



State Bank of Pakistan

# Regulatory Framework for Effective Management of Climate-Related Financial Risks

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SME, Housing & Sustainable Finance Department

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### 1. Definitions

**Board** means board of directors as defined in Section 2(1)(8) of the Companies Act 2017.

**Climate change** means change in the climate system which is caused by significant changes in the concentration of greenhouse gases as a direct or indirect consequence of human activities and which is in addition to natural climate change that has been observed during a considerable period.

**Climate-related financial risks** mean the potential risks that may arise from climate change or from efforts to mitigate climate change, their related impacts and economic and financial consequences.

**Climate risk drivers** represent climate-related changes that could give rise to financial risks. They are classified into either physical or transition risks (*see Annexure A for examples on climate risk drivers*).

**Financial Institutions** refer to banks, microfinance banks (MFBs), and development financial institutions (DFIs).

**Greenhouse Gas (GHG) Emissions:** Greenhouse gas (GHG) emissions are the release of gases (i.e., carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride) into the atmosphere that trap heat and contribute to the greenhouse effect.

**Materiality** refers to the threshold at which a climate-related risk i.e. physical or transition risks, could significantly affect a financial institution's capital, liquidity, earnings, risk profile, or business strategy over relevant time horizons.

**Physical risks** refer to economic costs and financial losses resulting from the increasing severity and frequency of:

- extreme climate change-related weather events (or extreme weather events) such as floods, torrential rains and urban flooding, landslides, droughts, heatwaves, wildfires and storms (i.e. acute physical risks);
- longer-term gradual shifts of the climate such as changes in precipitation, extreme weather variability, ocean acidification, and rising sea levels and average temperatures (i.e. chronic physical risks or chronic risks); and indirect effects of climate change such as loss of ecosystem

**Risk appetite** means the aggregate level of types of risk a financial institution is willing to assume within its risk capacity (that is, the maximum amount of risk a financial institution is able to assume given its capital base, risk management and control capabilities as well as its regulatory limits), in line with its business model, to achieve its strategic objectives.

**Senior management** refers to the President/Chief Executive Officer (CEO); and senior officials of a financial institution reporting to the President/CEO.

**Transition risks** refer to the risks related to the process of adjustment towards a low-carbon economy. These are driven by changes in policies, technology, market sentiment or customer behaviors.

## 2. Introduction

Pakistan remains highly exposed to climate risks, with recurring floods, droughts, and heatwaves threatening lives, infrastructure, and economic and financial stability. The State Bank of Pakistan (SBP) recognizes that such risks can translate into both *physical and transition risks*, affecting the safety and soundness of financial institutions (FIs).

Being cognizant of the premise, SBP has made climate change a crosscutting theme within its strategic priorities to strengthen the resilience of the financial system. In this backdrop, SBP has introduced several green initiatives such as Green Banking Guidelines (2017), Environmental and Social Risk Management (ESRM) Implementation Manual (2022), and Pakistan Green Taxonomy (2025) to guide the financial sector's transition towards sustainability.

Building on this foundation and to further strengthen financial sector's resilience to climate risks, the *Regulatory Framework for Effective Management of Climate-related Financial Risks (hereinafter referred to as the "Framework")* sets out a forward-looking approach consistent with international best practices, including *Basel Committee on Banking Supervision (BCBS) – Principles for the Effective Management and Supervision of Climate-related Financial Risks (2022)*. It is expected that this Framework will enable FIs to systematically integrate climate considerations into their institutional arrangements for the effective management of climate-related financial risks.

### 2.1 Purpose

The Framework aims to guide FIs in integrating climate-related financial risk considerations into their governance, business strategy, and risk management frameworks.

### 2.2 Applicability

The Framework shall be applicable on banks, microfinance banks (MFBs), and Development Financial Institutions (DFIs), collectively referred to as Financial Institutions (FIs). In line with the proportionality approach, all FIs shall assess and manage physical risks, while the management of transition risks shall apply to banks and DFIs, consistent with the materiality of their portfolios. For implementation requirements of Climate Stress Testing / Scenario Analysis, the FIs shall refer to FSD Circular No. 1 of 2025.

### 2.3 Implementation Target

All FIs shall ensure the compliance to the Framework by **June 30, 2029**. For the purpose, FIs are required to submit their board-approved, time-bound implementation plans and targets to SBP by **September 30, 2026**. The proposed implementation plan shall, at minimum, include the following along with timelines:

- Establishment of governance structure;
- Development/updates of relevant policies, and procedures;
- Integration into existing risk management & stress testing frameworks;
- Capacity building of relevant staff including the board and senior management.

### 2.4 Structure of the Framework

The document sets out principle-based expectations for FIs to ensure sound and prudent management of climate-related financial risks. It covers the following core areas:

- **Governance:** Board and senior management shall take ownership of climate-related financial risks by embedding them into strategic planning, risk appetite framework, and institutional policies, with defined roles, responsibilities, and oversight arrangements.
- **Internal Controls:** FIs shall incorporate climate-related financial risks into their internal control frameworks across all three lines of defense to ensure effective risk identification, measurement, and mitigation.
- **Capital and Liquidity Adequacy:** Material climate-related financial risks shall be incorporated into capital and liquidity adequacy assessments, including stress testing under severe but plausible climate scenarios.
- **Risk Management Processes:** Climate risk drivers shall be integrated into credit, market, liquidity, operational and other risk management processes, supported by robust monitoring, reporting, and escalation mechanisms (*see Annexure A for examples on climate risk drivers*).
- **Monitoring & Reporting:** The FIs shall establish robust data governance frameworks to ensure consistency and integrity of climate risk data that is used for internal/ external reporting.
- **Climate Stress Testing/ Scenario Analysis:** FIs shall develop and strengthen their capacity for climate stress testing and scenario analysis to assess resilience to both physical and transition risks over relevant time horizons.

### 3. Governance and Oversight

This section entails responsibilities of the board and senior management of FIs to ensure incorporation of climate-related financial risks into their overall business model and environment in which they operate.

#### 3.1 Responsibilities of the Board of Directors

The board shall:

- a) understand how climate risk drivers i.e., physical and transition risks affect their business in the short, medium, and long term to shape their business strategy process.
- b) have the ultimate responsibility of oversight and management of climate-related financial risks and shall assign/ establish a board committee responsible for effective oversight. The board committee shall also periodically review the internal reporting submitted by the management committee [*see section 3.2 (b) (vi)*] on FI's exposure to material climate-related financial risks and their mitigation/ management measures.
- c) clearly set the roles and responsibilities of relevant board committee and senior management for the management of climate-related financial risks.
- d) ensure integration of climate-related financial risks into the institution's strategy, risk management framework, risk appetite, and internal control framework.

### 3.2 Responsibilities of the Senior Management

The senior management shall:

- a) possess adequate knowledge, skills, and experience to be able to understand the FI's climate-related financial risks and shall remain updated.
- b) assign/establish a management committee that shall:
  - i. develop strategies, policies, procedures, and roles and responsibilities for internal organizational structures, along with accountability mechanisms for effective management of climate-related financial risks.
  - ii. ensure that the institution's strategy and risk appetite statement regarding climate-related financial risks are formulated in a manner consistent with its overall strategic objectives and risk management framework.
  - iii. establish systems for collecting, monitoring, and reporting information on climate-related financial risks for decision-making and regulatory reporting.
  - iv. develop and implement capacity building plans for relevant officials (including board and senior management) and regularly review the adequacy/appropriateness of internal capacity.
  - v. put in place effective escalation channels for reporting material climate-related financial risks.
  - vi. ensure regular and comprehensive reporting on climate-related financial risks to the relevant board committee, with a minimum reporting frequency on annual basis.

#### **Box-1: Observed practices in Governance & Oversight**

To ensure effective oversight of sustainability-related activities, some FIs have established dedicated board-level and/or management-level committees, whereas, others have delegated this responsibility to their existing risk management committees.

### 4. Internal Control Framework

The Internal Control Framework (ICF) shall clearly outline roles and responsibilities across three lines of defense for comprehensive, effective, and efficient management of climate-related financial risks:

- a) The business lines shall be responsible for ensuring that climate-related financial risks are effectively identified, measured, monitored, and managed throughout the operational cycle, from customer onboarding to ongoing monitoring, client engagement as well as in the process of development and implementation of new products.
- b) The risk management function shall conduct independent climate-related financial risk assessment and monitoring. The compliance function shall ensure the institution's adherence to applicable rules and regulations.
- c) The internal audit function shall ensure that the policies, processes, controls, and systems in the first and second lines are adequate to manage climate-related financial risks.

### **Box-2: Observed practices in Internal Control Framework**

It is observed that some FIs have established dedicated sustainability-related functions/units that coordinate with three lines of defense for comprehensive, effective, and efficient management of sustainability-related risks.

## **5. Capital and Liquidity Adequacy**

This section provides guidance on integration of material climate-related financial risks into capital and liquidity adequacy assessment processes and stress testing framework.

- a) The FI shall incorporate material climate-related financial risks, assessed as material, over relevant time horizons into capital and liquidity adequacy assessment processes, which may negatively affect its capital and liquidity positions (e.g., through traditional risk categories).
- b) The FI shall incorporate physical and transition risks, identified as material, over relevant time horizons into its stress testing framework, as prescribed in SBP's Guidelines on Climate Stress Testing<sup>1</sup>, in order to evaluate the bank's capital and liquidity positions under both business as usual and stressed conditions (i.e. severe but plausible scenarios).
- c) The FI shall develop appropriate risk metrics including risk limits and thresholds to manage material climate-related financial risks in line with its risk appetite statement.

## **6. Risk Management Process**

This section describes the key elements of an effective process to integrate climate-related financial risks across all traditional risk categories i.e. credit, market, liquidity, operational, and other risks.

- a) The FI shall incorporate material climate-related financial risks into its risk appetite and overall risk management framework, and establish effective processes:
  - i. to identify material climate risk drivers;
  - ii. to measure, manage, monitor, mitigate, and report material climate-related financial risks.
- b) The risk management framework shall at minimum:
  - i. comprise a process to identify climate risk drivers that are material, with clearly defined criteria and thresholds for determining materiality;
  - ii. assess the potential impact of such material climate risk drivers across short, medium and long term horizons and incorporate these assessments into capital and liquidity adequacy processes;
    - a. For physical risk assessment, the FI is encouraged to use publicly available data and information including but not limited to assessment reports of National & Provincial Disaster Management Authorities and geospatial data available through Natural Catastrophe (NatCat) Model of National Disaster & Risk

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<sup>1</sup> FSD Circular No. 1 of 2025

Management Fund (NDRMF), as and when issued or updated. The FI may also refer to any other sources after duly assessing its reliability and suitability.

- b. For transition risk assessment, the FI may use borrowers' emissions data or, where such data is unavailable, refer to sectoral emission intensities from a reliable source as a proxy<sup>2</sup>.
  - iii. incorporate the results of climate stress testing and scenario analysis into the institution's overall risk assessment and decision-making processes;
  - iv. ensure that material climate-related financial risks, arising from identified climate risk drivers, are appropriately considered and integrated into overall risk assessment and review processes;
  - v. identify and assess concentrations of exposures such as by sector, geography, or counterparty that may exacerbate climate-related financial risks.
- c) The FI shall establish and implement plans to manage and mitigate identified material climate-related financial risks and shall regularly review the effectiveness of such plans.

### 6.1 Credit Risk Management

- a) The FI shall adequately address the risks arising from climate risk drivers in its credit/ risk policies and processes.
- b) The FI shall enhance the existing due diligence process to assess and monitor climate-related financial risks at the initiation of a contractual relationship and on an ongoing basis, at portfolio, counterparty and transaction levels.
- c) The FI shall identify, measure and manage the concentrations in geographies, industries/sectors, and counterparty exposed to climate-related financial risks.
- d) The FI shall consider suitable risk mitigation option(s) to control or minimize material climate-related credit risks. The FI is encouraged to consider options such as adjusting credit underwriting criteria, deploying targeted borrower engagement, or developing corrective action plans.

### 6.2 Market Risk Management

- a) The FI shall assess how climate risk drivers may affect the value of financial assets in its portfolios.
- b) The FI shall evaluate the potential impact of climate-related financial risks on its market risk profile and establish effective processes to monitor, control, and mitigate the associated impact on its portfolio.
- c) The FI shall assess climate-related financial risks at the counterparty level and evaluate concentrations by product, sector, and geography at the time of making investment decisions and ongoing monitoring.

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<sup>2</sup> For instance, see Annexure – C of Guidelines on Climate Stress Testing issued vide FSD Circular No. 1 of 2025

### 6.3 Liquidity Risk Management

- a) The FI shall adopt a forward-looking approach to assess material impact from climate risk drivers that could (i) increase net cash outflows (e.g., increased drawdowns of credit lines, accelerated deposit withdrawals); and/or (ii) reduce the value of assets comprising its liquidity buffers.
- b) In such instances, the FI shall incorporate the above factors into its liquidity risk management (including liquidity adequacy assessment processes, stress testing<sup>3</sup>, early warning indicators) and liquidity buffer adjustments.

### 6.4 Operational Risk & Other Risks Management

- a) The FI shall assess the impact of climate-related events and transition developments on its operations as a whole (including material outsourced activities) and its ability to continue providing critical services at an optimum level. The outcome of the assessment, if significant to the critical business functions, shall be reflected in the business continuity plan accordingly.
- b) The FI shall assess the impact of material climate risk drivers on other risks, such as strategic and reputational risks, and also take the same into account as part of its risk management, capital and liquidity adequacy assessment processes.

#### **Box-3: Observed practices in Operational Risk Management**

It is observed that some FIs consider physical risks in their Business Continuity Plans or Disaster Recovery Plans.

### 6.5 Monitoring & Reporting

- a) The FI shall develop capabilities to aggregate its climate risk data and maintain internal reporting systems that produce reliable, timely, and accurate information on climate-related financial exposures, including risk concentrations (e.g., by geography, sector or counterparty) to support strategic planning and risk management.
- b) In case of data gaps, the FI shall consider alternative data sources or reasonable proxies to bridge the gap. In such cases, the FI shall ensure that:
  - i. the rationale for the selection of proxies and its sources & limitations shall be clearly documented;
  - ii. proxies shall be sourced from reliable and recognized sources<sup>4</sup>;
  - iii. proxies shall be applied conservatively, ensuring that the potential climate-related risks are not underestimated;
  - iv. the use of proxies shall be reviewed periodically, with consideration of improvements in data availability over time.

<sup>3</sup> Please refer to FSD Circular No. 1 of 2025

<sup>4</sup> Examples are provided in section 6 (b) (ii)

- c) The FI shall provide timely and regular reports to the board and senior management on climate-related financial risks for informed decision-making. The frequency, depth and scope of these reports shall commensurate with the size and complexity of the institution's operations and risk profile, with a minimum reporting frequency on annual basis.
- d) The FI shall consider qualitative and quantitative tools and metrics to strengthen effective risk monitoring.
- e) The reports shall at minimum include:
  - i. Sectors and geographic locations vulnerable to climate risk drivers. This shall be supported by rationale.
  - ii. Non-Performing Financing (NPFs) specifically due to climate change.
  - iii. Borrower-level emissions data [*please refer to section 6 (b) (ii) (b)*].
  - iv. Map borrower activities according to Pakistan Green Taxonomy, where applicable.
- f) For effective data governance, FI shall implement systems that comprehensively collect and aggregate relevant climate risk data to facilitate effective assessment and reporting of climate-related financial risks

### **Box-4: Observed practices in Monitoring & Reporting**

It is observed that few FIs have voluntarily issued sustainability reports, whereas most have reported sustainability-related activities within their annual reports.

## **7. Climate Stress Testing/ Scenario Analysis**

- a) The FI shall ensure that climate stress testing/ scenario analysis is designed to capture key climate-related financial risks and is periodically reviewed for relevance and effectiveness. For implementation requirements of Climate Stress Testing/ Scenario Analysis, all FIs shall ***refer to FSD Circular No. 1 of 2025***.

Annexure A: Examples of Climate Risk Drivers

Risks	Physical	Transition
	<p>Examples of acute drivers:</p> <ul style="list-style-type: none"> <li>• Droughts</li> <li>• Floods</li> <li>• Storms</li> <li>• Heatwaves</li> <li>• Landslides</li> <li>• Wildfires</li> </ul> <p>Examples of Chronic shift in patterns:</p> <ul style="list-style-type: none"> <li>• Extreme weather variability</li> <li>• Ocean acidification</li> <li>• Increasing temperature</li> <li>• Sea-level rises</li> <li>• Shift in rainfall patterns</li> </ul>	<p>Examples:</p> <ul style="list-style-type: none"> <li>• Policy, legislation and regulation changes: <ul style="list-style-type: none"> <li>▪ Carbon pricing</li> <li>▪ Other green energy transition measures</li> </ul> </li> <li>• Technological changes with shift to greener alternatives</li> <li>• Shifting market or customer sentiment with preferences for greener alternatives</li> </ul>
Credit	<p>The ability to repay or exposure at risk may be impacted, for example:</p> <ul style="list-style-type: none"> <li>• Through a reduction in income following a climate event;</li> <li>• Lower collateral valuations in real estate portfolios as a result of increased flood risk/ damaged properties/ lower yields in food crops.</li> </ul>	<p>Transition measures may trigger substantial adaptation costs and lower profitability, which may lead to an impact on the ability to repay as well as lower collateral values.</p>
Market	<p>Physical risk drivers may lead to change in market sentiment and result in sudden repricing or changes in volatility.</p>	<p>Transition risk drivers can affect carbon-intensive industries, resulting in the repricing of related securities and derivatives.</p>
Operational	<p>Extreme weather events may cause damage to the properties of financial institutions, such as branches and data centers, leading to disruption in their operations.</p>	<p>Shifts in market sentiment on climate issues may expose FIs to reputational and liability risks stemming from their financing of environmentally controversial activities.</p>
Other risks: Liquidity and Business Model	<p>Physical risk drivers may affect counterparties, leading to fund withdrawals or the diversion of resources toward repairing damages from such events.</p>	<p>Transition risk drivers may undermine the viability of certain business lines, creating strategic risks for specific business models.</p> <p>The liquidity of financial institutions may also be impacted by the abrupt repricing of securities triggered by transition risk drivers.</p>