1. Introduction

This section provides Financial Institutions (FIs) with practical steps on incorporating climate change considerations into their decision-making. This is critical to manage climate-related financial risks and capture the opportunities associated with the transition towards low-carbon, inclusive and climate-resilient economies. It is also relevant to deliver financial value over the long term, and meet the increasing expectations of financial regulators, shareholders, and stakeholders. It implies cross-departmental collaboration and engagement with clients to help them identify, assess, manage, and disclose climate-related issues.

This section provides information on how climate change can drive financial risks to an FI. It then focuses on the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and provides guidance on how to take steps towards their implementation. The TCFD is the international standard to follow to integrate climate risks and opportunities into existing governance, risk management, strategic and performance metrics frameworks.

British International Investment itself committed to and has taken steps to implement the TCFD recommendations. British International Investment structured its climate strategy according to the four pillars of the TCFD's recommendations.

2. Climate change is a driver of financial risks and opportunities for FIs

Climate change, and society's response to it, present financial risks and opportunities to FIs. These risks, or opportunities, can stem from two primary channels: physical and transition risks. Physical risks arise from the effects of climate change on businesses, physical and natural assets, and people. Transition risks arise from changes in policies, technologies, and markets sentiments. (Please see the next section for further details).

Physical and transition risks manifest through and are drivers of conventional risk types for FIs − credit risk, market risk, operational risk, liquidity risk, and underwriting risks.

FIs are mostly exposed to climate-related risks indirectly through their clients' and investees' exposures to these risks. For instance, banks that provide loans to companies with high greenhouse gas emissions profiles, such as fossil fuel producers, may accumulate

climate-related risks via their credit exposures. Further, extreme weather events can lead to business disruption and damages to property, with potential negative implication on the creditworthiness of affected clients or the value of their assets hold as collaterals by an FI.

FIs may also have direct exposures to climate-related risks through physical infrastructures e.g. offices or branches located in areas prone to floods or not meeting energy efficiency standards.

FIs have a crucial role to play in managing climate-related risks by promoting and financing their clients' investments in low-carbon technologies and climate-resilient solutions.

- Physical and transition risks.

  Physical and transition can translate into financial risks (or opportunities) to FIs through transmission channels at the micro (household and business level) and macro levels (economy wide).

  - Physical risks can arise from climate and weather-related extreme events such as droughts, floods, or storms, which can damage property and infrastructure or disrupt economic activities and trade. They may also arise from long-term incremental shifts in climate and weather patterns such as increasing mean temperatures which can affect labour and agricultural productivity.

  - Transition risks can rise from the process of adjustment towards a net-zero economy prompted, for example, by changes in policy (e.g. carbon pricing), technology, market dynamics, and sentiment. These could prompt unanticipated or premature write-downs of carbon-intensive assets and the reassessment of the value of a large range of assets.

  Figure 1. Key drivers of physical and transition risks

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- Climate and conventional risk types are linked

  Climate-related financial risks materialise through conventional risk types like credit

risks (e.g. impaired ability to repay/defaults on credit obligations), market risks (e.g. repricing of assets), underwriting risks (e.g. insured losses increase), operational risks (e.g. disruptions, facility closures), and liquidity risks (e.g. refinancing risks).

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- FIs play a crucial role in ensuring the stability of financial systems

  Central banks and Supervisors recognised physical and transition risks as sources of risk to macroeconomic and financial system stability, and a source of fiscal risk to Governments. They are making steps to integrate climate risks into their regulatory and supervisory frameworks. These span from the issuance of dedicated supervisory expectations to climate-stress testing.

  FIs sit at the heart of the economy allocating capital and risks. They are thereby exposed and can contribute to the systemic risks that climate change poses. As such, FIs have a critical role to play in driving changes in the real economy, investing and financing the transition to low-carbon, inclusive, and climate-resilient economies.

- FIs can finance the transition to low-carbon economies

  FIs play a pivotal role in directing and scaling up capital toward investments and assets that support the transition towards low-carbon and resilient economies and enables the achievements of 'net zero' carbon emissions commitments. By taking a 'climate risk lens' at their portfolios and transactions, FIs can identify opportunities for steering capital towards climate investments.

  For instance, FIs financing energy or water intensive manufacturing companies, can help them identify and invest in energy or water efficient technologies. FIs offering mortgages to households, can finance investments in distributed renewable energy generation technologies to lower energy bills. To this end, they develop dedicated product offering, so-called green lending products. FIs can also source capital in support of their operations by issuing Green Bonds or Sustainability Bonds. (see *Green Financing: Pursuing Climate Investment Opportunities)*

3. Taskforce on Climate-Related Financial Disclosures (TCFD)

The Financial Stability Board established in 2015 an industry-led task force, the TCFD, to provide guidance to both financial and non-financial organisations on how to improve understanding of the 'price' of climate-related risks (and opportunities) and integrate it in capital allocation decision-making.

The TCFD developed widely adoptable recommendations on climate-related financial disclosures that are applicable to organisations across sectors and jurisdictions. The TCFD's recommendations aim to support both financial and non-financial sector organisations to understand and manage their financial exposure to climate-related risks and opportunities, and disclose this information in a clear, comparable, and consistent way.

The recommendations of the TCFD are structured around four pillars: Governance, Strategy, Risk Management, and Metrics and Targets. The following sections provides brief details for each of these pillars of the TCFD's recommendations.

Key benefits associated with implementing the recommendations of the TCFD include: improved understanding of climate-related risks and opportunities; improved access to capital by informing investors that the FIs' climate-related risks are adequately assessed and managed; and proactively addressing investors' and regulators' demand for climate-related information.

- Governance

  A key step for an FI is the allocation of clear roles and responsibilities on climate change, from the board down to the operational levels to ensure adequate oversight and day-to-day management. Climate change requires an organisation-wide effort to identify, assess, and manage its related risks (opportunities) at the transaction, portfolio, and institutional levels. It requires the involvement of all lines of defence and cross-departmental collaboration.

  Integrating climate change in an FI's existing governance also implies developing a climate change strategy and operationalising it throughout capital allocation policies, processes, and decision-making.

- Strategy

  A strategic approach on climate implies identifying climate risks and opportunities most relevant to an FI's business and context of operations in the short, medium and longer term. A mapping of the portfolio with a climate lens can help identify those sectors/sub-sector/clients most at risk from the transition to 'net-zero' and/or the physical effects of climate change. It can help to identify priority areas for more detailed assessment including through scenario analysis. An FI could for instance start by assessing the greenhouse gas (GHG) footprint of its portfolio through international recognised methodologies such as the Partnership for Climate Accounting Financials (PCAF). An FI's approach can increase in sophistication over time as experience and expertise within the organisation grow.

  For taking an informed strategic approach to climate change, the TCFD recommends performing climate scenario analysis. Climate scenarios are hypothetical constructs that help identify early warning signals. An organisation can start with qualitative narratives and then adopt semi-quantitative or quantitative approaches.

  A climate change strategy defines an FI's view and commitments on climate change and how it would deliver and measure progress against its commitments over time. As an example, please see British International Investment's Climate Strategy.

  A climate change strategy should show how an FI plans with foresight to address risks and pursue climate-related opportunities through dedicated products and services.

  Failing to act on climate can put an FI at risk if losing its license to operate. It can also affect an FI's competitive positioning as more forward-thinking competitors could move faster in offering dedicated "green" financial products in an effort to help their customer decarbonise their activities and adapt to the effects of climate change. Proactive steps taken now to address climate change can improve an FI's competitive position relative to its peers, enhance its ability to attract capital, and meet increasing expectations from financial regulators, shareholders, and civil society.

- Risk

  The TCFD recommends integrating the systematic identification, assessment, and management of climate-related risks – physical and transition risk – within existing risk

management frameworks. An FI's Environmental and Risk Management System (ESMS) is a key entry point to this end.

An overview of physical and transition risk data providers can be found here.

- Metrics and targets

  FIs should define metrics to assess climate-related risks and opportunities and targets to manage them. These can be determined based on GHG emissions, water, energy and/or land use, and location (e.g. flood zones) as applicable. Metrics and targets are relevant to track progress over time and to inform strategic decisions and and/or risk management approaches.

4. Implementing the TCFD's recommendations

Developing an FI's climate risk capability and fully implementing the TCFD's recommendations is a multi-year process. Many FIs in Africa and South Asia have made formal commitments to the TCFD and have taken steps towards implementation (see TCFD supporters here). Many more institutions are taking initial steps even without a formal commitment.

The table below provides an overview on the TCFD's recommendations. And the sections that follow provide further details on key steps towards the implementation of 4 pillars of TCFD.

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5. Governance

- Assign clear roles and responsibilities

Senior climate champion	Ensure buy-in and sufficient seniority to effectively manage climate issues and steer strategy towards climate-related opportunities.A senior representative e.g. from the board (including consideration in relevant sub-committees such as Risk) or executive team should be selected as the climate champion.
Roles and responsibilities	Ensure accountability for climate monitoring and performance. Formally incorporate climate oversight in senior role description, for example in the job description, terms of reference for oversight committees, or into board and senior executive evaluations. Ensure the champion has necessary internal support and capabilities assigned to effectively inform climate-related decision making.
Capacity	Senior champion should have sufficient climate-related skills which can be achieved also if board and senior executive team explicitly embeds roles for climate expertise, e.g. advisory sub-committees.
Monitoring	Agree the frequency and process through which the board/senior management will consider climate-related issues (e.g. board briefings, corporate objectives processes) and how climate-related issues will feed into investment strategy over time.

- Raise cross-functional climate awareness (training)

  To implement the TCFD's recommendations it is relevant to develop institutional awareness and knowledge about climate change and its related financial risks and opportunities. Training should be conducted so that decision-makers both at the senior and operational levels have enough know-how around climate change impacts to discuss it with clients and to include climate risk/opportunities factors in the investment process.

  Three considerations can improve the efficacy of training outcomes:

  - **Appropriate to job function:** In light of the differentiated roles and responsibilities, it is advisable to structure distinct knowledge and capacity building activities for those with oversight functions vs. those with operational functions. Senior management should have a working understanding of how

climate change and the low-carbon transition may affect the organisation and are equipped to drive the implementation of a climate strategy to ensure the organisation resilience over the long term.

- **Multidisciplinary**: It is a good emerging practice to create multidisciplinary and cross-departmental working groups to develop the organisations' approach to climate change, both from a risk and an opportunity standpoint. Those who will be responsible for implementing strategic and risk management approaches should have more in-depth technical and multidisciplinary training.

- **'Hands-on'**: Training should include a suite of climate due diligence exercises and concrete examples of how climate risks can impact financial performance. Examples should be as context-specific and show practical outcomes.

These training programmes can be conducted with the help of external experts, as well as with other firms in the same industry.

Free training is available on the TCFD Knowledge Hub's online courses section, covering introductory topics like making disclosures, and new modules on understanding climate risk. UNEP-FI offers a more detailed (paid) course called "Climate Change & the TCFD: Risks & Opportunities for the Banking Industry".

As part of its value-proposition, BII continues to explore opportunities to collaborate and support its portfolio companies in the adoption of TCFD into its governance and risk management framework.

Effective management of financially material, climate-related risks and opportunities requires direct oversight and senior leadership. Leadership sets the tone at the top, establishing key climate-related factors as core business drivers that should be identified, assessed, measured, managed, and reported like any other business-critical issue. This will ensure that the FI maintains the strategic direction and allocates enough resources to progress the TCFD alignment process.

6. Strategy

- Materiality assessment

  FIs need to identify and prioritise efforts on climate-related physical and transition risks most material to the organisation. A materiality assessment of the likelihood of each climate-related risk and degree of impact across sectors/locations/portfolios can help towards this end.

  The key question to be asked is whether, how, and when physical and transition risks can have a substantial impact on the operations, supply chains, or markets of an FI's balance sheet.

  To help determine the materiality of climate-related risks, FIs can assess:

  - The nature of the activities financed and location. The TCFD defined a list of sectors that are typically highly exposed to climate risks considering their energy intensity, greenhouse gas emissions and/or water intensity profiles (e.g. oil and gas, transportation, mining, and agriculture). Indexes such as the ND-GAIN Vulnerability Index can help identify those contexts more vulnerable to climate change impacts.

  - The level of exposure to the climate-related risks associated with the activities financed and, thereby, the amount of the active portfolio, the type of product (e.g. debt vs. equity), and tenors. Physical climate risks, for instance, are particularly relevant for FIs financing long-lived assets such as infrastructures.

  The output of the materiality assessment process is a materiality matrix.

- Scenario analysis

  The TCFD recommends FIs to use scenario analysis to assess and disclose the "actual and potential impacts" of climate-related risks and opportunities on their business as well as their resilience to such risks. This is because the effects of climate change vary by sector, geography, and organisation. Scenario analysis helps an FI to make strategic and risk management decisions under conditions of uncertainties.

A climate scenario describes a path of development leading to a particular outcome in terms of greenhouse gas emissions and related implications on climate variables and socio-economic and natural systems.

There are two types of climate scenarios: physical and transition risks scenarios.

- Physical scenarios model different potential future states of physical impacts of climate change across different time frames.
- Transition scenarios lay out a policy/technological pathway and emissions trajectories consistent with holding global average temperatures to the targets agreed in the Paris Agreement – *well below 2oC above pre-industrial levels*.

The TCFD requires the use of at least two climate scenarios, one of which maintains global temperature rise of *less than 2oC warming*. Good emerging practice suggests considering at least a 1.5*o*C scenario, *2oC* and higher e.g. *4oC.*

To perform scenario analysis, an FI should at first define the scope of the assessment (e.g. the sector(s)/industry(ies) identified most at risk via the materiality assessment), then select relevant transition and physical risk scenarios and time horisons. The time horisons should extend beyond the holding period of the current portfolio because climate impacts that emerge beyond the current holding period will impact the financial sustainability of the firm on the medium to long term.

To get started, an FI can begin with qualitative scenario narratives or storylines to help management explore the potential range of implications associated with climate-related risks.

Commonly used scenarios include:

Transition risk scenarios:

- International Energy Agency (IEA) Net Zero by 2050, Technology Perspectives, Stated Policies Scenario, Sustainable Development Scenario, etc.)
- Bloomberg New Energy Finance – New Energy Outlook

Physical risk scenarios:

- Intergovernmental Panel on Climate Change (IPCC) Representative Concentration Pathways; Shared Socioeconomic Pathways (SSPs)

Transition and physical risk scenarios:

- Network for Greening the Financial System (NGFS): Orderly, Disorderly, Hot House World

For more information on scenario analysis, consult the TCFD Hub, the NGFS' scenarios or the latest publication of the TCFD on the topic. Tools such as the Water Risk Filter tool or the Paris Agreement Capital Transition Assessment (PACTA) are free, open-source climate scenario analysis toolkits that can help an FI in performing scenario planning.

FIs need to identify the nature of the risks (and opportunities) related to the climate faced and understand the related potential financial exposure. Climate-related financial risks (opportunities) vary depending on the nature of the activities supported, their location, and the volume and type of capital extended.

7. Risk Management

- Integrate climate considerations into credit process

  FIs should consider an approach that suits their investment needs and climate goals. Typically, a combination of bottom-up and top-down approaches help gaining evidence at the transaction and portfolio levels.

  The Climate Risk Landscape UNEP FI (2021) provides an overview of climate risk assessment methodologies.

- Integrate climate considerations into the ESMS

For new transactions, the following questions can be helpful to include in the Due Diligence Questionnaire (DDQ). They help to build evidence for bottom-up analysis.

Issue	Possible DD Questions
Introduction	- Is there a general awareness of climate change risks and how they may influence own business, suppliers, customers, etc.?
Regulation	- What current or proposed laws and regulations related to climate change may impact your business?
Carbon footprint	- What is your business's direct and indirect carbon footprint? - If any, what targets have you set to reduce your business's carbon emissions?
Competitors	- What actions are your competitors taking to mitigate or assess climate change impact? - How do your actions compare to those of your competitors?
Cost/ profitabilityforecasts	- How might climate change affect the profitability of a company in the short term (immediate impacts on Opex, short-term capex, etc.) and over the long term (asset destruction, stranded assets, etc.)? - If so, what mitigation efforts have been considered?
Management of climate-related risks/ opportunities	- What steps are you taking to manage the climate-related risks you have identified to your business? - Have you established a climate risk mitigation policy and strategy? - If any, which functions within your business are responsible for climate change or environmental measurement, management, and reporting?

The Transition Pathway Initiative (TPI) offers good insights on the type of questions that can be posed to a company to evaluate their management of greenhouse gas emissions and alignment with the Paris Agreement (download all sector data for more details).

- Fully integrate into financial considerations

  Most climate risk assessment methodologies to date have focused on working out the impacts of physical and/or transition risks scenarios on counterparty's financial statement and using the results for quantifying the credit and market risks for investments/loans in financial models. The resulting changes in financial statements are in fact integrated into Probability of Default, Loss-Given Default, or securities' valuation models to quantify the financial risks (e.g. credit risks) both on a portfolio basis and individual transaction/client basis.

  Correlation analysis is an entry-level technique for finding potentially useful associations between climate-related hazards and financial information. It considered, for instance, the relationships between loan performance metrics and climate-related events. (See UNEP FI (2020) report "Charting a New Climate" for more insights on correlation analysis).

  Debt: For debt products, an emerging trend among FIs is the incorporation of climate risks into the credit rating. This is in progress across a number of institutions ranging from DFIs like EBRD, to commercial banks like Standard Chartered, to ratings agencies such as Moody's and S&P. Climate considerations could therefore potentially upgrade or downgrade ratings and therefore interest rates.

  S&P Global Ratings (2019) provides evidence of how physical and transition risks resulted in credit rating actions.

  Cash valuation: Methods for understanding climate impacts on valuation are also being developed. These tend to an adjusted Discounted Cash Flow, where the discount factor also includes climate criteria.

  There are a number of freely available resources to help firms start to translate climate factors into financial risks and opportunities. These include SASB's "Materiality Map" and the Climate Financial Risk Forum's "Guide to Climate-Related Financial Risk Management". A firm can also hire specialised external consultants to help with the process.

Once an approach is determined, the next step is to determine a methodology to

systematically identifying, assessing, and managing physical and transition risks (and opportunities) in investment decision making.

8. Metrics and Targets

- Portfolio-level climate targets

  Metrics may include the following:

  - Exposure to carbon-related assets: The amount and % carbon-related assets relative to total assets as well as the amount of lending and other financing connected with climate-related opportunities.
  - *Carbon foot-printing:* Measure the carbon emissions of an FIs' portfolio to help it identify priority areas for emissions reductions.
  - *Green/brown exposure:* Measure the portfolio's exposure to green (low-carbon) versus brown (high-carbon) assets/lending, then identify ways to shift towards green and away from brown assets/lending.
  - *Impact metrics:* Examples of such metrics include avoided greenhouse gas emissions, exposure to renewable energy, and reduced resource consumption.

  Where relevant, metrics should be collected and integrated into the investment process. This plan should include a timeline for any targets, the changes in investment methodology that will be required to achieve these targets, and an implementation timeline for the introduction of climate-related indicators.

TCFD recommends the setting of metrics and targets to assess and manage climate-related risks and opportunities over time. For FIs the TCFD recommends creating metrics which reflect how the climate risk is measured, collected at the client level, and aggregated at the full portfolio-level. Metrics should inform the setting and tracking of portfolio-level targets.

9. Networks

Financial institutions may wish to collaborate with peers to learn and share experiences. For example, the United Nations Environment Programme Finance Initiative (UNEP FI) has been running pilots implementing the TCFD recommendations for banks and insurance companies, which include emerging markets banks and which publishes regular programme output and initial bank TCFD reports.

10. Further resources

FIs are advised to consider consulting different sources for input into any scenario analysis work that should be conducted.

- Useful resources
  - The methodologies published by the UN Environment Finance Initiative ("UNEP FI") are a good starting point in assessing transition and physical risks. The approach and methodologies are a result of a pilot programme with 16 leading banks from around the world and they detail how to conduct scenario-based forward-looking assessments of transition and physical-related risks in two separate reports ("Extending our Horizons" and "Navigating a New Climate"). Phase II of the TCFD investor pilot commenced in 2021. This pilot will expand on the work in Phase I by introducing new climate risk assessment methodologies and exploring sector-specific risks and opportunities.

  - The Inevitable Policy Response – PRI, Vivid Economics, and Energy Transition Advisors are building a Forecast Policy Scenario which lays out the policies that are likely to be implemented up to 2050 and quantifies the impact of this response on the real economy and financial markets. The Forecast will provide investors with a unique tool for navigating a complex, evolving policy and regulatory landscape – to enhance portfolio resilience and inform strategic asset allocation.

  - The "Paris Agreement Capital Transition Assessment" is a free-to-use online tool which can assist FIs to analyse their exposure to transition risk in equity and fixed income portfolios over multiple climate scenarios.

Topic	Source	Reference

TCFD Recommendations	TCFD	Recommendations of the Task Force on Climate-related Financial Disclosures
	TCFD	Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures
	TCFD	Guidance on Risk Management Integration and Disclosure
	TCFD	Forward-Looking Financial Sector Metrics Consultation Summary of the Forward-Looking Financial Metrics Consultation
TCFD Implementation How to	TCFD	The Use of Scenario Analysis in Disclosure of Climate-Related Risks and Opportunities
	IIGCC	Navigating climate scenario analysis – a guide for institutional investors Understanding physical climate risks and opportunities – a guide for investors Addressing physical climate risks: key steps for asset owners and asset managers
	CDSB and SASB	Laying the groundwork for effective TCFD-aligned disclosures
	PRI	TCFD for private equity general partners: technical guide
TCFD Implementation Status update	TCFD	TCFD Implementation: 2020 Status Report
	PRI	Top four takeaways from the PRI's first year of mandatory TCFD-based reporting

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