

The Current State of Climate Disclosure by Financial Institutions

September 2019

Sara AghakazemJourabaf

PhD, Research Associate, Global Risk Institute



GLOBAL
RISK
INSTITUTE

EXECUTIVE SUMMARY

In this article, we review the current practices that financial institutions are employing, globally, to comply with the recommendations developed by the *Task Force on Climate-related Financial Disclosure (TCFD)* (Figure 1). We highlight some of the challenges and obstacles that these institutions have faced when implementing those recommendations, and offer suggestions on how to deal with them. In line with strong support for the TCFD recommendations, we call for continued actions by the financial sector, governments, and standard-setting organizations in order to facilitate more effective and thorough disclosures of climate-related issues. The key areas for improvement that we have identified are as follows:

1. Financial institutions should establish an effective governance structure for climate-related risks.
2. Financial institutions should include emergent climatic risks in their scenario analysis.
3. Standard-setting organizations should develop industry- and region-specific reference scenarios for more comparable disclosures.
4. Standard-setting organizations should develop detailed criteria for materiality analysis.
5. Governments should support an orderly transition to a lower-carbon economy through early strategic planning and transparent policy signals.
6. Policy makers should make climate-related disclosures mandatory.

In June 2019, Canada's Expert Panel on Sustainable Finance released 15 recommendations focused on spurring the essential market activities, behaviours, and structures needed to bring sustainable finance into the mainstream. These recommendations are grouped into three pillars: (1) The opportunity, (2) foundations for market scale, and (3) financial products and markets for sustainable growth. As they navigated through this, much attention was paid to the industry-led, international Task Force on Climate-related Financial Disclosures (TCFD).

The TCFD, championed by Mark Carney and Michael Bloomberg in 2015, set out to develop recommendations on how companies should disclose climate-related risks and opportunities. Support for the TCFD is broad-based with 785 companies, 340 investors with over \$34 trillion, 36 central banks, and five governments, Canada among them, having committed to uphold its recommendations.

Additionally, the Canadian Securities Administrators (CSA) has recently issued guidance to issuers on how they might approach preparing disclosures of material climate-related risks. Again, their guidance references the TCFD recommendations.

As we look to strengthen our climate-related governance, strategy, risk management, metrics and targets, there is much to gain from following the TCFD recommendations.

CLIMATE DISCLOSURE PRACTICES BY FINANCIAL INSTITUTIONS

In this section, we discuss current TCFD practices implemented by financial institutions world-wide. We refer to statistics that are based on publicly available climate-related disclosures made through the CDP 2017 questionnaire.* These statistics are based on the information available at the time of writing this article. Subsequently, the *TCFD 2019 Status Report*,† that reviews companies’ 2016, 2017, and 2018 disclosures for alignment with the TCFD recommendations, shows that despite some progress made by financial institutions, the obstacles and challenges addressed in this article still exist. Our discussion concerns each of the four thematic areas – governance, strategy, risk management, and metrics and targets – recommended by the TCFD.

Climate and carbon reporting are not new for most large organizations. The TCFD recommendations (Figure 1) leverage existing frameworks, such as the CDP (formerly the Carbon Disclosure Project), but ask organizations to take their analysis one step further and consider the financial implications of climate change. Among the voluntary international regimes, CDP has fully integrated all of the TCFD recommendations into its questionnaire.¹ This questionnaire is used extensively for reporting climate-related issues by organizations in both the financial and non-financial sectors.

Figure 1: The TCFD recommended disclosures



Source: *The final TCFD recommendations report (2017)*.

* The majority of statistics referenced in this article are taken from two 2018 reports that are based on the disclosures made through CDP 2017 climate change questionnaire. In the first report, done jointly by CDP and CDSB, the sample includes 197 financial institutions from 14 selected geographies around the world, including Canada. The second report, conducted by EY, reviews the disclosures of 182 financial institutions from 18 countries, including Canada.

† TCFD: 2019 Status Report is available at <https://www.fsb-tcfd.org/wp-content/uploads/2019/06/2019-TCFD-Status-Report-FINAL-053119.pdf>

Governance

The TCFD asks organizations to describe their governance around climate-related risks and opportunities, as well as management's role in assessing and managing such risks and opportunities. Governance, through board oversight and management's actions, can illustrate whether an organization is taking adequate steps to identify and manage its climate-related risks and opportunities. Information disclosed on governance helps investors and other stakeholders make informed decisions based on better understanding as to the resilience of their portfolios to climate-related issues.

The financial sector has taken significant steps to prioritize climate-related issues at the board level. In this sector, 83% of organizations world-wide have reported some form of board oversight on climate change. Interestingly, there is a significant gap between North American and European financial institutions in overseeing climate-related issues. Over 90% of companies in France, Germany, and the UK have demonstrated board oversight on climate change, compared to 68% of companies in Canada and the USA.² This gap likely reflects the difference in the evolution of regulations and guidelines which have been more progressive in Europe than in North America.*

In Canada, however, recent progress has been made in terms of implementing the TCFD recommendations. One prime example is the recent publication of the *Final Report of the Expert Panel on Sustainable Finance* (June 2019) which provides next step recommendations to the Government related to pursuing a Canadian approach to implementing the TCFD. In addition, the *Canadian Securities Administrators (CSA) Staff Notice 51-258* was issued in August 2019.³ Its key objective was to provide issuers with guidance on how they might approach preparing disclosures of material climate-related risks. CSA pays particular attention to the role of the board in strategic planning, risk oversight, and the review and approval of an issuer's regulatory filings.

While the majority of financial institutions disclose some

* To review notable regulations and guidelines supporting the TCFD recommendations across the world see the TCFD roadmap available at https://6fefcb86e61af1b2fc4-c70d8ead6ced550b4d987d7c03fcd1d.ssl.cf3.rackcdn.com/cms/reports/documents/000/004/185/original/TCFD_Roadmap.pdf?1551945244

level of board oversight on climate change, there is room for further progress to be made. The same holds true as relates to management's action in assessing and managing climate-related issues. Financial institutions have, on average, addressed 59% of the recommended disclosures on governance, scoring 29% on quality of disclosure.^{4,5} Banks with the highest score for quality have provided details around managing the transition risks of companies included in their lending and investment portfolios, as well as the physical risks of the assets funded through their lending and investment activities. Similarly, the best-performing asset owners and managers have reported the impacts of the transition and physical risks on investments and portfolios.

Among financial institutions, scores for both the coverage and quality of disclosure around governance are the highest for banks and insurers. Conversely, these scores are the lowest for asset owners and managers who typically have increasing demand for more comprehensive and consistent disclosures.⁵ Disclosures reflect opportunity for the majority of asset owners and managers to increase their focus on climate change and assign a separate committee responsible for assessing climate risks.⁶ An analysis of recent responses from the world's 100 largest public pension funds shows that 70% of pension funds require that material climate-related issues be identified at the board level.⁷

Furthermore, less than half of the companies surveyed inform the board about climate-related issues more than once a year.⁸ The low frequency of reporting to the board may signal an opportunity for increased board attention to climate-related issues as a central risk linked to core business strategy. As a general conclusion, financial institutions should build an effective governance structure that raises strong awareness of climate-related issues at the board level.

Strategy

The TCFD asks organizations to assess the actual and potential material impacts of climate-related issues on their business strategies. It recommends that organizations

⁵ These numbers are calculated by the author of this paper based on the results published by EY Global Climate Risk Disclosure Barometer (2018).

identify climate-related risks and opportunities that could have material financial implications over the short to long term, and assess the resilience of their strategies to these risks and opportunities. There are several challenges in implementing this procedure. For the majority of organizations, in both the financial and non-financial sectors, the assessment time horizon is less than 6 years, implying short-term strategic responses to climate change.⁹ This limits the ability to build resilience to climate-related risks that might emerge over longer periods of time. In addition, proposing long-term solutions to support the Paris Agreement goals, and promoting a rapid and orderly transition to a lower-carbon future, both require extending the horizon. Extending the time horizon increases the uncertainty around the magnitude and timing of physical damages resulting from climate change, the effectiveness of mitigation/adaptation technologies at reducing those damages,¹⁰ and the changes in climate policies.¹¹

Uncertainties inherent in climate change can be mitigated using forward-looking, scenario-based assessments of climate-related risks and opportunities that may evolve under different conditions. Organizations can leverage scenario analysis to better understand potential impacts on their strategies and financial performance.¹² The TCFD strongly recommends including the 2°C benchmark, proposed by the Paris Agreement, in addition to other challenging scenarios such as those related to business as usual and Nationally Determined Contributions (NDC).¹³ Financial institutions can strengthen disclosures by incorporating more robust scenario analysis, including scenarios reflecting the Paris Agreement benchmark.¹⁴

Financial institutions, on average, cover 56% of the TCFD recommended disclosures on strategy, scoring 26% on quality of disclosure.[¶] These institutions have either disclosed limited information about their analyzed scenarios and results or indicated that they are postponing the scenario analysis.¹⁵ In addition, the scenario modelling has generally excluded physical risks due to the complexity or probability of materiality beyond the assessment horizon. These issues are more pronounced among asset owners and managers. To set

risk premiums, insurance companies have frequently (more than other financial institutions) conducted scenario analysis with particular attention to physical risks, but rarely disclosed reputational and liability risks following a natural disaster. These observations imply an opportunity for financial institutions to develop robust and flexible long-term strategies that deal with uncertainties inherent in climate change. Among banks, the disclosures are superior in Australia compared to other regions, mainly because scenario analysis has been used to drive strategic responses to climate-related issues.¹⁶

Risk Management

The TCFD asks organizations to describe (1) their processes for identifying, assessing, and managing climate-related risks, and (2) how those processes are integrated into their risk management structures. This information helps investors and other stakeholders evaluate organizations' risk profiles and risk management activities and reveals the degree to which climate-related risk considerations have been factored into their risk management frameworks.

Evidence suggests that financial sector risk management practices require more effort to fulfill the TCFD requirements.¹⁷ Financial institutions address 54% of the recommended risk management disclosures. Explanation of their processes is limited and, as a result, quality of disclosures is rated at 27%.^{18,**} These statistics reflect an opportunity for financial institutions to expand their baseline risk management practices as "climate-related risk is a non-diversifiable risk that affects nearly all sectors."¹⁹

These results are likely linked to issues concerning financial materiality. Defining the processes that determine the financial materiality of climate-related risks, over a specific time horizon, is an important aspect of risk management.²⁰ Failing to do so undermines the quality of disclosures.²¹ When materiality is not clearly defined and disclosed, investors and other stakeholders may face significant challenges when trying to evaluate possible climate-related impacts on their portfolios.²² They cannot rely on the information disclosed by investee firms.

Also contributing to the baseline risk management

¶ These numbers are calculated by the author of this paper based on the results published by EY Global Climate Risk Disclosure Barometer (2018).

** Ibid

practices, organizations have typically designed their processes to manage climate-related risks that might emerge over less than 6 years.²³ Adopting this short time horizon, likely reflects organizations' uncertainty estimating climate risk over the long run. This gives rise to "reactive rather than strategic" responses to managing such risks as they become evident over time.²⁴ As well, some analyses methodologies (e.g., quantifying physical risks) rely on backward looking historical data which cannot explain the future impacts of climate change.^{25,26}

Consequently, existing risk management procedures should be improved to fully align with the TCFD recommendations that advocate the use of scenario analysis to foresee climate-related risks expected to emerge over a longer time horizon. These observations call for more action, particularly on the part of standard-setting organizations, to help the various sectors of the economy (1) overcome the challenges in setting timeframes, (2) assess the financial materiality of climate-related risks, and (3) develop more mature and forward-looking processes that incorporate such risks into traditional risk management frameworks.

Metrics and Targets

The TCFD recommends that organizations explain their metrics and targets for measuring and managing their material climate-related risks and opportunities. Revealing such information helps investors and other stakeholders assess and compare organizations' general exposure to climate-related issues and their progress in managing those issues.²⁷ The TCFD pays particular attention to disclosing metrics and targets regarding Scopes 1, 2, and 3 GHG emissions.^{††} It highlights that these emissions are the main driver of climate change and that reducing them to support the Paris Agreement likely imposes more significant transition risks on large emitters. In practice, the most commonly disclosed metrics and targets set by financial institutions relate to Scopes 1 and 2 GHG emissions.^{28,29} Scope 3 emissions from investments are rarely disclosed.^{30,31}

†† According to the TCFD report, Scope 1 are all direct GHG emissions from owned or controlled sources, Scope 2 are indirect GHG emissions from consumption of purchased electricity, heat, or steam, and Scope 3 refers to other indirect emissions (not covered in Scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions.

In setting targets for (Scopes 1 and 2) emissions reductions, 19% of financial institutions are currently using internal carbon pricing, while 32% have identified climate policies as a key risk driver.³²

Other climate-related metrics and targets are rarely revealed. Focusing predominantly on setting metrics and targets to measure and reduce GHG emissions does not adequately reflect important climate-related risks and opportunities identified by an organization in line with its strategy and risk management processes. This point is supported by the fact that organizations with similar levels of GHG emissions face different climate-related risks. Reducing such risks depends on how robust and thorough their strategies and risk management processes are. Therefore, focusing on emission-reduction targets cannot deal with all material risks induced by climate change and can yield important repercussions for this sector. This issue is particularly crucial for insurance companies with greater exposure, than other institutions, to the physical risks of climate change. In general, the financial sector has addressed 58% of the recommended disclosures around metrics and targets. However, limited elaboration on disclosed items and the omission of relevant information have led to a score of 29% on quality of disclosures.^{33,††}

KEY AREAS FOR IMPROVEMENT

The TCFD recommendations help organizations understand and respond to their climate-related issues. Although climate disclosures indicate that the financial sector has made efforts to comply with the TCFD recommendations, there are areas for improvement. We suggest six key areas for improvement that will help organizations to move towards best practices.

†† These numbers are calculated by the author of this paper based on the results published by EY Global Climate Risk Disclosure Barometer (2018).

1. Financial institutions should establish an effective governance structure for climate-related risks.

Modest disclosures, made by financial institutions around governance, may indicate the need to raise directors' awareness of climate-related issues and to develop an effective governance structure at the board level. The World Economic Forum has articulated eight principles when building effective climate governance (Figure 2).³⁴ These principles are based on existing corporate governance frameworks, including the TCFD recommendations, and have involved extensive consultations with over 50 board directors.

While these principles provide a useful framework for boards to provide oversight on climate-related issues, they do not prescribe an approach to environmental and social governance. This fact is acknowledged by the *Canadian Coalition for Good Governance (CCGG)* which established similar principles summarized in *The Directors' E&S Guidebook*, issued in 2016. CCGG argues that "each company's approach will be based on its unique situation and strategic course, and will take time to develop."³⁵ The *Final Report of the Expert Panel on Sustainable Finance*³⁵ (June 2019) recommends that the federal government point to the World Economic Forum's principles and the CCGG's guidebook in order to encourage good board governance in Canada.³⁴ In addition, the *Canadian Securities Administrators (CSA) Staff Notice 51-358* (August 2019) emphasizes the role of the board in providing risk oversight as well as adopting a strategic planning process that takes into account climate-related risks and opportunities.

To conclude, there is no unique solution to effective governance that can be adopted by all companies. These principles offer an approach for integrating climate-related risks into core business practices and priorities. They set a clear pathway towards defined priorities and remain adaptable to changing conditions that might occur over time.³⁶

³⁴ See page 3 of CCGG's *The Directors' E&S Guidebook*, available at https://www.ccg.ca/wp-content/uploads/2019/01/the_directors__e_s_guidebook.pdf

³⁵ See Recommendation 5.1 on Page 17 of *Final Report of the Expert Panel on Sustainable Finance*.

Figure 2: Guiding principles for effective climate governance on corporate boards

- 1) A board should be accountable for ensuring a company's long-term resilience to climate-related risks.
- 2) A board should determine the most effective way to embed climate-related issues into its committee structures to maintain oversight of the company's climate resilience and governance.
- 3) A board's committees should be sufficiently diverse in knowledge, skills, and experience. Such diversity enables appropriate scrutiny of climate subjects with material financial implications.
- 4) A board should ensure that management conducts the materiality assessment of climate-related issues over a long time horizon and on an ongoing basis.
- 5) A board should ensure that all material information is integrated into long-term investment planning and decision-making processes.
- 6) A board should ensure that material climate-related issues and strategic decisions are consistently and transparently disclosed in financial filings.
- 7) A board should maintain regular exchanges and dialogues with policy-makers, investors, and other stakeholders to encourage the sharing of methodologies and to stay informed about, for example, the latest climate-related risks and regulatory requirements.
- 8) A board may encourage inclusion of climate-related targets and indicators into incentive schemes to ensure that senior management factors climate-related risks and opportunities into planning and actions.

Source: *The World Economic Forum (2019)*.

2. Financial institutions should include emergent climatic risks in their scenario analysis.

The next challenge concerns institutions providing adequate disclosures regarding physical risks and, in particular, overlooking emergent climatic risks. Uncertainty and complexity regarding the magnitude, timing, and costs of physical risks make understanding these risks and their impacts increasingly challenging. Specifically, the IPCC emphasizes the evidence of “emergent risks” that could lead to unexpected climatic tipping points – i.e., abrupt and drastic changes in the earth systems in response to smooth variations in driving forces.³⁷ The potential collapse of the Atlantic thermohaline circulation, the dieback of the Amazon rainforest, and the decay of the Greenland ice sheet and Arctic sea-ice are tipping points that have received recent attention.³⁸ Tipping points could irreversibly shift the world to a new warmer state, causing additional impacts on global economies.³⁹

We suggest that financial institutions leverage results obtained from environmental science studies as well as from economic models (such as environmental valuation techniques) to estimate, at least, a lower bound for potential economic losses associated with tipping points.⁴⁰

For example, assume that we need to understand the financial implications of the decay of the Greenland ice sheet. Environmental scientists indicate that this decay is likely to occur at a global temperature increase of between 1°C and 2°C, and its key impact could be the rise in the global mean sea-level by 2 to 7 meters.⁴¹ On the other hand, according to economic models, the expected annual loss of sea-level rise under 1 meter, in the 100-year flood zone with no adaptation, is estimated to be around 0.3-9.3% of the global GDP.⁴² After combining these results, a rough estimate for the economic losses caused by melting the Greenland ice sheet is at least 0.6% of global GDP. As another example, a 2019 study has demonstrated that melting Arctic sea-ice accelerates global warming, which could lead to significant rises in the mean discounted economic effect of climate change: +4.0% (\$24.8 trillion) under the 1.5°C scenario, +5.5% (\$33.8 trillion) under the 2°C scenario, and +4.8% (\$66.9 trillion) under the NDC scenario.⁴³ These values are estimated by incorporating

dynamic emulators of complex physical models into one of the existing integrated assessment models (called PAGE-ICE).

Significant potential losses associated with climatic tipping points imply that financial institutions should go beyond the physical risks associated with extreme weather events. They should try to understand and quantify the potential material (physical) impacts of climatic tipping points on their businesses, under different scenarios, and integrate them into their long-term strategies and risk management processes.

3. Standard-setting organizations should develop industry- and region-specific reference scenarios for more comparable disclosures.

The TCFD advocates that scenario analysis should consider a reasonable variety of future outcomes. Scenario analysis helps organizations understand possible future impacts of physical and transition risks on their businesses. There are numerous possible climatic scenarios and the choices may be very different across organizations. This makes climate-related disclosures difficult to compare. To deal with this issue, the TCFD suggests that organizations adopt the publicly available scenarios developed by the International Energy Agency (IEA) and the Intergovernmental Panel on Climate Change (IPCC) that are relevant to their organizations.^{44,***}

Despite the TCFD recommendations around scenario analysis, there are still two important practical issues: First, as discussed earlier,^{†††} financial institutions do not disclose adequate information about their climatic scenarios and, in particular, disclosures often overlook the 2°C scenario. Second, the existing scenarios focus on climate and the economy at a global scale and are not produced for the purposes of organizational level disclosure.⁴⁵ Therefore, some scenarios might not be

*** The IEA develops different scenarios that illustrate the impact of different climate policies on the level of temperature rise. The IPCC derives scenarios by integrating climate models with projections of greenhouse gas concentrations. These scenarios are summarized in a Technical Supplement, *The Use of Scenario Analysis in Disclosure of Climate-Related Risks and Opportunities*,³⁷ that the TCFD published to facilitate scenario analysis.

††† See Strategy on Page 4.

relevant to, or appropriate for, organizations in a certain geographic region or with a specific supply chain. For example, Canada is warming at double the global average, implying that global climate projections, and the resulting scenarios, cannot fully reflect Canada's specific climate. Thus, they cannot adequately enhance critical strategic thinking regarding potential climate-related risks and opportunities in Canada.

These two practical issues can be mitigated by developing industry- and region-specific reference scenarios, to enable more accurate and comparable analysis and reduce the likelihood of overlooking the important scenarios. We conclude that the best practice is to disclose all the parameters used, assumptions made, and analytical choices for implementing the scenario analysis. Ideally, this practice should be adopted in Canada and more broadly. If financial institutions are more specific in their disclosures, both national and international standard-setting organizations will be better able to respond with standard scenarios that align with the needs of specific industries and regions. Canada's *Final Report of the Expert Panel on Sustainable Finance* recommends the federal government promote comparability through sponsoring a research effort to develop several base climatic scenarios, including 2°C or lower scenarios.^{***}

4. Standard-setting organizations should develop detailed criteria for materiality analysis.

The most important challenge in identifying which information to disclose is linked to deciding which climate-related issues are material, particularly over medium to long term horizons. The TCFD has a financial interpretation of materiality and recommends that “organizations should determine materiality for climate-related issues consistent with how they determine the materiality of other information included in their financial filings.”⁴⁶ However, such a general view of materiality does not provide the detailed criteria organizations need to determine which information to report. In addition, there is no consensus about time horizons over which

climate-related risks might become material. These issues increase the likelihood of unintentional misrepresentation and/or omission of relevant climate-related information, posing liability and reputational risks. In addition, organizations adopt different approaches for materiality assessment and defining time horizons, which reduces the comparability of disclosures.

To deal with these issues, standard-setting organizations should develop detailed materiality criteria that will enable financial institutions to conduct accurate and robust materiality analysis. The urgent need for such criteria is reflected in various initiatives across the world. Examples are *The Australian Accounting Standards Board's Practice Statement 2: Making Materiality Judgements*, Canada's *Final Report of the Expert Panel on Sustainable Finance*, and the *Canadian Securities Administrators (CSA) Staff Notice 51-358*. This CSA report articulates guiding principles for determining materiality and advocates that “information is likely material if a reasonable investor’s decision whether to buy, sell, or hold securities in an issuer would likely be influenced or changed if the information in question was omitted or misstated.” This definition of materiality, compared to the TCFD, gives a more detailed direction for materiality assessment. In addition, it is important that financial institutions have a benchmark for defining their time horizons for materiality assessment.

Not surprisingly, lack of detailed definitions of materiality, that can be adopted by all organizations and remain robust across time horizons, can cause climate-related disclosures to be inadequate, incomparable, and time inconsistent.

5. Governments should support an orderly transition to a lower-carbon economy through early strategic planning and transparent policy signals.

Achieving the primary goal of the Paris Agreement – i.e., to keep the rise in average global temperature well below 2°C – will require a rapid structural shift towards lower-carbon technologies. However, certain market failures that exist in the financial system may provide inadequate incentives to undertake lower-carbon investments at the

^{***} See Recommendation 5.2.c on Page 18 of *Final Report of the Expert Panel on Sustainable Finance*.

required scale and pace. Such market failures are usually dealt with by imposing a carbon tax or a cap-and-trade program. However, carbon tax is subject to debate for two primary reasons:⁴⁷ First, while these policies are intended to facilitate transition to a lower-carbon economy, they might cause excessive economic losses and exacerbate financial instability if implemented too abruptly. Second, the perception that environmental taxes could have adverse impacts on businesses, and subsequently on growth and employment, often makes them less desirable for governments, and reduces the required strength of such policies for a smooth transition.

To mitigate undesirable implications of climate policies, we provide three suggestions: First, regulators should design optimal policies that yield the highest social welfare and implement them at an optimal time. To achieve this, there is a need to develop dynamic models that enable forward-looking assessments of climate-related risks and their social and macroeconomic repercussions on financial stability, growth, and employment. These models should combine dynamic macroeconomic models with climate scenarios and involve all potential time-dependent trade-offs as a result of transition to a lower-carbon economy. Whether the additional costs imposed by a climate policy are worthwhile depends on the avoided costs and the benefits of adopting that policy.

Second, it is crucial that policy makers develop an early strategic plan that supports a smooth and orderly transition to a lower-carbon future, while concurrently safeguarding financial stability and promoting growth. For example, Canada is ambitious to be among the leaders in the global transition to a low-emissions future. In April 2018, Canada's Minister of Environment and Climate Change and Minister of Finance jointly appointed the Expert Panel on Sustainable Finance to present the Government with a set of recommendations to scale and align sustainable finance in Canada with the country's climate and economic goals.⁵⁵⁵ Such an initiative facilitates the transition to a climate-smart economy and ensures financial stability.

Third, policy makers should be transparent about their

future climate policies, so that organizations in both financial and non-financial sectors can better foresee the future, become more aware of potential material risks imposed by such policies, and adequately mitigate such risks through adjusting their business strategies and risk-management processes in a timely manner.

6. Policy makers should make climate-related disclosures mandatory.

It is noteworthy that disclosure regimes that rely on self-reporting may not lead to widespread implementation unless auditors and policy makers intervene. This point has been evident in certain examples of disclosures on GHG emissions and other types of environmental issues over the past decades. Similarly, even with the intervention of standard-setting organizations, incentive remains for some financial institutions to underreport their climate-related issues if the expected benefits exceed the expected costs. Organizations may choose a level of reporting that yields the highest expected net benefit.

To promote adequate levels of disclosure by organizations, the first step should be to make climate-related disclosures mandatory rather than voluntary. A third party should then audit the disclosures and inspect work places/facilities to verify that there are no discrepancies between organizations' disclosed and actual climate adaptation/mitigation actions. Since both inspections and audits are costly, policy makers should develop optimal mechanisms for random audits/inspections and develop optimal structures for penalties that eliminate incentives for underreporting and misrepresenting information.

The need for mandatory reporting, particularly based on national standards, as well as auditing, has been extensively reflected in the media.¹¹¹¹ Various initiatives across the world (see, for example, Canada's *Final Report of the Expert Panel on Sustainable Finance*) reinforce this

⁵⁵⁵ Final Report of the Expert Panel on Sustainable Finance- Mobilizing Finance for Sustainable Growth, published in June 2019, is available at http://publications.gc.ca/collections/collection_2019/eccc/En4-350-2-2019-eng.pdf

¹¹¹¹ See, for example, <https://www.cbc.ca/news/politics/climate-change-bank-of-canada-financial-system-review-1.5137625>, and <https://www.nationalobserver.com/2019/05/16/news/bank-canada-warns-fire-sales-carbon-intensive-assets-could-destabilize-financial>.

imperative. The urgency for government intervention to enforce adequate levels of climate-related disclosure is clear.

CONCLUSION

This study set out to (1) review the practices financial institutions are currently employing globally to comply with the *Task Force on Climate-related Financial Disclosure (TCFD)*, (2) identify associated challenges and obstacles, and (3) make recommendations to move towards best practices.

It is evident that climate-related disclosures in the financial sector are still in their infancy and that institutions are challenged with materiality assessment and scenario analysis, particularly when there is uncertainty around the magnitude, timing, and costs associated with physical and transition risks.

Collectively, the TCFD recommendations and, subsequently, the *Canadian Securities Administrators (CSA) Staff Notice 51-358*, and *Canada's Final Report of the Expert Panel on Sustainable Finance* offer excellent guidelines that can be used as a framework for future action. We strongly advocate their adoption.

APPENDIX

BACKGROUND ON THE TOPIC

Climate change poses significant risks to financial stability globally. Over the last four decades, the number of worldwide extreme weather events, such as floods and storms, has tripled. Consequently, the average losses of the global insurance industry have soared to US\$64 billion per year over the last decade, compared to nine billion annually in the 1980s.^{****} The financial implications of climate change are not limited to insurance companies. As the frequency and severity of weather-related catastrophes increase, other financial institutions also experience significant losses through the interruption of supply chains, reduced stock prices due to compromised assets, and increased operation costs, to name a few examples. Estimations indicate that further changes in climate can result in an up to 17% loss of the world's financial assets, which is equivalent to US\$24 trillion.⁴⁸ Therefore, climate change is widely seen as one of the most likely and impactful global threats to financial stability in the future,⁴⁹ which suggests countries must take action in order to limit global warming.

Over the last few years, countries have taken important steps towards reducing the physical impacts of climate change. A prime example is the ratification of the Paris Agreement in 2016 by countries that are the main producers of global carbon emissions.⁵⁰ The Paris Agreement's central aim is to pursue efforts to keep the rise in global average temperature well below 2 degrees Celsius by the end of the century. However, responding to this agreement requires a transition to a lower-carbon economy, which can impose significant financial and reputational risks due to extensive changes in policy, technology, and supply and demand for certain

^{****} These numbers are calculated by the author of this article based on the data published by Munich RE in 2018, under the title of "Overall and insured losses in US\$ for relevant natural loss events worldwide 1980 – 2018", available at <https://natcatservice.munichre.com/overall/1?filter=eyJ5J2WFyRnJvbSI6MTk4MCIwVhclRvIjoyMDE4fQ%3D%3D&type=1>.

commodities, products, and services. Specifically, this transition is expected to induce more ambitious climate policies at international, national, and sub-national levels, which may significantly impact the existing assets. Implementation of climate policies necessitates a carbon budget for the world in which only a small fraction of proven reserves can be extracted, causing a broad range of assets to lose their value and subsequently become stranded.⁵¹ Asset stranding can tumble share prices and cause significant economic losses.⁵² Therefore, reducing the physical impacts of climate change imposes transition risks on the entire financial system, which can be mitigated through an early governments' strategic planning that supports a smooth transition to a lower-carbon future.⁵³

Transition to a lower-carbon economy also induces opportunities for organizations through resource efficiency and cost savings, the adoption of low-emission energy sources, the development of new products and services, access to new markets, and building resilience along the supply chain.⁵⁴ Climate-related risks and opportunities (collectively referred to as climate-related issues) can have material impacts on the financial position of organizations by affecting their revenues and expenditures, assets and liabilities, and capital and financing.

Financial institutions have shown an urgent need to understand climate-related issues that would be material to their businesses. In practice, financial and non-financial organizations often disclose their material risks and opportunities induced by climate change through various channels such as mandatory/voluntary frameworks, sustainability reports, financial filings, and company websites.⁵⁵ However, inconsistency and insufficient comparability among existing disclosure frameworks, as well as inadequate disclosures around climate-related risks and opportunities, undermine the quality of decision-useful information for investors and other stakeholders.

Recognizing these issues motivated the G20 Finance Ministers to ask the Financial Stability Board to review how the financial sector can account for climate-related

issues.⁵⁶ The result has been the emergence of a voluntary and consistent disclosure framework that helps market participants better understand and report their material climate-related risks and opportunities.⁵⁷ This framework is called the Task Force on Climate-related Financial Disclosures (TCFD), which is “designed to leverage, rather than replace, existing disclosure regimes.”⁵⁸ In 2017, the TCFD published its final recommendations that “provide a common set of principles that should help existing disclosure regimes come into closer alignment over time.”⁵⁹ These recommendations are developed around four thematic areas: governance, strategy, risk management, and metrics and targets (Figure 1, page 2).

Since its inception, the TCFD has received 785 supporters from a broad range of sectors including 374 financial firms responsible for assets of \$118 trillion.⁶⁰ In addition, governments and financial regulators around the world are adopting and implementing the TCFD recommendations. For example, Canada’s Minister of Environment and Climate Change and Minister of Finance jointly appointed the Expert Panel on Sustainable Finance to explore opportunities and challenges facing Canada in this field, and in June 2019, the Expert Panel issued its final report that presents the Government with a set of recommendations to scale and align sustainable finance in Canada with its specific climate and economic goals. In particular, the Panel recommends the Government to define and pursue a Canadian approach to implementing the TCFD recommendations.

REFERENCES

- ¹ CDP Technical Note on the TCFD (2019), “Disclosing in line with the TCFD’s recommendations in 2019”, https://b8f65cb373b1b7b15feb-c70d8ead6ced550b4d987d7c03fcdd1d.ssl.cf3.rackcdn.com/cms/guidance_docs/pdfs/000/001/429/original/CDP-TCFD-technical-note.pdf?1512736184
- ² Joint CDSB and CDP Report (2018), “Ready or not: Are companies prepared for the TCFD recommendations?”, https://www.cdsb.net/sites/default/files/tcfd_preparedness_report_final.pdf
- ³ CSA Staff Notice 51-2-358, “Reporting of Climate Change-related Risks”, https://www.osc.gov.on.ca/documents/en/Securities-Category5/csa_20190801_51-358_reporting-of-climate-change-related-risks.pdf
- ⁴ EY Global Climate Risk Disclosure Barometer (2018), “How are your climate change disclosures revealing the true risks and opportunities on your business?”, https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/assurance/assurance-pdfs/ccass_global_climate_risk_barometer.pdf
- ⁵ Ibid
- ⁶ Ibid
- ⁷ Asset Owners Disclosure Project (November 2018), “World’s largest pension funds ignoring climate breakdown – How can they fix it?”, <https://aodproject.net/worlds-largest-pension-funds-ignoring-climate-breakdown-how-can-they-fix-it/>
- ⁸ Joint CDSB and CDP Report (2018), “Ready or not: Are companies prepared for the TCFD recommendations?”
- ⁹ Ibid
- ¹⁰ Felgenhauer, T. & Webster, M. (2013), “Multiple adaptation types with mitigation: A framework for policy analysis”, *Journal of Global Environmental Change* 23, 1556-1565
- ¹¹ Campiglio, E., Dafermos, Y., Monnin, P., Ryan-Collins, J., Schotten, G. & Tanaka, M. (2018), “Climate change challenges for central banks and financial regulators”
- ¹² Final TCFD Recommendations Report (2017), “Recommendations of the Task Force on Climate-related Financial Disclosure”, <https://www.fsb-tcfid.org/publications/final-recommendations-report/>
- ¹³ TCFD Technical Supplement (2017), “The use of scenario analysis in disclosure of climate-related risks and opportunities”
- ¹⁴ EY Global Climate Risk Disclosure Barometer (2018), “How are your climate change disclosures revealing the true risks and opportunities on your business?”
- ¹⁵ Ibid
- ¹⁶ Ibid
- ¹⁷ Joint CDSB and the SASB report (September 2017), “Converging on Climate Risk: CDSB, the SASB, and the TCFD”, https://www.cdsb.net/sites/default/files/sasb_cdsb-tcfid-convergingonclimaterisk-091317-web.pdf
- ¹⁸ Ibid
- ¹⁹ Final TCFD Recommendations Report (2017), “Recommendations of the Task Force on Climate-related Financial Disclosure”
- ²⁰ Ibid
- ²¹ Joint CDSB and CDP Report (2018), “Ready or not: Are companies prepared for the TCFD recommendations?”
- ²² Joint CDSB and the SASB report (September 2017), “Converging on climate risk: CDSB, the SASB, and the TCFD”
- ²³ Joint CDSB and CDP Report (2018), “Ready or not: Are companies prepared for the TCFD recommendations?”
- ²⁴ Ibid
- ²⁵ EY Global Climate Risk Disclosure Barometer (2018), “How are your climate change disclosures revealing the true risks and opportunities on your business?”
- ²⁶ Joint CDSB and the SASB report (2017), “Converging on climate risk: CDSB, the SASB, and the TCFD”
- ²⁷ Final TCFD Recommendations Report (2017), “Recommendations of the Task Force on Climate-related Financial Disclosure”
- ²⁸ Status Report (2018), “Task Force on Climate-related Financial Disclosures: 2018 Status Report”
- ²⁹ EY Global Climate Risk Disclosure Barometer (2018), “How are your climate change disclosures revealing the true risks and

opportunities on your business?”

- ³⁰ EY Global Climate Risk Disclosure Barometer (2018), “How are your climate change disclosures revealing the true risks and opportunities on your business?”
- ³¹ Joint CDSB and CDP Report (2018), “Ready or not: Are companies prepared for the TCFD recommendations?”
- ³² Ibid
- ³³ EY Global Climate Risk Disclosure Barometer (2018), “How are your climate change disclosures revealing the true risks and opportunities on your business?”
- ³⁴ Final Report of the Expert Panel on Sustainable Finance (June 2019), http://publications.gc.ca/collections/collection_2019/eccc/En4-350-2-2019-eng.pdf
- ³⁵ World Economic Forum (2019), “How to set up effective climate governance on corporate boards”, http://www3.weforum.org/docs/WEF_Creating_effective_climate_governance_on_corporate_boards.pdf
- ³⁶ Canadian Coalition for Good Governance (2016), “The Directors' E&S Guidebook”, https://www.ccg.ca/wp-content/uploads/2019/01/the_directors_e_s_guidebook.pdf
- ³⁷ Oppenheimer, M., Campos, M., Warren, R., Birkmann, J., Luber, G., O'Neill, B., Takahashi, K., Brklacich, M., Semenov, S., Licker, R. & Others (2015), “Emergent risks and key vulnerabilities”, *Climate Change 2014 Impacts, Adaptation and Vulnerability: Part A: Global and Sectoral Aspects*, Cambridge University Press, 1039-1100, https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-Chap19_FINAL.pdf
- ³⁸ Lenton, T. M., Held, H., Kriegler, E., Hall, J. W., Lucht, W., Rahmstorf, S. & Schellnhuber, H. J. (2008), “Tipping elements in the Earth’s climate system”, *Proceedings of the national Academy of Sciences* 105, 1786-1793, <https://www.pnas.org/content/105/6/1786.short>
- ³⁹ Yumashev, D., Hope, C., Schaefer, K., Riemann-Campe, K., Iglesias-Suarez, F., Jafarov, E., Burke E. J., Young, P. J., Elshorbany, Y. & Whiteman, G. (2019), “Climate policy implications of nonlinear decline of Arctic land permafrost and other cryosphere elements”, *Nature Communications* 10, 1900, <https://www.nature.com/articles/s41467-019-09863-x>
- ⁴⁰ Goldstein, A., Turner, W. R., Gladstone, J. & Hole, D. G. (2018), “The private sector’s climate change risk and adaptation blind spots”, *Nature Climate Change* 6, 18-25, <https://www.nature.com/articles/s41558-018-0340-5>
- ⁴¹ Lenton, T. M., Held, H., Kriegler, E., Hall, J. W., Lucht, W., Rahmstorf, S. & Schellnhuber, H. J. (2008), “Tipping elements in the Earth’s climate system”
- ⁴² Hinkle, J., Lincke, D., Vafeidis A. T., Perrette, M., Nicholls, R. J., Tol, R. S. J., Marzeion, B., Fettweis, X., Ionescu, C. & Levermann, A. (2014), “Coastal flood damage and adaptation costs under 21st century sea-level rise”
- ⁴³ Yumashev, D., Hope, C., Schaefer, K., Riemann-Campe, K., Iglesias-Suarez, F., Jafarov, E., Burke E. J., Young, P. J., Elshorbany, Y. & Whiteman, G. (2019), “Climate policy implications of nonlinear decline of Arctic land permafrost and other cryosphere elements”, *Proceedings of the national Academy of Sciences* 111, 3292-3297, <https://www.pnas.org/content/111/9/3292.short>
- ⁴⁴ TCFD Technical Supplement (2017), “The use of scenario analysis in disclosure of climate-related risks and opportunities”, <https://www.fsb-tcf.org/wp-content/uploads/2017/06/FINAL-TCFD-Technical-Supplement-062917.pdf>
- ⁴⁵ Landry E. & Jay J. (2018), “The Task Force on Climate-related Financial Disclosures: Design decisions in the vortext of ESG reporting standards”, <https://cbey.yale.edu/sites/default/files/2018/10/Landry%20final%20Oct%2029%202018.pdf>
- ⁴⁶ Final TCFD Recommendations Report (2017), “Recommendations of the Task Force on Climate-related Financial Disclosure”
- ⁴⁷ Campiglio, E., Dafermos, Y., Monnin, P., Ryan-Collins, J., Schotten, G. & Tanaka, M. (2018), “Climate change challenges for central banks and financial regulators”, *Nature Climate Change* 6, 462–468, <https://www.nature.com/articles/s41558-018-0175-0>
- ⁴⁸ Dietz, S., Bowen, A., Dixon, C. & Gradwell, P. (2016), “‘Climate value at risk’ of global financial assets”, *Nature Climate Change* 6, 676–679, <https://www-nature-com.proxy.lib.uwaterloo.ca/articles/nclimate2972.pdf>
- ⁴⁹ The World Economic Forum (2019), “The Global Risk Report 2019”, <https://www.weforum.org/reports/the-global-risks-report-2019>

- ⁵⁰ The United Nations Climate Change (2016), “Paris Agreement- Status of Ratification”, <https://unfccc.int/process/the-paris-agreement/status-of-ratification>
- ⁵¹ Cairns, R. (2018), “Stranded oil of Erewhon”, *Journal of Energy Policy* 121, 24 8-251
- ⁵² Caldecott, B., Harnett, E., Cojoianu, T., Kok, I. & Pfeiffer, A. (2016), “Stranded assets: A climate risk challenge”, *Washington, DC: Inter-American Development Banks*
- ⁵³ Campiglio, E., Dafermos, Y., Monnin, P., Ryan-Collins, J., Schotten, G. & Tanaka, M. (2018), “Climate change challenges for central banks and financial regulators”, *Nature Climate Change* 6, 462–468, <https://www.nature.com/articles/s41558-018-0175-0>
- ⁵⁴ Final TCFD Recommendations Report (June 2017), “Recommendations of the Task Force on Climate-related Financial Disclosure”
- ⁵⁵ Ang, G. & Copelando, H. (2018), “Integrating climate change-related factors in institutional investment”, *OECD Round Table on Sustainable Development*, <https://www.oecd.org/sd-roundtable/papersandpublications/Integrating%20Climate%20Change-related%20Factors%20in%20Institutional%20Investment.pdf>
- ⁵⁶ G20 Ministerials (April 2015), “Communiqué G20 Finance Ministers and Central Bank Governors Meeting”, <http://www.g20.utoronto.ca/2015/150417-finance.pdf>
- ⁵⁷ Final TCFD Recommendations Report (2017), “Recommendations of the Task Force on Climate-related Financial Disclosure”
- ⁵⁸ Carney M. (December 2016), A speech on “Remarks on the Launch of Recommendations of the Task Force on Climate-related Financial Disclosure”, *Bank of England*, <https://www.bis.org/review/r161216h.pdf>
- ⁵⁹ Final TCFD Recommendations Report (2017), “Recommendations of the Task Force on Climate-related Financial Disclosure”
- ⁶⁰ Status Report (2019), “Task Force on Climate-related Financial Disclosures: 2019 Status Report”, <https://www.fsb-tcfd.org/wp-content/uploads/2019/06/2019-TCFD-Status-Report-FINAL-053119.pdf>

ACKNOWLEDGEMENT

The author gratefully acknowledges all the valuable comments from Sonia Baxendale, *President & CEO, GRI*, Vanda Vicars, *COO, GRI*, Alyson Slater, *Senior Director, GRI*, Hugh O'Reilly, *Executive in Residence, GRI*, and Lois Tullo, *Executive in Residence, GRI*.

ABOUT GRI

We are a premier organization that defines thought leadership in risk management for the financial services industry. We bring together leaders from industry, academia, and government to draw actionable insights on emerging risks.

© 2019 Global Risk Institute in Financial Services (GRI). This “The Current State of Climate Disclosure by Financial Institutions” is a publication of GRI. This “The Current Global State of Climate Disclosure by Financial Institutions” is available at www.globalriskinstitute.org. Permission is hereby granted to reprint the “The Current State of Climate Disclosure by Financial Institutions” on the following conditions: the content is not altered or edited in any way and proper attribution of both authors and GRI is displayed in any reproduction. All other rights reserved.