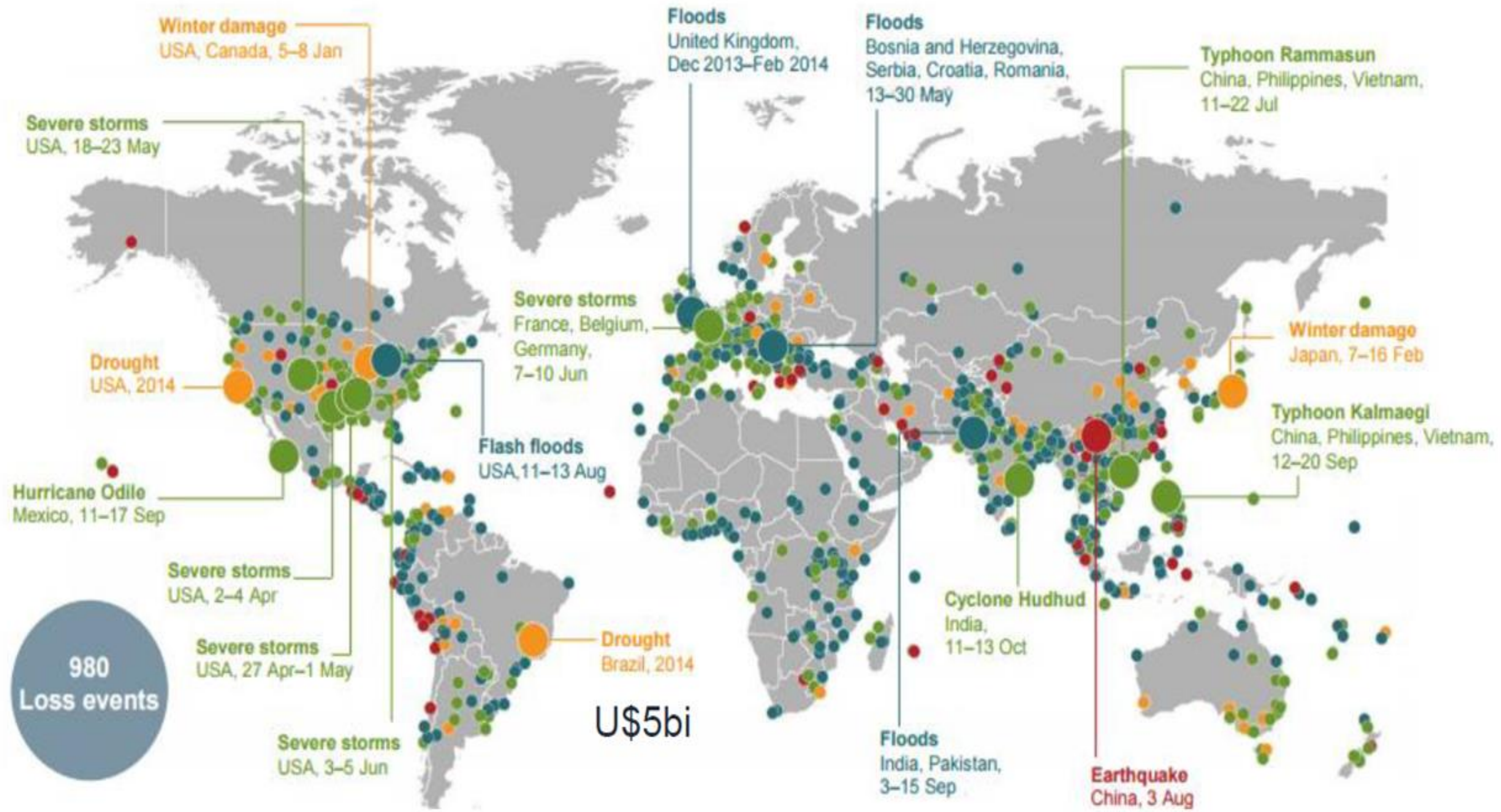
UNEP FINANCE INITIATIVE

TCFD & the finance sector

- **An overview of UNEP FI's current work**

Loss Events



Fonte: Munich RE – NatCatService. Worldmap of Natural Catastrophes 2014.


Fuqua

Jim Teske
@JimTeskeNC9

Seguir

What could be a better day trip for a meteorologist on #nationalweatherpersonsday than a drive to Tug Hill (Boylston Route 15) #LocalSYR

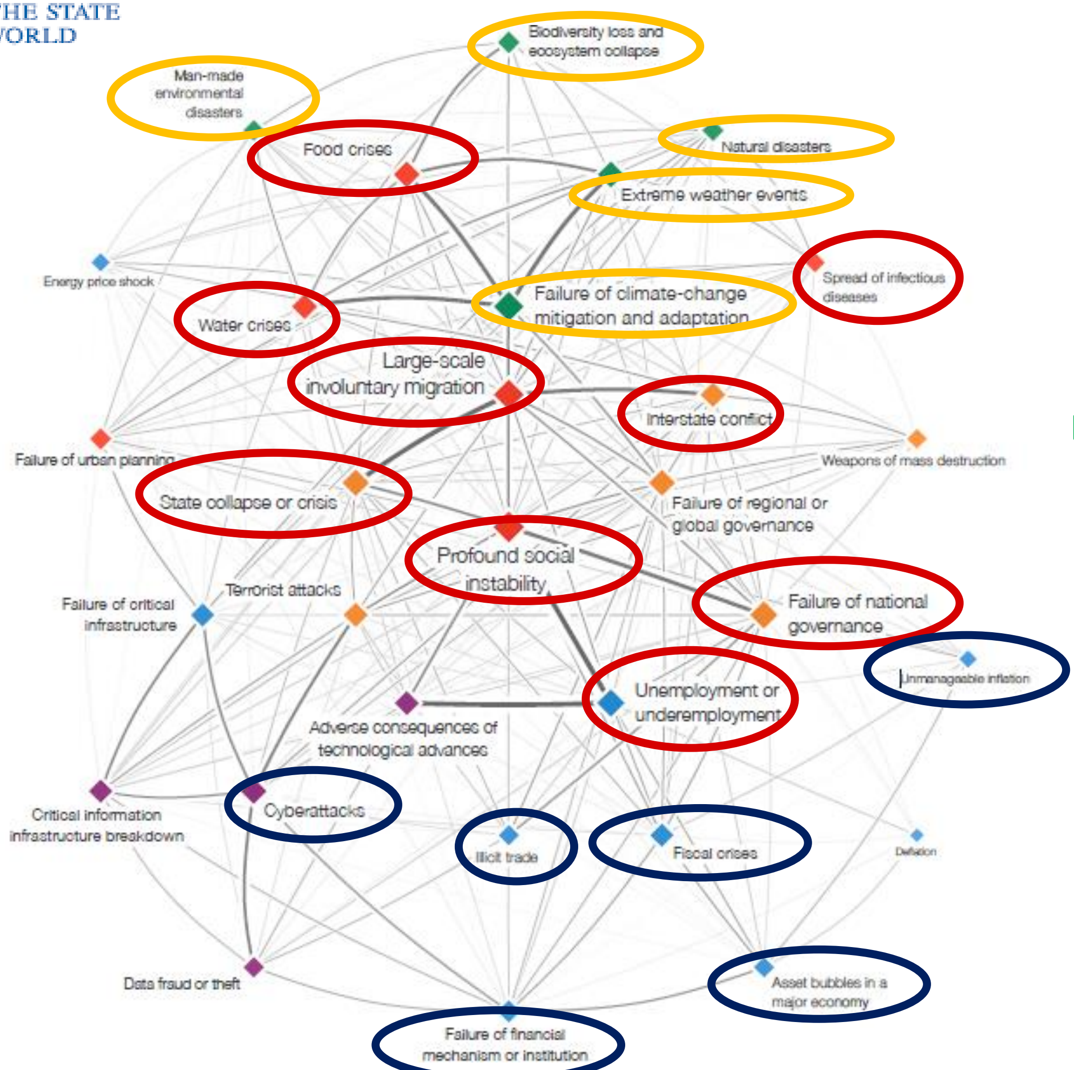
10:19 - 5 de fev de 2017

38 Retweets **134** Curtidas

6 38 134

Climate Risks

COMMITTED TO IMPROVING THE STATE OF THE WORLD



Environmental Risks

Social Risks

Financial Risks

Operational Risks
Credit Risks
Reputational Risks
Portfolio Managment

Figure III: The Global Risks Interconnections Map 2018

About TCFD

G20 Finance Ministers and Central Bank Governors asked the Financial Stability Board (FSB) to review how the financial sector can take account of climate-related issues.

The FSB established the Task Force on Climate-related Financial Disclosures (TCFD) to develop recommendations for more effective climate-related disclosures that:

- could "**promote more informed investment, credit, and insurance underwriting decisions**" and,
- in turn, "would enable stakeholders to **understand better** the concentrations of **carbon-related assets in the financial sector** and the financial system's **exposures to climate-related risks**."

Industry Led and Geographically Diverse Task Force

The Task Force's 32 international members, led by Michael Bloomberg, include providers of capital, insurers, large non-financial companies, accounting and consulting firms, and credit rating agencies.

Challenges

Currently, challenges with respect to climate-related disclosure are faced by:

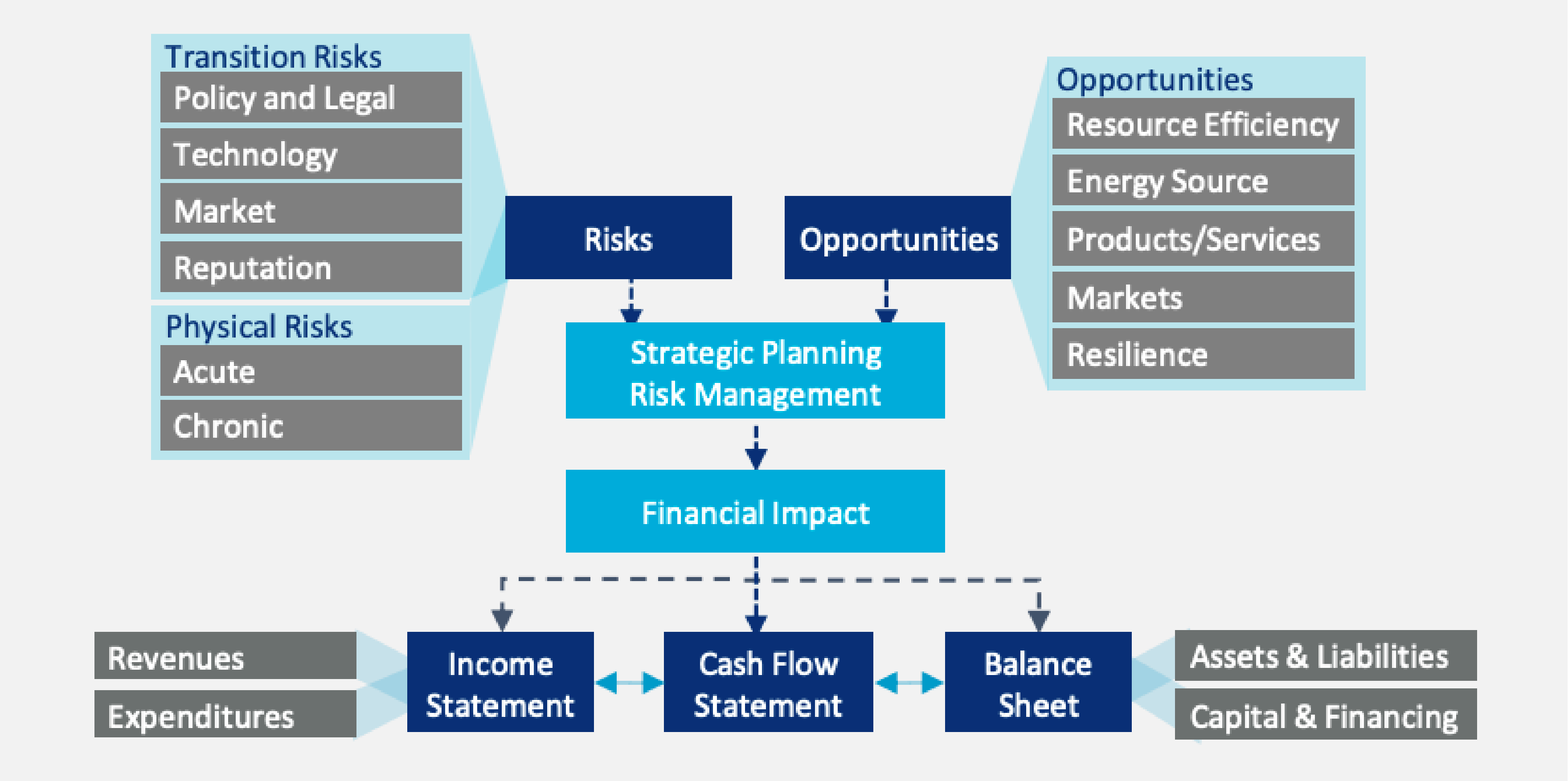
- **Issuers** who generally have an obligation under existing law to disclose material information, but lack a coherent framework to do so for climate-related information,
- **Investors, lenders, and insurers** who need decision-useful, climate-related information to make informed capital allocation and financial decisions, and
- **Regulators** who need to understand risks that may be building in the financial system

The Task Force aims to provide the solution:

a voluntary, consistent disclosure framework that improves the ease of both producing and using climate-related financial disclosures

Focus on Financial Impact

The Task Force focused on financial impact of climate-related risks and opportunities on an organization, rather than the impact of an organization on the environment.



Risks and Opportunities

TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

Type	Climate-Related Risks
Transition Risks	**Policy and Legal**
	– Increased pricing of GHG emissions – Enhanced emissions-reporting obligations – Mandates on and regulation of existing products and services – Exposure to litigation
	Technology
	– Substitution of existing products and services with lower emissions options – Unsuccessful investment in new technologies – Costs to transition to lower emissions technology
	Markets
	– Changing customer behavior – Uncertainty in market signals – Increased cost of raw materials
	Reputation
	– Shifts in consumer preferences – Stigmatization of sector – Increased stakeholder concern or negative stakeholder feedback
Physical Risks	**Acute**
	– Increased severity of extreme weather events such as cyclones and floods
	Chronic
	– Changes in precipitation patterns and extreme variability in weather patterns – Rising mean temperatures – Rising sea levels

Type	Climate-Related Opportunities
Resource Efficiency	– Use of more efficient modes of transport – Use of more efficient production and distribution processes – Use of recycling – Move to more efficient buildings – Reduced water usage and consumption
Energy Source	– Use of lower-emission sources of energy – Use of supportive policy incentives – Use of new technologies – Participation in carbon market – Shift towards decentralized energy generation
Products and Services	– Develop and/or expand low emission goods and services – Development of climate adaptation and insurance risk solutions – Development of new products or services through R&D and innovation – Ability to diversify business activities – Shift in consumer preferences
Markets	– Access to new markets – Use of public-sector incentives – Access to new assets and locations needing insurance coverage
Resilience	– Participation in renewable energy programs and adoption of energy-efficiency measures – Resource substitutes/diversification

Recommendations

The Task Force developed **four widely-adoptable recommendations** on climate-related financial disclosures that are applicable to organizations across sectors and jurisdictions.

The recommendations are structured around four thematic areas that represent core elements of how organizations operate:

Governance
The organization's governance around climate-related risks and opportunities

Strategy
The actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning

Risk Management
The processes used by the organization to identify, assess, and manage climate-related risks

Metrics and Targets
The metrics and targets used to assess and manage relevant climate-related risks and opportunities

TCFD Scope – recommendations

TCFD | TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

Governance	Strategy	Risk Management	Metrics and Targets
Disclose the organization's governance around climate-related risks and opportunities.	Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	Disclose how the organization identifies, assesses, and manages climate-related risks.	Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.
Recommended Disclosures	**Recommended Disclosures**	**Recommended Disclosures**	**Recommended Disclosures**
a) Describe the board's oversight of climate-related risks and opportunities.	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	a) Describe the organization's processes for identifying and assessing climate-related risks.	a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.
b) Describe management's role in assessing and managing climate-related risks and opportunities.	b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	b) Describe the organization's processes for managing climate-related risks.	b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.
	c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

Overview of Climate Change Workstream at UNEP FI

Climate Change

Banks

Investors

Insurers

Responding to the FSB's TCFD

TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

Responding to the Paris Agreement

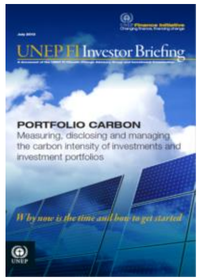
PARIS2015 COP21·CMP11

Strategic research & positioning

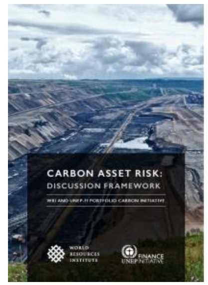
GLOBAL COMMISSION ON ADAPTATION

UNEP FI's track record - climate assessment by FIs

2009
First ever finance sector supplement on sustainability reporting

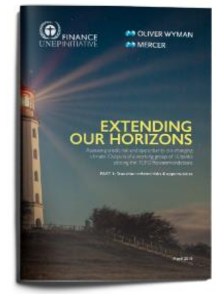


2013
Why and how investors should measure and disclose carbon

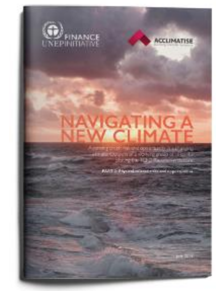


2015
FI guidelines to identify, assess, manage carbon risks

2015-2017
What comes after risk disclosure? Risk mitigation action.



2018
Recommendations for assessing Transition Risks



2018
Recommendations for assessing Physical Risks

FIs disclosing on sustainability (2009)

FIs assessing and disclosing carbon/transition risks (2013–2015)

FIs mitigating transition risks (2015-2017)

TCFD Recommendations (2018)

Responding to the TCFD – together.

Goals and outputs of TCFD pilots

- **Signal Finance Industry support** for TCFD Recommendations
- **Enable UNEP FI members** to assess and disclose climate-related risks and opportunities in alignment with the TCFD recommendations: **physical risks and transition risks**
- Contribute to the emergence of a **harmonized approach to TCFD disclosure** in the finance sector and to provide an example and guidance to the wider banking industry

Reports on **Transition** and **Physical** Risk available on UNEP FI Website (Resources/Publications)

http://www.unepfi.org/publications/banking-publications/navigating-a-new-climate-assessing-credit-risk-and-opportunity-in-a-changing-climate/

TCFD Scope – scenarios

Green scenario **Brown scenario**

Scenario	Rapid Energy Transition	Two-degree	Business as usual
Corrective transition response	Radical and swift	Strong, beyond current commitments	Current trajectory, based on efforts already under way
Change in temperature vs. pre-industrial era (2100)	1.5°C	2°C	4°C
Emission peak	2020	2020	2040
% fossil fuel in energy mix (2050)	<40%	<50%	80%

← **More Transition Risk**

- Controlled yet aggressive change
- Major short term impact but reduced long-term impact
- Lowest economic damage

More Physical Climate Risk →

- Uncontrolled change
- Limited short-term impact but major long-term impact
- Economic damages increase

TCFD adoption by banks (transition)

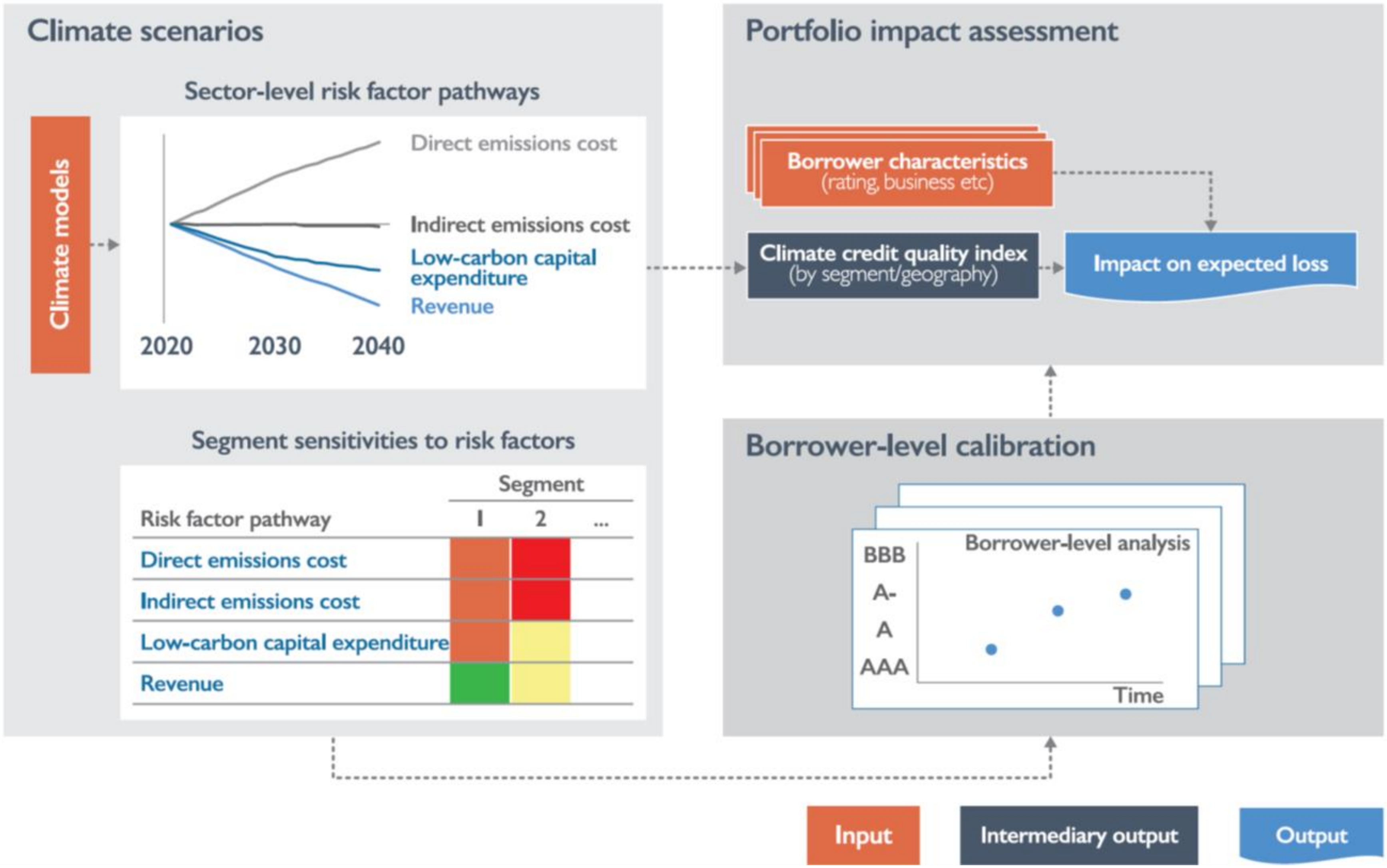
Several approaches are thinkable

	Macro economic-level	Sector-level	Borrower-level
Description	• Assess impact of climate scenario on the loan book through national-level variables	• Assess impact of climate scenario on the loan book through an assessment of the scenario impact on economic sectors	• Directly assess impact of climate scenario on borrower-level financials or credit risk factors
Feasibility & Assessment	• Will not effectively capture all transition risk credit impacts, e.g.: – Impacts of re-distributional impacts on sectors – Bank-specific sector concentrations	• Expected to capture main transition sensitivities as they will largely be sector-specific	• No existing, comprehensive climate risk assessment of borrowers • Limited availability of relevant attribute data • Direct linkage of climate scenarios to existing credit risk models is challenging

Higher granularity

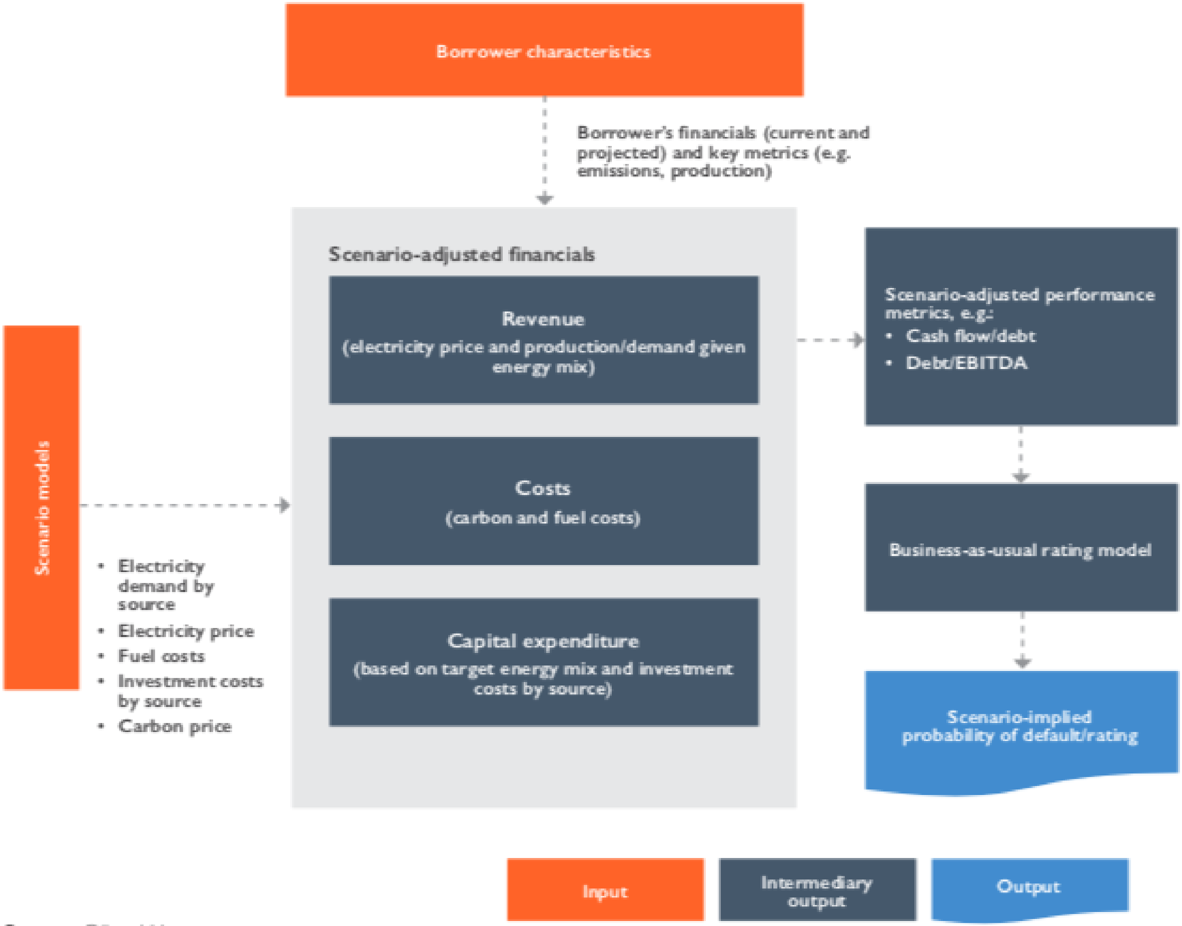
A mix of sector-level and borrower-level modeling can be used to capture climate risk – see next pages

Transition risks in loan-books



Transition risks in loan-books

Figure 2.6: Adjusting rating factors for unregulated power generation utilities using scenario variables (simplified example, illustrative)



Source: Oliver Wyman

Case Study: Metal & Mining

Table 3.5: Segment sensitivity to risk factor

SEGMENTS	RISK FACTOR PATHWAYS			
	DIRECT EMISSIONS COSTS	INDIRECT EMISSIONS COSTS	LOW-CARBON CAPEX	REVENUE
Black coal mining	Moderately high	Moderately high	Moderately high	High
Copper ore mining	Moderately low	Moderate	Moderate	Moderately high
Gold ore mining	Moderately low	Moderate	Moderate	Moderate
Iron ore mining	Moderate	Moderately high	Moderate	Moderately low
Metal ore mining N.E.C.	Moderately low	Moderate	Moderate	Moderate
Mineral sand mining	Low	Moderately low	Moderate	Moderate
Nickel ore mining	Moderately low	Moderate	Moderate	Moderately high
Alumina production	High	High	High	Moderately high
Basic iron & steel manufacturing	High	High	High	Moderately high

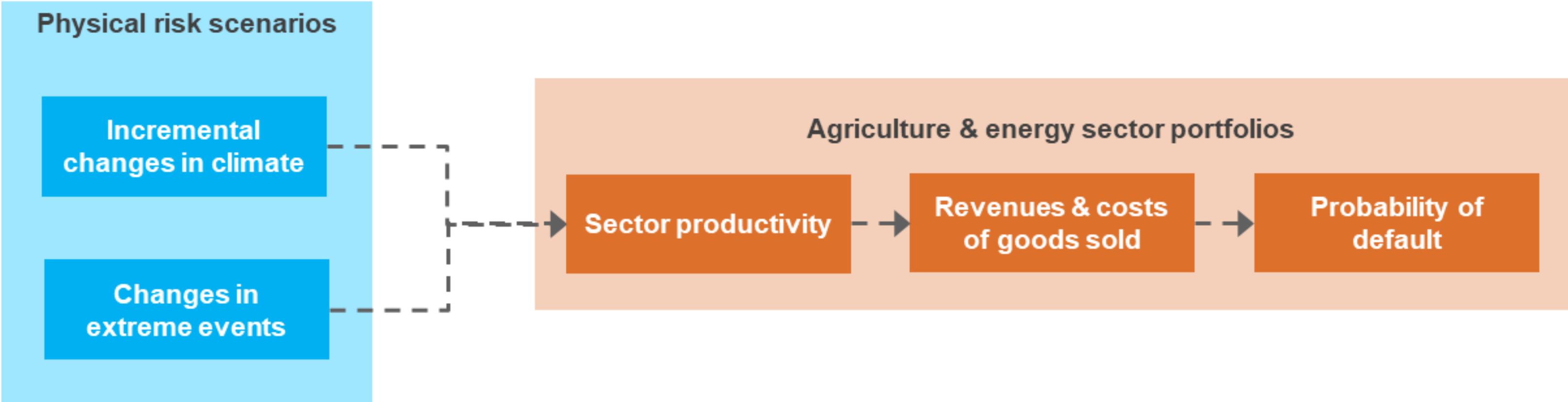
Portfolio analysis

Figure 4.6: Illustrative snapshot analysis of bank capabilities and market assessment

TCFD adoption by banks (physical)

Methodology for agriculture and energy
Relating incremental climate change and extreme events to probability of default

- Analyse impacts of **incremental climate change** and **extreme events** for **industry sub-sectors:**
  - Evidence base provides data on changes in productivity, price, downtime
- Assess implications for borrowers' finances:
  - **Changes in revenue**
  - **Changes in costs of goods sold**
  - Potential **adaptation investments** are not accounted for
- Estimate changes in **probability of default:**
  - By stressing factors/ratios in banks' internal credit rating models that have revenue and cost components



Methodology for real estate
Relating extreme events to loan-to-value ratios

- Analyse probabilities of encountering **extreme weather events**
- Assess potential changes in **property values**
- Calculate revised **loan-to-value ratios**
- For **income-producing real estate**, changes in revenue (e.g. loss of rental income) are not accounted for

Objectives of Phase 2

Starting from the methods, insights, recommendations from Phase 1:

1. **Broaden & expand**
   - ✓ Participating banks (private & public)
   - ✓ Partners: Scenarios, data, modelling

2. **Enhance the 'toolkit'**
   - ✓ Scenarios, data, modelling
   - ✓ Anything else that might be needed

3. **Cement the leadership of UNEP FI members**
   - ✓ Become the go-to platform for advice & dialogue: for FIs and stakeholders

Phase 2: enhancing the toolkit

1. **Climate scenarios**, in partnership/close coordination with: IPCC, CICERO, IEA, IIASA, PIK (all have confirmed interest and availability)

Objectives:

- ✓ Banks understand the full spectrum of climate scenarios available today
- ✓ Banks understand how they differ and what assumptions they rely on
- ✓ Gaps in the scenario landscape are jointly identified and closed, incl.:
  - **Transition risks:** *Non-linear climate change mitigation scenarios*
  - **Physical risks:** *Enhanced economic impact scenarios*

2. **Asset-level data,** potentially in partnership/close coordination with the institutions leading on this topic: Stanford, Oxford, CDP, WRI, 2di

Objectives:

- ✓ Banks understand the state of affairs globally on the availability of climate-relevant asset-level data
- ✓ This includes breadth of data, depth, and access, across attributes of relevance to both transition and physical risks
- ✓ Gaps and constraints are jointly identified and addressed

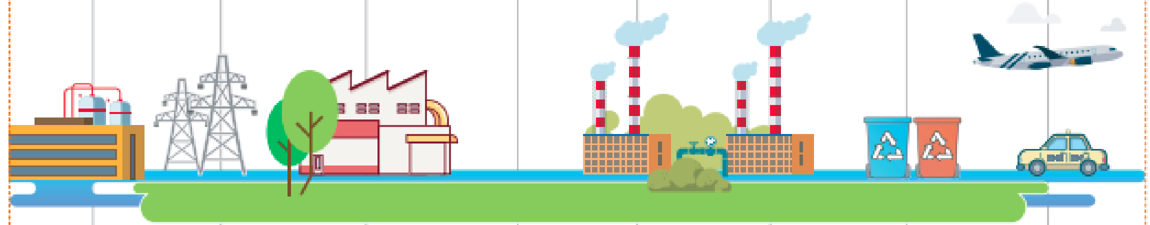
3. **Legal challenges,** potentially in partnership with legal advisers / firms

Objectives:

- ✓ Banks understand potential legal barriers inhibiting TCFD-responsive disclosures
- ✓ Approaches and language are jointly developed to handle such obstacles

Example: Itaú

Metas para operação



	Consumo de água	Consumo energia elétrica (total)	Consumo energia renovável (prédios adminstrativos)	*Power usage effectiveness* (PUE)	Emissões escopo 1	Emissões escopo 2[1]	Resíduos/ aterro sanitário (prédios administrativos)	Viagens de negócio (áereo + táxi)
Meta absoluta 2020	Reduzir em 16% nosso consumo de água entre 2013 e 2020	Reduzir em 11% nosso consumo de energia entre 2013 e 2020	Atingir um indicador de 96% da energia consumida por fontes renováveis	Atingir um indicador PUE de 1,60	Reduzir em 3% nossas emissões de escopo 1 entre 2013 e 2020	Reduzir em 11% nossas emissões de escopo 2 entre 2013 e 2020	Reduzir em 46% a destinação de resíduos das nossas unidades administrativas para aterros entre 2013 e 2020	Reduzir em 10,5% a quantidade de quilômetros rodados entre 2013 e 2020
Meta relativa 2020	Reduzir em 43% nosso consumo de água por R$ 1 milhão em produtos bancários entre 2013 e 2020	Reduzir em 40% nosso consumo de energia por R$ 1 milhão em produtos bancários entre 2013 e 2020	Não se aplica	Este é um indicador absoluto. Sem escala	Reduzir em 35% nossas emissões de escopo 1 por R$ 1 milhão em produtos bancários entre 2013 e 2020	Reduzir em 40% nossas emissões de escopo 2 por R$ 1 milhão em produtos bancários entre 2013 e 2020	Não fazemos por indicador relativo nesse caso	Reduzir em 40% a quantidade de quilômetros rodados por produto bancário entre 2013 e 2020
Desempenho 2017[1]	Atualmente reduzimos em 17% nosso consumo absoluto e em 40% nosso indicador relativo	Atualmente, reduzimos em 1% nosso consumo absoluto e em 27% nosso indicador relativo	Atualmente, 95% da energia dos prédios administrativos é proveniente de fontes renováveis	Atingimos um PUE de 1,81 em 2017	Em 2017, obtivemos uma redução 23% no indicador absoluto e em 44% no indicador relativo	Em 2017, obtivemos uma redução de 6% no indicador absoluto e em 31% no indicador relativo	A quantidade encaminhada para aterro sanitário aumentou, pois em 2017 prédios administrativos e agências implementaram a gestão destes dados	Atualmente, reduzimos em 2% nosso consumo absoluto e em 29% nosso indicador relativo

Example: Itaú

Impacto das mudanças climáticas sobre o valor de mercado dos setores, por setor e tipo de impacto
(Itaú Asset Management, Mudanças climáticas e seus impactos)

Setor/ Impacto	Danos físicos	Dissemi-nação de doenças	Mudanças no ciclo hidrológico	Novos produtos	Precificação das emissões	Produtividade agrícola, florestal e custo dos insumos	Total geral
Energia			Negativo/baixo		Negativo/muito alto	Positivo	Negativo/muito alto
Materiais	Negativo/muito baixo		Negativo/médio		Negativo/alto	Negativo/baixo	Negativo/muito alto
Serviços públicos	Negativo/médio		Negativo/médio		Negativo/alto		Negativo/alto
Consumo cíclico	Negativo/baixo	Negativo/muito baixo	Negativo/muito baixo		Negativo/médio	Negativo/médio	Negativo/médio
Consumo não cíclico	Negativo/muito baixo	Negativo/muito baixo	Negativo/médio		Negativo/baixo	Negativo/médio	Negativo/médio
Industrial	Negativo/alto		Negativo/muito baixo	Positivo	Negativo/médio		Negativo/médio
Financeiro	Negativo/baixo	Negativo/baixo	Negativo/muito baixo	Positivo	Negativo/baixo	Negativo/baixo	Negativo/médio
Tecnologia da informação			Negativo/muito baixo			Negativo/baixo	Negativo/baixo
Telecomuni-cações	Negativo/baixo				Negativo/baixo		Negativo/baixo
Saúde		Positivo					Positivo

Negativo/muito alto
Negativo/alto
Negativo/médio
Negativo/baixo
Negativo/muito baixo
Neutro
Positivo

Fonte:
Itaú Asset Management, 2017

Example: TD Bank Group

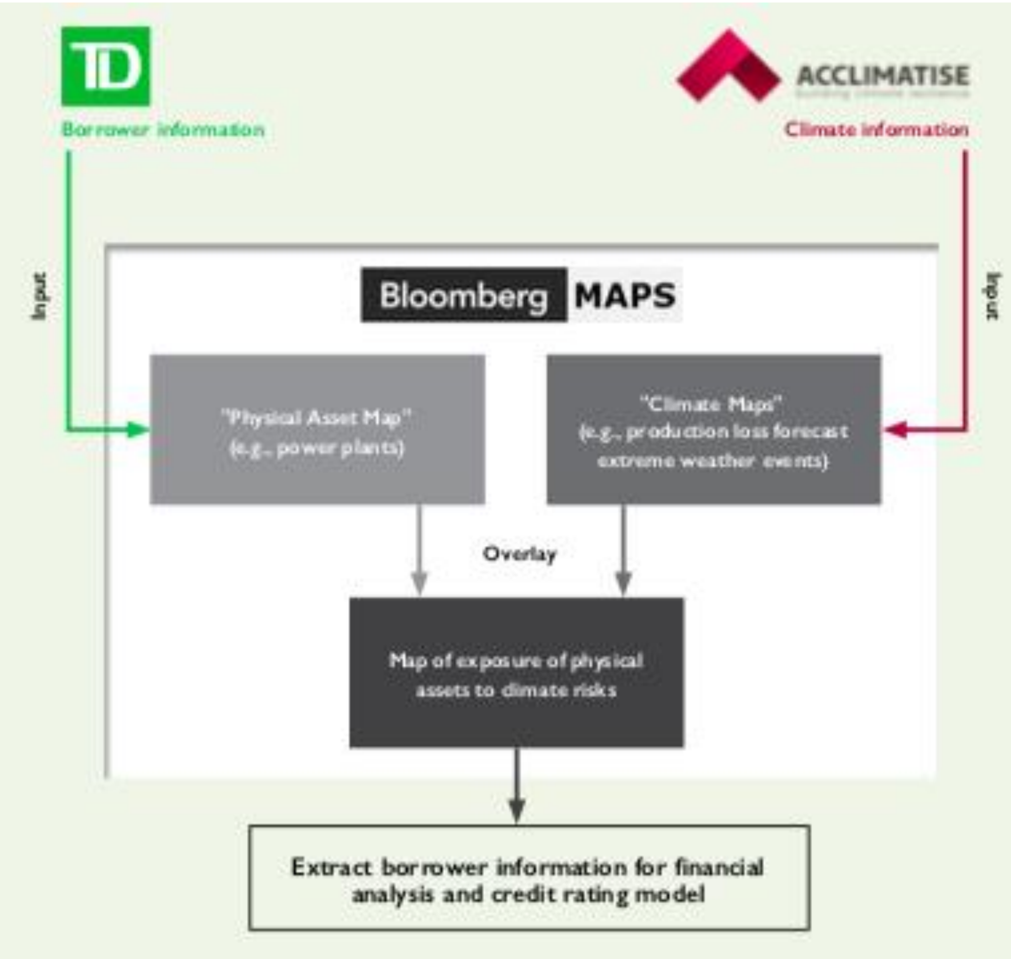
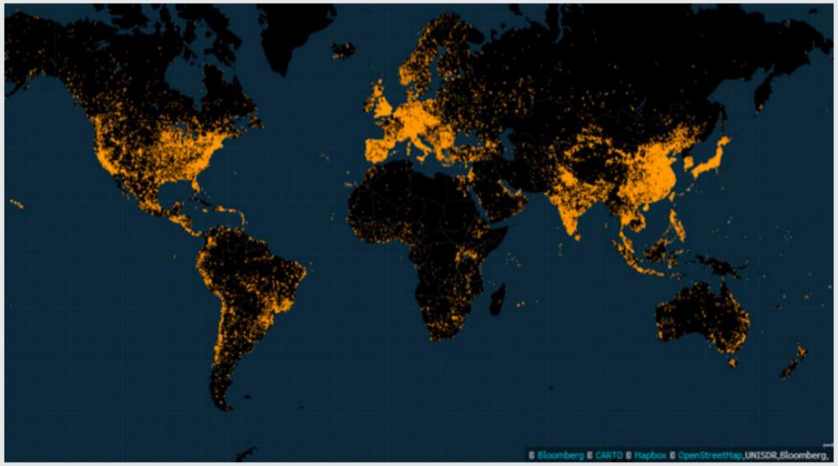
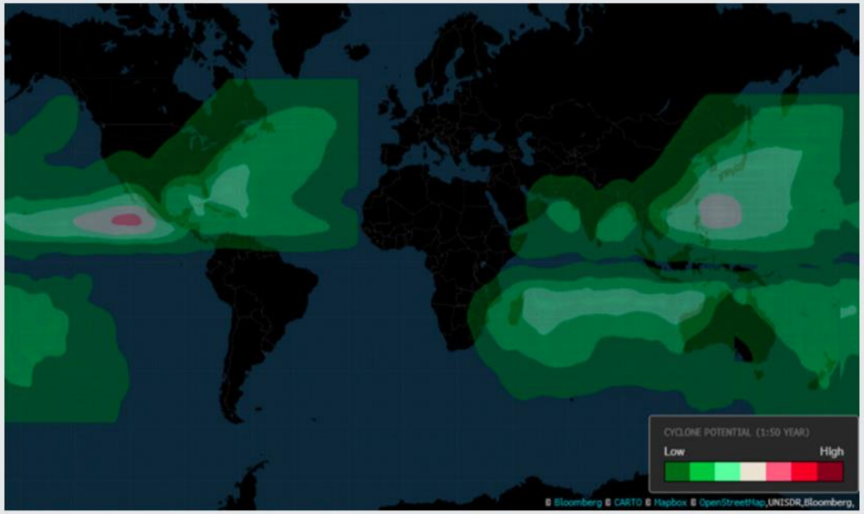


Figure 3.4: Location of global power plants (Physical Asset Map)



Note: Figure 3.4 to Figure 3.9 show all power plants globally, not TD's portfolio of borrowers.

Figure 3.5: Present-day 1:50 year cyclone risk (Climate Map)



Example: Westpac

Our 2020 Action Plan – supporting the transition to a net zero emissions economy.

Provide finance to back climate change solutions

- Increase our lending to climate change solutions to $10 billion by 2020 and $25 billion by 2030
- Facilitate $3 billion in climate change solutions by 2020, e.g. Climate Bond issuance and arrangement
- Reduce the emissions intensity of our power generation portfolio to 0.30 tCO2e/MWh by 2020

Support businesses that manage their climate-related risks

- Work with our customers to assess the financial implications of climate-related risks and opportunities in their business, including resilience under forward-looking scenarios
- Specific criteria set for thermal coal mining, energy generation and agribusiness

Help individual customers respond to climate change

- Making their homes more climate-resilient, improve energy efficiency and reduce their environmental impact

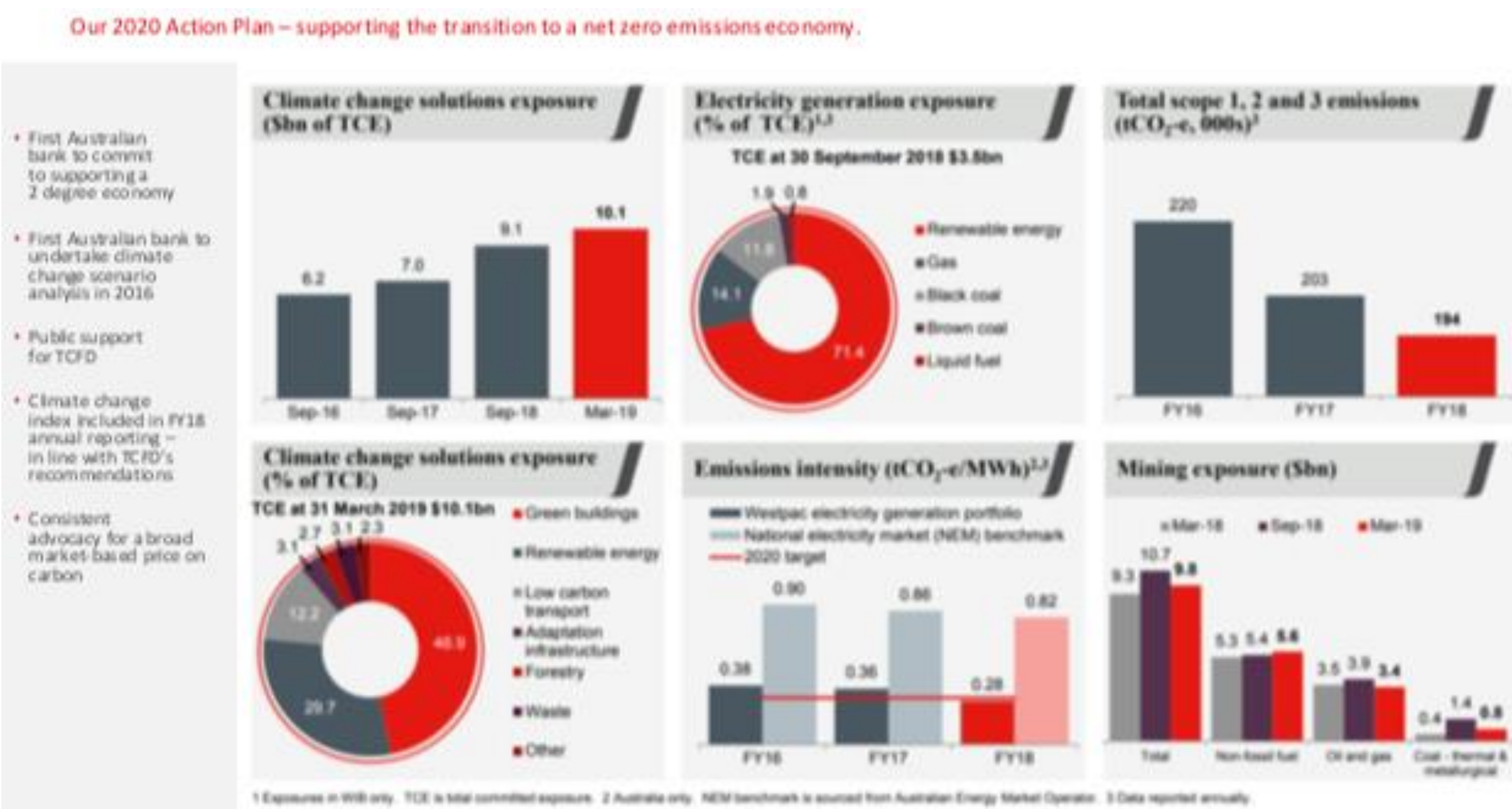
Improve and disclose our climate change performance

- Such as setting a science-based target to reduce Westpac's direct footprint emissions by 9% by 2020 and 34% by 2030
- Align our work and reporting with the recommendations of the Task Force on Climate-related Financial Disclosures

Advocate for policies that stimulate investment in climate change solutions

- Such as a continued commitment to a broad market-based price on carbon as the most efficient way to encourage emissions reductions at the lowest cost to the economy
- Support a long-term target of reducing emissions to net zero in the second half of the 21st century

Example: Westpac



Example: Westpac

Continued alignment with the TCFD

- Westpac continues to integrate the consideration of climate-related risks and opportunities into business operations. This includes alignment with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD)
- Climate change-related risks are managed within the Group's sustainability, and wider risk management framework

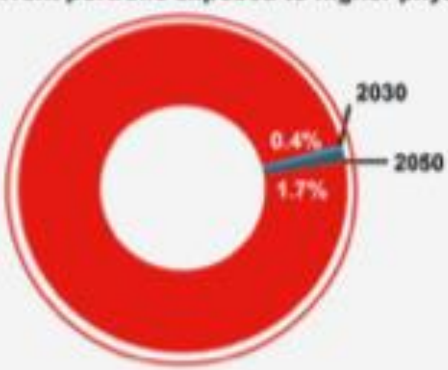
TCFD | TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

Transition risk – key points

- Westpac assessed potential transition risks (policy, legal, technology and market changes related to climate change)
- Analysis focused on our current Australian Business and Institutional lending[1] and exposure to sectors that may face growth constraints under 1.5[2] and updated 2 degree scenarios by 2030 and 2050
- Approximately 2.7% of the portfolio is exposed to sectors that may experience higher risk in a transition to a 1.5 degree economy by 2030
- Approximately 0.9% of the portfolio is exposed to sectors that may experience higher risk in a transition to a 2 degree economy by 2030

Portfolio physical risk – 4 degree scenario

Share of current portfolio exposed to higher physical risk (%)



Physical risk – key points

- Westpac assessed potential physical risks[3] (financial impacts of changes in climate patterns and extreme weather events)
- Analysis focused on the Australian mortgage portfolio and exposure to postcodes that may face increased physical risk under a 4 degree scenario
- Approximately 1.7% of the portfolio is exposed to postcodes that may experience higher physical risk by 2050 under a 4 degree scenario
- Data presented shows the share of current exposure to postcodes that may experience higher physical risk at intervals of 2030 and 2050 under our IPCC RCP 8.5 Scenario[4]

Thank you

Maria Eugenia Sosa Taborda
Maria.sosataborda@un.org