme weather events across regions. As governments, businesses and financial institutions accelerate climate action, continued efforts towards the Paris Agreement's goal of limiting warming to well below 2°C, while pursuing 1.5°C, reinforce the need for organisations to proactively build climate resilience.²

However, the business challenge extends beyond the increasing frequency of individual hazards. Climate hazards are now creating persistent risks to physical assets, operations and supply chains, with extreme heat emerging as the single largest contributor to projected corporate asset losses over the coming decades.³

02 Changing Expectations

Climate risk is no longer assessed solely for sustainability reporting. Investors, regulators and boards increasingly expect organisations to demonstrate how climate risks could affect financial performance, strategy and resilience.

03 Changing Analytical Capability

Advances in geospatial data, climate models and asset-level analytics are enabling organisations to move beyond qualitative assessments towards location-specific, decision-ready climate intelligence.

Yesterday's Lens

ESG

Disclosure

Compliance

Today's Lens

Strategy

Financial Impact

Enterprise Value

Resilience

Transition in approach of climate risk assessment



²AR6 Synthesis Report: Climate Change 2023 — IPCC

³Business on the Edge: Building Industry Resilience to Climate Hazards | World Economic Forum

	TRADITIONAL CLIMATE RISK ASSESSMENT	EMERGING CLIMATE RISK INTELLIGENCE
SCOPE Where and how risk is assessed?	CORPORATE LEVEL ASSESSMENT Enterprise-wide view with limited granularity	ASSET & LOCATION-LEVEL ASSESSMENT Granular view of individual assets, operations and value chains
APPROACH How risk is evaluated?	EXPERT JUDGEMENT & QUALITATIVE WORKSHOPS Relies on experience & subjective inputs SIMPLE RISK MATRIX Simplified representation of climate risks	DATA-SUPPORTED ANALYTICS Leverages geospatial data, climate models and advanced analytics MULTI-HAZARD & SCENARIO-BASED ASSESSMENT Considers multiple hazards, interactions & future scenarios
OUTCOME How insights are used?	DISCLOSURE-ORIENTED Focussed on reporting & compliance requirements CLIMATE RISK IN ISOLATION Considers climate risk as 'standalone' factor STATIC ASSESSMENT Point-in-time assessment with limited updates RISK IDENTIFICATION Highlights riskst QUALITATIVE FINANCIAL IMPACT Limited linkage to financial performance	DECISION-ORIENTED Supports strategic & operational decision-making CLIMATE, NATURE & BUSINESS DEPENDENCIES Built on the interconnections of climate, nature and business DYNAMIC, REPEATABLE & REFRESHABLE INTELLIGENCE Continuously updated as data, science and business evolve RESILIENCE, ADAPTATION & STRATEGIC DECISION-MAKING Enables action, builds resilience and creates long-term value CLIMATE VALUE AT RISK (CLIMATE VAR) Estimates potential impacts on revenue, assets and enterprise value

The transition is supported by advancement in analytical capability for climate risk



FOREWORD

For years, climate risk assessment was largely viewed as a check-list item for sustainability reporting, compliance and stakeholder expectations. The outlook has now shifted, the more relevant questions for business leaders today are where the exposure sits, how it can translate into financial and operational impact, and whether the organisation is prepared to act.

This shift—from disclosure to decision-making is at the heart of effective climate risk management.

This publication provides a timely perspective on this transition, highlighting how climate risk is becoming more granular, financially relevant and interconnected with core business risks.

Equally important is the need to understand how climate hazards translate into business consequences. Climate risks, therefore, cannot be viewed in isolation; it needs to be integrated with enterprise risk management, strategy, capital allocation and business continuity.

Technology has an important role to play in enabling this evolution, however it is not the answer alone.

Data can tell us where the risk is; but business judgement is required to interpret its meaning and the action to follow. The combination of climate science, technology, and management judgement is what can turn climate data into climate intelligence.

The real measure of progress, therefore, should not be the sophistication of climate disclosure, but the quality of decisions that follow from it.

Climate resilience will increasingly be a determinant of business resilience. Leaders who recognise this early will be better prepared for disruption and better positioned to protect value, strengthen competitiveness and thrive in the transition to a more sustainable economy.

I hope this publication encourages business leaders, boards and sustainability professionals to look beyond the risk matrix—and towards a more integrated, technology-enabled and action-oriented approach to climate resilience.

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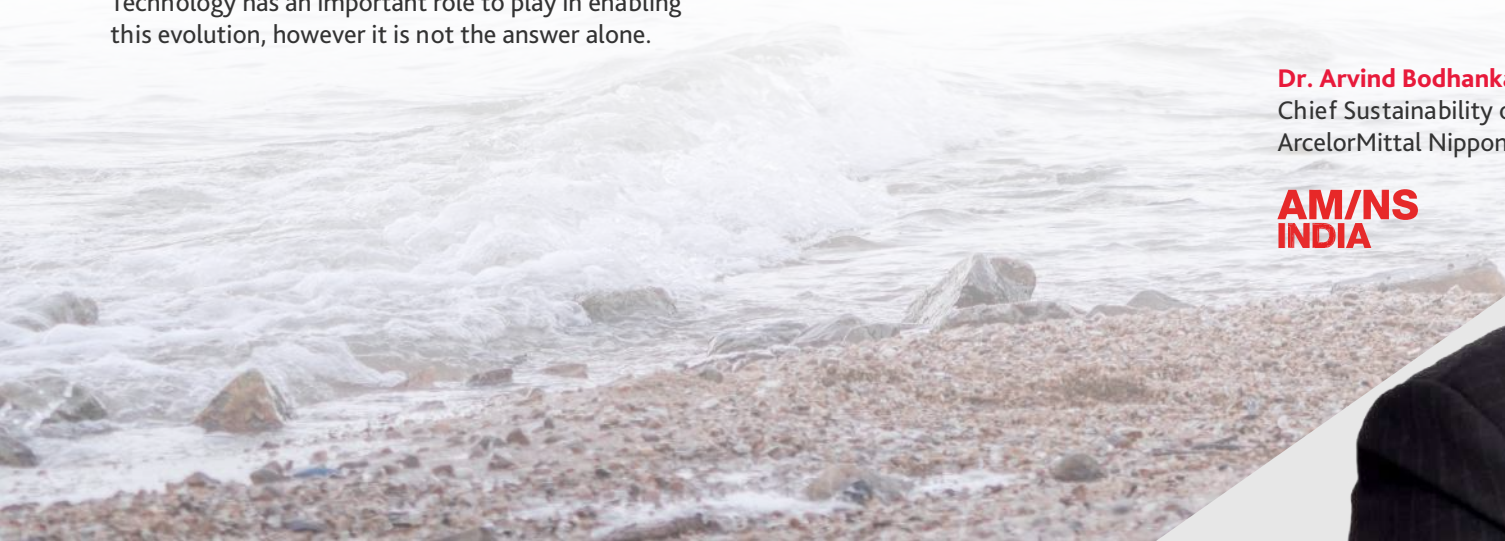




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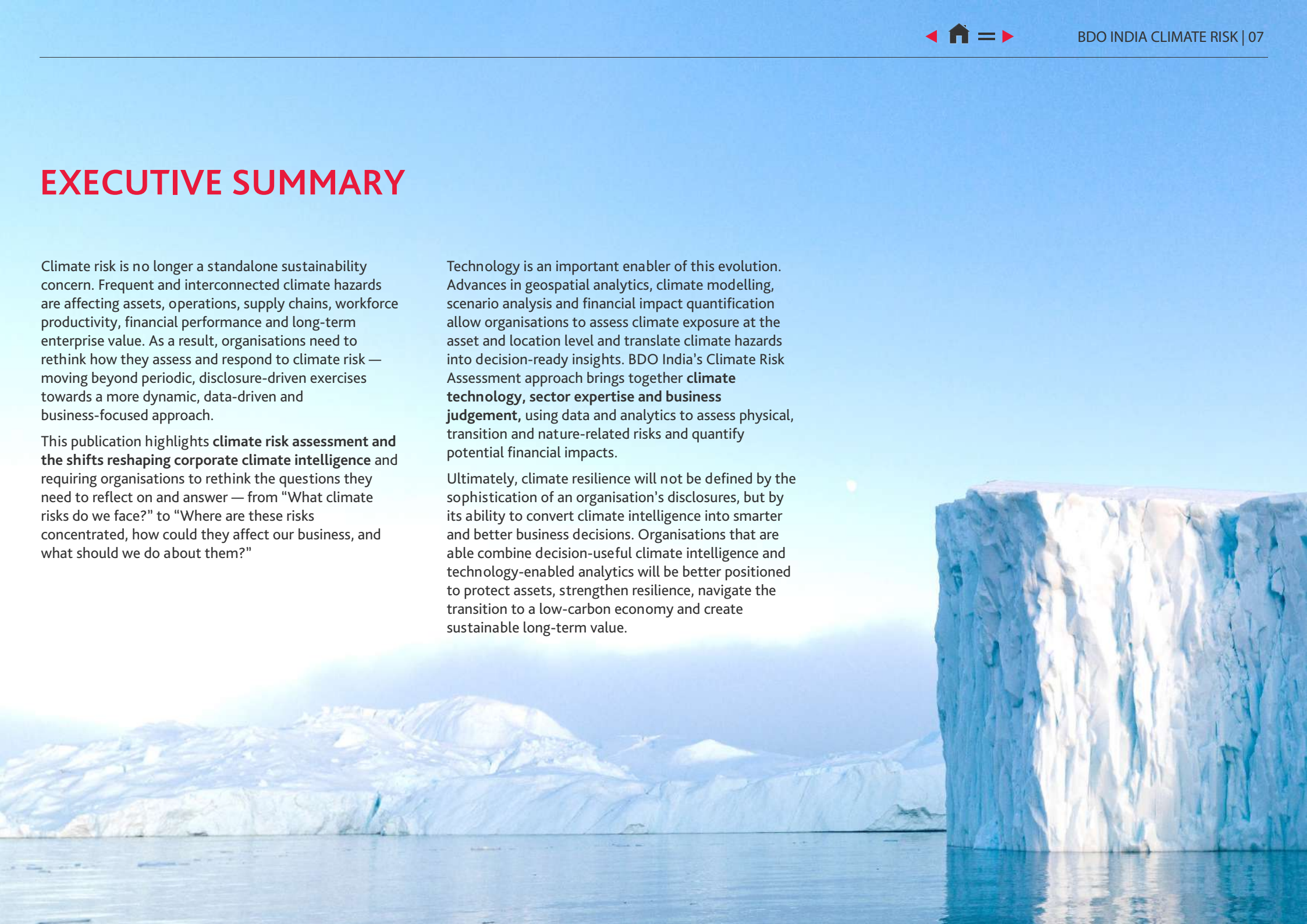
EXECUTIVE SUMMARY

Climate risk is no longer a standalone sustainability concern. Frequent and interconnected climate hazards are affecting assets, operations, supply chains, workforce productivity, financial performance and long-term enterprise value. As a result, organisations need to rethink how they assess and respond to climate risk — moving beyond periodic, disclosure-driven exercises towards a more dynamic, data-driven and business-focused approach.

This publication highlights **climate risk assessment and the shifts reshaping corporate climate intelligence** and requiring organisations to rethink the questions they need to reflect on and answer — from “What climate risks do we face?” to “Where are these risks concentrated, how could they affect our business, and what should we do about them?”

Technology is an important enabler of this evolution. Advances in geospatial analytics, climate modelling, scenario analysis and financial impact quantification allow organisations to assess climate exposure at the asset and location level and translate climate hazards into decision-ready insights. BDO India's Climate Risk Assessment approach brings together **climate technology, sector expertise and business judgement**, using data and analytics to assess physical, transition and nature-related risks and quantify potential financial impacts.

Ultimately, climate resilience will not be defined by the sophistication of an organisation's disclosures, but by its ability to convert climate intelligence into smarter and better business decisions. Organisations that are able combine decision-useful climate intelligence and technology-enabled analytics will be better positioned to protect assets, strengthen resilience, navigate the transition to a low-carbon economy and create sustainable long-term value.



KEY TAKEAWAYS

01

Climate Risk is
Business Risk

02

Asset-Level
Intelligence Drives
Better Decisions

03

Financial Materiality is
the New Benchmark

04

Technology Enables
Decision-Ready
Insights

05

Resilience Creates
Competitive Advantage

“

Climate risk assessment must
evolve at the same pace as the
risks it is designed to assess”

”

CHAPTER 1

THE CHANGING CLIMATE RISK LANDSCAPE:

An Intersection Between Climate Risk, Financial Impact And Business Decisions

Climate risk assessment is undergoing a fundamental transformation. Changing climate patterns, evolving stakeholder expectations and advances in analytical capabilities are redefining how organisations identify, measure and respond to climate-related risks. Rather than being driven by regulation alone, this evolution reflects a growing need for more decision-useful, financially relevant and location-specific climate intelligence.

Five Forces Reshaping Corporate Assessment

Climate risk assessment is undergoing a fundamental transformation. These five shifts demonstrate how organisations are moving from broad risk identification towards more precise, data-driven and business-focused climate intelligence.



SHIFT 01

From Disclosure to Financial Materiality

Climate risk is increasingly assessed through its potential impact on revenues, operating costs, asset values, financing, insurance availability, supply chains and enterprise value. Frameworks such as IFRS S2 reinforce this shift by requiring organisations to disclose climate-related risks that could reasonably affect cash flows, access to finance and cost of capital.⁴

The question earlier

What climate risks do we face?



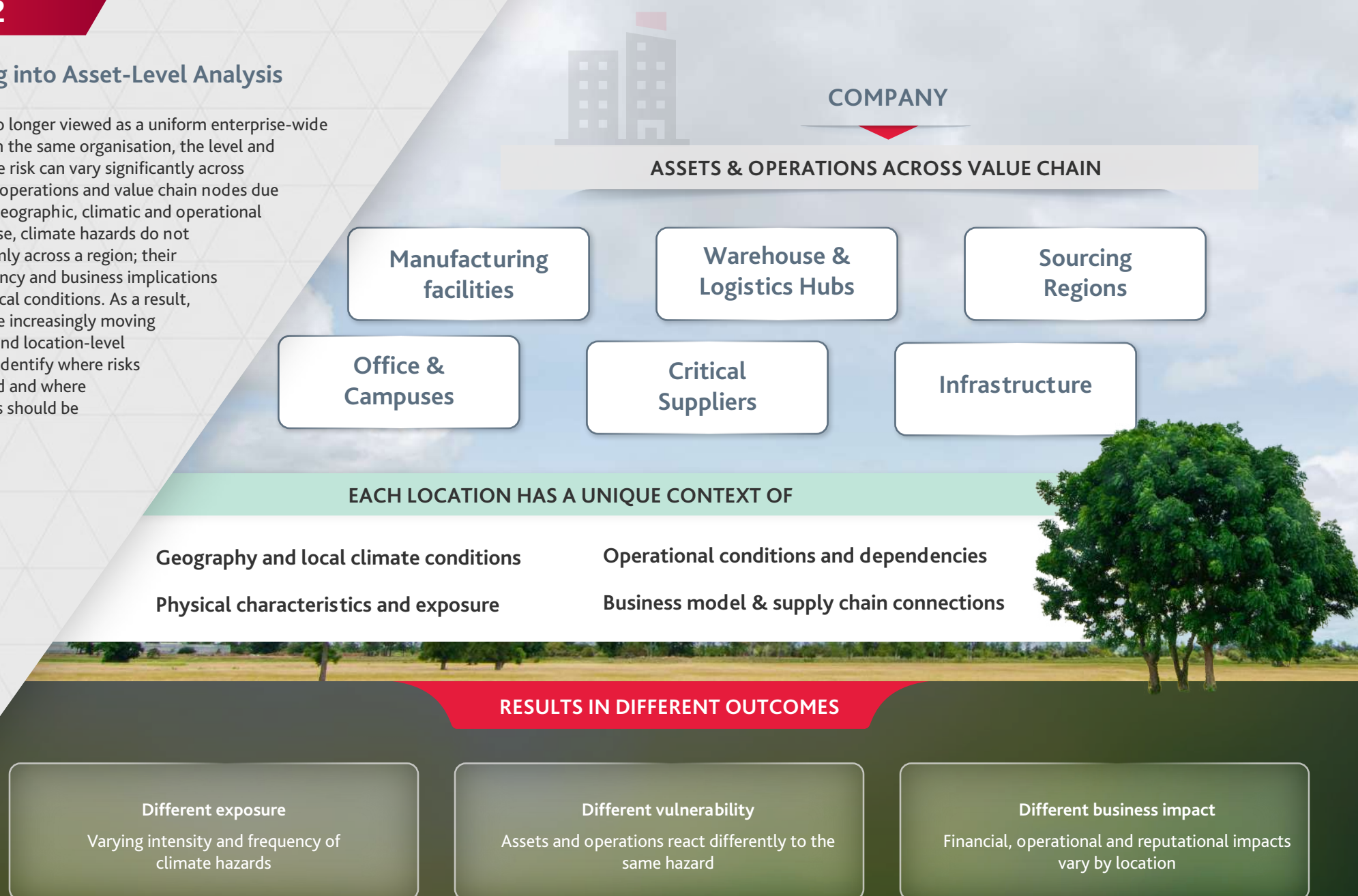
The question 'now'

How could climate risks affect financial performance?

SHIFT 02

Deep-diving into Asset-Level Analysis

Climate risk is no longer viewed as a uniform enterprise-wide exposure. Within the same organisation, the level and nature of climate risk can vary significantly across different assets, operations and value chain nodes due to their unique geographic, climatic and operational contexts. Likewise, climate hazards do not manifest uniformly across a region; their intensity, frequency and business implications are shaped by local conditions. As a result, organisations are increasingly moving towards asset- and location-level assessments to identify where risks are concentrated and where resilience efforts should be prioritised.



SHIFT 03

From Single Hazard to Compound & Cascading Risks

Climate risks rarely occur in isolation. Organisations are increasingly experiencing compound and cascading risks, where multiple climate hazards interact with operational vulnerabilities, supply chain dependencies and infrastructure constraints. Understanding these interconnected impacts is becoming critical to assessing business resilience and prioritising adaptation measures.

CLIMATE HAZARDS

Extreme Heat + Water Stress



Flooding + Transport Disruption



Drought + Energy Constraints



BUSINESS CONSEQUENCES

Lower production + Reduced workforce productivity

Asset damage + Supply interruption

Higher operating costs + Production risk

Multiple climate hazards and their consequential business impacts

“The next frontier is not simply identifying individual hazards but understanding how hazards interact with business vulnerabilities and dependencies.”



SHIFT 04

Climate Risks Materialise Through Interconnected Natural and Business Systems

Business resilience depends not only on a stable climate but also on the natural systems that support operations and value chains. Increasingly, organisations are recognising that climate-related risks cannot be fully understood without considering their interconnectedness with water resources, biodiversity, land use and supply chain dependencies.



Climate-related business risks rarely arise from a single environmental factor. They emerge through interconnected pathways that influence resource availability, ecosystem health and value chain resilience. Understanding these linkages enables more informed prioritisation of risk mitigation and adaptation measures.

SHIFT 05

From Periodic Study to Ongoing Risk Intelligence

Climate risk assessment is evolving from periodic reporting exercises to an integrated component of organisational management systems. Aligning with ISO 14001:2026, organisations are expected to embed climate change considerations into existing environmental and business management processes rather than treating them as standalone activities. This enables continuous monitoring, timely risk identification and informed decision-making, while integrating climate risk into enterprise risk management, business continuity, strategic planning and resilience investments.



PLAN

- Screen climate risks
- Diagnose exposure
- Quantify impacts

DO

- Prioritise actions
- Implement resilience measures

CHECK

- Monitor climate indicators
- Review performance

ACT

- Adapt strategy and controls
- Update assessments & plans

“The climate risk question is becoming more granular, more financial and more connected to core business decisions”

The PDCA cycle embeds climate risk assessment into existing management systems, transforming it from a periodic reporting exercise into a continuous process of planning, implementation, monitoring and improvement.

CHAPTER 2

GLOBAL CLIMATE RISK: The Rising Impact On Corporate Balance Sheets

Climate hazards are no longer isolated environmental events; they are becoming persistent sources of operational disruption, financial loss and strategic uncertainty. The scale of this underlying risk is already significant. German watch's Climate Risk Index 2026 records more than **9,700 extreme weather events between 1995 and 2024**, resulting in more than **832,000 deaths and nearly US\$4.5 trillion in direct economic losses globally**. Storms accounted for the largest share of economic losses, while floods affected nearly half of all people impacted by extreme weather over the period. These figures illustrate not only the growing frequency and severity of climate-related hazards, but also the scale at which their consequences can reverberate across economies and communities.

The World Economic Forum's Business on the Edge: Building Industry Resilience to Climate Hazards⁵ highlights how extreme heat, wildfires, drought, water stress, tropical cyclones and flooding can damage fixed assets across industries while disrupting supply chains,

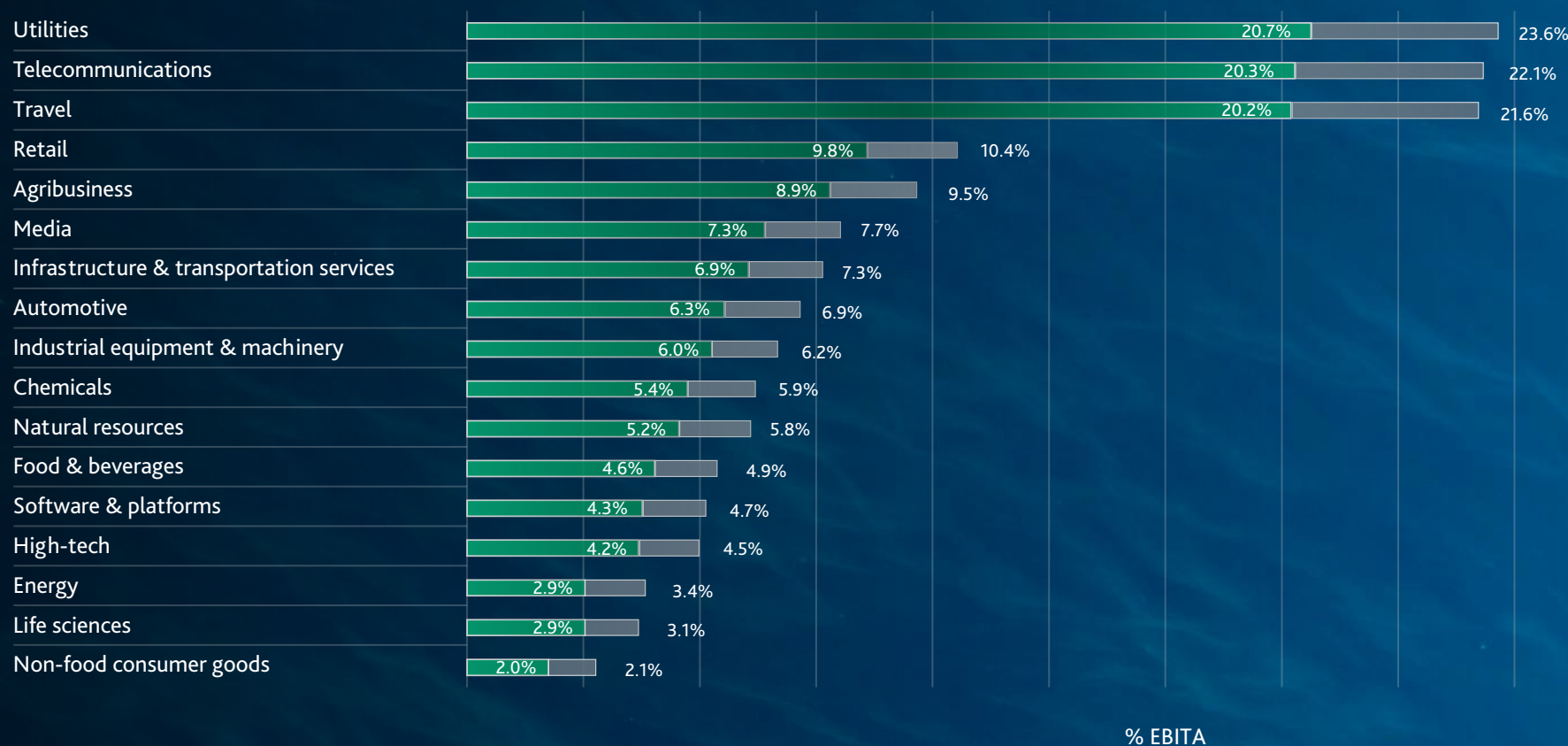
increasing operating costs and reducing workforce productivity. Its analysis estimates that climate hazards could drive **US\$560–610 billion in annual fixed-asset losses** for listed companies by 2035, depending on the emissions scenario. For the average company, these losses could translate into an estimated **6.6–7.3% reduction in earnings by 2035**, with the financial impact increasing further over the longer term.

Importantly, this exposure is not confined to businesses traditionally perceived as climate sensitive. While sectors such as travel, utilities and telecommunications may face significant direct exposure to physical hazards, industries including technology, software and life sciences can also experience material impacts through infrastructure dependencies, logistics constraints, supply-chain disruption and rising operating costs. Climate hazards can therefore propagate through interconnected business systems, transforming a physical event in one location into broader consequences for revenues, costs, asset values and business continuity.



⁵ Climate hazards are reshaping business realities and responses | World Economic Forum

Percentage EBITA loss - 2021-23



Note: Industry average for 5,043 companies with available data; average EBITA 2021-2023.

■ Low emissions scenario
 ■ High emissions scenario (additional losses)

“The question is no longer whether an organization is exposed to climate risk, but where that exposure sits, how it can propagate, and what it means for financial performance.”

CHAPTER 3

INDIA'S CLIMATE RISK REALITY: One Country, Multiple Geographical Risks

Global climate risk discussions often classify countries as either 'high risk' or 'low risk'. While useful for broad international comparisons, this view provides limited insight for businesses seeking to understand and respond to the specific climate risks they face. For Indian companies, climate risk is far more nuanced. The nature, intensity and business consequences of climate hazards vary significantly across regions, sectors and asset locations.

A manufacturing plant in Gujarat faces a very different climate risk profile than a logistics hub in Chennai, a data centre in Hyderabad, an agricultural sourcing network in Maharashtra or a commercial real estate portfolio in Mumbai.

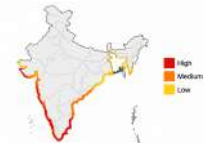
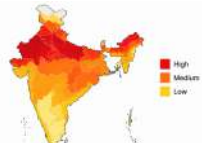
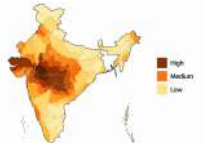
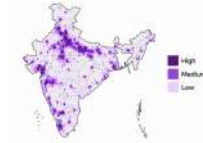
These differences are not simply geographical; they influence operational continuity, capital expenditure, insurance costs, workforce productivity and long-term asset value.

India's diverse geography creates multiple, overlapping climate risk zones. As a result, corporate climate risk assessments can no longer rely on enterprise-wide assumptions; they must account for where assets are located and how local hazards interact with business operations.

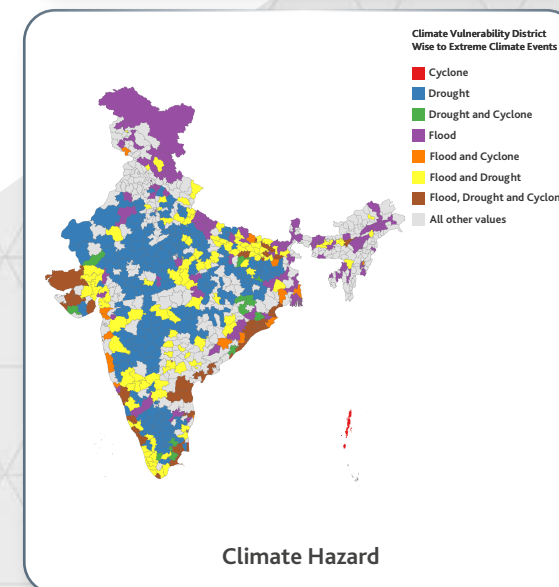
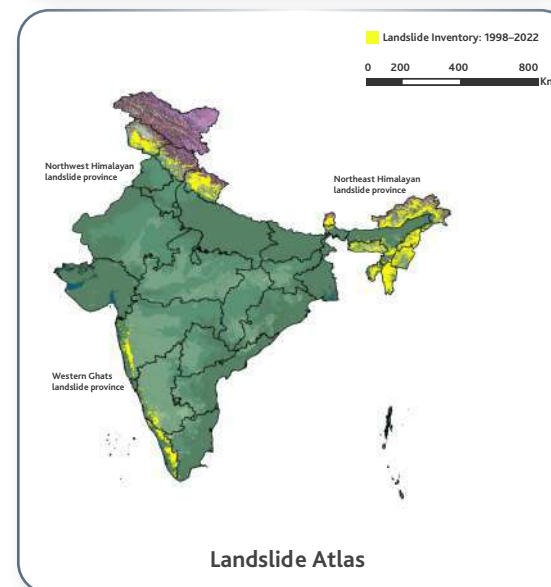
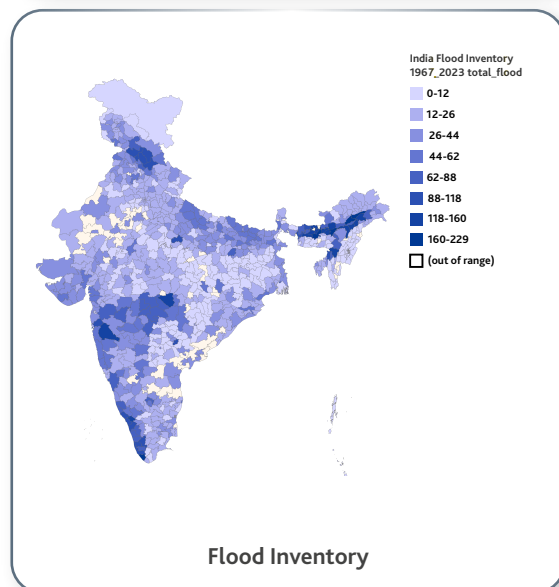
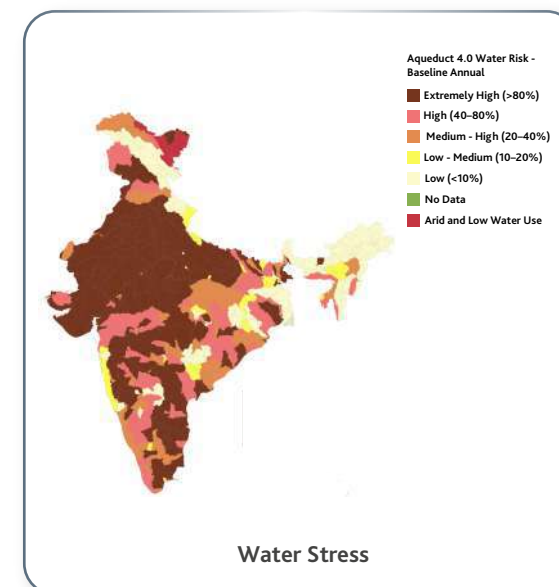
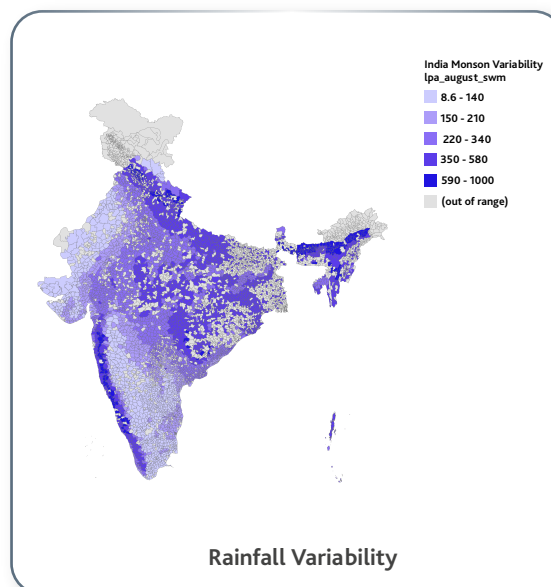
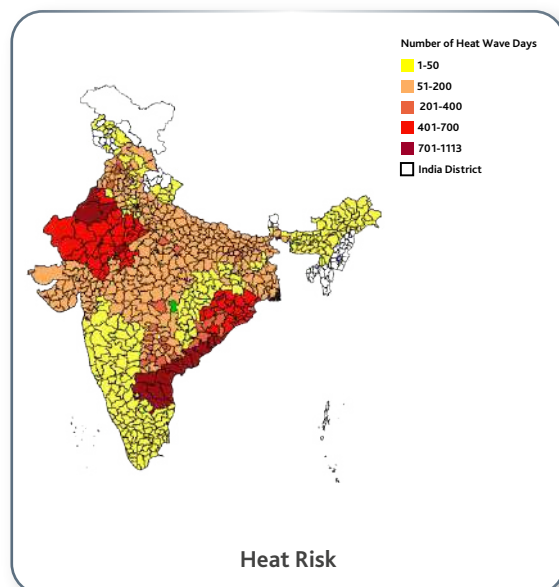
Climate-related disasters caused over USD 12 billion in economic losses in India in 2025 with floods accounting for more than 63% of the total losses.⁶

⁶ Economic Times: Natural catastrophes Cost - India

Impact of climate-related disasters

CLIMATE HAZARD	Coastal Flooding & Cyclone	Riverine & Urban Flooding	Extreme Heat	Water Stress & Drought	Extreme Precipitation	Landslide Exposure	Supply Chain & Infrastructure Disruption
							
Operations & Assets	Damage to assets, ports, warehouses and industrial estates; operational shutdowns	Plant inundation, equipment damage, data loss, operational stoppages	Reduced equipment efficiency, higher cooling demand, increased wear & tear	Water scarcity, production curtailment, constraints on process industries and power plants	Flash floods, drainage overload, asset damage, disruption to outdoor operations	Damage to facilities, roads and transmission networks; restricted site access	Disruption to logistics, transport, ports, power supply and digital connectivity
Supply Chain	Port closures, shipping delays, import-export disruptions	Supplier facilities affected, transport delays, last-mile disruptions	Supplier downtime (especially heat-sensitive sectors), increased lead times	Input shortages for water-intensive sectors, supplier stress	Transport delays, warehouse flooding, raw-material delivery delays	Road and rail blockages, supplier inaccessibility, project delays	Multi-tier supply chain breakdowns, higher inventory holding, network reconfiguration
Financial Impact	Higher insurance premiums, asset write-downs, recovery costs	Revenue loss from downtime, higher repair and clean-up costs	Higher energy costs, productivity losses, reduced revenue	Higher operating costs, regulatory risks, CAPEX for water efficiency	Increased working capital requirements, higher claims, damage costs	Project cost overruns, insurance claims, investment delays	Revenue loss, penalty costs, customer dissatisfaction
Workforce	Evacuations, health risks, transport unavailability	Safety risks, commuting disruptions, absenteeism	Heat stress, reduced productivity, health incidents	Water scarcity affecting communities, health and hygiene impacts	Safety risks, work interruptions, productivity loss	Worker safety risks, displacement, restricted access	Increased travel time, workforce disruption, employee well-being impacts
Infrastructure & Services	Damage to coastal roads, ports, power and telecom networks	Urban drainage failure, transport shutdowns, power outages	Power demand spikes, grid stress, water supply stress	Reduced reservoir levels, groundwater depletion, limited hydropower generation	Drainage overload, transport disruption, power and telecom interruptions	Damage to hydropower assets, roads, bridges, tunnels and telecom infrastructure	Network congestion, port and rail disruption, energy supply shocks
Overall Risk level (Relative)	High	High	High	High	High- Medium	High- Medium	High

Vulnerability of India from climate risk



What is changing in India?



Climate Risks Are Escalating

Extreme heat, flooding, water stress and extreme rainfall are already disrupting manufacturing, infrastructure, logistics, agriculture and urban operations, driving higher costs, productivity losses and supply chain disruptions.



Financial Markets Demand Climate Data

Financial institutions expect organisations to quantify how climate risks could affect cash flows, asset values, financing needs and enterprise value under different climate scenarios.



Disclosure Expectations Are Expanding

Global capital markets and value chains increasingly expect climate risk assessment and disclosure using recognized frameworks, making it essential for competitiveness.



Boards Need Clear Priorities

Boards are shifting from enterprise-wide risk assessments to asset-level climate intelligence that informs strategic planning and capital allocation.

“For Indian businesses, climate risk is fundamentally a Geography x Asset x Sector x Time-horizon question.”

CHAPTER 4

SECTOR LENS: The Business Impact Of Climate Risk

The business impact of climate change depends not only on the risk itself, but also on an organisation's assets, operating model, supply chain dependencies and customer base. A flood affecting a manufacturing plant disrupts production and logistics, whereas the same event may increase credit risk for a lender, reduce occupancy for a real estate portfolio or interrupt healthcare services.

Understanding **how climate risks transmit into business and financial outcomes** is therefore becoming central to enterprise risk management, capital allocation and resilience planning.



Climate Risk Transmission Across Key Sectors

SECTOR	PHYSICAL RISKS	TRANSITION RISKS	HOW RISK TRANSMITS TO BUSINESS	CLIMATE-RELATED OPPORTUNITIES
Manufacturing	▪ Extreme heat ▪ Water stress ▪ Flooding	▪ Raw material price volatility ▪ Carbon pricing & CBAM ▪ Energy transition & emissions regulations ▪ Low-carbon product demand	▪ Production downtime ▪ Equipment damage ▪ Reduced workforce productivity ▪ Supply chain disruption & higher operating costs	▪ Energy efficiency ▪ Process electrification ▪ Renewable energy adoption ▪ Low-carbon product innovation
Real Estate & Infrastructure	▪ Flooding, ▪ Extreme heat ▪ Sea-level rise	▪ Green building regulations ▪ Transition to net zero ▪ Embodied carbon requirements ▪ Changing tenant expectations	▪ Asset damage ▪ Declining property value ▪ Higher insurance costs & resilience CAPEX	▪ Green buildings resilient infrastructure ▪ Climate-resilient urban development
Financial Services	▪ Borrower vulnerability ▪ Collateral exposure ▪ Concentration risk	▪ Climate-related disclosure requirements ▪ Portfolio decarbonisation ▪ Stranded asset exposure	▪ Increased credit defaults ▪ Collateral impairment ▪ Insurance claims & portfolio risks	▪ Sustainable finance ▪ Transition finance ▪ Green lending and Climate risk products
Consumer & FMCG	▪ Water scarcity ▪ Agricultural disruption ▪ Logistics interruptions	▪ Sustainable sourcing expectations ▪ Packaging regulations (EPR) ▪ Carbon footprint pressures	▪ Higher input costs ▪ Supply disruption ▪ Inventory shortages & price volatility	▪ Circular economy ▪ Sustainable sourcing ▪ Resource efficiency
Healthcare	▪ Heatwaves ▪ Flooding ▪ Changing disease patterns	▪ Sustainable healthcare standards & regulations (NABH, NABL) ▪ Low-carbon healthcare operations	▪ Facility disruption ▪ Supply shortages & workforce challenges	▪ Energy-efficient hospitals ▪ Climate-resilient healthcare infrastructure
IT/ ITES	▪ Extreme heat ▪ Water stress ▪ Grid instability	▪ Energy efficiency standards for data centres ▪ Renewable energy commitments	▪ Increased freshwater consumption for cooling ▪ Higher electricity costs & Infrastructure investment	▪ Green data centres ▪ AI-enabled climate analytics

LEGEND:

Revenue	Expenditure	Assets and Liabilities	Capital and Financing
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Note: Colour coding denotes the primary **Task Force on Climate-related Financial Disclosures (TCFD) financial impact theme**. The same theme may represent either an adverse or beneficial financial impact depending on the context (e.g., **Equipment damage** and **energy efficiency** both relate to **Expenditure**, with the former increasing and the latter reducing expenditure).

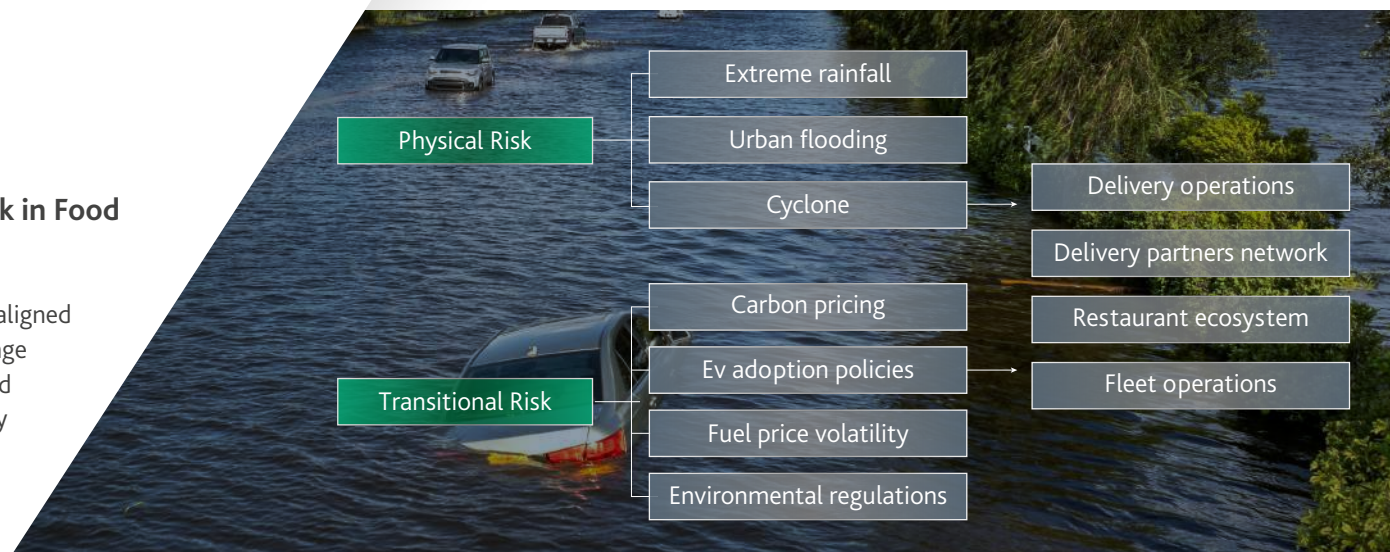
Business Case Studies

CASE STUDY 01

Consumer & FMCG (E-Commerce)

Extreme Rainfall and Urban Flooding: Climate Risk in Food Delivery Operations

A leading consumer E-commerce platform conducted a TCFD-aligned climate risk assessment to evaluate the impact of climate change across its operations and value chain. The assessment identified **heavy rainfall, urban flooding, and extreme weather** as key physical risks affecting delivery operations. It also highlighted **carbon pricing, EV transition policies, rising fuel prices, and stricter environmental regulations** as major transition risks that could increase operating costs and require changes in the delivery fleet and business model. To address these risks, the company is accelerating electric vehicle adoption, improving weather monitoring systems, and strengthening operational resilience.



Identified risks and opportunities for a leading e-commerce platform

Business Impact



Lower order volumes
during extreme
weather events



Delays in deliveries
due to flooded roads
and transport
disruptions



**Reduced operational
efficiency** across the
delivery network



**Increased operating
costs** through
weather-related safety
measures, protective
equipment, and rider
support

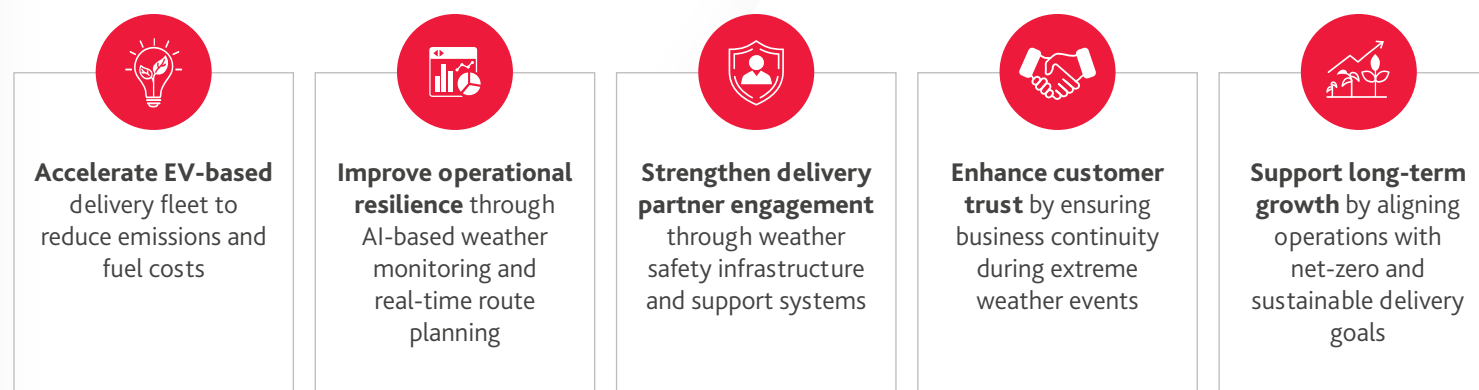


**Additional
investment** in
weather monitoring
systems, real-time
alerts, and delivery
partner shelters

Climate Risk Transmission



Business Opportunities



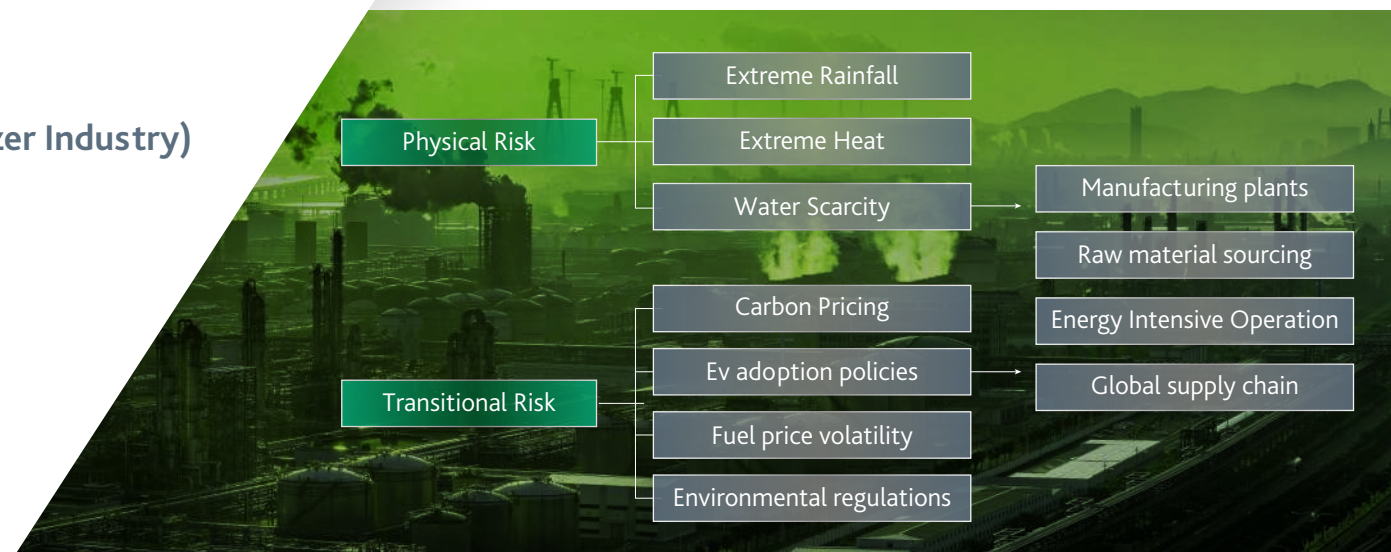
This case reinforces that climate risks extend beyond physical assets and can significantly affect service-based businesses through disruptions to logistics and workforce availability. Extreme rainfall and urban flooding reduce delivery efficiency, impact customer experience, and increase operational costs. By integrating climate risk into business planning and investing in resilience measures such as weather monitoring systems, delivery partner safety, and operational contingency plans, the company is better positioned to maintain business continuity under changing climate conditions.

CASE STUDY 02

Manufacturing Sector (Chemical & Fertilizer Industry)

Managing Climate Risks in a Global Chemical Manufacturer

A leading global chemical manufacturer conducted a TCFD-aligned climate risk assessment across its operations in India, Indonesia, Nigeria, and Uzbekistan. The assessment identified **heavy rainfall, flooding, extreme heat, and water scarcity** as major physical risks affecting manufacturing facilities and supply chains. It also recognised **carbon pricing, commodity price volatility, environmental regulations, and technology transition** as significant transition risks that could increase production costs and influence long-term competitiveness. The company uses climate scenario analysis to evaluate these risks and guide investments in low-carbon technologies and operational resilience.



Identified risks, opportunities and integration of risks into ERM for a leading global conglomerate

Business Impact



Increased production costs due to higher energy and raw material prices



Operational disruptions caused by flooding, extreme heat, and water shortages



Higher compliance costs from evolving environmental regulations and carbon pricing

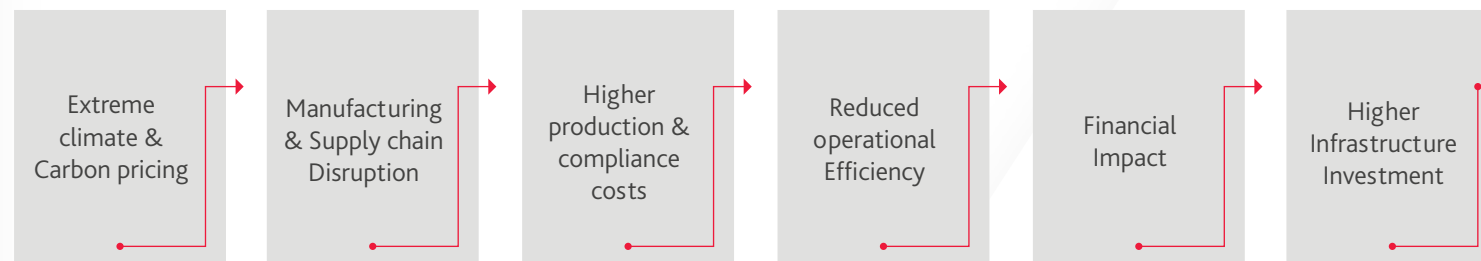


Supply chain disruptions affecting raw material availability and production continuity

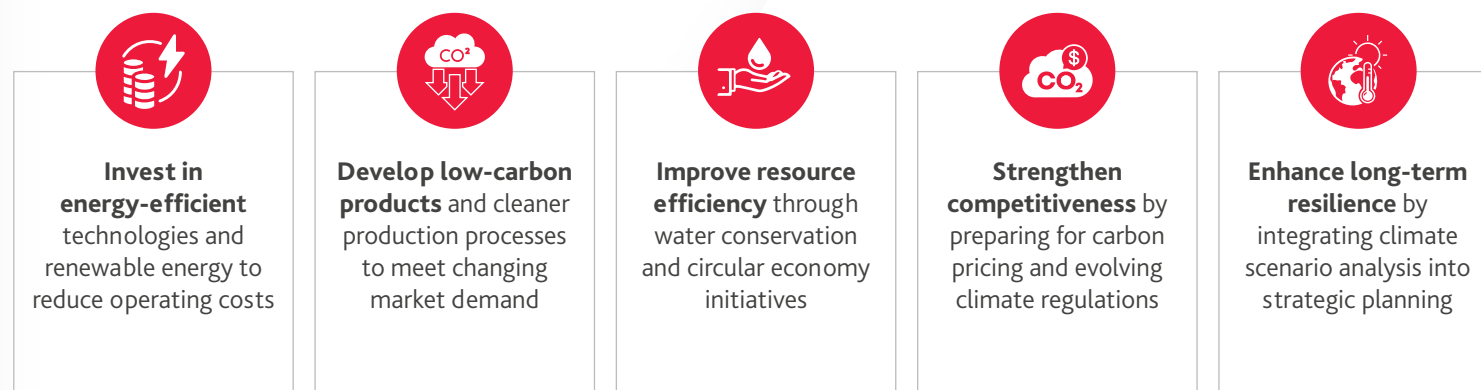


Increased capital investment in energy-efficient technologies, renewable energy, and climate-resilient infrastructure

Climate Risk Transmission



Business Opportunities



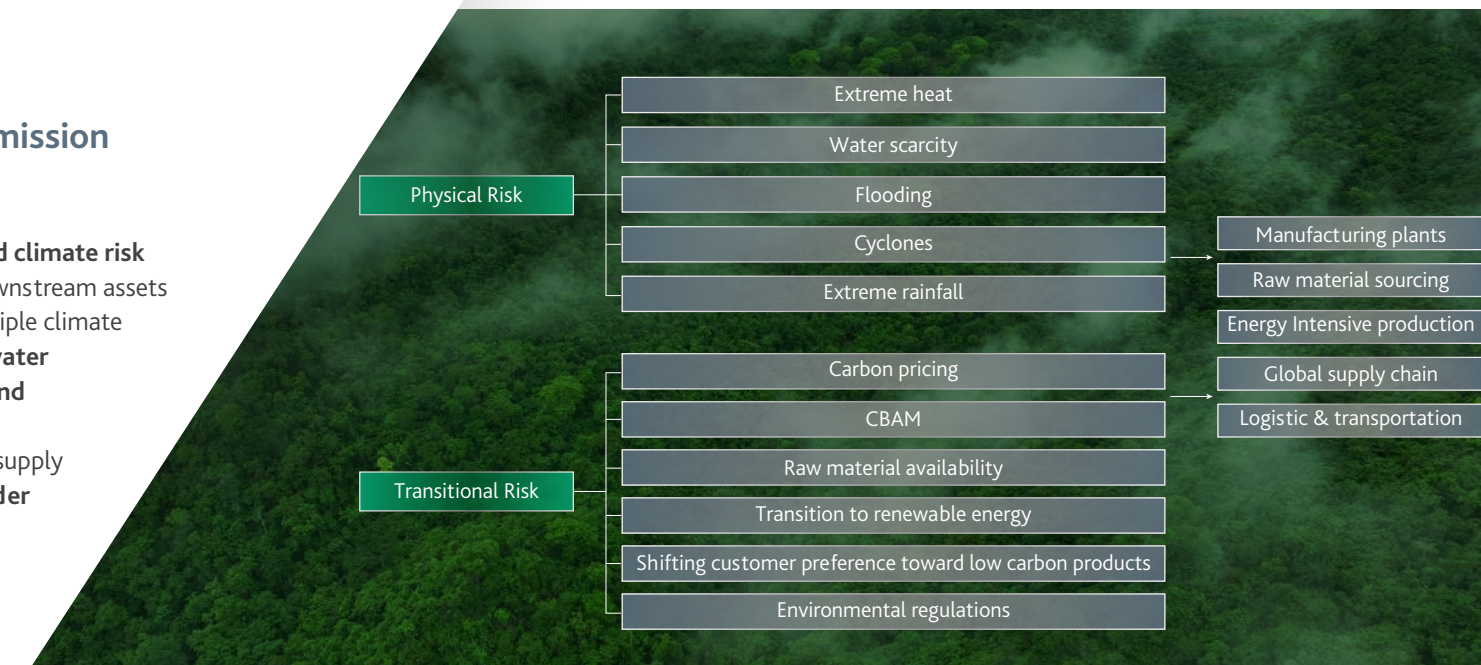
This case highlights that climate change poses both physical and transition risks to manufacturing businesses. Extreme weather events, water scarcity, and evolving climate regulations can disrupt production, increase operating costs, and affect long-term competitiveness. By adopting climate scenario analysis, strengthening supply chain resilience, improving resource efficiency, and investing in low-carbon technologies, the company demonstrates how proactive climate risk management can enhance operational resilience and support sustainable business growth.

CASE STUDY 03

Manufacturing Sector (Power Transmission Components)

A manufacturing company conducted a **TCFD-aligned climate risk assessment** across its operational, upstream, and downstream assets to evaluate the impacts of climate change under multiple climate scenarios. The assessment identified **extreme heat, water scarcity, river flooding, urban flooding, cyclones, and extreme rainfall** as major physical risks affecting manufacturing facilities, logistics, infrastructure, and supply chains. It also recognised **carbon pricing, carbon border adjustment mechanisms (CBAM), raw material availability, transition to renewable energy, shifting customer preferences toward low-carbon products, and evolving environmental regulations** as key transition risks that could increase operational costs and influence long-term competitiveness.

The company integrates climate risks into its **Enterprise Risk Management (ERM) framework** and uses climate scenario analysis to guide investments in renewable energy, energy efficiency, water conservation, and long-term operational resilience.



Identified risks and opportunities, assessment of financial impact related to CBAM for a leading manufacturing company

Business Impact



Increased operating costs due to carbon pricing, CBAM compliance, and higher energy costs



Production disruptions from water scarcity, flooding, cyclones, and extreme rainfall



Higher capital expenditure for water recycling, renewable energy, and equipment upgrades



Supply chain disruptions due to raw material shortages and climate-related logistics interruptions

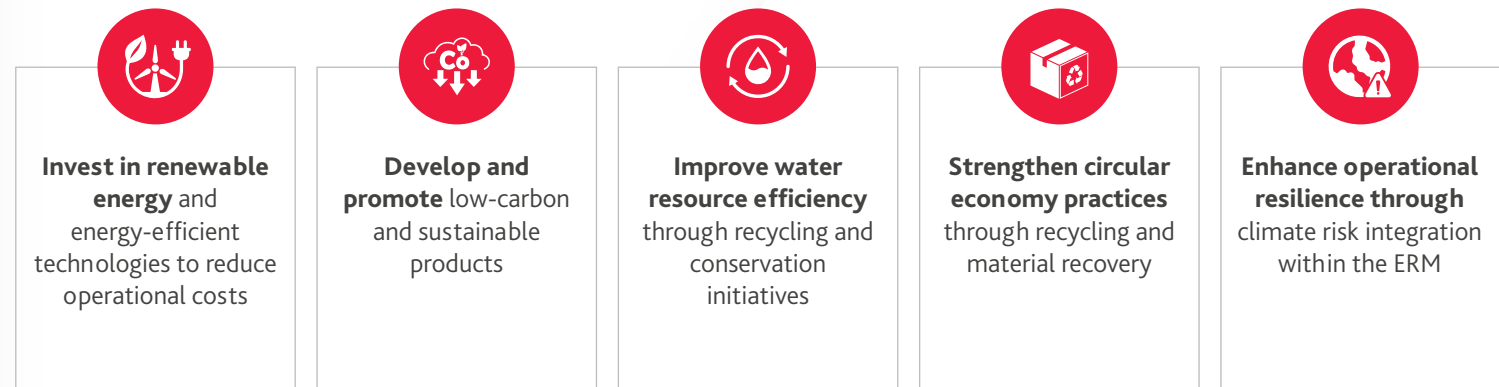


Infrastructure damage and higher maintenance costs from flooding and extreme weather events

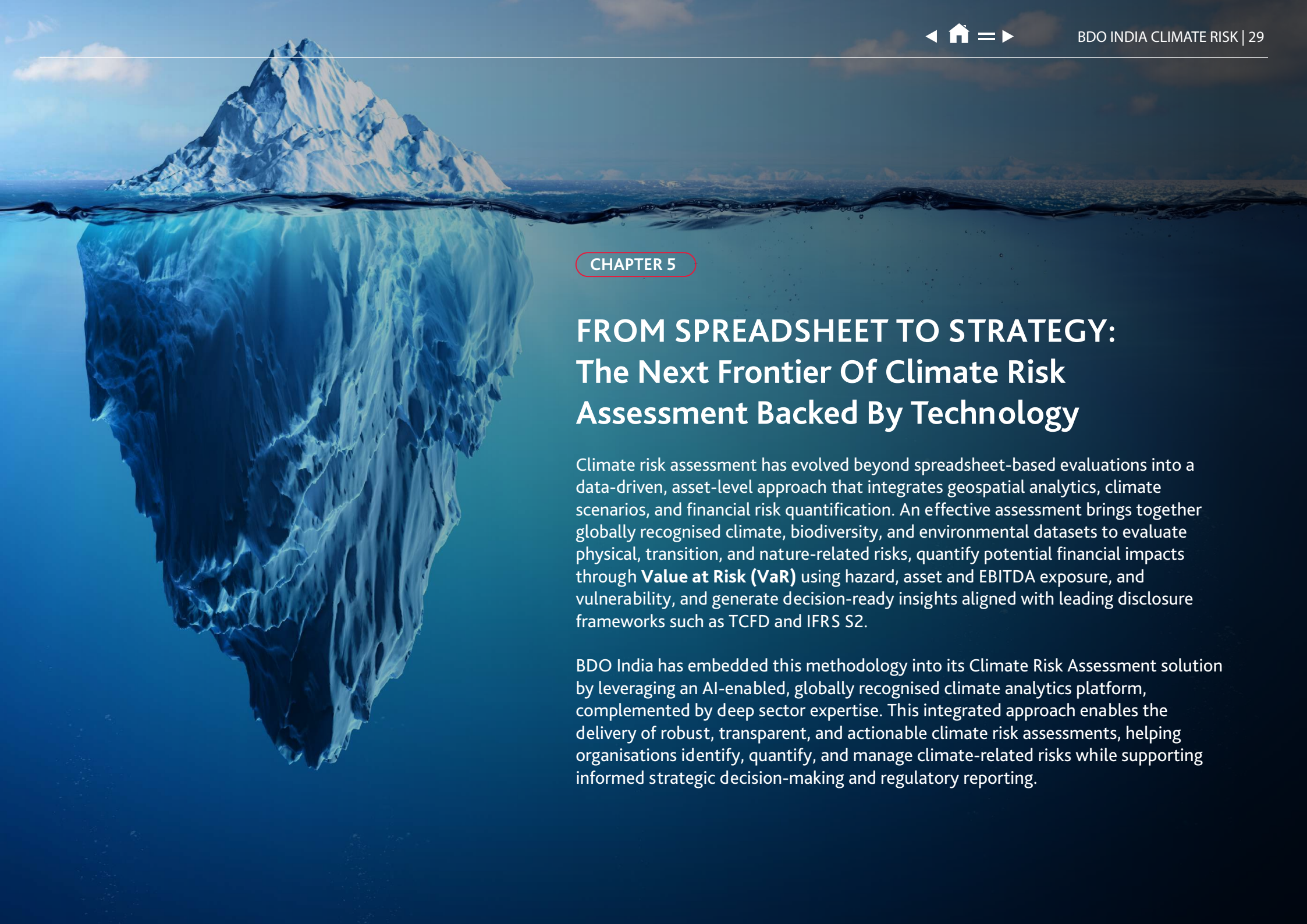
Climate Risk Transmission



Business Opportunities



This case emphasises that climate change presents both physical and transition risks to manufacturing businesses. Extreme weather events, water scarcity, flooding, and rising temperatures can disrupt manufacturing operations and supply chains, while carbon pricing, environmental regulations, and raw material constraints can increase production and compliance costs. By integrating climate risk assessment into strategic planning, improving energy and water efficiency, investing in renewable energy and circular economy initiatives, and strengthening operational resilience, organisations can better manage climate-related risks while supporting long-term sustainable growth.

A large iceberg floating in the ocean. The tip of the iceberg is visible above the water surface, while the much larger, jagged base is submerged underwater. The water is a deep blue, and the sky is a lighter blue with some clouds.

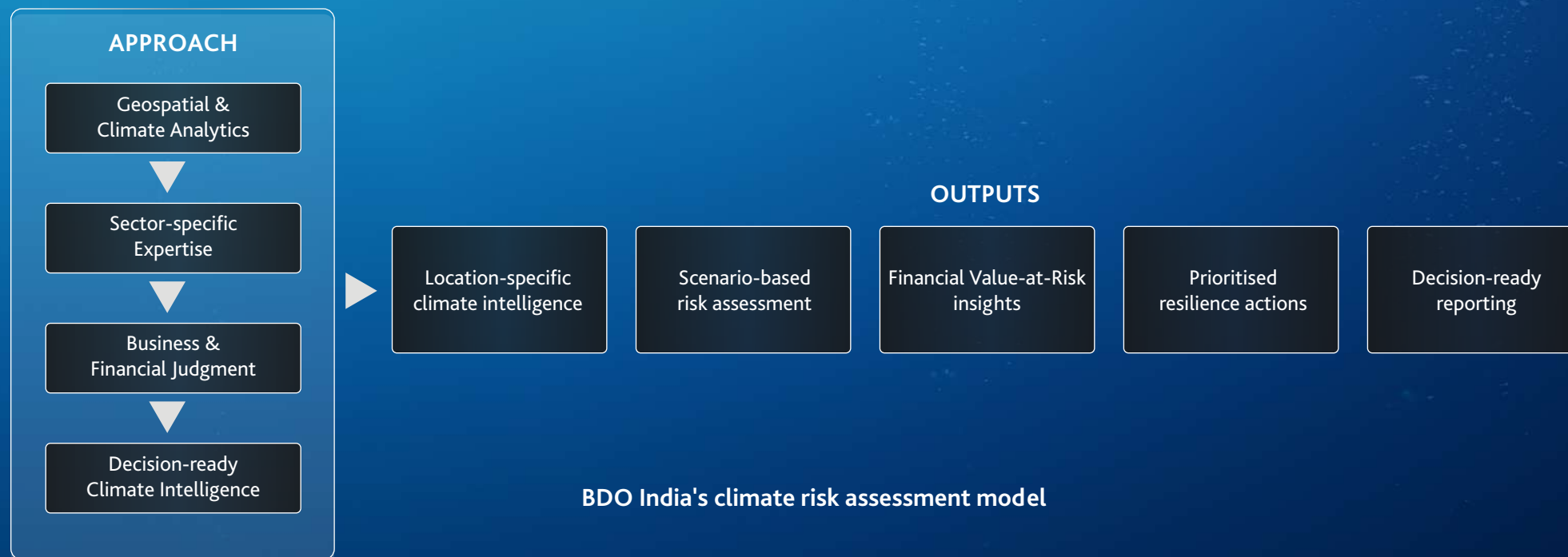
CHAPTER 5

FROM SPREADSHEET TO STRATEGY: The Next Frontier Of Climate Risk Assessment Backed By Technology

Climate risk assessment has evolved beyond spreadsheet-based evaluations into a data-driven, asset-level approach that integrates geospatial analytics, climate scenarios, and financial risk quantification. An effective assessment brings together globally recognised climate, biodiversity, and environmental datasets to evaluate physical, transition, and nature-related risks, quantify potential financial impacts through **Value at Risk (VaR)** using hazard, asset and EBITDA exposure, and vulnerability, and generate decision-ready insights aligned with leading disclosure frameworks such as TCFD and IFRS S2.

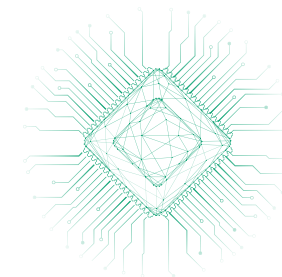
BDO India has embedded this methodology into its Climate Risk Assessment solution by leveraging an AI-enabled, globally recognised climate analytics platform, complemented by deep sector expertise. This integrated approach enables the delivery of robust, transparent, and actionable climate risk assessments, helping organisations identify, quantify, and manage climate-related risks while supporting informed strategic decision-making and regulatory reporting.

The objective is not simply to identify risks, but to help organisations understand their implications and determine appropriate actions



“

Technology can identify where to look. Advisory expertise determines what it means and what to do next”



With **Climate Technology × Sector Expertise × Business Judgment**, BDO India helps organisations transform climate data into business insight, enabling informed decisions on resilience, investment, disclosure and long-term value creation.

As physical and transition climate impacts become more frequent, interconnected and financially material, organisations are recognising that climate risk is no longer solely an ESG issue, it is a strategic business issue. Leading organisations are moving beyond asking "What should we disclose?" to asking "How should climate intelligence influence our business decisions?" The distinction is significant. Disclosures describe risks; climate resilience is built by acting on them.

CHAPTER 6

THE ROAD AHEAD: Moving From Climate Risk Disclosure To Resilience

The next generation of climate risk assessments will therefore be judged not by the volume of risks identified, but by their ability to support better decisions on capital allocation, operational resilience, supply chain strategy and long-term value creation.



Indra Guha
Partner
Sustainability & ESG,
BDO India

Five Questions Every Board Should Be Asking

As climate risks become more financially material and geographically specific, boards should challenge management with five fundamental questions:

1

Do we know which assets, locations and value-chain nodes face the highest future climate exposure?

2

Have we distinguished climate hazards from actual business vulnerability?

3

Can we explain how priority climate risks could affect financial performance and enterprise value?

4

Have we identified and prioritised adaptation and resilience measures?

5

Is climate risk integrated into strategy, enterprise risk management and investment decisions?



Looking Ahead

The Future of Climate Risk Assessment

Advances in climate science, geospatial intelligence, artificial intelligence and scenario modelling will enable organisations to monitor emerging risks in near real time, assess multiple future pathways and quantify financial implications with greater confidence.

Future assessments are also expected to become increasingly integrated, bringing together climate, water, biodiversity, supply chain and financial risk into a single enterprise-wide view. As expectations from investors, regulators and financial institutions continue to evolve, organisations that embed climate intelligence into everyday business decisions will be better positioned to build resilience and capture long-term opportunities.



“Climate resilience is not achieved through better disclosures alone. It is achieved when climate intelligence becomes an integral part of strategic decision making, investment planning and operational resilience.”

The next generation of climate leaders will not be defined by the sophistication of their climate risk disclosures, but by how effectively climate intelligence influences real business decisions. Organisations that combine robust climate science, technology-enabled analytics and informed business judgement will be better equipped to protect assets, strengthen resilience and create sustainable long-term value in an increasingly uncertain climate.

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GLOSSARY

TERM	DEFINITION
Asset-Level Assessment	Evaluation of climate risks at individual assets, facilities, or operational locations rather than at the enterprise level.
Business Resilience	An organisation's ability to anticipate, withstand, adapt to, and recover from climate-related disruptions while maintaining operations.
Carbon Pricing	A policy mechanism that assigns a financial cost to greenhouse gas emissions to encourage emission reductions.
Climate Hazard	A climate-related event or trend (e.g., flood, drought, cyclone, or heatwave) that may adversely affect people, assets, or business operations.
Climate Intelligence	Decision-ready insights generated by combining climate science, geospatial analytics, financial analysis, and business expertise to support strategic decision-making.
Climate Risk	The potential for adverse business impacts resulting from physical climate hazards or the transition to a low-carbon economy.
Compound Risk	Risk arising when multiple climate hazards occur simultaneously or sequentially, amplifying their combined impacts.
Financial Materiality	The extent to which climate-related risks and opportunities could affect an organisation's financial performance, cash flows, or enterprise value.
Geospatial Analytics	The use of geographic data, mapping, and spatial analysis to assess climate exposure, vulnerability, and risk.
Nature-related Risk	Risks arising from changes in ecosystems, biodiversity, water resources, or land use that may affect business operations and value chains.
Physical Risk	Risks resulting from acute climate events (e.g., floods, storms) or chronic changes (e.g., rising temperatures, water scarcity).
Scenario Analysis	A method of assessing how organisations may perform under different future climate and policy scenarios.
Supply Chain Resilience	The ability of a supply chain to prepare for, respond to, and recover from climate-related disruptions while maintaining continuity.
Transition Risk	Risks associated with the shift to a low-carbon economy, including policy, regulatory, technological, market, and reputational changes.
Value at Risk (VaR)	A quantitative estimate of the potential financial loss associated with climate-related risks under specified scenarios.

LIST OF ABBREVIATIONS

ABBREVIATION	FULL FORM
AI	Artificial Intelligence
AR6	Sixth Assessment Report of IPCC
BRSR	Business Responsibility and Sustainability Report
CAPEX	Capital Expenditure
CBAM	Carbon Border Adjustment Mechanism
ESG	Environmental, Social and Governance
EV	Electric Vehicle
FMCG	Fast-Moving Consumer Goods
GHG	Greenhouse Gas
IFRS	International Financial Reporting Standards
IPCC	Intergovernmental Panel on Climate Change

ABBREVIATION	FULL FORM
ISSB	International Sustainability Standards Board
IT	Information Technology
ITES	Information Technology Enabled Services
MoEFCC	Ministry of Environment, Forest and Climate Change
NABH	National Accreditation Board for Hospitals & Healthcare Providers
NABL	National Accreditation Board for Testing and Calibration Laboratories
NAPCC	National Action Plan on Climate Change
NDMA	National Disaster Management Authority
TCFD	Task Force on Climate-related Financial Disclosures
UNFCCC	United Nations Framework Convention on Climate Change
VaR	Value at Risk
WEF	World Economic Forum

ABOUT BDO

BDO GLOBAL

BDO is an international network of independent public accounting, tax and advisory firms. We support organisations with an unwavering focus on quality, industry expertise, and the innovative use of technology to deliver impactful solutions. Our commitment to people, clients, and communities is at the core of everything we do. With our people-first culture, we foster an environment where diversity thrives, growth is nurtured, and continuous learning drives lasting progress for a sustainable future.



*AS OF SEPTEMBER 2025

BDO INDIA

BDO India offers Assurance, Tax, Advisory, Technology Products & Solutions, Digital Transformation, and Managed Services & Outsourcing to domestic and international clients across various industries. Bringing together expertise, innovatively driven and delivered through technology, we empower businesses to navigate their unique challenges with transformative, impactful, client-centric solutions.



*INCLUDES EMPLOYEES FROM BDO RISE AND BDO EDGE

ABOUT OUR CLIMATE ADVISORY SERVICES

BDO India's Climate Advisory Solutions, offered by Sustainability & ESG Practice, helps organisations understand, assess and respond to evolving climate and sustainability challenges. By combining climate science, technology-enabled analytics and sector expertise, we support businesses in strengthening resilience, managing transition risks and integrating climate intelligence into strategic decision-making. Our capabilities span climate risk and vulnerability assessments, scenario analysis, ESG strategy, roadmap and disclosure, decarbonisation pathways, sustainable energy and energy transition. Through a multidisciplinary approach, we help organisations move beyond compliance towards informed, future-ready business decisions.

GET IN TOUCH

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