

# Climate Risk Management in Financial Institutions:

Pathway to a Sustainable Future



# Abstract

The ongoing pandemic has delivered a massive shock to the increasingly interconnected global economy. The pandemic is not a black swan event — epidemiologists, academics, and the World Health Organization (WHO) routinely issued warnings that were ignored. But the crisis has highlighted the ability of one-off events to trigger a global economic downturn and their potential to recur, albeit slowly and painfully. Climate change, with its capacity for large-scale impact on the environment, businesses, and life as we know it, is another such event, which makes the need for governments and corporations to manage climate risks urgent and unavoidable.

The impact of climate risk on the banking and financial services industry will be sizeable; indeed, climate risks can threaten the stability of the financial system. At a time when global financial institutions are dealing with the COVID-19 crisis, increased costs due to changes triggered by climate risk will further worsen systemic vulnerabilities that may have little to do with climate change. This white paper discusses the impact of climate change on the financial services industry and presents a strategy that financial institutions can adopt to manage climate change risks.

## Effects of climate change

Climate risk poses an existential threat to humankind. Like the pandemic, climate change too can cause short-term disorder such as supply chain disruptions and restrictions to daily life. Changes like democratic and societal restrictions, governmental disruptions, and a shift from global to nationalistic values will emerge in the longer term. The impact of a climate crisis on the global economy will thus be long-lasting and unprecedented. The financial services industry too will bear the brunt of this impact – in fact, the Bank for International Settlements (BIS) has opined that climate change can provoke ‘green swan’ events that could lead to systemic financial crisis unless timely action is taken.<sup>1</sup>

A positive development, however, is that the pandemic and its aftermath have led to a reappraisal of the environmental impacts from businesses and social policies as well as a reevaluation of the true meaning of responsible governance. Despite global recognition that climate change is a big risk, few decisive steps have been taken primarily because the effects of climate change are not immediately visible but are felt over the longer term and involve high costs for redress or other pressing issues demand immediate attention.

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[1] Bloomberg, ‘Green Swan’ Climate Event Could Trigger Global Financial Crisis, BIS Warns, January 2020, Accessed November 2020, <https://www.bloomberg.com/news/articles/2020-01-20/-green-swan-event-could-trigger-global-crisis-bis-warns>

## ESG and climate risk

Environmental, social, and governance (ESG) is a term used for factors associated with sustainability or corporate responsibility; nevertheless, it can have a material financial impact on financial institutions' value strategy, whether short-term or long-term. ESG factors materialize at many levels such as international, national, sectoral, and entity.<sup>2</sup> National regulators are looking to define the impact of ESG risks on financial institutions such as those emanating from their effects on banks' counterparties. Both banks and regulators will therefore need to carefully assess the financial impact of ESG risks.

While the metrics and methodologies to assess the social and governance aspects are available, the same cannot be said for environmental risks, particularly those related to climate change. Global bodies such as the Task Force on Climate-related Financial Disclosures (TCFD), Network of Central Banks and Supervisors for Greening the Financial System (NGFS), UN Principles for Responsible Investment (PRI), Bank of England (BoE), and the US Commodity Futures Trading Commission (CFTC) have warned that environmental risk stands out as the biggest challenge. Development of the European Union's (EU) taxonomy regulation will help financial institutions and regulators in the effective management and supervision of ESG risks.

### Financial risks of climate change

Climate change risks fall into two broad categories:

- **Physical risks:** potential loss to property, business, and life due to floods, earthquakes, temperature rise, environmental degradation, pollution, water scarcity, and sea level rise as well as biodiversity loss.
- **Transition risks:** potential loss due to shift to a low-carbon economy; existing industries could see radical change, resulting in significant impact on communities and livelihoods, driven by technology transformation, regulatory requirements, and market and customer needs.

The pattern and pace of physical and transition risks can affect the financial system as well as the various risks that financial institutions have to deal with (see Figure 1).

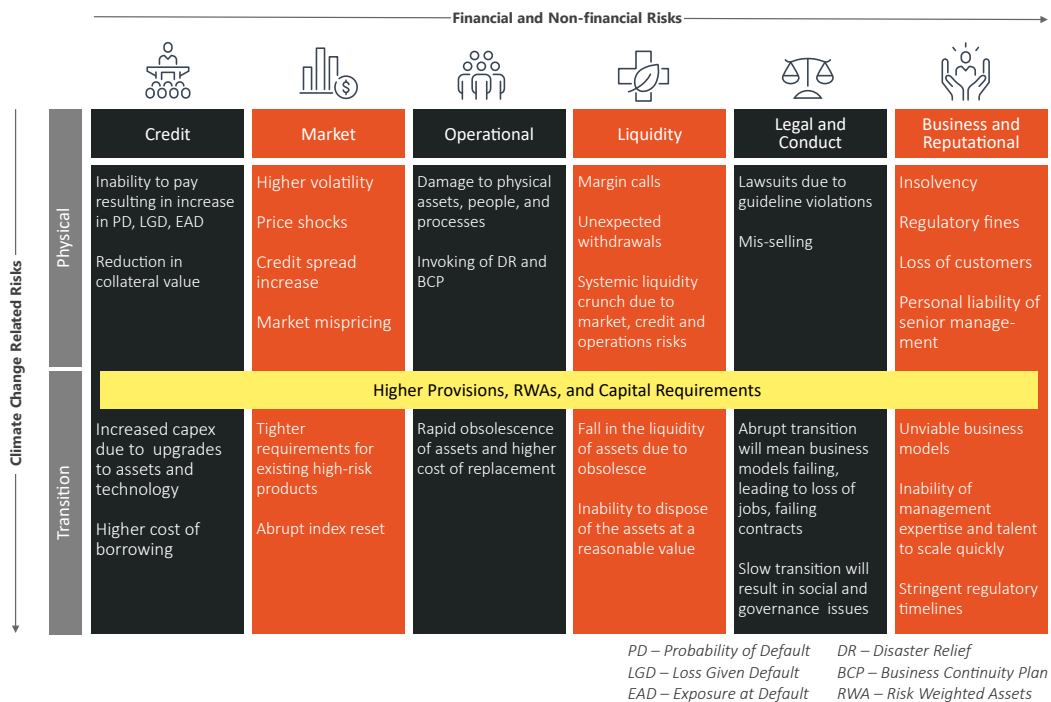


Figure 1: Effects of Climate Risks on Financial and Non-financial Risks

[2] European Banking Authority, Discussion paper on management and supervision of ESG risks for credit institutions and investment firms, October 2020, Accessed November 2020, [https://www.dirittobancario.it/wp-content/uploads/sites/default/files/allegati/2020-11-02\\_\\_esg\\_discussion\\_paper.pdf](https://www.dirittobancario.it/wp-content/uploads/sites/default/files/allegati/2020-11-02__esg_discussion_paper.pdf)

Physical and transition risks may demonstrate a non-linear relationship with each other and in their interactions with other risks. It is too early to predict the relationship due to lack of data. Based on our experience of engaging with global clients, we find that 20-30% of the additional data required from a climate risk perspective is not available with financial institutions. Financial institutions have to create a strategy to source the new information either directly from its customers or from specialized providers such as Trucost (S&P Global), Bloomberg, Refinitiv, and others. Financial and risk models will need to evolve to capture the relationship as accurately as possible, to be able to design the appropriate mitigation measures.

## Regulatory agenda

Transitioning to a climate-sustainable, carbon-neutral economy as mandated by the Paris Agreement on Climate Change<sup>3</sup> will require financial institutions to take firm action on combating the climate threat. Regulators will need to play an important role in clearly defining the expectations from industry participants, guaranteeing efficient monitoring and management of systemic risk, and ensuring that the pace of transition is in line with the Paris Agreement. In fact, regulators have already sharpened focus on climate risks and their impact on the financial system. Supervisors across the globe are increasingly perceiving the need for incorporating climate risk scenarios into financial institutions’ business strategies, models, and processes as well as internal governance frameworks. The EBA considers incorporating climate risk as a driver of prudential risks a progressive step.<sup>2</sup> Going forward, regulators are likely to include climate scenarios in stress tests and disclosures to assess idiosyncratic and wider systemic risks.

## Imperatives for financial services

As financial services supply the funds needed by economies and corporations to function, they have the power to shape the narrative. While climate change and associated risks have featured in the corporate social responsibility programs of financial firms, it is now time to move beyond that. Banks have the power and responsibility to direct businesses and the economy toward a structured and coordinated transition to carbon neutrality through their lending and investment agenda. They should take cues from asset management firms that have moved in this direction by issuing ESG funds, which are showing tremendous growth.

In our view, financial institutions must adopt a structured approach across four key dimensions — **understand, accept, act, and deliver** — to define their climate risk strategies (see Figure 2).

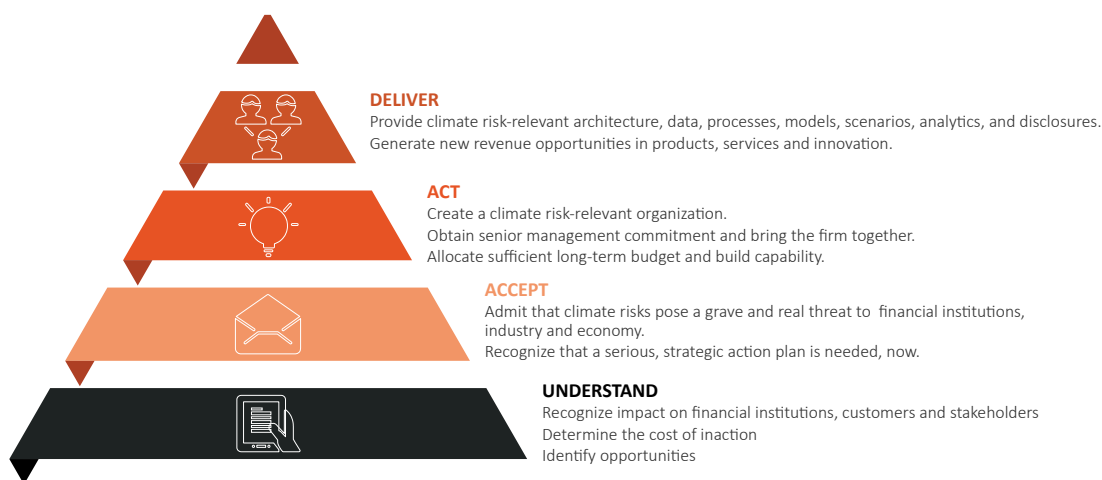


Figure 2: Approach to Defining a Climate Risk Strategy

[3] European Commission, Paris Agreement, Accessed November 2020, [https://ec.europa.eu/clima/policies/international/negotiations/paris\\_en#tab-0-0](https://ec.europa.eu/clima/policies/international/negotiations/paris_en#tab-0-0)

## Understand

The Paris Agreement has set 2050 as the deadline to achieve carbon neutrality; every passing year will magnify the effects of physical and transition risks. Financial institutions must take steps to understand the cost of inaction, especially as the impact is irreversible. Understanding the impact of climate risks on different stakeholders will require a comprehensive assessment exercise (see Figure 3).

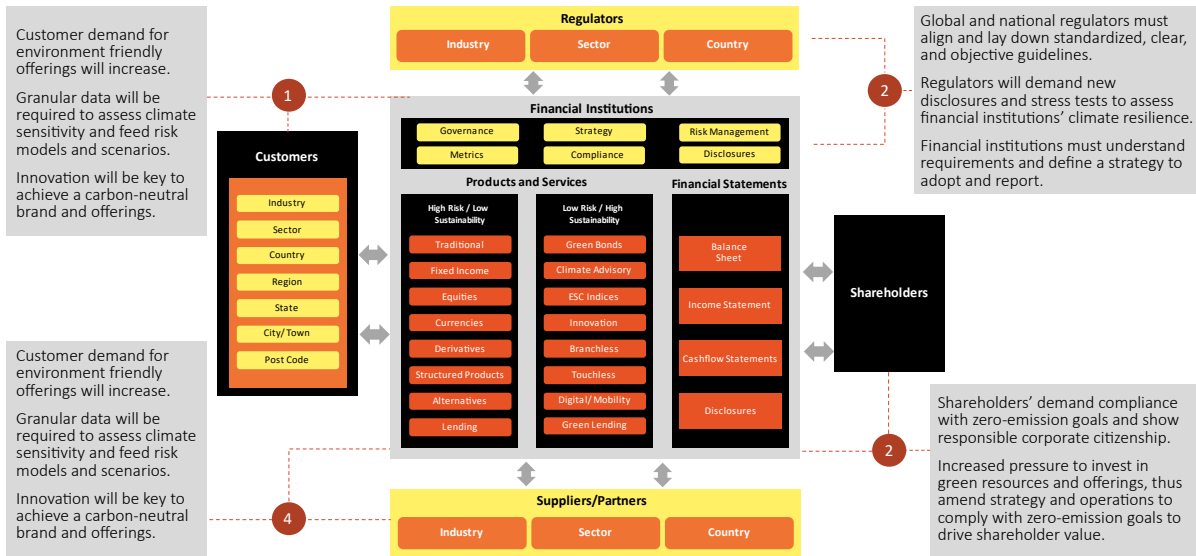


Figure 3: High-Level View of Financial Institutions' Climate Risk-Related Interactions with Stakeholders

Apart from the macro-level interactions, financial institutions will need to understand the cost and impact of inaction on their organization and portfolios by undertaking detailed and comprehensive impact assessment across all components (see Table 1).

Product Type	Impact
Money markets	High volumes, short maturities, hence low impact.
Corporate loans, leases, lines of credit, collateralised loan obligations (CLOs)	Risk will be a factor of maturity, and sector exposure to physical and transition risks of the asset, which in turn will affect the sensitivity of the CLOs and CDOs.
Corporate bonds, collateralised debt obligations (CDOs)	Physical location of the property will influence the risk severity of the asset, which in turn will affect the sensitivity of the MBS.
Mortgages and mortgage-backed securities (MBS)	Asset held by the firm, business sector and model, leverage, liquidity and the instruments traded will determine the risk level for the equities.
Equities	Ability to withstand climate risk, demographic profile, industry concentration, and the ability to transition into a low-carbon economy will be the key determining factors.
Currencies	Maturity, underlying asset, counterparty, country, and industry will determine risk sensitivity.
Derivatives	

Table 1: Climate Risk Impact on Financial Institutions and their Portfolios

## Accept

Financial institutions need to accept that a climate crisis is an existential threat, and perhaps, inevitable in the absence of timely action. Accepting climate risk as a mainstream financial risk is a necessary step to incorporate climate risk into their risk appetite and strategy as well as overall business strategy. This will trigger the development of metrics, models, scenarios, and disclosures and help create greener products and services.

## Act

To effectively manage climate risk, banks must 'price' their carbon footprint. Transitioning to a low carbon economy may involve risks associated with policy, markets, products, legal, and technology changes as well as the risks of adopting innovative solutions to manage the effects of climate

change. Implementing changes to operations and business models will require special focus on governance, risk management, scenario analysis, and disclosures. Financial institutions need to adopt an innovative risk management approach that considers multiple dimensions from economic, political, and social risks while incorporating scenarios covering the coming temperature increases of 1.5-4°C. Challenges will arise in meeting the long-term goals of mitigating risks, infusing resilience, and ensuring adaptation to ‘could-be’ scenarios that might emerge in the time horizon of 2050. An understanding of portfolios and mapping to proposed green and/or brown taxonomies is the starting point. Multiple groups will be involved in the execution and clearly defining the expected actions from each group will be key to success (see Table 2).

Activity	Board	Senior Management	Climate Risk Steering Committee	Lines of Business
Setting up the climate risk-relevant organization and steering committee under senior management with board oversight	A	R	C	I
Performing initial impact assessment and identifying regulatory requirements on financial institutions’ portfolios, business environment, and stakeholders	C	R	A	I
Ploughing the findings into ERM strategy, risk appetite statement, and the three lines of defense (LoD) model	C	A	R	R
Defining a detailed book of work – risk identification, measurement, monitoring management, and mitigation	I	R	A	C
Designing a detailed strategy to incorporate risk factors into models, scenarios, and metrics	I	C	A	R
Assessing impact and performing gap analysis across data, processes, applications, model, resources, and infrastructure	I	C	R	R
Implementing changes to achieve a sustainable, climate risk-relevant organization; executing the product and services strategy- ‘brown vs green’- with a clear transition path	I	C	A	R
Following industry and regulatory developments and incorporating an agile response mechanism	I	R	A	C

R Responsible A Accountable C Consulted I Informed

Table 2: Key Activities Mapped to Departments

## Deliver

The last step relates to delivering a climate-resilient firm with mature capabilities (see Table 3). We envision a climate risk-resilient financial institution as:

- **Innovative and intelligent:** using new technologies to gain insights to proactively contain threats and provide better customer service
- **Cost-efficient:** characterized by a purpose-driven, lean organization, harmonized business units, streamlined processes and applications, and optimal capital structure
- **Future-ready:** with inbuilt operational resilience to respond to expected regulatory, business, and market changes and unexpected threats such as acute climate scenarios.

Parameter	Capabilities that financial institutions must acquire
<b>Organization design</b>	• Well defined climate risk relevant organization with proper segregation of responsibilities and clear channels of communication (top down and bottom up).
<b>Data</b>	• Well-designed and executed data strategy including sourcing, storing, consumption, and governance.
<b>Models and scenarios</b>	• Models capable of running scenarios over long-term horizons and in line with national and international regulatory guidelines.
<b>Strategy</b>	• Strategy to manage risks and harness opportunities for sustainable generation of new revenue.
<b>Innovation</b>	• Harnessing technology to innovate new products and services with short time-to-market; leveraging artificial intelligence (AI) and machine learning (ML) for proactive detection of risks across portfolios.
<b>Architecture</b>	• Future-proof, best-in-class architecture across business lines incorporating requirements of climate risk, streamlined processes, and rationalized application stack.
<b>Disclosure</b>	• Efficient execution to ensure accurate and timely disclosures.
<b>Metrics</b>	• Detailed forward-looking metrics highlighting climate change risks and opportunities mapped to organizational strategy.

Table 3: Capabilities of a Climate Risk-Resilient Financial Institution

**A word of caution:** large enterprise-wide transformations often fail due to lack of visibility into the big picture at the inception of the program. This leads to dilution of the strategic intent, siloed adoption, tactical implementation, cost and schedule overruns, revenue loss, and possibly, adverse regulatory remarks. As regulators stipulate reporting standards, standardization will help institutions meet climate risk requirements.

## Grab the opportunity in adversity

The threat of climate change brings with it a once-in-a-lifetime opportunity to build intelligent, responsible, and sustainable organizations, and the financial services industry can play a leading role in driving this shift. While regulators and governments lay down policies, success will require institutional buy-in coupled with collective and coordinated action from all stakeholders. Irrespective of regulatory compulsions, we believe that financial institutions must take affirmative action in adopting green operations, especially as this could emerge as a competitive differentiator in attracting and retaining the Gen Z cohort.

## About the authors

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# Awards and accolades



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