TCFD | TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

FUNDAMENTALS AND OVERVIEW OF TCFD

May 2021

Agenda

01	Fundamentals of climate risk
02	Overview of TCFD disclosure requirements
03	How to get started
04	Importance to investors
05	Q&A

Please mute yourself when not speaking and use the chat function to signal you have a question

01

FUNDAMENTALS OF CLIMATE RISK

Climate change has been recognized as one of the top risks globally

Rising importance of environmental threats

Trend in top 5 risks in terms of likelihood

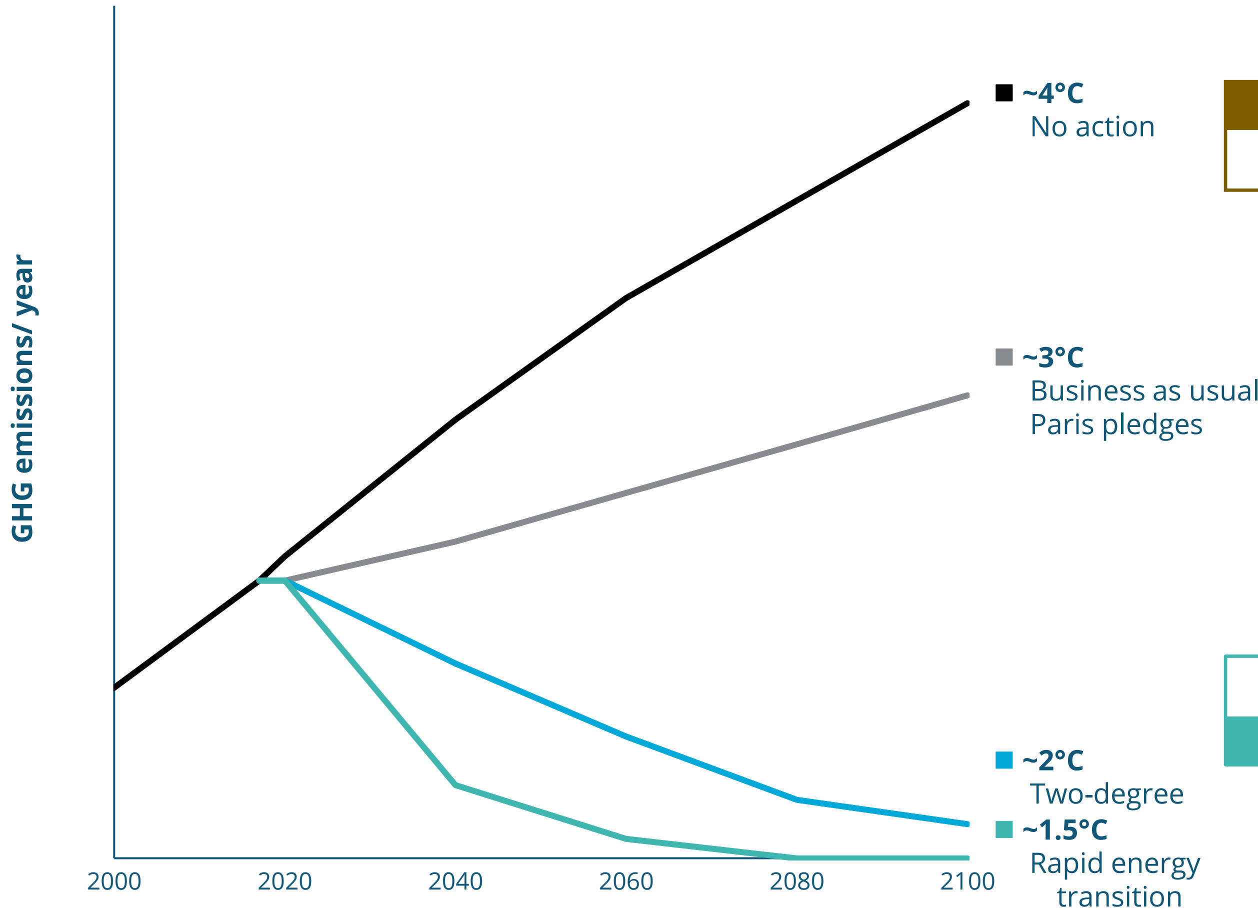
Economic | Environmental | Geopolitical | Societal | Technological

2015	2016	2017	2018	2019	2020
Interstate conflict	Involuntary migration	Extreme weather	Extreme weather	Extreme weather	Extreme weather
Extreme weather	Extreme weather	Involuntary migration	Natural disasters	Climate action failure	Climate action failure
Failure of national governance	Climate action failure	Natural disasters	Cyberattacks	Natural disasters	Natural disasters
State collapse or crisis	Interstate conflict	Terrorist attacks	Data fraud or theft	Data fraud or theft	Biodiversity loss
Unemployment	Natural catastrophes	Data fraud or theft	Climate action failure	Cyberattacks	Human-made environmental disasters

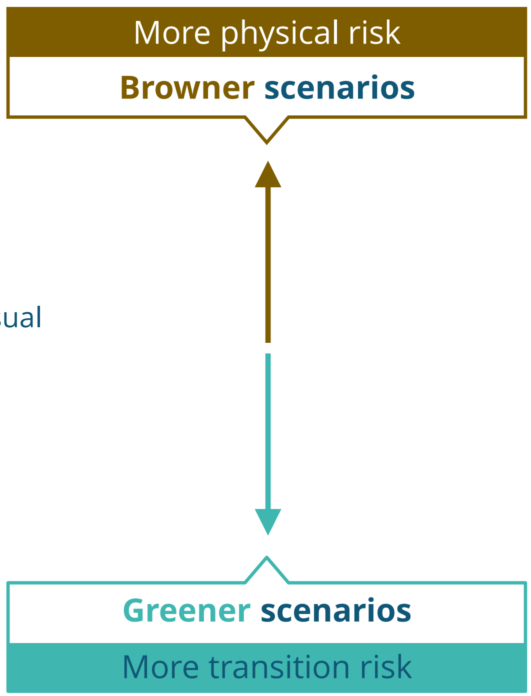
Note: Charts based on a survey conducted among the World Economic Forum's multi-stakeholder communities, the professional networks of its Advisory Board, and members of the Institute of Risk Management; Source: MMC, WEF: Global Risks Report 2020

Climate risk is composed of physical risks and transition risks

CO2 emission trajectory and corresponding climate change scenarios



Regardless of the path we take, we will face climate risks



Companies are typically exposed to two types of climate change impacts: physical and transition…

Physical impacts

Impacts on the value of financial assets that arise from climate- and weather-related events

Chronic

- Coastal erosion, sea level rise, rising mean temperatures, changes in precipitation patterns, drought

Acute

- Hailstorms, land mass movements, windstorms, wildfires, hurricanes

Transition impacts

Financial impacts from the adjustment towards a lower-carbon economy

Policy and legal

- Climate-related policy actions (e.g., carbon taxes, green house gas emission restrictions)

Technology

- Market disruption from new technologies (e.g., battery storage, direct air capture)

Market

- Shift in public preferences toward "green" businesses (e.g., investor and customer sentiment, flight shame)

Reputation

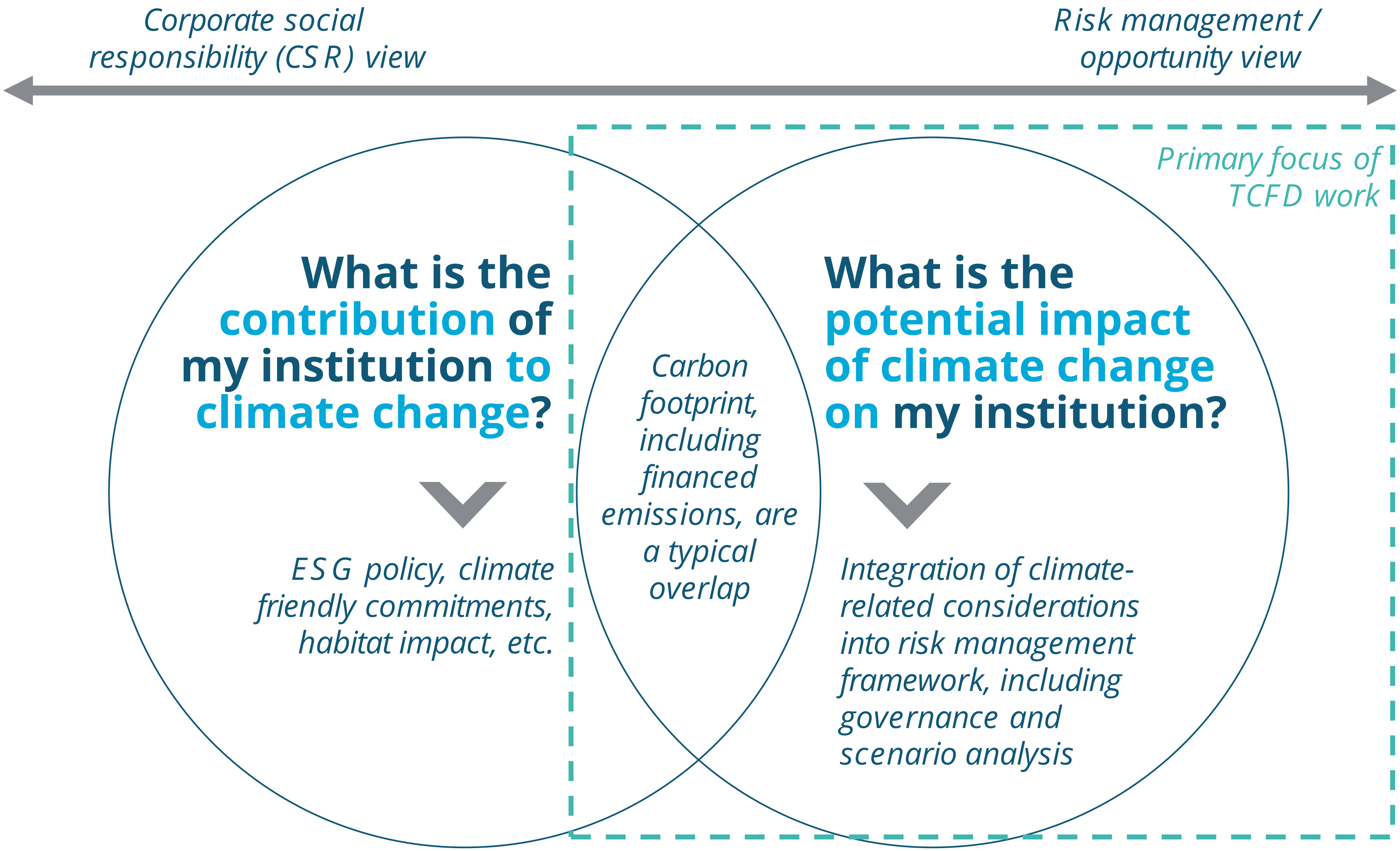
- Increased stakeholder concern or negative stakeholder feedback (e.g., employee attraction or retention)

Climate risks have unique characteristics

- **Different effects based on geography and activities**
- **Longer time horizons and long-lived effects**
- **Novel and uncertain nature**
- **Changing magnitude and nonlinear dynamics**
- **Complex relationships and systemic effects**

Source: TCFD, Guidance on Risk Management Integration and Disclosure

Climate change risks span a spectrum from company-level CSR issues to risk management issues with many issues including elements of both



These risks expose companies and investors to financial impacts…

Transition to a greener economy and/or **physical** impact of climate change

Risks	Example financial impact
Operational risks due to chronic physical risks	Cost of business interruption and contingency
Damaged assets due to acute physical risks	Increased cost of maintenance and repairs
Climate-related policy actions (e.g. carbon tax policies)	Impact on profitability
Regulatory stranding of certain assets	Impacts to impairment value of assets
Shift in public preferences toward "green" businesses	Increased CapEx for lower-carbon alternatives

…as well as the overall financial system

Impact of sudden changes in energy use

A sudden transition away from fossil fuels could harm the economy if alternative sources of energy are restricted in supply and more expensive at the margin.

Revaluation of carbon-intensive assets

There could be a sudden repricing of carbon-intensive assets, which are financed in large part by debt.

Rise in natural catastrophes

There could be a rise in natural catastrophes related to climate change, increasing insurers' and reinsurers' liabilities.

Source: Reports of the Advisory Scientific Committee, No 6 / February 2016, "Too late, too sudden: Transition to a low-carbon economy and systemic risk."

On the flip side, the transition to net zero is creating new climate opportunities for companies

Renewables

Power Generation

Storage

Grid

Carbon Capture & Storage

Enhanced Oil Recovery

Industrial Gases

Electric Vehicles

OEMs

Battery Manufacturers

Lithium and Cobalt

Semi-conductors

Hydrogen

Industrial Gases

Fuel Cell Manufacturers

Electrolyzer Manufacture

Biofuels

02

OVERVIEW OF TCFD DISCLOSURE REQUIREMENTS

To help identify data needed by the financial sector to appropriately assess and price climate-related risks, the FSB established the 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 31 international members, led by Michael Bloomberg, include providers of capital, insurers, large non-financial companies, accounting and consulting firms, and credit rating agencies.

The Task Force's work is a solution by the market for the market

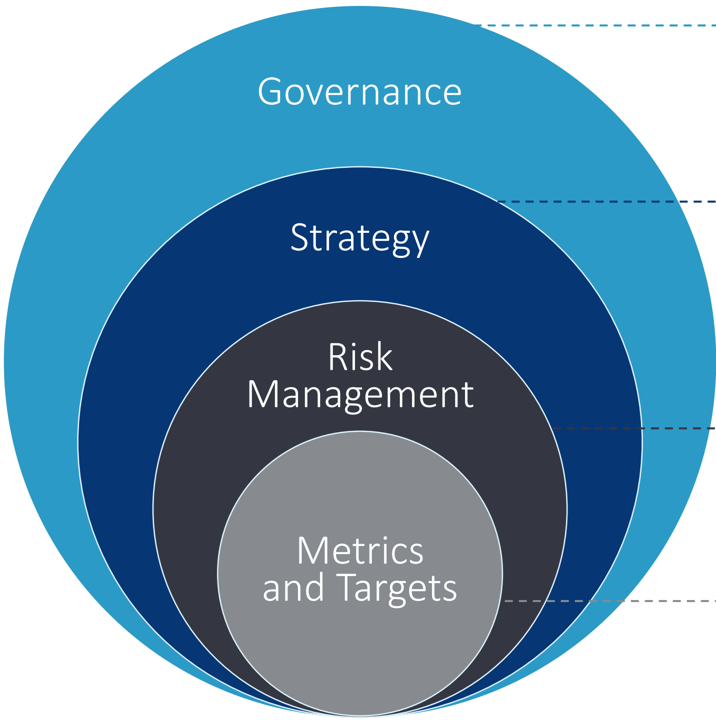
2017 Recommendations and Implementing Annex

In developing its 2017 recommendations and implementation guidelines, the Task Force:

- Considered the **challenges and benefits of disclosure** around climate-related risks and opportunities
- Engaged in **significant outreach and consultation** with users and preparers of disclosures and other stakeholders, including two public consultations, individual discussions and focus groups with industry, webinars, and outreach events in multiple countries
- Sought to develop a decision-useful framework to **align and supplement existing disclosure and reporting frameworks**
- Emphasized disclosure of the **financial impacts** of climate-related risks and opportunities on a company (rather than company's impact on environment)
- The TCFD framework is intended to be **a focal point for harmonizing disclosures**, and **a roadmap for areas where additional work may be warranted** by others

The Task Force developed four widely-adoptable recommendations on climate-related financial disclosures

Core elements of the TCFD recommendations[1]



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

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

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

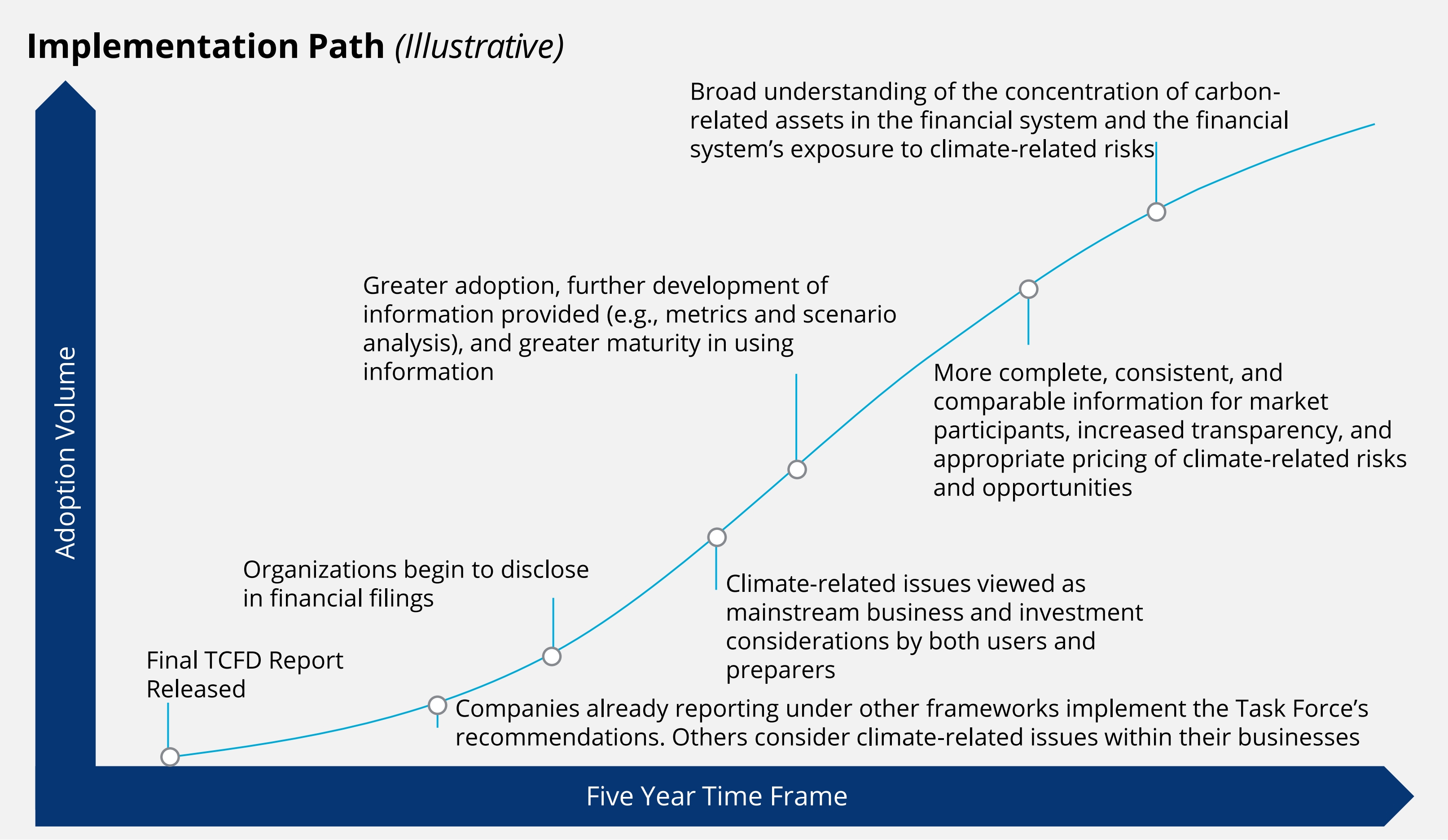
Metrics and Targets
The metrics and targets used to assess and manage relevant climate-related risks and opportunities

1. *Recommendations of the Task Force on Climate-related Financial Disclosures*, June 2017

The Task Force developed 11 recommendations across these four thematic areas

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.

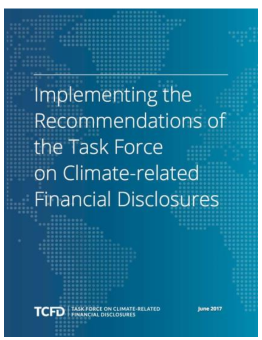
TCFD expects that reporting will evolve over time as organizations contribute to the quality and consistency of the information disclosed



Since 2017, TCFD has released a number of additional reports and guidance to measure progress and aid implementation

Final Recommendations

2017



Implementing Guidance (Annex)

Status Report

2018

Status Report

2019

Status Report

2020

Risk Management Guidance

Scenario Analysis Guidance

In addition to recommendations, TCFD developed guidance to assist organizations in implementing the recommended disclosures

Final Recommendations

2017

Implementing Guidance (Annex)

Recommendations
Four broad areas of recommendations tied to: governance, strategy, risk management, and metrics and targets

Recommended Disclosures
Eleven specific recommended disclosures that organizations should include in their financial filings to provide decision-useful information

Guidance for All Sectors
Guidance providing context and suggestions for implementing the recommended disclosures for all organizations

Supplemental Guidance for Certain Sectors
Guidance that highlights important considerations for certain sectors and provides a fuller picture of potential climate-related financial impacts in those sectors

Financial Sector Industries:
- Banks
- Insurance Companies
- Asset Managers
- Asset Owners

Non-Financial Groups:
- Energy
- Transportation
- Materials and Buildings
- Ag., Food, and Forest Products

Additional Technical Guidance on Scenario Analysis (2017 and 2020) and Risk Management Integration and Disclosure (2020)

Each year, the TCFD analyzes public disclosures and assesses the proportion that align with four recommendations

Excerpt of 2020 Status Report findings

Energy companies and materials and buildings companies have the highest levels of TCFD-aligned disclosure at 40% and 30%, respectively.

Insurance companies follow closely behind materials and buildings companies at 27%.

Banks fall roughly in the middle of the eight industries reviewed, with an average level of TCFD-aligned disclosure of 23%.

Table 2. Average Percentage of Disclosure by Industry[1]

Industry	%
Energy	40%
Materials and Building	30%
Insurance Companies	27%
Ag, Food, and Forest Products	25%
Banks	23%
Transportation	23%
Consumer Goods	18%
Technology and Media	13%

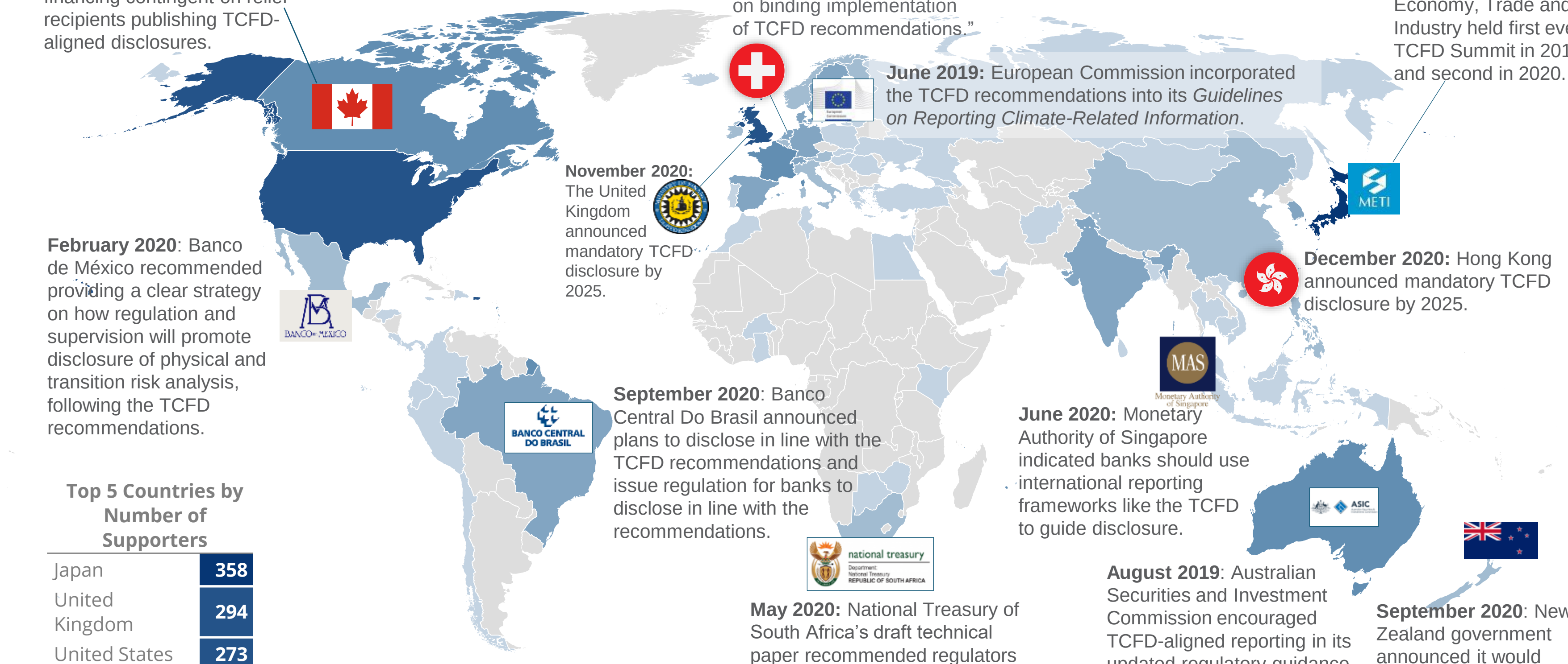
Status Report

2020

The influence of TCFD continues to grow globally with over 2,100 supporters from around the world

June 2017	When the Task Force released its disclosure recommendations in June 2017, it did so with the support of over 100 CEOs.
December 2017	At French President Emmanuel Macron's One Planet Summit, Governor Mark Carney and Mike Bloomberg advanced the discussion around the TCFD and announced over 230 supporters.
September 2018	The Task Force released its first status report at the One Planet Summit in New York City and announced over 500 supporters.
June 2019	The Task Force released its second status report and announced almost 800 supporters.
October 2020	The Task Force released its third status report and announced 1,500 supporters.
May 2021	2,100+ supporters that have a market capitalization of $23 trillion, including over 900 financial firms, responsible for assets of $180 trillion.

In addition, various jurisdictions are taking steps to encourage or mandate disclosure requirements aligned with the TCFD framework



May 2020: Canadian government established COVID-19 relief financing contingent on relief recipients publishing TCFD-aligned disclosures.

January 2021: Swiss Federal Council instructed to "prepare draft legislation on binding implementation of TCFD recommendations."

October 2019/2020: Japan's Ministry of Economy, Trade and Industry held first ever TCFD Summit in 2019 and second in 2020.

June 2019: European Commission incorporated the TCFD recommendations into its *Guidelines on Reporting Climate-Related Information*.

November 2020: The United Kingdom announced mandatory TCFD disclosure by 2025.

February 2020: Banco de México recommended providing a clear strategy on how regulation and supervision will promote disclosure of physical and transition risk analysis, following the TCFD recommendations.

December 2020: Hong Kong announced mandatory TCFD disclosure by 2025.

September 2020: Banco Central Do Brasil announced plans to disclose in line with the TCFD recommendations and issue regulation for banks to disclose in line with the recommendations.

June 2020: Monetary Authority of Singapore indicated banks should use international reporting frameworks like the TCFD to guide disclosure.

May 2020: National Treasury of South Africa's draft technical paper recommended regulators and the financial sector establish standards on identifying, monitoring, and reporting climate-related risks, that incorporate the TCFD recommendations.

August 2019: Australian Securities and Investment Commission encouraged TCFD-aligned reporting in its updated regulatory guidance.

September 2020: New Zealand government announced it would introduce a mandatory climate-related financial disclosure regime based on the TCFD framework.

Top 5 Countries by Number of Supporters

Japan	358
United Kingdom	294
United States	273
Australia	96
France	94

Legend

300+	200-299	100-199	50-99	24-59	10-24	<10

Number of Supporters

03

HOW TO GET STARTED

A survey conducted by TCFD in 2019 highlighted a number of implementation challenges experienced by firms

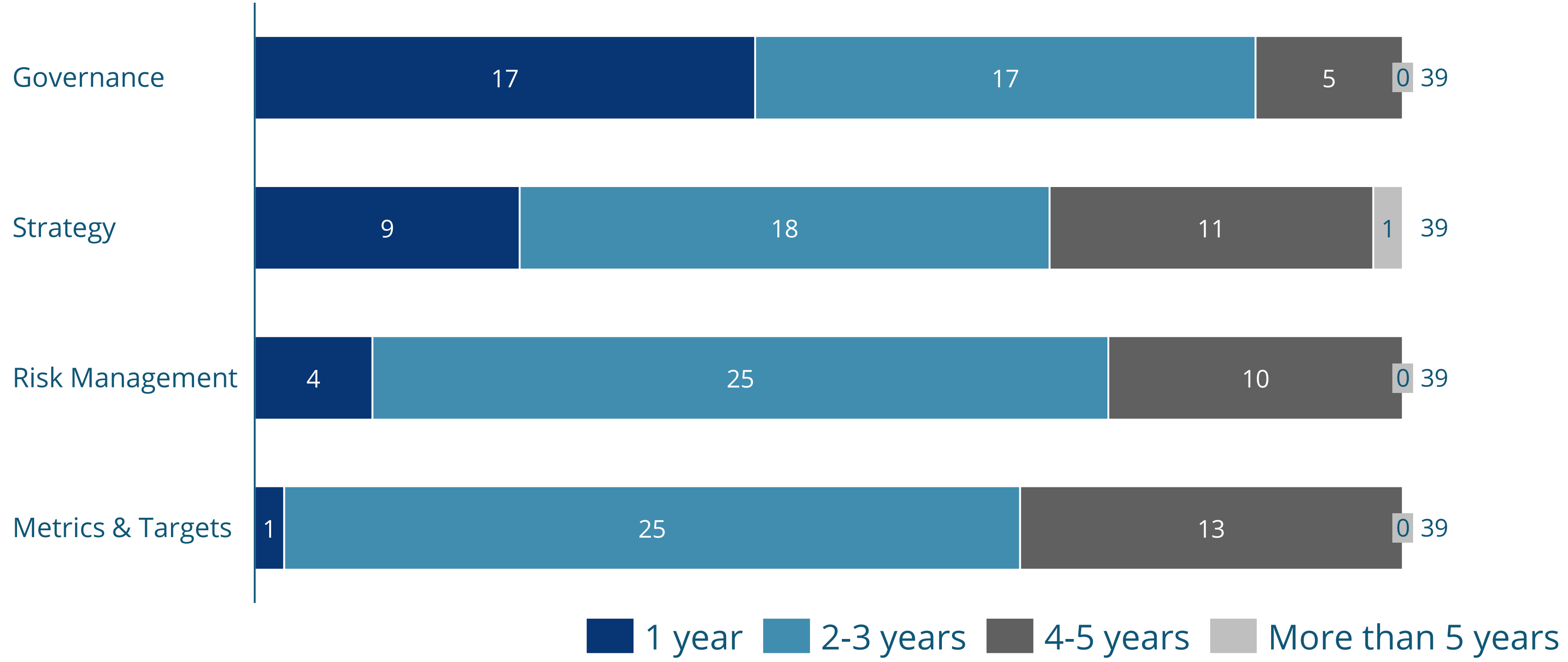
Top implementation issues identified by pillar
(Percent, number of respondents)

Governance	Strategy	Risk Management	Metrics and Targets
Climate is embedded in our processes so it is challenging to discuss separately in our governance disclosures	Disclosing scenario analysis assumptions is difficult because they include confidential business information	Climate is integrated into our risk management processes and, therefore, does not require separate disclosure	There is a lack of standardized metrics for our industry
49 %, 89	***46 %, 83***	***36 %, 65***	***42 %, 75***

Source: TCFD, 2020 Status Report

Governance is foundational to a successful implementation of the TCFD program and is hence affected first

How long do you expect it to take for your company to implement the Task Force for Climate-Related Financial Disclosures (TCFD) recommendations?
# of respondents, Total = 39 financial institution



Source: Oliver Wyman/IACPM Survey (2019), https://www.oliverwyman.com/our-expertise/insights/2019/feb/climate-risk-and-the-financial-impact.html

As a next step, an organization should set up a coherent climate risk program and integrate TCFD into company's public disclosures

	Foundation	High-level design	Develop & pilot	Roll-out
Program management	Foundational steps: Capability & portfolio review; Vision setting; Roadmap	Ongoing program oversight, planning, and benchmarking		
Governance and reporting		Firm-wide governance and BOD role Design of policies, mandates and charters Risk management organization and responsibilities for climate	Reporting template and metrics design	Implementation
Risk management		Transition risk scenario methodology design Physical risk scenario methodology design Deal-level climate risk assessment design Risk identification, including litigation	Transition risk pilot Physical risk pilot Deal-level risk factors and process pilot	Cross business roll-out
Opportunities and business strategy		Reputation and sector policy framework review and benchmarking Opportunities framework design and Firm ambition setting	Business unit pilot – Climate strategy design	Remaining BUs – Climate strategy design
Disclosure and metrics		TCFD Table of Contents and detailed outline Metrics and targets framework Review of broader climate disclosure framework and engagement	TCFD disclosure 1.0	Ongoing disclosure

Relevant TCFD pillars Governance Risk Management Strategy Metrics and Targets

Source: Example of Oliver Wyman TCFD/Climate Risk program structure

04

IMPORTANCE TO INVESTORS

Climate change is increasingly becoming a top agenda item for investors

Why does climate change matter to investors?

- Climate change will have **significant physical and economic impacts** on many different aspects of human activity
- Climate change is a **systemic issue which affects all asset types and sectors**
  - As such, it will impact the portfolio returns, asset valuations and asset allocation processes of asset owners with diversified, global portfolios
- However, it will **also provide new investment opportunities**
  - For example, the IPCC forecast that new public and private investment in energy will need to grow to around U$2.4 trillion annually to 2035 – representing around 2.5% of the global GDP

How do TCFD Recommendations help?

Risk assessment	Capital allocation	Strategic planning
More effectively evaluate climate-related risks to your company, its suppliers, and competitors.	Make better-informed decisions on where and when to allocate your capital	Better evaluate risks and exposures over the short, medium, and long term.

Investor groups are placing pressure on financial institutions to act

Specific investor coalitions

Investor initiative to ensure world's largest corporate GHG emitters take necessary action on climate change

27 institutional investors delivering on a commitments to transition the investment portfolios to net-zero GHG emissions by 2050

3,200+ investment managers and asset owners focused on responsible investing in consideration of ESG factors

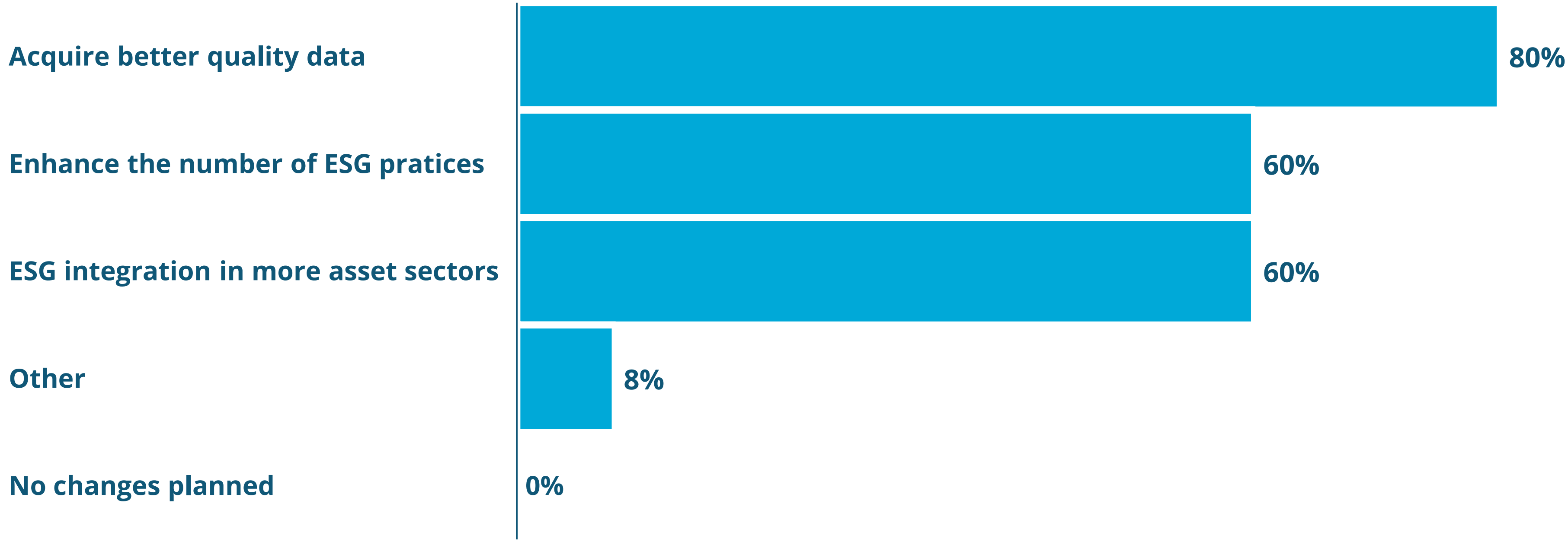
240+ asset owners and asset managers focused on mobilising capital for the low carbon transition

Hundreds of impact investors working together to help advance impact measurement and management strategies

Investors are focusing on acquiring better-quality data, enhancing the number of ESG practices, and further integration

Initiatives on ESG integration planning to be developed or improved over the next 3 years

Institutional investors were asked which type of ESG integration initiatives they are planning to develop or improve over the next three years:
% of respondents, Total = 26 financial institution



Note : Items in "Other" are climate risk and continued enhancement of ESG disclosure
Source: Oliver Wyman in partnership with the WWF, incorporating sustainability into infrastructure

Banks have taken a variety of mitigation actions to begin aligning their portfolios with Paris Agreement

Exclusion of high carbon sectors

- Blanket/partial exclusion of new lending to counterparties in high carbon emitting sectors e.g. Coal, Oil & Gas, Arctic Drilling etc.
- Most common approach utilized by banks but misses opportunity to engage with, advise and finance clients in these sectors to transition to lower carbon solutions

Inclusion of climate risk into credit assessment process

- Transition risks and physical risks of counterparty considered as a direct input into the credit risk assessment
- Transition risk will penalize higher emissions sectors, while physical risk penalizes those firms which have not taken steps to increase their climate resilience

Scaling internal capital/cost allocation

- Internal benefit provided for funding green assets and negative adjustment made for funding brown assets
- Internal allocation of capital or funding costs often the lever used to benefit/penalize lending behaviors

Portfolio intensity measurement, monitoring and reporting

- GHG intensity of portfolio measured and projected into the future based on counterparty transition commitments
- Forward looking profile monitored against internal targets and alignment with Paris agreement; Expected to be used to support advanced disclosure

Ability to support Paris agreement goals

Alignment view is not the same as the risk view; some banks look at both

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Q&A