Task Force on Climate-related Financial Disclosures (TCFD) Recommendations

Global Progress Report for the Banking Sector

October 2019

BCS CONSULTING

Expect Excellence

Foreword

Tackling climate change has become humanity's most pressing issue. Extreme weather events are increasing in frequency and intensity, with scientific research suggesting that it is extremely likely that human activity is the dominant cause. The realisation of this in communities, organisations and economies around the globe has already highlighted the need for the immediate action required to avert further crises and achieve the goals set out in the Paris Agreement.

The Task Force on Climate-related Financial Disclosures (TCFD) is a major facilitator towards these goals. The recommendations within the framework provide organisations with a blueprint on how to assess the risks and opportunities presented to them by climate change. Furthermore, it encourages – through transparency, commitment and collaboration – a timely and coordinated response to help drive the transition towards a lower-carbon, resource-conscious economy.

The TCFD disclosure framework is currently voluntary. Whilst there has been strong initial endorsement, there are calls to make the TCFD mandatory to accelerate adoption and drive faster and stronger action. The UK has shown leadership on this front in its recently published Green Finance Strategy, setting out its expectation for all listed companies and large asset owners to disclose in line with the TCFD recommendations by 2022. This announcement signals the intent of the UK government to make all organisations accountable for their climate impact, alongside being the first nation in the G7 to legislate for net-zero carbon emissions by 2050.

The finance sector has, perhaps, the most crucial role of all to play in the transition to a low-carbon economy. Financial flows need to be unleashed for this at a grand scale – to the tune of $1 trillion a year for the foreseeable future – to allocate capital to the infrastructure and technology developments required to mitigate risk, adapt and build resilience to climate change. The TCFD framework will help banks in this role by providing information to highlight where the opportunities lie.

This BCS Consulting report details the progress of the banking sector on the TCFD implementation journey. It provides an overview of how banks have responded to the challenge set-out by the Task Force, assesses the maturity of current disclosures, and outlines what work is still to be done. Yes, there are challenges ahead for banks to adhere to TCFD and fully implement its recommendations, which will require creativity, dedication and cross-sector partnerships; but the opportunities presented by getting this right to protect long-term natural and financial asset value and unlock the potential of economies around the globe are immense.

I hope that banks continue making rapid progress on this journey and that they keep developing their expertise, keep showing leadership and keep working collaboratively to embed TCFD within their organisations. I believe this can both bring huge benefits to individual companies and help create an economy that works both for society and the environment.

Sir Roger Gifford
Chair, UK Green Finance Institute
Senior Banker, SEB

Executive Summary

More than two years have passed since the Task Force on Climate-related Financial Disclosures (TCFD) released its final recommendations report. The TCFD framework aims to provide more standardisation on the disclosure of costs, opportunities and risks of climate change for organisations across the world. The implementation of the framework can support a more efficient allocation of capital to help mitigate the impact of climate change and build the infrastructure required for a future lower-carbon economy.

The purpose of this report is to provide a progress assessment on banking sector disclosures specifically[1], considering the critical role that banks need to play as enablers of capital to fund the transition to a low-carbon economy. With this objective in mind, the study considers the following questions and themes:

1) **Industry coverage:** What part of the banking market is endorsing the TCFD framework? How has this evolved over time? Which regions are leading?
2) **Maturity assessment:** How mature are the disclosures based on the recommendations of the framework? Which areas are most and least advanced? What are the key challenges?
3) **Key areas of focus and best practices:** What have been the most frequent initiatives disclosed by banks over the last two years in their TCFD disclosures? What is the current and future focus as evidenced by their commitments and current projects?

[1] See TCFD: 2019 Status Report (TCFD 2, 2019) for a global view across all industries. The TCFD status report uses artificial intelligence to support scanning of information given the volume of companies analysed.

Results summary

INDUSTRY COVERAGE

Overview

76
Banks have endorsed the TCFD recommendations, accounting for...
40%
of global banking assets

39
Banks have started disclosing on the TCFD framework, accounting for...
24%
of global banking assets

51% of the banks endorsing TCFD have over **$500 billion** assets

Leading Region: Europe

31
banks endorsing TCFD

85%
regional banking assets

MATURITY ASSESSMENT

MOST MATURE THEME
Environmental operational footprint metrics & targets:
64%
of banks disclosing in the advanced-intermediate stage

LEAST MATURE THEME
Carbon impact of banking services metrics & targets:
31%
of banks disclosing in the advanced-intermediate stage

Country Leader: France

82%
of banks disclosures in the advanced-intermediate state

KEY AREAS OF FOCUS AND BEST PRACTICES

Top Themes Referenced as Future Focus

Processes for risk identification and assessment
15%
of bank disclosures

Impact of scenarios on organisation
15%
of bank disclosures

Key findings

1) Industry coverage

- As of July 1st 2019, **76 banks endorse the TCFD framework, with a cumulative share of ~40% of global banking assets** ($59 trillion[2]). Of these banks, 39 have started to disclose on the TCFD framework (24% of global banking assets – $35 trillion).
- **The pace of new banks endorsing TCFD has slowed significantly in 2019.** Only 9 banks have endorsed in 2019 (as of July 1st) compared to 38 banks in 2017 and 29 banks in 2018. Global market share of banking assets covered by TCFD endorsement has grown only 10% since Q4 2017 (currently 40%).
- **The leading region in terms of endorsement and disclosure is Europe** – both in terms of number of banks endorsing the TCFD framework (31) and market coverage (85% of European banking assets).
- **Asia is the highest potential growth region for the TCFD framework** - currently with only 31% of the market endorsing whilst also being the largest banking market (by asset size).
- **51% of banks endorsing TCFD are large (greater than $500bn in assets).** Endorsement by additional top 75 largest banks[3] (28 are currently not endorsing TCFD) would increase the global market share of banking assets covered by ~19% to 59%.

2) Maturity assessment

Assessment of the TCFD recommendations progress:

- **Metrics and targets for greenhouse gas (GHG) emissions and related risks (environmental operational footprint) is the most mature recommendation[4]** with 64% of banks in the intermediate-advanced stage.
- Processes for identification, assessment and management of climate-related risk is the second most mature recommendation with more than 50% of banks disclosing in the intermediate-advanced stage.
- **Metrics and targets for the assessment of climate-related considerations (carbon impact of banking services) is the least mature recommendation** with only about a third of banks in the intermediate-advanced stage.

Key highlights per theme:

- **Scenario analysis, executive engagement and board engagement are still in initial stages of development.**
- **Banks are evidencing strong growth in the development of green products.**
- **There is evidence of significant effort to amend policies and review position statements to reflect climate change considerations.**

Country level assessment:

- **France, United Kingdom, Switzerland and Sweden have the highest % of bank disclosures in the intermediate-advanced maturity stage.**

[2] Market share based on total global banking assets estimate of $148 trillion (DBRS, 2019). Total banking assets for banks endorsing TCFD sourced from Relbanks (2018), annual accounts, and additional sources (see annexe a.).
[3] Top 75 as per 2018 S&P Global Market Intelligence Report (S&P, 2018).
[4] In other words, of all the TCFD recommendations, metrics & targets for GHG is the recommendation with the largest number of banks in the intermediate-advanced stage of disclosure.

3) Key areas of focus and best practices

- **Creation of executive committees and defining new roles** for climate change is the most referenced Governance-related disclosure (28% of Governance disclosures).
- **Impact of scenarios** is the most referenced disclosure in Strategy, although primarily as a forward-looking objective (just under 20% of Strategy disclosures).
- **Disclosures relating to processes for risk identification and assessment** is the highest referenced Risk Management activity (23% of Risk Management disclosures).
- **Metrics for assessment of risks and opportunities** is the most referenced Metrics and Targets disclosure (24% of Metrics and Targets disclosures), although again primarily as a forward-looking objective.
- **The top areas of future focus are processes for risk identification and assessment, and impact of scenarios on the organisation** - each with 15% of future disclosures.
- There are valuable best practice examples in all areas which banks can analyse to further enhance their consideration of climate-related risks and opportunities.

Examples of current industry best practices in TCFD disclosures

Through our assessment of over 200 sources this report provides a view on best practices associated to each of the four core principles of the TCFD framework. See section 2c for further examples of best practices within the industry.

TCFD Framework Area	TCFD Disclosure	Industry Best Practise (selected examples)
Governance	Disclosure 2: Describe the board's oversight and consideration of climate-related risks and opportunities.	**EBRD** Board provides approval of the Bank's Environmental and Social Policy (ESP) which covers both lending and internal operations. In addition, the EBRD's Board is routinely appraised of climate-related risks and opportunities at the project level through the inclusion of relevant information (for example, GHG emissions and climate resilience considerations).
Strategy	Disclosure 5: Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	**Deutsche Bank** has completed oil and gas, and electricity sector tests using the International Energy Agency new policy scenario and sustainable development scenario[5]. This information has been used to assess vulnerabilities in these carbon-intensive sectors and to evaluate diversification requirements in the portfolio.
Risk Management	Disclosures 6-8: Describe the processes for identifying, assessing, and managing climate-related risks and how they are integrated into the organisation's overall risk management.	**Nordea** has integrated ESG risks in the credit risk framework and enhanced credit risk policies and guidelines. ESG screening is integrated in the credit risk assessment of all transactions.
Metrics and Targets	Disclosure 10-11: Disclose the metrics and targets used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.	**Credit Suisse** measures balance sheet and credit risk-weighted assets across fossil fuel sectors. **Mizuho** includes a description of loan exposures to oil and gas, utilities and coal mining.

[5] International Energy Agency, 2019.

Recommendations summary by area of the TCFD framework:

Based on the findings outlined in this report, BCS Consulting has defined a set of recommendations that banks should consider to enhance their climate-related financial disclosures and more effectively manage climate-related risks and opportunities. The recommendations are structured by area of the TCFD framework. In addition, a set of holistic recommendations has been provided aimed at banks and the Task Force[6]; the latter especially considering how to increase engagement with the framework.

1) Governance:

To effectively manage climate-related risks and opportunities:

- Sustainability and climate change oversight should be formally embedded into the responsibilities of the board to enhance climate-related accountability.
- Board climate-related activity, including reviews and approvals, should be clearly documented to evidence that the board is engaged and to track progress within the climate agenda.
- Banks should consider incorporating representatives who are highly qualified in climate change and environmental management to the board and climate-related executive committees.
- Banks should clearly articulate governance models for escalation of climate-related matters.

2) Strategy:

To embed climate-related issues into strategy:

- Banks should ensure that strategic objectives integrate climate-related risks and opportunities.
- Banks should take advantage of existing climate scenarios developed by think tanks and other research organisations and complement analysis with scenarios developed internally.
- Banks should look to set up in-house climate research and collaborate with NGOs, research agencies, and universities to foster collaboration on climate change.
- Banks should incentivise internal engagement across teams to consider climate-related risks and opportunities, including Risk, Finance, Front Office and Corporate Sustainability.
- Banks should develop environmental training programmes to enhance efficiency (water use, waste reduction, etc) whilst also training relationship managers in climate-related risks and opportunities.
- Banks should continue revising policy and commitments, engaging environmental experts to help understand how best to monitor the environmental impact of clients.

3) Risk Management:

To reduce climate-related risk:

- Banks should adopt a holistic approach of climate-related risk management, beyond credit risk, considering the identification and mitigation of other key risk types (e.g. market and operational risk).
- Banks should further develop and embed sustainability indicators into risk management practices, developing metrics to measure the carbon impact of their financing activities and integrating sustainability considerations in the credit rating of clients.
- Banks should review and enhance sustainability controls to monitor environmental risks in their financing activities.
- Relationship Managers should proactively engage with clients to understand their respective climate-related plans and factor these results in account planning.

[6] Task Force on Climate-related Financial Disclosures, responsible for defining and promoting the framework.

4) Metrics and Targets:

To improve the measurement of climate-related performance:

- Banks should articulate targets for carbon emission metrics and track year-on-year progress.
- Banks should align to frameworks that aim to standardise definitions of green products, such as the Green Loan Principles[7], and align climate-related risk metrics to industry initiatives such as the Portfolio Carbon Initiative[8].
- Banks should benchmark their environmental performance against peers to identify areas of improvement and to take advantage of existing industry knowledge in metrics development.

General recommendations:

- As prescribed by the TCFD framework, banks should consolidate their TCFD disclosures and include them in their annual report to support investor reviews.
- Banks should attempt to standardise their disclosure approach in the TCFD framework to support comparability across the industry and year-on-year.
- Banks should have their own environmental data audited through a third party to certify its accuracy and increase market confidence in the information shared.
- The TCFD framework should be actively promoted to engage additional large banks and increase market coverage. Cross collaboration with international governmental agencies should help stimulate voluntary endorsement.
- The Financial Stability Board should consider ways of making climate-related financial reporting mandatory at the country level. As evidenced by this analysis, uptake in TCFD endorsement has been stagnating and year-on-year progress may not be fast enough to drive the urgent banking response required to help mitigate the risk of a 2 degrees scenario[9].

[7] Loan Market Association, 2019.
[8] Greenhouse Gas Protocol, 2019.
[9] See annexe b. for further information (Global Context of Climate Change).

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Contents

1. Report Methodology Summary

This report focuses on the implementation of the TCFD framework in the banking sector disclosures, considering the critical role that banks need to play as enablers of capital to fund the transition to a low carbon economy.

The report analyses disclosures from the 76 financial institutions (banks)[10] listed in the TCFD supporters directory as of July 1st 2019. The analysis is underpinned by the TCFD endorsement list data, public banking market data and data collated from banks' public disclosures (Annual Reports, Corporate Social Responsibility Reports, ESG Reports, etc).

The research conducted in this report aims to identify the level of progress of banks in the adoption of the TCFD framework. The report has completed three types of analysis for this purpose.

1) **Industry coverage:** What coverage of the banking market is endorsing the TCFD framework? How has this evolved over time? Which regions are leading?
2) **Maturity assessment:** How mature are the disclosures based on the recommendations of the framework? Which areas are most and least advanced? What are the key challenges?
3) **Key areas of focus and best practices:** What have been the most frequent initiatives disclosed by banks over the last two years in their TCFD disclosures? What is the current and future focus as evidenced by their commitments and current projects?

This report analyses the adoption and maturity of disclosures based on public information.

Industry coverage

The banks have been assessed to confirm whether they have started disclosing against the TCFD framework or have just acknowledged it. The analysis frames which regions lead in the commitments to disclose on TCFD.

To support the analysis, banks have been categorised in this report by their reported total asset size as per Relbanks' Top 100 banks in the World (Relbanks, 2018), annual accounts and other sources[11].

Bank Categorisation (our definition)	Total Asset Size US $ Billion
Large	>500
Medium	50-500
Small	<50

Whilst most banks in the study can be considered large, having more than $50 billion in total assets, for the purpose of analysis the population has been split to distinguish between the extremely large (+$500 billion), which tend to be globally systemically important banks, large ($50-$500 billion), which tend to be at least national systemically important banks (even in developed financial markets) and other (smaller than $50 billion)[12].

[10] The list of banks covered by this report are defined as banks/banking and capital markets categories in the Financial Sector TCFD signatories list.
[11] For some banks annual accounts and other sources were used for total assets; see annexe a. for list of sources.
[12] Total global banking assets is an estimate sourced from DBRS (2019).

Maturity assessment

This section evaluates progress in the implementation of the TCFD framework. To achieve this, all TCFD disclosures of banks are segmented and categorised into 11 themes, and each theme is then mapped to a TCFD recommendation. The disclosure themes have been reviewed in terms of the status of implementation as ongoing activity, implemented initiatives or future commitments. BCS Consulting developed a maturity assessment methodology to rank the level of progress as either not started, beginner, intermediate or advanced. All banks have been rated in each category against the methodology and total results for the industry per theme (% of banks in not started, beginner, intermediate and advanced stage for each assessment question) have been produced.

The findings within each category have been included in this report and the Methodology section contains a detailed list of sources used and the maturity assessment methodology applied.

Key areas of focus and best practices

This section highlights the topics most referenced in the disclosures and provides examples of best practices described by banks in their TCFD submissions.

2. Results

a. Industry Coverage

Section overview

The focus of this section is to assess the current state of TCFD endorsement by banks globally, reviewing:

- Engagement overview; bank size and global market share covered by banks endorsing TCFD.
- Regional coverage of the TCFD recommendations.
- Endorsement trends in TCFD.

Engagement overview

Figure 1: Global market share, number of banks and size

NUMBER OF BANKS ENDORSING TCFD
76
=
GLOBAL BANKING MARKET SHARE COVERED
40%

NUMBER OF BANKS ALREADY DISCLOSING UNDER TCFD
39
=
GLOBAL BANKING MARKET SHARE COVERED
24%

Size of banks endorsing TCFD

SIZE OF BANKS ENDORSING TCFD

51%
LARGE
>$500 BILLION

38%
MEDIUM
$50 – $500 BILLION

11%
SMALL
<$50 BILLION

Figure 1 findings: TCFD support is mainly driven by the largest banks (larger than $500 billion). Current endorsers account for 40% of global banking assets and about half of the banks endorsing have commenced disclosing.

Since publication of the TCFD recommendations in June 2017, 76 banks have endorsed the framework accounting for ~40% of global banking assets ($59 trillion[13]). The results highlight that a significant share of global banking assets is covered by the banks endorsing.

Of the 76 banks that endorse, 39 banks have commenced disclosing under the TCFD framework, accounting for ~24% of global banking assets ($35 trillion). The smaller number disclosing highlights the scale of the challenge in implementing TCFD. Although there is support for what the framework is seeking to achieve in the sector, implementing the recommendations will require significant effort and time.

51% of banks endorsing TCFD are large (greater than $500bn in assets). This is not surprising as large banks have more financial resources to drive an active climate change agenda. Large banks are also more in the public and regulator's eye and the resulting increased visibility has placed pressure on them from a reputational and conduct perspective.

Regional coverage

Figure 2: Endorsement and market penetration of TCFD in the Banking sector

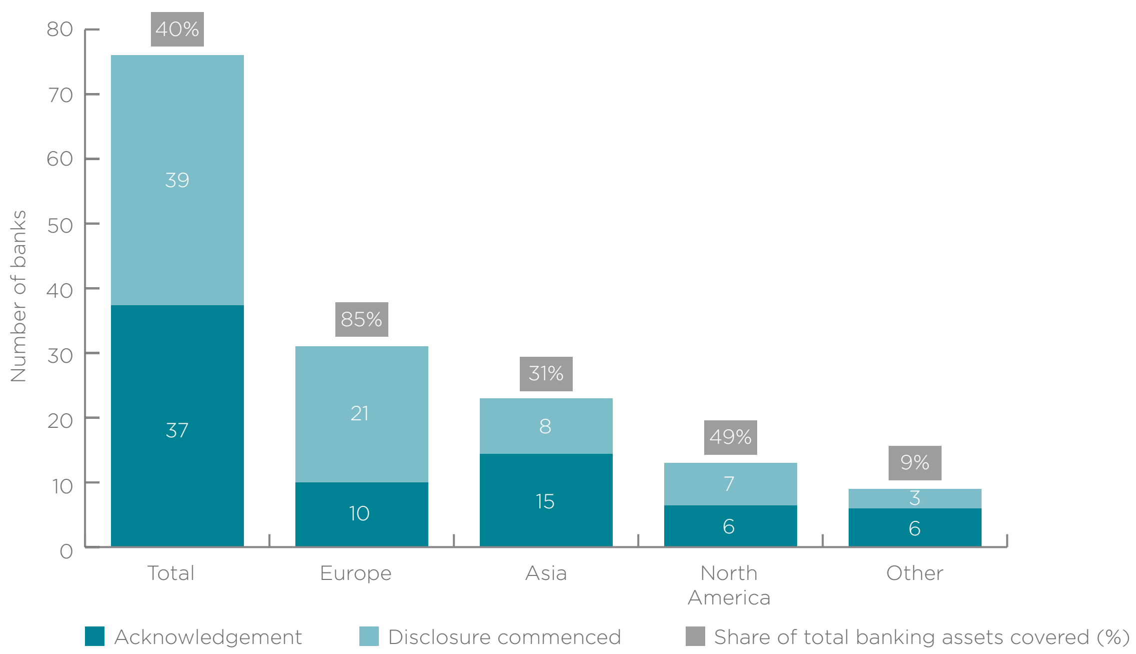


Figure 2 findings: Europe is the leading region in TCFD, evidencing the highest market penetration and the largest number of banks endorsing the framework.

Looking at the regional breakdown of TCFD acknowledgement, Europe is the leading region with a total of 31 banks endorsing TCFD, followed by Asia (23) and North America (13). From a market coverage perspective, Europe has a leading regional market share of TCFD acknowledgement within the large banking regions, with 85% of banking assets covered, followed by North America (49%) and Asia (31%)[14]. There is limited market coverage in smaller banking regions (9%), with only 9 banks endorsing from Oceania, Africa and South America. The most advanced region in terms of disclosures is also Europe with 21 banks disclosing and a ratio of disclosure to acknowledgement of 68%, followed by North America with a ratio of 54%. The results highlight the importance of increasing engagement in other regions, especially in Asia, which is the largest banking market in the world[15] and yet where there is still limited market penetration for the TCFD framework.

[13] Market share based on total global banking assets estimate of $148 trillion (DBRS, 2019). Total banking assets for banks endorsing TCFD sourced from Relbanks (2018), annual accounts, and additional sources (see annexe a.).
[14] See annexe a. for regional size estimates and sources.
[15] Approximately $55 trillion, (Oliver Wyman, 2017).

Regional coverage of the TCFD recommendations[16]

Figure 3: TCFD acknowledgement and disclosure by country – Europe

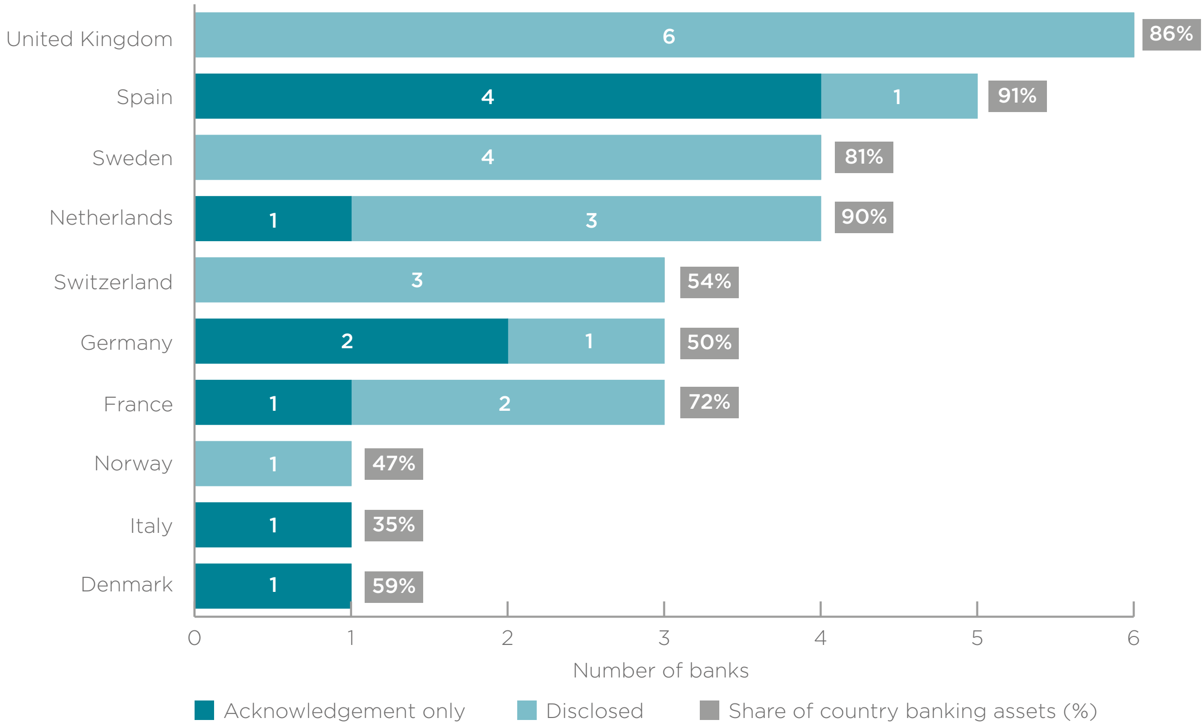


Figure 3 findings: UK and Sweden have the highest level of engagement in Europe, with at least 4 banks already disclosing and market penetration above 80%.

Figure 4: TCFD acknowledgement and disclosure by country – Asia

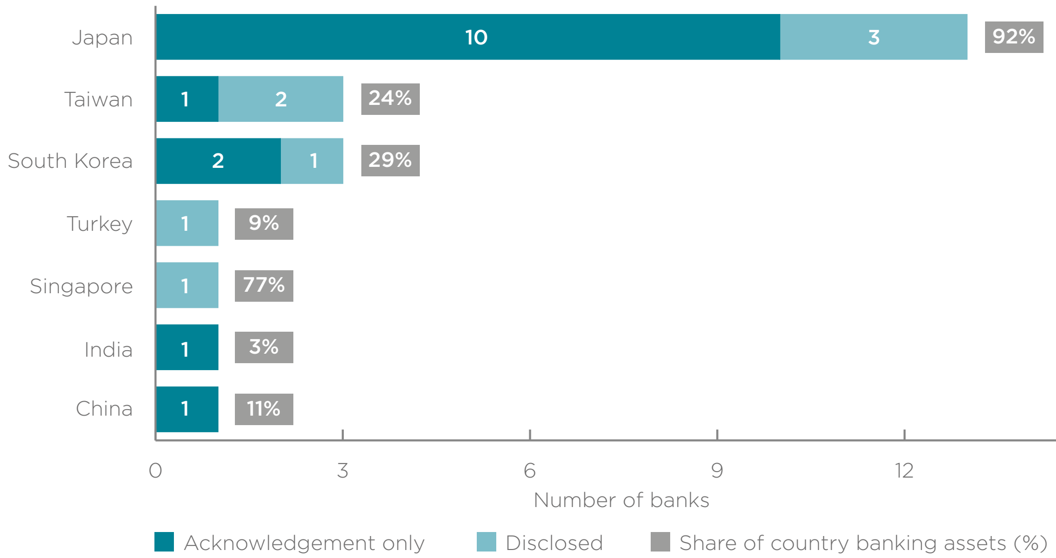


Figure 4 findings: Japan has the highest level of engagement in Asia with 10 banks endorsing, 3 banks disclosing and market penetration of 92%.

[16] See annexe a. for country size estimates and sources.

Figure 5: TCFD acknowledgement and disclosure by country – North America

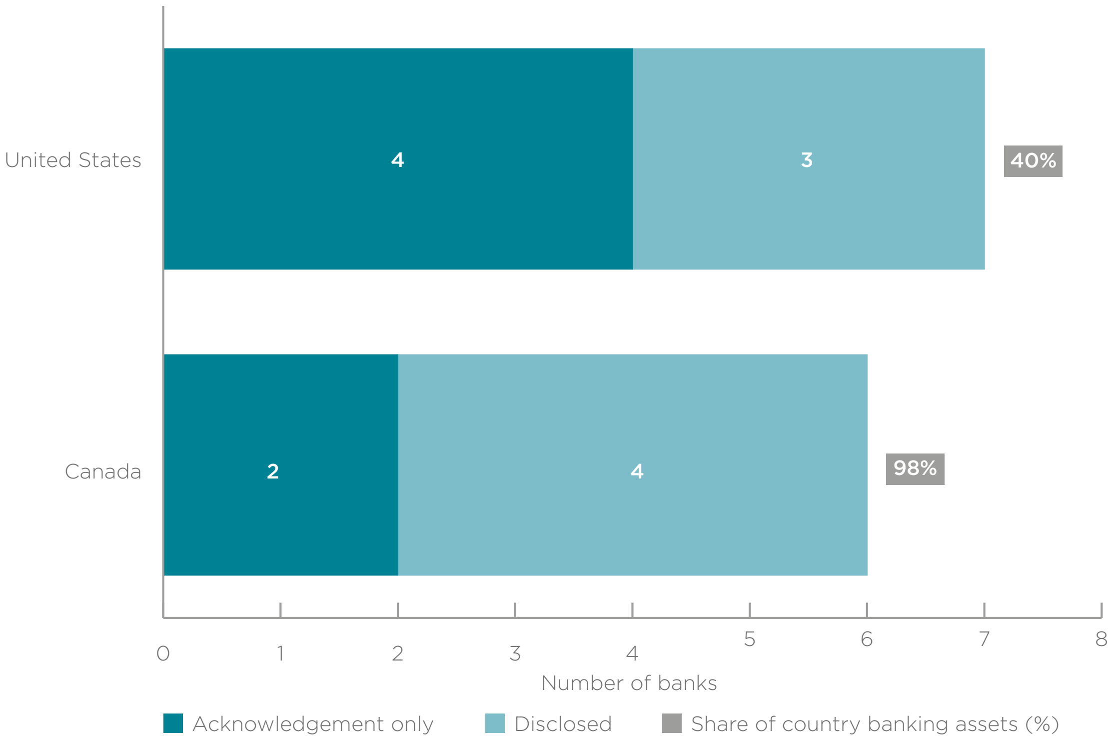


Figure 5 findings: High engagement in Canada with 98% of market coverage, limited engagement in the US (market coverage of 40%).

Endorsement trend

Figure 6: Number of banks endorsing TCFD and market share gained per period

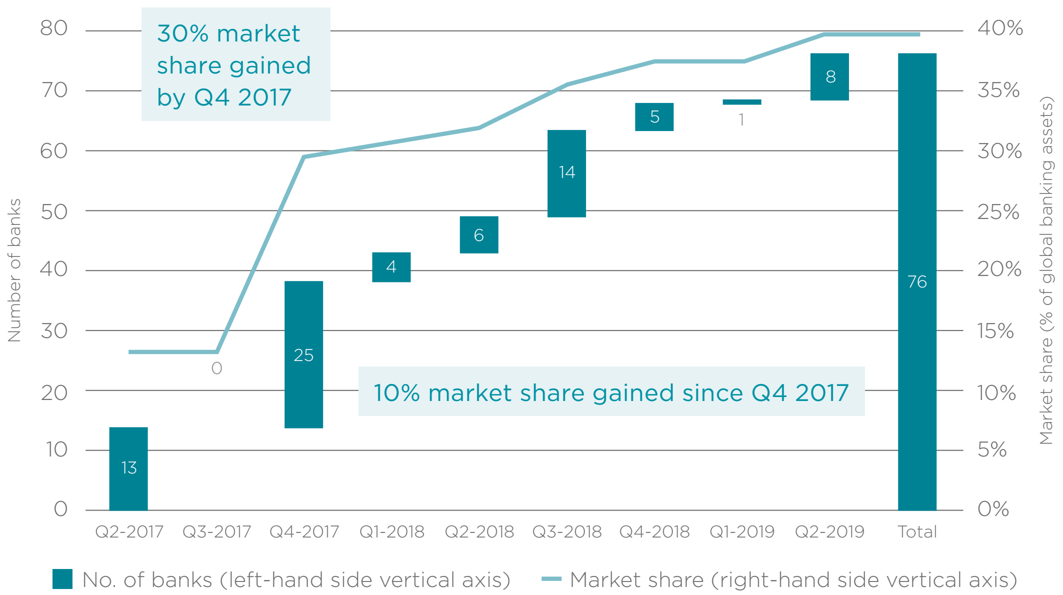


Figure 6 findings: Global TCFD endorsement shows signs of stagnation, as the majority of the market share has been gained in 2017, with limited market growth since then.

While the trend in acknowledgement of the TCFD recommendations has, in general, kept climbing, global market penetration has plateaued. By Q4-2017, the global market share of assets held by banks endorsing TCFD accounted for 30%[17]. The market share gained since then has only been ~10%.

The strongest year of TCFD endorsement was 2017 (38 banks), with a slight slowdown in 2018 (29 banks). So far in 2019, only 9 banks have added their endorsement to the TCFD recommendations.

Figure 7: Number of banks endorsing TCFD and market share gained per period – a closer look at the largest regions.

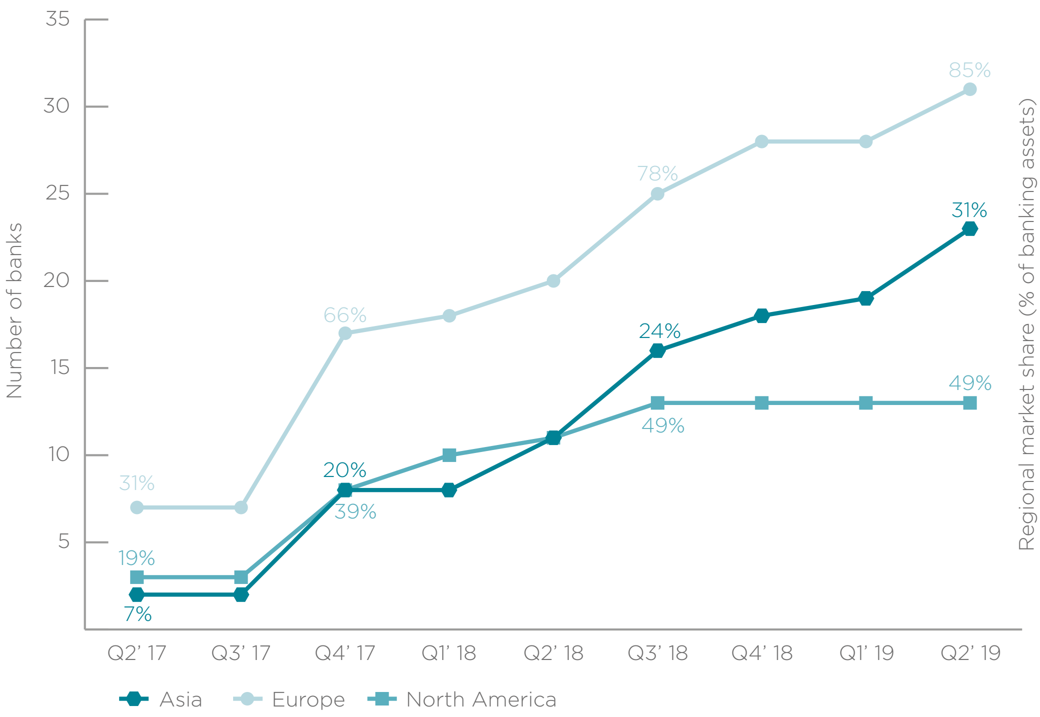


Figure 7 findings: Asia and North America are key areas for future TCFD endorsement.

As illustrated by figure 7, Asia is a key area of potential growth for the framework – as currently only 31% of the regional market is endorsing TCFD. Europe, on the other hand, has the total highest number of banks adopting the framework but its rate of adoption has been gradually slowing since Q3 2018 and it is already reaching a high level of market penetration (85%). North America had a similar number of banks endorsing compared to Asia up until Q2 2018 but has shown much slower growth since then and has stalled at 49% of market penetration. Oceania, Central America, South America and Africa combined account for less than 25% of the global banking market hence there is more limited potential for global growth contribution[18].

[17] Market share based on total global banking assets estimate of $148 trillion (DBRS, 2019). Total banking assets for banks endorsing TCFD sourced from Relbanks (2018), annual accounts and additional sources (see annexe a.).
[18] See annexe a. for regional market estimates.

Can endorsement continue to grow?

Figure 8: Market share coverage including the top 28 largest banks which are not currently endorsing TCFD.

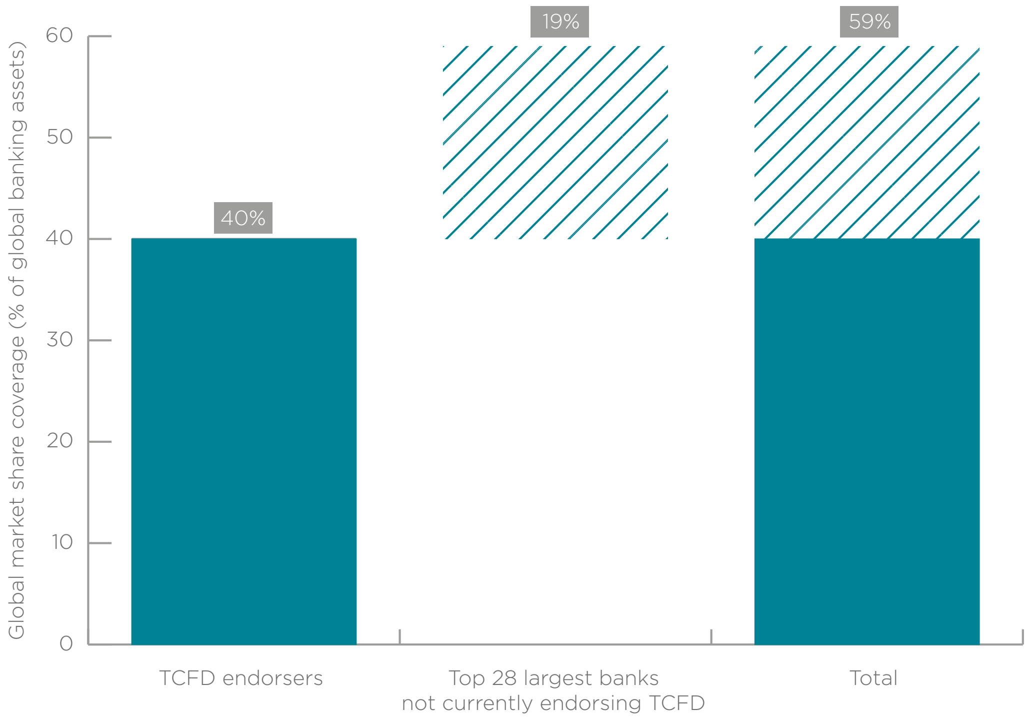


Figure 8 findings: Market share coverage could reach ~59% if all of the top 75 largest banks endorse TCFD.

Currently, 28 of the world's top 75 banks have not yet endorsed TCFD. If this group supported the framework, global market share would reach ~59%[19]. As evidenced above, there is still significant potential for market penetration in TCFD endorsement by focusing on the larger banks. The largest market share contribution of these 28 banks would come from Asia (13%), followed by Europe (4%), North America (2%) and finally, South America (<1%)[20].

Beyond these 28 banks, Asia and North America are key regions to focus engagement efforts, particularly in countries like China and the US[21], which are extremely important banking markets. In both countries many large banks are yet to endorse TCFD and there is limited market penetration as evidenced in figures 4 and 5.

[19] Based on Top 75 banks as per 2018 S&P Global Market Intelligence Report (S&P, 2018).
[20] See annexe a. for list of 28 top 75 banks not currently endorsing TCFD.
[21] See annexe a. for country market estimates and sources.

Conclusion

76 banks have endorsed the TCFD recommendations, and of these, approximately 51% are already disclosing under the framework, which cover approximately 40% of global banking assets. The analysis evidences a clear correlation between the size of the bank and the rate of TCFD endorsement. The largest banks (over $500bn of total assets) are those who have mostly endorsed TCFD. Only 11% of banks endorsing have less than $50 billion assets.

Europe is the leading region in TCFD, evidencing the highest market penetration within the large regions (85%), the largest number of banks endorsing the framework and the largest number of banks already disclosing. Within Europe, Sweden and the UK have the highest level of engagement in the region, with at least 4 banks already disclosing and market penetration above 80%. Within Asia, Japan has the highest level of engagement in the region with 10 banks endorsing, 3 banks disclosing and 92% market penetration. In North America, there is high engagement in Canada but moderate engagement in the US with 40% market penetration.

There are clear signs of stagnation in TCFD endorsement as most of the market share was gained in 2017 (30%) and only 10% has been gained since then. This trend can also be observed in the total number of banks endorsing TCFD. 38 banks endorsed the framework in 2017, but only an additional 38 banks have endorsed in 2018 and 2019.

There is still significant growth potential for the framework by ensuring additional large banks endorse TCFD. Engagement from the 28 largest banks which are not currently endorsing TCFD would result in a 19% market share increase, which would take TCFD market share to 59% of total global banking assets.

Asia (especially China) and the US are key areas of focus for future engagement given the size of these banking markets and the relatively low market penetration (31% in Asia, 40% in the US).

2. Results

b. Maturity Assessment

Section overview

The purpose of this section is to analyse the maturity of banking TCFD disclosures with the aim of understanding which are the most and least advanced areas. This section focuses on the analysis of 39 banks that are currently disclosing under the TCFD framework. To complete this analysis BCS Consulting developed a maturity methodology based on 11 themes, with each theme linked to the relevant recommendations of the TCFD framework. All banks have been graded based on 4 possible stages (not started, beginner, intermediate, advanced) for each theme based on public TCFD disclosures. Results have been consolidated to provide an industry view per TCFD recommendation.

Global results by TCFD recommendation

Figure 9

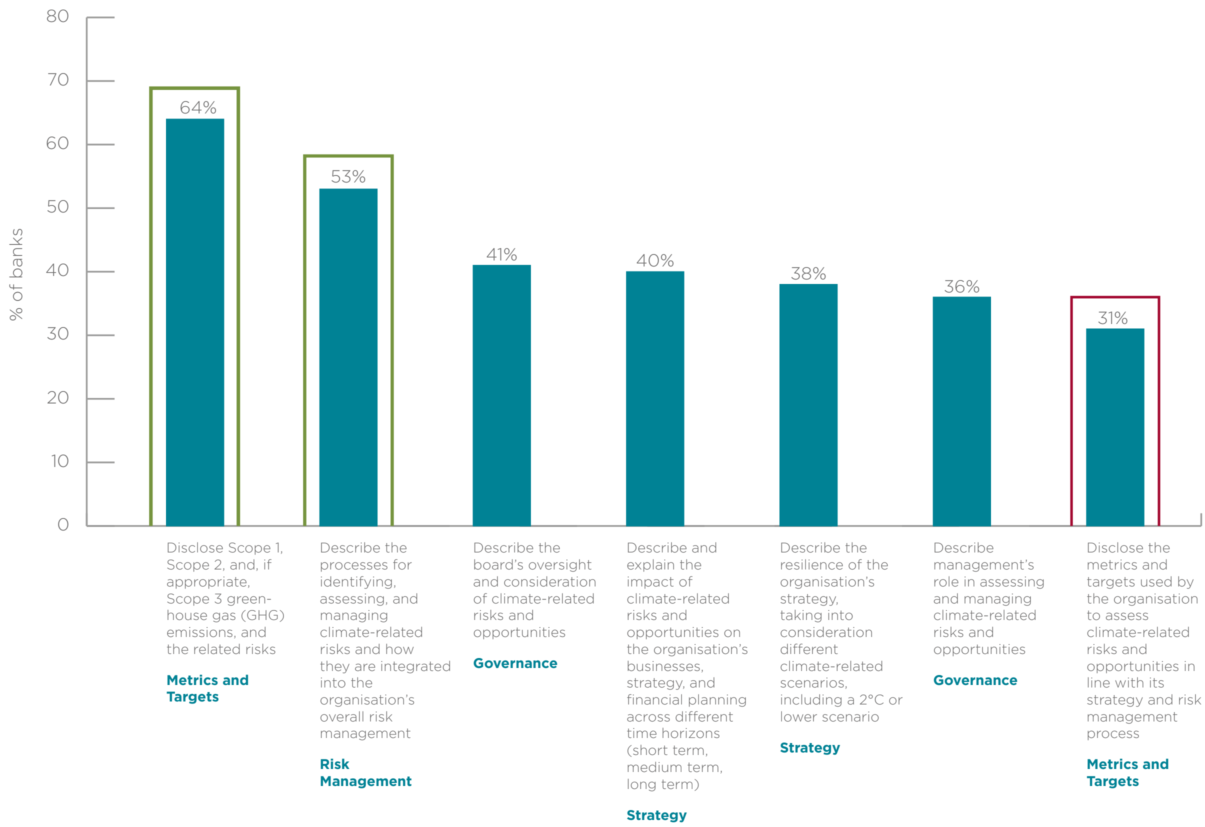


Figure 9 findings:

- **Metrics and targets for GHG emissions and related risks is the most mature area** with over 64% of the reporting banks in the advanced-intermediate maturity stage (highlighted in green).
- **Processes for identification, assessment and management of climate risks is the second most mature area** with over 50% of the banks disclosing in the advanced-intermediate maturity stage (highlighted in green).
- **Metrics & targets for the assessment of climate-related risk and opportunities is the least mature area** with only about a third of banks in the advanced-intermediate stage (highlighted in red).

Figure 9 provides a clear representation of how banks are progressing in their TCFD disclosures. Information concerning greenhouse gas emissions (GHG) operational footprint management is irrefutably high on the agenda across most banks and reporting is quite advanced. This is not surprising as there are already well-established methodologies and services able to conduct footprint tracking reviews. Many banks are identifying the key drivers of GHG impact on their operations, there is evidence of targets tracking and increasing maturity in the granularity of GHG disclosures. Aside from GHG metrics and related risks, there has also been important progress in evidencing risk management processes and frameworks for climate risk; many banks are describing how ESG considerations have been factored in deal screening processes and defining approaches to consider transitional and physical risks, taking into consideration regional focus, sector and potential changes in the regulatory landscape.

There is however still plenty of work to be done to develop metrics to assess climate risks (carbon impact of lending and other banking services). Most banks acknowledge they are still developing measurement tools for carbon footprint lending impact. Only a few banks report metrics such as credit risk-weighted assets across fossil fuel sectors and measures of balance sheet exposure to carbon-intensive sectors. When these metrics are reported they are, in general, not granular and not tracked year-on-year. Equally more evidence of management's role in assessing and managing climate-related risk should be disclosed; there is limited description of specific reviews and decisions carried out by climate-related executive committees and by executive roles appointed for climate risk management.

Disclosure maturity by country

Figure 10

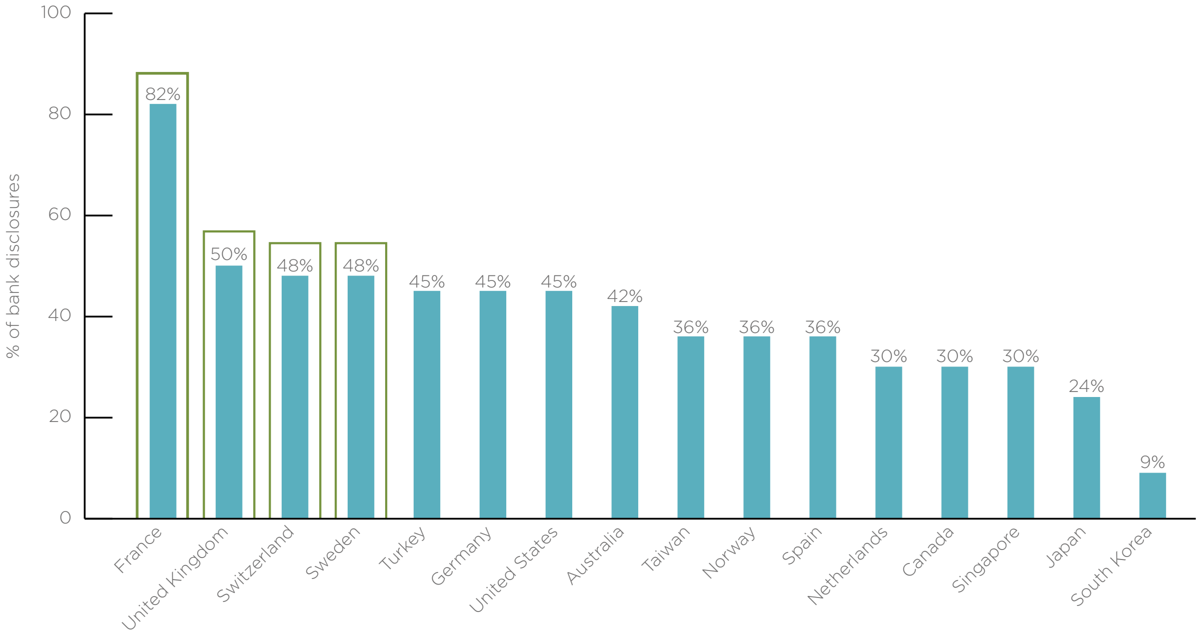
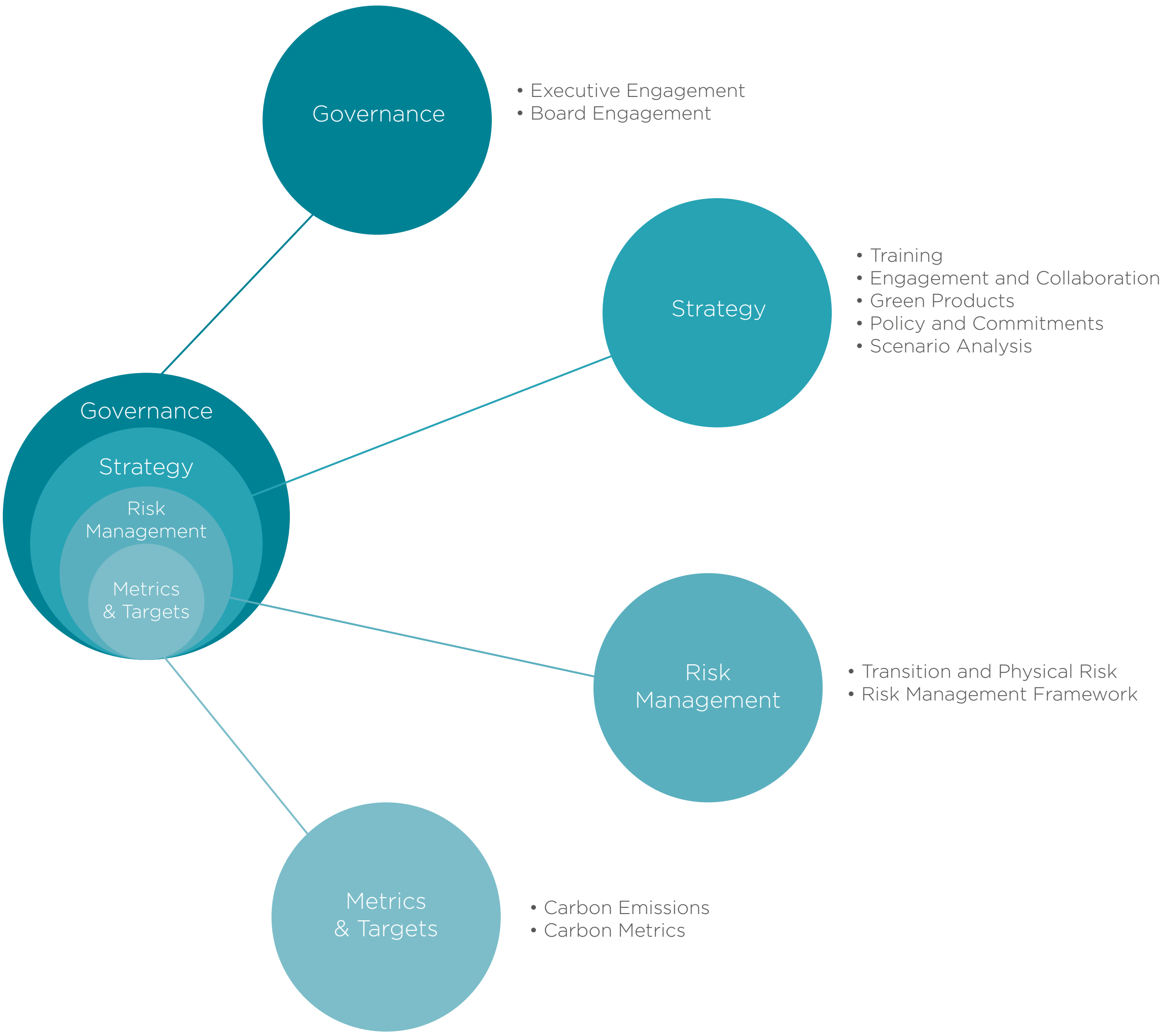


Figure 10 findings: France, United Kingdom, Switzerland and Sweden show the most mature disclosures globally (highlighted in green).

Due to the influence of several Europe-wide initiatives aiming to minimise the impact of climate change, we can clearly see a high level of maturity in bank disclosures in countries such as France, Switzerland, Sweden and the United Kingdom. German bank disclosures are also quite advanced, evidencing a similar level to the banks that have started disclosing in the US. Outside of Europe, Turkey, US and Australia have the most advanced disclosures.

Disclosure maturity by theme

The following section analyses the level of advancement of banking disclosures at a more granular level (theme level) in relation to the core proponents of the TCFD framework (Governance, Strategy, Risk Management and Metrics & Targets). The themes analysed are mapped to the TCFD framework as follows:



Governance

Theme: Executive Engagement

TCFD Disclosure 1: Describe management's role in assessing and managing climate-related risks and opportunities		
Beginner	**Intermediate**	**Advanced**
Committee in place to provide oversight of risks and opportunities (executive level).	Description of specific roles and responsibilities of the executive committee, as well as new executive roles.	Evidence of specific reviews and decisions made by the committee (climate considerations).

Figure 11

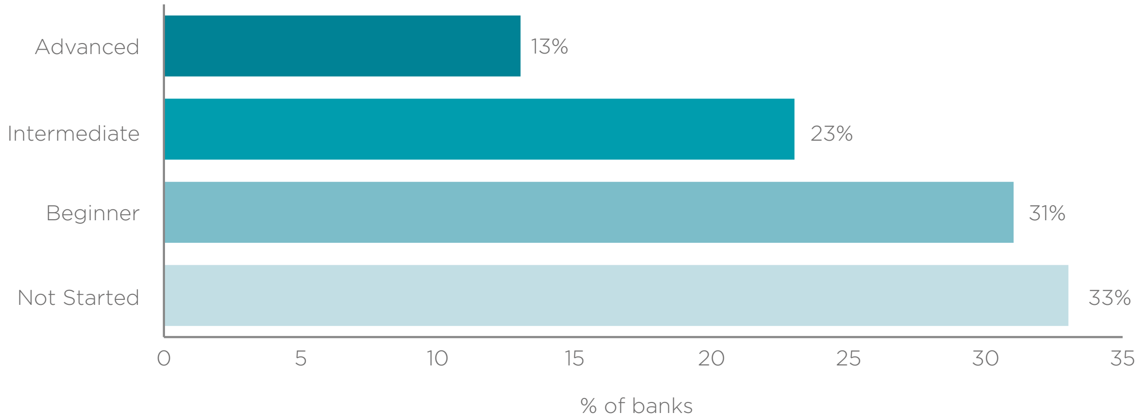


Figure 11 findings: 36% of the banks are in the intermediate-advanced stage, while majority of the banks are still in initial stages of development.

A large proportion of banks have created executive level committees responsible for managing climate change and created new roles for climate risk management. There is often however, limited evidence of specific responsibilities for these committees and of decisions being made by them. This may be due to the recent adoption and incomplete efforts of operationalising and incorporating climate change to overall vision, strategy and objectives.

Despite these results, 13% of banks reporting are evidencing advanced disclosures and demonstrating strong executive engagement in climate considerations. These banks detail the types of reviews & approvals of the committees in relation to climate-related issues, and clearly define objectives and governing principles.

Theme: Board Engagement

TCFD Disclosure 2: Describe the board's oversight and consideration of climate-related risks and opportunities		
Beginner	**Intermediate**	**Advanced**
Evidence of board oversight for risks and opportunities.	Description of specific roles and responsibilities of the board in relation to climate.	Evidence of specific reviews and decisions made by the board (climate considerations)

Figure 12

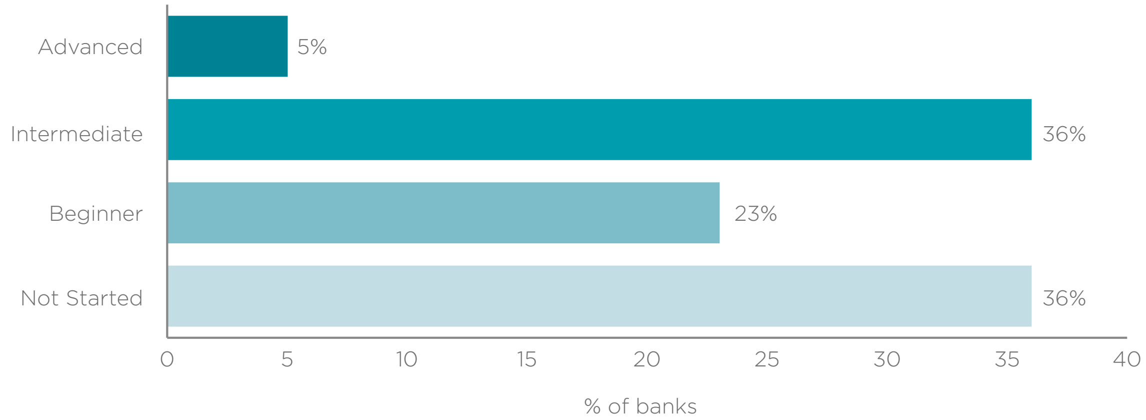


Figure 12 findings: Board engagement has average maturity relative to other disclosures with 41% in the intermediate-advanced stage.

A significant portion of banks are still in the not started stage (36%). 41% of banks are disclosing the responsibilities of the board in relation to climate, but only a few banks are disclosing the types of reviews and decisions carried out (only 5%). Over time we should see more banks providing insight into the role of the board in climate risk management, in a similar way as it's currently done for other types of risks, remuneration and audit. An important consideration to achieve this objective is ensuring climate risk is more formally considered as a responsibility of board representatives – any decisions and discussions in relation to the topic need to be clearly documented.

Strategy

TCFD Disclosure 3 & 4: Describe and explain the impact of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning across different time horizons (short term, medium term, long term).

Theme: Training

Beginner	Intermediate	Advanced
Training objective disclosed.	Description of specific teams being trained.	Metrics of training and or targets.

Figure 13

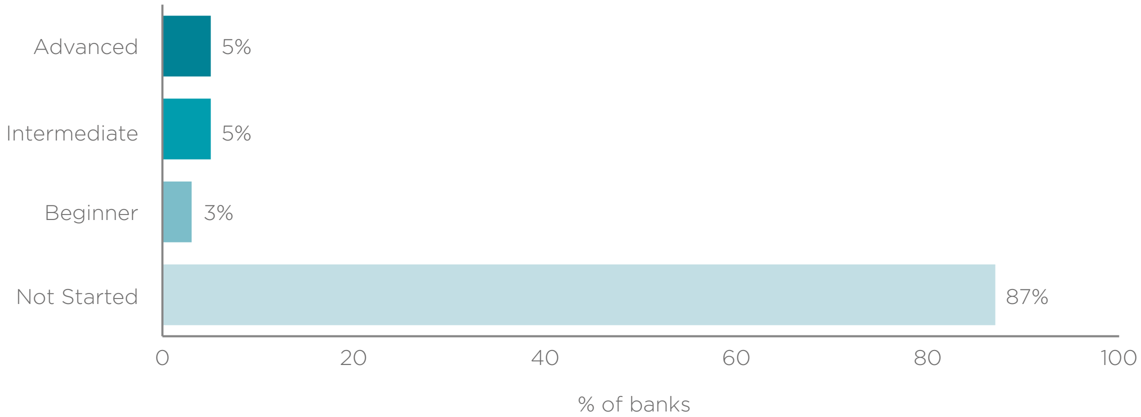


Figure 13 findings: Only 10% of disclosing banks are among the intermediate and advanced stages collectively. 87% of banks have not started to disclose information relating to training plans, teams trained and training targets/metrics.

Training is the least developed theme within the strategy section with almost 90% of disclosing banks not detailing any training plan or training targets. Only a few banks disclose training initiatives, with the primary focus of training being awareness of waste reduction and energy savings opportunities in the operations of the organisation. A small number of banks disclose that they train their relationship managers to make them aware of green opportunities and reputational risks associated with carbon-intensive companies. This type of training can be important to influence action in the industry.

Theme: Engagement and Collaboration

Beginner	Intermediate	Advanced
Endorsement of climate and broader ESG initiatives, e.g. Equator Principles, SDG, Paris Agreement, PRI, etc[22].	Beginner criteria and evidence of internal collaboration (e.g. creation of inter-discipline forum, research team) or external collaboration (e.g. partnership with another organisation).	Internal and external collaboration evidence as well as endorsement of global initiatives.

Figure 14

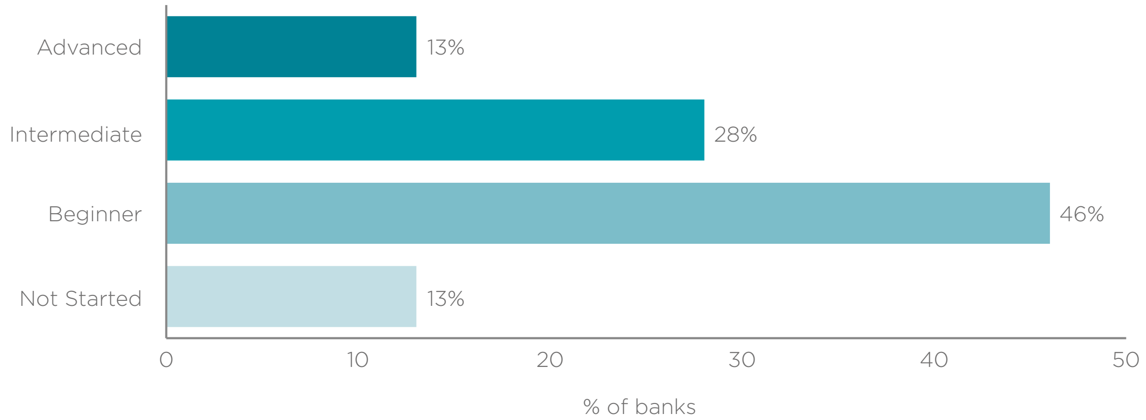


Figure 14 findings: 41% of banks in the advanced-intermediate maturity in engagement and collaboration.

Many banks are endorsing a wide range of climate and broader ESG initiatives, including Equator Principles, Sustainable Development Goals (SDG), Principles for Responsible Investing (PRI), CDP, Paris Agreement, United Nations Environment Programme Finance Initiative (UNEP FI) and others[23]. Many banks are evidencing internal initiatives for cross-functional collaboration, including the development of climate programmes and creating internal research teams to investigate climate change. Other initiatives covered by more advanced banks include partnerships with universities, think tanks and cross industry research initiatives for green financing and climate risk mitigation. Despite these results, a larger number of banks are still in the initial stages (59% in beginner-not started). More effort is required in driving internal initiatives and cross industry collaboration.

[22] See annexe d. for further information.
[23] See annexe d. for further information.

Theme: Green Products

Beginner	Intermediate	Advanced
Evidence of green product development in progress.	Evidence of green product offering.	Metrics for green reporting and targets.

Figure 15

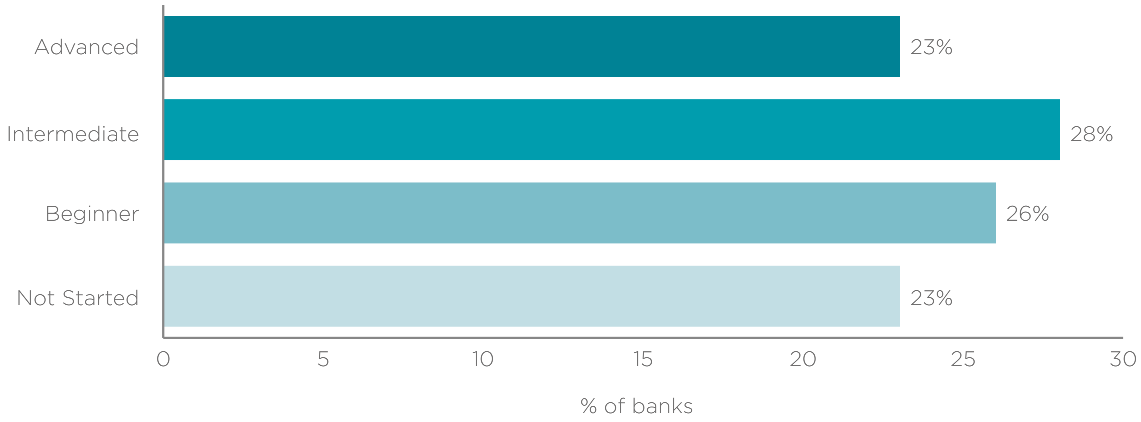


Figure 15 findings: Over 50% of banks are in the advanced-intermediate stage for Green Products.

There has been substantial growth in the green products market and several banks are in the process of developing new green solutions. For a market which was non-existent ten years ago, the cumulative issuance of bonds between 2007 and Q1 2018 reached $377 billion - 2018 issuance alone totalled over $167 billion (Green Bonds Market Highlights, 2018). Banks have made good progress in evidencing the development of green solutions, with 77% of banks at least evidencing green products under development and 23% already disclosing green reporting metrics and targets.

The industry leaders in this category can often demonstrate to have implemented a "Green Product Framework" that details the criteria underpinning the categorisation for green products. They also tend to highlight the level of facilitation, the level of direct financing as well as assets under management investment in green initiatives. Common examples of bank initiatives include green loan products to support small and medium-sized enterprises in their financing needs and underwriting for green bonds. In addition, industry leaders have set-up internal green banking councils that aim to further develop green finance products and support clients and customers with green finance solutions.

Theme: Policy and Commitments

Beginner	Intermediate	Advanced
Commitment to review position statements and policies.	Evidence of policy amendments (environmental considerations).	Intermediate criteria and lending targets in high impact sectors.

Figure 16

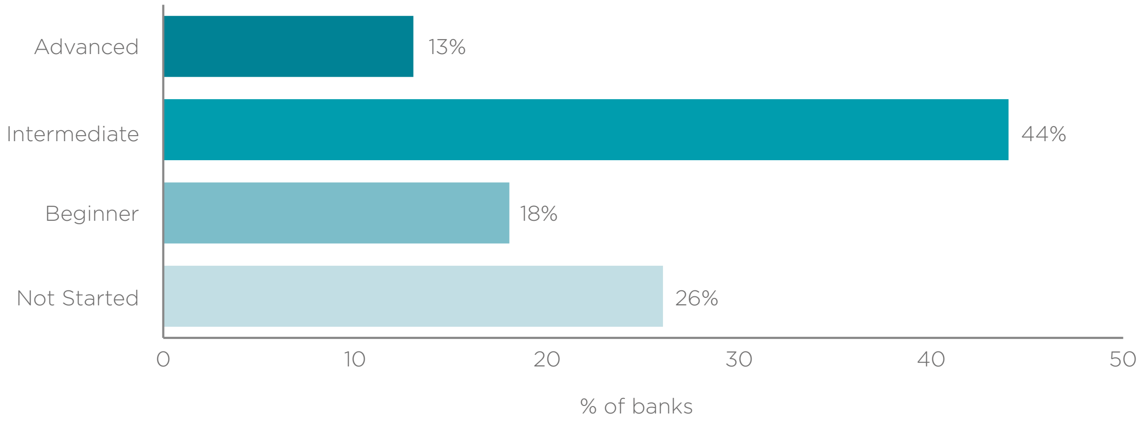


Figure 16 findings: A large number of banks are revising position statements and updating policies to more effectively manage climate risk (57%).

There is clear evidence of an attempt to more thoroughly consider the impacts of climate change on policies and position statements – 57% of banks are evidencing recent policy amendments and 13% are also evidencing lending targets in carbon-intensive sectors. Industry leaders define specific sustainability risk policies to cover a range of different industries across their product portfolio, ranging from agricultural commodities to defence, energy, mining and forestry. These policies aim to promote sustainable practices and lead to banks ending customer relationships where customers are unwilling to comply with the new and enhanced sustainable risk policies. Several banks have introduced Sustainable Risk Managers that help oversee and implement those policies. These risk managers have local or regional expertise for advising on specific environmental and social risks.

Theme: Scenario Analysis

TCFD Disclosure 5: Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario		
Beginner	**Intermediate**	**Advanced**
Commitment to complete scenario analysis and enhance stress testing capabilities.	Development of specific scenarios (e.g. 2, 4 degrees, etc) and sector shocks.	Evidence of stress tests completed and of carbon techniques under development such as carbon price calculation in the rate of return and/or disclosure of credit portfolio in high impact sectors (e.g. exposure disclosure).

Figure 17

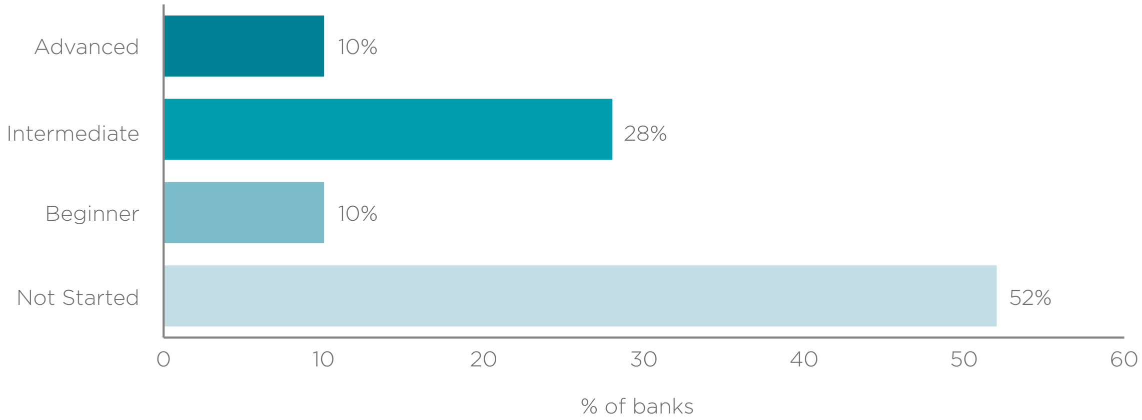


Figure 17 findings: There is a low level of maturity for Scenario Analysis, only 38% of banks are in the intermediate-advanced stage.

It is apparent that scenario analysis is still in the initial stages of development with many banks in the beginner/not started stage (62%). 10% of banks in our analysis are considered as advanced maturity. While stress-testing and scenario analysis have been tools used by risk departments for a long period of time, their adoption for the purposes of climate risk is still limited. Likely reasons for low maturity in this area include a lack of expertise, challenges in developing effective climate risk methodologies, as well as competing internal priorities.

In general, there is quite limited evidence of quantitative scenario analysis results in the TCFD disclosures. Most banks have not run climate stress tests on their portfolio; however, 38% of disclosing banks are already developing scenarios and sector shocks. Some banks are providing qualitative commentary on internal climate stress-testing outcomes in specific sectors. The most advanced banks are describing the methodologies being used for climate stress tests, the type of scenarios considered and lending exposure to carbon-intensive sectors. Most advanced banks tend to be those that have participated in wider industry initiatives such as the United Nations Environment Programme Finance Initiative (UNEP FI) pilot on implementing the TCFD recommendations.

Banks should prioritise the development of extensive climate scenario analysis models, which will be critical in determining affected portfolios and assessing the resilience of banking assets. Modelling climate risk will provide a forward-looking view on physical and transition risks and provide the data necessary to build mitigating strategies.

Risk Management

Theme: Transition and Physical Risk, Risk Management Framework

TCFD Disclosures 6-8: Describe the processes for identifying, assessing, and managing climate-related risks and how they are integrated into the organisation's overall risk			
Category	**Beginner**	**Intermediate**	**Advanced**
Transition and Physical Risk	Objective to assess client's impact on climate change agenda, reference to transition risk and physical risk considerations.	Evidence of approach definition (e.g. identification of critical sectors, time horizon for planning, sector and product considerations).	Adoption of climate risk considerations in credit risk processes (e.g. annual renewal of internal rating, risk factor modelling, customer thermal coal utilisation, transition risk rating development, etc).
Risk Management Framework	Consideration of ESG factors in the screening process.	Evidence of climate risk integration into processes and frameworks (e.g. ESG criteria application process, evidence of ESR framework, etc).	Description of specific monitoring tools used (e.g. ESG screening tool reference, EMS system, etc).

Figure 18

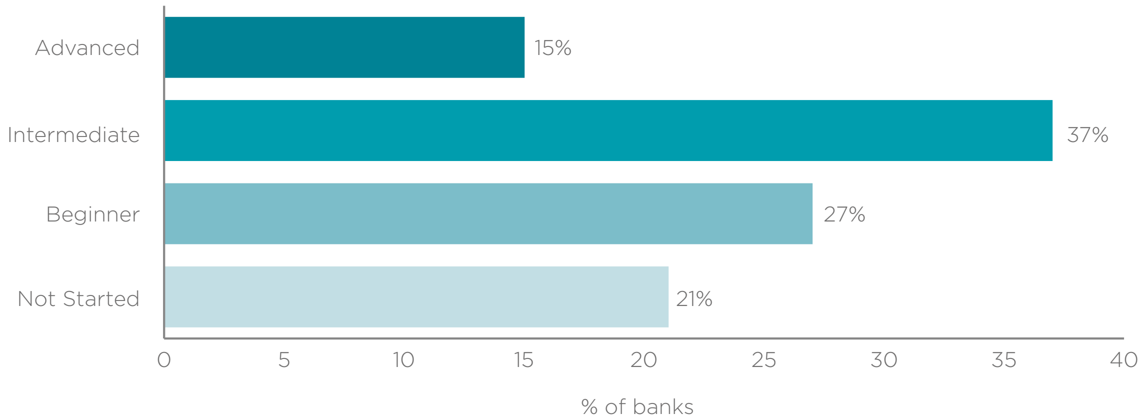


Figure 18 findings: There has been good integration of transition, physical risk and risk management framework considerations in risk management practices: 52% of banks in the advanced-intermediate stage.

Overall, banks are showing a good level of maturity for disclosures in this area with 15% advanced, and 21% not started. Most of the disclosing banks evidence consideration of different time horizons for various sectors in their portfolios and of the approaches they intend to follow to manage physical and transitional risks. There is significant evidence of analysis and classification of sectors to determine which are deemed carbon-intensive by the respective banks and analysis of high-risk regions regarding transitional risk. Banks are also looking at the potential carbon pricing trajectories and the impact on the risk appetite of the organisation. Most advanced banks are creating, or have defined, new measures of credit risk to reflect transition risk. However, there is a risk of myopia of the wider picture when assessing some of the above data in isolation. Despite the overall progress in establishing processes for climate-related risk management, measurement of climate risk is still in initial stages (see Carbon Metrics results), hence effective management of climate risk, whilst evidencing good progress in framework set-up and planning, is still at least a few years away.

Metrics and Targets

Under the TCFD framework, banks are asked to describe targets and metrics that are in place in relation to climate change and to provide performance updates against these targets. There are two types of metrics and targets that we are considering in this report:

Carbon emissions (environmental operational footprint)

The measurement of GHG emissions driven by company operations such as energy use in facilities, employee travel, etc. In addition, consideration of other environmental factors such as water consumption and waste management.

Carbon metrics (carbon impact of banking services)

The carbon impact of banking services, such as financing, advisory, facilitation and investment in carbon-intensive activity.

Theme: Carbon Emissions

TCFD Disclosure 9: Disclose Scope 1, Scope 2, and, if appropriate, Scope 3[24] greenhouse gas (GHG) emissions, and the related risks		
Beginner	**Intermediate**	**Advanced**
Currently developing measurement tools.	Targets and/or description of mitigation initiatives (e.g. purchasing of renewable energy). Some evidence of CO_2 emission metrics disclosure (e.g. total CO_2 emissions, with limited segmentation) and disclosure of other environmental factors (water usage, waste management, etc).	Reporting CO_2 emission metrics, targets and description of mitigating initiatives.

Figure 19

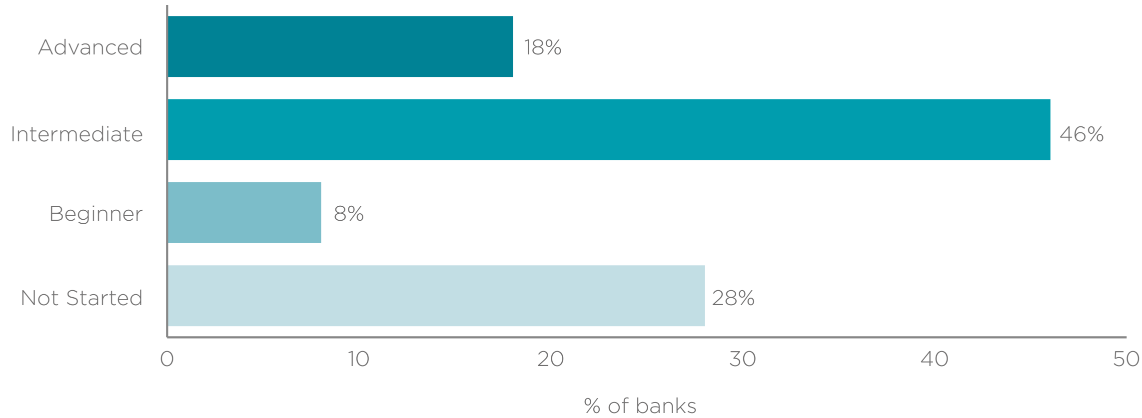


Figure 19 findings: There is a high level of maturity in GHG emissions, with two-thirds of the banks already setting targets, reporting on GHG emissions and describing mitigation initiatives.

There is a high level of maturity for disclosures relating to carbon emissions, with 18% advanced and only 28% not started. 64% of banks have set targets for GHG emissions in their operations and are reporting GHG metrics.

The area for the greatest scope of improvement is banks moving from intermediate (46%) to advanced, by providing granular disclosures of GHG metrics.

[24] Scope 1,2 and 3 emissions as defined by the GHG Protocol. Scope 1 emissions are direct emissions from owned or controlled sources. Scope 2 are indirect emissions from the generation of purchases emissions. Scope 3 are all indirect emissions not captured in source 2 emissions that occur in the value chain of the reporting company, including both upstream and downstream emissions.

Theme: Carbon Metrics

Disclosure 10-11: Disclose the metrics and targets used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process		
Beginner	**Intermediate**	**Advanced**
Currently developing measurement tools.	Targets or plans (e.g. integrating CO_2 measurement in funds, developing climate risk metrics, etc).	Evidence of measurement (e.g. measure of balance sheet and credit risk-weighted assets across fossil fuel sectors, etc).

Figure 20

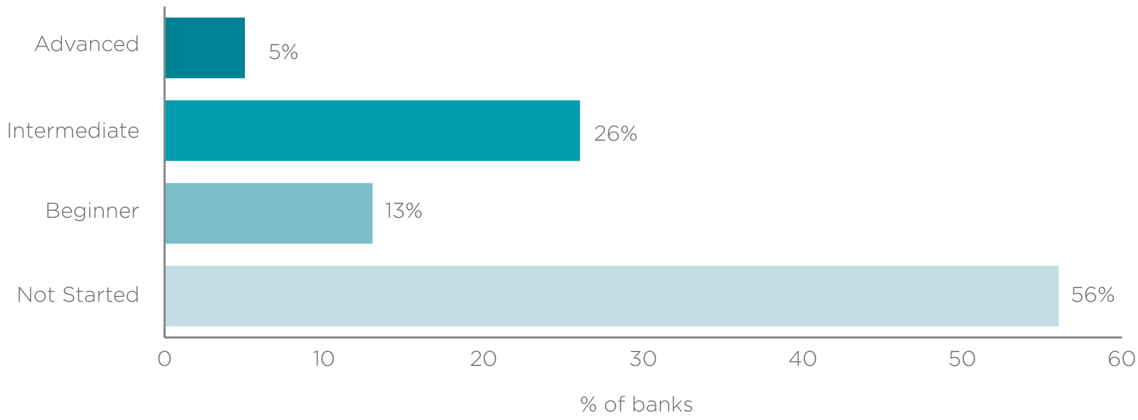


Figure 20 findings: Carbon Metrics is the least mature theme in comparison with other disclosures with 5% of banks in the advanced stage and 56% in the not started stage.

Many banks are yet to start developing measurement tools to assess their lending carbon footprint. Only a few banks report metrics such as credit risk-weighted assets across fossil fuel sectors and measures of balance sheet exposure to carbon-intensive sectors.

Furthermore, when the metrics and targets are reported they lack granularity, year-on-year tracking and a description of the methodologies used to create them.

The key reason for these results is the lack of time for banks who are engaging with the TCFD framework to design and implement carbon metrics.

Many banks are engaged in wider initiatives to define adequate measurement tools for the carbon impact of banking services, so we should see more progress in this area in the coming years.

Conclusion

There is a clear disparity between banks' disclosure maturity across the four key pillars of the TCFD Framework.

The least advanced area is the development of carbon metrics and targets to assess the climate risks with only 31% of banks in the intermediate-advance stage. Only a few banks are reporting credit risk-weighted assets for carbon-intensive sectors and measures of balance sheet exposure. Carbon metrics is a key area for banks to improve in the coming years; over time we should expect more banks being capable of estimating the indirect CO_2 emissions that their balance sheet is financing, having a better view of risk-weighted assets tied to carbon-intensive activity and having metrics to monitor transitional and physical risks.

The analysis has also highlighted that board engagement, executive engagement and climate scenario analysis requires development. In general, banks are creating committees and commenting on board or senior executive endorsement but there is still only partial evidence of decisions being made and of the roles and responsibilities regarding climate change. Similarly, banks are still in the process of developing climate scenarios as acknowledgement of climate stress tests and disclosure of quantitative impact is still limited. Furthermore, training is still in early development with only a small number of banks disclosing initiatives in this area.

The development of carbon emission metrics, on the other hand, for tracking the operational impact of banks is quite mature: 64% of banks disclose targets, results and mitigation initiatives for GHG emissions. Several banks are identifying key drivers of GHG impact on their operations, enhancing reporting granularity, as well as defining and tracking targets.

The processes for identification, assessment and management of climate risk is another area progressing well with 52% of banks being categorised as either 'Advanced' or 'Intermediate' in the maturity of their disclosures. Banks are evidencing significant planning and analysis to consider the implications of climate risks across their business, looking at different time horizons, analysing possible carbon pricing trajectories, defining key sectors and describing the integration of such processes in wider enterprise risk management frameworks.

Banks are also evidencing growth in the development of green products and there is clearly strong evidence of external and internal initiatives to help integrate climate change considerations. Equally, banks are clearly investing significant effort to amend policies and acknowledging the need to review position statements regarding climate change impacted operations.

From a regional perspective, Europe is the most mature area with France, the UK and Switzerland evidencing the highest percentage of disclosures in the intermediate-advanced stage. Outside of Europe, Turkey, the US and Australia hold the highest percentage of disclosures in the intermediate-advanced stage.

2. Results

c. Key Areas of Focus and Best Practices

This section highlights examples of best practices across banks and tracks the most referenced disclosures, providing a view of where the current effort is being placed and where banks are targeting future activity.

Governance

Figure 21

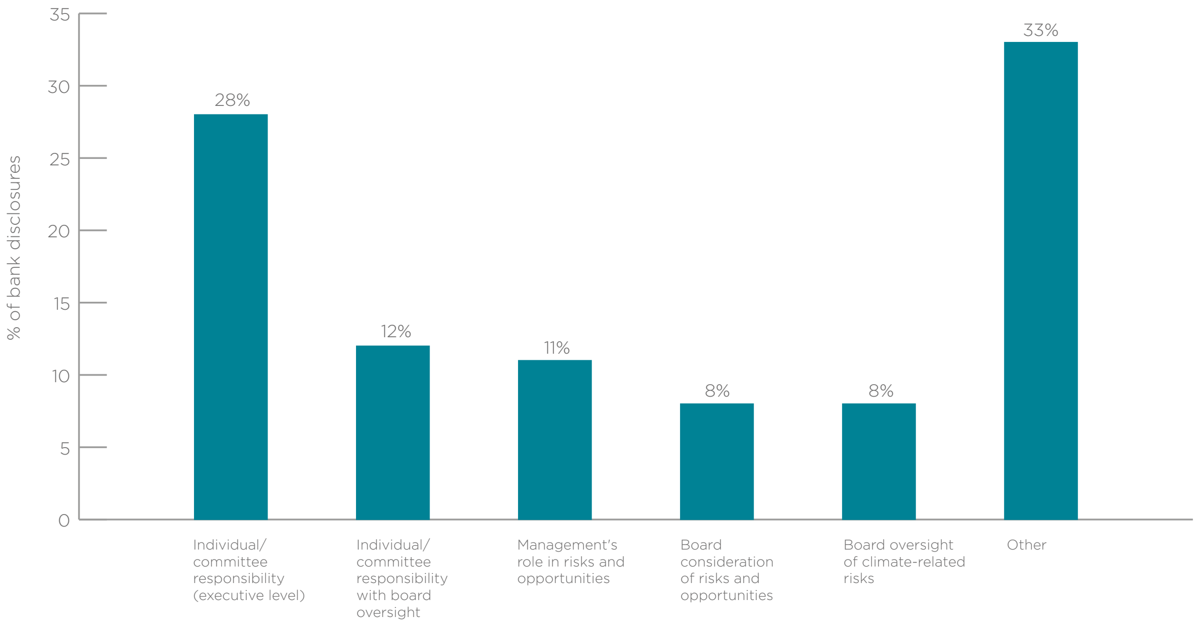


Figure 21 findings: The most referenced Governance activity is individual/committee responsibility (executive-level) with 28% of Governance disclosures.

There has been a strong focus across the industry to create new executive roles and to establish executive-level committees responsible for managing climate change risks and opportunities, for example:

- **Shinhan Financial Group** holds a Corporate Social Responsibility Committee which reviews climate change-related countermeasures, policies, plans for company-wide activities and relevant projects.
- **Citigroup** established the Environmental and Social Advisory Council (ESAC), a senior executive-level advisory council, which provides guidance on environmental and social issues related to global business activities, including advising on the Sustainable Progress Strategy.

- Also at **Citigroup,** the Global Head of Sustainability oversees Citi's Sustainable Progress Strategy and collaborates with a range of senior leaders to enable the development and implementation of climate-related metrics and targets, as well as other goals and programmes that generate a positive impact on society.
- In **Nordea,** Group Sustainable Finance is responsible for setting the strategic sustainability direction in focus areas. Group Sustainable Finance supports the business areas implementing policies and processes, for example in the integration of sustainability in the product offering.

There is also evidence of consideration for board oversight, for example:

- **Barclays** Board has governance oversight via Board Reputation Committee which reviews and approves ESG strategy to mitigate climate change and ESG targets.
- **EBRD** Board provides approval of the Bank's Environmental and Social Policy (ESP) which covers both lending and internal operations. In addition, EBRD's Board is routinely appraised of climate-related risks and opportunities at the project level through the inclusion of relevant information (for example, GHG emissions and climate resilience considerations).
- **ING** established the Climate Change Committee (CCC). This committee is chaired by ING's Chief Risk Officer and co-chaired by the board member responsible for Wholesale Banking. The CCC governs ING's climate-related risk and opportunity management, strategy and target-setting for the Group.

Strategy

Figure 22

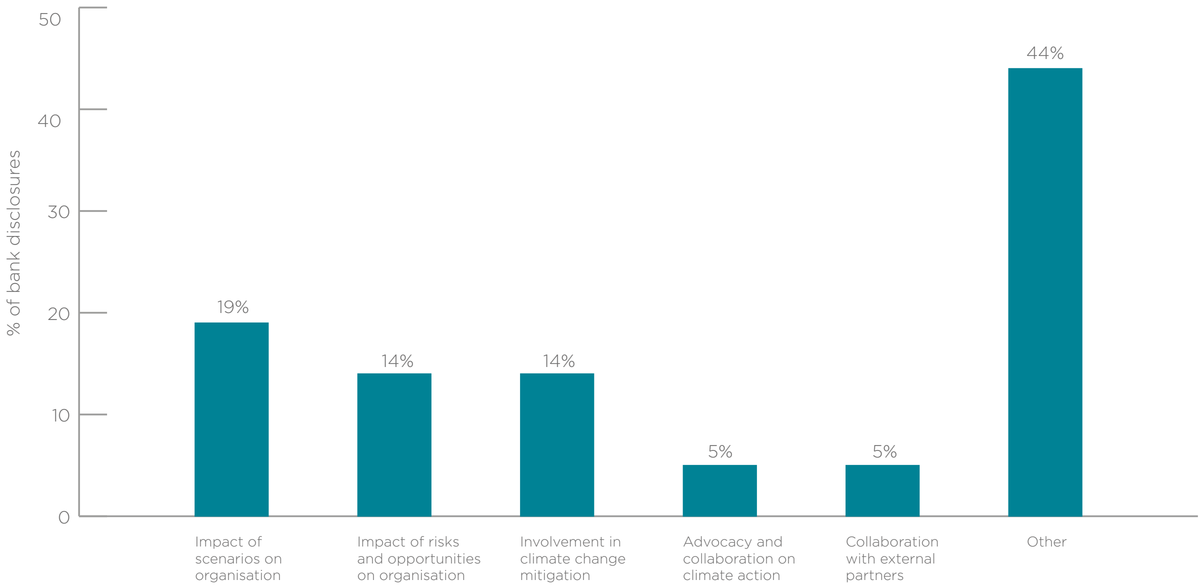


Figure 22 findings: The top strategy area referenced is the impact of scenarios on organisation, with just below 20% of Strategy disclosures specifically relating to this.

Whilst, in general, development in scenario analysis is low, a few banks are starting to consider climate-related scenarios on their organisation. Some good examples are the following:

- **Lloyds Banking Group** undertook forward-looking scenario analyses in their Commercial Banking business including business-as-usual and low-carbon transition scenarios, identifying sectors with a higher level of climate-related risk and opportunity.
- **Deutsche Bank** has completed oil and gas, and electricity sector tests using the International Energy Agency[25] new policy scenario and sustainable development scenario. This information has been used to assess vulnerabilities in these carbon-intensive sectors and to evaluate diversification requirements in the portfolio.
- **Société Générale** is testing analysis methodology developed by the 2 Degrees Investing Initiative (2DII)[26] using detailed corporate data. The bank is measuring the discrepancy between the portfolio's profile and the profile for which it should strive (based on climate scenarios).

Moreover, a large number of banks have updated their policies to include climate risk. For example:

- **HSBC** has introduced sustainable risk policies set by its Centre of Sustainable Finance. Customers across its Commercial and Global Banking segments will be given a Sustainability Risk Rating for its potential impact on people or the environment according to whether it operates to a standard that meets HSBC's policy. The customer relationship may be terminated if the customer is not meeting the sustainable risk policy standards.
- **BNP Paribas** integrates sector-specific policies and a broad list of ESG exclusions such as tobacco stocks in managed funds, direct financing to tobacco companies and coal-fired projects in high-income countries.
- **Société Générale** has ceased offering financial services and products to companies whose current activity in thermal coal represents 50% or more. To companies between 30% and 50%, it will cease activity if they do not have a reduction strategy to reach at most 30% by 2025.

[25] International Energy Agency, 2019.
[26] Global think tank on climate-related metrics and policies in financial markets.

Additionally, there is evidence of collaboration across the sector and with external partners on a range of climate-related issues. Many banks disclose the ways in which they have engaged with external partners, for example:

- **Handelsbanken** has participated in several collaborative engagements such as the PRI engagement on Methane Risks and Climate Action 100+[27].
- **Standard Chartered** and others have joined the Science Based Targets initiative 'Expert Working Group' to support methodologies for Scope 3 'financed emissions'.
- **National Australia Bank** is working with the Australian Bureau of Statistics to develop a set of standard green industry codes.

Within Strategy, training is an area with limited disclosures. Only a few banks have disclosed that they have rolled out training on climate-related issues across their organisation.

Examples of training include:

- **HSBC** has given sustainability training to more than 2,300 employees during 2018 and launched a sustainability online learning programme for all employees globally, with content developed in collaboration with the University of Cambridge Institute for Sustainability Leadership.
- **Lloyds Banking Group** is equipping its business relationship managers and other colleagues with training and tools to have more informed conversations on climate-related issues.

On green financing, there is clearly a strong momentum in the development of new products:

- **SEB** introduced the ability to purchase a green mortgage in 2018 and has been looking at ways to increase access to this product in the market.
- **UBS** created a new green fund (climate aware fund), selecting companies well prepared for a low carbon future.

There has also been good disclosure of green financials:

- **UBS** provides a view of climate-related sustainable investments, total deal value of green financial advisory services as well as total deal value for equity and capital markets green activity.
- **Citigroup** provides a detailed breakdown of progress against their $100 billion Environmental Finance goal, including the financing split by sector, region and the environmental criteria applied. The bank estimates GHG emissions avoided because of their financing.
- **HSBC** also provides a breakdown of progress against their $100 billion Sustainable Finance goal, detailing cumulative progress in investments, financing and facilitation.

Overall, whilst there seems to be good progress made within Strategy elements such as policy and commitments, and green products, there seems to be a key gap in disclosing information regarding the resilience of companies' strategies to climate change. Further work needs to be done in this regard to ensure scenario analysis is further amalgamated into the corporate strategy.

[27] See annexe d. for further information.

Risk Management

Figure 23

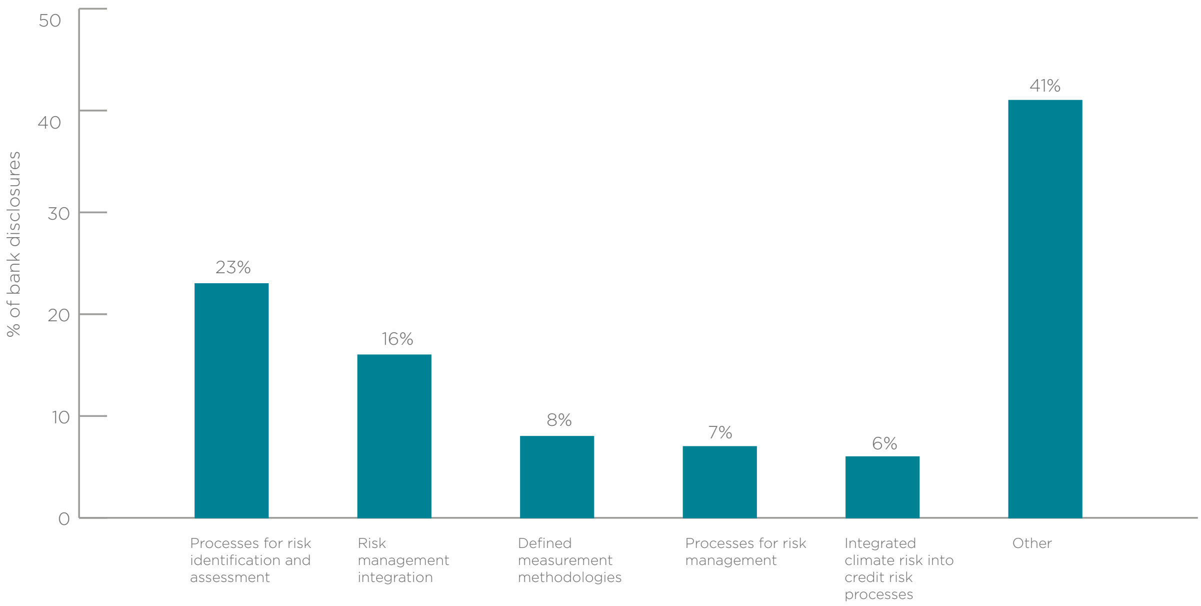


Figure 23 findings: Processes for risk identification and assessment is the most referenced disclosure type at 23%.

There is clearly a strong focus on implementing risk management processes for climate across the industry, for example:

- **Deutsche Bank** refer transactions with material reputational risk from a climate perspective to their Regional Reputational Risk Committees.
- **UBS** have an Energy Management System (EMS) established to monitor climate-related risks and opportunities.
- **Handelsbanken** implemented climate change risk identification and assessment in product development, benchmarking offering against sustainability standards.

In addition to establishing a process for risk management, many disclosing banks have integrated climate risk into credit risk frameworks. For example:

- **BMO Financial Group** applies environmental and social screening procedures to categorise and assess projects based on the magnitude of their potential impacts and risks. These principles have been integrated into their credit risk management framework.
- **Nordea** has integrated ESG risks into the credit risk framework and enhanced credit risk policies and guidelines. ESG screening is integrated into the credit risk assessment of all transactions.

Metrics & Targets

Figure 24

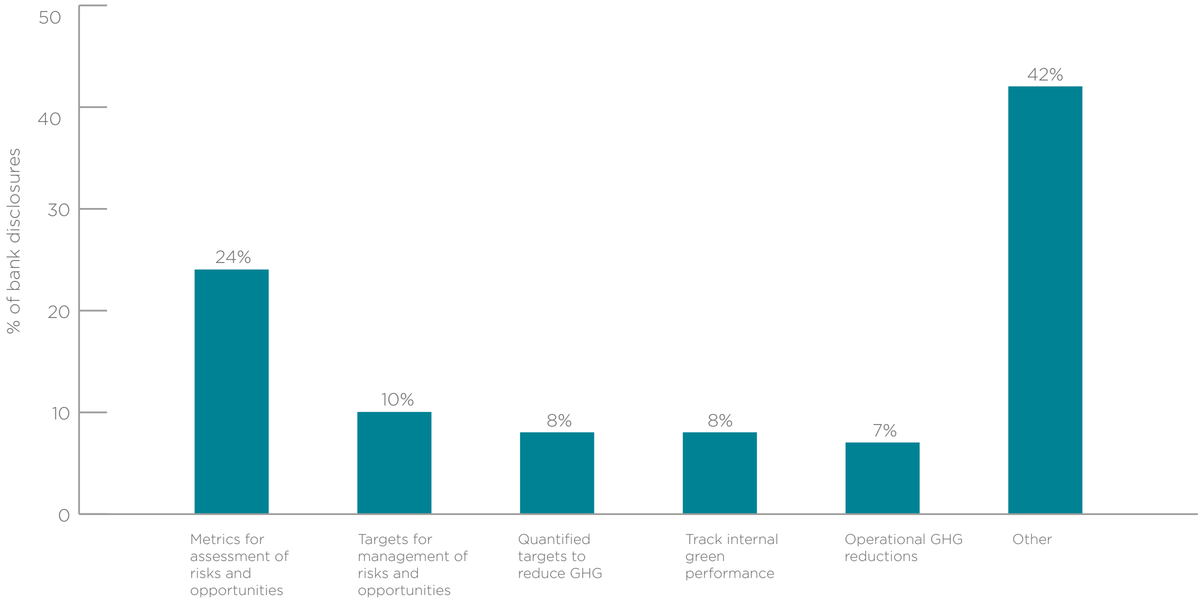


Figure 24 findings: 24% of disclosures relate to metrics for assessment of risks and opportunities.

Metrics for assessment of risks and opportunities is frequently referenced in the disclosures, albeit there is still limited progress in implementing these metrics. In contrast, there is evidence of strong progress in the development of carbon emission metrics, for example:

- **BNP Paribas** included both the level of GHG per FTE emitted in 2018 and the target level for 2020.
- **RBS** published an environmental footprint report disclosing operational GHG emissions breakdown by driver (Energy, Business Travel, etc) as well as water and waste metrics with baseline totals and year-on-year figures.
- **Nordea** has completed a materiality assessment of direct emissions, identifying business travel as its top driver (71% of 2018 carbon emissions) and energy consumption as a key contributor. Nordea Bank has built a strategy to maximise energy efficiencies in facilities and enhance the monitoring of water usage.

Whilst there is less progress in developing carbon metrics, examples of where banks have done this are the following:

- **Credit Suisse** measures balance sheet and credit risk-weighted assets across fossil fuel sectors.
- **UBS** provides a view of carbon-related asset as a percentage of net exposure.
- **Deutsche Bank** provides a description of loan exposures to oil and gas, utilities and coal mining.
- **HSBC** details the percentage of wholesale loans and advances to customer and banks in six sectors identified as carbon-intensive.
- **Société Générale** is evaluating the carbon footprint of the bank's balance sheet commitments in line with Article 173 of French Legislation (disclosure of significant greenhouse gas emissions).
- **Mizuho** includes a description of loan exposures to oil and gas, utilities and coal mining.

The following section provides a view specifically of future commitments made in the TCFD disclosures. Future disclosures from banks highlight where the industry will be focusing its attention and where we are likely to see more effort on climate change management in the years to come.

Future Disclosures

Figure 25

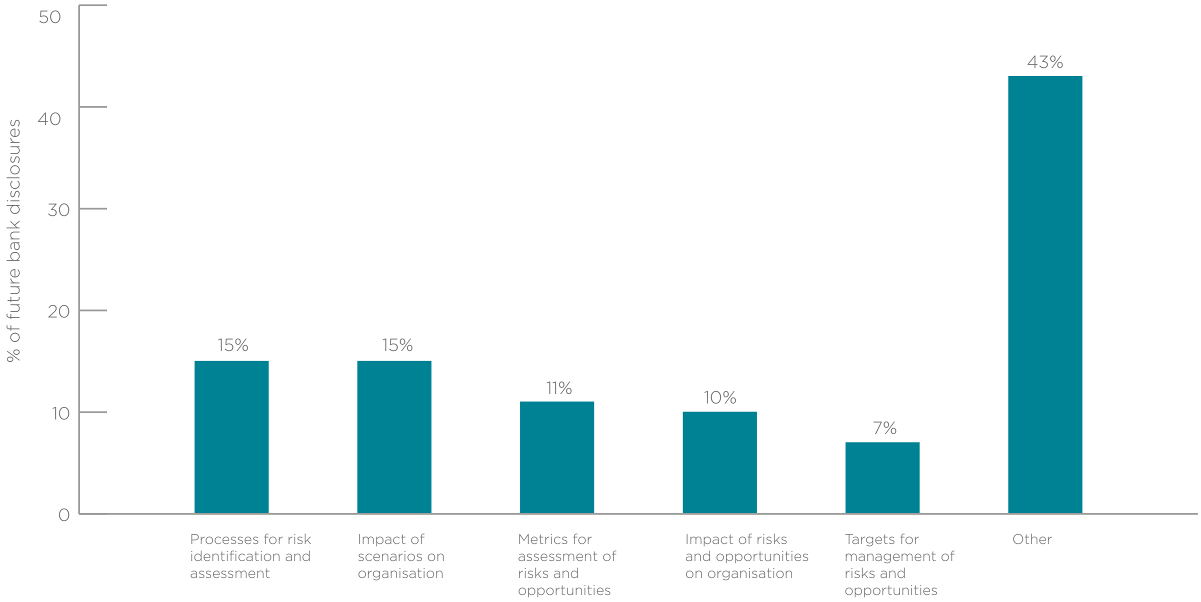


Figure 25 findings: 15% of disclosures relating to future activities banks would undertake were related to processes for risk identification and assessment and the impact of scenarios on the organisation.

As evidenced by the chart above, future areas of focus are primarily the further development of processes for risk identification, development of scenario analysis tools, and metrics and targets for risk and opportunities. Over the next few years, we should see further growth in the development of green metrics, further development of metrics to measure the carbon impact of the balance sheet and further evidence of how climate risk is managed and embedded in organisations.

Conclusion

As evidenced by this analysis, the key areas of current focus in Governance are the creation of executive committees and of new roles to provide climate risk oversight, both of which account for 28% of Governance disclosures.

In the Strategy section, the most referenced disclosure is the impact of scenarios (just under 20% of Strategy disclosures), however, this disclosure is primarily highlighted as a forward-looking objective.

Disclosures relating to processes for risk identification and assessment is the highest referenced Risk activity (23% of Risk Management disclosures), while metrics for assessment of risk and opportunities is the most referenced Metrics and Targets disclosure, although again primarily highlighted as a forward-looking objective (24% of Metrics and Targets disclosures).

The key areas of future focus are the further development of risk identification processes, analysis of scenario impact and metrics for assessment of risks and opportunities (15%, 15% and 11% of future commitments/plans disclosed respectively).

As evidenced by this study, there are valuable examples of best practices which banks can analyse to further enhance their consideration of climate-related risks and opportunities.

3. Recommendations

Based on the findings outlined in this report, BCS Consulting has identified several recommendations that banks should consider in order to enhance their climate-related financial disclosures and more effectively manage climate-related risks and opportunities. The recommendations are structured by area of the TCFD framework. In addition, a set of holistic recommendations has been provided aimed at banks and the Task Force[28], the latter especially considering how to increase engagement with the framework.

Key recommendations:

Governance

To effectively manage climate-related risks and opportunities:

- Sustainability and climate change oversight should be formally embedded into the responsibilities of the board to enhance climate-related accountability.
- Board climate-related activity, including reviews and approvals, should be clearly documented to evidence that the board is engaged and to track progress in the climate agenda.
- Banks should consider incorporating representatives who are highly qualified in climate change and environmental management to the Board and to climate-related executive committees.
- Banks should clearly articulate governance models for escalation of climate-related matters.

From our study, we can conclude that there is still a lack of board oversight for climate change issues. The topic of climate change needs to be enshrined in the board's agenda and clear processes for discussing risks, opportunities and the frequency of climate-related board meetings should be disclosed publicly. The study also highlights the importance of ensuring adequate climate training for board and senior management executives. Evidence that representatives of these committees have skills and knowledge in environmental management will provide investors with more confidence that climate-related issues have adequate oversight. Current disclosures can be enhanced by providing more visibility on key management decisions, such as the rationale for reviewing/not reviewing climate-related policies, rationale for approval/rejection of climate sensitive financing projects, etc.

Strategy

To embed climate-related issues into strategy:

- Banks should ensure that strategic objectives clearly integrate climate-related risks and opportunities.
- Banks should take advantage of existing climate scenarios developed by think tanks and other research organisations and complement analysis with scenarios developed internally.
- Banks should look to set up in-house climate research and collaborate with NGOs, research agencies, and universities to foster collaboration in understanding and mitigating climate change.
- Banks should incentivise internal engagement across teams to consider climate-related risks and opportunities, including Risk, Finance, Front Office and Corporate Sustainability.
- Banks should develop environmental training programmes to enhance efficiency (water use, waste reduction, etc) whilst also training relationship managers in climate-related risks and opportunities.
- Banks should continue revising policy and commitments, engaging environmental experts to help understand how best to monitor the environmental impact of clients.

[28] Task Force on Climate-related Financial Disclosures, responsible for defining and promoting the framework.

Collaborating with organisations that put climate change at the heart of business strategies will be key to ensure the risks arising from climate change are managed effectively across the current portfolio and going forward. By developing insights, through research and cross-industry knowledge sharing, banking innovation will flourish to support the best ideas and solutions for climate change.

One of the most effective ways of integrating climate risk in operations is to ensure that the workforce is trained on sustainability issues. Some of the largest banks (defined in this report) have adopted staff-specific trainings but substantial effort is required in setting up trainings more broadly in the industry. Training for relationship managers is also essential to ensure there is clear consideration of the climate-related risks and opportunities for servicing specific clients. When looking at the opportunities of climate change, the development of green product metrics is clearly progressing, with some banks already setting sustainable financing goals and tracking progression.

Another important area for the future will be articulating more precisely the types of activities that banks will not service. Whilst there is evidence of substantial progress in policy review, often the environmental risks are difficult to measure, given the large number of clients being serviced by banks in multiple locations. It is therefore important to invest in developing climate risk methodologies, in completing detailed client assessments and in developing climate product taxonomies that clearly articulate what is considered green financing versus brown financing and the bank's risk appetite for climate-sensitive activity. Engaging environmental experts and cross-industry collaboration can be important to develop innovation in climate risk measurement and monitoring.

Risk Management

To reduce climate-related risk:

- Banks should adopt a holistic approach of climate-related risk management, beyond credit risk, considering the identification and mitigation of other key risk types (e.g. market and operational risk).
- Banks should further develop and embed sustainability indicators into risk management practices, developing metrics to measure the carbon impact of their financing activities and integrating sustainability considerations in the credit rating of clients.
- Banks should review and enhance sustainability controls to monitor environmental risks in their financing activities.
- Relationship Managers should proactively engage with clients to understand their respective climate-related plans and factor these results in account planning.

It is widely recognised that climate change will affect the value of assets and business performance. It is critical for banking institutions to integrate climate-related risks within credit and market risk frameworks for strategic and financial decision making. Banks should also look to integrate non-financial impacts of climate change on their business operations in order to establish a holistic risk management framework that spans across all risk types, including reputational risk and operational risk.

The development of metrics for the assessment of climate risks is the area where most work is required. Banks need to review their portfolio and understand their exposure to carbon-intensive activity, starting at the sector level and gradually drilling down to the product level, taking special consideration for region of activity. Transitional and physical risks should be formally part of credit assessments and banks should also consider developing internal carbon pricing mechanisms to further integrate environmental considerations in business practices. Banks should also review the sustainability controls in place for transactions, ensuring that there is a clear understanding of the supply chain of potential clients, their regions of operation and their environmental strategy.

Metrics and Targets

To improve the measurement of climate-related performance:

- Banks should articulate targets for carbon emission metrics and track year-on-year progress.
- Banks should align to frameworks that aim to standardise definitions of green products, such as the Green Loan Principles[29], and align climate-related risk metrics to industry initiatives such as the Portfolio Carbon Initiative[30].
- Banks should benchmark their environmental performance against peers to identify areas of improvement and to take advantage of existing industry knowledge in metrics development.

Banks should continue enhancing their tracking on carbon emissions and ensure compliance with the GHG Protocol Corporate Accounting and Reporting Standard. The results highlight that targets are often disclosed for the next 12 months. Banks should also disclose medium-term targets to ensure there is a clear strategy for carbon emissions management.

Banks need to further develop their metrics on credit risk-weighted assets across fossil fuel sectors and the measurement of balance sheet exposure to carbon-intensive sectors, enabling the leadership teams to adequately address the insight gained from more effective information.

To ensure standardisation across the industry, endorsing and aligning to initiatives such as the Green Loan Principles and the Portfolio Carbon initiative will help develop adequate climate metrics for the assessment of risks and opportunities. Furthermore, benchmarking metrics against peers can be a valuable way of ensuring that the bank is keeping up with the latest developments.

[29] Loan Market Association, 2019.
[30] Greenhouse Gas Protocol, 2019.

General Recommendations

Several general, more holistic recommendations can be drawn from the information laid out in this report:

- As prescribed by the TCFD framework, banks should consolidate their TCFD disclosures and report them in the annual report to support investor reviews.
- Banks should attempt to standardise their disclosure approach in the TCFD framework to support comparability across the industry and year-on-year.
- Banks should have their own environmental data audited through a third party to certify its accuracy and increase market confidence in the information shared.
- The TCFD framework should be actively promoted to engage additional large banks and increase market coverage. Cross collaboration with international governmental agencies should help stimulate voluntary endorsement.
- The Financial Stability Board should consider ways of making climate-related financial reporting mandatory at the country level. As evidenced by this analysis, uptake in TCFD has been stagnating and progress year-on-year may not be fast enough to drive the urgent banking response required to help mitigate the risk of a 2 degrees scenario[31].

Many banks have chosen to report TCFD in ESG reports, Non-Financial reports or in standalone climate-related financial disclosure submissions. Often the disclosure format used by banks changes substantially year-on-year, which makes comparability more difficult. Banks should integrate their TCFD disclosures in their annual reports, standardise the reporting format and ensure these submissions have the same level of scrutiny as annual accounts. In this context, external auditing of the banks' own environmental data can be an important way to demonstrate reliability and provide investor confidence.

This study has also highlighted signs of stagnation in the TCFD uptake. The framework needs to be promoted to engage additional large organisations and increase engagement in other regions of the world beyond Europe, where market penetration is lower. To date, the regional endorsement is still highly concentrated in a small group of countries. Furthermore, voluntary disclosure may be proving a limiting factor in driving the urgent action required. Recent announcements such as the expectation, in the UK, to make all listed companies and target asset owners disclose in line with the TCFD recommendations by 2022[32] should also be followed by other countries to help facilitate global alignment in financial climate reporting.

As evidenced by this report, financial institutions are increasingly evolving from more traditional approaches centred on corporate social responsibility and reputational risk to more focused initiatives that attempt to address the financial impacts of climate change. By carrying out detailed reviews of their current business processes, defining measurable and reliable metrics and targets, as well as enforcing a culture of responsibility, banks can play an important role in driving the transition to a lower-carbon economy. The last two years evidence a good start in climate financial reporting for the industry, but more work is urgently required to drive the response necessary to fight against the imminent threat of climate change.

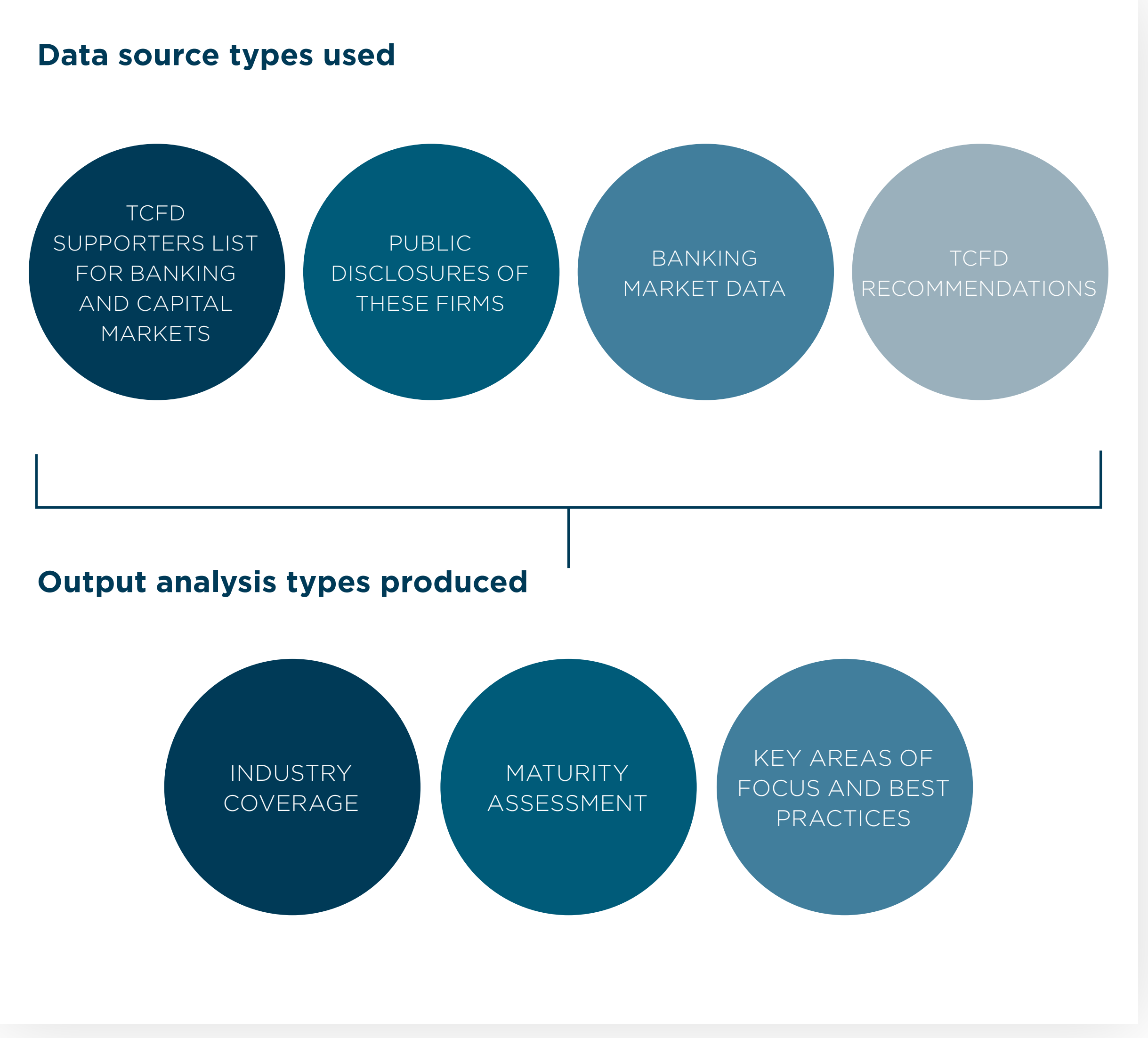
[31] See annexe b. for further information (Global Context of Climate Change).
[32] See Green Finance Strategy (2019).

4. Annexes

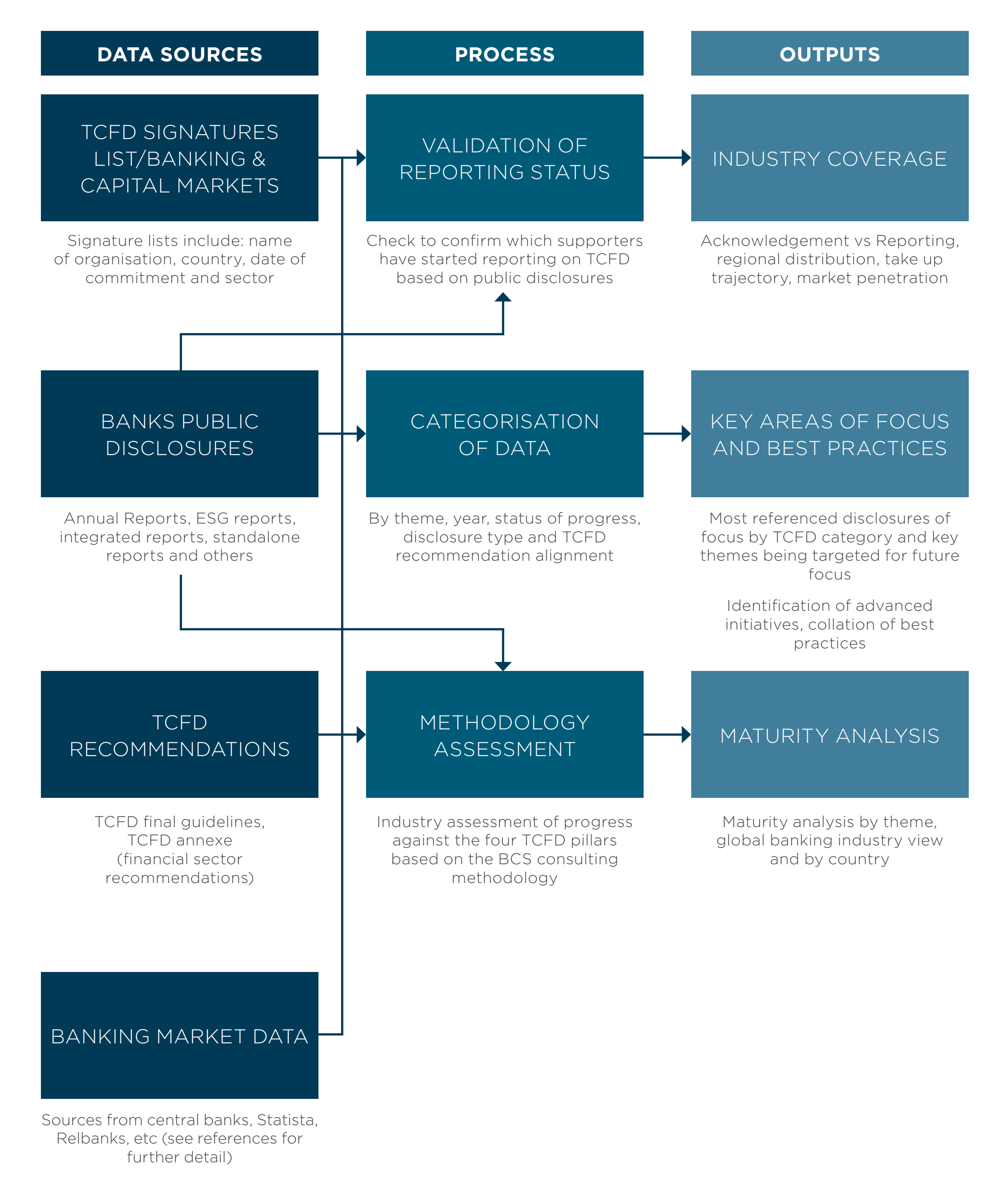
a. Report Methodology

To support qualitative and quantitative analysis, the approach used to prepare the report consisted of four stages:

1. Reviewing public sources of data.
2. Collating and classifying the data.
3. Applying the assessment methodology.
4. Consolidating results to provide an industry view.



TCFD report – approach overview



Scope

The study analysed the disclosures of 76 banks who had formally endorsed the TCFD framework by July 1st 2019. The list was sourced from the TCFD supporters directory. The study looked specifically at financial sector banks and capital market supporters. Complete list of firms analysed is detailed below.

Financial Sector – TCFD endorsement for banks[33] – FSB 2019 (Extracted 1st July 2019)

Name	Location	Region	Endorsement Date	Total Assets (USDbn)	Total Assets Source
ABN AMRO Bank N.V.	Netherlands	Europe	Nov-17	471.0	Relbanks (2018)
Australia and New Zealand Banking Group Limited (ANZ)	Australia	Oceania	Jun-17	700.4	Relbanks (2018)
Banco Santander	Spain	Europe	Dec-17	1,730.1	Relbanks (2018)
Bank J. Safra Sarasin Ltd.	Switzerland	Europe	May-19	35.7	Bank J. Safra Sarasin Ltd., Annual Report (2018)
Bank of America	United States	North America	Jun-17	2,281.2	Relbanks (2018)
Bankia	Spain	Europe	Jun-18	256.3	Relbanks (2018)
Bankinter	Spain	Europe	May-19	78.3	Bankinter Consolidated Balance Sheet (2017)
Barclays	United Kingdom	Europe	Jun-17	1,528.9	Relbanks (2018)
Bayerische Landesbank	Germany	Europe	May-19	264.6	Relbanks (2018)
BBVA	Spain	Europe	Dec-17	826.6	Relbanks (2018)
BMCE Bank of Africa	Morocco	Africa	Sep-18	32.4	BMCE Bank of Africa Annual Report (2018)
BMO Financial Group	Canada	North America	Dec-17	578.5	Relbanks (2018)
BNP Paribas	France	Europe	Jun-17	2,335.3	Accuity (2019)
BTG Pactual S.A.	Brazil	South America	Dec-17	33.1	BTG Pactual S.A. Annual Report (2018)
CaixaBank	Spain	Europe	Dec-17	459.0	Relbanks (2018)
Canadian Imperial Bank of Commerce (CIBC)	Canada	North America	Mar-18	483.8	Relbanks (2018)
Citigroup Inc.	United States	North America	Jun-17	1,843.1	Relbanks (2018)
Commonwealth Bank of Australia	Australia	Oceania	Mar-18	750.8	Relbanks (2018)
Crédit Agricole S.A.	France	Europe	Dec-17	2,112.0	Relbanks (2018)
Credit Suisse Group AG	Switzerland	Europe	Nov-17	815.6	Relbanks (2018)
Daiwa Securities Group	Japan	Asia	Apr-18	191.0	Daiwa Securities Group Annual report (2018)
Danske Bank A/S	Denmark	Europe	Sep-18	569.3	Relbanks (2018)
DBS	Singapore	Asia	Dec-17	387.3	Relbanks (2018)
Deutsche Bank	Germany	Europe	Sep-18	1,766.9	Relbanks (2018)
Development Bank of Japan	Japan	Asia	Jun-18	151.0	Development Bank of Japan (2019)
DGB Financial Group	South Korea	Asia	Sep-18	46.9	Relbanks (2018)
DNB ASA	Norway	Europe	Jun-17	328.3	Relbanks (2018)

[33] TCFD endorsement list sourced from TCFD supporters directory. Categories included from the TCFD supporters list are banks/banking and capital markets. AllianceBernstein and KBC Group were removed from the official list as they are not banks. Hitachi Capital Corporation and Kyushu Financial Group endorsed the framework in June 2019 but were added to the TCFD supporters directory after July 1st 2019. These two banks have not been included in the analysis completed for this report.

Name	Location	Region	Endorsement Date	Total Assets (USDbn)	Total Assets Source
E.SUN Financial Holding	Taiwan	Asia	Dec-17	66.0	E.SUN Financial Holding Financial Report (2017)
European Bank for Reconstruction and Development (EBRD)	United Kingdom	Europe	Mar-18	68.7	European Bank for Reconstruction and Development (EBRD) Financial Report (2018)
Goldman Sachs	United States	North America	Sep-18	916.8	Relbanks (2018)
Handelsbanken	Sweden	Europe	Jul-18	336.7	Relbanks (2018)
HSBC Holdings plc	United Kingdom	Europe	Jun-17	2,521.8	Relbanks (2018)
Industrial and Commercial Bank of China (ICBC)	China	Asia	Jun-17	4,027.0	Accuity (2019)
ING Group	Netherlands	Europe	Jun-17	1,013.7	Relbanks (2018)
International Finance Corporation (IFC)	United States	North America	Sep-18	94.3	International Finance Corporation (IFC) Financials (2018)
Intesa Sanpaolo	Italy	Europe	Oct-18	954.5	Relbanks (2018)
IOOF Holdings Ltd.	Australia	Oceania	Sep-18	2.1	IOOF Holdings Ltd. Annual Report (2018)
Itaú	Brazil	South America	Oct-17	437.4	Relbanks (2018)
Japan Finance Corporation	Japan	Asia	May-19	203.0	Japan Finance Corporation (2017)
Japan Post Bank Co., Ltd.	Japan	Asia	Apr-19	1,943.0	Japan Post Bank Annual Report (2018)
JPMorgan Chase & Co.	United States	North America	Dec-17	2,219.0	Accuity (2019)
KB Financial Group	South Korea	Asia	Oct-18	409.0	Relbanks (2018)
KfW Bankengruppe	Germany	Europe	Oct-18	565.4	Relbanks (2018)
Lloyds Banking Group	United Kingdom	Europe	Dec-17	1,095.6	Relbanks (2018)
Macquarie Group	Australia	Oceania	Apr-19	124.4	Relbanks (2018)
Mitsubishi UFJ Financial Group, Inc	Japan	Asia	Dec-17	2,773.8	Relbanks (2018)
Mizuho Financial Group	Japan	Asia	Dec-17	1,850.1	Relbanks (2018)
Morgan Stanley	United States	North America	Jun-17	851.7	Relbanks (2018)
National Australia Bank	Australia	Oceania	Oct-17	615.5	Relbanks (2018)
National Bank of Canada	Canada	North America	Apr-18	208.4	Relbanks (2018)
Nomura Holdings, Inc.	Japan	Asia	Jun-18	394.8	Relbanks (2018)
Nordea Bank Abp	Sweden	Europe	Dec-18	695.8	Relbanks (2018)
Rabobank	Netherlands	Europe	Oct-17	722.3	Relbanks (2018)
RBS	United Kingdom	Europe	Dec-17	995.7	Relbanks (2018)
Resona Holdings, Inc	Japan	Asia	Oct-18	434.7	Relbanks (2018)
Royal Bank of Canada	Canada	North America	Oct-17	1,028.7	Relbanks (2018)
Scotiabank	Canada	North America	Feb-18	754.5	Relbanks (2018)
SEB	Sweden	Europe	May-18	311.5	Relbanks (2018)

Name	Location	Region	Endorsement Date	Total Assets (USDbn)	Total Assets Source
Shin Kong Financial Holdings	Taiwan	Asia	Sep-18	115.7	Bloomberg (2019)
Shinhan Financial Group	South Korea	Asia	Sep-18	399.2	Relbanks (2018)
Société Générale	France	Europe	Oct-17	1,527.4	Relbanks (2018)
Standard Chartered	United Kingdom	Europe	Jun-17	663.5	Relbanks (2018)
State Street Corporation	United States	North America	Oct-17	238.4	Relbanks (2018)
Sumitomo Mitsui Financial Group	Japan	Asia	Dec-17	1,847.5	Relbanks (2018)
Sumitomo Mitsui Trust Holdings, Inc.	Japan	Asia	Jul-18	569.9	Relbanks (2018)
Swedbank	Sweden	Europe	Sep-18	269.2	Relbanks (2018)
Taishin Financial Holdings	Taiwan	Asia	Jan-19	56.9	Taishin Financial Holding Co., Ltd. And Subsidiaries Consolidated Financial Statements (2019)
TD Bank Group	Canada	North America	Oct-17	1,007.0	Relbanks (2018)
The Norinchukin Bank	Japan	Asia	Apr-19	1,006.7	Relbanks (2018)
THE SHIGA BANK, LTD.	Japan	Asia	Jul-18	55.3	Nikkei Asian Review (2019)
The Shoko Chukin Bank, Ltd.	Japan	Asia	May-19	113.0	The Shoko Chukin Bank, Ltd. Annual Report (2018)
Türkiye Garanti Bankası A.Ş.	Turkey	Asia	Jun-17	62.7	TheBanks.eu (2018)
UBS Group	Switzerland	Europe	Jun-17	937.8	Relbanks (2018)
Van Lanschot Kempen	Netherlands	Europe	Sep-18	15.5	Van Lanschot Kempen Annual Report (2018)
Westpac	Australia	Oceania	Dec-17	664.9	Relbanks (2018)
YES BANK	India	Asia	Dec-17	33.0	Economic Times (2018)

Information sources for firms

For all identified banks, the following materials were reviewed for TCFD reference (2017-2019):

- **Annual reports:** annual reports, detailing financial performance, governance disclosure and management review.
- **Integrated reports:** reports that combined financial information and non-financial information and follow the standard International Integrated Reporting Council guidelines.
- **Non-Financial reports:** reports that describe a broad range of non-financial disclosures and describe the social contribution of the organisation.
- **Sustainability reports:** Corporate Social Responsibility (CSR), Environmental Social Governance (ESG), which describe social, environmental and/or governance-related issues.
- **Standalone Climate-related Financial Disclosure reports:** in some cases, banks have produced standalone reports for climate-related financial disclosures.

Country & regional banking sector size as measured by total assets

Market sizes are estimated to help obtain an understanding of market penetration. Therefore, actual numbers may vary, and will either be slightly lower or higher than the numbers referenced in the tables below.

The tables below detail the country and regional estimates used for this report.

*Estimate conversion based on FX rates as of August 2019.

Region	Location	Market Size (USDtn)	Source
Africa	Morocco	< 1bn	Statista (2019)
Asia	China	38.0	Oliver Wyman (2017)
Asia	India	1.0	Oliver Wyman (2017)
Asia	Japan	12.5	Relbanks (2018)
Asia	Singapore	0.5	Oliver Wyman (2017)
Asia	South Korea	3.0	Statista (2019)
Asia	Taiwan	1.0	Oliver Wyman (2017)
Asia	Turkey	0.7	Statista (2019)
Europe	Denmark	1.0	TheBanks.eu (2017)
Europe	France	8.3	European Central Bank, Supervisory Banking Statistics (2019)
Europe	Germany	4.7	European Central Bank, Supervisory Banking Statistics (2019)
Europe	Italy	2.7	European Central Bank, Supervisory Banking Statistics (2019)
Europe	Netherlands	2.5	European Central Bank, Supervisory Banking Statistics (2019)
Europe	Norway	0.7	European Central Bank, Supervisory Banking Statistics (2019)
Europe	Spain	3.7	European Central Bank, Supervisory Banking Statistics (2019)
Europe	Sweden	2.0*	Relbanks (2018) - * figure based on four largest banks accounting for 80% of all lending in Sweden
Europe	Switzerland	3.3	European Banking Federation (2017)
Europe	United Kingdom	8.0	European Banking Federation (2017)
North America	Canada	4.1	Bank of Canada (2017)
North America	Mexico	0.5	Gobierno de México (2018)
North America	United States	21.1	Federal Reserve Bank of New York (2019)
Oceania	Australia	3.1	Reserve Bank of Australia (2019)
South America	Brazil	2.1	Statista (2019)

Region	Banking Assets (USDtn)	Source
Asia	55.0	Oliver Wyman (2017)
Europe	30.5	European Banking Study (2018)
North America	25.7	Federal Reserve bank of New York (2019); Gobierno de Mexico (2018); Bank of Canada (2017),
Other	36.8	Residual estimate
Total	148	DBRS (2019)

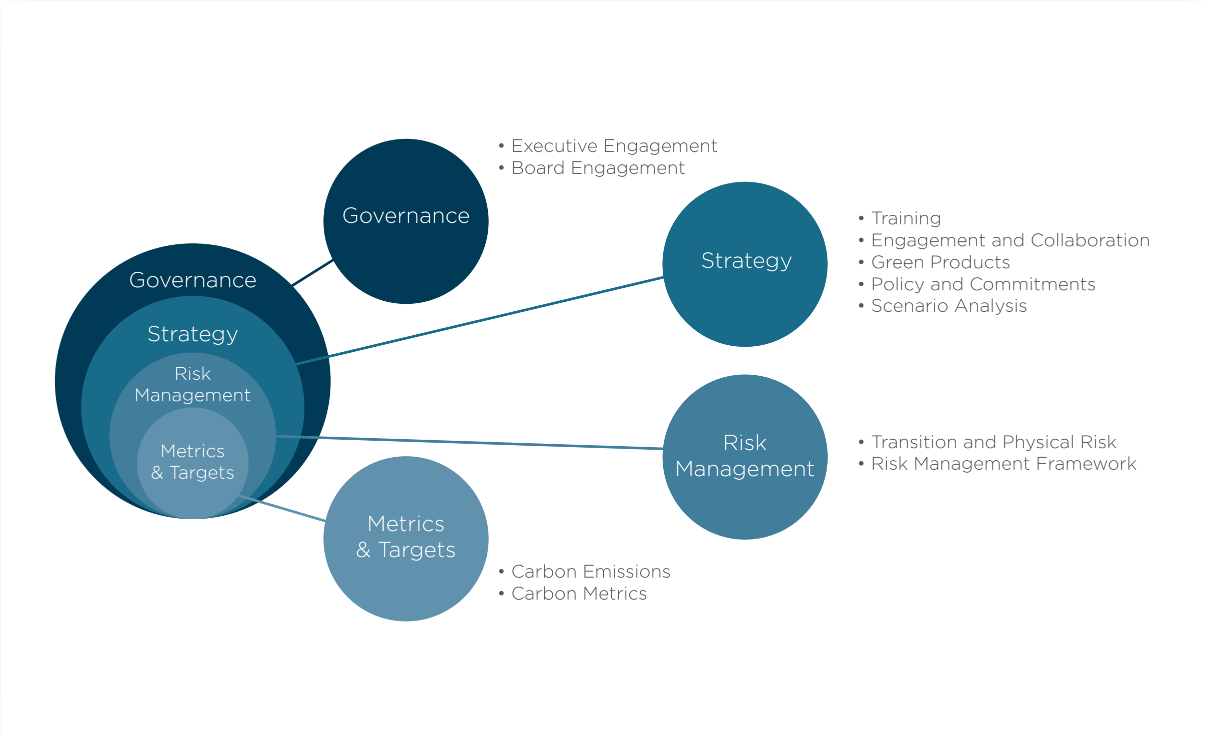
List of banks in Top 75[34] that do not endorse TCFD (in alphabetical order)

No	Name	Total Assets (USDbn)	Location	Region
1	Agricultural Bank of China	3,236	China	Asia
2	Banco Bradesco	370	Brazil	South America
3	Banco do Brasil	408	Brazil	South America
4	Bank of China	2,992	China	Asia
5	Bank of Communications	1,389	China	Asia
6	Bank of New York Mellon	372	US	North America
7	Caixa Econômica Federal	381	Brazil	South America
8	Cassa Depositi e Prestiti	504	Italy	Europe
9	China CITIC Bank	873	China	Asia
10	China Construction Bank Corporation	3,400	China	Asia
11	China Everbright Bank	628	China	Asia
12	China Merchants Bank	968	China	Asia
13	China Minsheng Bank	907	China	Asia
14	Commerzbank	543	Germany	Europe
15	Crédit Mutuel	837	France	Europe
16	DZ Bank	607	Germany	Europe
17	Groupe BPCE	1,512	France	Europe
18	Hua Xia Bank	368	China	Asia
19	Industrial Bank (China)	987	China	Asia
20	Ping An Bank	499	China	Asia
21	PNC Financial Services	381	US	North America
22	Postal Savings Bank of China	1,385	China	Asia
23	Sberbank of Russia	471	Russia	Europe
24	Shanghai Pudong Development Bank	943	China	Asia
25	State Bank of India	535	India	Asia
26	U.S. Bancorp	462	US	North America
27	UniCredit	1,005	Italy	Europe
28	Wells Fargo & Co.	1,872	US	North America

[34] Top 75 banks and total assets as per S&P Global Market Intelligence Report (S&P, 2018). List of banks not endorsing as of July 1st 2019 as per TCFD supporters directory. Bradesco Asset Management (BRAM) signed the Statement of Support for TCFD Recommendations in June 2017 but not Banco Bradesco S.A.(Group).

Data categorisation

All the information collated from TCFD disclosures was documented by year of disclosure, status (ongoing, implemented, and future) and categorised into disclosure themes. All disclosures were mapped to the TCFD recommendations as illustrated below.



Maturity assessment

BCS Consulting developed a maturity assessment methodology to evaluate progress in the disclosures based on 11 questions across the four TCFD categories. All banks were rated in each category against the methodology and total results for the industry per theme (% of banks not started, beginner, intermediate and advanced stage for each assessment question) have been produced for this report. The assessment methodology is as follows:

#	Section	Theme	Description	Maturity
1	Governance	Board Engagement	Evidence of board oversight for risks and opportunities.	Beginner
1	Governance	Board Engagement	Description of specific roles and responsibilities of the board in relation to climate change.	Intermediate
1	Governance	Board Engagement	Evidence of specific reviews and decisions made by the board (climate considerations).	Advanced
2	Governance	Executive Engagement	Committee in place to provide oversight of risks and opportunities (executive-level).	Beginner
2	Governance	Executive Engagement	Description of specific roles and responsibilities of the executive committee, as well as new executive roles.	Intermediate
2	Governance	Executive Engagement	Evidence of specific reviews and decisions made by the committee (climate considerations).	Advanced
3	Strategy	Green Products	Evidence of green product development in progress.	Beginner
3	Strategy	Green Products	Evidence of green product offering.	Intermediate
3	Strategy	Green Products	Metrics for green reporting and targets.	Advanced
4	Strategy	Training	Training objective disclosed.	Beginner
4	Strategy	Training	Description of specific teams being trained.	Intermediate
4	Strategy	Training	Metrics of training and or targets.	Advanced
5	Strategy	Policy and Commitments	Commitment to review position statements and policies.	Beginner
5	Strategy	Policy and Commitments	Evidence of policy amendments.	Intermediate
5	Strategy	Policy and Commitments	Intermediate criteria and lending targets in high impact sectors.	Advanced
6	Strategy	Engagement and Collaboration	Endorsement of Equator Principles, SDG, Paris Agreement, PRI, etc.	Beginner
6	Strategy	Engagement and Collaboration	Beginner criteria and evidence of internal collaboration (e.g. creation of inter-discipline forum, research team) or external collaboration (e.g. partnership with another organisation).	Intermediate
6	Strategy	Engagement and Collaboration	Internal and external collaboration evidence as well as endorsement of global initiatives.	Advanced
7	Strategy	Scenario Analysis	Commitment to complete scenario analysis and enhance stress testing capabilities.	Beginner
7	Strategy	Scenario Analysis	Development of specific scenarios (e.g. 2, 4 degrees, etc) and sector shocks.	Intermediate

#	Section	Theme	Description	Maturity
7	Strategy	Scenario Analysis	Evidence of stress tests completed and of carbon techniques under development such as carbon price calculation in rate of return and/or disclosure of credit portfolio in high impact sectors (e.g. exposure disclosure).	Advanced
8	Risk Management	Transition and Physical Risk	Objective to assess client's impact on climate change agenda, reference to transition risk and physical risk considerations.	Beginner
8	Risk Management	Transition and Physical Risk	Evidence of approach definition (e.g. identification of critical sectors, time horizon for planning, sector and product considerations).	Intermediate
8	Risk Management	Transition and Physical Risk	Adoption of climate risk considerations in credit risk processes (e.g. annual renewal of internal rating, risk factor modelling, customer thermal coal utilisation, transition risk rating development, etc).	Advanced
9	Risk Management	Risk Management Framework	Consideration of ESG factors in screening process.	Beginner
9	Risk Management	Risk Management Framework	Evidence of climate risk integration into processes and frameworks (e.g. ESG criteria application process, evidence of ESR framework, etc).	Intermediate
9	Risk Management	Risk Management Framework	Description of specific monitoring and tools procedures (e.g. ESG screening tool reference, EMS system, etc).	Advanced
10	Metrics and Targets	Carbon Emissions	Currently developing measurement tools.	Beginner
10	Metrics and Targets	Carbon Emissions	Targets and/or description of mitigation initiatives (e.g. purchasing of renewable energy). Some evidence of CO_2 emission metrics disclosure (e.g. total CO_2 emissions, with limited segmentation) and disclosure of other environmental factors (water usage, waste management, etc).	Intermediate
10	Metrics and Targets	Carbon Emissions	Reporting CO_2 emission metrics, targets and description of mitigating initiatives.	Advanced
11	Metrics and Targets	Carbon Metrics	Currently developing measurement tools.	Beginner
11	Metrics and Targets	Carbon Metrics	Targets or plans (e.g. integrating CO_2 measurement in funds, developing climate risk metrics, etc).	Intermediate
11	Metrics and Targets	Carbon Metrics	Evidence of measurement (e.g. measure of balance sheet and credit risk-weighted assets across fossil fuel sectors, etc).	Advanced

4. Annexes

b. Global Context of Climate Change

Introduction

The world is facing a climate emergency that will drastically affect the underpinning of the global economy.

Atmospheric concentration of greenhouse gases has triggered a temperature increase of approximately 1 degree Celsius from pre-industrial levels. Two-thirds of the temperature increase has occurred since 1975 (Goddard Institute for Space Studies, 2019). Furthermore, human activity is a key driver of global warming. The Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC)[35] concluded that it is more than 95% likely that at least half of the observed increases in temperature since 1951 through to 2010 were driven by human activity. IPCC estimates a 1.5-degree increase from pre-industrial levels between 2032 and 2052 if warming continues at the current rate (IPCC, 2014). A 2-degree rise in temperature would have profound impacts on ecosystems leading to high heat stress in cities, flooding, storms and droughts, triggering significant economic losses and financial instability (IPCC, 2014).

The Paris Climate agreement is the first universal, legally binding climate deal on a collective temperature goal and was adopted by 195 countries in 2016. Its main objective is to keep the global temperature well below a 2-degree increase from pre-industrial levels, which requires important changes in the economy. Fossil fuels are responsible for 70% of greenhouse gas emissions and state pledges in 2017 cover only a third of the emission reduction required (UN, 2018). As such, the private sector, especially banks as key enablers of capital, must play a pivotal role in securing the global economic shift to achieve the Paris Agreement target. Climate change poses clear risks to the stability of the financial system and to help understand the potential impact, the Bank of England has identified two[36] core types of risks (Bank of England, 2017) that affect the banking sector: physical risks and transitional risks.

Physical risks

Banks need to mitigate the physical impacts of extreme weather-related events. Droughts, floods, sea level rise, storms and heatwaves can result in damage to residential and commercial properties, factories, agricultural products and many other assets. Damage to these assets will translate into asset impairments and into the deterioration of borrowers' creditworthiness.

Bank of England Case Study – Residential Mortgages and Flood Risk

"The impacts of flooding and coastal change in the UK are already significant and expected to increase as a result of climate change.[...] Under a 2°C scenario, sea level in England and Wales is projected to rise a further 21-28cm by 2080."

About 9% of current mortgage exposure in England is in a flood risk zone.
The proportion of mortgages in the flood risk zone and the probability of flooding are expected to increase[37].

Norway – Sovereign Wealth Fund

In June 2019 Norway's Parliament voted for its Sovereign Wealth Fund, the Government Pension Fund Global (GPFG), to divest from a large number of oil and gas exploration holdings. The sell-off has an estimated value of $8 billion and is an attempt to reduce the fund's exposure to fossil fuels.

[35] Intergovernmental Panel on Climate Change (United Nations body for assessing and providing the scientific basis of climate change).
[36] The Bank of England has defined liability risk as its third climate-related risk which is primarily centred on the Insurance sector.
[37] Bank of England, 2018.

Transition risks

The adjustment to a lower-carbon economy results in transition risk as changes in policies, technology and consumption patterns can also diminish the value of a large range of assets and hinder the financial performance of businesses, especially those that are carbon-intensive. For example, to meet the 2-degree Paris Agreement climate target, two-thirds of known carbon reserves are deemed to be 'unburnable', and the level of losses attributed to these 'stranded assets' is anticipated to range up to $4 trillion (Nature Climate Change, 2018). Climate-related regulation will drive material asset impairments for carbon-intensive industries such as the energy industry (oil, gas, carbon, etc). Similarly, new technology and changes in consumption patterns can impact the business performance of carbon-intensive industries such as transport, agriculture, livestock, forestry, metals & mining and chemicals.

Financial impact for the banking sector: risks and opportunities

Physical and transitional risks will generate financial and non-financial risks for the banking sector. More frequent extreme weather-related events, changes in environmental regulation and in consumer patterns can affect prices in financial markets, which could result in losses for banks. For example, changes in the prices of commodities, corporate bonds, sovereign debt, equities and some derivatives are likely, and may negatively impact banks positions in the coming years if their portfolios are not aligned with expected climate pathways.

More frequent extreme weather events can damage assets such as property on a more regular basis. For banks, this increases credit risk in their portfolio as the probability of default and the loss given at default may increase. From an operational risk perspective, severe weather events can also impact business continuity, affecting processes, infrastructure and people. Banking reputation could also be impacted because of increased scrutiny from stakeholders regarding climate change action.

Climate change poses a significant threat to future global financial stability, but it also presents financial institutions with vast investment opportunities. Financial institutions have an important role in securing market stability, by channelling financial flows and allocating capital towards low carbon initiatives. The funds needed to finance this transition are significant with an estimated $60 trillion of additional investment required in renewables and energy efficiency by 2050 and governments relying in part on the private sector to assist in funding this transition (UNEP FI, 2019).

However, to achieve this, a key missing element is an adequate assessment of the risks and opportunities presented by climate change for the global economy. It is precisely in this context that the development of effective climate-reporting frameworks is of extreme importance and where the Task Force on Climate-related Financial Disclosures (TCFD) can play an important role. In April 2019, Principles for Responsible Investment (PRI) announced that it will be making additional sections of its reporting framework mandatory for signatories[38] in 2020. This relates to sections recently created to align with the TCFD recommendations.

Furthermore, at the time of writing, the UK government has announced the future Green Finance Strategy (July 2019), which includes the expectation to make all listed companies and target asset owners disclose in line with the TCFD recommendations by 2022. These are important steps to increase engagement with the framework as enhancing climate disclosures requires a global coordinated effort.

[38] See annex d. for further information.

4. Annexes

c. TCFD Background

Overview and purpose

The Task Force on Climate-related Financial Disclosures (TCFD) was formed by the Financial Stability Board (FSB) in December 2015 in response to a request from the G20 countries to better understand the financial risks posed by climate change. The main objective of the TCFD is to develop consistent climate-related financial disclosures to help investors, lenders, and insurance underwriters improve their understanding and analysis of climate-related risks and opportunities.

The formation of the TCFD was driven by the recognition that the private sector has a critical role in the fight against climate change. The voluntary recommendations set out by the TCFD have been designed to assist companies in identifying and disclosing the potential financial impacts of climate-related risks and opportunities as well as to help embed climate change considerations in their business models. The final recommendations were issued in June 2017.

TCFD framework structure

The TCFD structured its recommendations, which transcend sectors and jurisdictions, around four key areas: Governance, Strategy, Risk Management, and Metrics and Targets.

An overview of the framework is detailed below.[39]

Governance	Strategy	Risk Management	Metrics and Targets
Disclose the organisation's governance around climate-related risks and opportunities. **Recommended Disclosures:** 1. Describe management's role in assessing and managing climate-related risks and opportunities. 2. Describe the board's oversight of climate-related risks and opportunities.	Disclose the actual and potential impacts of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning where such information is material. **Recommended Disclosures:** 3. Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long terms. 4. Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning. 5. Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	Disclose how the organisation identifies, assesses and manages climate-related risks. **Recommended Disclosures:** 6. Describe organisation's processes for identifying and assessing climate-related risks. 7. Describe the organisation's processes for managing climate-related risks. 8. Describe how processes for identifying, assessing, managing climate-related risks are integrated into the organisation's overall risk management.	Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material. **Recommended Disclosures:** 9. Disclose Scope 1, Scope 2, and, if appropriate Scope 3 greenhouse gas (GHG) emissions, and the related risks. 10. Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process. 11. Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.
Complementary guidance for the banking sector (summary view)			
• Banks should describe processes and frequency by which the board and/or board committees are informed about climate-related issues. • Banks should describe how the board monitors and oversees progress against goals and targets for addressing climate-related issues.	• Banks should describe significant concentrations of credit exposure to carbon-related assets. • Banks should consider disclosing climate-related risks (transitional and physical) in lending and other financial intermediary business activities.	• Banks should consider characterising their climate-related risks in the context of traditional banking industry risk categories such as credit risk, market risk, liquidity risk, operational risk. • Banks should consider describing any risk classification frameworks used.	• Banks should provide the amount and percentage of carbon-related assets relative to total assets, the amount of lending and other financing connected with climate-related opportunities • Banks should provide metrics to assess the impact of climate-related risks on their financing activities, considering industry, geography, credit quality and average tenor.

[39]See Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures (2017) for a full list of guidelines to implement the recommendations.

Note on climate and ESG

Climate risks and opportunities are part of the concept of Environmental, Social and Governance (ESG) criteria, which aim to consider the sustainability and ethical impact of a business decision. The development of ESG considerations was driven by concerns that purely focusing on shareholder value maximisation as the primary corporate goal ignores the potentially detrimental effect of business activities on other stakeholders such employees, local communities and the environment. Whilst ESG touches on elements of climate, TCFD is specifically concerned with climate-related considerations and provides consistent guidelines for companies to manage climate-related risks and opportunities effectively.

4. Annexes

d. Key Terms for Reference

Organisation	Description
CDP	Formally known as the Carbon Disclosure Project, a not-for-profit organisation supporting investors, companies and cities in disclosing their environmental impacts (CDP, 2019).
Climate Action 100+	Investor initiative launched in 2017 with over 360 investors with collective management of over $34 trillion of assets. The initiative aims to ensure greenhouse gas emitters take action on climate change (Climate Action 100+, 2019).
Equator Principles	Risk management framework which has been adopted by 97 financial institutions for managing environmental and social risks in projects with the intention to provide a minimum standard for due diligence and monitoring (Equator Principles, 2019).
Paris Climate Agreement	United Nation Framework Convention on Climate Change. This landmark agreement has been adopted by 195 countries since 2016 to combat climate change via the central aim of keeping global temperature rise below 2 degrees Celsius above pre-industrial levels (UNFCC, 2017).
Principles of Responsible Investment	PRI is supported by the United Nations since 2005 which provides a voluntary set of six investment principles to incorporate ESG into investment practices (Principles of Responsible Investment, 2019).
Science Based Targets	Initiative that champions science-based target setting as a powerful way of boosting companies' competitive advantage in the transition to a low-carbon economy. The initiative showcases companies that set science-based targets, defines and promotes best practice in science-based target setting, offers resources to reduce barriers to adoption and independently assesses and approves companies' targets (Science Based Targets, 2019).
Sustainable Development Goals	17 global goals led by the United Nations Development Programme and adopted by all United Nations Member States in 2015 providing a blueprint for a better and sustainable planet by 2030 (UN Sustainable Development Goals, 2019).
UN Environment Programme Finance Initiative	UNEP FI is a global partnership between the United Nations Environment Programme and the Financial Sector with the aim to promote Sustainable Finance (UNEP FI, 2019).

4. Annexes

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"Banks have a critical role to play as facilitators of informed and robust capital allocations to support climate-resilient financial systems. The report reiterates the need for greater adoption of the TCFD recommendations globally to meet the scale of the challenge"

Mardi McBrien
Managing Director, Climate Disclosure Standards Board (CDSB)

"Climate risk management is firmly on the agenda of regulators and is now front-and-centre for banks to address. This report provides a timely reminder of the work that still needs to be done to meet the ambition of the TCFD framework"

Jo Paisley
Co-President, GARP Risk Institute

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