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Leveraging climate change disclosures

Global perspectives, concrete actions

Eric Dugelay, Deloitte Sustainability Services, Member of the TCFD - March, 2019

Content

Climate change on top of the sustainability agenda

The world of investors is now vocal

Blackrock Chairman & CEO, Larry Fink's Letter to CEOs

- Larry Fink encouraged CEOs to be more intentional and transparent about their purpose, culture, and environmental, social and governance performance (ESG). Clarity of purpose helps companies more effectively make strategic pivots in the service of long-run goals.
- Mr. Fink stated that within the next five years all investors will measure a company's impact on society, government and the environment to determine its worth.
- BlackRock's Investment Stewardship engagement priorities for 2019 are: governance, including company's approach to board diversity; corporate strategy and capital allocation; compensation that promotes long-termism; environmental risks and opportunities; and human capital management.
- "With the world undergoing the largest transfer of wealth in history: $24 trillion from baby boomers to millennials. As wealth shifts and investing preferences change, environmental, social, and governance issues will be increasingly material to corporate valuations."

"Attracting and retaining the best talent increasingly requires a clear expression of purpose… In a recent survey by Deloitte, millennial workers were asked what the primary purpose of businesses should be – 63 percent more of them said 'improving society' than said 'generating profit.'" – Larry Fink, 2019 Letter to CEOs

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Climate change is perceived to generate the most important risks for the global economy

One illustration : the World Economic Forum 2019 Global Risks Report

- Three of the top five risks to the global economy are environmental risks.
- Survey respondents are increasingly worried about environmental policy failure: having fallen in the rankings after Paris, "failure of climate-change mitigation and adaptation" jumped back to number two in terms of impact this year.
- The results of climate inaction are becoming increasingly clear. The accelerating pace of biodiversity loss is a concern.
  - Species abundance is down by 60% since 1970.
  - In the human food chain, biodiversity loss is affecting health and socioeconomic development, with implications for well-being, productivity, and even regional security.
- According to UN Environment, issuance of "green bonds" jumped from US$11 billion in 2013 to US$155 billion in 2017.

Categories
Economic · Environmental · Geopolitical · Societal · Technological

Top 10 risks in terms of **Likelihood**	Top 10 risks in terms of **Impact**
1. Extreme weather events	1. Weapons of mass destruction
2. Failure of climate-change mitigation and adaptation	2. Failure of climate-change mitigation and adaptation
3. Natural disasters	3. Extreme weather events
4. Data fraud or theft	4. Water crises
5. Cyberattacks	5. Natural disasters
6. Man-made environmental disasters	6. Biodiversity loss and ecosystem collapse
7. Large-scale involuntary migration	7. Cyberattacks
8. Biodiversity loss and ecosystem collapse	8. Critical information infrastructure breakdown
9. Water crises	9. Man-made environmental disasters
10. Asset bubbles in a major economy	10. Spread of infectious disease

Source: World Economic Forum Global Risks Perception Survey 2018–2019

Climate Change and businesses

The difficulties to identify the extent of the impacts

- A physical risk is an uncertain event or condition that, if it occurs, can cause significant negative impact for several countries or industries within the next 10 years. When speaking about physical risk, both incremental impacts and extreme events are included.
- "Failure of climate-change mitigation and adaptation" has a significant impact and high likelihood. (1)

(1) Source : World Economic Forum

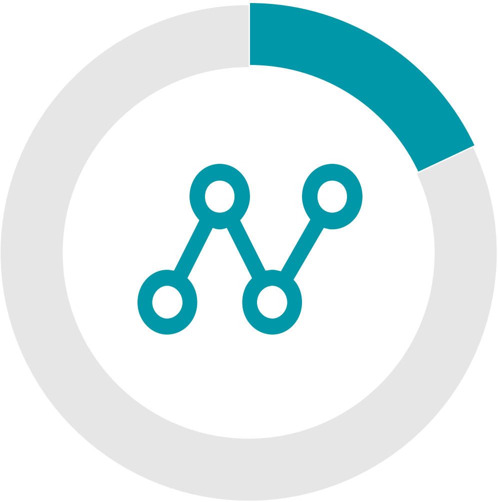
Physical risk

- To stimulate a low-carbon transition, governments will need to take actions, for example by implementing cap and trade markets or ramping up fuel efficiency standards. Such actions will naturally impact the economy.
- In the future, policies, technologies and society will continue to evolve, resulting in a changing set of impacts across industries.

Transition risk

- A non-linear change is a change that is not based on a simple proportional relationship between cause and effect. Nonlinear changes are often abrupt, unexpected, and difficult to predict ("Tipping Points").
- Climate effects can amplify each other, greatly increasing exposure and limiting options to respond. (2)

(2) Source : UNEP-FI



Non linearity

All businesses will be impacted by physical consequences of climate change

Adaptation strategies entail a complex framework to build

Each sector is likely to be impacted by the climate change and its geo-physical consequences. The diversity of the effects on the value chain increases the difficulties in building adaptation strategies.

	Short- and long-term physical impact	**Illustrative effect on value chain**
Electric power	• *Intensity and duration of extreme weather events* • *Warmer average temperature*	• *Reduced output* • *Changing seasonal power demand* • *Increased peak demand*
Insurance	• *Virtually all physical effects*	• *Increased claims, losses and liabilities* • *More difficulty pricing physical perils*
Tourism	• *Increased weather extremes and variability* • *Rising sea level and coastal erosion*	• *Damage to infrastructure and facilities* • *Decreased attractiveness*
Agriculture, Food & Beverage	• *Water scarcity and droughts* • *Shifts in seasons* • *Loss of biodiversity*	• *Decreased crop yield and potential crop failures* • *Water conflicts with communities and other users*
Apparel	• *Changing rainfall patterns* • *Changes in pest and disease distribution*	• *Fluctuating quality, and cost of raw materials* • *Disruptions for operations*

The importance of the Climate related Financial Disclosures (TCFD) recommendations

A tipping point

A new requirement from the Principles for Responsible Investment (PRI)

TCFD-based reporting to become mandatory for PRI signatories in 2020

Objective

Supporting the adoption of the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) is a high priority for the Principles for Responsible Investment (PRI) as they provide a global framework for translating climate information into financial metrics.

Background:

- In 2018, PRI introduced TCFD-aligned indicators to its Reporting Framework
- Over 480 investors, representing $42 trillion USD, opted to complete the voluntary indicators and submit responses.
- In 2019, the climate indicators will again be voluntary.

2020 Requirements: From 2020, PRI will make certain climate indicators mandatory to report, but voluntary to disclose. Remaining PRI climate risk indicators will stay voluntary until good practice develops.

"It is increasingly important for investors to incorporate emerging mega risks such as climate change into their view of the future. TCFD provides the best available framework for systematically including climate-related risks and opportunities into investment strategy." – Fiona Reynolds, CEO of the PRI

Click here to access

The CDP is also pushing for adoption of the TCFD

CDP IS AIDING IMPLEMENTATION OF THE TCFD

CDP
DISCLOSURE INSIGHT ACTION

2017/18

- **16 of 22 TCFD Sectors** with sector-specific questionnaires
- **Updated core questionnaires** to align with TCFD (Climate Change, Water, Forests)
- **Aligning the structure** of CDP questionnaires with the four TCFD themes
- Two technical notes on TCFD and scenario analysis

2019/20

- **22 of 22 TCFD Sectors** with sector-specific questionnaires
- Release of final **two non-financial** sector-specific questionnaires (Real estate and Capital Goods)
- The **four Financial Sectors** receiving sector-specific questionnaires
- **Specific** Technical note for Financial services

- **~7000 companies have TCFD aligned disclosures through CDP in 2018**
- **Over 500,000 clicks** for CDP's reporting guidance for companies
- CDP worked with the TCFD Secretariat to inform and support their TCFD Status Report
- 25 questions in CDP Climate Change questionnaire labelled as TCFD aligned, with 2 questions about reporting through mainstream reports.

These were just two examples : the buy-in for TCFD disclosures is overwhelming

Government Efforts

- **EC's Technical Expert Group** on Sustainable Finance published its Report on Climate-related Disclosures, outlining how NFRD should incorporate the TCFD
- **Japanese Ministry of Economy, Trade and Industry**'s TCFD guidance report
- **IOSCO** statement on importance of considering ESG issues when reporting material information that references TCFD as a framework to consider using
- **UK's Financial Conduct Authority** discussion paper seeking to build on the work of the TCFD
- **BoE PRA** consultation paper referencing the TCFD in a draft supervisory statement to improve banks' and insurers' management of financial risks from climate change
- **Network for Greening the Financial System**, a group of 18 central banks and supervisors, published progress report stating the TCFD could be a solution for a global standardized framework on climate reporting.

Alignment of Reporting Frameworks

- **Corporate Reporting Dialogue** Better Alignment Project (CDP, CDSB, GRI, SASB)
- **PRI** announces mandatory reporting on Governance and Strategy
- Updated reporting guides from **Bursa Malaysia** and **Hong Kong Exchange** to align with the TCFD

Implementation Initiatives

- **A4S** CFO Workshops
- **WEF** Alliance of CEO Climate Leaders workshops – focus on legal counsel engagement
- **Institute of Chartered Accountants in England and Wales** workshops for accountants
- **WBCSD** Utilities and Chemicals Preparer Forums
- **Institute of International Finance** TCFD working group

Initiatives Related to Scenario Analysis

- **PRI** and **California Insurance Commission's** scenario analysis tool "Paris Agreement Capital Transition Assessment"
- **Electric Power Research Institute** published study to develop public technical resource on scenario analysis
- **Institutional Investors Group on Climate Change** published scenario analysis guidance for institutional investors
- **IPIECA**, Oil and Gas Industry Association for Environmental and Social Issues is assisting members on TCFD and conducted survey showing increased use of scenario analysis
- **TCFD Knowledge Hub** now has 140 resources on scenario analysis

Focus on the TCFD

What we have seen and what we foresee

BACKGROUND

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.

13
Experts from the Financial Sector

9
Experts from Non-Financial Sectors

9
Other Experts

Task Force Members

Chair and Vice-Chairs

Michael Bloomberg
Chairman
Founder and President
Bloomberg L.P.

Yeo Lian Sim
Vice-Chair
Special Adviser
Singapore Exchange

Graeme Pitkethly
Vice-Chair
Chief Financial Officer
Unilever

Denise Pavarina
Vice-Chair
Managing Officer
Banco Bradesco

Christian Thimann
Vice Chair
CEO and Chairman of the Management Board
Athora Germany

Members

Jane Ambachtsheer
Global Head of Sustainability
BNP Paribas Asset Management

Matt Arnold
Managing Director and Global Head of Sustainable Finance
JPMorgan Chase & Co.

Wim Bartels
Partner Corporate Reporting
KPMG

Bruno Bertocci
Managing Director, Head of Sustainable Investors
UBS Asset Management

David Blood
Senior Partner
Generation Investment Management

Richard Cantor
Chief Risk Officer
Moody's
Chief Credit Officer
Moody's Investor Service

Members *(continued)*

Koushik Chatterjee
Group Executive Director, Finance and Corporate
Tata Group

Brian Deese
Global Head of Sustainable Investing
BlackRock

Eric Dugelay
Partner, Sustainability Services
Deloitte

Liliana Franco
Director, Accounting Organization and Methods
Air Liquide Group

Takehiro Fujimura
General Manager Corporate Sustainability Department
Mitsubishi Corporation

Neil Hawkins
Corporate Vice President and Chief Sustainability Officer
The Dow Chemical Company

Thomas Kusterer
Chief Financial Officer
EnBW

Diane Larsen
Audit Partner, Global Professional Practice
EY

Stephanie Leaist
Managing Director, Head of Sustainable Investing
Canada Pension Plan Investment Board

Eloy Lindeijer
Chief, Investment Management
PGGM

Ruixia Liu
General Manager, Risk Department
Industrial and Commercial Bank of China

Giuseppe Ricci
Chief Refining & Marketing Officer
ENI

Members *(continued)*

Martin Skancke
Chair, Risk Committee
Storebrand

Rhian-Mari Thomas
Managing Director, Chair Barclays Green Banking Council

Steve Waygood
Chief Responsible Investment Officer
Aviva Investors

Martin Weymann
Head Sustainability, Emerging & Political Risk Management
Swiss Re

Fiona Wild
Vice President, Sustainability and Climate Change
BHP

Michael Wilkins
Managing Director, Environment & Climate Risk Research
S&P Global Ratings

Jon Williams
Partner, Sustainability and Climate Change
PwC

Special Adviser

Russell Picot
Chair, Audit and Risk Committee, LifeSight
Board Chair, HSBC Bank (UK) Pension Scheme Trustee
Former Group Chief Accounting Officer
HSBC

Source: TCFD

Focus on Financial Impact

RISKS

Transition

Policy and Legal
- Carbon pricing and 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

Market
- Changing customer behavior
- Uncertainty in market signals
- Increased cost of raw materials

Reputation
- Shift in consumer preferences
- Increased stakeholder concern/negative feedback
- Stigmatization of sector

Physical
- Acute: Extreme weather events
- Chronic: Changing weather patterns and rising mean temperature and sea levels

OPPORTUNITIES

Resource Efficiency
- Use of more efficient modes of transport and 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

Products & Services
- Development and/or expansion of low emission goods and services
- Development of climate adaptation and insurance risk solutions
- Development of new products or services through R&D and innovation

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

Strategic Planning
Risk Management

Financial Impact

Revenues
Expenditures

Income Statement

Cash Flow Statement

Balance Sheet

Assets & Liabilities
Capital & Financing

Financial Impact by Industry

To assist organizations in understanding how climate-related risks may impact them financially, the Task Force prepared a high-level overview of the types of financial impact of climate-related risks that have been identified for specific industries and groups.

The financial impacts from climate-related risks are grouped into the following general categories:

- Revenues
- Expenditures
- Assets and Liabilities
- Capital and Financing

*Largely, but not solely, based on select content from the Sustainability Accounting Standards Board (SASB) "Financial Impacts of Climate Risk" table in its Climate Risk Technical Bulletin

Evidence of Financial Impact*

Groups and Industries		Revenues	Expenditures	Assets and Liabilities	Capital and Financing
Financial	Banks	■		■	
	Insurers	■	■	■	
	Asset Owners	■		■	
	Asset Managers	■		■	
Energy	Oil and Gas	■	■	■	■
	Coal		■	■	■
	Electric Utilities	■	■		■
Transportation	Air Freight		■		■
	Passenger Air Transportation		■		■
	Maritime Transportation		■		■
	Rail Transportation		■		■
	Trucking Services		■		■
	Automobiles and Components	■	■		■
Materials and Buildings	Metals and Mining		■		■
	Chemicals	■	■		■
	Construction Materials	■	■		■
	Capital Goods	■	■		
	Real Estate Management and Development	■	■	■	■
Ag, Food, and Forest	Beverages		■		■
	Agriculture	■	■	■	■
	Packaged Foods and Meats		■	■	■
	Paper and Forest Products	■	■	■	■

STRUCTURE OF 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

DISCLOSURE RECOMMENDATIONS

The four recommendations are supported by **specific disclosures** organizations should include in financial filings or other reports to provide decision-useful information to investors and others.

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.

KEY ELEMENTS OF DISCLOSURE RECOMMENDATIONS

Location of Disclosure

- The Task Force recommends that organizations provide climate-related financial disclosures in their mainstream (i.e., public) **annual financial filings**.
- If certain elements are incompatible with national disclosure requirements, the Task Force encourages organizations to disclose those elements in **other official company reports**.
- Organizations in the four non-financial groups that have more than one billion U.S. dollar equivalent (USDE) in annual revenue **should consider disclosing** strategy and metrics and targets information in other reports when the information is not deemed material and not included in financial filings.

Principle of Materiality

- The disclosures related to the **Strategy and Metrics and Targets recommendations** are subject to an assessment of materiality. The disclosures related to the **Governance and Risk Management recommendations** are not and should be provided because many investors want insight into the governance and risk management context in which organizations' financial and operating results are achieved.

Scenario Analysis

- The Task Force encourages forward-looking information through scenario analysis—a useful tool for considering and enhancing resiliency and flexibility of strategic plans that allows investors to understand how **resilient organizations' strategies are to climate-related risks**.
- Recommended disclosure (c) under Strategy and the related guidance asks organizations to describe the resilience of their strategies, taking into consideration different climate-related scenarios, including **a 2°C or lower scenario**.

Beginning the Journey – Illustrative Roadmap

For organizations in early stages of assessing climate-related risks and opportunities, it may be helpful to develop a roadmap for implementing the recommendations.

Year 1

- Compare current disclosures to the recommendations, especially Governance and Risk Management, and identify alignment and gaps
- Determine information and data needs and process changes
- Begin evaluating metrics for assessing climate-related risks and opportunities
- Incorporate climate-related risks into risk identification and assessment process as needed
- Assign oversight to board committees and management as needed
- Disclose information related to Governance and Risk Management recommendations or disclose intention to implement the TCFD recommendations

Year 2

- Implement new processes for information and data collection and reporting
- Identify metrics useful for assessing climate-related risks and opportunities
- Adjust data collection to support metrics
- Identify climate-related risks and opportunities and assess whether they are material
- Identify relevant climate-related scenarios and consider how those scenarios might affect the organization
- Disclose information related to Governance and Risk Management recommendations and item (a) of the Strategy recommendation, where the information is material

Year 3

- Calculate and use metrics for assessing climate-related risks and opportunities
- Integrate scenario analysis into strategic planning and/or risk management frameworks
- Disclose information related to Governance and Risk Management recommendations
- Disclose information related to Strategy and Metrics and Targets recommendations, where the information is material

GROWING SUPPORT FOR TCFD AND ITS WORK

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 and announced over 500 supporters.

TCFD by the Numbers

601 **Supporters as of March 2019**

With a market capitalization of over 8.7 trillion USD. Including 326 financial firms, responsible for assets of over 107 trillion USD.

Overview of 2018 Status Report

The TCFD 2018 Status Report provides an overview of current disclosure practices related to the TCFD recommendations as well as additional information to support preparers with implementing the recommendations.

The Task Force's report focuses on the following:

- summarizing **current disclosure practices** relative to core elements of the recommended disclosures
- providing **examples of disclosures** that contain information aligned with the recommended disclosures
- sharing **user perspectives on decision-useful information**
- providing **perspectives of a small group of preparers** from the oil and gas industry
- summarizing **major initiatives that support the TCFD** and implementation of its recommendations

Key Takeaways of 2018 Status Report

The Task Force reviewed disclosures of several companies and found disclosing information in alignment with its recommendations is possible for preparers and helpful to users. It also found climate-related disclosures are still in early stages and further work is still needed for disclosures to contain more decision-useful climate-related information.

The majority disclose some climate-related information.
The majority of companies disclosed information aligned with at least one recommended disclosure, usually in sustainability report.

Financial implications are often not disclosed.
While many companies disclose climate-related financial information, few disclose the financial impact of climate change on the company.

Information on strategy resilience under climate-related scenarios is limited.
Few companies describe the resilience of their strategies under different climate-related scenarios, including a 2°C or lower scenario, which is a key area of focus for the Task Force.

Disclosures vary across industries and regions.
Companies' areas of focus in terms of climate-related financial disclosures vary significantly. For example a higher percentage of non-financial companies reported information on their climate related metrics and targets compared to financial companies, but a higher percentage of financial companies indicated their enterprise risk management process included climate-related risk.

Disclosures are often made in multiple reports.
Companies are often provided information aligned with the TCFD recommendations in multiple reports– financial filings, annual reports, and sustainability reports.

Disclosure Review Approach

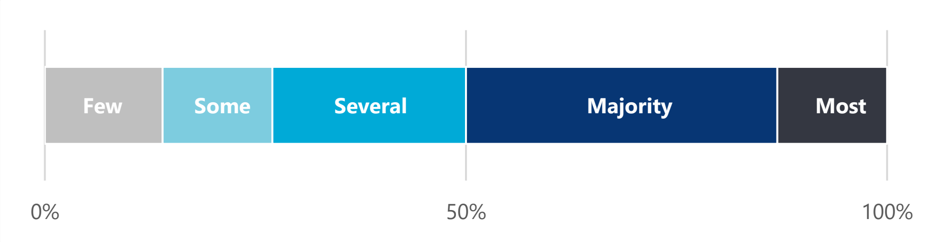
A key aspect of the Task Force's 2018 Status Report is the review of current disclosure practices relative to core elements of the recommended disclosures.

The Task Force used a two-pronged approach to review companies' disclosures (primarily financial filings and sustainability reports).

1. The Task Force used artificial intelligence technology to review nearly 1,750 large companies' publicly available reports.
2. The Task Force formed a small group of members to review publicly available reports of 200 large companies.

Review Scale

The results from the disclosure reviews are informative when considered on a relative basis (versus exact numbers). Therefore, the Task Force developed a review scale to describe the relative number of companies that disclosed information aligned with the recommended disclosures.

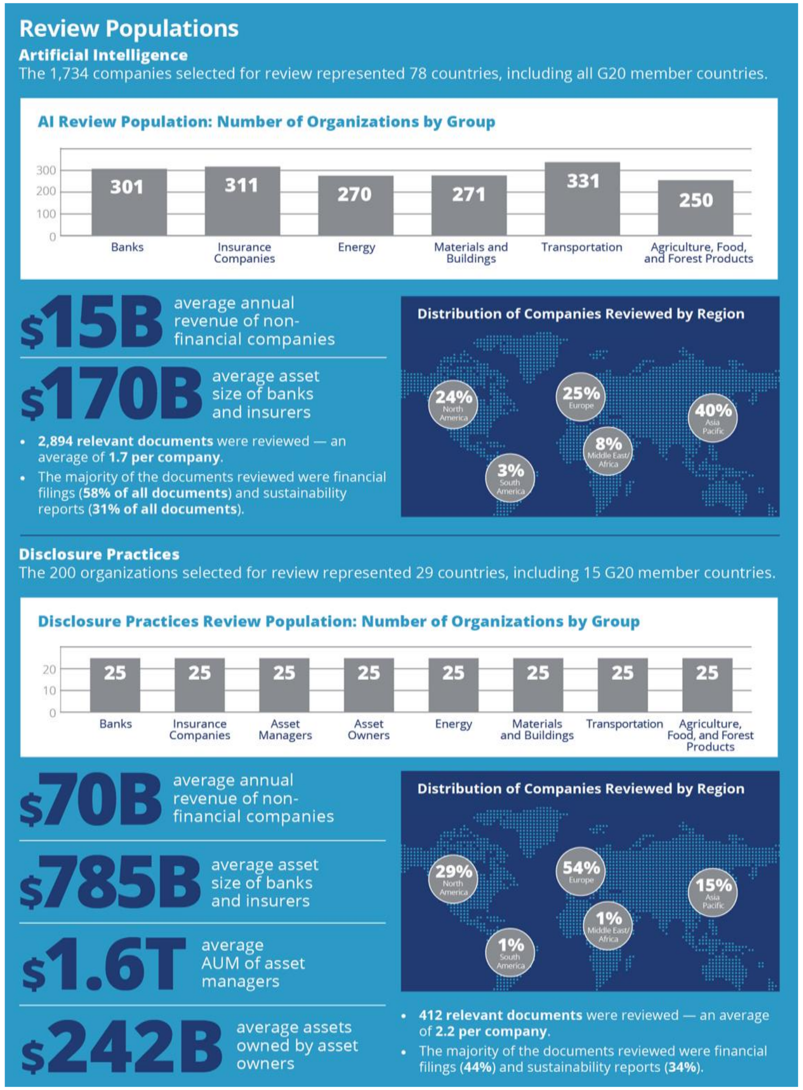


Disclosure Review Population and Selection Methodology

The Task Force reviewed climate-related financial disclosures from nearly 1,800 companies in eight specific groups highlighted in the 2017 report. Companies were selected for review by:

1. Identifying companies with public debt or equity.
2. Ranking companies by size using annual revenue to identify largest companies in non-financial groups, total assets for banks and insurance companies, assets under management for asset managers, and assets owned for asset owners.
3. Selecting the 400 largest companies in each group, except for asset managers and owners where top 50 were identified.
4. Adjusting population based on available documents and review objectives.
   a. Removed companies that did not have financial filings available in English.
   b. For the disclosure practices review, identified the largest 25 companies that included the term "climate change" in their most recent financial filings
   c. For the AI review, removed companies whose reports could not be sufficiently processed and removed asset managers and asset owners.

Asset owners and asset managers were excluded from the AI review because, in many cases, the types of reports needed were not publicly available.

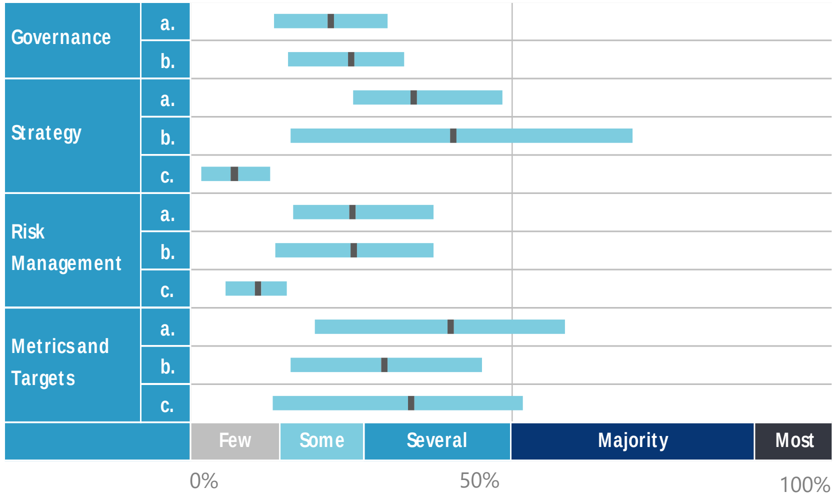


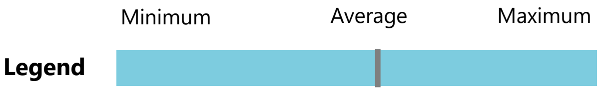
CURRENT DISCLOSURE PRACTICES

The Task Force reviewed publicly available reports and found that many companies in the eight groups disclose information aligned with a core element of one or more of the Task Force's recommended disclosures.

Artificial Intelligence (AI) Review

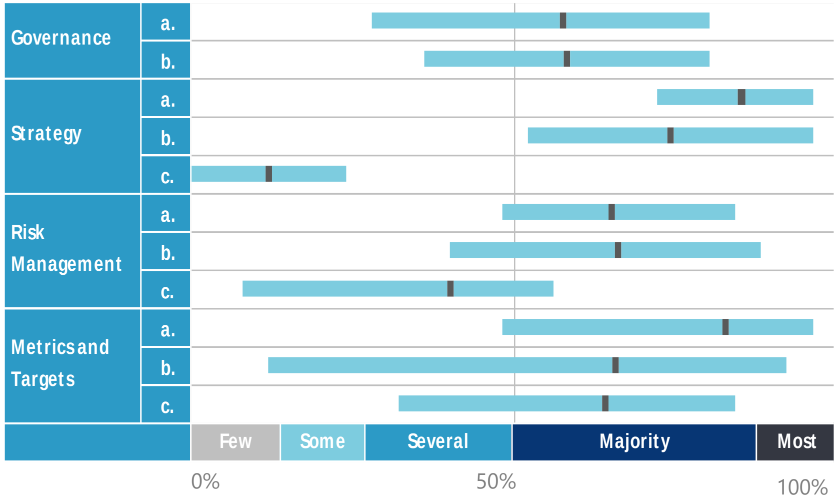
1,734 companies in six groups (see appendix for results by group)





Disclosure Practices Review

200 companies in eight groups (see appendix for results by group)



The sample of 200 companies for this review was intentionally biased toward those more likely to disclose information on climate change to provide better insight on the current disclosure practices of large companies. Accordingly, the results are higher for the disclosure practices review than for the AI review.

The Task Force did not attempt to assess the level of adoption of its recommendations for this report nor the quality or comprehensiveness of existing climate-related financial disclosures. See the Appendix for more information on the review scope and approach.

2019 Status Report: Overview

Similar to the 2018 status report, the Task Force's 2019 status report will provide information intended to support preparers in implementing the recommendations. The 2019 TCFD report is scheduled to be released in mid-2019 and will likely include the following:

- The results of an artificial intelligence review of climate-related disclosures for a wider range of industries
- A comparison of climate-related disclosures by reporting year
- The results of the November 2018 TCFD survey on implementation of the recommendations
- Other updates on climate-related disclosure progress

Drill down on TCFD disclosures in the French largest companies

France top (“CAC 40”) companies based on the sectors identified by the TCFD
First signatories of the TCFD support declaration, 29 June 2017
Subsequent support

Finance	Energy	Transportation	Materials & Building	Agriculture, Food & Forestry	Other
AXA	Air Liquide	Airbus	Arcelor Mittal	Carrefour	Accor
BNP Paribas	**Engie**	Michelin	Bouygues	Danone	Atos
Crédit Agricole	TechnipFMC	PSA	**LafargeHolcim**	Pernod Ricard	Capgemini
Société Générale	**Total**	Renault	Legrand		Essilor International
	Veolia	Safran	**Saint-Gobain**		**Kering**
		Valeo	**Schneider Electric**		L’Oréal
			Unibail-Rodamco		LVMH
			Vinci		Orange
					Publicis Groupe
					Sanofi
					Sodexo
					Solvay
					STMicroelectronics
					Vivendi

Methodology to rate the adoption of the TCFD recommendations

- Excluding the Finance sector (which includes Insurance), classification of companies according to the **four groups identified by the TCFD:** Energy / Transportation / Materials & Building / Agriculture, Food & Forestry and regrouping the remaining companies in a category Other.

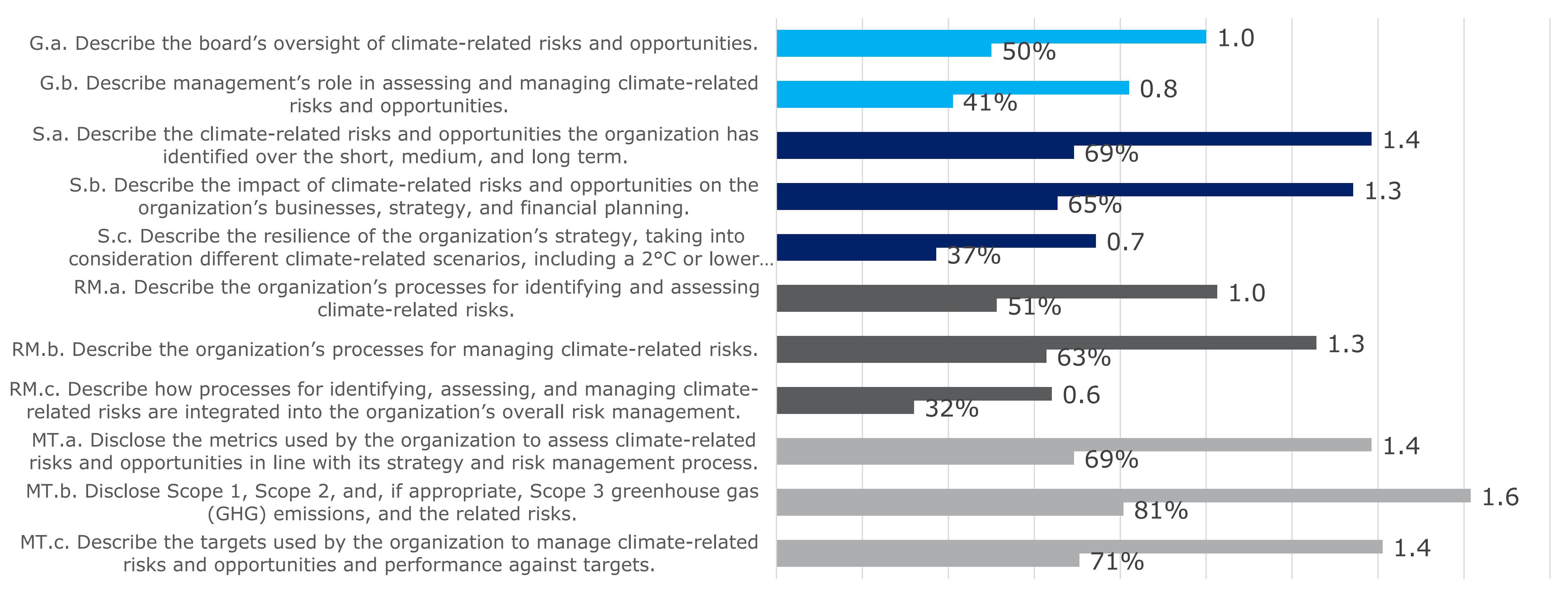
- Systematic review of the information published by companies in the FY2017 Registration Document (FY2017) (or FY2016 in the absence of FY2017 DDR) in relation to the recommendations of the TCFD (Recommendations and Guidance of the Final Report, Review Guidance). Where relevant, other official publications were also reviewed (eg annual report, climate policy, TCFD report).
- **Rating of information according to the 11 disclosures proposed by the TCFD * according to a scale of three notes ranging from 0 to 2:**
  - **0** : lack of satisfactory information
  - **1** : presence of satisfactory information (some of the points that TCFD wants directly related to the climate, or completeness of the points desired by the TCFD but related to the environment in a more general way)
  - **2** : presence of fully satisfactory information (completeness of the points desired by the TCFD and directly related to the climate)
- Calculation of the sum of the scores assigned to the companies of the same group for each question of the TCFD and calculation of the percentage that this sum represents compared to the total of points that this group of companies could reach (obtaining note 2 for all the questions).
- Calculation of the average score given to firms in the same sector for each TCFD question.
- Consolidation of results for the entire CAC40, calculation of the sum of the scores awarded for each question, the percentage of the total possible, and the average score.
- **Scoring diagrams for the CAC 40 and group of companies should therefore not be read as giving a percentage of companies that would be in "compliance" with the (otherwise non-binding) recommendations of the TCFD.**

* Questions were rated based on an analytical grid which can be considered as robust and allowing comparability of results accross companies. However such an analysis is not exempt of interpretation

Consolidated results

Companies have often identified climate issues and are beginning to address them at a strategic level, but they make little use of scenario analysis

For each question, the results are presented in absolute value (average score assigned to each company, the maximum being 2) and as a percentage of achievement of the highest possible score.



Reminder: Scoring diagrams should not be read as giving a percentage of companies that would be in "compliance" with (otherwise non-binding) TCFD recommendations.

Climate change disclosures

The ultimate output of a robust scenario analysis process

Building a scenario-based analysis

A key step for answering TCFD recommendations

Many scenarios have been developed both on transition and physical risks. A scenario-based analysis would certainly use more than one scenario. Furthermore, the integration of both transition risk and physical risk in the same methodological framework would require a conceptual adaptation.

Existing scenarios

IEA World Energy Outlook	*New policies scenario, current policies scenario, sustainable development scenario,…*
IPCC scenarios	*AR5 RCP8.5, AR5 RCP6.0, AR5 RCP4.5,…*
Private sector scenarios (Shell, Exxon,..)	*New Lens scenarios (Mountain and Ocean), Evolving Transition scenario, Faster transition scenario,…*

Difficulties in applying public scenarios:

- *Macro and global assessment for policy makers and scientists*
- *Not fitted for a business or investment context*
- *Misinterpretation of non-linear changes*

It is **usually necessary to consider various scenarios**. Once selected, these scenarios **have to be adapted to each activity of the assessed business**. **A key point for a company conducting this kind of assessment is to understand underlying assumptions of picked-up scenarios.**
Typically, physical and transition risks are considered separately as their drivers, temporality and sensitivity are different.

Beyond existing scenario-based models

Companies need to use an adapted methodology for their own scenario development

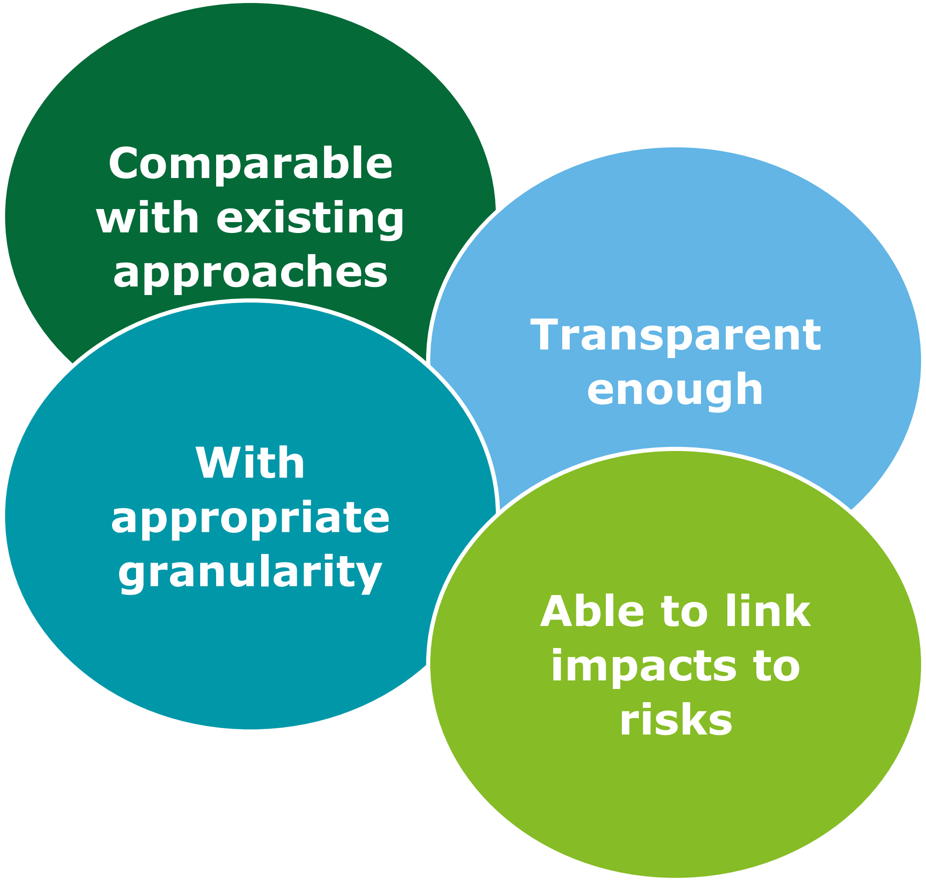
The objective of scenario-based analysis is to assist in a better understanding of :

- **The degree of robustness** of the organization's strategy and financial plans under different plausible future states of the world;
- **How the organization may be positioning itself** to take advantage of opportunities and plans to mitigate or adapt to climate-related risks;
- **How the organization is challenging itself** to think strategically about longer-term climate- related risks and opportunities.

Key characteristics of scenario analysis

- ***Plausible***
- ***Distinctive***
- ***Consistent***
- ***Challenging***
- ***Relevant***

Key features of the methodology

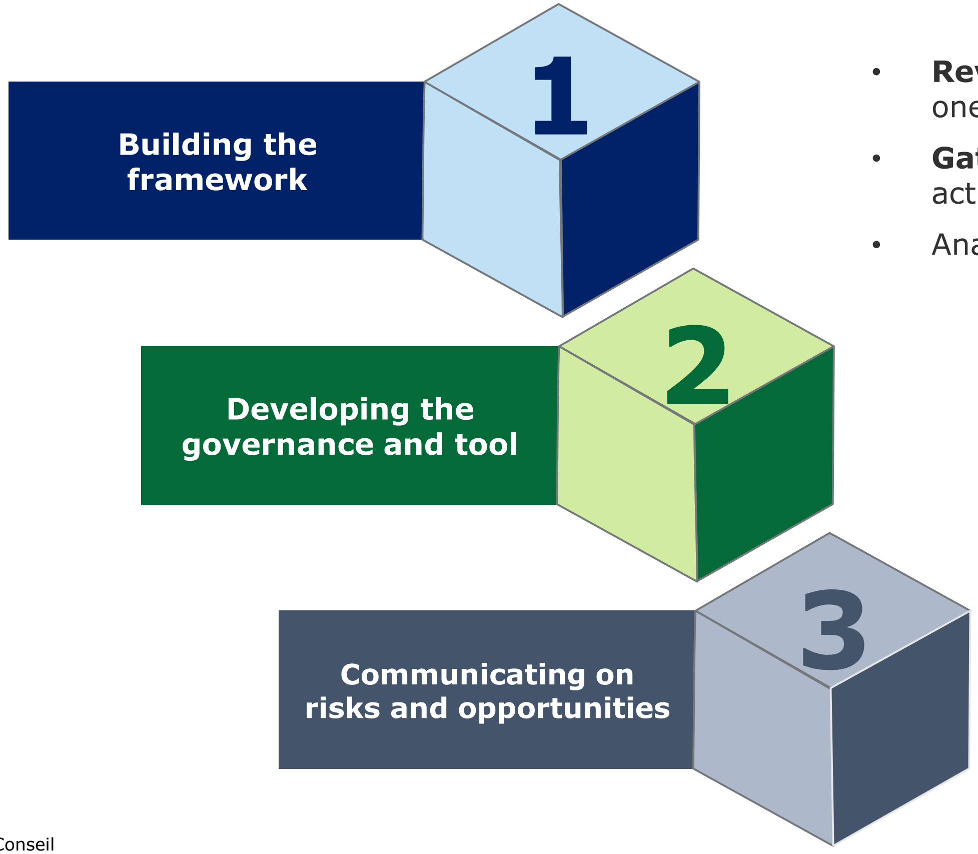


Typical approach

What it takes to operationalize a suitable approach of climate related risks assessment

Operationalize this kind of approach in a company is mainly a matter of framework building. If internal knowledge and skill would probably need to be completed by external expertise, the design of an appropriate governance, able to mobilize key stakeholders and resources is the very first step towards answering TCFD recommendations.

Methodology implementation steps



Main tasks

- **Review publicly available scenarios** to select the most appropriate ones
- **Gather information on climate risks** and their impact on economic activities (with a regional breakdown if appropriate)
- Analyze company's activities to **define a consistent segmentation**

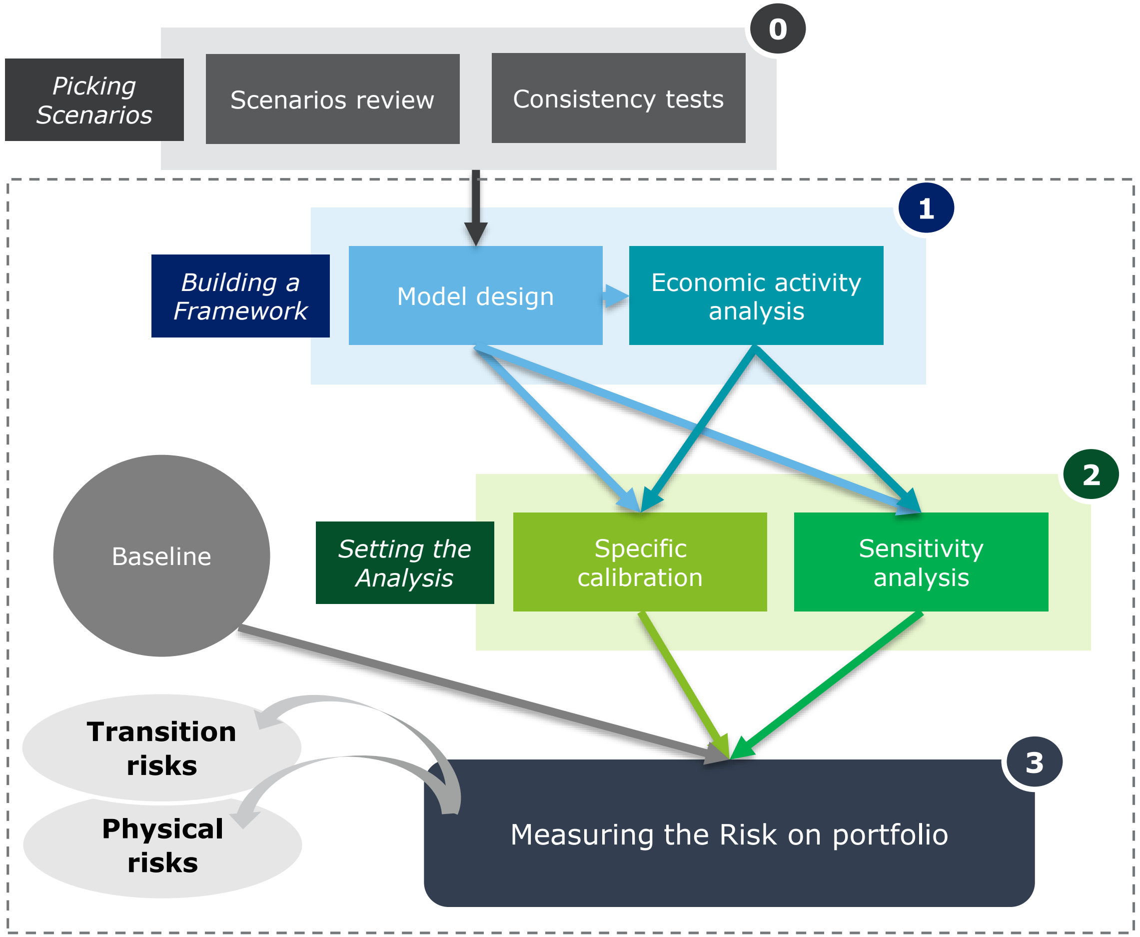
- Design an efficient **process for expert consultation**
- **Elaborate a systematic tool** leading to a repeatable, updatable and scalable risk & scenario analysis process
- **Define the appropriate governance** process for the approach

- **Identify key outputs** of the assessment
- **Draft a climate disclosure report** according to TCFD recommendations
- **Summarize key findings** and the way forward, including any uncertainties and/ or areas for further investigation

Illustration: Our methodology for inclusion of climate risk in the credit risk monitoring process of a bank

A specific analysis of climate-related sensitivity inspired by the UNEP-FI methodology, a top-down approach with specific bottom-up mechanisms

Schematic implementation of the proposed methodology



- One of the main KPIs used to follow climate-related risk is the Probability of Default (PD) or the Loss Given Default (LGD).
- An UNEP-FI methodology proposes to estimate PD or LGD variations related to transition risks. The objective is to go further by gathering **both physical and transition risk methodologies in a single framework.**
- Picking suitable scenario(s) is be a key step of the process. We develop a Top-Down approach reinforced by Bottom-Up analysis when appropriate. **The objective is to build a macro-analysis tool.**
- At present, scenario models only provide risk outputs at a sector level. To bring sector-level risk down to the segment level, analysts must define **relative sensitivities** of segments :
  - First, a correct baseline and an analysis framework must be built;
  - Then, defining the sensitivity of representative borrowers can help to specify the risk at segment level in financial terms.

Estimation of PD and LGD's variations helps to define the Expected Loss as the following relation is used :

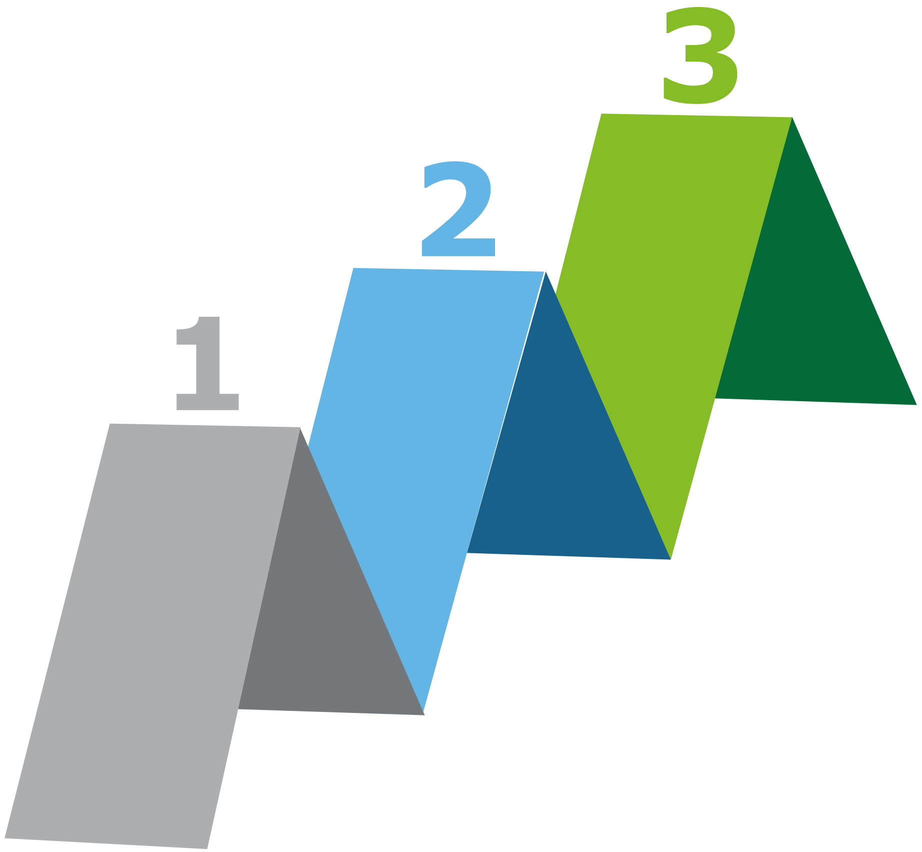
Expected Loss (EL) = Probability of Default (PD) * Loss Given Default (LGD) * Exposure at Default (EAD)

Climate-related risk is measured as the change in **expected loss** under a scenario or a mix of scenarios. In other words, the methodology aims to capture the expected loss conditional on a given scenario (or scenarios) and expected physical impacts.

Climate change disclosures - The ultimate output of a robust scenario analysis process

Taking a step back, what are companies' real benefits using this approach?

It is an iterative exercise: the first report is intended in particular to generate reaction (internally), to reveal gaps and to initiate possible corrective actions. Beyond the simple wish to comply with the recommendations of the TCFD, there are multiple benefits:



3- Communication

Like any publication of information in an annual report, the ultimate objective is to highlight the competitive advantages of the company (resilience, ability to seize opportunities ...)

2- Risk Analysis

Scenario analysis provides a partly quantitative understanding of climate risks, and thus a more organized approach to corrective actions

1- Internal awareness

Stakeholder consultation and validation by management are strong levers of internal awareness, both to think about how to understand the risks and to convince management to leverage on opportunities

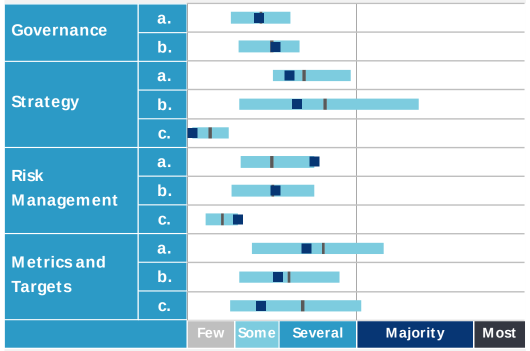
Appendices

Appendix 1: TCFD Status report details
Appendix 2: Deloitte climate change scenario analysis & TCFD reporting services

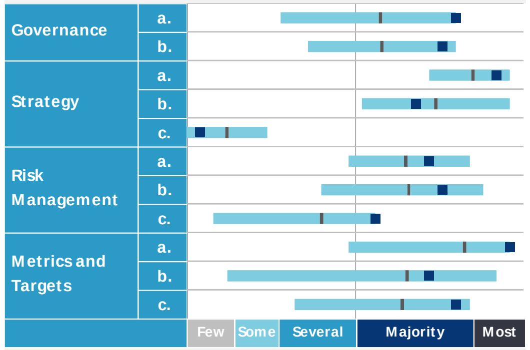
REVIEW RESULTS BY INDUSTRY - FINANCIALS

Banks

Artificial Intelligence (301 Companies)



Disclosure Practices (25 Companies)



Legend

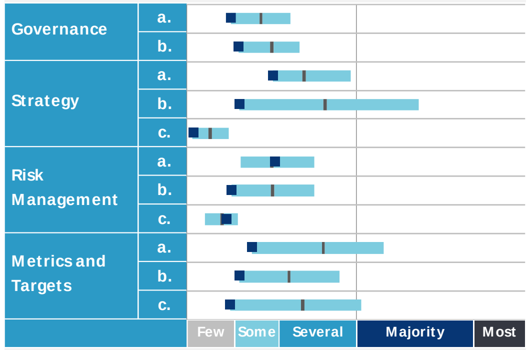
■ Banks

| 50%

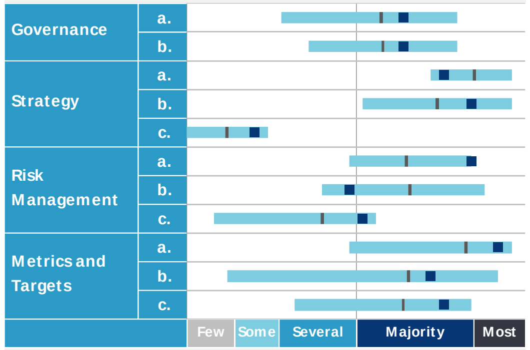
Minimum Average Maximum

Insurance Companies

Artificial Intelligence (311 Companies)



Disclosure Practices (25 Companies)



Legend

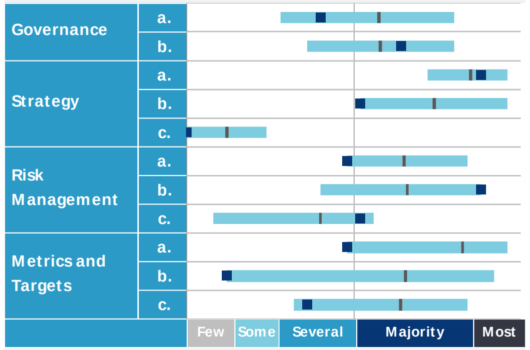
■ Insurance Companies

| 50%

Minimum Average Maximum

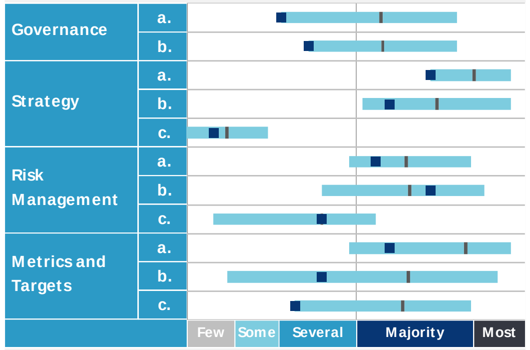
Asset Managers

Disclosure Practices (25 Companies)



Asset Owners

Disclosure Practices (25 Companies)



Legend

■ Asset Owners

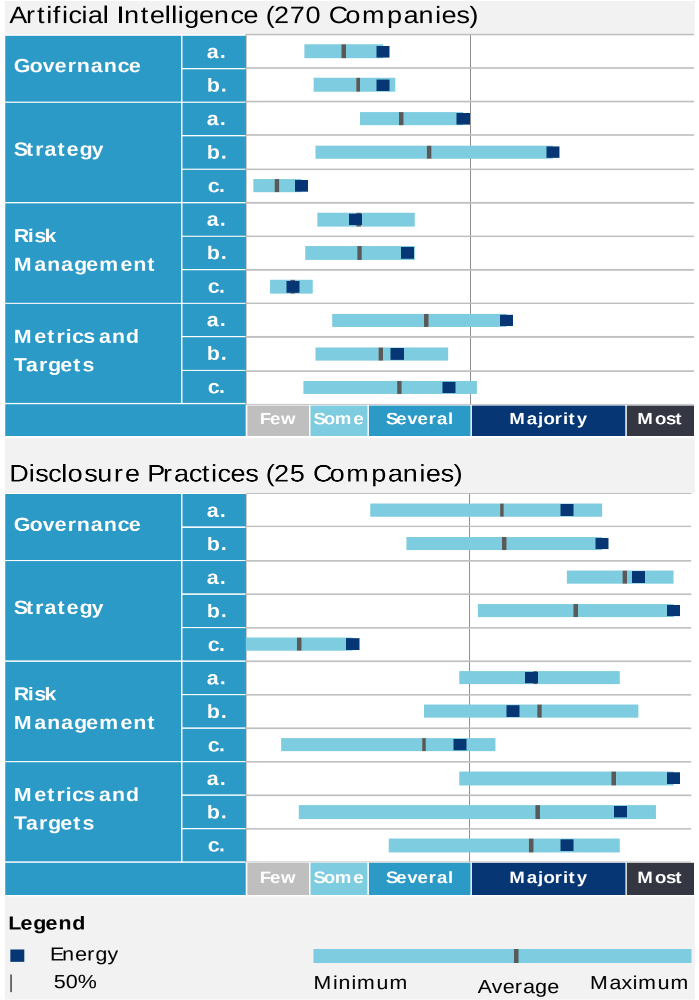
| 50%

Minimum Average Maximum

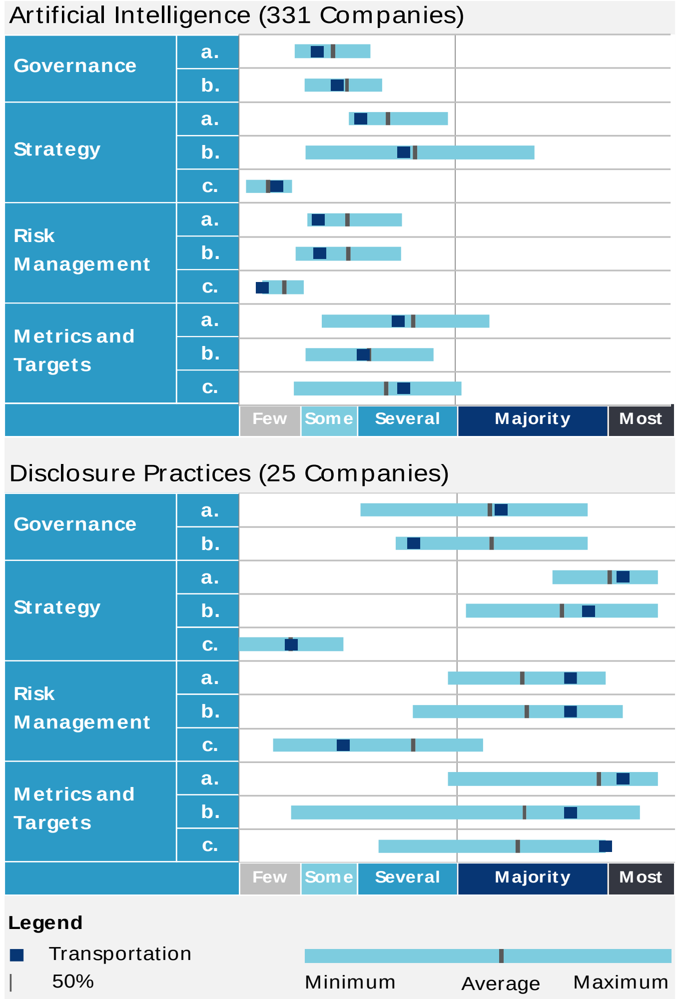
Asset owners and asset managers were excluded from the AI review because, in many cases, the types of reports needed were not publicly available.

REVIEW RESULTS BY INDUSTRY – NON-FINANCIALS

Energy

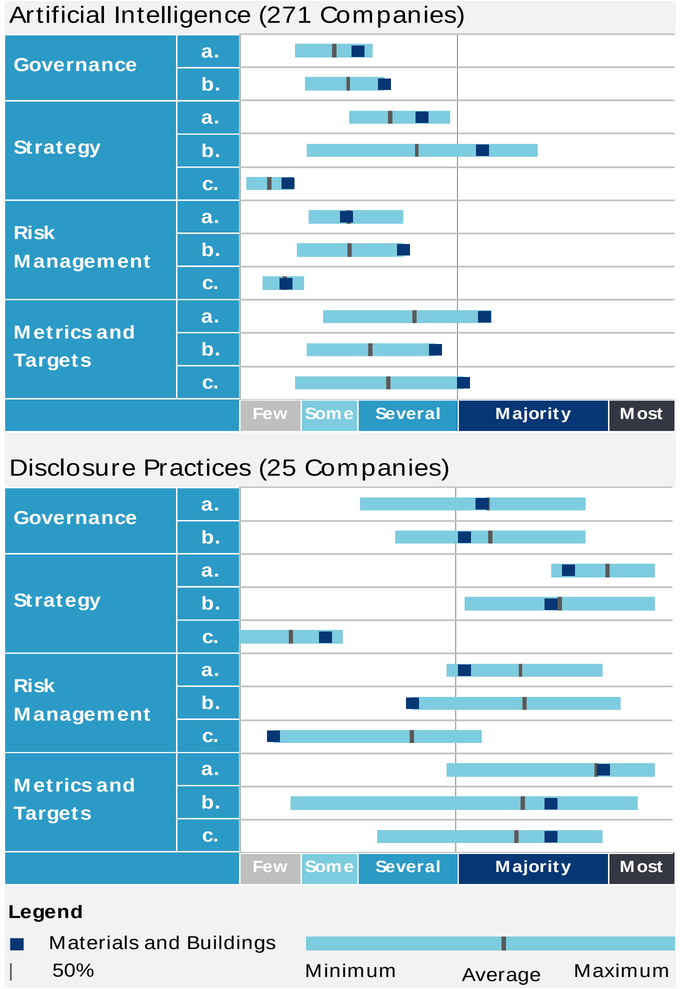


Transportation

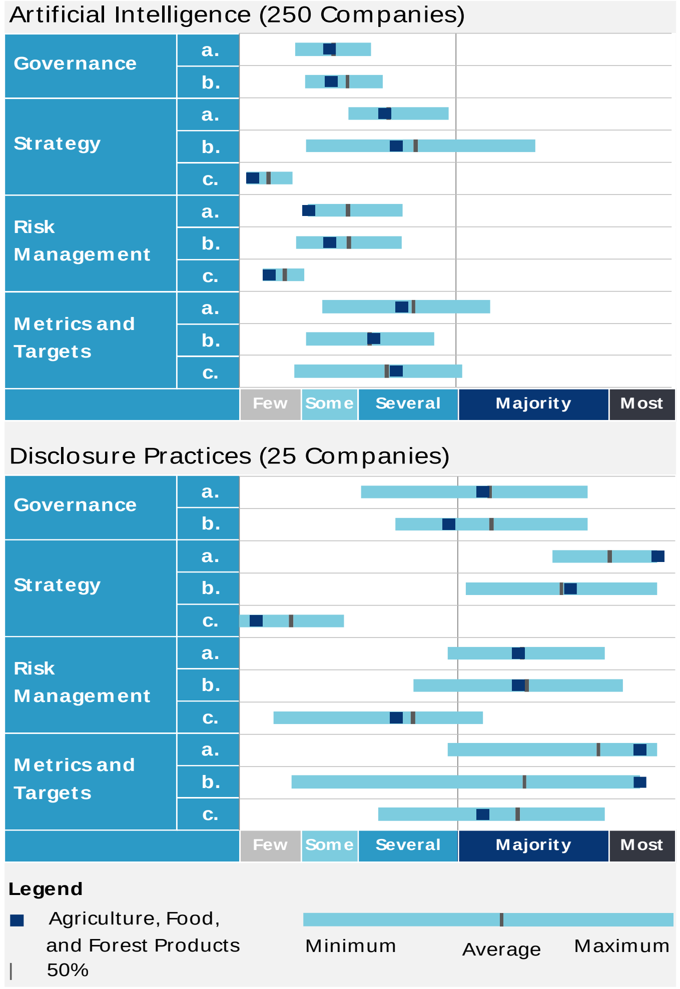


REVIEW RESULTS BY INDUSTRY – NON-FINANCIALS *(CONTINUED)*

Materials and Buildings



Agriculture, Food, and Forest Products



Appendix 2 : Deloitte climate change scenario analysis & TCFD reporting services

Deloitte conducts tailored climate scenario analysis in alignment with the TCFD recommendations

Our Practice

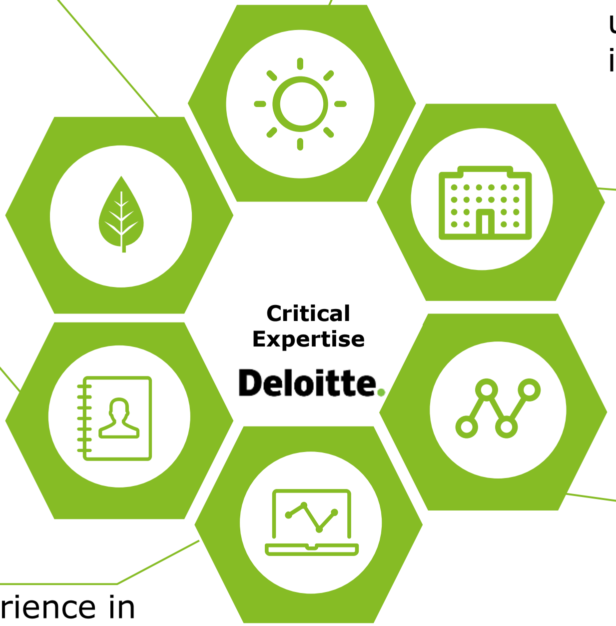
800+ Sustainability and Climate Change professionals globally delivering services to clients in more than 50 member firms across the globe.

Our seat at the table

We bring an informed perspective of the evolving market context around climate risk with a ‘seat at the table’, with a number of initiatives looking to help shape the communication between companies and market participants including the Task Force on Climate-related Financial Disclosures (TCFD).

In-house climate modeling experience

Our team includes climate scientists with extensive experience in applying climate models for risk analysis across different sectors. We have established relationships with leading global climate research institutes.



Climate risk

Vast global experience with international financial institutions, governments and the private sector in applying “state of the art” climate risk and vulnerability assessment methodologies to understand the financial materiality of climate induced risks.

Resiliency

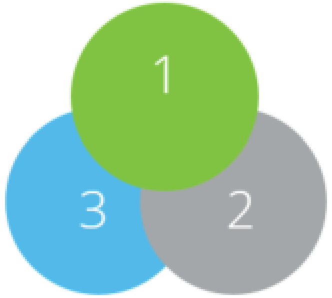
Deep knowledge in designing resiliency operating models that enable our clients to respond efficiently and effectively to potential disaster situations.

Holistic capabilities

Holistic services leveraging our broad expertise in infrastructure and capital projects, climate risk, disaster recovery, human capital, economic and financial modelling, and enterprise risk management.

Challenges and objectives

Identifying, assessing and managing climate risks to ensure the long term sustainability of your business



1
AT STAKE

Positive and negative impacts of climate change risks on business activities

Climate change risks can positively or negatively impact business activities and businesses have also an impact on climate change. A strategy supported by viable tools, is needed to address potential climate change risks and challenges for the company: policy regulation, availability of raw materials, geopolitical context, etc.

2
SHORT-TERM OBJECTIVES

Identify key climate change risks, priority risks and mitigation actions

Understand **"hot spots"** and design framework for risks monitoring and potential communication to internal and external stakeholders, including shareholders, based on a **robust and transparent** risk framework.

3
LONG-TERM OBJECTIVES

Monitor and mitigate risks

Monitor and mitigate risks, ensure findings contribute to key business decisions, **communicate** to stakeholders using appropriate risk frameworks.

Our approach in four steps

A clear, step-by-step, cost-effective approach ensuring short to long term actions against climate change risks.

Deloitte helps organizations from start to finish or intervenes at specific steps of the approach.

STEP 1

IDENTIFICATION AND PRIORITIZATION OF YOUR KEY CLIMATE-RELATED RISKS AND OPPORTUNITIES

- Definition of the scope, parameters, main data needs, targets, indicators and objectives
- Data collection and stakeholder consultation
- Quantification and analysis of key climate-related risks and opportunities

STEP 2

ANALYSIS OF TAILOR-MADE CLIMATE SCENARIOS

- Definition of scenarios (including a 2°C scenario) taking into account: increase in global temperature, worldwide endorsement of policies to fight climate change, specific factors for each economic sector, potential disruptions
- Detailing risks and opportunities for each scenario

STEP 3

DEVELOPMENT OF ACTIONS TO MITIGATE RISKS

- Development and implementation of actions to address priority risks and opportunities
- Short, mid and long-term – feasible and flexible solutions
- Development of key performance indicators to measure and monitor progress

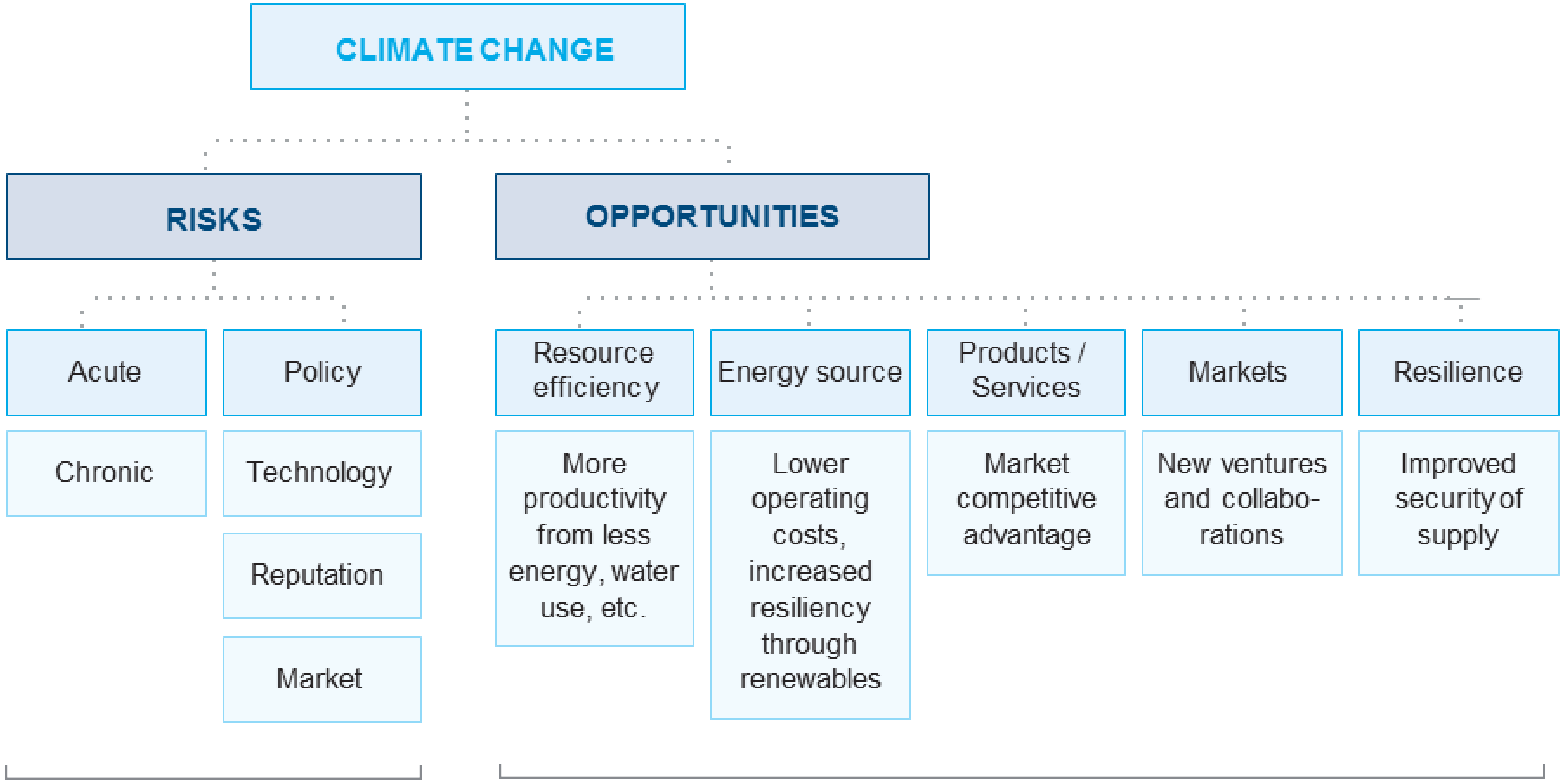
STEP 4

COMMUNICATION AND DISCLOSURE OF CLIMATE-RELATED RISKS AND OPPORTUNITIES

- Climate disclosure report according to TCFD recommendations
- Summary of key findings and the way forward, including any uncertainties and/ or areas for further investigation

Identification and prioritization of key climate-related risks and opportunities

STEP 1



Prioritisation of climate-related risks:

- Magnitude of risk: scope
- Likelihood of risk
- Potential impacts and consequences e.g. financial impacts include impacts on revenue statements, cash flow and balance sheet, etc.

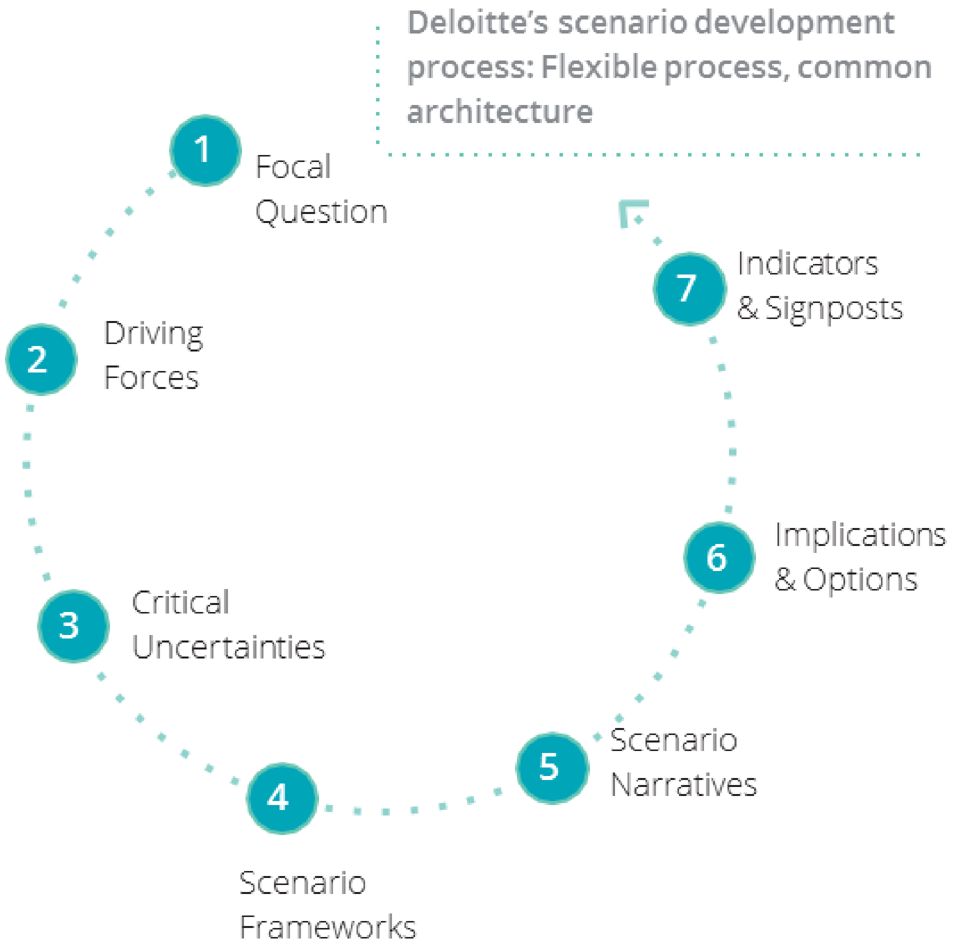
Build upon promising opportunities:

- Opportunities could offset potential risks e.g. new investments, reduced operating costs, access to new markets
- Opportunities focused on climate change mitigation and adaptation solutions and a transition to a lower-carbon economy

Analysis of tailor-made climate scenarios

STEP 2

- Scenario analysis allows to explore and develop an understanding of how various combinations of climate-related risks, both transition and physical risks, may affect your businesses, strategies, and financial performance over time.
- Scenarios are hypothetical constructs and not designed to deliver precise outcomes or forecasts. Instead, scenarios provide a way for organizations to consider how the future might look if certain trends continue or certain conditions are met.
- The TCFD provides in-depth step by step guidance, including a specific technical supplement on scenario analysis on how to carry out scenario analysis, including recognition of key issues and challenges to consider.
- Our approach goes one step further, enabling a progressive analysis and leveraging on your understanding of your business.



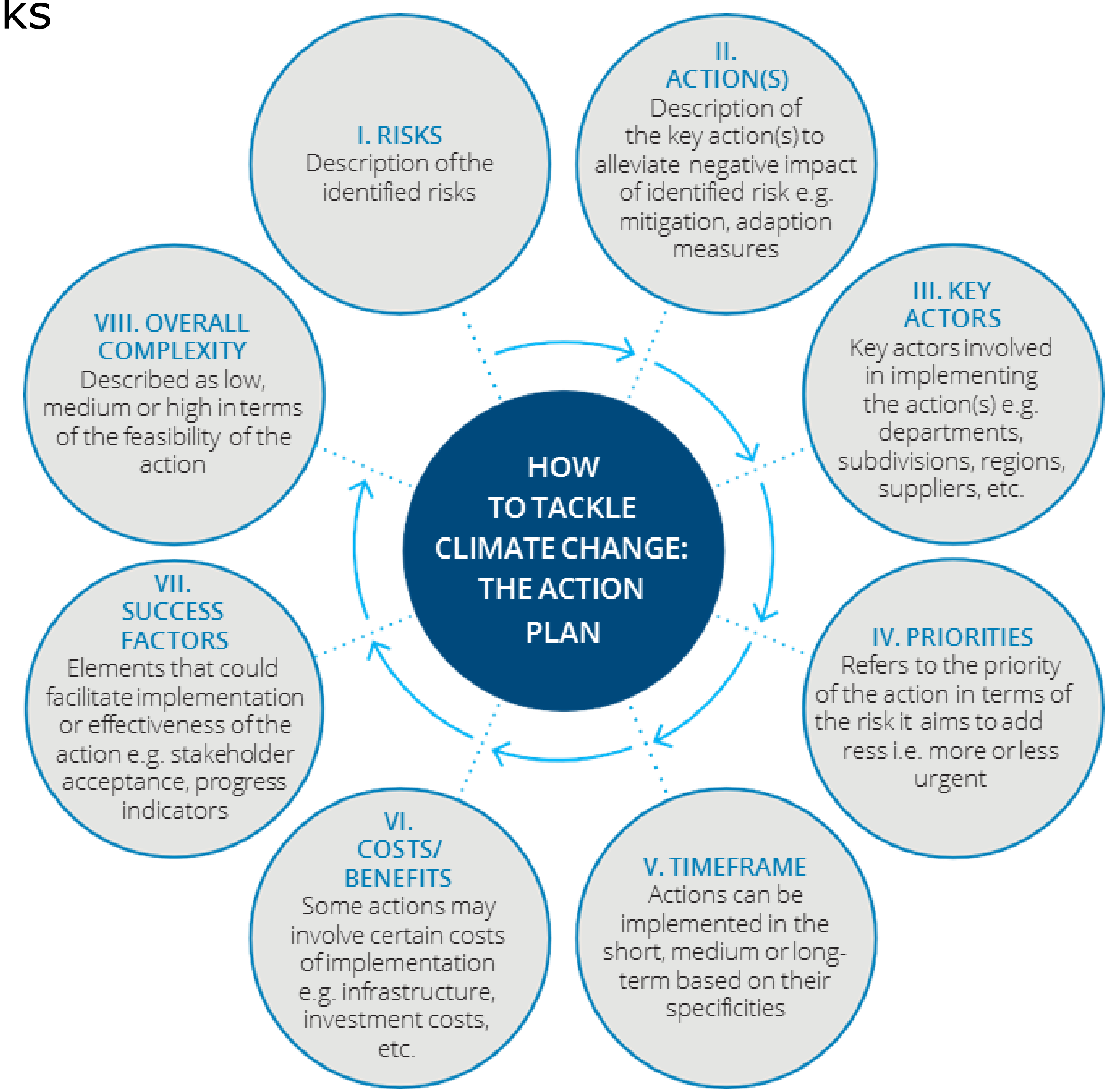
Scenario analysis improves judgment and decision-making in the face of radical uncertainty

Development of actions to mitigate risks

STEP 3

- Actions to mitigate and adapt to the identified climate change risks for your company will be developed based on findings from internal consultation and external benchmark. The actions should be coherent with both your current actions as well as relevant international initiatives.

- The action plan can be adapted to reflect evolutions such as technologic developments, policy context, etc. The action plan also highlights the areas of highest risk and vulnerability, what can be done, by who and by when, etc.



Communication and disclosure of climate-related risks and opportunities

STEP 4

- The TCFD's recommendations include detailed guidance on the structure and contents of the climate disclosures. There is also supplemental guidance for the financial and non-financial sectors, highlighting important sector-specific considerations.

- Certain elements from the climate disclosures reported may be adapted to reflect more specifically the scope and interests of your organization. They can be used as a strategic communication tool for internal purposes and for external stakeholders. Further, the disclosures can be included in financial filings and for investors.

Contact

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