ESG & Climate Risks in India:
An introduction for finance professionals
House rules

Videos & mics
Chat box for questions or technical assistance
Mark attendance through the chat box
Technical difficulties due to other programs

Mentimeter ready on your phone/web browser
‘Raise hand’ during Q&A
Introduce yourself during Q&A
Day 1

Part 1
• Setting the scene: global and national developments in sustainable finance & ESG

Part 2
• Introduction to ESG & climate risks: physical, transition social and governance risks, and their impacts on India’s financial sector

Day 2

Part 3
• ESG & climate risk management: introduction to tools ESG and climate risk assessment tools and techniques

Part 4
• Standards & disclosures: introduction to various non-financial reporting and disclosures, standards, frameworks and principles

Part 5
• Opportunities & the way forward: opportunities and the role of internal stakeholders in ESG & climate risk assessment
Part 1

Setting the scene
Global developments

• Current global temperature is at 1.02-degree Celsius
• The international business and finance community has committed to meet Net Zero targets to limit temperature rise within 1.5 degree Celsius
• COP26, November 2021 - another landmark event. Its outcomes include:
  • Developed countries have committed to mobilize a total of $100 billion per year of International climate finance from 2020 until 2025
  • Developed countries to double the collective share of adaptation finance
  • Commitment to a process to agree on long-term climate finance beyond 2025
Global developments – multilateral agreements & goals

The State of the Paris Agreement
Countries by their participation in the Paris Agreement (as of April 21, 2021)

- $5-7 trillion needs to be invested per year till 2030
- $3.9 trillion per year by the emerging markets till 2030
- $2.64 trillion per year by India alone till 2030

(Standard Chartered, 2020, WEF, 2021, OECD 2021)
NDC commitments on GHG reduction: select emerging markets

- India: 30-35%
- South Africa: between 398 - 614 Mt p.a.
- China: 65%
- Brazil: 43%
- Turkey: 21%
- UAE: 23.5%
- Mexico: 22%
- Malaysia: 45%
- Vietnam: 25%
- Thailand: 20%
- Indonesia: 29%
- Philippines: 75%
- unconditional

(Nationally Determined Contributions (NDCs))
Global net-zero targets

**Global net zero coverage**

- **Emissions**: 88%
- **GDP (PPP)**: 90%
- **Population**: 85%

135 Out of a total 198 countries targets net-zero

~20% of the global economy with net zero targets enshrined in law

Status of net-zero carbon emissions targets

The inclusion criteria for net-zero commitments may vary from country to country. For example, the inclusion of international aviation emissions; or the acceptance of carbon offsets.

To see the year for which countries have pledged to achieve net-zero, hover over the country in the interactive version of this chart.

Indian companies with Net-zero targets by 2030-2031

FAME - 2

- 268749 Total No. of Vehicles
- Rs. 987.08 Cr Total Incentive

CII IGBC launches ‘Mission on Net Zero’

- IGBC targets all buildings to become Net Zero by 2050

(Businessline, 2021)
(Bizzbuzz, 2021)
Global developments – networks for practitioners
India is also developing a sustainable finance taxonomy.
Global developments

Global developments – regulatory guidance
Mandatory climate-related financial disclosures
Recent developments – COP26

COP26: New global climate deal struck in Glasgow

(BBC, 2021)

Glasgow Climate Pact

- Re-visiting emissions-cutting plans next year to try to keep 1.5C target reachable
- The first ever inclusion of a commitment to limit coal use
- Increased financial help for developing countries

RBI commits to integrate climate-related risks into financial stability monitoring

(The Hindu, 2021)

Big emissions cuts still needed to limit warming to 1.5C
Projected greenhouse gas emissions in 2030, gigatonnes

Source: Energy Transitions Commission
Take home point 1:

Countries all over the world are introducing increasingly stringent climate policies and ambitious net-zero targets. New policies will shape markets, and therefore the viability of loans and investments
Global risk landscape

Environmental risks + Debt crises + Geo-economic confrontations

1. climate action failure
2. extreme weather
3. biodiversity loss

Environmental risks

Short and medium term

Long term

Technological risks

1. digital inequality
2. cybersecurity failure

Societal risks

1. social cohesion erosion
2. livelihood crises
3. mental health deterioration

Environmental risks are expected to be the top global risk over the next decade

(World Economic Forum, 2022)
Global risk landscape

Most severe risks on a global scale over the next 10 years

<table>
<thead>
<tr>
<th></th>
<th>Economic</th>
<th>Environmental</th>
<th>Geopolitical</th>
<th>Societal</th>
<th>Technological</th>
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</thead>
<tbody>
<tr>
<td>1st</td>
<td>Climate action failure</td>
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<td>2nd</td>
<td>Extreme weather</td>
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<tr>
<td>3rd</td>
<td>Biodiversity loss</td>
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<td>4th</td>
<td>Social cohesion erosion</td>
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<td>5th</td>
<td>Livelihood crises</td>
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<td>6th</td>
<td>Infectious diseases</td>
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<td>7th</td>
<td>Human environmental damage</td>
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<td>8th</td>
<td>Natural resource crises</td>
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<tr>
<td>9th</td>
<td>Debt crises</td>
<td></td>
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<tr>
<td>10th</td>
<td>Geoeconomic confrontation</td>
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</tbody>
</table>

- "Climate action failure is considered to be most critical risk globally in both, short term (2-5 years) and long term (5-10 years)"
Global risk landscape

Current state of international risk mitigation efforts against "environmental risks"

- **Climate Change Mitigation**
  - Not started: 9%
  - Early development: 68%
  - Established: 21%
  - Effective: 2%

- **Biodiversity Preservation**
  - Not started: 10%
  - Early development: 67%
  - Established: 21%
  - Effective: 2%

- **Natural Disaster Relief**
  - Not started: 6%
  - Early development: 36%
  - Established: 48%
  - Effective: 10%

(World Economic Forum, 2022)
Climate risks facing India

The human and economic costs of climate impacts in India are already immense.

- Heatwaves
- Heavy rain events
- Rising sea levels
- Tropical storms

INR 6 lakh crore of Indian debt at risk
Rs. 3. 83 trillion at risk - SBI
Rs. 1. 79 trillion at risk - HDFC
Climate risks facing India

95% of Indian coastal districts are extreme-level hotspots

In 2020, cyclone Amphan caused damages worth $ 13 billion

Cyclone Tauktae caused damages to the tune of $ 1.5 billion

Cyclone Yaas costed $ 1.5 billion in damages in 2021

<table>
<thead>
<tr>
<th>Climate change: physical impacts</th>
<th>Climate change: economic impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rainfall patterns</td>
<td>Higher temperatures</td>
</tr>
<tr>
<td>An extra two heatwaves (12–18 days at high temperatures) each year by 2064.¹</td>
<td>Water flow in the Ganges and Brahmaputra to fall by 17.6% and 19.6% respectively by mid-century (compared to end of previous millennium).²</td>
</tr>
<tr>
<td>Sea-level rise</td>
<td>Storms and cyclones</td>
</tr>
<tr>
<td>Sea levels to rise by 20–30 cm by end-century (compared to current levels).³</td>
<td>Cyclones in the Bay of Bengal are projected to nearly double by 2070–2100, compared to 1961–1990.⁴</td>
</tr>
</tbody>
</table>

(ODI, 2021)

Cyclone Amphan caused damages worth $ 13 billion
Cyclone Tauktae caused damages to the tune of $ 1.5 billion
Cyclone Yaas costed $ 1.5 billion in damages in 2021

GDP

GDP in 2100 to be reduced by:
- 10% at 3°C of global warming due to declining agricultural productivity, sea-level rise and increased health expenditure.⁵
- 2.6% at 2°C global warming and up to 13.4% at over 4°C of global warming due to declining labour productivity from temperature and precipitation changes.⁶
- 90% at 3°C of global warming, based on the historical relationship between temperature and GDP.⁷
Take home point 2:

Countries all over the world, including India, are already feeling the impacts of climate change. Without rapid action to reduce emissions, we face a much more severe climate crisis and consequently greater economic and financial damages.
The world of sustainable finance

- Sustainable finance
- Green finance
- Transition finance
- Social finance
- Climate finance
- Adaptation finance
Sustainable finance generally refers to the process of taking due account of environmental, social and governance (ESG) considerations when making investment decisions in the financial sector, leading to increased longer-term investments into sustainable economic activities and projects.

OECD – “Finance for achieving economic growth while reducing pollution and greenhouse gas emissions, minimizing waste and improving efficiency in the use of natural resources.”

Government of Germany – “Strategic approach to incorporate the financial sector in the transformation process towards low-carbon and resource-efficient economies, and in the context of adaptation to climate change.”

World Bank – “International public finance that has the explicit objective of supporting mitigation and/or resilience-building activities, and which typically has some degree of concessionality.”

Swiss Federal Ministry of Environment – “Financial products and services, under the consideration of environmental, social and governance factors throughout the whole risk management and decision-making process, provided to promote responsible investments which create a positive environmental, social and governance impact.”
The language of sustainable finance

**Transition Finance**

“Transition finance is industry inclusive (spanning green to brown) and aims to offer especially high-emitting companies financing for the shift towards a climate-neutral, or even positive, status quo.”

*(Nordea Sustainable Finance Advisory, 2021)*

**Adaptation Finance**

“Adaptation finance is used to implement adaptation actions and plans. It can come from different sources, incl. public and private sources, and international (e.g., development banks and funds) and domestic (government spending) sources.” *(UNEP Adaptation Gap Report 2020)*

**Social Finance**

“Social finance supports actions that address specific social issue and seek positive social outcomes for certain social groups. Such projects can include promoting affordable basic infrastructure, access to essential services, such healthcare, affordable housing, employment generation through SME financing and microfinance, food security, socioeconomic advancement and empowerment” *(ICMA)*

However, no cohesive and/or universal definition is available yet
Sustainable finance

“Sustainable finance generally refers to the process of taking due account of environmental, social and governance (ESG) considerations when making investment decisions in the financial sector, leading to increased longer-term investments into sustainable economic activities and projects.” (EU)

- Debt products where the underlying theme/goal is sustainability-related
  - Sustainability-linked loans
  - Sustainability-linked bonds
  - Green bonds
- Sustainability imperatives include
  - reducing GHG emissions,
  - securing food, water and forest systems
  - redefining transport and waste management

**COVID—19 boost**

Sustainable funds & ESG indices outperformed their traditional counterparts during the COVID-19 pandemic, demonstrating their resilience and debunking the myth ESG compromises profit or growth (Bloomberg NEF, Vivid Economics, 2020)

**Debt**
- Green/Social/Sustainability/Climate/Transition bonds,
- ESG funds
- Green deposit
- Green loans

**Equity**
- Green Indices-based Mutual Funds,
- ETFs and Stocks,
- Socially Responsible Investments
Rise of sustainable finance

$976.6 billion combined sustainable debt issued globally in 2021

$517.4 billion green bonds issuance globally in 2021

Global sustainable debt issuance (US $ billion) including green, social and sustainable bonds, sustainable-linked loans and bonds, and green loans

Sovereign issuers boost Q3 2021 green volume

Development Bank 7.1%

Sovereign 22%

Financial Corporate 26%

Non-Financial Corporate 25.7%

Local Government 5.1%

Loan 4.4%

Government-Backed Entity 15%

Strong growth puts market on track for record levels at end of 2021

Annual trillion in green bonds within reach by 2023

(Climate Bonds Initiative, 2021)
Types of sustainable finance offerings

- **Green/Social/Sustainability Bond**
  - Green bonds are fixed-income instruments, generally certified for green end-use
  - Bond proceeds used towards green/social/SDG-aligned projects
  - ICMA’s Green/Social/Sustainability Bond Principles offer guidelines to
    - streamline the use of proceeds,
    - evaluation and selection process,
    - management of proceeds,
    - reporting

- **Sustainability-Linked Loan**
  - General corporate-purpose loans used to incentivize borrowers’ commitment towards sustainability goals
  - APLMA, LMA and LSTA’s Sustainability Linked Loan Principles offer guidelines and recommendations

- **Other Products**
  - Blended Finance: When concessional funding from public/philanthropic fund is used to raise private capital and meet the financing of SDG goals
  - Green Retail products like green fixed deposits offer solutions for the retail customers
  - Green Securitization using Asset Backed Securities (ABS)

**Sectors**

- **Renewable energy**, energy efficiency, decarbonisation
- **Sustainable infrastructure**
- **Water, soil or biodiversity conservation & reduced resource extraction**
- **Affordable healthcare, WASH & education**
- **Climate-smart agriculture to reduce land-use degradation**
Sustainable finance offerings - examples

IRFC raised $500 million by green bond issuance by listing it exclusively on IFSC’s exchanges. Aim was to promote low-carbon transportation.

HDFC’s green housing retail loan book is about $2.7 billion across 300 certified green building projects.

A cement company issued a 10-year dollar denominated sustainability linked bond targeted towards reducing 22% of carbon emissions.

Toyota ABS securitized loans for electric and hybrid vehicles. The first green ABS issuance by Toyota was $1.75 billion & financed the purchase of 39,900 vehicles.
Take home point 3:

Sustainable finance encompasses lucrative lending opportunities in India, while ESG can help mitigate potential non-financial risks.
ESG – introduction

ESG is “the consideration of environmental, social and governance factors alongside financial factors in the investment decision-making process.” (MSCI)

ESG vs sustainability

- More specific
- More measurable
- More holistic

ESG’s importance for lenders

- Set of standards to gauge desirable characteristics on E, S & G, non-financial risks and resilience to shocks, which impact the business’ cash flows, thus impacting lenders

Lending to ESG-smart businesses

= ESG-smart lending
ESG – key parameters

- Emissions
- Natural resources, land-degradation & biodiversity
- Waste & effluents
- Water-use
- Pollution
- Environmental compliances

- HSE, labour safety
- Labour relations
- Gender, diversity & social inclusion
- Local communities, NGOs, CSOs
- Product transparency
- Supplier relations

- Board transparency & diversity
- Management structure
- Key management compensation
- Ethical conduct, bribery, corruption
- Financial & non-financial disclosures
- Audit & controls
ESG gains global traction

Shell: Netherlands court orders oilgiant to cut emissions
(BBC, 2021)

Governments and Big Oil were first. The next wave of climate lawsuits will target banks and boards
(CNBC, 2021)

Exxon loses board seats to activist hedge fund in landmark climate vote
(Reuters, 2021)

Climate risk is starting to worry banks and regulator
(Moneycontrol, 2021)

Singapore to consider climate risks in stress test for financial institutions
(S&P Global, 2020)

How central banks are tackling climate change risks
(World Economic Forum, 2020)

Will focus on climate-related risks, says Reserve Bank of India
(Business Standard, 2021)

ESG factors now part of lending decision by top banks globally: Crisil CEO
(Business Standard, 2021)

Banks take up gauntlet against climate risks
(ING, 2021)

Top Indian companies committed to Science Based Targets initiative (SBTi)
(CSR Journal, 2021)

Vietnam Launches Climate-Smart Maps and Adaptation Plans
(OpenGovAsia, 2021)

Bangladesh Bank Makes Green Finance Mandatory
Central Bank Of Bangladesh Makes It Mandatory For Banks & NBFC’s To Disburse 2% Of Sustainable Financing To Green Financing
(Taiyang News, 2021)
ESG Integration at the bank level

**ESG/climate considerations to cover the bank’s activities like (but not limited to)**

- Defining and identifying risks
  - Materiality considerations
  - Vulnerability, hazard and exposure
  - Geographic and business model-related considerations
  - Policies in place

- RMS processes & frameworks, risk measurement, integration into CAM/ICAAP/ERM, risk mitigation strategies

- Risk weightages and loan pricing

- Risk governance

- From prudential regulation’s perspective

- Disclosures of KPIs and progress

- Developing a portfolio of suitable sectors in the loan book

- Incorporating into branch network

- Data systems and processes

- Internal capacity building and training
Proliferation of ESG investment strategies

<table>
<thead>
<tr>
<th>EXCLUSIONARY SCREENING</th>
<th>POSITIVE SCREENING</th>
<th>ESG INTEGRATION</th>
<th>IMPACT INVESTING</th>
<th>ACTIVE OWNERSHIP</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DEFINITION</strong></td>
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<tr>
<td>Excludes, from the investment universe, companies or countries involved in activities that do not align with the moral values of investors or with global standards around human rights, labor practices, the environment and anti-corruption.</td>
<td>Tilts portfolio toward one of following: Best in class: companies outperforming peers in ESG measures ESG momentum: companies improving ESG measures more quickly than peers Thematic investing: companies solving specific ESG challenges (climate change, gender diversity, etc.)</td>
<td>Incorporates ESG data, alongside traditional financial analysis, into the securities selection process.</td>
<td>Targets a measurable positive social and/or environmental impact. Investments are generally project specific.</td>
<td>Entails engaging with companies and voting company shares on a variety of ESG issues to initiate changes in behavior or in company policies and practices.</td>
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<tr>
<td><strong>COMMON OBJECTIVES</strong></td>
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<tr>
<td>Align portfolios with investors’ moral and ethical values Mitigate ESG risks Achieve higher returns Support a business model that aims to solve an environmental or social problem Improve or maximize a portfolio’s ESG score</td>
<td>Mitigate ESG risks Achieve higher returns</td>
<td>Mitigate ESG risks Achieve higher returns</td>
<td>Generate and measure specific social and/or environmental benefits that align with purpose</td>
<td>Influence company strategy for long-term value creation Help company management capture value by mitigating risk or seeking opportunities Advance ESG disclosure and practices</td>
</tr>
<tr>
<td><strong>INVESTMENT CONSIDERATIONS</strong></td>
<td>Securities selection is based predominately on ESG scores and ratings. Sourcing quality ESG data remains a challenge.</td>
<td>Sourcing quality ESG data remains a challenge. Securities selection is based on quantitative and qualitative assessment of ESG factors, requiring analyst expertise. A long-term mindset is necessary as it is difficult to time the occurrence of a negative event resulting from an ESG issue.</td>
<td>Investments may be illiquid and investment returns could aim to be at or above the market rate.</td>
<td>A significant ownership stake is needed to exert influence. Substantial resources are also needed to engage with companies. Active ownership is crucial for index strategies.</td>
</tr>
<tr>
<td><strong>IMPACT CONSIDERATIONS</strong></td>
<td>Rewards companies that have higher ESG scores with capital. Impact is generally targeted toward specific sectors or themes (e.g. climate change, gender diversity, etc.)</td>
<td>No deliberate impact strategy as the primary objective is to achieve higher returns and/or mitigate ESG risks.</td>
<td>Impact is highly targeted on specific outcomes.</td>
<td>Broad impact due to continued engagement with company management on ESG issues.</td>
</tr>
</tbody>
</table>

(State Street Global Advisors, 2019)
ESG: Potential implications for India

US $84 billion of Indian bank debt at risk from climate-related extreme weather events (Bloomberg, 2021)

₹7 trillion may be lost by Indian companies in 5 years, but they may make ₹2.9 trillion too (Business Insider, 2021)

- India’s dependence on foreign capital, foreign businesses and capital imports, means Indian FIs cannot ignore the global ESG buzz
- India’s climate vulnerabilities, as seen by its ranking on climate and SDG indices that still needs to improve, is an added imperative

Centre forms expert committee for sustainable climate finance (Business Standard, 2021)

RBI joins climate change fight (Times of India, 2021)

IFSCA constitutes panel for development of sustainable finance hub (Business Standard, 2021)

COP26 developments – implications for ESG
Initiatives by Indian banks & financial institutions

Axis Bank forms environmental, social and governance committee

The committee will provide specialised focus, oversight and guidance relating to ESG

(Business Today, 2021)

Sustainability framework

RBL Bank has made a strategic commitment towards Sustainable Development. This commitment is driven by the Board and senior management. The implementation is overseen by the Environmental & Social and Governance (ESG) Committee. Regular updates are provided to Bank’s board.

The objectives of the Sustainability Framework are as follows:
- Setting strategic Environmental & Social (E&S) objectives, such as offering new products that address sustainability
- Incorporating E&S risk considerations into all financing activities and building client awareness on this subject
- Excluding financing clients whose business activities do not meet the Bank’s principles. The Bank has adopted the IFC Exclusion List
- Communicating E&S expectations to all staff, clients and other external stakeholders
- Committing to improving the overall E&S performance of its portfolio through enhanced risk management
- Committing to continually building capacity of Bank’s staff to identify E&S risk
- Development and delivery of financial products and services that enable more sustainable agricultural practices and results in resource conservation/ enhancement of resource efficiency
- Running financial inclusion programme for marginalized, economically weaker and business-wise less attractive sections in various States

Climate Change Fund

In keeping with the commitment of NABARD to address impact of climate change the “Climate Change Fund” was created out of the profit of NABARD during 2016-17 for facilitating attempts to address impacts of climate change especially towards fostering sustainable development. NABARD contributes annually from its profit towards the corpus of the fund.

Institution of the “Climate Change Fund” is a unique initiative of NABARD as a Development Financial Institution to foster sustainable development and contribute meaningfully towards national priorities.

NABARD

IFC lends $250 million to HDFC Ltd to boost green housing finance

Green housing is regarded as a luxury market in the country, but has climate benefits. IFC said its partnership with HDFC would help change perceptions about the market.

Business Standard, 2021)

NABARD provided Rs 1,236 crore from its Rural Infrastructure Development Fund for Assam in FY21

(The Economic Times, 2021)

SBI, EIB to invest up to €100 mn in Indian SMEs focused on climate change

(Economic Times, 2021)
GESI-smart ESG for India

Emerging developments that may influence ESG decision-making

- Risks to, and opportunities from, Indian women as employees, customers & in local communities - ESG-smart lending in India should be GESI-smart as well

Gender parity can boost India's GDP by 27%: WEF co-chairs

(IMF, 2018)

For Women in India, Small Loans Have a Big Impact

(IFC, 2018)

Women handle loans better than men: Key trends across auto, personal loan segments

(Financial Express, 2020)

In India’s Villages Women SHG members provide vital banking services during the COVID-19 crisis

(World Bank, 2020)

Women getting more credit conscious, also default less than men: Credit bureaus

(Economic Times, 2020)

The country could add up to $770 billion—more than 18%—to its GDP by 2025, simply by giving equal opportunities to women, according to an April 25 report by the McKinsey Global Institute.
An ESG-smart approach can improve our social license to operate, ability to operate in the natural ecosystem, and in a fair and responsible manner; however, mainstreaming ESG is not without its share of challenges.

1. Lack of standardization & uniform definition
2. Varied interpretations
3. Skewed finance flows
4. Data inconsistencies
5. Lack of incentives
6. Nascent understanding
Take home point 4:

There is a booming market for sustainable finance; there are tremendous financial and non-financial risks associated with 'unsustainable' finance.
Polls!

Head to www.menti.com
OR
Open the Mentimeter app

Enter meeting code – **4151 9096**

OR

Scan this QR code!
Part 2

ESG & Climate Risks
Climate-related financial risks refer to the potential risks that may arise from climate change or from efforts to mitigate climate change, their related impacts and their economic and financial consequences" (Basel Committee)
Box 1 Disastrous flooding in Mumbai

Greater Mumbai is home to over 20 million people and is one of the most densely populated cities in the world. It is the financial capital of India with a large commercial and trading base. However, most of the coastal city lies less than 15 m above sea level (D'Monte, 2017) and almost a quarter lies below or at mean sea level (Kumar et al., 2008). It is therefore one of the most vulnerable port cities in the world, facing a wide range of climate-related risks including storm surge, flooding, coastal erosion and sea-level rise (Murali et al., 2020).

Climate change is certainly not the only driver of environmental risk in Mumbai. The city was originally built on a series of islands hugging the coast. However, its lakes, rivers, mudflats, wetlands, mangroves, woods and coastline have gradually been built over to serve a growing population and economy. The increase in hard surfaces and loss of tree cover has prevented rainfall from seeping into the groundwater. Instead, it runs rapidly over the asphalt and concrete, pooling in low-lying parts of the city instead of flowing into the sea (Patankar et al., 2010; Sen and Nagendra, 2019). Poor sewage and drainage systems exacerbate the health risks of flooding, which include diseases such as malaria, diarrhoea and leptospirosis (Kumar et al., 2008).

Mumbai is already experiencing catastrophic floods. Hallegatte et al. (2013) rank major coastal cities according to flooding risk, and place Mumbai fifth in the world with annual losses of $284 million. In July 2005, flooding killed 5,000 people and caused economic damage totalling $690 million (Nagendra, 2017). Floods will only get worse when combined with the heavier rains, higher sea levels and more severe storms associated with climate change. Hallegatte et al. (2013) project that annual losses from flooding will reach $6.1 billion per year in 2050. Most of these losses are uninsured and borne by individuals or small businesses (Patankar and Patwardhan, 2016).

MUMBAI NEWS

Since 2019, Maharashtra spent ₹ 14K-crore as compensation for extreme weather events

The number is, however, a gross underestimation of the total cost of recent climate disasters in the state, officials and experts pointed out.

Source: ODI, The Costs of Climate Change India: A review of the climate-related risks facing India, and their economic and social costs (2021)

Source: Hindustan Times, 2021
Climate-related financial risks

Physical risk

Transition risk

Liability risk
Climate risk impact seen through the lens of traditional risk categories

<table>
<thead>
<tr>
<th>Risk type</th>
<th>Potential impacts of climate risk</th>
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<tbody>
<tr>
<td>Credit risk</td>
<td>Credit risk increases if climate risk drivers reduce borrowers’ ability to repay and service debt (income effect) or banks’ ability to fully recover the value of a loan in the event of default (wealth effect).</td>
</tr>
<tr>
<td>Market risk</td>
<td>Reduction in financial asset values, including the potential to trigger large, sudden and negative price adjustments where climate risk is not yet incorporated into prices. Climate risk could also lead to a breakdown in correlations between assets or a change in market liquidity for particular assets, undermining risk management assumptions.</td>
</tr>
<tr>
<td>Liquidity risk</td>
<td>Banks’ access to stable sources of funding could be reduced as market conditions change. Climate risk drivers may cause banks’ counterparties to draw down deposits and credit lines.</td>
</tr>
<tr>
<td>Operational risk</td>
<td>Increasing legal and regulatory compliance risk associated with climate-sensitive investments and businesses.</td>
</tr>
<tr>
<td>Reputational risk</td>
<td>Increasing reputational risk to banks based on changing market or consumer sentiment.</td>
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</tbody>
</table>
Physical risks

“Economic costs and financial losses resulting from the increasing severity and frequency of extreme climate change-related weather events, longer-term gradual shifts of the climate, and indirect effects of climate change” (Basel Committee, 2021)

- Heatwaves
- Droughts
- Floods
- Heavy rainfall
- Storms
- Wildfires

8 of the 10 warmest years on record have occurred in the past decade

It’s official: July was Earth’s hottest month on record

(National Oceanic and Atmospheric Administration, 2021)
Types of physical risks

**Acute physical risks**
“Acute physical risks are generally considered to consist of: lethal heatwaves, floods, wildfires and storms, including hurricanes, cyclones and typhoons as well as extreme precipitation.”
*(Basel Committee on Banking Supervision, 2021)*

**Chronic physical risks**
“Chronic physical risks are generally considered to include - rising sea levels, rising average temperatures, and ocean acidification”.
*(Basel Committee on Banking Supervision, 2021)*
Impact of physical risks

### Impact on banks & financial institutions

**Direct impact**
- Exposure to businesses
- Exposure to individuals and households
- Exposure to countries that face climate shocks

**(IMF, 2019)**

**Indirect impact**
- Through the effects of climate change on the wider economy
- Through feedback effects within the financial system

**(IMF, 2019)**

“Rising sea levels and a higher incidence of extreme weather events can cause losses for homeowners and diminish property values, leading to greater risks in mortgage portfolios”

- Increased risk of default
- Falling asset quality
- Falling asset value
- Changing prices
- Broken supply chains
Case Study
Impact of 2011 Thailand flood: Western Digital

**WIDER CONTEXT**

**ECONOMIC:**
- **Global:** Industrial production worldwide dropped by 2.5%. Real GDP growth rate in 2011 declined from 4.1% expected to 2.9%. Decline of production: 27.7% decline in HDD shipments. Resulting HDD price increase 10% (2011 Q4).
- **Thailand:** The manufacturing sector contributed to 8.6% of the decline of the real GDP between October & December 2011.

**FINANCIAL:**
- **Global:** Share prices of US and Japanese companies fell: Dell (down 5.4%), Nvidia (down 5%).
- **Thailand:** Insured losses reached over $15 billion. The situation led many insurers and re-insurers to either withdraw, increase their premiums or refuse to renew contracts. Many insurers demanded premiums exceeding 10% of the insured sum as a result of the floods, compared to pre-flood levels of less than 1%.

**SOCIAL:** 2.5 million people displaced, 813 casualties.

**VALUE CHAINS**
- **Supply Chain:** company’s component suppliers impacted
- **Production:** 46 days of stoppage
  - Q4 output slashed to half of pre-flood volume
  - Shipments declined 51%
- **Market Share:** down in Q4 2011 to 23% from (33% Q3)

**REAL ASSETS**
- Factory in Bang Pa-in Industrial Estate inundated with flood water

**REDUCED PRODUCTION**
- Reduction of financial performance

**WESTERN DIGITAL**
- **Revenues:** earnings decreased 35% in early 2012
- **Fixed Assets:** $119 million of fixed asset impairments
- **Recovery Charges:** $61 million
- **Write-downs Of Damaged Inventory:** $28 million
- **Wage Continuation:** $27 million during the shutdown period

**FINANCIAL ASSETS**
- **Share prices down by 9% in October 2011**

*(IGCC, 2020)*
Activity 1

Itaú Unibanco – Physical Risks in the Agricultural Sector

- Selected a portfolio with about 130 rural producer clients in the bank's corporate sector, representing a risk of about R$ 4 billion (about US $713 million)
- Within the portfolio of 130 clients, a sample set of 14 clients were chosen -
  - Having larger credit exposure
  - Representing relevant states
  - Representing relevant crops
  - Have different credit qualities i.e., different ratings
- Agricultural activity impacted in 2 ways
  - Gradual incremental changes in temperature
  - Change in frequency and intensity of extreme weather events
- Chose only one scenario (4 degrees C) and time horizon (2040s)
- Assessment of changes in revenue, changes in cost and qualitative impacts
- Present day balance sheet projected to include climate change impacts
- Climate adjusted balance sheet used to calculate projected rating

Total impact of physical risk = Impact of incremental changes + Impact of extreme events

In breakout rooms...
- Identify the physical risks that may materialize in this sector
- Chalk out a rough strategy to correlate these physical risks to traditional financial risks for a bank

Please nominate 1 person from your group to present the findings in 30 seconds – 1 minute!
Take home point 5:
The impacts of climate change pose a major financial risk to investments and loans in India.
Break

Please return in 10 minutes!
“Transition risk arises as markets shift towards a low-carbon economy, and derives from regulatory and policy change, disruptive technologies, and new business models which could result in adjustments to the value of companies, assets or investments.” (Norton Rose Fulbright)

Types of Transition Risks

- Policy change
- Tech innovations
- Market pressures from changing consumer demand
India's updates from COP26

India's priorities

'Net-zero carbon emissions by 2070': PM announces India's 5 commitments at COP26

(Times of India, 2021)

Raise the non-fossil fuel-based energy capacity of the country to 500 GW by 2030.

By 2030, 50% of the country's energy requirements would be met using renewable energy sources.

Reduce the total projected carbon emission by one billion tonnes between now and the year 2030.

The carbon intensity of the economy would be reduced to less than 45% by 2030.

Become carbon neutral and achieve net zero emissions by the year 2070.

(Hindustan Times, 2021)
Policy changes - implications

Changes in policy

and/or

Rise in company costs

Devaluation of company assets

Companies' profitability affected

Inability to pay loans

Banks' balance sheet affected
Transition risk example 1: Coal
Ipek Genscu, Research Fellow, ODI
Transition risk example 2: Renewable energy quotas

Dr Irving Mintzer, Professor, School of Public Policy, University of Maryland
Technological change - implications

Innovations in technology

Tech becomes superseded

Operational costs rise

Companies' profitability affected

Inability to pay loans

Banks' balance sheet affected
Lowering cost of renewable energy

Dr Irving Mintzer, Professor, School of Public Policy, University of Maryland
Shifts in market preference – implications

- Changes in consumer demand
  - Fall in demand for carbon-intensive products/services
- Shareholder activism & stewardship towards greater sustainability in portfolio
- Carbon-intensive companies’ profitability affected
- Inability to pay loans
- Banks’ balance sheet affected
Market developments that impact banks

COP26 coalition worth $130 trillion vows to put climate at heart of finance

(Reuters, 2021)

- Finance firms managing $130 trillion join net-zero pledge
- Carney says the money is there, but needs mechanisms
- Investors want scale, transparency and public commitment
- Kerry says pledges give only 60% chance of securing 1.5C

Basel Committee on Banking Supervision

Principles for effective climate risk management and supervision

- Corporate governance
- Scenario analysis
- Management monitoring & reporting
- Comprehensive management of credit risk
- Internal control frameworks
- Risk management process
- Comprehensive management of market, liquidity, operational & other risks
- Capital & liquidity adequacy

Comprehensive management of market, liquidity, operational & other risks

(Risk management process)
Implications of international market pressures
Sarah Colenbrander, Director of Programme – Climate and Sustainability, ODI
Disorderly & unjust transitions
Prashant Vaze, Senior Policy Fellow, Climate Bonds Initiative
Take home point 6:

New climate policies within and beyond India pose a major financial risk to carbon-intensive assets and businesses.
"The social risks are a phenomenon which must be evaluated from the viewpoint of society and not from that of an individual, having two essential dimensions: economic inequality and the unequal distribution of the resources among society members" (Rohde I., Rohde K. 2015)
Social risks

Types of social risks

- Health, safety & working conditions
- Impact on local communities & stakeholder opposition
- Diversity, inclusion & equal opportunities
Social risks

Lack of diversity, financial and social exclusion

- Loss of opportunities to innovate
- Reputational risk
- Financial risk
- Poor design or execution of interventions
Social risks

Lack of diversity, financial and social exclusion

Relocation of Federal Agency Hurt Diversity, Watchdog Finds
(The New York Times, 2021)

‘Gender Lens’ Funds Let Investors Put Money on Women Leaders
(The WALL STREET JOURNAL, 2021)

UK firms grapple with ethnicity pay gap reporting
(The New York Times, 2021)

Most big companies fail to fully detail board diversity despite SEC pressure
(CFO DIVE, 2021)

75% of senior execs say they’d leave their company for one that values diversity
(CNBC, 2017)

More inclusive financial systems can magnify the effectiveness of fiscal and monetary policies.
(IMF, 2018)

Pinterest agrees to spend $50 million on reforms to resolve discrimination allegations.
(The New York Times, 2021)

The shareholders had reported racial discrimination and retaliation against employees for speaking out. Reputational risk to the company and shareholders demanded accountability on the same. In return, along with the settlement, Pinterest agreed to spend $50 million on improving its diversity and equity.
Lending to sectors with social risks

Sectors with greater exposure to social risks

- Metals & Mining
- Oil & Gas
- Power
Impact of not carefully managing social risks

ESG: Social gets some airtime in commodities

"ESG was at the forefront of the discussion at the TXF Global Commodities event in Geneva. But it wasn’t just climate change and carbon neutrality on people’s minds. The ‘S’ portion of ESG is typically less focused on in the commodities world, despite having interesting implications for portfolio risk, and is gaining prominence."

(TXF News, 2021)

ESG concerns grow as miners rank environment, social issues and decarbonization as top risks for 2022

"Illegal mining in the Amazon hits record high amid Indigenous protests"

(Nature, 2021)

"To stop a scrapyard, some protesters in a Latino community risked everything"

(The Washington Post, 2021)

Australia: Police Will Not Remove Indigenous People Occupying Adani Mine Site

"The police recognised the traditional owners’ right to practice their culture at the site, potentially setting up a standoff."

(Wire, 2021)

The energy transition needs metals. But it needs social awareness too

(World Economic Forum, 2021)

Gold Mine Workers Face Higher Risk of Death

"Much of it is related to road traffic injuries."

(Manufacturing Business Technology Magazine, 2021)
Impact of not carefully managing social risks

Tesla faces claims of toxic suppliers and potential child labor
(Fortune, 2021)

Facebook To Pay $650 Million For Settlement Against Digital Privacy Violation
(Republic world, 2021)

Native Americans win ruling to join lawsuit against Lithium Americas project
(Reuters, 2021)

How Petra Diamonds Ended Up in a Human Rights Mess
(JCK, 2021)

Some data have shown that socially responsible investments can perform better over the long run. The MSCI KLD 400 Social Index has returned an average of 16.88% a year over the past decade, compared with 16.68% for the MSCI USA Investable Market Index.
(Wall Street Journal, 2021)

Bernd Deeken: Investors demand more from the 'S' of ESG
(Portfolio Adviser, 2021)

The 'social' in ESG is in the spotlight for litigation risk
(Canadian Lawyer, 2021)

In December 2020, a lawsuit was filed on behalf of current and past Black federal employees claiming systemic racism and discrimination against the Public Service of Canada.

The suit, filed in the Federal Court, claims damages for the wrongful failure to promote, intentional infliction of mental suffering, constructive dismissal, wrongful termination, negligence, and in particular, violations of employment law, human rights law and Charter breaches. It also seeks, among other things, the appointment of a Black Equity Commission and an apology from the prime minister.
### Social risks in Automobile Industry – Maruti Suzuki workers uprising in 2012

#### What?
- July 2012
- Manesar, Haryana
- 2700 contract workers
- 900 permanent workers
- 100s of trainees & apprentices
- Lockout for more than 1 month

#### Why?
- Wage disparity between contractual & permanent workers
- Steep increase in work contract
- 25% decline in real wages since 2000 with reduced breaks
- Arbitrary dismissal of workers

#### Impact
- Rs. 2500 Cr Loss in Revenue
- 38%, Market share reduced from 55.5 %
- 5.4 % Fall in net profits in 2012

---

**Maruti faces prolonged shutdown after worker riot**

*(The Hindu, 2012)*
Case Study
Women’s rights issues in the palm oil industry

“The government had permitted a palm oil company to establish and expand its plantations in the area. The company had cleared and drained peatlands, an important carbon sink, and planted oil palm trees on land villagers had been using for decades. In the process, it had completely disregarded how its actions violated the villagers’ land rights, led to the loss of livelihood for the village women, who had mostly farmed the land, and contributed to the global climate crisis.”

(Human Rights Watch, 2021)

The Fruits Of Their Labour: Abuse In The Palm Oil Industry

(Human Rights Pulse, 2021)
Activity 2

In breakout rooms, discuss...

- What are some of the social risks for lenders that arise out of loans to beauty and cosmetic companies sourcing palm oil?
- What could be some of the mitigants? What could be some of the checkpoints, that you as a risk manager, would look at?

Please nominate 1 person from your group to present the findings in 30 seconds – 1 minute!
Take home point 7:

Unless social risks are identified and carefully managed, they pose a major financial and reputational risk to investors and lenders.
Governance risks

"Governance refers to the actions, processes, traditions and institutions by which authority is exercised and decisions are taken and implemented. Governance risk applies the principles of good governance to the identification, assessment, management and communication of risks." (The International Risk Governance Council)

Objectives

- Responsible
- Transparent
- Fair
- Accountable
Types of governance risks

**Board action**
- Board oversight
- Board diversity

**Management action**
- Executive compensation
Governance risks

**Board action**

- TCFD and the Board's oversight process
- Insights from Harvard Law School article
- Advantages and disadvantages of strengthening governance through Board oversight
- Developments from EU FIs on Board governance wrt climate
  - Findings from ECB's Guide on climate risks
  - ING Netherlands' Board governance structure
  - Examples from the US and India

---

**Deutsche Bank pays nearly $125m to resolve US bribery and fraud claims**

*(Financial Times, 2021)*

**Company boards are being held to higher levels of accountability and transparency**

*(Fortune, 2021)*

**ESG & Cognitive bias inside the boardroom: ESG is here to stay and will continue to disrupt business models**

*(Financial Express, 2021)*
Governance risks

Board action

More corporate directors agree action needed on board diversity

(Financial Management, 2021)

SFIO chief pulls up independent directors for washing hands of frauds

(Business Standard, 2021)

- Lack of diversity, including women representation (GESI-goals)
- Diversity and innovation linkage
- Lack of ESG/climate experts on Boards – technical diversity
- Corporates unprepared with concrete plans to meet pledges
Governance risks

Management action

Is executive compensation linked to ESG performance?

Are management KPIs linked to ESG performance?

International developments

Firms plan to link investment in social good to CEO salary

(Economic Times, 2021)

Shareholders push Facebook for change, Facebook pushes back

(S&P Global, 2018)
GESI within governance

Equal Opportunities

- Compliant with diversity and inclusion regulations
- Glass ceiling challenges to growth in the workplace
- Minimal discrimination - maximum brand reputation
- Realize the economic opportunity of GESI-inclusion

Equal Outcomes
Take home point 8:

Unless governance risks are identified and carefully managed, they pose a major financial and reputational risk to investors and lenders.
Polls!

Head to [www.menti.com](http://www.menti.com) OR
Open the Mentimeter app

OR

Enter meeting code – **4151 9096**

OR

Scan this QR code!
Consequences of ESG & climate risks

Climate Risks

• Physical Risks
  • Chronic
  • Acute
• Transition risks
  • Policy
  • Technology
  • Market pressures

Impact on economic sectors & macroeconomy

• Damages to property
• Business interruptions
• Effects on household and business incomes
• Feedback across economy through product and labour markets

Impact on financial institutions & markets

• Credit & market risk
• Liquidity risks
• Operational risks
• Amplification through interconnectedness and correlated exposures

Feedback loop that may adversely affect economic and financial stability

(Financial Stability Oversight Council, 2021)
Consequences of ESG & climate risks

Physical risks:
- Business disruption
- Asset destruction
- Migration
- Reconstruction/Replacement
- Lower value of stranded assets
- Increase in energy prices with dislocations

Transition risks:
- Lower property & corporate asset value
- Lower household wealth
- Lower corporate profits, more litigation
- Lower growth & productivity affecting financial conditions

Financial system:
- Market losses (equities, bonds, commodities)
- Credit losses (residential & corporate loans)
- Underwriting losses
- Operational risk (including liability risk)

Negative feedback from tighter financial conditions

(IMF, 2019)
Why climate risks matter for banks
Dr Rathin Roy, Managing Director, ODI
Q&A
End of Day 1
Day 2
Part 3

ESG & Climate Risks Management
Need for ESG & climate risk assessment

- Imminent regulation
- Growing demand for ESG skills
- Reducing exposure
Why financiers cannot ignore climate risks

What does temperature rise imply for India?

2°C Celsius rise
- Unpredictable monsoon, already a reality
- Will lead to major flood & drought patterns

2.5°C Celsius rise
- Glacial melting may destabilize north India’s glacier-fed rivers and regions
- Impact on irrigation and food yields for a population expected to touch 1.5bn by 2030

4°C Celsius rise
- Increased frequency of extreme monsoons
- Shifts to new climate regimes in coastal India & increased droughts in dry-regions

- Frequency & variation of extreme events (M-o-M monsoons)
- Sluggish growth in bank deposits of late
- Uninsured natural disaster losses in India
- Millennial consumers’ trends (EU survey, India)

Uninsured natural disaster losses in India

Frequency & variation of extreme events (M-o-M monsoons)

Sluggish growth in bank deposits of late

Millennial consumers’ trends (EU survey, India)
Climate change-related financial risks (CRFR)

1. Overview of risk identification and exposure mapping, risk quantification methodologies and tools, and ways in which banks may look at impact of CRFRs on their portfolio.

2. Climate-related financial disclosures, focusing on TCFD.

3. Opportunities for financiers arising out of climate risks.

Both "financing of green....." and "greening of finance....." require alignment with climate-related financial risks.

To be covered in this session

To be covered in subsequent sessions

All rights reserved
### Conceptual considerations towards risk identification/exposure mapping

<table>
<thead>
<tr>
<th>Identifying the level of risk</th>
<th>Physical Risk Drivers</th>
<th>Top-Down Approach</th>
</tr>
</thead>
</table>
| Level of risk in a geography depends on hazard (events), vulnerability (susceptibility) & exposure (location) | • Link disruption caused by hazards to real assets and economic activities, that impact financial flows  
• Look at probability and severity of hazards | Approaches risk at an aggregate level, and then “pushes down” or attributes aggregated measures of risk to component parts |
| Vulnerability depends on nature of resources, transport, SCM, labour, etc. |  |  |
| Hazard refers to chronic and sudden climate-related events | **Transition Risk Drivers** | **Bottom-Up Approach** |
| Exposure in terms of sub-sectors covered in the portfolio | • Link risk elements to economic factors that impact financial flows  
• Assess how, and to what level, sectors in the portfolio might be affected | Approaches risk at the component level, and aggregates individual measures of risk to provide a consolidated view |

---

**Basel Committee, 2021, UNEP FI 2020**
Other considerations in context of risk identification/exposure mapping

- Institutionalize a risk classification system for rank ordering of exposures
- Difference between traditional and climate risk classifications
- May consider the use of risk mitigants

- Detailed understanding of portfolio with regard to locations, risk drivers, clients, etc.,
- Identify a particular sector or geography to start with

- Work with limited granular/historical data and scarcity of empirical models
- Combine qualitative and quantitative approaches

- Models with granular data - for pricing, valuation & underwriting purposes
- Models with sparse data - for strategic planning & portfolio allocation

(Basel Committee, 2021, UNEP FI, 2020)
Exposure mapping & impact on counterparties

Transmission channels of CRFR to banks

Microeconomic vs. macroeconomic transmission channels

Microeconomic: Impacts bank’s borrowers; transmits CRFR to bank’s traditional risks, impacting its financial position

Macroeconomic: Impacts economic system & parameters in which the bank functions, transmitting CRFR to the bank

Ways in which it impacts counterparties & banks

Business interruption basis locations or transition events

Flow impact (cash flows, income or costs), which hits ability to earn and repay, or realize the asset’s income potential

Damage to, or new guidelines for, real assets like buildings

Stock impact (asset valuation), which hits collateral or asset values, asset impairments, pricing of securities, etc.

Loss of income, jobs and/or human productivity

Disaster recovery, food supply loss, etc.
Exposure mapping and measurement: Heatmaps

Benefits
- Insight into total portfolio exposure
- Early indication of where higher risks may lie within a portfolio
- Focus for deep-dive analyses of risk ‘hotspots’

Challenges
- Would require granular data to be more location-specific
- Data on smaller borrowers may be unavailable
- Historical horizon of available data is a determinant

Heat-maps combine risk classification systems with risk grading criteria to score exposures
- Screens whole portfolios across sectors or geographies

TCFD: Heat-map based on prioritization criteria

Heat-map based on exercise with 39 FIs: UNEP-FI’s report

Examples: Transition risk heat-maps of select banks

Banks have generally first focused on transition risk drivers, rather than physical risks

(Basel Committee, 2021)
In line with the observation in the previous slide, physical risk heat-mapping has generally followed transition risk heat-mapping, resulting in physical risk heatmaps covering both types of risks.

Examples: Physical risk heat-maps of select banks

Danske Bank, Denmark

Banco Santander, Spain

Citibank, USA

<table>
<thead>
<tr>
<th>Industry</th>
<th>Physical risk assessment</th>
<th>Transition risk assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Commercial property</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Personal customers</td>
<td>High</td>
<td>Medium</td>
</tr>
<tr>
<td>Private housing co-ops</td>
<td>High</td>
<td>Medium</td>
</tr>
<tr>
<td>Construction &amp; building materials</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Metals and mining</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Pulp &amp; paper, chemicals</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Shipping, oil &amp; gas</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Consumer goods</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Utilities and infrastructure</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Hotels, restaurants and leisure</td>
<td>Medium</td>
<td>Low</td>
</tr>
<tr>
<td>Transportation</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Automotive</td>
<td>Low</td>
<td>Medium</td>
</tr>
<tr>
<td>Capital goods</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Pharma and medical devices</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Retailing</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Services</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Social services</td>
<td>Low</td>
<td>Low</td>
</tr>
</tbody>
</table>

(Danske Bank TCFD Progress Update 2021, Citigroup’s TCFD report, 2020, Banco Santander Climate Finance report, 2020)
Exposure mapping and measurement: Other methods

Climate Risk Scores

- Provides quantitative/semi-quantitative scores
- Scores can be aggregated to develop portfolio-level, sector-level or geography-level risk scores

Indicators of Greenness/KPIs

- KPIs to measure carbon intensity, energy efficiency, energy labels, collateral in hazard-prone regions, gap of the portfolio with global/national climate targets, etc.

Example of observed practice: Climate-related and environmental key performance indicators

The ECB observed an institution which had integrated the following climate-related and environmental KPIs to measure reduction of exposure transition risks: i) the carbon emission footprint of its assets; ii) the average energy label of its mortgage portfolios; and iii) the number of homes that saw an energy label improvement thanks to its financing. In addition to these KPIs, the institution stresses the correlation with material climate-related events. The numbers correspond to statistical averages.

Strategic pillars

Support our clients’ transition to sustainability

- Renewable energy commitment as a % of energy portfolio
- Sustainable financing
- Sustainable investments (client assets)

We provide our clients with insight into their sustainability performance

- Clients rated on our CDS sustainability rating tool
- Commercial Banking
- Corporate & Institutional Banking

We help our clients invest to make their homes and real estate more sustainable

- Average energy label (residential portfolios)
- Average energy label (commercial properties)
Before moving to scenarios, what are pathways?

RCPs?

SSPs?

IPCC AR5/AR6

Why?

RCP8.5: ~5°C
RCP6.0: 3-3.5°C
RCP4.5: 2-3°C
RCP2.6: < 2°C

—

(Ho, Emily, Budescu, David, Bosetti, Valentina, Keller, Klaus Keller, 2019, *Not all carbon dioxide emission scenarios are equally likely: a subjective expert assessment*, Climatic Change Journal Springer/IPCC AR5, Carbon Brief 2018)
Risk measurement & quantification: Scenario analysis

• A methodology to develop a range of plausible future paths on climate change
• Helps understand how climate risks impacts economic variables, and their resultant financial implications
• Enables better preparedness amongst banks, and helps analyse tail-risks

1. Identify physical & transition risk scenarios
2. Link scenario’s impacts to financial risks
3. Assess borrower’s sensitivity to these risks
4. Calculate potential losses at an aggregate level

• Starting point for a bank – specific hazards for PR, and specific sectors for TR
• Considerations to be mindful of, when a bank develops a scenario

TCFD’s process for applying scenario analysis to climate risks

1. Ensure governance is in place: Integrate scenario analysis into strategic planning and/or enterprise risk management processes. Assign oversight to relevant board committees/sub-committees. Identify which internal and external stakeholders to involve and how.

2. Assess materiality of climate-related risks

3. Identify and define range of scenarios

4. Evaluate business impacts

5. Identify potential responses

6. Document and disclose: Document the process; communicate to relevant parties; be prepared to disclose key inputs, assumptions, analytical methods, outputs, and potential management responses.

NGFS’s high-level framework for scenario analysis

Scenario analysis
David Carlin, TCFD and Climate Risk Program Lead, UNEP-FI
Risk measurement & quantification: Stress testing & sensitivity analysis

Sensitivity Analysis for climate impacts

- Assess the effect of one variable, across scenario-runs, on economic outcomes
- Often used to assess impact of policy-related transition risks
- Helps develop a range of potential climate-economic impacts

Stress Testing for climate impacts

- Helps assess the bank’s near-term resiliency to climate shocks
- Mostly uses capital adequacy as a target
- Difference between climate stress test and normal stress test
- Limited predictive capacity of historical events
- Examples from Colombia and the UK

Climate risk stress test of UK banks by BoE, using NGFS scenarios: Initial results of 2021 Climate Biennial Exploratory Scenario

Climate risk stress test of UK banks by BoE, using NGFS scenarios: Initial results of 2021 Climate Biennial Exploratory Scenario

- Transition risks
  - Early Action: Medium
  - Late Action: High
  - No Additional Action: Limited

- Nature of transition
  - 2021: Early and orderly
  - 2031: Late and disorderly
  - R.A.

- Peak UK shadow carbon price (carbon tax and other policies): £20 (2021), £100 (2031), £30

- Physical risks
  - Mean global warming relative to pre-industrial levels by the end of scenario (°C):
    - Early Action: 1.8
    - Late Action: 1.8
    - No Additional Action: 3.3

- Mean sea level rise in the UK (m):
  - Early Action: 0.16
  - Late Action: 0.16
  - No Additional Action: 0.29

- Impact on output
  - Temporarily lower growth
  - Sudden contraction (recession)
  - Permanently lower growth and higher uncertainty

- Average annual output growth in the UK (per cent):
  - Year 0-10: 1.4
  - Year 11-20: 1.5
  - Year 21-30: 1.6

References:

Climate stress tests
Prashant Vaze, Senior Policy Fellow, Climate Bonds Initiative
Risk measurement & quantification: Climate VAR and Correlation

**Climate VAR**
- Risk measure estimating the loss due to climate risk to a portfolio or market, in a specific time horizon
- Applies traditional VAR approaches to assess impact of climate events on balance sheet
- Research on $2.5tn global AUM found 1.8% C-VAR

**Correlation**
- Measures strength of association of two variables
- May not define their causal relationship
- Value may be skewed owing to outliers

### Models to assess economic impacts of climate change

#### Integrated Assessment Models
- Suite of tools that combine interactions between socio-economic systems using pathways, to see how our choices impact natural systems (climate system)
- Shift in emphasis from “what happens if?” to “how do we get to?”
- Commonly used by banks, despite limited capturing of financial impacts
- Probability allotted to extreme events that have not occurred before may be less

#### Agent-based models
- Allows economic agents to interact with each other
- Allows simultaneous changes on multiple variables

#### Input Output models
- Traces impact of climate shocks on the forward and backward linkage of an industry (supply chain or distribution network)

#### Macroeconomic modelling
- Capture the phenomena that a climate shock in an economic sector would lead to behavioural changes amongst the impacted agents

#### Other models
- CGE models allow complex behavioural interactions among sectors
- DSGE models integrate uncertainty in agent decision-making
Example of tool to assess climate impacts

- **Green RWA’s Climate Extended Risk tool**
  - Facilitates calculation of expected and unexpected credit losses
  - Unexpected losses calculated using metrics like POD or LGD
  - Screenshot shows amounts in lending portfolio labeled high-risk

- **Climate Analytics’ Climate Impact Explorer tool**
  - Projections of future climate impacts for different GHG scenarios
  - Developed by Climate Analytics, Potsdam Institute, ETH Zurich, etc.
  - Screenshot shows river flood depth risks at 2°C warming scenario

Disclaimer: Tools are shown only as an example; the consortium does not endorse any specific tool.

- [https://www.greenrwa.org/the-cerm](https://www.greenrwa.org/the-cerm)
Example of tool to assess CRFRs: Transition and physical risks

**Oliver Wyman & S&P Global’s Climate Credit Analytics tool**
- Performs stress test and scenario analysis based on NGFS scenarios
- Converts scenarios into financial drivers, to forecast financials
- Generates outcomes for loan and debt asset classes

**KNMI Netherlands’s Climate Explorer tool**
- Focus on extreme precipitation, although it covers most events
- Users can select climate event, time horizon & location coordinates
- Spatial resolution within the range offered in the market

---

**Process followed**

1. **Climate scenario**
   - Industry & Market Data
   - Company financials

2. **Key drivers**
   - Price
   - Volume
   - Unit cost
   - Capital expenditure
   - Asset value

3. **Company-level financial statements (scenario-adjusted)**
   - Income statement
   - Balance sheet
   - Cash flow statement

4. **Credit scoring models**
   - CreditModel™ Probability of Default Fundamentals Mode
   - Scenario-adjusted credit score and PD

---

**Maximum temperature time-series for Delhi**


http://climexp.knmi.nl/start.cgi

Disclaimer: Tools are shown only as an example; the consortium does not endorse any specific tool.)
CRFR’s impact on traditional risks in a bank’s portfolio

**Credit risks**

Physical: Wealth erosion as damage to real assets impacts its valuation & income potential; SCM disruptions & loss of productivity, impacting ability to repay

Transition: Leads to stranded assets, credit-related losses & worsening financial position; MNCs in India particularly impacted

**Market risks**

Physical: Consumption shock causing business disruptions or changing demand patterns, impacting financial metrics & financial market volatility

Transition: May cause higher cost of carbon, disrupting demand-supply dynamics and hiking the cost of capital

**Liquidity risks**

Physical: Worsening financial metrics & credit rating hits ability to raise funds; Also, deposit withdrawals may occur

Transition: Reduced fundraising from traditional channels due to transition risk perceptions

**Other risks**

Reputation: Negative branding for funding climate-sensitive sectors in age of social media

Operations: Disruptions & damage to transport & telecom networks or office infrastructure

Others: IT risks to data centers owing to evolving energy regulations; Risk of compliance costs owing to penalties

*(Basel Committee, 2021, ECB, 2020)*
Banco Bradesco SA, Brazil

- 3rd largest bank in Brazil and Latin America
- Significant exposure in construction/property sector
- Heavy rains, flood & landslide risk in south-east Brazil

- UNEP-FI pilot on its retail mortgage and flood risk
- Used climate events data from Swiss RE’s CatNet
- Data on postal code and coordinates of funded assets
- Leveraged UNEP-FI’s tool to calculate future impacts

**Question for participants to discuss later: How would property value depreciation impact your portfolio?**

<table>
<thead>
<tr>
<th>Annual Probability of Flood Occurrence</th>
<th>Depreciation in Property Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2040s (4°C scenario)</td>
<td>2040s (4°C scenario)</td>
</tr>
<tr>
<td>2020</td>
<td>2040s (4°C scenario)</td>
</tr>
<tr>
<td>2% (1 in 50 years)</td>
<td>4.8% (1 in 20 years)</td>
</tr>
<tr>
<td>1%</td>
<td>2.4%</td>
</tr>
<tr>
<td>0.5%</td>
<td>1.2%</td>
</tr>
</tbody>
</table>
CRFR’s impact on bank’s portfolio – key metrics for credit risk

Probability of default

• Shows likelihood the counterparty would fail to repay
• Can be at firm-level or sector-level
• ECB research: POD for an average EU bank could be 7.1% higher by 2050, unless drastic climate action occurs
• Research on 41 Polish banks from 2013-2019 found certain sectors to be of high-risk, with positive dependency on carbon and coal price (ECB’s Climate Risk & Financial Stability report)

Loss given default

• Shows recovery value of the asset, in case of default
• Extreme climate events damage real assets, impacting collateral and recovery values
• Models must consider locations, other risk-mitigants, seniority of exposure, recovery costs, etc.
• LGD has received less attention than POD, wrt climate

### Integration into existing risk management processes

#### Integration into ERM framework
- Include climate risks as drivers of existing risk categories in the ERM
- No research supporting separate climate risk category
- Conduct climate due diligence
- Climate-related responsibilities in 3 lines of defense in risk management
- Include climate risks in materiality assessment

#### Integration into CAM
- Financing conditions borrowers need to meet, as per results of ESG/climate risk assessment conducted for new applications, to be included in CAM
- Use these results for climate-related adjustments in covenants, credit rating, collateral valuations, capex requirements and pricing of loans
- Follow colour coding, as per the results obtained, for monitoring

#### Integration into ICAAP
- Include climate issues in normal risk identification process
- Include climate risks in stress tests, to check capital adequacy
- Integrate climate-related risks into financial stability monitoring
- Look at materiality of climate risks
- Undertake systematic mapping of potential climate risks

---

ESG/Climate-related adjustments to a company’s financials

Examples from Robeco & Erasmus University

Robeco’s Value-Driven Adjustment (VDA) approach

- Managing of material long-term ESG/climate issues
- How these connect to changes in strategy, revenue drivers, innovations, competitive advantage, etc.
- Translate into adjustments to financial value drivers
- Integrate into fair valuation models
- Arrive at fundamental credit score/rating
- Element of judgement call, probabilities & scoring

Erasmus University’s case-study: McDonald’s

- Understanding the dynamics of new-age sectors
- Assess risks in context to business model, long-term value drivers, competitive positioning, sustainability & business strategy
- Impact of material risks on financial value drivers
- Emissions, deforestation, carbon footprint, health, work, etc., & impact of regulations, taxes & growing consumer awareness
- Impact on sales growth, COGS, margins, cost of capital & ROC

<table>
<thead>
<tr>
<th>Value Driver adjustments</th>
<th>Before ESG/climate analysis</th>
<th>After ESG/climate analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales growth</td>
<td>3%</td>
<td>2% (-100bp)</td>
</tr>
<tr>
<td>EBIT margin</td>
<td>43%</td>
<td>40% (-300bp)</td>
</tr>
<tr>
<td>WACC</td>
<td>6.2%</td>
<td>7% (+80bp)</td>
</tr>
<tr>
<td>Fair value</td>
<td>$184</td>
<td>$129 (~30%)</td>
</tr>
</tbody>
</table>
First Rand Group – ESG & climate risk integration
Madeleine Ronquest, Head of Environmental and Social Risk, First Rand Group
Take home point 9:

Scenario development and stress testing allows financiers to assess their exposure to risks and introduce appropriate risk management strategies.
Part 4
Standards & Disclosures
Non-financial reporting & disclosures

Global developments

1992  UNEP – Finance Initiative
1997  Global Reporting Initiative
2003  Equator Principles
2006  UN Principles for Responsible Investment
2011  Sustainability Accounting Standards Board
2013  International Integrated Reporting Framework
2015  • Paris Agreement
       • UN SDGs
2017  • Corporate Leadership Group on Integrated Reporting
       • TCFD
2019  • UN Principles of Responsible Banking
       • ISO Standard on Climate Change Adaptation
2020  • EU Taxonomy
       • TNFD
2021  • Formation of ISSB
       • Value Reporting Foundation – merger of SASB and IIRC

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National developments

RBI joins network for greening financial system
(The Economic Times, 2021)

Sebi comes out with disclosure requirements under Business Responsibility and Sustainability Report
(The Economic Times, 2019)

Sebi in process of stipulating disclosures specific to ESG scheme: Ajay Tyagi
(The Economic Times, 2021)

A new sustainable finance taxonomy for India is imminent

RBI Deputy Governor stresses on need to mainstream green finance
(The Economic Times, 2021)
Central banks & disclosure policies
Prashant Vaze, Senior Policy Fellow, Climate Bonds Initiative
Existing standards & disclosure frameworks

**Principles**
- IFC
- PRI
- UNEP Finance Initiative
- EQUATOR PRINCIPLES

**Standards**
- GRI
- TCFD
- SASB
- BRSR
- SFDR

**Metrics/Indices**
- Dow Jones Sustainability Indexes
- MSCI
- SUSTAINALYTICS
- ISS ESG
- S&P Global
IFC – E&S Performance Standards
Lalit Bhandari, Senior Environmental and Social Development Specialist, IFC
TCFD is a set of voluntary climate-related financial risk disclosures to be adopted by companies to inform investors on climate-related risks.

Established in 2015 by the Financial Stability Board (FSB) the TCFD’s aim is to build better understanding of the financial sector’s exposure to climate-related risk.

- The rapid rise in the number of TCFD supporters signifies a major shift among market participants in acknowledging that climate change presents a financial risk
- The Task Force comprises of 32 global members representing a broad range of economic sectors and financial markets and a careful balance of users and preparers of climate-related financial disclosures
  - 16 experts from the financial sector
  - 8 experts from the non-financial sector
  - 8 other experts
- Members include banks, pensions funds, asset managers, NBFCs, credit rating agencies, consulting and accounting companies among others
Governance
Disclosures on the organization’s governance around climate-related risks and opportunities

Strategy
Disclosures on actual and potential impacts of climate-related risks and opportunities on businesses, strategy and financial planning

Risk Management
Disclosures on how the organization identifies, assesses and manages climate-related risk

Metrics & Targets
Disclosures on the metrics and targets used to assess and manage relevant climate-related risks and opportunities
TCFD Status Report

Status 2021

- **89** Countries & Jurisdictions
- **120** Regulators & Governmental Entities
- **194** $ tn Assets
- **25** $ tn Combined Company Market Capitalization

Support from governments & regulators

- Brazil 2022
- Singapore 2023
- Hong Kong 2025

International standards and regulators support

- G7
- G20
- IFRS®
- CDP
- FSB
- IOSCO
- European Commission

(TCFD, 2021)
Case Study
Itaú Unibanco is the largest banking institution in Brazil as well as the largest in Latin America.

- Mapped the potential impacts of climate risk and their channels of transmission onto traditional risk disciplines.
- Traditional risk disciplines include environment and social, credit, insurance, operational, market, compliance, reputation and strategy.

3 qualitative scenarios considered:

- **Orderly transition**
- **Disorderly transition**
- **Materialization of physical risks**

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Status on the implementation of climate finance projects in response to TCFD recommendations

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Delivered in 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governance</td>
<td>Resolutions on climate risk are taken by the Environmental and Social Risk Committee.</td>
</tr>
<tr>
<td></td>
<td>Our CRO was nominated as the executive responsible for this topic.</td>
</tr>
<tr>
<td></td>
<td>Our work is carried out in a multidisciplinary way, through our Climate Finance Squad, who are responsible for implementing TCFD recommendations and managing climate change projects.</td>
</tr>
<tr>
<td></td>
<td>The Corporate Environmental and Social Risk department is responsible for carrying out climate risk engagements and for ongoing follow-up of this topic, thus providing an integrated view of the bank's business and how it quickly deals with this topic.</td>
</tr>
<tr>
<td>Strategy</td>
<td>Climate risk was included in Itaú Unibanco's Environmental and Social Responsibility and Sustainability Policy and in specific procedures on climate risk management, with exposure of concepts, tools and methodologies in use and responsibilities of each involved area, duly formalized following the Compliance guidelines.</td>
</tr>
<tr>
<td>Risk management</td>
<td>We take an active role in local and international discussions on climate change.</td>
</tr>
<tr>
<td></td>
<td>In collaboration with UNEP FI, we have developed tools and methodologies to identify and address climate finance, in addition to already having developed and disclosed climate scenarios.</td>
</tr>
<tr>
<td></td>
<td>In collaboration with FEBRABAN, we developed and implemented climate risk management tools, as well as a process for identifying material risks associated with the E&amp;S risk, including climate risk.</td>
</tr>
<tr>
<td></td>
<td>We also include implementing the TCFD recommendations among our Positive Impact Commitments, and integrating climate risks and opportunities into our strategy.</td>
</tr>
<tr>
<td>Targets and metrics</td>
<td>We included climate variables in the calculation of the credit risk rating of the bank's corporate segment (CIB).</td>
</tr>
<tr>
<td></td>
<td>We have set out a Climate Risk Governance framework.</td>
</tr>
<tr>
<td></td>
<td>We widened the mandate of the Environmental and Social Risk Committee to also address climate risk.</td>
</tr>
<tr>
<td></td>
<td>We implemented the monitoring of our corporate loan portfolio's sensitivity to climate risk.</td>
</tr>
<tr>
<td></td>
<td>Our targets for the bank's operating emissions are Science-Based Targets (Scopes 1 and 2 emissions).</td>
</tr>
<tr>
<td></td>
<td>We adopted PCAF and PACTA methodologies to understand our financed emissions and climate alignment with the Paris Agreement.</td>
</tr>
<tr>
<td></td>
<td>We have implemented a methodology for analyzing the sensitivity of our credit portfolio to climate risk.</td>
</tr>
</tbody>
</table>
“SASB Standards guide the disclosure of financially material sustainability information by companies to their investors. Available for 77 industries, the Standards identify the subset of environmental, social, and governance (ESG) issues most relevant to financial performance in each industry.” (SASB)

Companies can also use SASB’s standards internally to

- Identify financially material risks & opportunities
- Inform long-term strategy
- Improve operations
- Sustainability Reporting: Impact Materiality
  - Sustainability Reporting: Financial Materiality
  - Financial Reporting

Why
• Manage and report sustainability topics that matter to investors

What’s in it?
• Disclosure topics, accounting metrics, technical protocols and activity metrics for each industry

Point of view
• Inward looking, the world's impact on company and its financial performance

(Adapted from IOP and Perry Goldschein)
The EU Taxonomy for sustainable activities is a tool to help stimulate investment in sustainable economic activities. It is a new green language that companies need to learn in the coming years.

It is a catalogue of economic activities, such as electricity production and vehicle manufacturing, and the criteria which must be respected for these activities to be considered sustainable.

**Types of economic activities:**

- **Low Carbon:** Wind and Solar Parks
- **Transition:** Production of cement and steel
- **Enabling:** Network maintenance

**Environmental Goals:**

01 Climate change mitigation
02 Climate change adaptation
03 Sustainable use of terrestrial and aquatic ecosystems
04 Pollution prevention and control
05 Protection Restoration of biodiversity
06 Transition towards a circular economy
EU Sustainable Finance Disclosure Regulation

The EU SFDR is “a set of rules which aim to make the sustainability profile of funds more comparable and better understood by end-investors” (ROBECO, 2021)

The SFDR “lays down harmonized rules for financial market participants and financial advisers on transparency with regards to the integration of sustainability risks and the consideration of adverse sustainability impacts in their processes and the provision of sustainability-related information with respect to financial products.” (CSSF, 2020)

Objectives of the SFDR

- Promote transparency & avoid greenwashing
- Facilitate enhanced investor decision-making
- Standardise the language for sustainable investment products

Disclosures at 2 levels

Entity level

Product level

(S&P Global, 2021)
“The Principles for Responsible Banking are a unique framework for ensuring that signatory banks’ strategy and practice align with the vision society has set out for its future in the Sustainable Development Goals and the Paris Climate Agreement” (UN PRB, 2021)

<table>
<thead>
<tr>
<th>Principle</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PRINCIPLE 1: ALIGNMENT</strong></td>
<td>We will align our business strategy to be consistent with and contribute to individuals’ needs and society’s goals, as expressed in the Sustainable Development Goals, the Paris Climate Agreement and relevant national and regional frameworks.</td>
</tr>
<tr>
<td><strong>PRINCIPLE 2: IMPACT &amp; TARGET SETTING</strong></td>
<td>We will continuously increase our positive impacts while reducing the negative impacts on, and managing the risks to, people and environment resulting from our activities, products and services. To this end, we will set and publish targets where we can have the most significant impacts.</td>
</tr>
<tr>
<td><strong>PRINCIPLE 3: CLIENTS &amp; CUSTOMERS</strong></td>
<td>We will work responsibly with our clients and our customers to encourage sustainable practices and enable economic activities that create shared prosperity for current and future generations.</td>
</tr>
<tr>
<td><strong>PRINCIPLE 4: STAKEHOLDERS</strong></td>
<td>We will proactively and responsibly consult, engage and partner with relevant stakeholders to achieve society’s goals.</td>
</tr>
<tr>
<td><strong>PRINCIPLE 5: GOVERNANCE &amp; CULTURE</strong></td>
<td>We will implement our commitment to these Principles through effective governance and a culture of responsible banking.</td>
</tr>
<tr>
<td><strong>PRINCIPLE 6: TRANSPARENCY &amp; ACCOUNTABILITY</strong></td>
<td>We will periodically review our individual and collective implementation of these Principles and be transparent about and accountable for our positive and negative impacts and our contribution to society’s goals.</td>
</tr>
</tbody>
</table>

- **40%** of global banking assets
- **$65 tr** of total asset base
- **250** banks
- **1** Indian bank
GRI is an independent, international standards organization that helps businesses, governments and organizations understand and communicate their impacts on ESG issues.

Structure Model of GRI Standards

- **Universal Standards**
  - Requirements and principles for using the GRI Standards
  - Disclosures about the reporting organization
  - Disclosures and guidance about the organization's material topics

- **Sector Standards**
  - Use the Sector Standards that apply to your sectors

- **Topic Standards**
  - Select Topic Standards to report specific information on your material topics

(GRI, 2021)
An integrated report is a concise communication about how an organization’s strategy, governance, performance and prospects, in the context of its external environment, lead to the creation of value in the short, medium and long term (IR).

Objectives

- Improve the quality of information available
- Promote a more cohesive and efficient approach to corporate reporting
- Enhance accountability and stewardship
- Support integrated thinking, decision-making and actions

The 6 capitals of Integrated Reporting

- Financial capital
- Manufactured capital
- Intellectual capital
- Social & relationship capital
- Human capital
- Natural capital

Value creation

Integrated reporting/thinking → Better decisions → Better actions → Better capital & resource allocation & utilisation → Long-term sustainable value
Revised BRSR framework

1. Interoperability
2. Essential & Leadership indicators
3. Sustainability reporting
4. Assessment metrics

BRR vs BRSR

1. Applicable to top 1000 listed companies (by market cap)
2. Reporting as part of the annual report
3. Based on 9 core principles that promote transparency, accountability, contribution to sustainability and human rights, stakeholder management and environmental protection

1. Applicable to top 1000 listed entities on a voluntary basis until for FY21-22 and mandatory, thereafter
2. Reporting as part of the annual report and the MCA21 portal
3. Revised framework based on interoperability, essential and leadership indicators, sustainability reporting and assessment metrics
## Principle 1
Businesses should conduct and govern themselves with integrity, and in a manner that is ethical, transparent and accountable.

## Principle 2
Businesses should provide goods and services in a manner that is sustainable and safe.

## Principle 3
Businesses should respect and promote the well-being of all employees, including those in their value chains.

## Principle 4
Businesses should respect the interests of and be responsive to all its stakeholders.

## Principle 5
Businesses should respect and promote human rights.

## Principle 6
Businesses should respect and make efforts to protect and restore the environment.

## Principle 7
Businesses, when engaging in influencing public and regulatory policy, should do so in responsible and transparent manner.

## Principle 8
Businesses should promote inclusive growth and equitable development.

## Principle 9
Businesses should engage with and provide value to their consumers in a responsible manner.

### Key disclosures sought in the BRSR

| Overview and approach to address the ESG risks and opportunities | Environment-related disclosures |
|———|———|
| Sustainability related goals, targets and performance | Social-related disclosures |

- **Overview and approach to address the ESG risks and opportunities**
- **Environment-related disclosures**
- **Social-related disclosures**

Sustainability related goals, targets and performance

- Environment-related disclosures
- Social-related disclosures

**Sustainability related goals, targets and performance**

- **Overview and approach to address the ESG risks and opportunities**
- **Environment-related disclosures**
- **Social-related disclosures**
ESG ratings & rankings
Sudip Sural, CEO, Care Advisory
Challenges

Differences in scope
Difficulties in comparability
Fragmentation
Lack of global standard
Take home point 10:

Disclosing on non-financial parameters and climate risks is soon becoming an expectation rather than the exception, backed by both regulations and market demand.
Polls!

Head to [www.menti.com](http://www.menti.com)
OR
Open the Mentimeter app

OR

Enter meeting code – **4151 9096**

OR

Scan this QR code!
Break

Please return in 10 minutes!
Part 5
The Way Forward
ESG & climate opportunities

ESG & climate opportunities for India

Integrating ESG & climate risks in lending
Investing in positive impact projects
Innovating products
Greening internal operations
Diversifying human capital
Adopting a ‘risk-return-impact’ model
ESG & climate opportunities

Integrating ESG & climate risks in lending

- Integrating in ICAAP, ERM, CAM
- Adopting a 360-degree approach
- Pricing risks more accurately
- Measuring financed emissions

- Limiting/preventing financial and non-financial damages to the institution
- Avoiding reputational impact, legal challenges, fines & fees

Requires the borrower to disclose on their carbon footprint

Financed emissions 700 times more than operational emissions

International banks committed to measuring financed emissions

International banks committed to measuring financed emissions
ESG & climate opportunities

Investing in positive impact sectors

- Tagging assets
- Taking targets on climate
- Harnessing opportunities in budding new sectors
- Expanding access to credit for women & other marginalized groups

Curating portfolios more aligned with national and global priorities

Example

Partial Risk Guarantee Fund for Energy Efficiency: Risk sharing mechanism to extend loans for energy efficient projects.

Green Asset tagging, thus helps ensure that correct and consistent projects are funded and increases exposure to positive impact projects.
Innovating products

- Introducing new products based on technology and sustainability
- Catering to the bottom of the pyramid

Leveraging the rapidly growing sustainable finance market

Some examples

- Credit Enhancements
- Blended Finance
- Peer-to-peer lending
- Pay-as-you-go
ESG & climate opportunities

Examples of innovative products

1. Tech-enabled financing solution

The aim is to facilitate rural women and girls so they can access sanitary napkins at subsidised rates

**Stakeholders**
- A large Indian bank
- A tech company
- A state government

**Benefits**
- Eliminate misuse of subsidy
- Enhanced access to sanitary napkins
- Improved attendance of girl students
- Financial inclusion

**Beneficiaries**
- Napkin manufacturers
- Self-help groups
- Non-governmental Organisations

2. Blended finance solution

Aimed at facilitating access to mainstream debt finance for women salt farmers for solar pumps

**Stakeholders**
- A large Indian private sector bank
- A regional cooperative bank
- A local NGO

**Benefits**
- Distributed risk amongst all stakeholders while substantially reducing risks for primary lender
- Positive impact on Livelihoods
- Gender empowerment
- Energy Inclusion
- Financial Inclusion

**Beneficiaries**
- Local salt farmers
- NGOs
ESG & climate opportunities

Greening internal operations

- Placing an internal price on carbon
- Operationalizing ESG and climate risk strategies
- Holding the Board and management accountable for ESG and climate risk performance

Curating a responsible and sustainable banking structure
ESG & climate opportunities

Diversifying human capital

- Enhancing knowledge on ESG and climate risks
- Requiring ESG and climate risk knowledge and skills in hiring
- Including climate risk experts at the Board level

*Building in-house climate expertise to better internal processes and safeguard risks*
ESG & climate opportunities

Adopting a ‘risk-return-impact’ model

- Working towards creating an impact
- Safeguarding against future risks
- Reaping reputational benefits for creating meaningful social and environmental impact

Moving away from the conventional ‘risk-return’ model
Take home point 11:
Pursuing ESG lending and investment opportunities can generate financial and reputational advantages.
Case Study
OECD blended finance principles

**Principle 1**
Anchor blended use to a development rationale

**Principle 2**
Design blended finance to increase the mobilisation of commercial finance

**Principle 3**
Tailor blended finance to local context

**Principle 4**
Focus on effective partnering for blended finance

**Principle 5**
Monitor blended finance for transparency & results
Example of Outcome based-financing model

**Investors**
- UBS Optimus Foundation (USD 3.5M)
- Co-investment from service providers: Palladium (USD 0.3M), HLFPPPT (USD 0.5M), PSI (USD 0.5M)

**Verification**
- Mathematica Policy Research

**Beneficiaries**
- Base case of 360 private healthcare facilities in Rajasthan, India; up to 444 facilities

**Intervention**
- Support for facilities to prepare for accreditation under a new joint quality standard for maternal and newborn healthcare

**Graphs**
- Lives saved: Year 1 - 191, Year 2 - 1152, Year 3 - 3444, Year 4 - 6622, Year 5 - 9929
- Still births averted: Year 1 - 10, Year 2 - 30, Year 3 - 167, Year 4 - 311, Year 5 - 455

The Government of Rajasthan participates in an oversight role in a non-executive role and lays the ground for government outcome funding in a second phase of the impact bond.
Philippines Water Revolving Fund

Government of the Philippines—Department of Finance

Sovereign Guarantee

Japan Bank for International Cooperation (JBIC/JICA)

Standby Credit Line

Private Finance Institutions (PFIs)

Domestic Banks

Debt Service

Development Bank of the Philippines (DBP)

Credit Risk Guarantee

LGU Guarantee Corporation (LGUGC)

Co-Guarantee

United States Agency for International Development (USAID)

Concessional Funds

Philippines Water Revolving Fund (PWRF)

Loans

Debt Repayment

Water Service Providers (LGUs and Water Districts)

Legend

Supply of Finance

Repayment Flows

Credit Enhancement

Public/Donor Agencies

Private Financiers

Financial Intermediary

Service Provider

(World Bank, 2016)
Expansion of Wastewater Plant in Jordan

- **Millennium Challenge Corporation (MCC)**
- **Government of Jordan: Ministry of Water and Irrigation (MWI)**
- **Lender Syndicate led by Arab Bank**
- **Project Sponsors Suez Environment/IDI/Morganti-CCC**

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**Legend**
- Supply of Finance
- Repayment Flows
  - Public/Donor Agencies
  - Private Financiers
  - Financial Intermediary
  - Service Provider

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**Samra Wastewater Treatment Plant Company (SPC)**

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**As-Samra Wastewater Treatment Plant**

(World Bank, 2016)
Activity 3

Create a brief outline of a blended finance facility that can effectively manage risks, achieve returns and make an impact on any of the following SDGs.

Please nominate 1 person from your group to present the findings in 30 seconds – 1 minute!
Role of internal stakeholders

Role of credit & risk teams

- Create a compliance culture
- Integrate ESG & climate risk in the CAM
- Integrate ESG & climate risk in the ERM
- Articulate ESG & climate risk conditionalities in assessing loans

Benefits for credit & risk teams

- More robust and comprehensive risk analysis and credit approval processes
- Risk-adjusted pricing for loans and project finance
- Product innovation for alternative and unique sustainable finance/ESG products
- Asset tagging
- Greater social and environmental impact, leading to reputational benefits for the banks and the risk/credit officer
- Diversification in capital providers and access to global sustainable funds
Role of credit & risk teams

Sample analyzed dimensions

- Cross-sectoral dimensions
- Sector specific value drivers
- Company exposure and performance

Methodology

Research
- Metrics to quantify environmental and social impacts
- Determination of cash flows
- Estimation of probabilities

Quantification
- Using DCF method to reach ESG-adjusted valuation
- Present Value (NPV) of ESG issues

Valuation

Company

Environmental dimensions
- Water, energy and materials
- Biodiversity and land use
- Climate change

Social dimensions
- Waste management
- Relationships with workers
- Relationships with suppliers
- Relationships with communities

Governance dimensions
- Board independence and quality
- Corporate governance
Role of internal stakeholders

Role of the board & management

- Implement better Board oversight on ESG and climate risk
- Implement disclosure requirements for the bank’s internal operations
- Establish ESG and climate performance targets
- Require disclosures from borrowers on ESG and climate performance and impact
- Articulate a stewardship code that highlights ESG and climate performance and impact
Sample sustainability governance structure

Board of Directors

Corporate Responsibility

Governance

Risk

Credit

Human Resources

Audit

Finance

Board Committees

ESG & Climate Strategy Committee

ESG & Climate Risk Committee

CEO

Lines of Business

Global Head of Public Affairs

Chief Risk Officer

Head of HR/Head of Diverse Segments

Finance

Sustainability related teams (e.g., ESG Solutions, Product Teams, and working groups)

Chief Impact/Sustainability Officer

Head of Climate Risk

Diverse Segments Leader with teams embedded in LOB

Sustainability Steering Committee

Sustainability & ESG Team

Dotted reporting line

Global Head of Public Affairs

Treasury

CFO

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CDC – ESG & climate strategy
Amal-Lee Amin, Director Climate Strategy, CDC Group and Senior Advisor, COP26, Cabinet Office
Polls!

Head to [www.menti.com](http://www.menti.com)
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Activity 4

Based on what you have learned about ESG and climate risks, identify which of the following ESG/climate factors you would take into consideration while assessing a) retail and b) wholesale lending. Also identify what % weightage you would attribute to your chosen factors and why.

<table>
<thead>
<tr>
<th>Environment</th>
<th>Social</th>
<th>Governance</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHG emissions (including Scope 1, 2 &amp; 3)</td>
<td>Air, water and soil pollution</td>
<td>Gender equality, diversity and inclusion, POSH</td>
</tr>
<tr>
<td>Waste/effluents</td>
<td>Climate mitigation adaptation risk</td>
<td>Issues related to the local communities</td>
</tr>
<tr>
<td>Physical risks of climate change</td>
<td>Transition risks of climate change</td>
<td>Relations with debtors (suppliers)</td>
</tr>
<tr>
<td>Environmental regulations</td>
<td>Others</td>
<td>Others</td>
</tr>
</tbody>
</table>

Please nominate 1 person from your group to present the findings in 30 seconds – 1 minute!
End of Day 2