TCFD Disclosure and Climate Risk

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DISCLOSURE INSIGHT ACTION

OUTLINE

Overview of the TCFD

Climate-related risks and its characteristics

Leveraging CDP to improve TCFD alignment

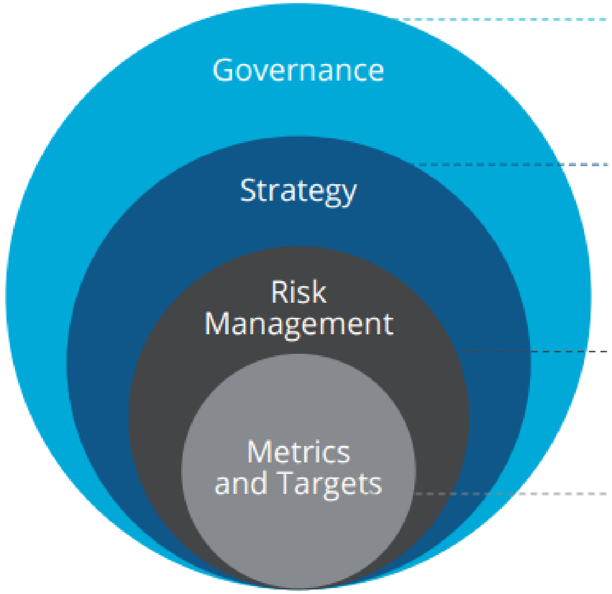
Resources

OVERVIEW OF TCFD

Task Force on Climate-related Financial Disclosure (TCFD)

- Climate-related financial disclosures
- Voluntary
- Financial sector & non-financial sectors
- Risks & opportunities (transition & physical)
- Scenario analysis & transition plans
- Short, medium & long-term
- Qualitative & quantitative disclosures

Core elements of the TCFD recommendations



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

TCFD, Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures, 2017

COMPANIES IN SCOPE

TCFD guidance is for companies of all sizes, industries and locations

Financial Sector

Banks
Insurers
Asset owners
Asset managers

Non-financial Sector

Energy
Transportation
Materials and buildings
Agriculture, food and forest products

TCFD RECOMMENDATIONS & PRINCIPLES FOR EFFECTIVE DISCLOSURE

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.

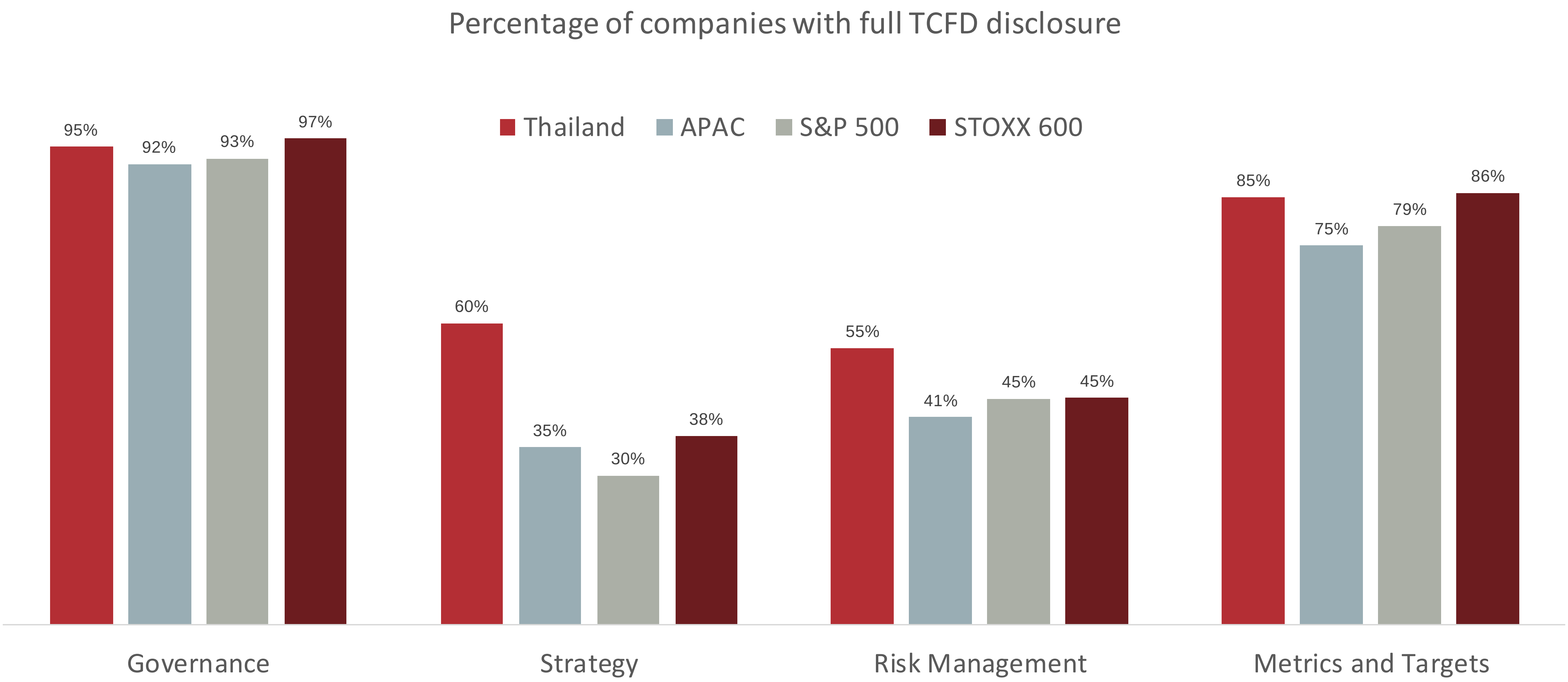
Principles for Effective Disclosures

1. Disclosures should represent relevant information
2. Disclosures should be specific and complete
3. Disclosures should be clear, balanced, and understandable
4. Disclosures should be consistent over time
5. Disclosures should be comparable among companies within a sector, industry, or portfolio
6. Disclosures should be reliable, verifiable, and objective
7. Disclosures should be provided on a timely basis

TCFD, Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures, 2017

COMPANIES WITH FULL TCFD DISCLOSURE

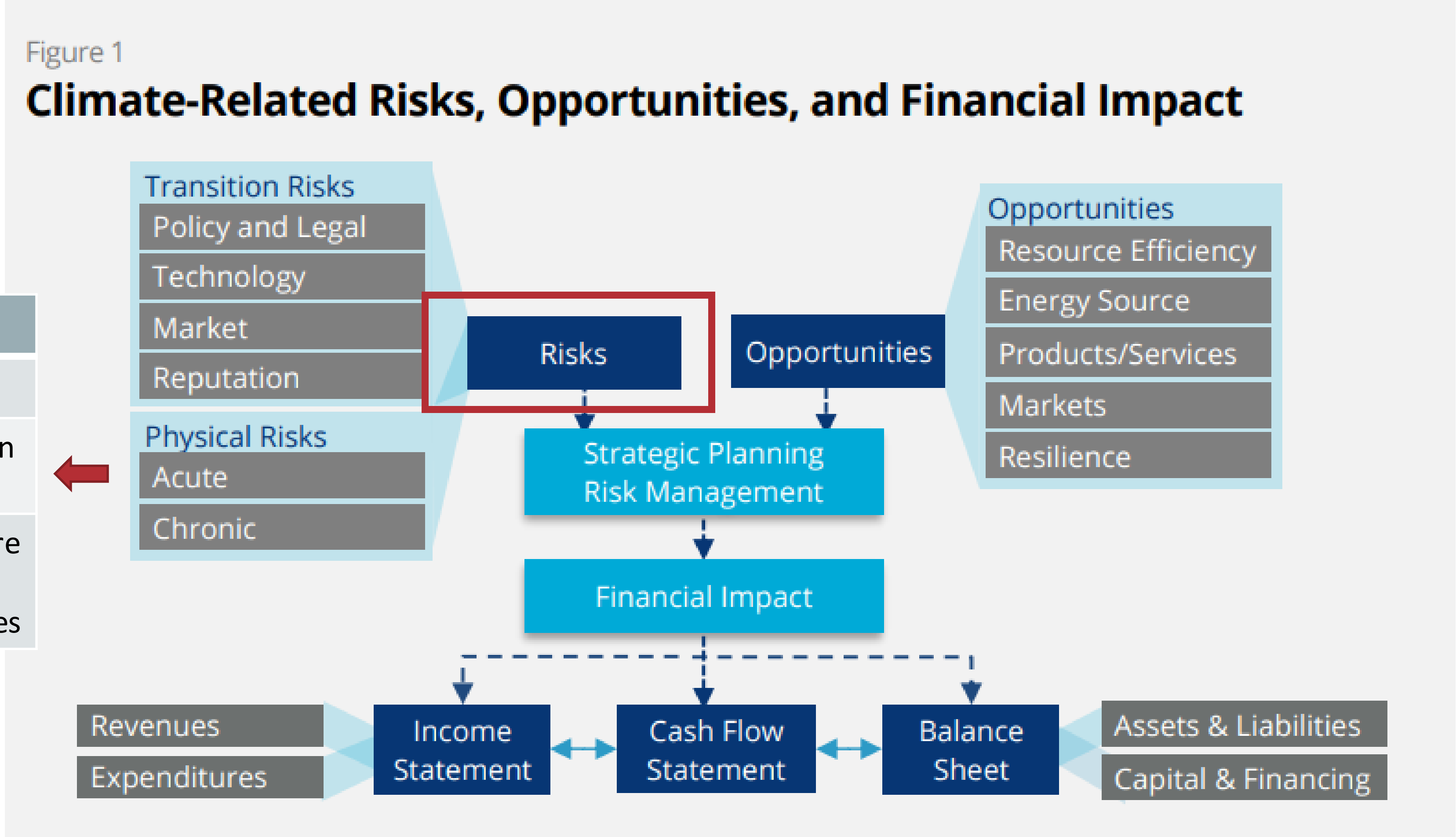
3,800 APAC companies disclosed via CDP questionnaire in 2021



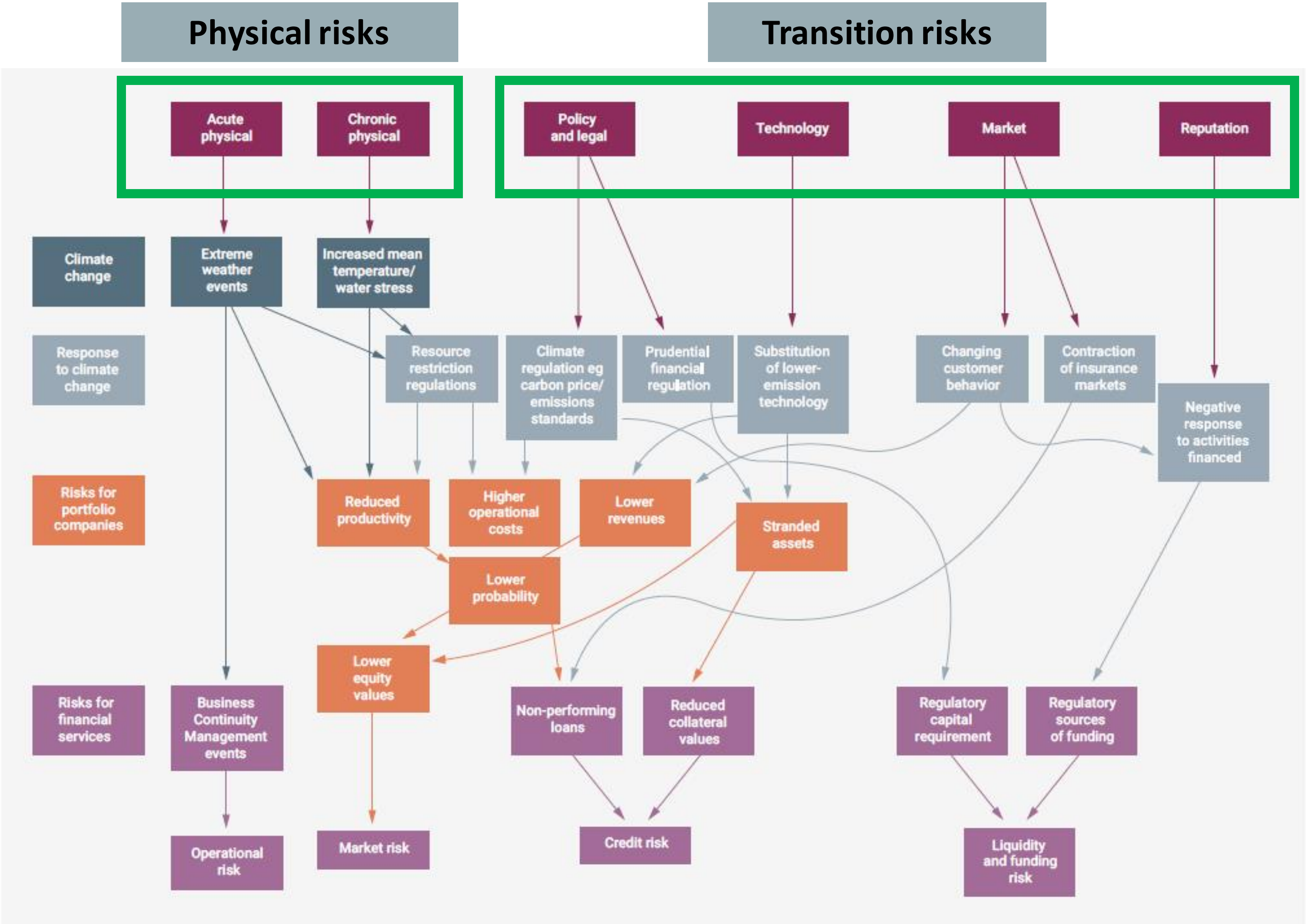
FOCUS ON CLIMATE-RELATED RISKS

TCFD divides climate-related risks into two categories

Physical risks		
	Acute	Chronic
Differences	Weather events driven	Long-term shirts in climate patterns
Examples	Droughts, floods, wildfires	Rising temperature & sea level, chronic heat waves



EXAMPLES OF CLIMATE-RELATED RISKS FOR FINANCIAL INSTITUTIONS



CDP, Financial Services Disclosure Report, 2020

CHARACTERISTICS OF CLIMATE-RELATED RISKS

Different effects based on geography and activities	The effects of climate change and climate-related risks occur on **local, regional, and global scales with different implications** for different businesses, products and services, markets, operations, and value chains, among others.
Longer time horizons and long-lived effects	Some climate-related risks exist and play out **over time horizons that stretch beyond traditional business planning and investment cycles**. These risks and related impacts may occur as a result of decades-long changes in driving forces (e.g., greenhouse gas concentrations in the atmosphere) leading to climate-related physical or transition risk changes over the short, medium, and long term.
Novel and uncertain nature	Many of the effects of climate change have no precedent, limiting the ability to apply statistical and trend analysis based on historical data. **Climate change is a dynamic and uncertain phenomenon** and possible mitigation responses are also complex, with many unknowns such as the development and deployment of critical technologies and adaptation strategies as well as changing market and consumer behaviours.
Changing magnitude and nonlinear dynamics	Climate-related risks may manifest at different scales over time, with increasing severity and scope of impacts. Climate systems may exhibit thresholds and tipping points that result in **large, long-term, abrupt, and possibly irreversible changes**. 10 Understanding the sensitivities of tipping points in the physical climate system, as well as in ecosystems and society, is essential for understanding climate-related risks.
Complex relationships and systemic effects	Risks associated with climate change are **interconnected across socioeconomic and financial systems**. Such interconnected risks are often characterized by knock-on effects and systemic effects, requiring a multidimensional perspective to assess the short-, medium-, and long-term implications for a company.

LEVERAGING CDP TO IMPROVE TCFD ALIGNMENT

CDP
DISCLOSURE INSIGHT ACTION

What investors and companies *should* be evaluating

Resources for providing complete and comparable information for each question against metrics

TCFD Recommendations → CDP Questions → CDP Guidance → CDP Scoring → Standardized, comparable, decision-ready data

Breakdown of recommendations into accessible, actionable metrics

What is best practice for each metric

THEMATIC QUESTIONNAIRES

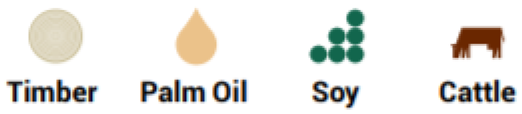
Climate Change

- Climate-related risks & opportunities
- GHG emissions and energy data
- Climate-related targets

CDP Technical Note on TCFD:
Governance, Strategy, Risk Management, Metrics & Targets

Forests

- 4 forest risk commodities:



- Plans to remove deforestation from direct operations and supply chains
- 3 unscored commodities: rubber, cocoa, coffee

Water Security

- Water dependence and management
- Facility-level water accounting
- Assessment of water-related risks & opportunities

MODULES OF CDP QUESTIONNAIRES

CDP
DISCLOSURE INSIGHT ACTION

Climate Change

- C1 Governance
- C2 Risks and opportunities
- C3 Business strategy
- C4 Targets and performance
- C5 Emissions methodology
- C6 Emissions data
- C7 Emissions breakdown
- C8 Energy
- C9 Additional metrics
- C10 Verifications
- C11 Engagements
- C13 Other land management impacts*
- C14 Portfolio impact*
- C15 Biodiversity
- FW Forests and Water Security*

Forests

- F1 Current state
- F2 Procedures
- F3 Risks and opportunities
- F4 Governance
- F5 Business strategy
- F6 Implementation
- F7 Verification
- F8 Barriers and challenges
- F9 Current state*
- F10 Procedures*
- F11 Impacts, risks and opportunities*
- F12 Governance*
- F13 Business strategy*
- F14 Implementation*
- F15 Engagement*
- F16 Verification*

Water Security

- W1 Current state
- W2 Business impacts
- W3 Procedures
- W4 Risks and opportunities
- W5 Facility-level accounting
- W6 Governance
- W7 Business strategy
- W8 Targets
- W9 Verification

**sector specific modules*

SECTOR MATERIALITY AND RELEVANCE

DISCLOSURE INSIGHT ACTION

TCFD KEY SECTORS

Energy

Oil & gas

Coal

Electric Utilities

Transport

OEMs

Services

Materials

Cement

Steel

Metals & mining

Chemicals

Construction

Real estate

Capital goods

Agriculture

Food, beverage and tobacco

Agricultural commodities

Paper & Forestry

Finance

Financial services

- Asset managers
- Asset owners
- Banks
- Insurance companies

CDP SECTOR-SPECIFIC QUESTIONNAIRES

CDP ALIGNMENT AGAINST TCFD RECOMMENDATIONS

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.	**C1.1b**	a) Describe the climate related risks and opportunities the organization has identified over the short, medium, and long term.	**C2.1a, C2.3, C2.3a, C2.4, C2.4a**	a) Describe the organization's processes for identifying and assessing climate-related risks.	**C2.1, C2.2, C2.2a, C-FS2.2b, C-FS2.2c, C-FS2.2d, C-FS2.2e**	a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	**C4.2, C4.2a, C4.2b, C9.1,**
b) Describe management's role in assessing and managing climate related risks and opportunities	**C1.2, C1.2a**	b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	**C2.3a, C2.4a, C3.1, C3.2b, C3.3, C3.4, C-FS3.7, C-FS3.7a**	b) Describe the organization's processes for managing climate related risks.	**C2.1, C2.2, C-FS2.2d, C-FS2.2e**	b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks	**C6.1, C6.3, C6.5, C6.5a, C-FS14.0, C-FS14.1, C-FS14.1a, C-FS14.1b**
		c) Describe the resilience of the organization's strategy, taking into consideration different climate related scenarios, including a 2°C or lower scenario.	**C3.2, C3.2a, C3.2b**	c) Describe how processes for identifying, assessing, and managing climate related risks are integrated into the organization's overall risk management.	**C2.1, C2.2**	c) Describe the targets used by the organization to manage climate related risks and opportunities and performance against targets.	**C4.1, C4.1a, C4.1b, C4.2, C4.2a, C4.2b, C-FS4.1d**

ALIGNMENT OVERVIEW: CDP QUESTIONS AGAINST TCFD DISCLOSURE

CDP
DISCLOSURE INSIGHT ACTION

TCFD Recommendation

CDP Questionnaire

RISK MANAGEMENT

Recommended disclosures

a) Describe the organization's processes for identifying and assessing climate-related risks.

b) Describe the organization's processes for managing climate related risks.

c) Describe how processes for identifying, assessing and managing climate-related risks are integrated into the organization's overall risk management.

Question No.	Question Text
General Questions	
C2.1	Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?
C2.2	Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.
C2.2a	Which risk types are considered in your organization's climate-related risk assessments?
Financial Services Sector Questions	
C-FS2.2b	Do you assess your portfolio's exposure to climate-related risks and opportunities?
C-FS2.2c	Describe how you assess your portfolio's exposure to climate-related risks and opportunities.
C-FS2.2d	Does your organization consider climate-related information about your clients/investees as part of your due diligence and/or risk assessment process?
C-FS2.2e	Indicate the climate-related information your organization considers about clients/investees as part of your due diligence and/or risk assessment process, and how this influences decision-making.

TCFD RISK MANAGEMENT: RISK MANAGEMENT PROCESS

CDP
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RISK MANAGEMENT

Recommended disclosures

a) Describe the organization's processes for identifying and assessing climate-related risks.

b) Describe the organization's processes for managing climate related risks.

c) Describe how processes for identifying, assessing and managing climate-related risks are integrated into the organization's overall risk management.

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

Change from last year

No change

Connection to other frameworks

TCFD

Risk Management recommended disclosure a) Describe the organization's processes for identifying and assessing climate-related risks.

Risk Management recommended disclosure b) Describe the organization's processes for managing climate-related risks

Risk Management recommended disclosure c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.

Response options

Select one of the following options:

- Yes
- No

EXAMPLE: RISK MANAGEMENT PROCESS

DISCLOSURE INSIGHT ACTION

RISK MANAGEMENT

Recommended disclosures

a) Describe the organization's processes for identifying and assessing climate-related risks.

b) Describe the organization's processes for managing climate related risks.

c) Describe how processes for identifying, assessing and managing climate-related risks are integrated into the organization's overall risk management.

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Question dependencies

This question only appears if you select "Yes" in response to C2.1.

Response options

Please complete the following table. You are able to add rows by using the "Add Row" button at the bottom of the table.

Value chain stage(s) covered	Risk management process	Frequency of assessment	Time horizon(s) covered	Description of process
Select all that apply: • Direct operations • Upstream • Downstream [not shown to FS]	Select from: • Integrated into multi-disciplinary company-wide risk management process • A specific climate-related risk management process	Select from: • More than once a year • Annually • Every two years • Every three years or more • Not defined	Select all that apply: • Short-term • Medium-term • Long-term • None of the above/Not defined	Text field [maximum 7,000 characters]

Have a risk management process that is multi-disciplinary and company-wide that covers the entire the value chain. Assessment occurs more than once a year and covers various time horizons.

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered

Direct operations
Upstream
Downstream

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

More than once a year

Time horizon(s) covered

Short-term
Medium-term
Long-term

PTT Global Chemical, Climate Change Response, 2021

EXAMPLE: DESCRIBING RISK MANAGEMENT PROCESS

Summary of description process:

- Climate risk assessment twice a year
- Climate scenario analysis
- Climate adaptation plan & mitigation measures
- Example of physical & transition risks

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered
Direct operations

Risk management process
Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment
More than once a year

Time horizon(s) covered
Short-term
Medium-term
Long-term

Description of process
The Strategic Development and Risk Management Committee led the company's risks assessment twice a year, which covers climate-related risks and opportunities. The Risk Manager first gathers risk profiles from the Risk Owners (functional level), designs and develops risk management framework, controls factors that may lead to risks and report risks to the Executive Committee for review and approval. To prepare for these impacts, True decided to conduct a physical risk assessment of climate related scenario analysis to identified climate change-related risk vulnerabilities across all relevant assets and operations. The results from this assessment will then be used to develop a climate change adaptation plan with mitigation measures that are planned ideally so that context-specific factors are considered. Example of important risk management of the company are as follows: 1. Physical Risk: A major climate related risk occurred in 2011 and 2016 when the Company's network equipment and facilities were affected by the heavy floods. As a result, the company has set in place the proactive preventive measure and incorporated the assessment results into the strategy and plan. 2. Transition Risk: To be in line with global and national concern with the climate change and higher temperature, Paris Agreement participation, and its existing Sustainability Goals 2020 of the Company (to reduce GHG by 10%) as well as the next 10-year Sustainability Goals 2030 to become Carbon Neutral, True has greatly focused on climate-related and opportunities within the organization.

True Corporation, Climate Change Response, 2021

TCFD RISK MANAGEMENT: IDENTIFYING RISK TYPES

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RISK MANAGEMENT: Recommended disclosures

a) Describe the organization's processes for identifying and assessing climate-related risks.

(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

Question dependencies
This question only appears if you select "Yes" in C2.1.

Change from last year
Additional guidance

Connection to other frameworks

TCFD

Risk Management recommended disclosure a) Describe the organization's processes for identifying and assessing climate-related risks.

Response options
Please complete the following table:

Risk type	Relevance & inclusion	Please explain
Current regulation	Select from: • Relevant, always included • Relevant, sometimes included • Relevant, not included • Not relevant, included • Not relevant, explanation provided • Not evaluated	Text field [maximum 2,500 characters]
Emerging regulation		
Technology		
Legal		
Market		
Reputation		
Acute physical		
Chronic physical		

EXAMPLE: IDENTIFYING TRANSITION RISK TYPES

Market	Relevant, always included	One of the transition risk that C.P. Group considered when assess our climate-related risk analysis is Market risk. Market related risks such as change in customer behavior towards low carbon products, reduced market demand for higher carbon products and services, increased demand for energy-efficient and lower-carbon products and services, if we fail to meet consumer new behavior, trend and expectation toward low carbon consumption, we might face impact to our overall business performance and financial impact including decrease in total revenue, increase in cost of raw material, decrease in reputation and trust.
Reputation	Relevant, always included	There are growing expectation from stakeholders on climate responsibility and awareness on climate issues, therefore, the risk from reputation is also considered when assessed the group's climate-related risks. C.P. Group's reputation and branding are our valuable assets. Therefore, it is important for C.P. Group to take the lead and and actions on climate change issues, as a private sector company of manufacturing and services, we are aware of our role in the GHG emissions reduction and recognizes that it has a responsibility to tackle problems posed by climate change. Moreover, by recognizing the urgency of the climate crisis, C.P. Group joined "Caring for Climate "initiatives, UN "Race to Zero" campaign and signed "Business Ambition for 1.5°C Commitment Letter", as well as, submit our Science Based Targets (SBT) to ensure the strongest ambition and align with trajectories that lead to net-zero value chain emissions by 2050, in line with the criteria and recommendations of the Science Based Targets initiative (SBTi). Furthermore, we also dedicated to become Carbon Neutral Organization by setting "Net Zero" goal by 2030 in the organization (Scope 1 + Scope 2) by reducing greenhouse gases emissions, promoting renewable energy programs, encouraging all employees, stakeholders and business partners to join for carbon emission reduction programs, in order to continuously minimize the carbon emission from the organization. Failure to deliver or achieve the targets might damage the corporate reputation and trust as a sustainable business, therefore, we have set strong KPIs, strategies and plans in order to achieve those ambitious goals.

Charoen Pokphand Group, Climate Change Response, 2021

Market risk: identified changing customer behaviour towards low-carbon products, and reduced demand for higher carbon products and services.

Reputation risk: identified growing expectation from stakeholders on climate responsibility and awareness on climate issues.

EXAMPLE: IDENTIFYING PHYSCIAL RISK TYPES

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Acute physical	Relevant, sometimes included	Acute physical risk arises through various events, such as increasing severity and/or frequency of severe weather. There are two potential impacts on HSBC: 1) Indirect impact on HSBC – via our customers For example, hurricane damage to a customer's warehouse halts manufacturing and leaves them unable to repay their loan. Alternatively, the cost of flood damage to a customers home leaves them unable to repay their mortgage. This is relevant for HSBC as this may impact a client's ability to repay debt, leading to increased credit risk. Credit risk is the risk of financial loss if a customer or counterparty fails to meet an obligation under a contract. Acute physical risk is included within climate risk assessments through the transition risk questionnaire process, for relevant wholesale sectors. In addition, to help understand the level of climate risk within our retail mortgage portfolio, we focused our financial risk assessment on the UK and Hong Kong mortgage portfolios, which together account for approximately 65% of our retail mortgage portfolio, as of November 2020. At an aggregate level, the overall impact from climate risk across our Hong Kong and UK residential real estate portfolios is expected to be limited in all scenarios stress tested as part of the pilot exercise, although the hot house scenarios show the largest relative impact. See our TCFD Update for further information on scenarios used. and the nature of the pilot exercise undertaken. In our TCFD Update 2020 we illustrate that acute physical risk may manifest through wholesale credit risk in the short to long term, and retail credit risk in the medium to long term. 2) Direct impact on HSBC: For example, one of our data centres is flooded and we are unable to service customers leading to a resilience incident. We have a large global footprint, with a network that covers 64 countries and territories and more than 200,000 employees. It is therefore critical that we understand the potential for business disruption caused by climate change to ensure that we can adapt and increase our resilience where appropriate. In the fourth quarter of 2020, we worked with external climate consultants to assess the physical impact of forward-looking climate scenarios on 97 of our most critical properties. In our TCFD Update 2020 we illustrate that acute physical risk may manifest through resilience risk in the short to long term.

Acute physical risk:
Indirect: via customers, for example, hurricane damage to customer warehouses halts manufacturing and leaves them unable to pay loans

Direct: data centres are flooded and unable to service customers leading to a resilience incident

HSBC plc, Climate Change Response, 2021

TCFD RISK MANAGEMENT: ASSESSING PORTFOLIO RISKS & OPPORTUNITIES

DISCLOSURE INSIGHT ACTION

RISK MANAGEMENT:
Recommended disclosures

a) Describe the organization's processes for identifying and assessing climate-related risks.

(C-FS2.2b) Do you assess your portfolio's exposure to climate-related risks and opportunities?

Question dependencies

- This question only appears if you select "Yes" in response to C2.1.
- Rows in this question will be presented according to the activities reported in C-FS0.7.

Change from last year

Modified question

Connection to other frameworks

TCFD

Risk management recommended disclosure a) Describe your organization's processes for identifying and assessing climate-related risks.

Response options

Please complete the following fixed row table.

(*column/row appearance is dependent on selections in this or other questions)

Portfolio*	We assess the portfolio's exposure	Explain why your portfolio's exposure is not assessed and your plans to address this in the future*
Banking (Bank)	Select from: • Yes • No, but we plan to in the next two years • No, and we do not plan to in the next two years	Text field [maximum 2,500 characters]
Investing (Asset manager)		
Investing (Asset owner)		
Insurance underwriting (Insurance company)		

EXAMPLE: ASSESSING PORTFOLIO RISKS & OPPORTUNITIES FOR BANKS & ASSET MANAGERS

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Bank lending (Bank):

- Climate scenario analysis
- Stress testing (top-down & bottom-up approach)
- Joined UNEP FI TCFD banking pilot

(C-FS2.2b) Do you assess your portfolio's exposure to climate-related risks and opportunities?

	We assess the portfolio's exposure	Please explain
Bank lending (Bank)	Yes	UBS manages climate risks in our own operations, balance sheet, client assets and supply chain. We are embedding climate risk into the UBS risk appetite framework and operational risk appetite statement. In 2020, we further integrated climate risk in risk identification, management stress testing methodology and reporting processes across the organization. In 2020, we also refined our ability to estimate the firm's vulnerability to climate-related risks using forward-looking scenario-based approaches, and developed a climate transition risk heatmap. We have been using scenario-based approaches since 2014 to assess our exposure to physical and transition risks associated with climate change. We have performed both top-down balance sheet stress testing (across the firm), as well as targeted, bottom-up analysis of specific sector exposures in short, mid-, and long-term horizons. From both top-down and bottom-up approaches, our internal stress tests suggested no immediate threat to UBS's balance sheet. UBS has partnered with 35+ banks and the greater scientific community in the context of the UNEP FI TCFD banking pilot since 2018 to translate 1.5 and 2 degree climate scenarios, which contain technology risk factors, into impacts in specific sectors and subsequently impacts on bank balance sheets (loan books in such sectors). In its second phase, the UNEP FI TCFD banking pilot expanded the development of analytical tools to include a range of possible scenarios, further advanced on scenario-based stress testing methodologies, and standardization between institutions on what defines climate-sensitive activities. In the third phase of the pilot project our objective is to develop analytical tools to help banks define and disclose climate-related risks and opportunities, as recommended by the TCFD. This includes developing and standardizing how we quantify climate-related risks, addressing data gaps in the process, including Paris-aligned scenarios, and further refining scenario-based stress-testing methodologies. As part of the PACTA pilot, we studied the alignment of select climate-sensitive sectors in our corporate credit portfolio with Paris Agreement benchmarks. The methodology provides an assessment of a bank's credit-financed activities in relation to the global shift to a low-carbon economy.

Investing (Asset manager)	Yes	We believe that Sustainable and Impact Investing can protect and enhance the value of our clients' investments by adding value to portfolios within the same risk /return profile. Sustainable investing is grounded in the broader use of material ESG information in the investment analysis process and the belief that such information will lead to better informed investment decisions. By identifying long-term investment opportunities, anticipating and managing financially material risks, engaging with corporate management, and creating products and services that take into account ESG factors, we believe companies will be more successful and our investments will positively impact society and the environment. Our Sustainable and Impact Investing strategy is overseen by an Executive Management Committee comprised of senior leaders across the business. The committee addresses a range of topics including our response to climate change. Our Sustainable Investment Research Analysts work with our portfolio managers (specifically across our equity platform) to assess and manage climate-related risks. The team has developed the capability for equity portfolio managers to examine the carbon footprint of their portfolios and comparing the relative carbon footprints of their company holdings to that of the benchmark. Carbon emissions data is also made available to all equity portfolio managers through the Portfolio Optimization Platform, which allows portfolio managers and analysts to download carbon and carbon intensity data on over 6,000 companies. Moreover, the Sustainable Investment Research analysts and investment analyst work together to engage with companies on behalf of clients to discuss approaches to mitigating climate change risk, as well as actively voting on shareholder resolutions to improve transparency and disclosure around climate-related reporting. This includes participation in the global Climate Action 100+ collaboration. Solar power, battery storage, electric vehicle charging stations, climate change measurement, social value measurement, resilience, health and smart building technologies are all initiatives of the Real Estate and Private Markets (REPM) Management Committee Global Sustainability Workgroup that have been incorporated into our investment process. As a result, REPM has reduced its carbon footprint by 19.4% over the past five years.

UBS, Climate Change Response, 2021

Investing (Asset manager):

- Create products & services with ESG factors
- Develop capacity for equity portfolio managers
- Carbon emissions database with intensity data from 6,000 companies
- Shareholder voting to improve climate reporting

EXAMPLE: ASSESSING PORTFOLIO RISKS & OPPORTUNITIES FOR INSURANCE COMPANIES

Insurance underwriting (Insurance company)	Yes	Initial results identifying portfolio exposure are provided by our annual climate risk assessment, scenario analysis and issues highlighted via our sustainability risk framework. These results allow us to perform deep-dive analysis for the most relevant portfolio exposures. Also, we have purchased external data that allows us to identify the carbon footprints of commercial customers, to assess their relative contribution in our portfolio. For physical risks, exposure of relevant perils such as windstorms, river floods, tornadoes and hailstorms, are modeled by our catastrophe modeling team, using vendor models, modified to our own requirements. The Group models exposures in a center of excellence. The risk modeling principally addresses climate-induced perils such as windstorms, river floods, tornadoes and hailstorms and geologically induced perils such as earthquakes. Potential gaps are addressed as part of Zurich's model validation process and the 'Zurich View' approach that provides uplifts for impacts we consider under-represented in the standard models. The Zurich View also underpins profitability assessment & strategic capacity allocation & guides the type & quantity of reinsurance Zurich buys. Zurich's reinsurance purchases protect the company's balance sheet from large natural catastrophe impacts & support earnings volatility management. As catastrophe models are typically based on historical data and hence backward looking, the ability to account for potential future changes gives additional importance to the Zurich View when modeling climate risks. The development of the Zurich View leverages both internal & external expertise. One such source of external knowledge is the Advisory Council for Catastrophes that provides insights into the patterns of occurrence, predictability & destructiveness of catastrophes & gives feedback about Zurich's approach to such catastrophes. For transition risk, exposure is determined more by industry sector, with carbon intensive sectors such as mining or power generation showing elevated risks. For example, Zurich's exposure to coal companies was identified as particularly high transition risk based on their carbon intensity and reputational risks. The use of external data on coal production data of individual companies then allowed us to identify relevant companies and take action in line with our coal policy.

Zurich Insurance Group, Climate Change Response, 2021

Insurance underwriting (Insurance company):

- Create products & services with ESG factors
- Develop capacity for equity portfolio managers
- Carbon emissions database with intensity data from 6,000 companies
- Shareholder voting to improve climate reporting

TCFD RISK MANAGEMENT: DESCRIBING PORTFOLIO RISKS & OPPORTUNITIES

DISCLOSURE INSIGHT ACTION

RISK MANAGEMENT: Recommended disclosures

a) Describe the organization's processes for identifying and assessing climate-related risks.

(C-FS2.2c) Describe how you assess your portfolio's exposure to climate-related risks and opportunities.

Question dependencies

This question only appears if you selected "Yes" to any of the activities listed in C-FS2.2b. A row will appear in this table for each portfolio for which you selected "Yes" in column 2 of question C-FS2.2b.

Change from last year

Modified question

Rationale

The TCFD recommendations highlight the importance of the financial services sector considering the potential impacts of climate-related risks and opportunities in the context of their financing activities. When evaluating exposure to climate-related risks and opportunities, organizations in the financial sector should primarily consider the potential impact on their financial portfolios including lending, financial intermediary, investment and/or insurance underwriting activities.

Connection to other frameworks

TCFD

Risk management recommended disclosure a) Describe your organization's processes for identifying and assessing climate-related risks.

Response options

Please complete the following table.

(*column/row appearance is dependent on selections in this or other questions)

Portfolio*	Type of risk management process	Proportion of portfolio covered by risk management process	Type of assessment	Time horizon(s) covered	Tools and m
Banking (Bank)	Select from: • Integrated into multi-disciplinary company-wide risk management process • A specific climate-related risk management process	Percentage field [enter a percentage from 0-100]	Select from: • Qualitative only • Quantitative only • Qualitative and quantitative	Select all that apply: • Short-term • Medium-term • Long-term • Not defined	Select all tha • UNEP FI Analysis Tc • UNEP FI Analysis Tc • 2DII Pari Capital Trai Assessmer • The Trar Initiative (T • 2 Degree • Portfolic alignment

EXAMPLE: DESCRIBING PORTFOLIO RISKS & OPPORTUNITIES

CDP
DISCLOSURE INSIGHT ACTION

Stress testing on three scenarios:

1) Orderly transition – temperature increases kept below 2C, meeting the Paris Agreement
2) Disorderly transition – temperature increases kept below 2C but with delayed and sudden policies
3) Failure to meet Paris Agreement - temperature increases in excess of 4C assuming no transition and a continuation of current policy trends

	Portfolio coverage	Assessment type	Description
Bank lending (Bank)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Investing (Asset manager)	All of the portfolio	Qualitative and quantitative	During 2020, the Group undertook a stress testing exercise based on the three scenarios laid out within the PRA Insurance Stress Tests: orderly transition (temperature increases kept below 2°C , meeting the Paris Agreement); disorderly transition (temperature increases kept below 2°C but with delayed and sudden policies); and failure to meet the Paris Agreement (specifically, reaching a temperature increase in excess of 4°C assuming no transition and a continuation of current policy trends), with a time horizon up to 2100. Portfolio coverage: The Group's entire asset portfolio was included, and the testing included the impact of physical and transition risk on the asset portfolio for the chosen scenarios. The impacts of climate change on insurance liabilities were also investigated. These stress tests have informed discussions on how to assess the Group's business objectives and strategy and have provided further insight into the capabilities and data required for future stress modelling. These analyses have also been complemented by reviewing alternative scenario testing methodologies using tools provided by specialist vendors or open solutions. The Group is continuing to explore and develop its scenario analysis approach, including investigating the use of the Group's economic capital model, and ultimately formalise the process for conducting sophisticated climate scenario analysis as part of the Group's risk management frameworks. During 2020 and into 2021, the focus will now be how to continue to effectively develop and advance our approach to assessing portfolio exposure to climate-change risk across our asset owner and asset manager business in a combined manner. Description of the tools used to assess the portfolio's exposure to climate-related risks and opportunities: The methodology used to measure the portfolio's exposure to climate-related risks is dependent on asset type. For example: Listed equities: Our Asian asset manager, Eastspring, has taken the lead across the Group in starting to measure and interpret the carbon footprint for listed equities in sample portfolios. This tool allows us to assess the carbon footprint of the portfolio constituents compared to historical constituents, the carbon efficiency of the portfolio, the exposure of a portfolio to fossil fuels, potential emissions from fossil fuels, the strength of carbon risk management relative to industry peers and a portfolio's exposure to clean technology. The carbon footprinting tool is also used across the business to understand the carbon footprint of our listed equity portfolios.

Prudential plc, Climate Change Response, 2021

TCFD RISK MANAGEMENT: CONSIDERING CLIMATE INFORMATION IN CLIENT/INVESTEE DUE DILIGENCE

CDP
DISCLOSURE INSIGHT ACTION

RISK MANAGEMENT:
Recommended disclosures

a) Describe the organization's processes for identifying and assessing climate-related risks.

b) Describe the organization's processes for managing climate related risks.

(C-FS2.2d) Does your organization consider climate-related information about your clients/investees as part of your due diligence and/or risk assessment process?

Question dependencies
Rows in this question will be presented according to the organizational activities reported in C-FS0.7. This question is not shown if "Insurance underwriting (Insurance company)" is the ONLY selection in C1 of C-FS0.7 and "Life and/or health" is the ONLY section in C2 of C-FS0.7.

Change from last year
Modified question (2021 C-FS2.2f)

Rationale
Considering climate-related information about clients/investees in the initial phases of risk assessment and/or as part of your due diligence process helps investors and organizations in the financial sector better understand their value chain's exposure to climate-related risks and opportunities.

Connection to other frameworks

TCFD

Risk management recommended disclosure a) Describe your organization's processes for identifying and assessing climate-related risks.

Risk management recommended disclosure b) Describe the organization's processes for managing climate-related risks.

Response options
Please complete the following table:

(*column/row appearance is dependent on selections in this or other questions)

Portfolio*	We consider climate-related information	Explain why you do not consider climate-related information and your plans to address this in the future
Banking (Bank)	Select from: • Yes • No, but we plan to do so in the next two years • No, and we do not plan to in the next two years	Text field [maximum 2,500 characters]
Investing (Asset manager)		
Investing (Asset owner)		
Insurance underwriting (Insurance company)		

EXAMPLE: CONSIDERING CLIMATE INFORMATION IN CLIENT/INVESTEE DUE DILIGENCE

CDP
DISCLOSURE INSIGHT ACTION

Banking lending:

- 22 specific credit & rating policies that contain ESG criteria and some climate-related criteria
- KYC process: business lines conduct CSR screening for all corporate clients active in one of the 10 sectors

(C-FS2.2f) Do you request climate-related information from your clients/investees as part of your due diligence and/or risk assessment practices?

	We request climate-related information	Please explain
Bank lending (Bank)	Yes	BNP Paribas has launched multiple initiatives to integrate climate risks into its risk management system (as disclosed in C-FS2.2c). In particular, 22 specific credit and rating policies now contain ESG criteria, including some climate-related criteria. In addition, as part of Know Your Client processes, its business lines conduct CSR screening for all corporate clients active in one of the 10 sectors (as defined by the CSR screening procedure). The purpose is to identify clients that present an ESG risk profile that may warrant additional due diligence to be performed, and in some cases by engaging with the clients. Where applicable, CSR Function review the assessment made by the business line. In 2020, the Group's CSR teams were asked to give an expert opinion in the assessment of ESG risks for 2,500 complex and/ or sensitive transactions related in particular to financing, new accounts, export support, and other matters, compared to 2,340 transactions the previous year.
Investing (Asset manager)	Yes	In line with its climate change strategy, BNP Paribas Asset Management adapted its Governance and Proxy voting Policy. It stipulates that: • We will vote "abstain" on the financial statements, discharge or director elections when the company does not report properly on its carbon footprint (scope 1 and 2), does not communicate, or does not want to engage with us in relation to its business strategy to mitigate and adapt to climate change. • We will vote in favour of value-enhancing resolutions which ask companies to reduce their greenhouse gas emissions in alignment with a target maximum 2°C global warming and will also file resolutions asking them to stop lobbying against any policy designed to achieve this. • We will indicate, in advance, a willingness to vote in favour of resolutions requesting disclosure on low-carbon compliant business plans.
Investing (Asset owner)	Yes	For the non-financial analysis of its investments, BNP Paribas Cardif collects specific ESG data (including climate-related information when relevant) for each asset class. It then analyses this data and includes it in the filtering processes for the investment universe. In addition, before integrating a new vehicle within the united-linked vehicle range, BNP Paribas Cardif questions the asset management company on ESG-Climate issues via a due diligence questionnaire.
Insurance underwriting (Insurance company)	Not applicable	BNP Paribas Cardif's two main products are life insurance and credit protection insurance.
Other products and services, please specify	Not applicable	Other products not relevant

BNP Paribas, Climate Change Response, 2021

TCFD RISK MANAGEMENT: TYPE OF CLIMATE INFORMATION IN CLIENT/INVESTEE DUE DILIGENCE

CDP
DISCLOSURE INSIGHT ACTION

RISK MANAGEMENT:
Recommended disclosures

a) Describe the organization's processes for identifying and assessing climate-related risks.

b) Describe the organization's processes for managing climate related risks.

(C-FS2.2e) Indicate the climate-related information your organization considers about clients/investees as part of your due diligence and/or risk assessment process, and how this influences decision-making.

Question dependencies
This question appears if "Yes" is selected in any row in C-FS2.2d. A row will appear if "Yes" is selected in the corresponding row in C-FS2.2d.

Change from last year
New question

Rationale
Considering climate-related information about clients/investees in the initial phases of risk assessment and/or as part of your due diligence process helps investors and organizations in the financial sector better understand their value chain's exposure to climate-related risks and opportunities. Data users are interested in what information financial institutions consider, about which clients/investees, and whether that is enough for them to make informed lending, investment and/or insurance underwriting decisions and thus mitigate climate-related risks within their portfolio.

Connection to other frameworks

TCFD

Risk management recommended disclosure a) Describe your organization's processes for identifying and assessing climate-related risks.

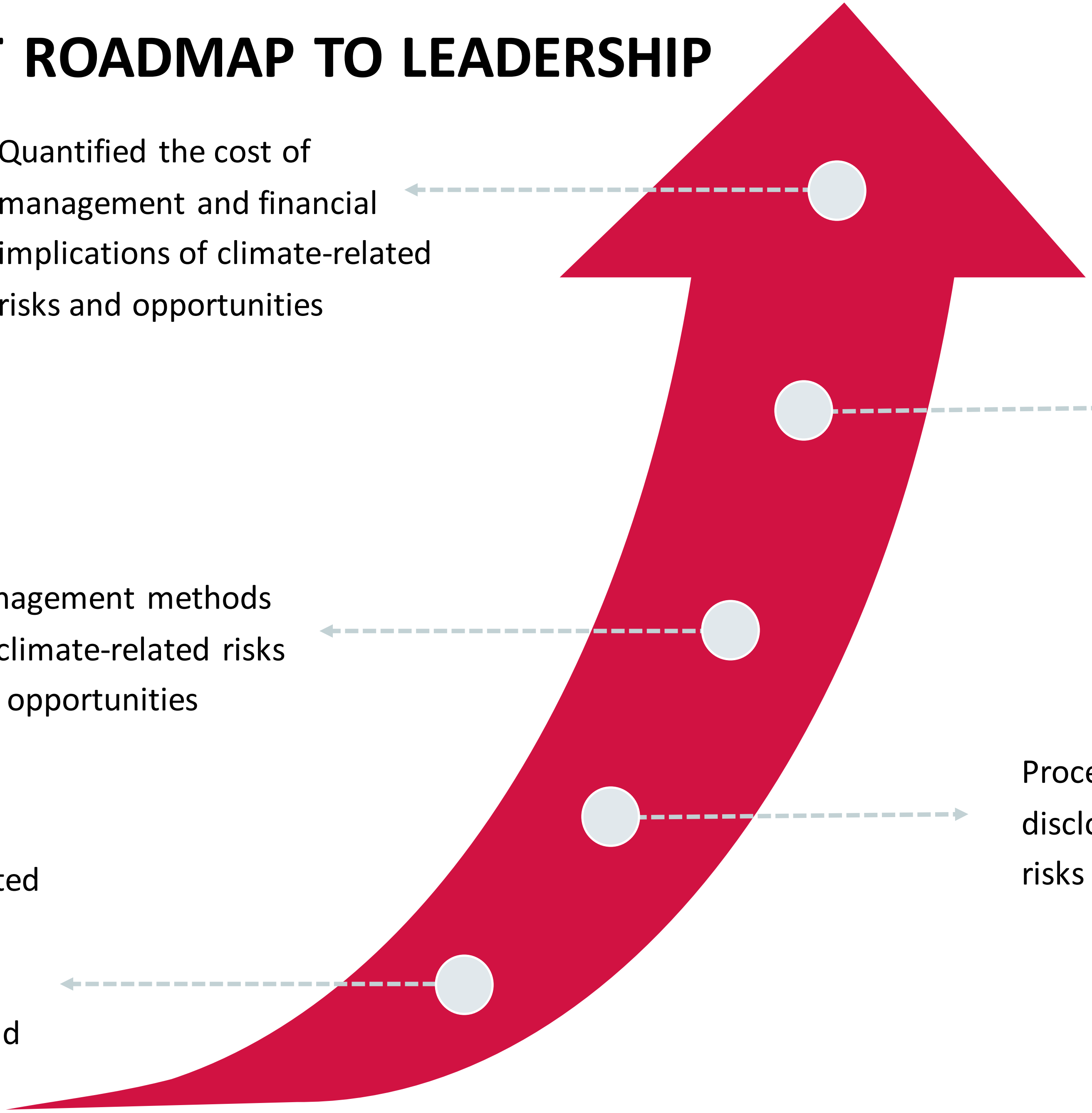
Risk management recommended disclosure b) Describe the organization's processes for managing climate-related risks.

Response options
Please complete the following table. You are able to add rows by using the "Add another" button at the bottom of the table.

(*column/row appearance is dependent on selections in this or other questions)

Portfolio*	Type of climate-related information considered	Process through which information is obtained	Industry sector(s) covered by due diligence and/or risk assessment process	State how this climate-related information influences your decision-making
Select from: • Banking (Bank) • Investing (asset manager) • Investing (asset owner) • Insurance underwriting (Insurance company)	Select all that apply: • Emissions data • Energy usage data • Emissions reduction targets • Climate transition plans • TCFD disclosures • Other, please specify	Select all that apply: • Directly from the client/investee • From an intermediary or business partner • Data provider • Public data sources • Other, please specify	Select all that apply: • Energy • Materials • Capital Goods • Commercial & Professional Services • Transportation • Automobiles & Components • Consumer Durables & Apparel • Consumer Services • Retailing • Food & Staples Retailing • Food, Beverage & Tobacco	Text field [maximum 2,500 characters]

RISK MANAGEMENT ROADMAP TO LEADERSHIP



Quantified the cost of management and financial implications of climate-related risks and opportunities

Holistic and comprehensive approach to climate-risk assessment

Management methods for climate-related risks and opportunities

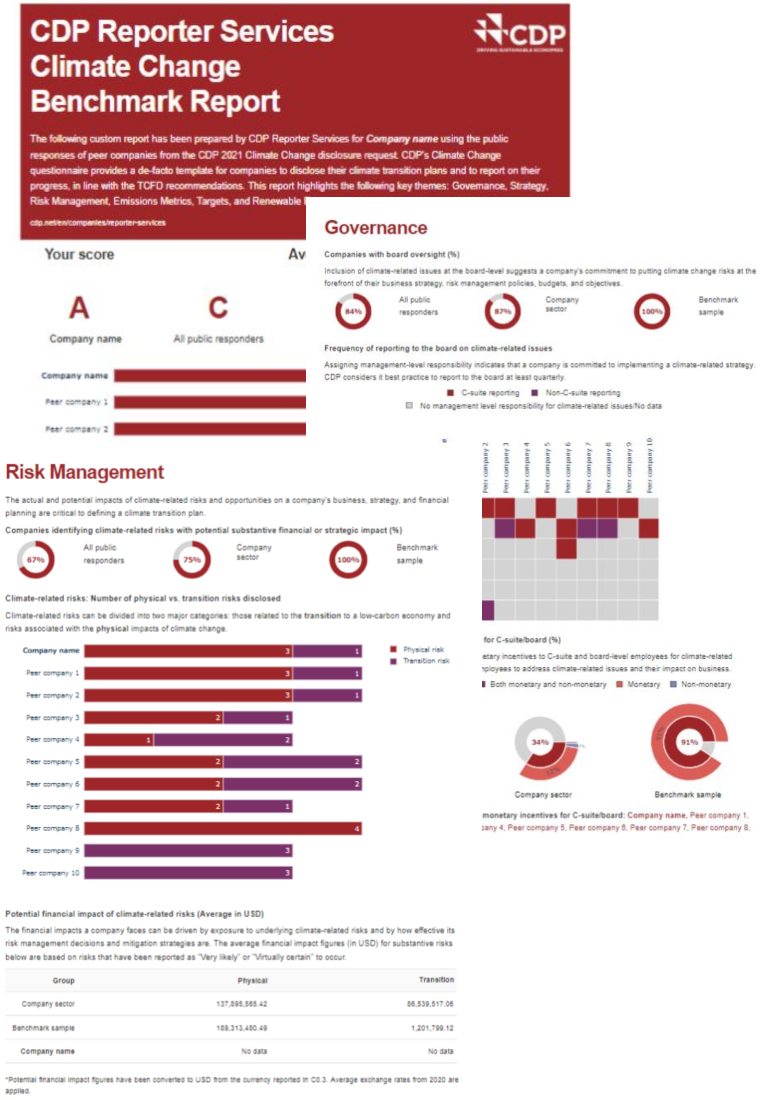
Process in place and disclosure on climate-related risks and opportunities

Limited or undocumented process for identifying, assessing, or managing climate-related risks and opportunities

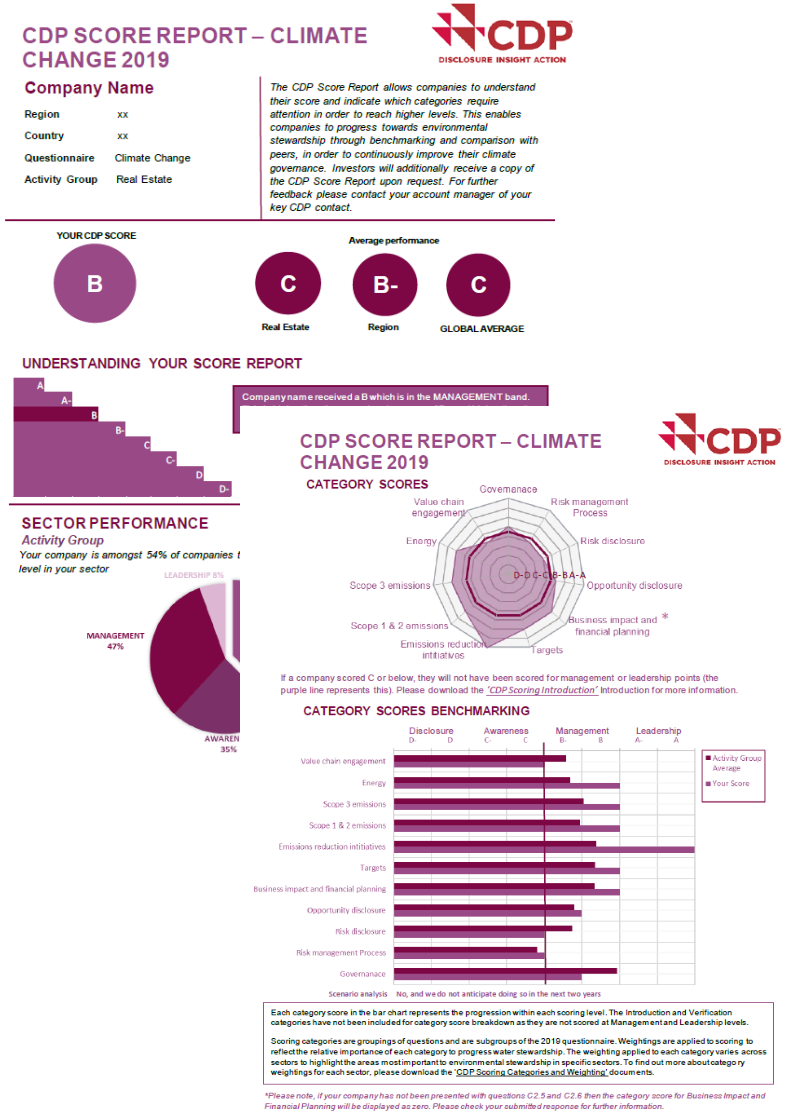
GET FEEDBACK FROM CDP AND IMPROVE

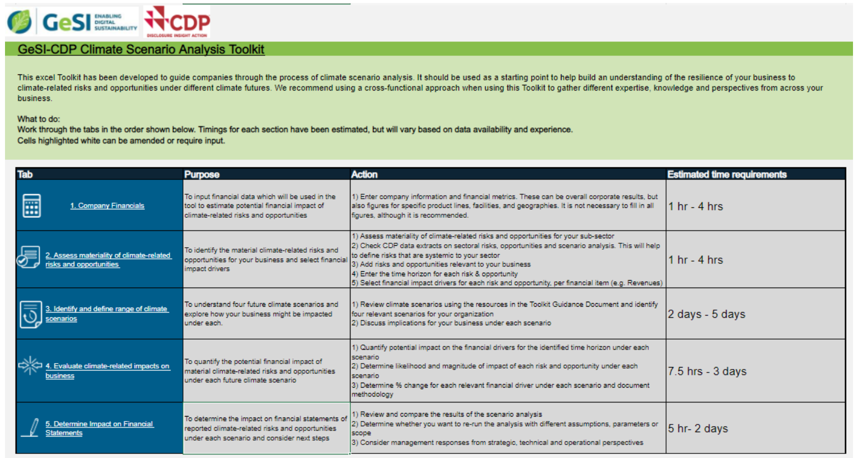
CDP DISCLOSURE INSIGHT ACTION

Benchmark Reports



Score Reports

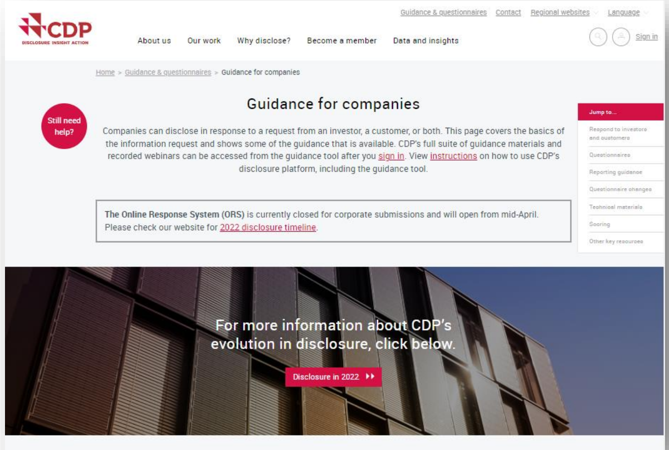




Other products & services:

- Gap analysis
- Scenario analysis toolkit
- Supply chain & banks programme (measure & manage Scope 3 emissions)

RESOURCES

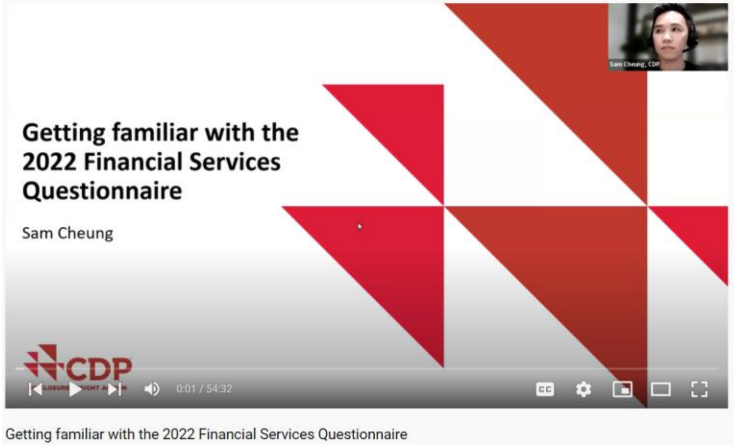


[CDP Climate Change Questionnaire]

[CDP Climate Change Reporting Guidance]

CDP Technical Notes:

- [Financial Services]
- [TCFD]
- [Transition Plans]

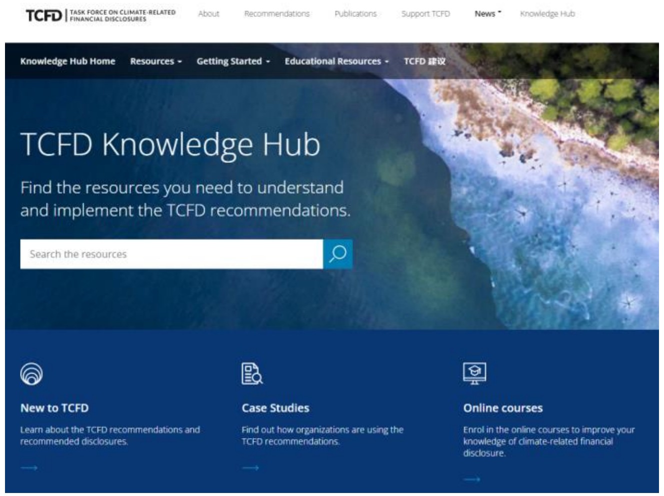


CDP Capacity Building Webinars:

- [Beginner] & [Climate Change]

CDP Capacity Building Webinars for Financial Services:

- [CDP Financial Services Questionnaire]
- [Financed emissions & science-based targets for financial institutions]
- [Natural capital assessment and disclosure]
- [CDP data]



[Free Online TCFD Courses]

Thank you

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