Basel Committee
on Banking Supervision

Climate-related financial risks: a survey on current initiatives

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Introduction

Climate-related financial risks refer to the set of potential risks that may result from climate change and that could potentially impact the safety and soundness of individual financial institutions and have broader financial stability implications for the banking system. These risks are typically classified as physical and transition risks. Physical impacts include the potential economic costs and financial losses resulting from the increasing severity and frequency of extreme climate-change related events, and longer-term progressive shifts in the cliate. Transition impacts relate to the process of adjusting to a low-carbon economy.

The Basel Committee on Banking Supervision recently established a high-level Task Force on Climate-related Financial Risks (TFCR). The TFCR is charged with contributing to the Committee's mandate of enhancing global financial stability by undertaking the following initial initiatives on climate-related financial risks:

- a stocktake of members' existing regulatory and supervisory initiatives on climate-related financial risks;
- a set of analytical reports on climate-related financial risks, including a literature review, and reports on the transmission channels of such risks to the banking system as well as on measurement methodologies; and
- the development of effective supervisory practices in order to mitigate climate-related financial risks.

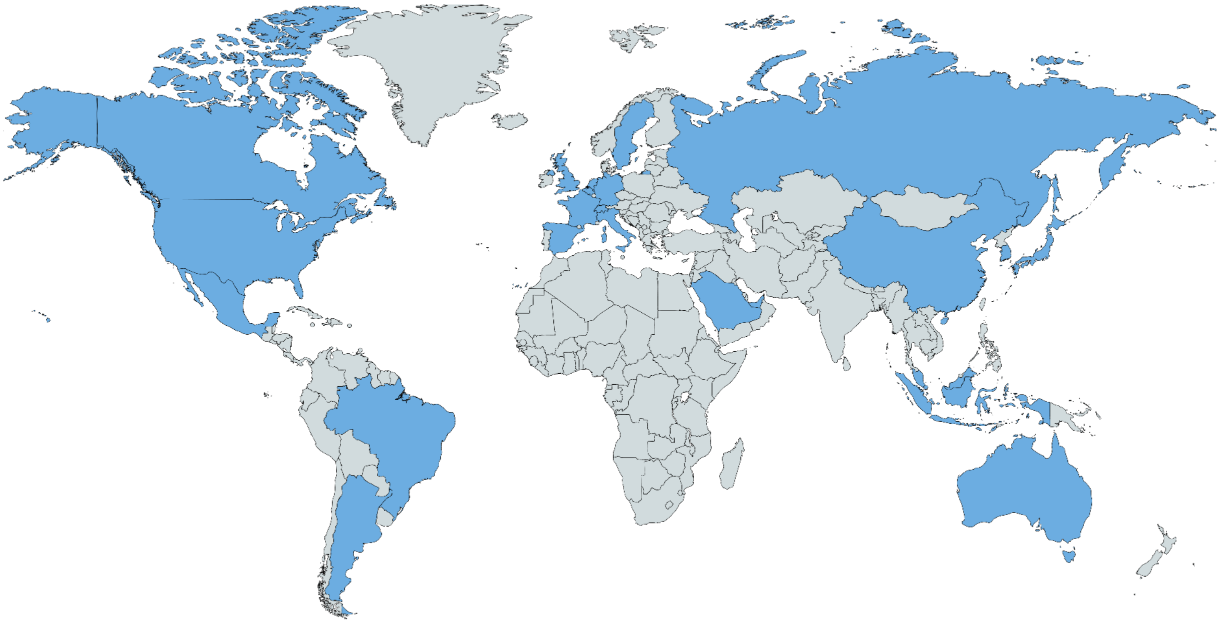
This report summarises the main results of the stocktake of members' initiatives on climate-related financial risks. In short, the survey suggests that:

- the majority of Basel Committee members consider it appropriate to address climate-related financial risks within their existing regulatory and supervisory frameworks;
- an overwhelmingly large share of members have conducted research related to the measurement of climate-related financial risks, while a number of members identified operational challenges in assessing climate-related financial risks such as data availability, methodological challenges, and difficulties in mapping of transmission channels. A majority of the members have raised risk awareness with banks through different channels, and many banks are disclosing information related to climate-related financial risks to some extent; and
- approximately two-fifths of members have issued, or are in process of issuing, more principles-based guidance regarding climate-related financial risks. However, the majority of members have not factored, or have not yet considered factoring, the mitigation of such risks into the prudential capital framework.

Responses to the stocktake

In total, responses to the stocktake were received from 27 members and observers, including the European Central Bank (ECB) and the European Banking Authority (EBA, See Figure 1 for the geographical range of the responses). The full list of members and observers that participated in the stocktake is set out in Annex 1.[1]

Figure 1: Respondents to the stocktake [(a)]



Sources: Basel Committee calculations and mapchart.net

(a) The ECB and the EBA also responded to the stocktake; the map includes BCBS jurisdictions from the European Union that responded to the stocktake.

Questionnaire

The stocktake sought responses from Basel Committee members on the following areas (see Annex 2 for the full set of questions):

- the role of climate-related financial risks in the regulatory and supervisory framework;
- research related to the measurement of climate-related financial risks;
- measures to raise awareness of climate-related financial risks among stakeholders;
- banks' approaches to managing and disclosing climate-related financial risks;
- the supervisory treatment of climate-related financial risks; and
- other initiatives that are underway among respondents.

The stocktake was conducted before the coronavirus disease pandemic, and the responses provided by members is correct as of February 2020.

1 Not all respondents answered all the questions, so the total number of respondents varies for each question/theme.

Results

This section summarises the main results of the stocktake themes outlined above. Since not all members responded to all questions, the number of respondents set out in the summary charts below vary by theme.

The role of climate-related financial risks in the regulatory and supervisory framework

The stocktake asked members whether climate-related financial risks are specifically designated in their regulatory and supervisory framework, and whether the mandate of their institution explicitly covers climate-related financial risks.

A large majority of respondents noted that they do not have an explicit mandate with regards to climate-related financial risks but indicated that such risks could potentially impact the safety and soundness of individual financial institutions and could pose potential financial stability concerns for the financial system. Accordingly, these respondents view it as appropriate to act within their existing mandate to mitigate climate-related financial risks. One respondent has a specifically designated mandate with regards to environmental, social and governance (ESG) risks, which include climate-related financial risks.

Most respondents considered climate-related financial risks to fall implicitly within their existing regulatory and supervisory framework, since the existing prudential framework requests banks to manage all risks of relevance, including climate-related financial risks. A few respondents were of the view that climate-related financial risks should, to the largest extent possible, be manifested or embedded into the existing risk categories (eg credit risk, operation risk, etc.), rather than be considered a new category of risk.

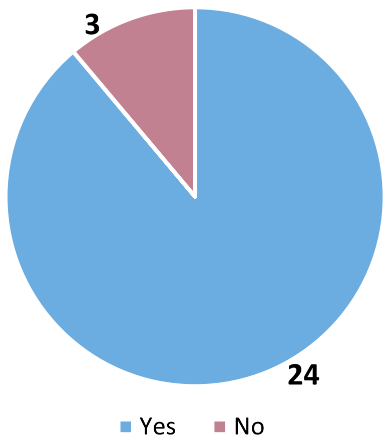
Research related to measurement of climate-related financial risks

All respondents noted that climate change may result in risks that could potentially have financial stability implications for the banking system. In total, 24 of the respondents reported that they have conducted research related to the measurement of financial risks related to climate change (Chart 1).

Respondents currently adopt varying approaches to assess climate-related financial risks. The most commonly used approaches include:

- qualitative studies on the transmission channels from climate change to financial risks and financial stability;
- quantitative estimation of the exposures of the financial sector to sectors or geographies that might be vulnerable to climate change; and
- scenario analysis and stress testing on climate-related financial risks.

Chart 1: Number of respondents who have conducted research on climate-related financial risks



Source: Basel Committee.

In addition, a few respondents use scorecards or heat maps to assess the materiality of specific physical or transition risks, and two jurisdictions reported that they are constructing key risk indicators to monitor risks related to climate change.

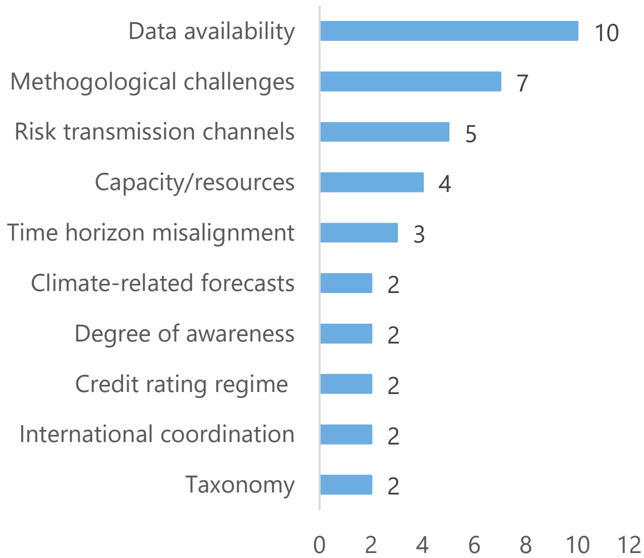
While no respondents reported specific barriers from a legal or enforcement perspective that prevent them from considering climate-related financial risks, 15 respondents identified operational challenges in developing a robust framework to assess climate-related financial risks (Chart 2). The most commonly cited challenges comprise the following:

- data availability: ten out of the 15 respondents highlighted the importance of bridging data gaps. They indicated that current data are not sufficiently granular or reliable to feed into the potential assessment models. Consistent emissions/climate-related data are needed across jurisdictions and across sectors to undertake further comparable risk analysis.
- methodological challenges: another key challenge identified by respondents is the lack of a harmonised and robust analytical framework for assessing climate-related financial risks. Several respondents highlighted the inherent uncertainties in quantifying the impact of climate change, which could be accentuated or mitigated depending on the speed and nature of innovations, political actions and environmental effects. Given the complexity involved in evaluations, the assessment techniques regarding climate-change financial risks are evolving and tend to be jurisdiction-specific. In addition, respondents were of the view that the assessment of climate-related financial risks should adopt a forward-looking approach, which further increases the difficulty of any risk assessment.
- difficulties in mapping of transmission channels: a handful of respondents mentioned the insufficient understanding in how climate change and the transition towards a low-carbon economy affect specific sectors, regions, markets and consequently the financial system. Broadly, the research on transmission channels between climate change and financial sectors is still nascent, and it is difficult to pinpoint how the risks could materialise.

Jurisdictions also mentioned other challenges, such as:

- a lack of capacity and human resources to identify and mitigate the risks appropriately;
- time horizon misalignments between the 'typical' horizon of banks' and supervisors' risk analyses and the longer-term climate forecast horizon;
- a lack of sufficiently granular and plausible forecasts related to climate change;
- varying degrees of awareness among jurisdictions and banks to address climate-related financial risks;
- a lack of a rigorous credit rating regime related to climate-related financial risks;
- the lack of internationally-coordinated actions on the management of climate-related financial risks; and
- a lack of a clear and widely accepted taxonomy regarding "green" and "brown" assets.

Chart 2: Challenges identified by number of jurisdictions



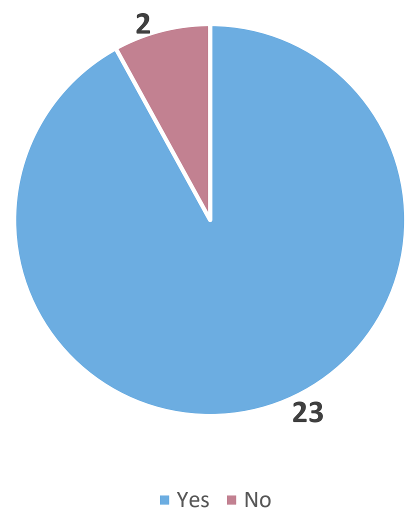
Source: Basel Committee.

Measures to raise awareness of climate-related financial risks among stakeholders

A majority of respondents have raised climate-related financial risks with banks through public channels. Only two jurisdictions responded that they have not raised climate-related financial risks with banks (Chart 3).

The most frequently used channels for public communications with banks on climate-related risks are conferences and meetings, and speeches (Chart 4). However, respondents also make use of a number of other channels as well.[2]

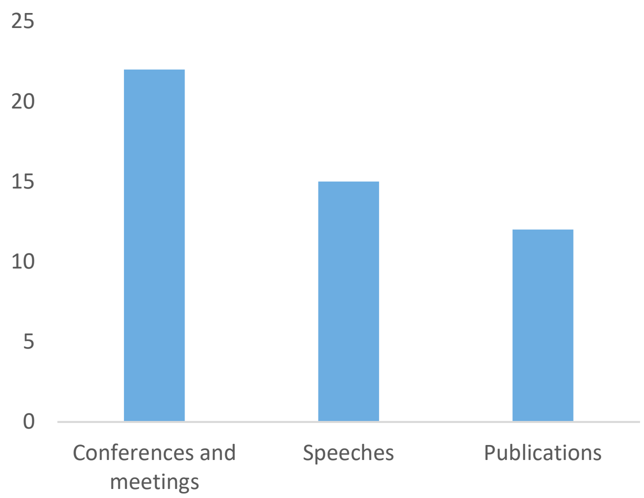
Chart 3: Number of jurisdictions that have raised climate change financial risks with banks[(a)]



Source: Basel Committee.

(a) For jurisdictions that answered relevant question in stocktake.

Chart 4: Most frequently used public channels among jurisdictions[(a)]



Source: Basel Committee.

(a) For jurisdictions that answered relevant question in stocktake.

Banks' approaches to managing and disclosing climate-related financial risks

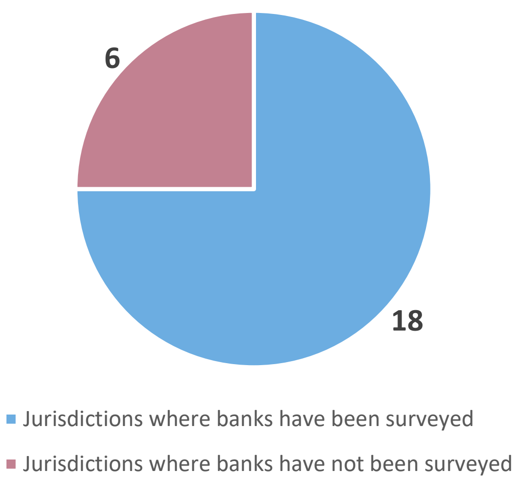
The stocktake asked respondents to provide information regarding the ways in which they survey banks' risk management of climate-related financial risks, and the disclosure by banks of such risks.

[2] See table 2 in Annex 1.

18 jurisdictions indicated that they have surveyed banks on climate-related financial risks at least once, while 6 jurisdictions mentioned that they have not (Chart 5).

Among the jurisdictions that have surveyed banks, approximately half of them noted that banks' approaches to the management of climate-related financial risks are at an early stage of development, and are therefore limited and evolving, with ample room for improvements. By and large, respondents noted that bigger banks are relatively more advanced in managing such risks compared to smaller banks. This is also the case with regards to banks' internal governance (eg the engagement of the board of directors and the involvement of senior management). Only a few of the jurisdictions mentioned that some of their banks perform stress testing of climate-related financial risks as part of their risk management process. In most of these cases, respondents noted that banks' models for stress testing are not sufficiently mature and are often hampered by a lack of relevant data.

Chart 5: Number of jurisdictions that have surveyed banks on climate-related financial risks[(a)]

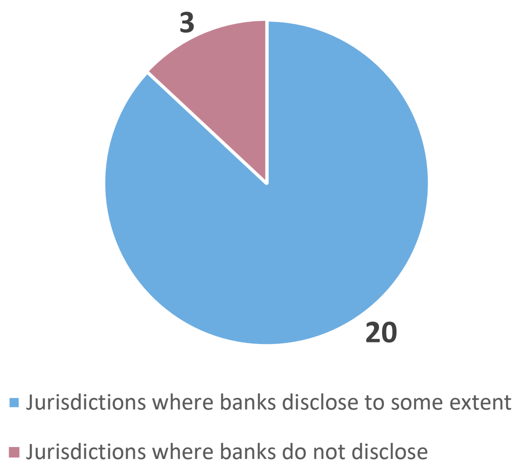


Source: Basel Committee.
(a) For jurisdictions that answered relevant question in stocktake.

In addition, respondents were asked if banks in their jurisdictions disclose or discuss climate-related financial risks publicly. 20 jurisdictions reported that their banks disclose such information to varying degrees, while 3 jurisdictions indicated that banks do not disclose such information (Chart 6).

Respondents highlighted a number of factors behind banks' climate-related financial risk disclosures. For example, banks may disclose such information in response to national legislations or on a voluntary basis as a part of their risk management process. A majority of respondents reported that these disclosures are currently made by banks on a voluntary basis, although some jurisdictions noted that they have implemented some relevant disclosure requirements in their national legislation. Almost half of the jurisdictions reported that banks' disclosure in this area is to a large extent based on the recommendations and framework for disclosure of climate-related financial risks published by the Task Force on Climate-related Financial Disclosures (TCFD), although the exact forms of disclosure seem to vary across banks. In some jurisdictions, the recommendations of the TCFD have been supplemented with non-binding guidelines. No jurisdictions reported that they provide a taxonomy to be used for disclosure by banks. Several European respondents noted that regulation related to banks' disclosures of climate-related financial risks is planned to come into force in 2022.

Chart 6: Number of jurisdictions in which banks disclose climate-related financial risks[(a)]

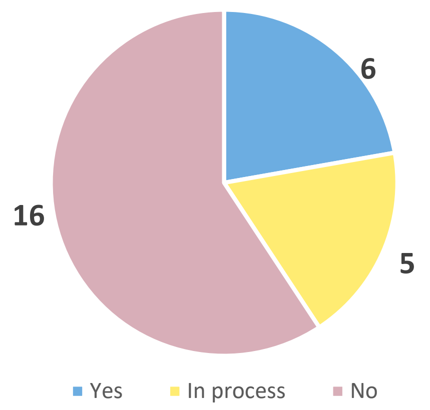


Source: Basel Committee.
(a) For jurisdictions that answered relevant question in stocktake.

Supervisory treatment of climate-related financial risks

The stocktake asked respondents whether they have issued dedicated supervisory guidance related to the governance, strategy and/or risk management of climate-related financial risks by banks. In total, approximately two-fifths of respondents reported that they have issued, or are in process of issuing, such guidance. Supervisory guidance is issued in the form of guidelines, action plans and supervisory statements, and they are not always legally binding rules, rather principle-based or interpretations of existing rules. From the guidance that has been issued or is in process of being developed, the following supervisory expectations can be observed:

Chart 7: Number of respondents who have issued supervisory guidance



Source: Basel Committee.

- outlining supervisory plans on deliverables and activities related to climate change risks;
- encouraging financial institutions to take actions in governance, risk management and disclosure of climate-related exposures and financial risks;
- providing guidance on how to properly integrate climate-related financial risks within risk management; and
- requiring banks to increase credit availability to ‘green’ and ‘low carbon’ sectors.

In addition to supervisory guidance, a few jurisdictions indicated that they are working on identifying ‘best practices’ to mitigate climate-related financial risks. Some of these initiatives are being conducted together with private-sector participants.

The majority of respondents have not yet factored, or considered factoring, the mitigation of climate-related financial risks into the prudential capital framework. Some jurisdictions indicated that authorities are still quite far from being able to quantitatively assess the climate-related financial risks in the context of capital. As such, they have no short-term plans to consider applying Pillar 1 or Pillar 2 requirements for climate-related financial risks. One jurisdiction mentioned that it may include these risks in its existing framework to the extent that these risks pose an impact to financial stability.

In terms of setting Pillar 1 capital requirement, only one respondent noted that it is required to evaluate by 2025, whether a dedicated prudential treatment of exposures related to assets or activities associated substantially with environmental and/or social objectives would be justified with aim to incorporate such approach into the prudential regulation of banks.

With regard to the potential application of Pillar 2 capital add-ons, several jurisdictions are of the view that the current Pillar 2 framework offers flexibility to address climate-related financial risks. Under Pillar 2, banks are required to develop the internal capital adequacy assessment process to capture all material risks that are not sufficiently covered under Pillar 1, and such risks would also include climate-related financial risks, if they are assessed to be material to the individual financial institution.

Four jurisdictions emphasised that prudential regulations must not be adjusted in order to accommodate other non-prudential objectives. For example, lowering capital requirements by introducing a “green” supporting factor in an effort to boost sustainable finance is inappropriate in the absence of empirical evidence showing that that “green” exposures carry lower financial risks than “non-green” ones.

In addition to capital requirements, two jurisdictions reported that they are considering the introduction of an explicit mandatory requirement for financial institutions to disclose information on material climate-related financial exposures and risks, if voluntary disclosure is not producing convincing results. European respondents reported that for large banks subject to their supervision, mandatory disclosure on ESG risks would come into effect in 2022 and become part of Pillar 3 requirements. One respondent mentioned that it has incorporated climate-related financial risks into its macroprudential framework by conducting an assessment of the banks' performance in providing credit to green sectors.

Other initiatives on climate-related financial risks and future work

Regarding other initiatives on climate-related financial risks pursued by members and observers, 17 jurisdictions indicated that they are pursuing additional work, which can be broadly divided into four different strands.

First, by and large one-third of the jurisdictions mentioned that participating in the work of the Network for Greening the Financial System (NGFS) continues to be a priority.

Second, roughly a third of the jurisdictions mentioned stress testing of climate-related financial risks as future potential work. In this context, stress testing has to be understood in a wide sense and includes developing key risk indicators and conducting sensitivity analysis.

Third, one jurisdiction stated that it is working to expand its sources of data available to researchers and to further collaborate with researchers and central banks in other jurisdictions.

Finally, a handful jurisdictions mentioned implementation and expansion of sustainable finance as a potential future work in their jurisdictions.

Annex 1: List of participating Basel Committee members and observers[a]

Jurisdiction	Institution
Argentina	Central Bank of Argentina
Australia	Australian Prudential Regulation Authority
Belgium	National Bank of Belgium
Brazil	Central Bank of Brazil
Canada	Office of the Superintendent of Financial Institutions
China	People's Bank of China China Banking and Insurance Regulatory Commission
European Banking Authority	
European Central Bank	
France	Banque de France Autorité de Contrôle Prudentiel et de Résolution
Germany	Bundesbank BaFin
Hong Kong	Hong Kong Monetary Authority
Indonesia	Bank Indonesia Otoritas Jasa Keuangan
Italy	Bank of Italy
Japan	Bank of Japan Financial Services Agency
Korea	Bank of Korea Financial Supervisory Service
Malaysia	Bank Negara Malaysia
Mexico	Banco de México National Banking and Securities Commission
Netherlands	De Nederlandsche Bank
Russia	Bank of Russia
Saudi Arabia	Saudi Arabian Monetary Authority
Singapore	Monetary Authority of Singapore
Spain	Banco de España
Sweden	Sveriges Riksbank Finansinspektionen
Switzerland	Swiss National Bank Swiss Financial Market Supervisory Authority
United Arab Emirates	Dubai Financial Services Authority[b]
United Kingdom	Bank of England Prudential Regulation Authority
United States	Federal Reserve Board Federal Reserve Bank of New York Federal Deposit Insurance Corporation Office of the Comptroller of the Currency

Source: BCBS stocktake

(a) In some of the jurisdictions, responses were provided from several different national authorities. In the analysis of the results of the stocktake in this note, these answers have been merged.

(b) In the capacity as Co-Chair of the Basel Consultative Group.

Annex 2: Stocktake questionnaire

The stocktake on members' regulatory and supervisory initiatives was comprised by eight questions related to the following themes:

- **Question 1**: the role of climate-related risks in the regulatory and supervisory framework;

  Are climate-related risks specifically designated in your regulatory and supervisory framework? Are they implicitly covered? If so, please describe the way in which such risks are reflected in your framework, giving citations where possible, and whether the mandate of your institution explicitly cover such risks. Are there specific challenges or barriers that prevent you from considering climate-related risks?

- **Question 2:** the measures taken to raise awareness of climate-related risks;

  Has your institution raised climate-related risks in discussions with banks and/or through public channels? If so, please describe the issues raised and the channels used.

- **Question 3:** research related to the measurement of climate-related risks;

  Has your institution conducted any research related to the measurement of financial risks related to climate change, including analytical tools and models to assess physical and transitional risks related to climate change at a micro- and macro-level? If so, please describe the research conducted (including the data sources used and analytical approaches) and a link to the work, if published.

- **Question 4:** banks' views on the impact of climate-related risks and their approaches to managing such risks;

  Have you surveyed banks on: (i) their views on the financial impact of climate-related risks; and (ii) how they manage such risks? If yes, please describe the main takeaways from this work, including: (i) the role of the board of directors in discussing climate-related risks; and (ii) the data and methodologies used by banks in modelling the impact of climate-related financial risks.

- **Question 5:** supervisory guidance / expectations related to banks' management of climate-related risks;

  Has your institution issued supervisory guidance related to the expected governance, strategy and/or risk management of climate-related risks by banks? If so, please describe the main elements of this guidance.

- **Question 6:** banks' disclosure of climate-related risk information;

  Do banks in your jurisdiction disclose or discuss climate-related financial risks (eg governance, strategy, risk management and/or metrics and targets)? If so, please describe the main elements of these disclosures. Are these disclosures voluntary or a result of supervisory expectations / requirements? Does your institution provide a taxonomy to be used for these disclosures?

- **Question 7:** current or planned consideration of climate-risk related initiatives with respect to the prudential framework;

  Has your institution factored, or considered factoring, the mitigation of climate-related risks into its prudential framework? If so, please describe how you have factored this mitigation.

- **Question 8**: other initiatives underway related to climate-related risks.

  What other initiatives are underway in your institution on climate-related risks?