



BANCO DE MÉXICO®



**Inquiry:** Design of a  
Sustainable Financial System

CLIMATE AND ENVIRONMENTAL RISKS  
AND OPPORTUNITIES IN  
MEXICO'S FINANCIAL SYSTEM

*from*

**DIAGNOSIS TO ACTION**

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## Banco de México

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## UNEP Inquiry

The Inquiry into the Design of a Sustainable Financial System has been initiated by the United Nations Environment Programme (UNEP) to advance policy options to improve the financial system's effectiveness in mobilizing capital towards a green and inclusive economy—in other words, sustainable development. Established in January 2014, it published the first edition of 'The Financial System We Need' in October 2015, with the second edition launched in October 2016. The Inquiry has worked in 20 countries and produced a wide array of briefings and reports on sustainable finance.

More information on the Inquiry is available at: [www.unepinquiry.org](http://www.unepinquiry.org) or from: Mr. Marcos Mancini, Head of International Cooperation, [marcos.mancini@un.org](mailto:marcos.mancini@un.org)

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## Foreword

The current report, launched in close collaboration between Banco de México and the UNEP Inquiry, represents an effort to incorporate environmental and social risks into mainstream risk strategies of Mexican financial institutions, and to capitalize on the opportunities that will result from the transition to a low-carbon economy.

Climate and environmental degradation are critical risks and challenges at the national and global levels. At the national level, they are associated with loss of natural capital, degrading ecosystems, pronounced deterioration of development opportunities, declining productivity and reduced welfare. At the global level, they are associated with extreme weather events, the rise of the sea level, potential trade and supply chain disruptions and even mass migrations out of the jurisdictions most adversely affected.

These challenges are difficult to manage. They are prone to the “free rider problem” and to financial and economic decisions taken with an insufficiently long horizon, neglecting the full intertemporal impact of today’s actions. Thus, we need to correct incentives, induce efficient economic decisions and promote change in households, firms, and public bodies in order to change habits and behave in an environmentally friendly way. Short-sighted narratives, national interest and lack of trust have deterred progress on this agenda.

Also, in some emerging economies, poverty, an inadequate institutional framework and a weak rule of law have created a fertile ground for a predatory behaviour that has significantly degraded the environment. Thus, a broader revision of environmental and social policies, together with a stronger rule of law, is definitely needed and can have a very positive impact.

The sound development of the financial system, one of our key objectives, requires from the central bank to foster better services for the benefit of households and corporates and to eradicate financial and risk management practices that avoid recognition of environmental negative externalities and risks. This is critical, as these practices can have major consequences on credit risk, financial stability and social development in an intertemporal context.

Therefore, it is essential that all financial participants fully identify and measure their direct ecological and social footprint, as well as their direct and indirect environmental and social risk exposures. This study represents an in-depth diagnosis of Mexican financial institutions current practices, tools and methodologies to evaluate climate, environmental and social risks, through in-person interviews with senior management teams.

A transparent framework and an adequate assessment of environmental and social risks can indeed modify considerably the allocation of resources, towards more economic efficient activities and sustainable projects. In contrast, opacity regarding environmental and social risks can lead to bad economic decisions, loss of natural heritage, and higher transition costs. In this regard, it is essential that both savers and investors be provided with better information on the assets, projects, and economic activities they are financing, including their climate, environmental and social footprint. It is also imperative to improve the methods to measure these risks.

The Network for Greening the Financial System was created on 12 December 2017 by central banks and supervisors to enhance the role of the financial system to manage risks and to mobilize capital for green and low-carbon investments in the broader context of environmentally sustainable development. NGFS members “acknowledge that climate-related risks are a source of financial risks. It is therefore within the mandate of central banks and supervisors to ensure the financial system is resilient to these risks.” Banco de México considers therefore imperative to promote within the entire financial sector the assessment of risks and opportunities related with climate, environmental and social risks.

The recommendations included in this report represent a call to action especially for CEOs and Boards of Directors of financial institutions to incorporate environmental and social risks and opportunities into their risk assessment and management strategies, to reinforce internal policies, and to develop internal competencies to assess physical and transition risks associated with climate change and environmental degradation.

This report also sets out required actions to increase green finance flows into the Mexican economy through a series of collective efforts. These include the definition of a national taxonomy for green and sustainable activities, the adoption of firm and open commitments to mainstream environmental risk management by financial market participants, and the development of voluntary reporting standards for Mexican companies. These efforts will enhance market transparency and remove uncertainties and therefore support companies, banks and investors in their financial decision-making, in the process of greening our financial markets.

I trust the survey results presented in this report will serve as a baseline for the development and implementation of standardized methodologies and criteria for assessing environmental risks, as well as for a deeper understanding of the challenges currently faced by the Mexican Financial System regarding climate, environmental and social risk. This is essential for the long-term well-being of our country and the entire world.

**Alejandro Díaz de León**  
Governor  
Banco de México





## Foreword

Climate change and other major environmental challenges are risks for economies, businesses and financial institutions. These institutions need to be prepared for these risks so they can both reduce them – by playing their part in international processes such as the Paris Agreement on Climate Change – and manage them to maintain profitability.

Mexico is exposed to many such risks. As this report highlights, air and water pollution, overexploitation of resources, soil erosion and poor management of solid waste lowered GDP by about 4.3 per cent in 2018. Climate change will cause further damage – hitting the tourism sector, ports, energy, communications and much more – as scenarios by the National Institute for Ecology and Climate Change show. This in-depth analysis of 66 credit institutions, pension funds, asset managers and insurance companies analyse the ability of Mexican financial institutions to identify, plan for and address these risks.

Green finance has been gaining momentum in Mexico, with the Mexican Banking Association's launch of a sustainability protocol in 2016 and the establishment of an Advisory Council for Green Finance in 2017. Policymakers and regulators are increasingly encouraging banks, investors and corporations to incorporate and disclose environmental, social and governance aspects of their businesses that are financially material. Banco de México is a founding member of the Network for Greening the Financial System and has been highlighting the importance of managing climate-related risks in its financial stability reports.

But there is a long way to go before the whole Mexican financial system future-proofs itself against environmental and climate risk. This report lays out a host of recommendations to speed up change – from creating clear timelines and commitments on incorporating environmental aspects into risk management policies, budgets and business plans to adhering more closely to guidelines from the international Task Force on Climate-related Financial Disclosures.

Mexican financial institutions have a responsibility to back their government's commitments under the Paris Agreement. At a global level, we need to cut almost 8 per cent from emissions every year until 2030 to have any chance of keeping global temperature rise below 1.5°C and reducing the impacts of climate change. We cannot achieve this without the full backing of the financial system. By recognizing and managing climate risks, financial institutions can be a real driving force for positive change.

Accounting for environmental and climate risks is in their own best interests. They can avoid stranded assets and economic damage to critical sectors, while at the same time taking advantage of the opportunities that the transition to green and low-carbon economies presents. I encourage everyone involved in Mexico's financial industry to look closely at the recommendations laid out in this report and implement them. The financial institutions that do so will be the ones that thrive for decades to come.

**Inger Andersen**  
Executive Director  
United Nations Environment Programme

# Executive Summary

**T**his study represents a significant effort to incorporate environmental and social risks into mainstream risk strategies of Mexican financial institutions, and to capitalize on the market opportunities that will result from the transition to a low-carbon economy.

The depletion of natural resources, the potential systemic impacts of climate change and the capacity of our societies to adapt and mitigate these risks are now dominant concerns of the international community. These risks are generally accepted to be financially material. Thus, many financial institutions have initiated a rapid transformation and effort to better understand and forecast these risks. The structural transformation that comes with greening the economy is also opening new business opportunities. Financial institutions that adapt to these changes will reap important benefits.

Several voluntary industry-led initiatives have put forward principles and guidelines to identify, measure, manage and disclose environmental, climate, social and governance risks. Initiatives like the Equator Principles, the Principles for Responsible Investment, the Principles for Sustainable Insurance and the Principles for Responsible Banking, which were launched in late 2019, have contributed to this voluntary transformation. Also, private sector-led initiatives have raised awareness and included a commitment to evaluate investment's environmental and social impacts.<sup>1</sup>

At the national level, the Mexican Banking Association launched a Sustainability Protocol in 2016, and now has an opportunity to step up commitments to foster this agenda. More recently, Mexican banks have had a strong uptake of the Principles for Responsible Banking. According to these principles, banks must identify two priority issues depending on where they consider having significant impact, be it social or environmental, and commit to establish targets on how their portfolio will have to change to be in line with these priorities.

The Green Finance Advisory Board (CCFV), comprised mainly of asset managers and asset owners in Mexico, has shown a proactive role in promoting green markets.

In addition, several Mexican development banks and important players in the sustainable finance ecosystem have been active through the adoption of the Equator Principles and of ESG (Environmental, Social and Corporate Governance) practices among their clients, and the issuance of green bonds.



Policymakers and regulators, on the other hand, are increasingly encouraging banks, investors and corporations to incorporate environmental, social and governance aspects and risks into their business processes, and to disclose these practices to regulators and stakeholders. Financing and risk management practices need to recognize potential social and environmental negative externalities and risks.

Mexico is highly exposed to climate and environment risks. According to the Mexican National Institute for Statistics (INEGI), severe air and water pollution, overexploitation of natural resources (hydrocarbons, forest resources and underground water), soil erosion and solid waste have significant economic consequences. INEGI estimated that the costs of these negative impacts amounted to 4.3% of GDP in 2018, following a trend of annual losses above 4% of GDP over the last 10 years.<sup>2</sup>

Climate change could generate even further economic and financial risks. Expected impacts include increases of fluvial floods, more frequent droughts in the centre and northern regions, increases in frequency and intensity of hurricanes in the Pacific north-east and on the Atlantic coast, as well as a continued loss of forest coverage. The impacts associated with a reduction of agricultural productivity, the collapse of fishing activity, severe weather events on infrastructure, the tourism sector, ports, energy and communications, and increases in health costs could be significant.<sup>3</sup> The climate scenarios developed by the National Institute for Ecology and Climate Change (INECC) point to a negative correlation between increases in temperature and Mexico’s GDP. These scenarios project increases in temperature above 1.5°C when compared to pre-industrial levels (according to the International Panel for Climate Change’s most recent report, temperatures have already risen 1.1°C). Economic losses are significant for all scenarios of temperature increases, with non-linear negative impacts for each projected increase in temperatures<sup>4</sup> (see Table 1 for a summary of expected impacts).

**TABLE 1.** MAIN AREAS OF VULNERABILITY TO CLIMATE CHANGE IDENTIFIED BY INECC<sup>5</sup>

SYSTEMS	IMPACTS	EXAMPLES OF IMPACTED SECTORS
<b>Hurricanes and severe weather events</b>	<ul style="list-style-type: none"> <li>• Increase in frequency and intensity of hurricanes</li> <li>• Impacts on biodiversity from increase in sea water temperature (ex: fucus – “sargazo”)</li> </ul>	<ul style="list-style-type: none"> <li>• Tourism</li> <li>• Agriculture yields</li> <li>• Fishing yields</li> </ul>
<b>Coastal</b>	<ul style="list-style-type: none"> <li>• Impact of sea level increase</li> <li>• Increased cost from coastal floods</li> </ul>	<ul style="list-style-type: none"> <li>• Housing and infrastructure</li> <li>• Port/communications</li> <li>• Agriculture (salinization)</li> <li>• Increase above 10% in health costs due to vector-borne, gastrointestinal and heat wave diseases</li> </ul>
<b>Water Security</b>	<ul style="list-style-type: none"> <li>• Increase in rainfall in certain areas</li> <li>• More frequent droughts</li> <li>• Increase in fluvial floods</li> </ul>	<ul style="list-style-type: none"> <li>• Agriculture yields, viability of specific crops</li> <li>• Tourism</li> <li>• Urban water security</li> </ul>

The commitments defined by Mexico under the Paris Agreement (Nationally Determined Contributions, or NDCs) to transition to a lower-carbon economy include a 22% reduction in greenhouse gas (GHG) emissions and a 51% reduction in black carbon emissions by 2030. According to Mexico’s NDCs, priority should be given to transport, electricity generation, construction/buildings, oil and gas, manufacturing, agriculture and waste sectors, as these concentrate CO<sub>2</sub> emissions (see Chapter 4 for a breakdown of the CO<sub>2</sub> emissions inventory in Mexico).

The transition to a low-carbon economy presents risks and opportunities to Mexican financial institutions. Risks include the obsolescence or premature retirement of carbon-intensive technologies (stranded assets), loss of profitability of several economic sectors, and value chain impact as a result cost increases (in the case of food and tourism sectors).<sup>6</sup> On the positive side, the transition to a low-carbon economy will require significant investments, representing opportunities for financial institutions (see Table 2).

**TABLE 2.** ECONOMIC OPPORTUNITIES ASSOCIATED WITH THE TRANSITION TO A LOW-CARBON ECONOMY<sup>7</sup>

<b>Electricity generation</b>	<ul style="list-style-type: none"> <li>• Clean energy generation</li> <li>• Reduction of transmission losses</li> <li>• Energy efficiency</li> </ul>
<b>Oil and gas</b>	<ul style="list-style-type: none"> <li>• Mitigation of methane emissions in oil refining process</li> <li>• Energy efficiency</li> </ul>
<b>Transport</b>	<ul style="list-style-type: none"> <li>• Transport efficiency plan</li> <li>• Energy efficiency for cargo transport</li> <li>• Biofuel development for air transport</li> <li>• Electromobility</li> </ul>
<b>Manufacturing</b>	<ul style="list-style-type: none"> <li>• Focus on cement, iron, steel industries and chemical</li> <li>• Energy efficiency</li> <li>• Cogeneration</li> <li>• Recycling</li> </ul>
<b>Residential and commercial</b>	<ul style="list-style-type: none"> <li>• Energy efficiency/high performance buildings/green mortgages</li> </ul>
<b>Waste management</b>	<ul style="list-style-type: none"> <li>• Compliance with stricter standards</li> <li>• Investment in municipal infrastructure</li> <li>• Cogeneration</li> </ul>
<b>Agriculture and livestock/land use changes</b>	<ul style="list-style-type: none"> <li>• Payment for environmental services in the forestry sector</li> <li>• Renewable energy investments</li> <li>• Adoption of sustainable agriculture practices</li> </ul>

This study represents a first in-depth diagnosis on the readiness of financial institutions to address environmental and climate risks. The study evaluates the evolving governance architecture adopted so far by financial institutions in Mexico to integrate environmental and social risks into their mainstream management risk strategies, also looking at the tools and capabilities used to address these risks. This diagnosis is expected to raise awareness at the senior level on the underpinning risks they face and the opportunities from climate and environmental impacts, in the context of international discussions about the fiduciary duty of financial organizations.

66 financial institutions (pension funds, asset managers, asset owners and credit institutions) completed a detailed survey, one for banks and another for asset managers, which covered four groups of questions:

- (i) The levels of board and senior management oversight of environmental (climate included) and social risks,
- (ii) How much these risks are considered in the risk management, business strategies and disclosure policies of organizations,
- (iii) The tools and resources used to identify and assess environmental and social risks,

- (iv) To what extent financial institutions access relevant environmental information to support decision-making.

The report is structured in three main chapters, covering governance, strategy and risk management practices. All three chapters include a set of drivers, challenges and recommendations to better align financial flows to the development of an environmental and socially responsible agenda, and a low-carbon economy.

**Chapter 2** explores the level of board oversight and senior management involvement in the understanding and strategic management of environmental and social risks. We assess the views of governing boards with respect to environmental and social risks, and the structures and mandates they have put in place to manage these risks, and compare them to international practices. We list below the main highlights and recommendations from this chapter.

#### MAIN DRIVERS ASSOCIATED WITH GOVERNANCE:

- Only half of financial institutions consider that environmental risks can impact them financially (54% of credit institutions and 45% of asset managers classified these risks as material).
- Most financial institutions see the relevance of having environmental and social risk management systems in place to support decision-making (75% of credit institutions and 45% of asset managers report having set up this policy).
- The main reason to develop environmental and social risk management systems is to reduce exposure to environmental, social and reputational risks (57% of credit institutions and 50% of asset managers identify these reasons). However, only a few financial institutions believe setting up an environmental and social risk management system will help them identify business opportunities (39% of asset managers and 14% of credit institutions).

#### MAIN BARRIERS IDENTIFIED:

- **Lack of board competencies:** Only a few financial institutions have set out an explicit mandate at the board level to address unrealized environmental opportunities (only 30% of credit institutions and 24% of asset managers currently oversee progress against goals and targets for addressing environment-related issues).
- **Low level of involvement from senior management:** While senior management seems to be increasingly interested in the subject, only in 31% of credit institutions and 21% of asset managers is senior management actively involved in the design of strategies and policies to manage social and environment-related risks and opportunities.
- **Lack of adequate management incentives:** Only 11% of credit institutions and 8% of asset managers consider environmental issues when setting the organization's performance objectives (KPIs).

#### TOWARDS A COMPREHENSIVE STRATEGY OF SUSTAINABLE FINANCE:

1. Consider raising supervisory expectations to boards of directors of financial institutions on setting up competencies to oversee environmental opportunities and risks.
2. Provide clarity and regulatory expectations on the future direction of sustainability reporting rules, including what constitutes material information for the purposes of corporate reporting (i.e. for companies listed in stock exchanges).
3. Consider issuing general principles, definitions and guidelines for green financial products distributed in the Mexican market.

#### RECOMMENDATIONS FOR FINANCIAL INSTITUTIONS:

1. Establish, at board level, the capacities to analyse environmental and social risks and opportunities, including updating board evaluation policies, and redefining board competencies.
2. Set out and disclose clear timelines and commitments at the board level to incorporate social and environmental aspects into major plans of action, credit, asset allocation and risk management policies, annual budgets, and business plans.
3. Include environmental and social aspects in the organization's performance objectives and define specific reporting indicators, including the capacity to measure green investments.
4. Implement governance mechanisms (including relevant committees, capabilities and reporting obligations) to include environmental risks in mainstream risk management activities.
5. Design clear management incentives to incorporate financially material climate- and environment-related factors in strategic business planning. The scope of incentives should include both risk management and business development activities.

**Chapter 3** evaluates how much Mexican financial institutions are integrating social, environmental and climate-related analysis into mainstream risk strategy and business planning to increase business and financial system-wide resilience.

We also explore how much financial institutions in Mexico are incorporating international best practices to manage climate, environmental and social risks and provide references in this respect.

#### MAIN DRIVERS ASSOCIATED WITH STRATEGY:

- o Financial institutions believe they will face environment-related opportunities driven by changes in physical and transition risk parameters (83% of credit institutions, and 74% of asset managers confirmed this view).
- o Financial institutions recognize Mexico's vulnerability to environmental risks (more than 80% of credit institutions and 68% of asset managers believe they will be affected by physical and transition risks within the next six years) but also see significant opportunities.
- o Financial institutions have the capability to perform scenario analysis and stress tests for non-environmental risks on a regular basis (96% of credit institutions, 87% of asset managers confirmed they perform these tests for non-environmental risks on a regular basis), and to apply digital technologies such as big data and artificial intelligence, but have yet to do so for climate scenarios.
- o International banks and asset managers established in Mexico have already adhered to the Task Force on Climate-related Financial Disclosures (TCFD) reporting at the headquarter level and could transfer this knowledge and capacity to their Mexican branches.
- o Mexico has made public its mid-century climate change strategy, which can serve as a useful guide for the long-term business planning of financial institutions, as it describes the strategic lines of action guiding policy at the national and subnational levels.

#### MAIN BARRIERS IDENTIFIED:

- o **The analysis of climate-related physical and transition risks and opportunities is still at an early stage in Mexican financial institutions** (64% of credit institutions and 53% of asset managers have not assessed physical risks. 81% of credit institutions and 74% have not assessed transition risks).
- o **Novel and complex forward-looking analysis is still to be integrated into routine risk assessment activities** (only 14% of credit institutions and 29% of asset managers have undertaken forward-looking assessments for environment-related risks).

- o **Most financial institutions in Mexico are either unfamiliar or only learning about TCFD recommendations** (70% of credit institutions and 85% of asset managers).

#### TOWARDS A COMPREHENSIVE STRATEGY OF SUSTAINABLE FINANCE:

1. Develop disclosure policies and guidelines with respect to climate-related and environmental risks in a consistent manner across the different financial supervisors (CONSAR, CNBV, CNSF, SHCP, Banco de México).
2. Evaluate the need for scenario analysis at a macro level to better understand the main climate-related risk (transitional and physical) variables that could affect financial system stability.
3. Develop forward-looking scenarios, in close coordination with relevant environmental authorities and experts, that should be considered by financial institutions in their risk assessment.
4. Provide a clear strategy on how regulation and supervision will promote disclosure of physical and transition risk analysis of financial institutions and corporations, following TCFD recommendations.
5. Evaluate a timetable for compliance with TCFD recommendations by Mexican banks and asset managers as well as for Mexican branches or subsidiaries of foreign financial institutions.

#### RECOMMENDATIONS FOR FINANCIAL INSTITUTIONS:

1. Develop capacities to incorporate physical and transition climate/environmental risks into mainstream risk analysis.
2. Adopt tools and implement useful processes to analyse physical and transition risks in scenario analysis. Undertake further pilot exercises for climate stress tests.
3. Develop specific targets and metrics to assess and manage environmental and climate-related risks and opportunities in line with each organization's strategy and risk management process. Assess performance against targets.

Finally, **Chapter 4** assesses the capacity of financial institutions to set out an effective and system-wide implementation of processes and capabilities to identify, assess and mitigate environmental and social risks, including forward looking scenario analysis.

The process of assessment of environmental and social risks goes through several phases: identification of risks, analysis of risk exposure, assessment of sources of these risks, and mitigation of these risks. In each step of the process financial institutions apply different tools and methodologies to support decision-making.

We analyse financial institutions capabilities to properly identify, process and incorporate the relevant data into their mainstream risk analysis processes. We assess how financial institutions incorporate relevant environmental information in risk analysis processes, the type of information they employ during their assessment process, and the challenges they face when using this information in their risk analysis processes.

The analysis is useful to identify potential gaps or vulnerabilities of environmental and social risk management processes, and possible ways to reduce these gaps. In this chapter we also explore how much financial institutions use relevant environmental information that is publicly available in Mexico, as well as some of the efforts by financial institutions to adapt this information for financial decision-making.

#### MAIN DRIVERS ASSOCIATED WITH RISK MANAGEMENT:

- Financial institutions expect to access and utilize more Environmental Social and Governance (ESG) data in the next three years (92% of credit institutions and 90% of asset managers).
- Financial institutions are increasingly exposed to changes in market conditions associated with climate and environmental impacts. These changes result from new policy instruments associated with the Paris Agreement, the acceleration of technological innovation and societal behaviour changes.
- The emergence of new technologies such as big data, artificial intelligence, remote sensing and precise weather forecasts, among others, can expand the capacity of financial institutions to better understand climate-related and environmental risks at precise geographic locations, allowing them to integrate the physical risk exposure faced by specific assets into their financial decision-making.

#### MAIN BARRIERS IDENTIFIED:

- **The environmental and social risk analysis done is mostly qualitative** (88% of credit institutions and 66% of asset managers) **and has little depth**. Under 50% of credit institutions and under 30% of asset managers implement and track management and control measures included in projects to mitigate these risks. Also, coverage of environmental risks assessment by credit institutions is low (on average 34% of credit portfolio and 23.5% of asset manager's portfolio).
- **The analysis of portfolio exposure to environmental risks is mostly qualitative** (61% of credit institutions and 53% of asset managers). The use of relevant data associated with environmental risks is scarce.
- **Financial institutions disclosure of policies on their environmental and social risk analysis practices is limited**. For instance, although most credit institutions (59%) have adopted exclusion lists, only 43% make these lists public and most asset managers (89%) do not publish their voting practices when representing investors in shareholders meetings (proxy voting).

#### TOWARDS A COMPREHENSIVE STRATEGY OF SUSTAINABLE FINANCE:

1. Consider issuing disclosure guidance to financial institutions in line with the TCFD recommendations.
2. Lead, with the participation of financial institutions and other stakeholders, the creation of an architecture or data repository of publicly available information related to climate and environmental and social risks and encourage its use by financial institutions.
3. Consider issuing guidance for asset managers to measure and disclose the alignment of their portfolios with Mexico's Nationally Determined Contributions and or other climate scenarios (i.e. CO<sub>2</sub> tons per million of revenue in their portfolio).
4. Consider issuing guidance for all asset managers to publish a report to the beneficial owners and stakeholders on how they have integrated environmental, social and climate-related risk assessments into their policies embedded into the investment management strategy or to explain why they have not done so.
5. Contemplate developing reporting standards associated with environmental and social risks for listed companies and financial institutions to encourage integrated reports.

## RECOMMENDATIONS FOR FINANCIAL INSTITUTIONS:

1. Increase senior risk management capacities to undertake the analysis of physical and transition risk-related data and use these capacities to identify green finance market opportunities associated with transition risks.
2. Expand the implementation of the Equator Principles to other portfolio categories. The “Spirit of the Equator Principles” should ideally be embedded throughout organizations and across product categories. The CCFV and the Mexican Banking Association could promote an expanded scope beyond project finance transactions to general corporate loans, mortgages, Initial Public Offerings (IPOs) and other investment vehicles, building asset management capacities.
3. Develop relevant metrics to assess climate-related risks and opportunities. This should be done with the support of analytical areas of institutions and the use of available digital technologies.
4. Align national development banks’ credit portfolios with low-carbon and climate-resilient activities consistent with Mexico’s Nationally Determined Contributions. This might include a differentiated pricing criterion for projects and activities with a high impact on climate change.
5. Establish a timeline to implement disclosure of environmental and social risk management practices to relevant stakeholders. Fund managers should consider integrating climate, environmental and social risk considerations into their Annual General Meeting voting.

In addition to the above-mentioned recommendations for financial institutions and regulators on the areas of governance, risk strategy and risk management, the report recommends:

- ⊙ Evaluate the creation of a task force involving financial regulators and supervisors (SHCP, Banco de México, CNBV, CONSAR, CNSF), financial institution representatives, and selected Mexican experts to develop a National Integrated Sustainable Financing Framework, which will set out the basis to mobilize finance aligned with the NDCs and the Sustainable Development Goals. One of its first assignments would be to develop a national green taxonomy aligned with international best practices, and a road map for the transition of the Mexican sector to a sustainable economy.
- ⊙ National development banks should consider incorporating physical and transitional risk assessment methodologies to lending activities.
- ⊙ Financial regulators should explore the role credit bureaus can have in collecting and providing to credit institutions financially material data on the environmental compliance of borrowers.
- ⊙ The CCFV should work with the National Securities and Banking Commission (CNBV) in the development of voluntary reporting standards for Mexican companies.
- ⊙ The Mexican Banking Association should update and publish its sustainability protocol and its signatories, with regular updates on compliance.
- ⊙ The Mexican Banking Association should consider establishing specific precautionary requirement guidelines, such as requiring borrowers to hold all environmental permits associated with their loan portfolios and comply with legal environmental requirements.

Going forward, we identify two areas for further research:

- ⊙ Analyse in further detail the economic activities that are likely most vulnerable to physical and transition risks in the Mexican economy and the financial economic measures to reduce such vulnerabilities.
- ⊙ Assess the financing requirements of the economic activities with the highest potential to reduce carbon emissions in Mexico and develop specific recommendations to finance them and reduce transition costs.



# 1. INTRODUCTION

## 1.1. PURPOSE

As our economic systems adjust to the new reality of climate change, the scarcity of natural resources and associated social pressures, financial policymakers and regulators are pressing economic agents to incorporate these factors into their business and risk assessment models. In this context, Banco de México has taken steps to better understand these risks, as well as to assess the preparedness of financial institutions to manage them.

This report presents the results of the first in-depth consultation with Mexican financial institutions on their environmental risk management practices, and on how these are included in mainstream risk strategies, as well as on how financial institutions can capitalize on opportunities that result from the transition to a low-carbon economy.

At a global level, the potential impacts of extreme weather events and natural disasters and the capacity to adapt and mitigate the impacts of climate change, are major concerns for the international business community.<sup>8</sup> As forecasting of climate-related risks and their materiality are better understood, financial markets are undergoing a fast transformation to adapt to new market conditions.

Policymakers and regulators are increasingly responding by encouraging investors and corporations to incorporate environmental, social and governance factors in their business processes. As of 2018, the World Business Council for Sustainable Development had identified over 1,000 regulatory requirements (80% of which are mandatory) in 63 countries.<sup>9</sup>

The process of transition to a low-carbon economy will require a significant reallocation of financial flows towards specific sectors, which will translate to both risks and opportunities for the financial industry. Transition costs will be larger, the longer we take to internalize the negative externalities associated with climate and environmental risks. Given the insufficient number of green projects to guarantee an orderly transition to a low-carbon economy, governments should catalyse sustainable investments. To do so, financial decision-making with a long-term horizon is necessary to adequate-





ly incorporate potential physical and transition costs of the projects. The Network of Central Banks and Supervisors for Greening the Financial System (NGFS) published its first comprehensive report in 2019. According to the report, transmission channels of climate and environmental risk to the financial system include corporate asset devaluation, lower corporate profitability and increased litigation, lower residential property values and lower household wealth.<sup>10</sup> Internationally, central banks have therefore started to consider climate-related scenarios and are looking to implement climate-related scenarios in their stress-test models.<sup>11</sup>

Given these signals from markets and regulators, and in line with their fiduciary responsibility, a number of financial institutions are taking leadership in incorporating environmental and social factors into mainstream risk management, corporate governance and the business strategy of their organizations.<sup>12</sup> The exposure to climate and environmental risks can be particularly relevant in the case of private equity investments or loan portfolios of banks, which represent a significant portion of the assets of financial institutions in emerging markets, because such assets are held for long periods of time.

Several voluntary industry-led initiatives have put forward principles and guidelines to identify, measure, manage and disclose environmental, climate, social and governance risks. For example, the Principles for Responsible Investment (PRI), an investor-led movement that fosters the integration of environmental, social and corporate governance issues into investment practices, has incorporated more than 2,500 asset managers and asset owners, representing more than US\$80 trillion (see Box 7). Similarly, the Principles for Sustainable Insurance represent commitments of the insurance industry to incorporate climate and environmental risks into their governance and strategy. The Principles for Responsible Banking, launched in 2019, will follow in this voluntary transformation. At a national level, the Mexican Banking Association launched a Sustainability Protocol in 2016, the CCFV has been promoting green investments in partnership with the stock exchanges and several Mexican development banks are adhering to ESG principles and have been issuers of green bonds.

#### BOX 1. EXAMPLES OF GUIDANCE AND RECOMMENDATIONS FROM INTERNATIONAL REGULATORY BODIES<sup>13</sup>

- **The Network of Central Banks and Supervisors for Greening the Financial System (NGFS).** The NGFS makes six recommendations to central banks, supervisors, policymakers and financial institutions to enhance their role in the greening of the financial system (the first four are aimed at central banks and supervisors; the last two point to actions that can be taken by policymakers to facilitate the work of central banks and supervisors):<sup>14</sup>
  1. Integrate climate-related risks into financial stability monitoring and micro-supervision
  2. Integrate sustainability factors into own-portfolio management
  3. Bridge the data gaps
  4. Build awareness and intellectual capacity; encourage technical assistance and knowledge-sharing
  5. Achieve robust and internationally consistent climate and environment-related disclosure
  6. Support the development of a taxonomy of green economic activities
- **The International Organization of Pension Supervisors (IOPS).** The IOPS introduced voluntary guidance on the integration of ESG factors in the supervision of pension fund investment and risk management, with the intention of inducing pension funds to integrate in their investment and risk management process ESG factors that may have financial consequences.<sup>15</sup> Following the same line, Mexico's pension funds regulatory

entity recently introduced mandatory reporting requirements, starting 2022, on ESG risks of investments and ESG-linked investments.<sup>16</sup>

- **The Sustainable Insurance Forum (SIF)**, a network of leading insurance supervisors and regulators, has also undertaken efforts to raise awareness about the impact of climate risks in the industrial sector of the economy. In 2018, the SIF published an Issues Paper on Climate Change Risk to the Insurance Sector that looks to “raise awareness for insurers and supervisors of the challenges presented by climate change, including current and contemplated supervisory approaches for addressing these risks.” When discussing investment activities, the report highlights the potential impacts of climate risks on sovereign and municipal credit ratings.<sup>17</sup>
- **The Task Force on Climate-related Disclosures (TCFD)**, which was convened in 2016 by the Financial Stability Board of the G20 to develop a series of recommendations for companies and financial institutions on the assessment and disclosure of climate change-related risks, also provides specific guidance and disclosure recommendations related to the incorporation of climate risks in the governance, strategy, risk management and the use of risk metrics of organizations.<sup>18</sup>

## 1.2. MEXICO’S CONTEXT

Mexico is highly exposed to climate-related physical risks and natural resource exhaustion, because of its geographic characteristics, location and population distribution. According to Mexico’s National Institute for Statistics (INEGI), in 2018, the economic cost of the overexploitation of natural resources (hydrocarbons, forest resources and underground water), and the depletion of the environment (soil erosion, solid waste, water and urban pollution) was estimated at MXN 1,019,751 million, equivalent to 4.3% of GDP.<sup>19</sup> Similarly, extreme weather events registered an average annual cost of more than MXN 46,000 million between 2000 and 2018.<sup>20</sup>

### BOX 2. PHYSICAL AND TRANSITION RISKS DEFINITIONS

The current study classifies risks as (i) related to the physical impacts of climate change and (ii) related to the transition to a low-carbon economy.

**Physical Risks** are associated with extreme climate change-related weather events (such as heat waves, landslides, floods, wildfires and storms) and longer-term progressive shifts of the climate (such as changes in precipitation, extreme weather variability, ocean acidification, and rising sea levels and average temperatures).<sup>21</sup>

**Transition risks** are related to the policy changes, legal and reputational impacts, technology and shifts in market preferences associated with the transition to a low-carbon economy. The transition to a low-carbon economy will potentially transform the energy, transportation, industrial and natural resource-based supply chains, including the financial services industry. Transition opportunities include those driven by resource efficiency and the development of new technologies, products and services, which could capture new markets and sources of funding.

Physical and transition risks can negatively impact cash flow generation and the repayment capacity of credit portfolios, as well as negatively affect asset value.<sup>22</sup>

Climate change impacts are expected to generate more negative costs. Scenarios prepared by the National Institute for Ecology and Climate Change (INECC) confirm an inverse correlation between projected increases in temperature and GDP per capita. This means that Mexican States expected to register the highest increases in temperature will also register lower growth rates in GDP per capita in the coming years. According to this analysis, “Increases in temperature of 1°C could negatively impact growth in GDP per capita between 0.77 and 1.76%”.<sup>23</sup> Chapter 3 presents a detailed analysis of the types of risks Mexico will be exposed to.



The transition to a low-carbon economy is transforming economic systems with implications for financial markets. In this respect, Mexico's commitments to reduce greenhouse gas emissions (GHG) 22% by 2030 under the Paris Agreement (Nationally Determined Contributions), added to changes in global market conditions, are already motivating structural market changes in specific sectors. Risks of financial losses associated with this transition include the obsolescence or the premature retirement of carbon-intensive technologies (stranded assets), loss of profitability of several economic sectors, and value chain impacts as a result of an increase in costs (in the case of food and tourism).<sup>24</sup> See Chapter 4 for a breakdown of CO<sub>2</sub> emissions inventory in Mexico.

As a founding member and as part of the Steering Committee of the Network of Central Banks and Supervisors for Greening the Financial System (NGFS), Banco de México has actively participated in setting out an agenda for the analysis and management of climate risks and their potential repercussions on financial stability, as well as on the role of supervisors in providing guidance to market participants.<sup>25</sup>

In 2018, Banco de México supported a first effort to promote the integration of scenario analysis into environmental risk management practices in Mexico. The effort, which was possible thanks to the collaboration of the German Development Agency (GIZ), the Cambridge Institute for Sustainable Leadership, Banco de México and the Autonomous Technological Institute of Mexico (ITAM), consisted of two workshops and a number of bilateral conversations with risk managers of financial institutions to introduce environmental scenario planning, and resulted in the publication of the first report on the subject in Mexico.<sup>26</sup>

Also in 2018, at the request of Banco de México, looking to implement the work done by the G20 Green Finance Study Group under Germany's Presidency in 2017 on the use of publicly available environmental information, the UNEP Inquiry published the document: "Environmental Data Dialogues in Mexico",<sup>27</sup> a report focused on understanding Mexico's environmental open data practices and how they compare to other countries leading the sustainable finance agenda, as well as on building up a knowledge base for financial institutions to assess their potential exposure to natural capital and climate change risk.

At a regional level, Banco de México has promoted constructive dialogues with key stakeholders to take the green finance and climate risk agenda forward. In January 2019, it hosted the first Green Finance Seminar for Central Banks and Supervisors of North, Central and South America, setting up the ground to align visions and develop common agendas among regulators and key financial players in the region.<sup>28</sup>

### 1.3. SCOPE OF THE STUDY

Taking the agenda forward, this study represents a first in-depth diagnosis on the governance architecture adopted by financial institutions in Mexico to integrate environmental and social risks in their mainstream risk strategy, as well as the tools and capabilities used to tackle these risks. The diagnosis is also a key first step in raising awareness at a senior level on the underpinning risks to the economy from climate and environmental impacts, and on how these need to be considered in the context of prudent investment management and fiduciary duty by Mexican financial organizations.

Alejandro Díaz de León, Governor of Banco de México, personally convened Mexican financial institutions to participate, generating a high-level response and proactive participation on the part of senior leaders of financial institutions. The survey was conducted in the form of interactive di-

alogues between UNEP specialists and senior management of the risk management, credit and business development areas of both asset managers and credit institutions. The interviews, which lasted on average two hours, and benefited from the invaluable support of Banco de México staff, represented a unique opportunity to engage decision-makers of financial institutions on the strategic relevance of including environmental risk management in the core business of their organizations.

Two questionnaires were specifically developed for this project (one for credit institutions and one for asset managers and asset owners) and were reviewed and discussed by several stakeholders of the Mexican financial market prior to initiating the project. The questionnaires were divided into four groups of questions, looking to assess: (i) the level of board and senior management oversight of environmental (climate included) and social risks, (ii) how much these risks are considered in the risk management, business strategies and disclosure policies of organizations, (iii) what tools and resources are used to identify and assess environmental and social risks, and (iv) how much financial institutions access relevant environmental information to support decision-making.

In addition to the 43 institutions that participated in the interviews from 10 June until 10 July 2019, we received the written answers to 23 questionnaires from institutions that were not interviewed. The sample of credit institutions includes the main development banks, international banks with local operations, and banks that operate only in Mexico.

<b>CREDIT INSTITUTIONS</b>	
Development banks	5
International banks	11
Local banks	12
<b>TOTAL</b>	<b>28</b>
Credit Portfolio of surveyed credit institutions (MXN millions Dec 2018)	5,448,031
<i>Source: CNBV</i>	

On the asset management and asset owners side, we interviewed seven of the ten pension funds (AFOREs) that are part of the system, 18 fund managers and 13 insurance companies. This group, which includes asset managers and asset owners, is referred to as “asset managers” in the report.

<b>ASSET MANAGERS</b>	
AFOREs (pension funds)	7
Insurance companies	13
Fund managers	18
<b>TOTAL</b>	<b>38</b>
Reported Assets of surveyed institutions (MXN millions Dec 2018)	2,623,008
<i>Source: CNBV</i>	

The total number of completed questionnaires is 66 (28 credit institutions, 38 asset managers). The sample covers close to the 90% of the credit portfolio of the banking system, 80% of the assets reported by fund managers to the National Securities and Banking Commission (CNBV), 90% of assets under management by the AFOREs, and 44% of assets reported by insurance companies.<sup>29</sup>

The report is structured in three chapters: following the introduction, Chapter 2 explores the level of board oversight and senior management involvement in the understanding and strategic management of environmental and social risks. We assess the views of governing boards with respect to environmental and social risks, and the structures and mandates they have put in place to manage these risks and compare them to international best practice.



Chapter 3 evaluates how much Mexican financial institutions are embedding environmental risks and opportunities into their risk strategies, and how much these risks are considered when developing risk strategy scenarios. We also explore how much financial institutions in Mexico are incorporating international best practices to manage climate and environmental risks and provide several references in this respect.

Finally, Chapter 4 focuses on the internal policies and operating procedures that financial institutions have in place in Mexico, and to what extent these are integrated into the organization's overall risk management practices. The analysis is useful to identify potential gaps or vulnerabilities in environmental and social risk management processes, and possible ways to reduce these gaps. This chapter also explores how much financial institutions use relevant environmental information that is publicly available in Mexico, as well as some of the efforts by financial institutions to adapt this information for financial decision-making.<sup>30</sup>

All three chapters include a set of highlights and recommendations, to better align financial flows to the development of a low-carbon economy.

**TABLE 3.** LIST OF FINANCIAL INSTITUTIONS THAT PARTICIPATED IN THE STUDY:

#### DEVELOPMENT BANKS

- \* Banco Nacional de Comercio Exterior
- \* Banco Nacional de Obras y Servicios Públicos
- \* Fideicomisos Instituidos en Relación con la Agricultura
- Q Nacional Financiera
- Q Sociedad Hipotecaria Federal

#### AFORES (PENSION FUNDS)

- \* Afore Azteca
- \* Afore Coppel
- \* Afore SURA
- \* Afore XXI Banorte
- \* Citibanamex Afore
- Q Fondo Nacional de Pensiones de los Trabajadores al Servicio del Estado
- \* Profuturo Afore

#### COMMERCIAL BANKS

- \* Banca Mifel
- \* Banco Actinver
- \* Banco Azteca
- Q Banco Credit Suisse (Mexico)
- \* Banco del Bajío
- \* Banco Finterra
- Q Banco Inmobiliario Mexicano
- \* Banco Inbursa
- \* Banco Mercantil del Norte
- \* Banco Monex
- \* Banco Nacional de México
- \* Banco Regional
- \* Banco Sabadell
- \* Banco Santander (México)
- \* Banco Ve Por Más
- Q Bank of América México
- \* Barclays Bank México\*
- \* BBVA Bancomer
- \* CIBANCO
- \* HSBC México
- \* Industrial and Commercial Bank of China México
- \* J.P. Morgan
- Q Scotiabank Inverlat

#### INSURANCE COMPANIES

- Q Agroasemex
- \* AIG Seguros México
- \* AXA Seguros
- Q Chubb Seguros México
- Q Fianzas y Caucciones Atlas
- \* Grupo Mexicano de Seguros
- \* Grupo Nacional Provincial
- \* Mapfre México
- Q Peña Verde Seguros
- \* Quálitas Compañía de Seguros
- \* Seguros Monterrey New York Life
- Q Tláloc Seguros
- Q Zurich, Compañía de Seguros

#### ASSET MANAGERS

- Q BBVA Bancomer Gestión
- Q Beel Infrastructure Partners
- Q BTG Pactual Gestora de Fondos
- \* Finaccess México
- \* Fondos de Inversión Afirme
- \* Intercam Fondos
- \* Más Fondos
- Q Old Mutual Operadora de Fondos (Skandia)
- \* Operadora Actinver
- Q Operadora de Fondos Banorte
- \* Operadora de Fondos de Inversión Ve + Más
- Q Operadora de Fondos Nafinsa
- \* Operadora Inbursa de Fondos de Inversión
- Q Operadora Valmex de Fondos de Inversión
- Q Pensiones Banorte
- Q Principal Fondos de Inversión
- Q Santander Asset Management

(\*) Interviewed

(Q) Answered the questionnaire



## 2. GOVERNANCE

### 2. 1. BACKGROUND

Boards of directors can play a central role in setting out the agenda to incorporate environmental and social risks into the mainstream business strategy of their organizations. As they become aware of the materiality of risks, boards can define policies, goals and procedures and assign responsibilities to specific committees and to senior management. They can also define disclosure policies and adopt public commitments.

In recent years, financial institutions have had to adapt their governance architecture to address new and more material risks associated with environmental and social impacts. For many years, these risks (such as air and water pollution, waste management, and the destruction of pristine ecosystems) were treated mostly as non-financial and were overseen by compliance or social responsibility specialists. However, the uncertainty and magnitude of environmental and climate risks is forcing financial institutions to review their approach. Focusing on compliance and reputation management seems insufficient to guide prudent investment and credit decisions of financial institutions.

In a TCFD global survey published in 2019, 60% out of 198 respondents said their organizations consider climate-related issues to be a material risk that could affect their portfolios today or in the next 1-2 years. This situation has resulted in an increased demand for transparency from organizations with respect to their risks and risk management practices, including climate-related and environmental risks.<sup>31</sup> Given that ESG risks and opportunities influence investment value, incorporating these factors in investment decisions has now been seen as part of their fiduciary mandate by many financial institutions.

Investors and other financial firms' stakeholders are increasingly interested in understanding how an organization's board oversees climate-related issues and how the firm's management assesses and governs these issues. In this regard, the TCFD recommends that climate-related financial disclo-

sure be included in annual financial filings because climate-related risk is non-diversifiable and has the potential to affect nearly all sectors of the economy.

As the NGFS makes it explicit in its comprehensive report, regulators want to make sure that “*climate-related risks are understood and discussed at board level, considered in risk management and investment decisions and embedded into firms’ strategy.*”<sup>32</sup>

Similarly, the PRI recommends that its signatories establish good governance frameworks to help encompass ESG issues and that boards articulate their organization’s beliefs with respect to climate-related risks in order to guide decisions in the medium and long term. (see Box 7 on the PRI).

With this in mind, Banco de México wanted to understand how participants in the survey govern environmental and social risks and opportunities in their organizations, the degree of involvement of the institution’s board of directors in this respect, and the role assigned to senior management in tackling environmental risks and opportunities.

## 2.2. HIGHLIGHTS AND RECOMMENDATIONS

**GOVERNANCE CHALLENGE:** Set out adequate governance architecture within financial institutions to manage climate, environmental and social opportunities and risks.

### MAIN DRIVERS ASSOCIATED WITH GOVERNANCE:

- Only half of financial institutions consider that environmental risks can impact them financially (54% of credit institutions and 45% of asset managers classified these risks as material).
- Most financial institutions see the relevance of having environmental and social risk management systems in place to support decision-making (75% of credit institutions and 45% of asset managers report having set up this policy).
- The main reason to develop environmental and social risk management systems is to reduce exposure to environmental, social and reputational risks (57% of credit institutions and 50% of asset managers identify these reasons). However, only a few financial institutions believe setting up an environmental and social risk management system will help them identify business opportunities (39% of asset managers and 14% of credit institutions).

### MAIN BARRIERS IDENTIFIED:

- **Lack of board competencies:** Only a few financial institutions have set out an explicit mandate at the board level to address environmental risks and unrealized opportunities (only 30% of credit institutions and 24% of asset managers currently oversee progress against goals and targets for addressing environment-related issues).
- **Low level of involvement from senior management:** While senior management seems to be increasingly interested in the subject, only in 31% of credit institutions and 21% of asset managers is senior management actively involved in the design of strategies and policies to manage social and environmental-related risks and opportunities.
- **Lack of adequate management incentives:** Only 11% of credit institutions and 8% of asset managers consider environmental issues when setting the organization’s performance objectives (KPIs).

TOWARDS A COMPREHENSIVE STRATEGY OF SUSTAINABLE FINANCE:

1. Consider raising supervisory expectations to boards of directors of financial institutions on setting up competencies to oversee environmental opportunities and risks.
2. Provide clarity and regulatory expectations on the future direction of sustainability reporting rules, including what constitutes material information for the purposes of corporate reporting (i.e. for companies listed in stock exchanges).
3. Consider issuing general principles, definitions and guidelines for green financial products distributed in the Mexican market.

RECOMMENDATIONS FOR FINANCIAL INSTITUTIONS:

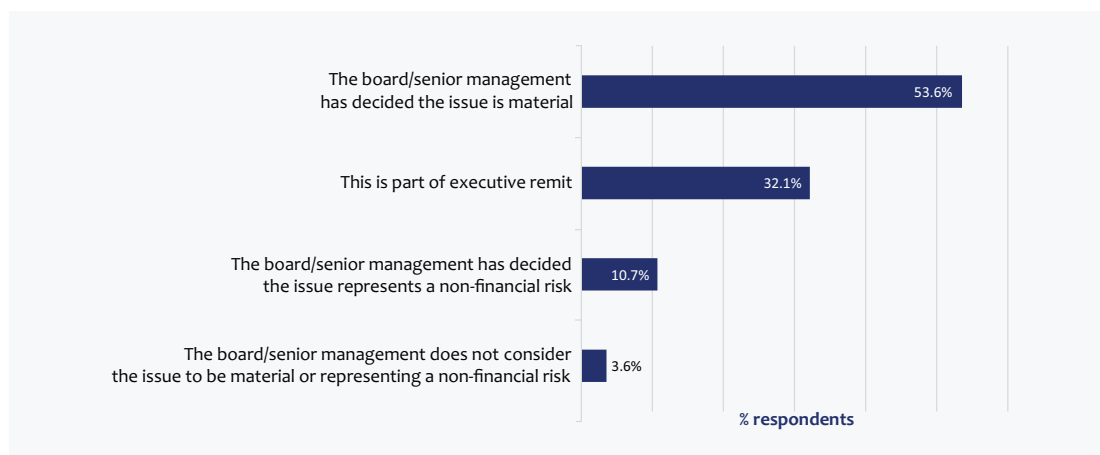
1. Establish, at the board level, the capacities to analyse environmental and social risks and opportunities, including updating board evaluation policies, and redefining board competencies.
2. Set out and disclose clear timelines and commitments at the board level to incorporate social and environmental aspects into major plans of action, credit, asset allocation and risk management policies, annual budgets, and business plans.
3. Include environmental and social aspects in the organization’s performance objectives and define specific reporting indicators, including the capacity to measure green investments.
4. Implement governance mechanisms (including relevant committees, capabilities and reporting obligations) to include environmental risks in mainstream risk management activities.
5. Design clear management incentives to incorporate financially material climate- and environment-related factors in strategic business planning. The scope of incentives should include both risk management and business development activities.

## 2.3. RESULTS

### a. Credit Institutions

The boards of directors of most credit institutions surveyed identified environmental risks as relevant to their organization. More than 80% of credit institutions define these risks either as material (54%) or have included the issue in the remit of executive management (32%). Only 15% of respondents identify environmental risks as non-financial (11%) or not relevant to their organization (4%).

**FIGURE 2.1** DOES YOUR ORGANIZATION’S BOARD OF DIRECTORS AND/OR SENIOR MANAGEMENT IDENTIFY ENVIRONMENTAL RISKS AND OPPORTUNITIES AS A TOPIC RELEVANT OR MATERIAL?



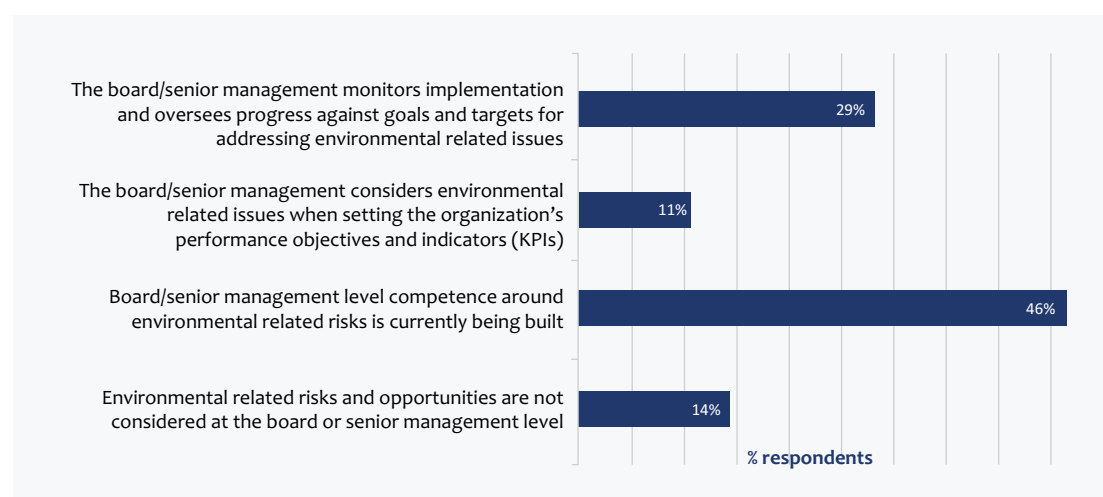




DEVELOPMENT BANKS	INTERNATIONAL BANKS	LOCAL BANKS
60%	55%	50%

During our interviews, respondents described the different approaches their boards have set out to manage environmental risks and opportunities. Some have formed a specific (sustainability) committee reporting to the board (25%), others have included these risks and opportunities in the mandates of their risk and credit committees, and others have appointed executive officers to pursue this agenda reporting to the Chief Executive Officer (ex: Chief Risk Officer, Legal Counsel, Compliance Officer, Chief of Staff of the CEO). One financial institution reported having appointed an independent board member to monitor environmental risks. Most international banks explained that this responsibility lies at the headquarter level in a different country. Only 14% of respondents said they have not assigned this responsibility to an executive or a committee.

**FIGURE 2.2** WHICH OF THE FOLLOWING BEST DESCRIBES THE BOARD'S/SENIOR MANAGEMENT OVERSIGHT OF ENVIRONMENT-RELATED ISSUES?



In general, the degree of board oversight of environmental risks is low and is still work in progress. Although the majority (75%) of financial institutions' senior management claim to be involved, at least partially, in assessing and prioritizing environmental risks and opportunities, almost half of the respondents claim to be still in the process of building competencies to oversee them, and only 20% of respondents mentioned having a specific sustainability strategy in relation to opportunities.

When compared to international practice, financial institutions in Mexico lag in developing the necessary competencies to manage environment-related risks. With certain exceptions, there is little indication that they have strengthened the composition of boards to include the knowledge and skills needed to understand climate-related threats and opportunities, and that they have fully integrated these topics in their board structures and committees.

In the Global Financial Markets Association (GFMA) Survey, conducted in 2019, based on the anonymized and aggregated responses of 22 of the largest globally active financial and capital market participants, 90% of respondents declared having board-level oversight of the institution's business strategy and risk tolerance setting for climate-related risks.<sup>33</sup>

From our analysis, we confirm that Mexican credit institutions have an opportunity to set up a more solid governance architecture to oversee environmental risks and opportunities, through specific action plans, budgets and clear objectives and performance indicators, as well as to formalize disclosure activities. Box 3 describes some governance examples adopted by credit institutions at the global level in this respect.

**BOX 3. EXAMPLES OF ENVIRONMENTAL RISKS GOVERNANCE STRUCTURES OF FINANCIAL INSTITUTIONS**

Examples of the type of governance banks have put in place to address environmental risks and opportunities:

- Some financial institutions appoint a specific committee to oversee environmental and climate risks, under the supervision of the risk committee, and with defined pre-agreed reporting rules to the board of directors, pre-agreed priority sectors risks to be reported on, and a pre-defined periodic review of an environmental policy and a credit policy. Management responsibilities are also disclosed in the annual report of the credit institution.<sup>34</sup>
- Other financial institutions organize board oversight through the nomination, governance and public affairs committee, responsible for overseeing global citizenship and sustainability activities, including as related to climate change. Senior management appointments involved in pursuing the climate risk agenda include: director of corporate citizenships, global head of sustainability and the social advisory council.<sup>35</sup>
- In the UK, the Prudential Regulatory Authority (PRA) issued specific guidance on the governance structure of financial institutions (SS 3/19) in April 2019 that states: “firms are expected to have clear roles and responsibilities at board level, including allocating responsibility for identifying and managing financial risks from climate change to the most appropriate existing SMF(s). Those responsibilities must be included in the SMF(s)’s Statement of Responsibilities and boards are expected to ensure that adequate resources and sufficient expertise are devoted to managing climate change risk.”

**Legal Risks<sup>36</sup>**

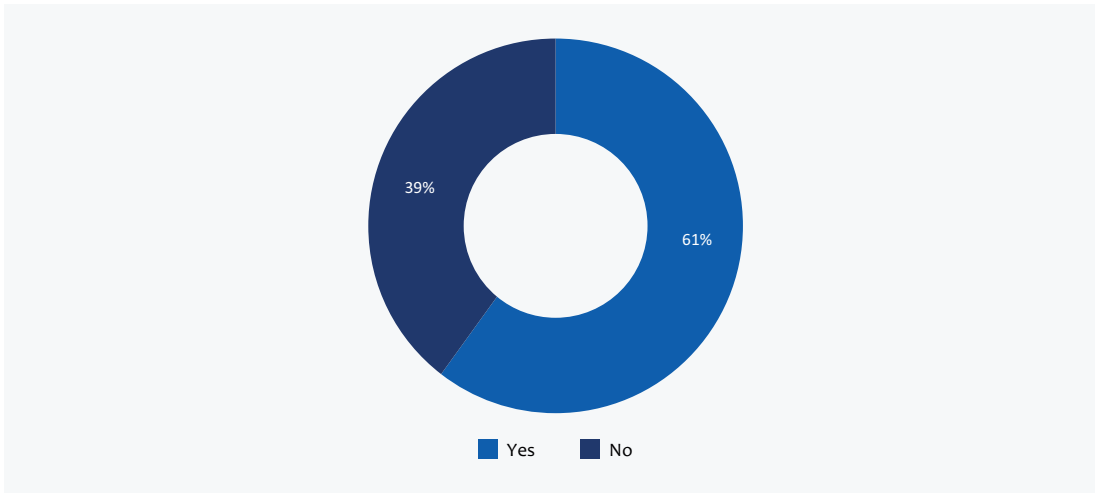
Most credit institutions (73%) do not consider that they are exposed to legal risks related to their client’s activities. The view of most respondents is that legal responsibility lies with their clients and that the risk of recourse to creditors is very small. Only a small share of international banks believes that they have legal exposure to environmental risks, compared to local credit institutions.

**FIGURE 2.3** DO YOU CONSIDER THAT, AS A LENDER, YOU COULD BE LEGALLY LIABLE FOR THE ENVIRONMENTAL PERFORMANCE OF YOUR INVESTMENTS?

	DEVELOPMENT BANKS	INTERNATIONAL BANKS	LOCAL BANKS
Yes	60%	9%	33%
No	40%	91%	67%

However, when asked about potential reputational risks associated with a client or a project’s poor environmental practices, more than 60% of institutions believe that they are exposed. Development banks are most concerned with reputational risks. This can be explained given their exposure to large infrastructure projects, which are more sensitive to reputational risks given the impact on local stakeholders or ecosystems and the responsibilities associated to public servants.

**FIGURE 2.4** DO YOU CONSIDER THAT, AS A LENDER, YOU COULD BE REPUTATIONALLY LIABLE FOR THE ENVIRONMENTAL PERFORMANCE OF YOUR INVESTMENTS (E.G. POLLUTION)?



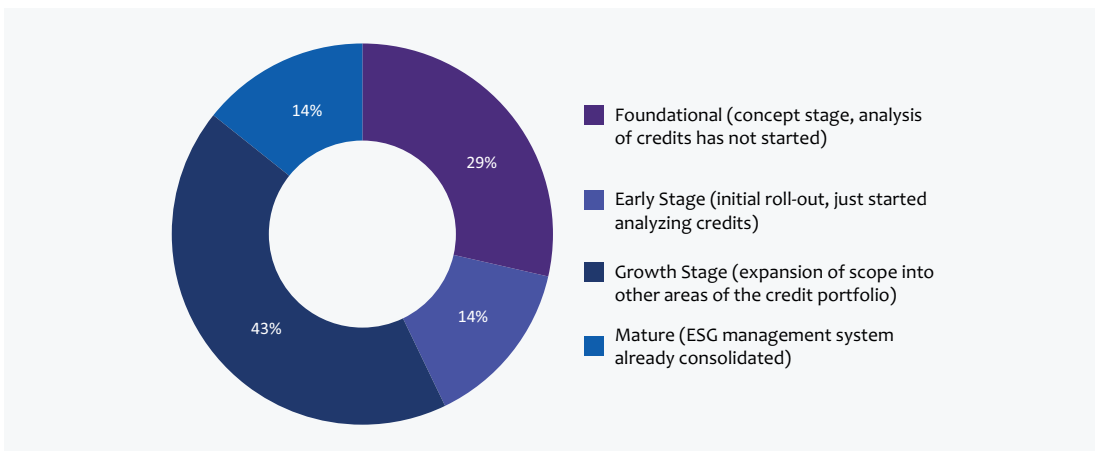
	DEVELOPMENT BANKS	INTERNATIONAL BANKS	LOCAL BANKS
Yes	80%	45%	67%
No	20%	55%	33%

We should note that in the case of international banks, the perception of their exposure to reputational risks reflects the views of the local teams that participated in the interviews and might not reflect the view of the institutions at the headquarter level; this includes reporting on the Equator Principles, which is centralized at headquarters. Another group of international banks claimed to not be exposed to reputational risks given their limited activities in Mexico.

**Environmental and Social Risk Management System (ESRMS)**

75% of respondents (100% of development banks, 82% of international banks, and 58% of local banks), declared they have an Environmental and Social Risk Management System (ESRMS) that can filter, evaluate, condition or reject projects on the basis of environmental and social criteria. However, from this group of respondents, 43% classify their system to be in an early stage.

**FIGURE 2.5** UNDER WHICH OF THE FOLLOWING DEVELOPMENT STAGES WOULD YOU CONSIDER YOUR ENVIRONMENTAL AND SOCIAL RISK MANAGEMENT SYSTEM TO BE?



Banks concentrate their screening on corporates (68% of credit institutions), and small and medium enterprises (39%). Less than 30% of credit institutions screen federal government and municipal debt. The average loan portfolio covered by the ESRMS reported by credit institutions is 34%, representing MXN 1,863,226.54, or 30% of Mexico's credit portfolio.<sup>37</sup>

When asked to mention the three main reasons to develop and implement a risk management system, credit institutions highlight the exposure to both environmental and social liabilities, as well as reputational risks. Access to financing from development banks was not highlighted as a reason to implement an ESRMS. *Mexican development banks have an opportunity to expand, through their concessional loans, the successful work of multilateral and bilateral development banks (IFC, IADB, CAF, KfW) in supporting the implementation of ESRMS in development banks in Mexico.*

Through their second floor financing, and given their capacity to raise international financing for climate-related investment, *Mexican development banks can create incentives for commercial banks to develop risk management capacities, following the example of multilateral and bilateral development banks (see Box 5, EcoCasa case).*

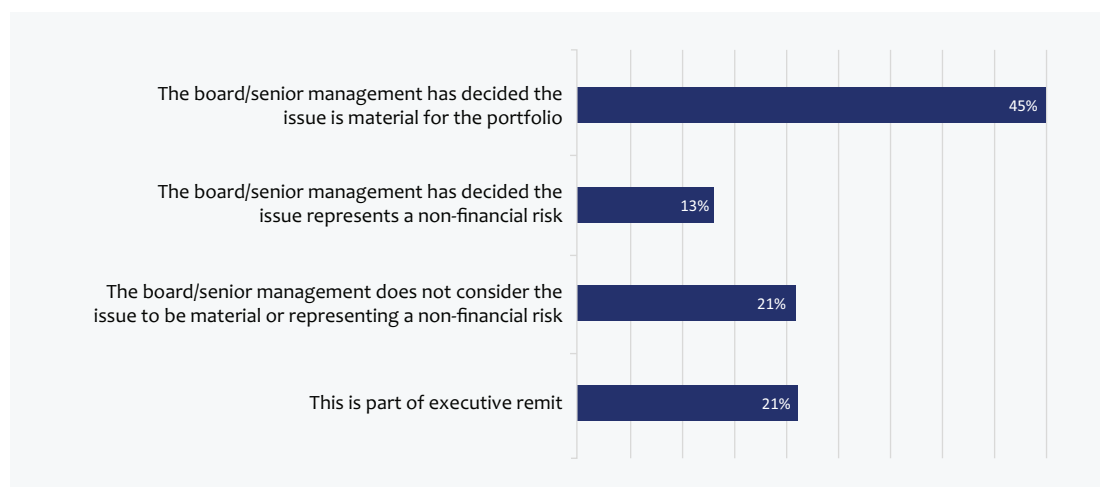
*Banks have an opportunity to incorporate ESRM into their digital transformation strategies.* Examples of opportunities would include incorporating the credit approval process flow in digital systems, adopting specific taxonomies for projects that facilitate future identification, including environmental risks into scenario planning, and implementing the use of georeferenced tools such as H-Aras (developed by the Mexican Banking Association), and GFW Pro into risk assessment processes.

## b. Asset Managers

On average, 45% of asset managers, pension funds and insurance companies (referred to as asset managers in this report) have classified environment-related risks as material. However, one in five respondents do not consider that ESG impacts represent a risk and one in five classify these risks as non-financial.

Looking specifically at segments, more than half of pension funds (57%) and asset managers (56%) believe that environmental risks and opportunities are material to their businesses. Insurance companies, which have portfolios with a high participation of sovereign fixed income bonds, believe that they have less exposure to environment-related financial risks. Asset managers and asset owners exposed to sovereign risks might reconsider this position considering the increasing evidence of adverse climate change impacts on sovereigns' ratings (see Box 4).

**FIGURE 2.6** DOES YOUR ORGANIZATION'S BOARD OF DIRECTORS AND/OR SENIOR MANAGEMENT IDENTIFY ENVIRONMENTAL RISKS AND OPPORTUNITIES (E.G. CLIMATE CHANGE, SOIL DEGRADATION, BIODIVERSITY LOSS, POLLUTION, ETC.) AS A TOPIC RELEVANT OR MATERIAL?



Institutions that consider ESG risks as material:	
Pension Funds (AFOREs)	57%
Insurance Co.	23%
Asset Managers	56%

#### BOX 4. ESG & ADVERSE CLIMATE CHANGE IMPACTS ON SOVEREIGN RISK

Recognizing the potential linkages of adverse climate shocks on credit ratings, UNEP FI developed in 2012 a methodology to assess these risks, called E-RISC (Environmental Risk in Sovereign Credit analysis), which focuses on the development of metrics and methods for quantifying natural resource and environmental risks so they can be incorporated into sovereign credit risk assessments. A second phase of the report, published in 2016, pointed to potential links between increases in food prices associated with climate change impacts, water scarcity, and sovereign risk. The model shows potential impacts of shocks in commodity prices on GDP, current account balance, and Consumer Price Index for 110 countries. Although Mexico is not identified as one of the most affected countries, the model shows it could potentially face negative impacts on all three indicators, facing a risk of downgrade.<sup>38</sup> This can have a direct impact on foreign currency sovereign debt and an indirect effect on local currency sovereign debt.

On another front, the Principles for Responsible Investment, in association with the CFA institute, published in 2019 the "Practical Guide to ESG integration in sovereign debt". The guide defines the main ESG factors to consider as well as publicly available resources and data to assess them:

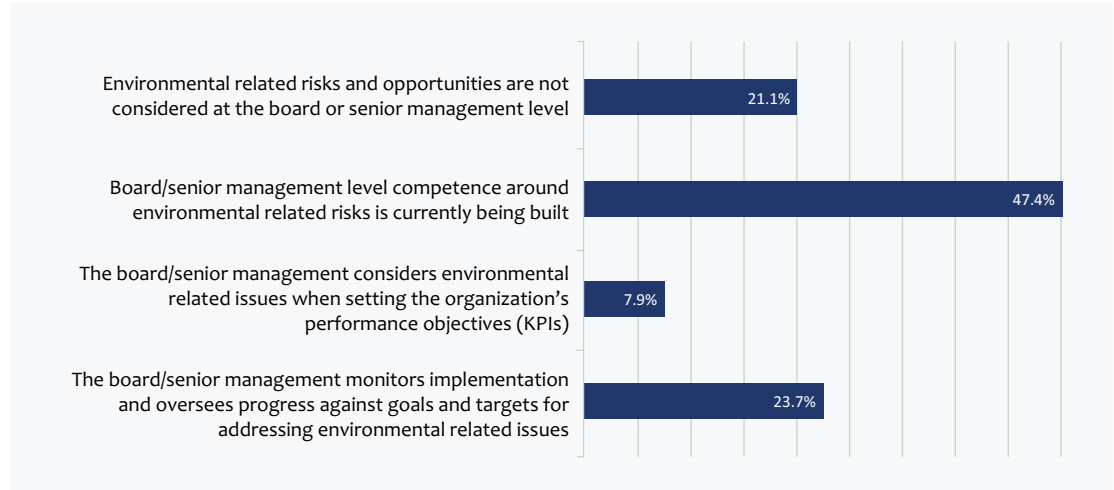
- Environmental factors (natural resources, physical risks, energy transition risks and energy security).
- Social factors (demographic change, education and human capital, living standards and income inequality and social cohesion).
- Governance factors (institutional strength, political stability, government effectiveness, and regulatory effectiveness).<sup>39</sup>

The views of asset managers in Mexico on the potential materiality of ESG risks is in line with international trends; the degree of response to address these risks seems to lag that of their peers in other regions. In a 2019 BNP ESG global survey with institutional investors, the majority (78%) of respondents stated that ESG is either playing a growing role or becoming integral to what they do as an organization. Only 12% of respondents stated that ESG played a minor role in their organization.<sup>40</sup>

Most asset managers and asset owners in Mexico do not have a governance structure in place to manage them. As with credit institutions, asset managers are only beginning to develop competen-

cies to oversee environmental issues. Only one in three institutions has put in place an oversight structure for these risks, with goals, targets or performance objectives. 30% of respondents have not yet appointed a director or committee responsible for environmental issues.

**FIGURE 2.7.** WHICH OF THE FOLLOWING BEST DESCRIBES THE BOARD’S/SENIOR MANAGEMENT OVERSIGHT OF ENVIRONMENT-RELATED ISSUES? % OF RESPONDENTS



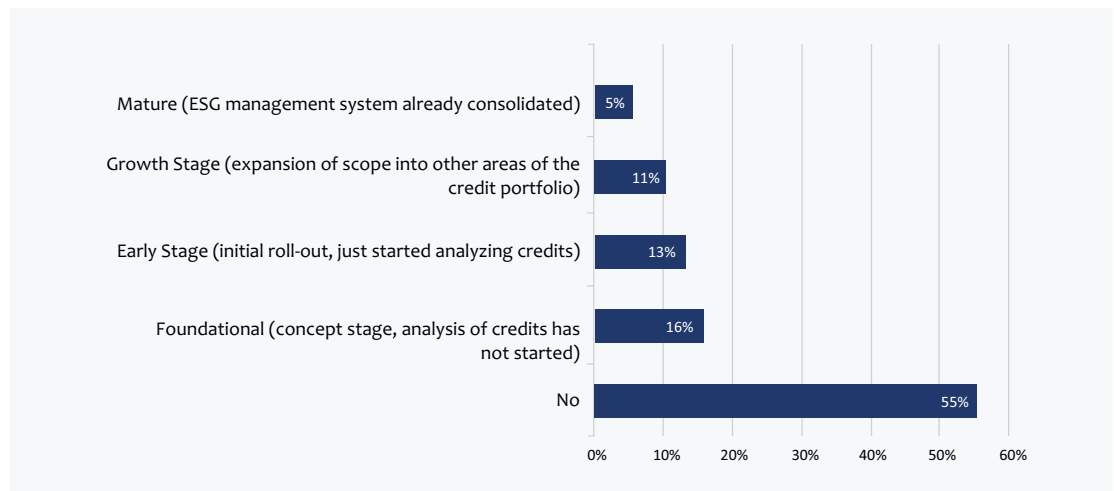
Only half of the surveyed institutions confirmed that their senior management is involved in the design of a risk strategy to manage environmental and social risks and opportunities.

The results of the survey confirm the need to accelerate the process of building capabilities of investment firms to assess ESG and climate risks, and to incorporate them in valuation and mark to market policies. This is particularly pressing for pension funds, since as of January 2022 they will need to report on how ESG factors impact the risks and opportunities of the strategies they develop.<sup>41</sup>

**Environmental Social and Governance Risk Management System:**

45% of surveyed institutions claim to have an ESG risk management system, however only 5% of asset managers consider their system to be in a mature state.

**FIGURE 2.8** DOES YOUR ORGANIZATION HAVE A RISK MANAGEMENT SYSTEM THAT ALLOWS IT TO FILTER, EVALUATE, CONDITION, OR REJECT INVESTMENTS BASED ON ENVIRONMENTAL, SOCIAL OR GOVERNANCE CRITERIA?

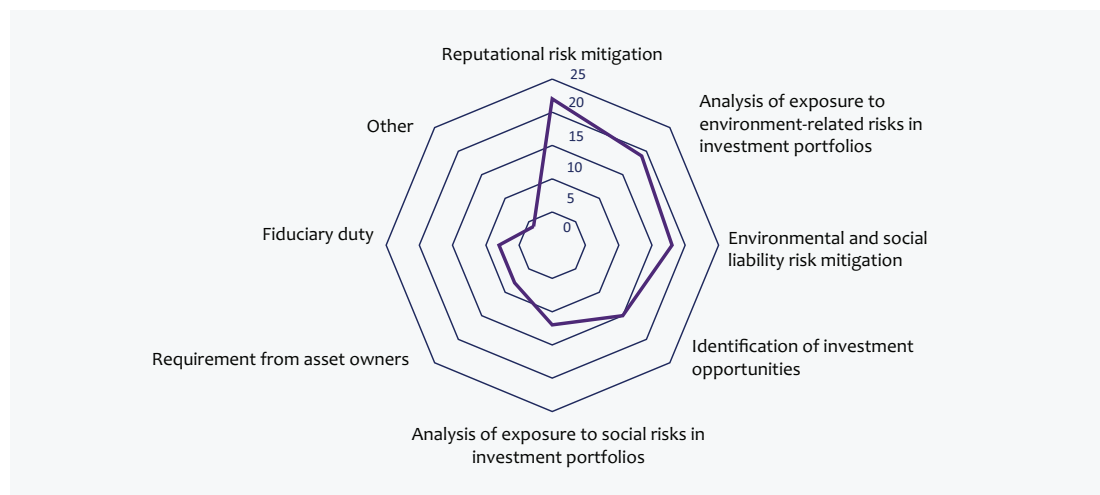




ESG assessment is still nascent in Mexico. Almost 70% of asset managers and asset owners make investment decisions without the support of a formal ESG risk management system.

We asked respondents to select three reasons for developing an ESG Management System.

**FIGURE 2.9** PLEASE SELECT THE OPTIONS THAT BEST DESCRIBE THE REASONS FOR DEVELOPING AN ESG RISK MANAGEMENT SYSTEM



The reduction of reputational risk, the analysis of exposure risks and the mitigation of environmental and social liabilities are the three main reasons pointed by asset managers. Only a small percentage of respondents see ESG risk assessment as a driver to identify investment opportunities. This might explain the limited offer of ESG linked investment products in the Mexican market, when compared with international markets. According to the PRI, citing MSCI reports, “the equity assets under management invested in ESG ETFs linked to MSCI’s ESG indices has increased from US\$1.7 billion to US\$20.2 billion over the period 2015 to June 2019.”<sup>42</sup> During our interviews, two fund managers mentioned they had initiated the distribution of ESG funds from other countries; however, no specific product had yet been developed for the Mexican market.

When contrasting these results with similar surveys at the global level, asset managers identify long-term returns, improving brand and reputation, and decreased investment risk as the top three drivers for ESG investing.<sup>43</sup>

Survey respondents do not identify their fiduciary responsibility as a reason to implement the ESG risk management system; only five institutions (13%) consider this a reason, a low percentage when compared to other regions (34%). Fiduciary duty should be understood not only in the context of protecting value of investments through an assessment of ESG factors, but also in capturing potential opportunities that ESG investments represent, which could maximize portfolio value. By setting up the governance structure around environmental risks, financial institutions position themselves to take advantage of strategic business opportunities that arise from the transition to a low-carbon economy. According to the Intergovernmental Panel on Climate Change (IPCC), at least a further US\$1.5 trillion of annual financing is expected to be directed to climate investments until 2030 to reach the Paris goals of keeping the average global temperature rise well below 2°C and as close as possible to 1.5°C. This has generated flows to sectors like renewable energy, electric mobility, green building and smart agriculture, and the development of innovative financing instruments and markets.<sup>44</sup>

## 3. STRATEGY

### 3.1. BACKGROUND

In order to be able to assess the potential impacts of climate, environmental and social risks on portfolio companies and business activities, and to incorporate them in their business strategy, financial institutions need to develop a good understanding of their nature. A first source of information to understand these risks at the national level is the official information produced by the Mexican government in the context of its international commitments. As a signatory of the Paris Agreement and as an active member of the IPCC, the Mexican government has dedicated significant resources to understanding how climate change and the exhaustion of natural resources could impact the economy, under predefined scenarios.

#### **Physical Risks in Mexico**

Among the main physical risks that affect Mexico are tropical cyclones (tropical depressions, tropical storms and hurricanes). The INECC estimates that more than 2.5 million people have been affected by these events between 2001 and 2013 and that economic costs are around MXN338 billion (US\$18 billion).<sup>45</sup>

Looking forward, increases in temperature will further stress the availability of water resources, making Mexico even more vulnerable to droughts and impacting agricultural activity. Under a scenario of increase in temperatures of 2.4°C and 4.5°C, implying a reduction in rainfall of 5-10%, the INECC estimates that losses in crop productivity could reach 25% by 2050.<sup>46</sup>

According to the National Commission for the Knowledge and Use of Biodiversity of Mexico's (CONABIO) natural capital, two thirds of the country has high levels of degradation, and only 12 states maintain sustainability conditions where ecosystem goods and services can still be generated without jeopardizing the natural capital of future generations. Nine states have their natural





capital at risk, that is, with a high probability of reaching unsustainable levels, and eleven states have practically depleted their natural capital, which represents a risk for future generations.<sup>47</sup>

Table 4 summarizes the main impacts that Mexico is expected to face in the coming years, under this scenario.

**TABLE 4. MAIN AREAS OF VULNERABILITY TO CLIMATE CHANGE IDENTIFIED BY INECC<sup>48</sup>**

SYSTEMS	IMPACTS	EXAMPLES OF IMPACTED SECTORS
<b>Hurricanes and severe weather events</b>	<ul style="list-style-type: none"> <li>• Increase in frequency and intensity of tropical cyclones</li> <li>• Impacts on biodiversity from increase in sea water temperature (ex: fucus – “sargazo”)</li> </ul>	<ul style="list-style-type: none"> <li>• Tourism</li> <li>• Agriculture yields</li> <li>• Fishing yields</li> </ul>
<b>Coastal</b>	<ul style="list-style-type: none"> <li>• Impact of sea level increase</li> <li>• Increased cost from coastal floods</li> </ul>	<ul style="list-style-type: none"> <li>• Housing and infrastructure</li> <li>• Port/communications</li> <li>• Agriculture (salinization)</li> <li>• Increase above 10% in health costs due to vector-related, gastrointestinal and heat wave diseases</li> </ul>
<b>Water Security</b>	<ul style="list-style-type: none"> <li>• Increase in rainfall in certain areas</li> <li>• More frequent droughts</li> <li>• Increase in fluvial floods</li> </ul>	<ul style="list-style-type: none"> <li>• Agriculture yields, viability of specific crops</li> <li>• Tourism</li> <li>• Urban water security</li> </ul>

### Transition Risks in Mexico

The main risks identified by INECC associated with the transition to a low-carbon economy include: the impacts on the increase in energy consumption, health costs, risks of stranded assets, effects on the tourism industry as a result of market preferences, and the structural impact of food supply chains.

**TABLE 5. EXAMPLES OF TRANSITION RISKS<sup>49</sup>**

<b>Mitigation policies and regulations for the transport sector</b>	Stricter enforcement of CO <sub>2</sub> emission norms for transport vehicles (ex: NOM 163 by SEMARNAT equalizing requirements energy efficiency of vehicles with those of the US). Mitigation policies to modernize the transport fleet.
<b>Risk of stranded assets</b>	Associated to the obsolescence or the premature retirement of carbon-intensive technologies. <sup>50</sup>
<b>Effects on the tourism industry</b>	Economic losses to the tourism industry in Quintana Roo as a result of lower occupancy rates and market preferences.
<b>Structural impact on food supply chains</b>	An increase in the price of agricultural commodities due to the reduction in yields will impact supply chains across the country.

Other potential transition risks are associated with changes in regulations to accelerate compliance with the Nationally Determined Contributions of the Paris Agreement. The commitments defined by Mexico include:

- 22% reduction in GHG emissions
- 50% reduction in black carbon emissions

Mexico’s CO<sub>2</sub> equivalent emission inventory is a good indication of the sectors that should become policy priorities in the medium term.

**TABLE 6. NATIONAL GREENHOUSE GAS EMISSIONS INVENTORY**

TOTAL AMOUNT: 700 Mt CO <sub>2</sub>	
Transportation	22.8%
Electricity generation	20.3%
Livestock	10.1%
Waste management	6.6%
Other sectors	40.2%

*Source: INECC, Sexta Comunicación, 2018*

The energy and transportation sectors (with the larger share of carbon emissions) will most likely be the sectors affected by regulatory changes in the near term. Another source of transition risk relates to regulatory changes and consumer preference changes in markets where Mexico exports, such as the US and Europe.

### Opportunities

As we transition to a low-carbon economy, new economic sectors emerge, presenting interesting financing opportunities for financial institutions. Energy efficiency, low-carbon energy generation and transportation, and water security solutions are some of the sectors that present such investment opportunities.

The INECC estimates the investment required to implement the Nationally Determined Contributions of the Paris Agreement could reach between US\$126 and US\$143 billion for the period 2014-2030. Based on the Nationally Determined Contribution action plan, the focus of mitigation measures will be electricity generation, transport, land use, waste management, agriculture, and residential and commercial.<sup>51</sup>

The table below lists the sectors that will most likely contribute to the decarbonization of the Mexican economy:

**TABLE 7. ECONOMIC OPPORTUNITIES ASSOCIATED WITH THE TRANSITION TO A LOW-CARBON ECONOMY<sup>52</sup>**

<b>Electricity generation</b>	<ul style="list-style-type: none"> <li>• Clean energy generation</li> <li>• Reduction of transmission losses</li> <li>• Energy efficiency</li> </ul>
<b>Oil and gas</b>	<ul style="list-style-type: none"> <li>• Mitigation of methane emissions in refining process</li> <li>• Energy efficiency</li> </ul>
<b>Transport</b>	<ul style="list-style-type: none"> <li>• Transport efficiency plan</li> <li>• Update of transport regulations</li> <li>• Energy efficiency for cargo transport (including development bank financing)</li> <li>• Biofuel development for air transport</li> <li>• Electromobility</li> </ul>
<b>Manufacturing</b>	<ul style="list-style-type: none"> <li>• Focus on cement, iron and steel industries, which represent close to 50% of emissions due to their energy consumption.</li> <li>• Energy efficiency</li> <li>• Cogeneration (ex: sugar mills)</li> <li>• Recycling</li> </ul>
<b>Residential and commercial</b>	<ul style="list-style-type: none"> <li>• Energy efficiency/high performance buildings</li> <li>• Green mortgages</li> </ul>

<b>Waste management</b>	<ul style="list-style-type: none"> <li>• Development of stricter standards</li> <li>• Investment in municipal infrastructure</li> <li>• Cogeneration</li> </ul>
<b>Agriculture and livestock/land use changes</b>	<ul style="list-style-type: none"> <li>• Payment for environmental services in the forestry sector</li> <li>• Renewable energy investments</li> <li>• Best practices</li> </ul>

## 3.2. HIGHLIGHTS AND RECOMMENDATIONS

**STRATEGY CHALLENGE:** Integrating environmental and climate-related analysis into financial institutions' mainstream risk strategy and business planning to increase business and financial system wide resilience.

### MAIN DRIVERS ASSOCIATED WITH STRATEGY:

- Financial institutions believe that they will face environment-related opportunities driven by changes in physical and transition risk parameters (83% of credit institutions, and 74% of asset managers confirmed this view).
- Financial institutions recognize Mexico's vulnerability to environmental risks (more than 80% of credit institutions and 68% of asset managers believe that they will be affected by physical and transition risks within the next six years) but also see significant opportunities.
- Financial institutions have the capability to perform scenario analysis and stress tests for non-environmental risks on a regular basis (96% of credit institutions, 87% of asset managers confirmed that they perform these tests for non-environmental risks on a regular basis), and to apply digital technologies such as big data and artificial intelligence, but have yet to do so for climate scenarios.
- International banks and asset managers established in Mexico have already adhered to TCFD reporting at the headquarter level and could transfer this knowledge and capacity to their Mexican branches.
- Mexico has made public its mid-century climate change strategy, which can serve as a useful guide for the long-term business planning of financial institutions, as it describes the strategic lines of action guiding policy at the national and subnational levels.

### MAIN BARRIERS IDENTIFIED:

- **Analysis of climate-related physical and transition risks and opportunities is still at an early stage in Mexican financial institutions** (64% of credit institutions and 53% of asset managers have not assessed physical risks. 81% of credit institutions and 74% have not assessed transition risks).
- **Novel and complex forward-looking analysis is still to be integrated into routine risk assessment activities** (only 14% of credit institutions and 29% of asset managers have undertaken forward-looking assessments for environment-related risks).
- **Lack of familiarity with TCFD:** Most financial institutions in Mexico are either unfamiliar or only learning about TCFD recommendations (70% of credit institutions and 85% of asset managers).

### TOWARDS A COMPREHENSIVE STRATEGY OF SUSTAINABLE FINANCE:

1. Develop disclosure policies and guidelines with respect to climate-related and environmental risks in a consistent manner across the different financial supervisors (CONSAR, CNBV, CNSF, SHCP, Banco de México).

2. Evaluate the need for scenario analysis needs at a macro level to better understand the main climate-related risk (transitional and physical) variables that could affect financial system stability.
3. Develop forward-looking scenarios, in close coordination with relevant environmental authorities and experts, that should be considered by financial institutions in their risk assessment.
4. Provide a clear strategy on how regulation and supervision will promote disclosure of physical and transition risk analysis of financial institutions and corporations, following TCFD recommendations.
5. Evaluate a timetable for compliance with TCFD recommendations by Mexican banks and asset managers as well as for Mexican branches or subsidiaries of foreign financial institutions.

RECOMMENDATIONS FOR FINANCIAL INSTITUTIONS:

1. Develop capacities to integrate physical and transition climate/environmental risks into mainstream risk analysis.
2. Adopt tools and implement useful processes to analyse physical and transition risks in scenario analysis. Undertake further pilot exercises for climate stress tests.
3. Develop specific targets and metrics to assess and manage environmental and climate-related risks and opportunities in line with each organization’s strategy and risk management process. Assess performance against targets.

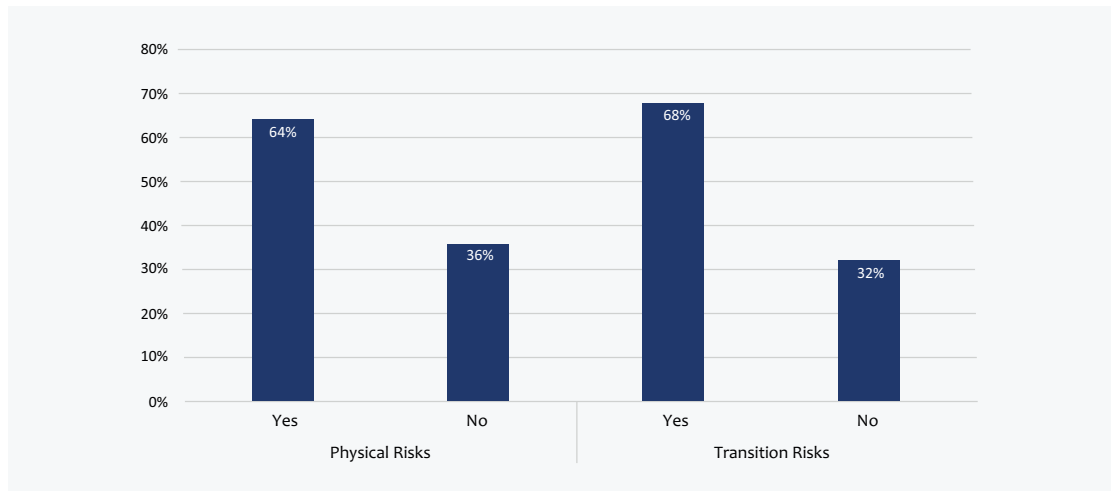
### 3.3. RESULTS

#### a. Credit Institutions

##### Identified social and environmental risks and opportunities

Most credit institutions believe that they are exposed to some type of transition (68%) or physical (64%) risks.

**FIGURE 3.1** DO YOU CONSIDER YOUR ORGANIZATION TO HAVE IN ITS EXISTING LOAN PORTFOLIO ENVIRONMENT-RELATED RISKS THAT ARE DRIVEN BY CHANGES IN PHYSICAL CLIMATE PARAMETERS, REGULATION AND CHANGES IN CONSUMER PREFERENCES?



## Physical Risks

The main physical risks mentioned in the survey are presented in Table 8:

**TABLE 8.** TOP OF MIND PHYSICAL RISKS IDENTIFIED BY CREDIT INSTITUTIONS

RISKS LISTED BY RESPONDENTS	IMPACTED SECTORS
Climate-related events (hurricanes, droughts, floods)	Agriculture Tourism/hotel industry Real estate/construction
Changes in wind patterns	Renewable energy
Impacts caused by the over exploitation of natural resources, mainly water	Agriculture (water availability) waste management

Risks listed during the survey are “top of mind” results, and are not extracted from quantitative analyses, mostly reflecting the empirical experience from bankers and risk managers.

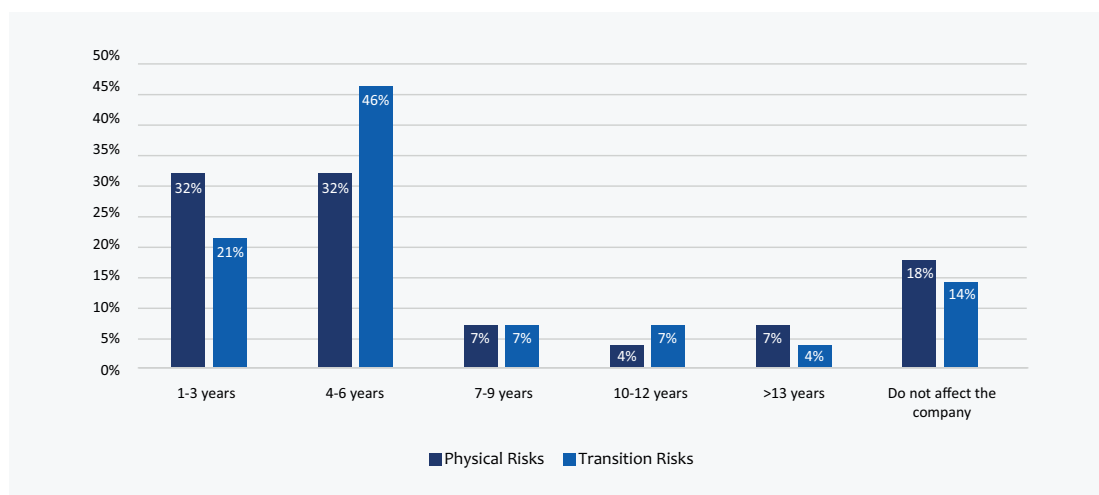
## Transition Risks

Table 9 lists the main changes in market conditions and/or regulations related to the decarbonization of the economy, technological change and market trends listed by participants:

**TABLE 9.** TOP OF MIND TRANSITION RISKS IDENTIFIED BY CREDIT INSTITUTIONS

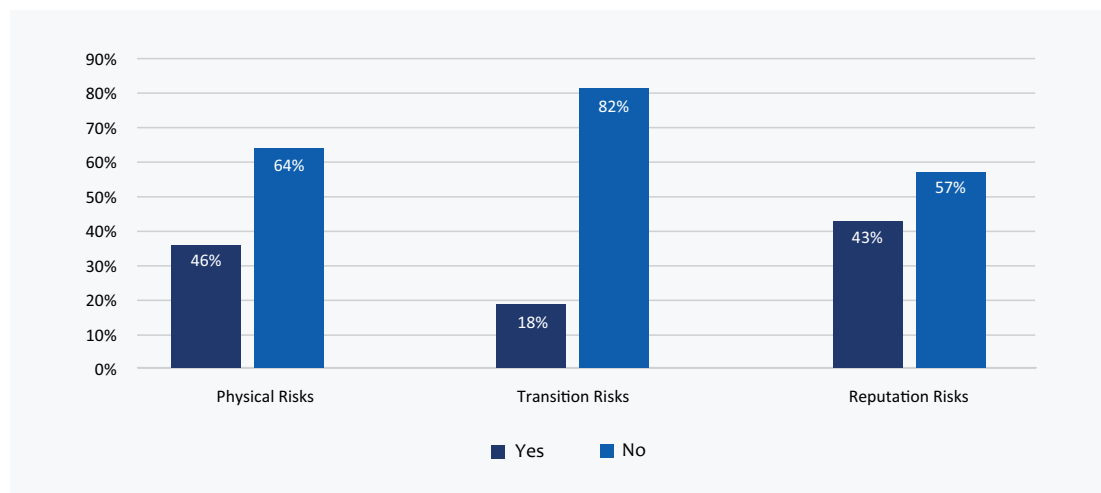
RISKS LISTED BY RESPONDENTS	SECTORS
Changes in regulations to control the overexploitation of natural resources, mainly water, and the environmental impact of these activities	Mining, agriculture, energy
Changes in energy transition law	Energy generation projects
Changes in the use of PET/plastic use trends	Manufacturing
Carbon taxes	Manufacturing, energy
Regulatory changes in fertilizer use	Agriculture
New low-carbon technologies	Automotive sector

**FIGURE 3.2** IN HOW MANY YEARS WILL ENVIRONMENTAL PHYSICAL AND TRANSITION RISKS DRIVE FINANCIAL RISKS TO YOUR INSTITUTION? % OF RESPONSES



More than 60% of credit institutions believe that their portfolio will be impacted by physical or transition risks within the next six years. Although the average credit portfolio of Mexican credit institutions might be shorter (on average between 3.5 and 4 years<sup>53</sup>), most credit activities are based on stable relationships with counterparts, therefore a long-term perspective is inevitable when assessing the potential materiality of risks. Despite this, only a small percentage of respondents confirmed having undertaken an analysis of their exposure to physical, transition and reputational risk.

**FIGURE 3.3** HAS YOUR ORGANIZATION PERFORMED ANY ANALYSIS OF EXPOSURE TO:



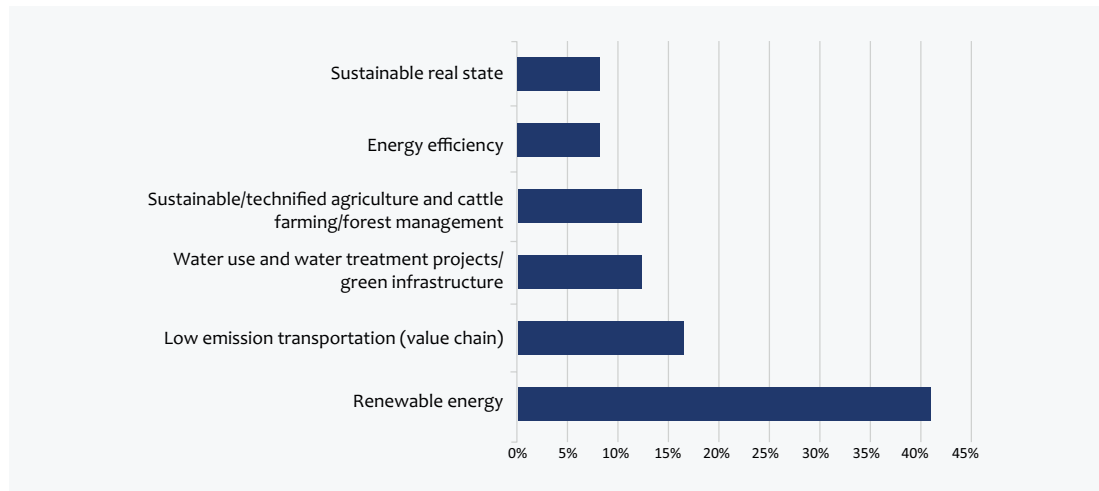
Moreover, of the 15 banks whose board of directors has defined environmental risks as relevant (see Governance chapter), less than 50% have carried out risk exposure analysis.

	DEVELOPMENT BANKS	INTERNATIONAL BANKS	LOCAL BANKS	TOTAL	%
The board of directors identified environmental risks and opportunities as a relevant topic	3	6	6	15	
The bank has performed any analysis of exposure to:					
Physical risk	0	3	3	6	40%
Transition risks	0	3	1	4	27%
Reputation risks	0	3	3	8	53%

### Opportunities

The majority (86%) of credit institutions believe that they will face opportunities due to changes in physical, regulatory and consumer preference parameters, especially in the areas of energy and the production value chain of low-emission vehicles.

FIGURE 3.4 TOP OF MIND OPPORTUNITIES DRIVEN BY PHYSICAL AND TRANSITION CHANGES



None of the credit institutions identifying opportunities used as reference the NDC's agenda. However, several institutions expressed concern about the current uncertainties regarding energy transition law and short-term policy signals from newly elected government authorities.

Compliance with both the Paris Agreement and the commitment on the Sustainable Development Goals represent interesting opportunities for Mexican Financial institutions, with estimates that could reach more than US\$120 billion in the next 10 years.<sup>54</sup> Table 4 presented in the background section of this chapter provides useful insights on economic opportunities associated with the transition to a low-carbon economy. Credit institutions have an opportunity to mobilize financing to this effect.

#### BOX 5. ECO CASA, A SUCCESSFUL INNOVATION FOR ENERGY-EFFICIENT LOW-INCOME HOUSING FINANCING<sup>55</sup>

In 2012, the Federal Mortgage Society (SHF), a Mexican housing development bank that was created in 2001, launched an innovative credit line that incorporates energy-efficient construction standards, targeting the primary and secondary Mexican housing finance markets for low- and middle-income families. Launched in partnership with the Inter-American Development Bank, the Clean Technology Fund (Climate Investment Funds) and the German Development Bank KfW, the programme offers low-interest loans to financial intermediaries that can then supply concessional credit to developers to specifically build 'EcoCasas' – affordable, new housing that reduces CO<sub>2</sub> equivalent (CO<sub>2</sub>e) emissions by at least 20%.

Using a whole house approach methodology and simulation tools, banks, non-banks and developers can choose how to reduce CO<sub>2</sub>e emissions, but are encouraged to focus on the structure of the building – for example through isolation, better windows and shading – and then incorporating technologies, such as additional ventilation, gas, water, among many others depending on the climate zone and the economic context of the potential buyer.

EcoCasa offers free technical assistance to support developers in generating their housing proposals, and together with the financial intermediary, performs a permanent virtual supervision and monthly on-site and virtual verifications, which guarantees the quality of the construction. The interest rate reduction is up to 260 basis points below traditional financing, which offsets incremental costs by incorporating energy efficiency measures so as not to alter the selling price of an EcoCasa.

Some of the benefits of the programme include the development of simple and effective measurement systems that monitor the improvements and efficiency of a wide range of eco-technologies, design and construction materials. Three tools were developed to this effect:

- DEEVi (Energy Efficient Housing Design), used to determine strategies and evaluation methodologies that allow SHF to know more accurately the energy performance of houses and the potential of different eco-technologies to reduce

energy demand in homes. Elaborated by the Passivhaus Institute with collaboration and funding from Mexican housing agencies, such as SHF, the Mexican National Housing Commission (CONAVI) and the Mexican National Workers' Housing Fund Institute (INFONAVIT).

- SAAVi (Water Saving Simulator in Housing) monitors the savings of efficient water use and the related reduction of CO<sub>2</sub> emissions. Developed by SHF with the collaboration of other Mexican housing agencies, the Passivhaus Institute and Capital Sustentable.
- HEEVi (Housing Urban Environment Assessment Tool), developed by SHF in conjunction with the Mario Molina Center (CMM) and the National Housing Registry (RUV), helps identify the presence of urban equipment, transportation, municipal capacity, services, and employment, among others, managing to encourage an appropriate location and degree of urbanization for each project.

SHF has also generated a tool to measure the carbon footprint associated with the life cycle of construction materials. To do this, SHF convened the main companies that manufacture the most used materials in social housing to work with the Institute of Engineering of the National Autonomous University of Mexico (UNAM) and develop this tool.

Without being limited to prescriptive criteria, EcoCasa encourages SHF, the financial intermediary and the developer to optimize and analyse new paths in terms of construction and technology, including new passive techniques, more efficient eco-technologies and materials exploration as well as offering a guide for housing innovation.

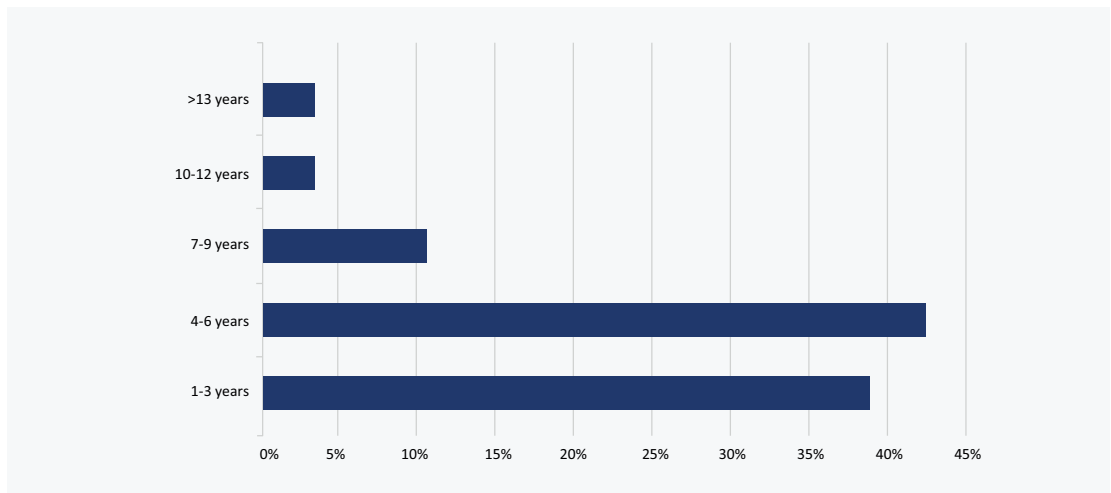
The programme represents 18% of SHF's total construction credit portfolio and as of June 2018 had financed 56,942 homes distributed in 26 cities with an estimated 40-year 2.0 MtCO<sub>2</sub>e reduction and an investment of MXN12,061 million.

### Impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning

In order to put in context the environmental risk strategy of credit institutions, we inquired on the general risk analysis strategy of credit institutions.

More than 60% of respondents project their overall risk analysis for a term greater than four years. Given that credit institutions believe that physical and transition risks will impact them within the next six years, the case for including these risks into mainstream risk analysis is evident.

FIGURE 3.5 HOW FAR INTO THE FUTURE DOES YOUR RISK MANAGEMENT STRATEGY LOOK?



Mexican credit institutions have the capability to apply their scenario forecasting abilities and new digital technologies to assess environmental risks.



96% of credit institutions undertake some type of quantified analysis on the potential impact of risks on their assets (scenario analysis, stress testing, etc.). The two common challenges encountered when gathering and processing the input data for day-to-day scenarios are the access to data/information and the definition of relevant scenarios.

Despite having the capability to run scenarios, only 14% of surveyed institutions have carried out similar exercises to analyse environmental risks, and these have been pilot tests (mainly drought stress and impact analysis on natural capital).

40% of credit institutions confirmed that they apply digital technologies in their risk analysis.

**TABLE 10.** EXAMPLES OF DIGITAL TECHNOLOGIES APPLIED BY FINANCIAL INSTITUTIONS MENTIONED BY RESPONDENTS

<b>BIG DATA</b>
(i) Data on payment behaviour for consumer and business credit
(ii) Storage, processing and analysis of credit portfolio information
(iii) International counterparty risk analysis
<b>OTHER TECHNOLOGIES</b>
(i) Tools for the construction of models such as Orchestra, SAS, Python and R
(ii) Power vial (dynamic table) Oracle SQL and R, data mart
(i) Development of robots to automatize and update risk factors and metrics
(ii) Compliance labs
(iii) Data mining for risk management

Using digital technologies to assess environmental risks is a global trend. In a recent survey undertaken by the GFMA, 85% of the 22 largest financial institutions confirmed that they are exploring how to leverage data or new technologies to better assess and price climate-related risk.<sup>56</sup>

### Adherence to voluntary initiatives

Participating in voluntary initiatives is a strategy used by many organizations to access best practices as well as to move an agenda forward. For the past ten years, the number of voluntary, industry-led initiatives that promote the adoption of commitments towards sustainable finance has multiplied. Most initiatives define principles, standards and commitment timelines.

67% of credit institutions endorse the Mexican Banking Association sustainability protocol, representing close to 80% of the total credit portfolio. However, most respondents mentioned that they have not introduced significant changes in their processes as a result of the signing of this protocol. The Mexican Banking Association has an opportunity to leverage this platform by introducing an agenda of concrete commitments for signatories (see Box 6, example of Colombia).

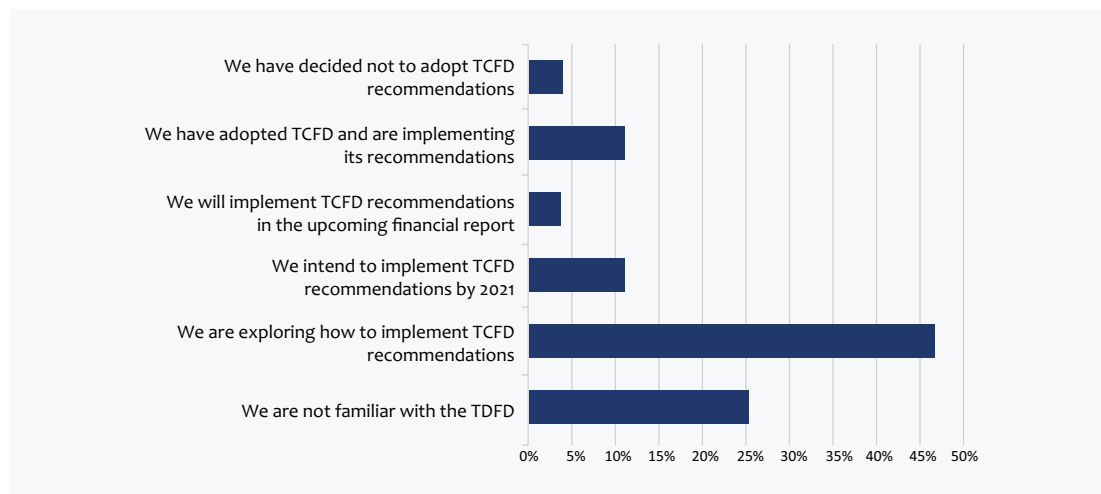
In general, the adherence to international initiatives by Mexican institutions is still nascent. Almost 40% of respondents have signed the Equator Principles, and only 20% claim to be signatories of the PRI, TCFD and Climate Disclosure Project (CDP).

As mentioned before, the framework developed by the TCFD to help banks identify and report on physical and transition risks and opportunities from climate risk has been increasingly adopted by financial institutions at an international level. TCFD's guidance provides step-by-step guidance for the identification, analysis and disclosure of both physical and transition risks for credit institutions.

However, during our survey more than 70% of banks either do not know or have just begun to know the TCFD (this number includes 80% of development banks, which are still analysing whether to implement the recommendations).

54% of international banks and 83% of local banks are either just getting familiar with the recommendations or simply do not know them.

**FIGURE 3.6** HAS YOUR COMPANY ADOPTED TCFD RECOMMENDATIONS?



In this respect, Mexico lags other regions. An analysis undertaken by the TCFD of disclosures from 104 banks at the global level found that the percentage of banks disclosing relevant climate-related information was on average above 50% that for all groups of reporting (Governance, Strategy, Risk Management and Metrics), a considerable increase from 2016.<sup>57</sup>

In another survey from the GFMA, conducted in May and June of 2019 and based on the anonymized and aggregated responses of 22 of the largest globally active financial and capital market participants, 77% confirmed they follow the TCFD disclosure recommendations.

Credit institutions should accelerate the implementation of the TCFD’s framework and the application of current risk management methodologies to have a more accurate assessment of the impact of physical and transition risks in their portfolios.

**BOX 6. GREEN PROTOCOL IN COLOMBIA<sup>58</sup>**

The Green Protocol in Colombia is an agreement between the Government and the financial sector to promote the sustainable development of the country, and to work for environmental preservation and the sustainable use of natural resources.

The protocol defines four strategies:

1. Develop green products and services. Promote sustainable development financing through credit and/or investment facilities, as well as programmes that promote the sustainable use of natural resources.
2. Incorporate environmental and social impacts in credit and investment risk analyses in the activities and projects to be financed, complying with environmental regulations.
3. Promote eco-efficiency and the sustainable consumption of renewable natural resources.

4. Communicate the protocol through the necessary channels, inform and engage stakeholders about the policies and practices of the institutions associated with the protocol.

#### Results and products:

- Tax incentives for customers in the banking sector who invest in climate change mitigation and adaptation projects.
- Environmental and Social Risk Analysis (ESRA) guide.
- Eco-efficiency. With the support of the Ministry of the Environment and Sustainable Development (MADS), the Sustainable Purchasing Management Guide for Financial Institutions was developed. Also, a standard of carbon footprint measurement, validated by the Colombian Institute of Technical Standards (ICONTEC), was built.
- Capacity building: first e-learning course.
- The Green Protocol indicators.

The success of the protocol's implementation since 2012 has been due to good communication between entities and committees, the oversight of the federal government, and the commitment of the senior management of the participating organizations (the protocol was set up with the participation of and feedback of more than 20 national and international entities). The original protocol signed in 2012 has been already ratified for another five-year period in 2017 with the commitment of 22 financial entities.

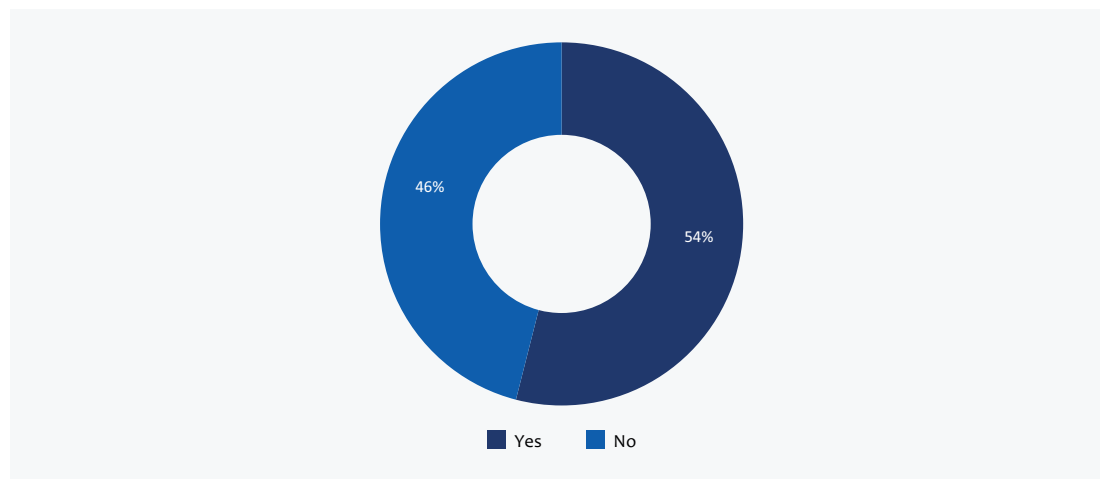
## b. Asset Managers

### Identified Social and Environmental risks and opportunities

#### Physical Risks

Only 54% of asset managers believe that their portfolio could be affected by physical risks (vs 64% of credit institutions).

**FIGURE 3.7** DO YOU CONSIDER YOUR ORGANIZATION TO HAVE ENVIRONMENT-RELATED FINANCIAL RISK DRIVEN BY GRADUAL CHANGES IN CLIMATE PARAMETERS IN ITS INVESTMENT PORTFOLIO?



	PENSION FUNDS (AFOREs)	INSURANCE COMPANIES	ASSET MANAGERS
Yes	86%	62%	33%
No	14%	31%	67%

AFOREs expressed more concern for the impacts of physical risks (86%); insurance companies expressed less concern when discussing their investment activities (62%), as these are highly concentrated in sovereign debt given strict regulatory controls. Although investment in sovereign bonds might seem to represent a lower immediate exposure to environmental and social risks, as we have shown earlier in this chapter, Mexico’s vulnerability to climate risks should not be underestimated, and investors should analyse possible direct and indirect exposure to changes in credit rating of their sovereign debt portfolio due to adverse climate impacts.

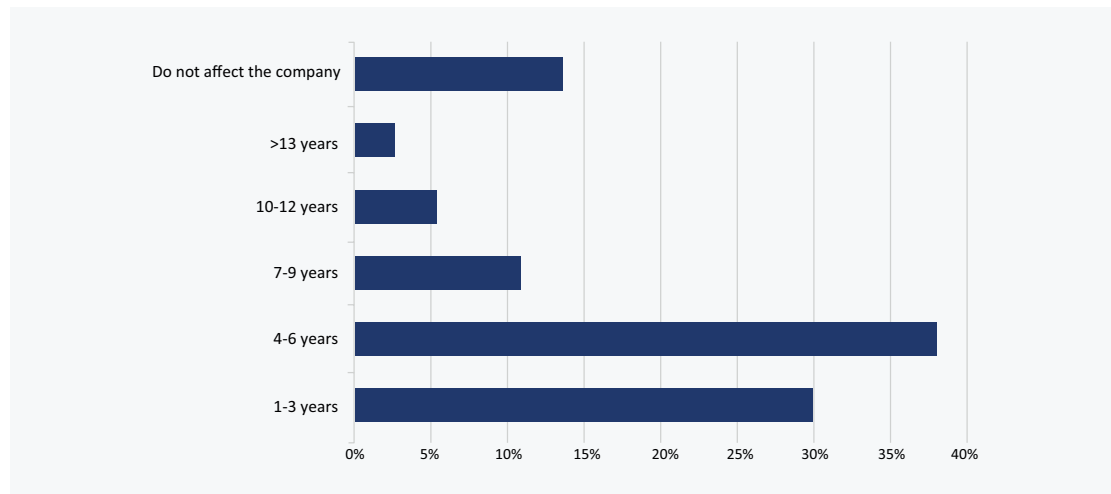
The main physical risks mentioned by surveyed organizations are listed in the following table:

**TABLE 11.** TOP OF MIND PHYSICAL RISKS IDENTIFIED BY ASSET MANAGERS

RISKS LISTED BY RESPONDENTS	IMPACTED SECTORS
Climate-related events (hurricanes, droughts, floods)	Real estate Construction and infrastructure Agriculture
High energy consumption	General
Pollution risks	Hydrocarbons
Depletion of natural resources (water)	Biodiversity

68% of respondents believe physical risks could impact their portfolios within the next six years. Comparing these results with the general risk strategy time horizon described by credit institutions (p.38) we see that the time frame coincides, confirming the relevance of including environment-related risks in the general risk strategy of the organization.

**FIGURE 3.8** ENVIRONMENTAL-RELATED FINANCIAL RISKS DRIVEN BY CHANGES IN PHYSICAL PARAMETERS MAY AFFECT THE INSTITUTION IN THE NEXT:

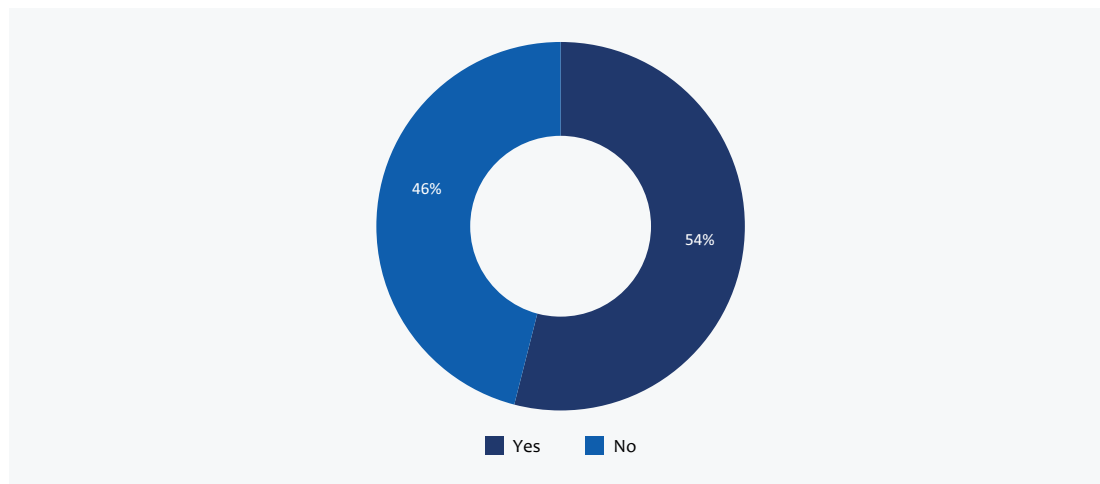


A small group of respondents believes that physical risks will not impact their portfolio; when asked to explain why this was the case, this same group claimed not to have formally analysed these risks yet.

**Transition Risks**

54% of respondents believe that they have exposure to transition risks.

**FIGURE 3.9** DO YOU CONSIDER YOUR ORGANIZATION TO HAVE IN ITS EXISTING INVESTMENT PORTFOLIO ENVIRONMENT-RELATED RISKS THAT ARE DRIVEN BY CHANGES IN REGULATION?



	YES	NO
PENSION FUNDS (AFOREs)	86%	14%
INSURANCE COMPANIES	46%	54%
ASSET MANAGERS	44%	56%

Given their mandatory long-term view, AFOREs are the segment that seems most concerned with transition risks. On the other hand, fund managers represent the segment with less concern for these types of risks.

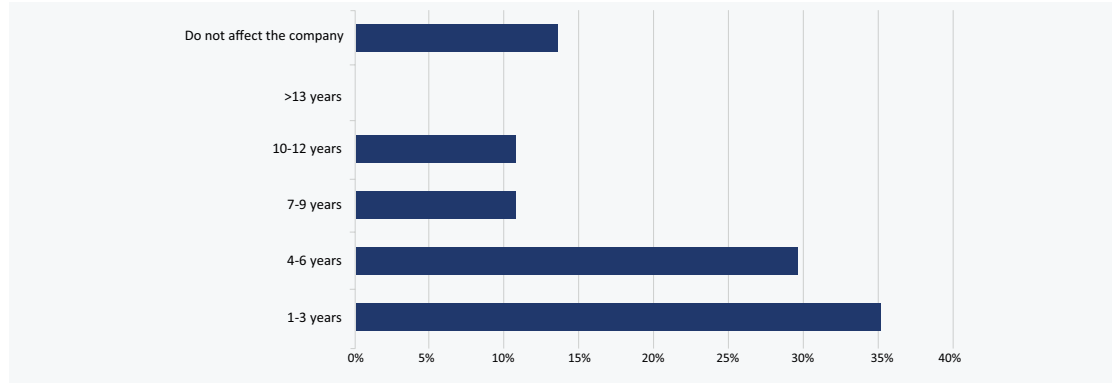
65% of respondents believe that transition risks could materialize within the next six years. The table below lists the sectors that were identified (top of mind) by asset managers that could be impacted by regulations:

**TABLE 12.** TOP OF MIND TRANSITION RISKS MENTIONED BY ASSET MANAGERS

- Energy sector/hydrocarbons/electricity
- Automotive (new technologies)/transport (more restrictive rules)
- Plastic and PET manufacturing
- Agriculture: fertilizer use
- Use of natural resources (e.g. water, mining)
- Environmental regulations in relation to real estate projects
- Several economic activities impacted by carbon tax/new waste standards

Comparing these results with the Global Climate Change and Sustainability Services study of institutional investors published by Ernst and Young (EY), we see that asset managers in Mexico are less concerned about physical risks than their international peers. In this survey investors confirmed they are more concerned about the physical implications of climate change risk than the transition risks such as those tied to adapting to new regulations, practices and processes. 70% say that, over the next two years, they will pay a fair amount or allocate a great deal of time and attention to physical risks. 48% say the same of transition risk.<sup>59</sup>

**FIGURE 3.10** ENVIRONMENT-RELATED FINANCIAL RISKS DRIVEN BY CHANGES IN REGULATION MAY AFFECT THE INSTITUTION IN THE NEXT:



Less than 50% of respondents have performed an analysis of exposure to physical, transition or reputational risks, with transition risks being the least assessed by the different segments.<sup>60</sup>

Percentage of each segment that has analysed risks on physical, transition and reputation risk			
	AFOREs	INSURANCE COMPANIES	ASSET MANAGERS
Physical risk	57%	54%	39%
Transition risks	29%	15%	33%
Reputational risks	57%	23%	50%

### Opportunities

74% of respondents consider that they will face and try to take advantage of opportunities related to changes in regulation, physical parameters or consumer preferences.

Top of mind opportunities for asset managers include sustainable infrastructure, renewable energy project finance, greenfield projects (including real estate) that incorporate sustainability criteria, and electric car supply chains.

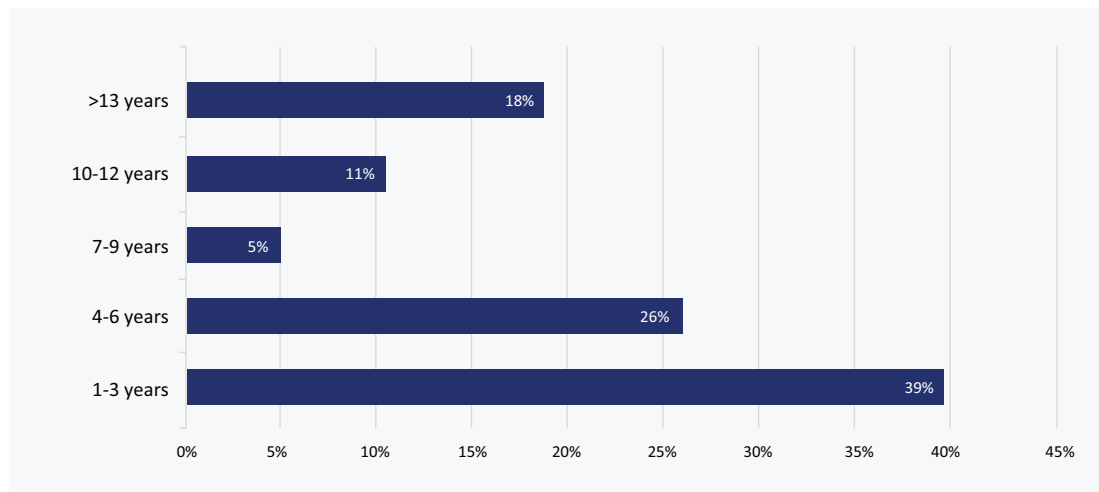
### Impact of climate-related risks and opportunities on the organization’s businesses, strategy, and financial planning

The survey set out a set of questions focused on the day-to-day risk strategy and financial planning of asset managers.

60% of respondents project risk analysis for a term greater than four years; these include the large majority of ss and insurance companies, and 40% of asset managers.

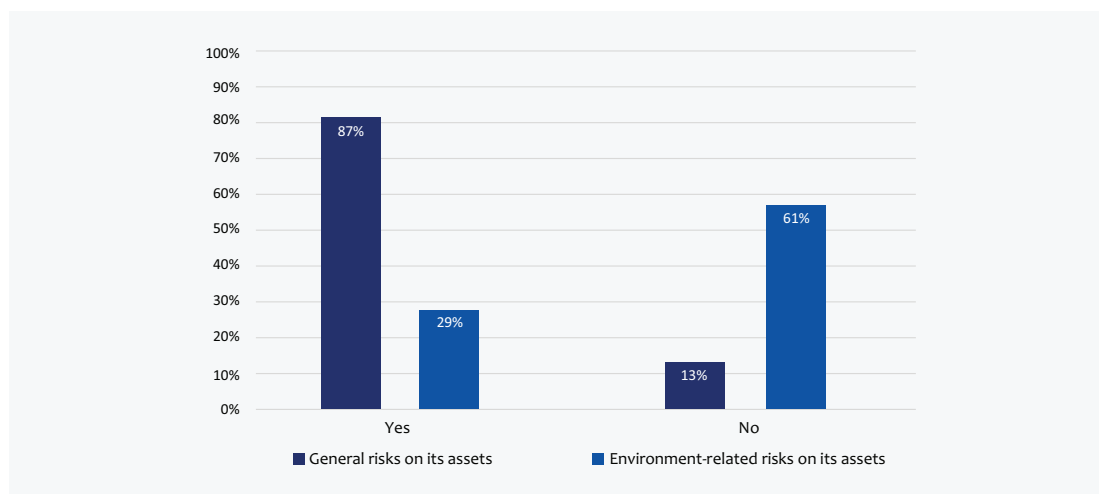
Given the term of up to six years in which asset managers believe physical and transition could impact their portfolios, it seems prudent to include these risks in the overall risk strategy of the institutions.

**FIGURE 3.11** HOW FAR INTO THE FUTURE DOES YOUR (GENERAL) RISK MANAGEMENT STRATEGY LOOK?



As in the case of credit institutions, asset managers have the capacity to undertake scenario analysis, however most asset managers have not used this method to assess how physical and transition risks may impact their portfolios.

**FIGURE 3.12** HAS YOUR ORGANIZATION UNDERTAKEN ANY QUANTIFIED ANALYSIS (SCENARIO ANALYSIS, STRESS TESTING, ETC.) ON THE POTENTIAL IMPACT ON ITS ASSETS?



**TABLE 13.** EXAMPLES OF ANALYSIS PERFORMED FOR ENVIRONMENTAL RISKS MENTIONED BY RESPONDENTS

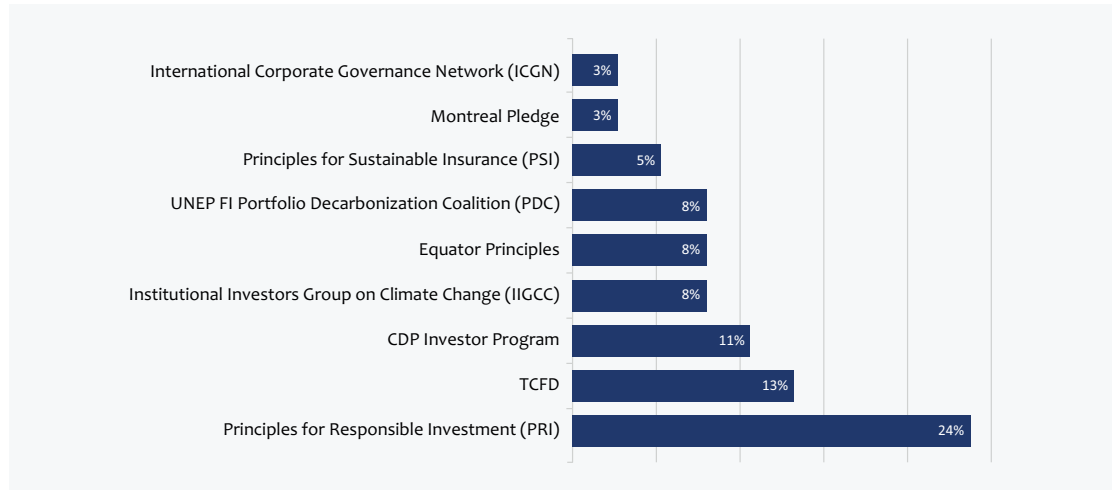
- Carbon Delta - tool that allows you to see the VAR of the stressed portfolio with extreme climatic scenarios.
- Phased carbon tax; accelerated carbon tax; redistribution carbon tax
- Social investment resilience programme.
- Portfolio exposure analysis with the 2° Investing Initiative.

Note: some of these analyses were undertaken by asset managers at the global level and are not necessarily focused on the Mexican market.

### Adherence to voluntary initiatives

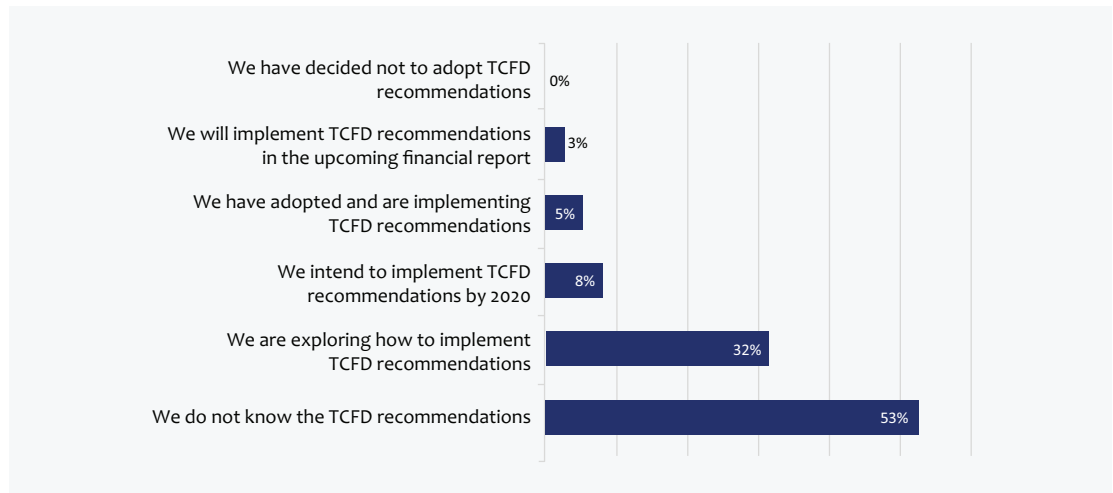
As in the case of credit institutions, we inquired on the adherence of asset managers to international initiatives, as a leverage to adopt best practices and the adoption of common agendas.

**FIGURE 3.13** WHICH ENVIRONMENTAL, SOCIAL AND CORPORATE GOVERNANCE EXTERNAL CODES OF CONDUCT, DECLARATIONS OR VOLUNTARY REGULATIONS HAS YOUR ORGANIZATION BACKED?



The PRI is the initiative with the largest number of signatories (24%), however asset managers in general have not adhered to international initiatives. More than half of respondents claimed not to be familiar with the TCFD.

**FIGURE 3.14** HAS YOUR COMPANY ADOPTED TCFD RECOMMENDATIONS?



More than 50% of asset managers claim not to be familiar with TCFD. 57% of AFOREs, 61% of insurance companies and 44% of asset managers are in this group.

The lack of familiarity with the TCFD on the part of asset managers in Mexico is in clear contrast with international trends: according to TCFD’s 2019 report, more than 340 investors with nearly US\$34 trillion assets under management endorse the recommendations, and most importantly, they now require TCFD disclosures from investee companies.



## BOX 7. THE PRINCIPLES FOR RESPONSIBLE INVESTMENT (PRI)

The Principles for Responsible Investment is an investor-led initiative that fosters the integration of environmental, social and corporate governance issues into investment practices. Signatories of the PRI recognize their fiduciary responsibility to protect the long-term interests of their beneficiaries, and the need to incorporate ESG factors to guarantee this responsibility.

Signatories commit to the adoption of six principles to this effect:

- (i) Incorporate ESG issues into investment analysis and decision-making processes,
- (ii) Be active owners and incorporate ESG issues into our ownership policies and practices,
- (iii) Seek appropriate disclosure of ESG issues with investee companies,
- (iv) Promote acceptance and implementation of the Principles within the investment industry,
- (v) Work together to enhance the effectiveness in implementing the Principles, and
- (vi) Report activities and progress in the implementation of the principles.<sup>61</sup>

More than 2,500 investment firms have signed the PRI in more than 60 countries, representing US\$80 trillion in assets under management, and have access to support and guidance on industry practices in its platform. The PRI's platform offers tools and training forums for ESG integration (including the adoption of TCFD recommendations), as well as producing regulatory insights and tools to support policy action, and promoting the network and collaboration platform for signatories, that includes its well-regarded in-person annual meeting.

### PRI signatories in Mexico (\* signatories that do not have their main HQ in Mexico)

- Afore Banamex
- Ainda
- Altor
- Angel Ventures
- Banco HSBC\*
- Banco JP Morgan\*
- BBVA Bancomer
- BEEL
- Black Rock\*
- CKD IM
- Ecovalores
- Fondo Nacional de Infraestructura
- Grupo Financiero Banorte
- Nexus
- Old Mutual\*
- Profuturo
- Santander Asset Management\*
- Scotia Bank\*
- Vitalis
- Zurich Operadora de Seguros\*

The PRI have been signed by 13 asset managers and asset owners in Mexico, representing a total US\$200 billion under management. These include pension funds, infrastructure funds, asset managers and investor advisors. In addition to proactively strengthening its network with new signatories, the PRI strategy in Mexico has concentrated on supporting its Mexican members to implement the principles, focusing on the active empowerment of asset owners, providing capacity building to incorporate ESG into investment decisions, reinforce leadership and increase transparency.

To foster the development of sustainable markets and the use of ESG data in Mexico, the PRI participates in conferences and forums organized by key players in the sustainable finance field; it will host its global round table regional conference in Mexico in October 2020. It has also established a partnership with the CCFV to promote sustainable finance in Mexico and will support the work on fiduciary duty in the country as well.

## 4. RISK MANAGEMENT

### 4.1. BACKGROUND

In this chapter, we explore the types and extent of risk analysis tools that financial institutions apply in the assessment of environmental and social risks. The analysis will provide an indication of the readiness of financial institutions to understand and manage their exposure to these risks in their investments, credit activities and portfolio management.

Generally, the process of assessment of environmental and social risks goes through several phases:

- (i) Identification of risks,
- (ii) Analysis of risk exposure,
- (iii) Assessment of sources of these risks, and
- (iv) Mitigation of these risks.

In each step of the process firms apply different tools and methodologies to support decision-making, such as the use of exclusion lists, compliance check lists and questionnaires, sector-specific lists of risks assessment, credit exposure classification, scenario analysis and other mitigation strategies.<sup>62</sup>

A challenge that financial institutions face during the assessment of environmental and social risks is the availability and applicability of relevant data associated with environmental and social risks. Missing out on specific information on potential risks can misguide financial decisions; therefore, a key challenge financial institutions face is to develop the capabilities to properly identify and process the relevant data, and to incorporate it into the mainstream risk analysis processes. Credit rating agencies and market intelligence services increasingly incorporate ESG elements in their analysis; however, data provision on the part of companies and the development of common standards and taxonomies are still challenges faced by financial institutions.

Moreover, the complex nature of climate/environmental risks, the links between them and the uncertainty associated with the future behaviour of these risks is a challenge for financial institutions and credit agencies.

In this chapter, we assess how much financial institutions incorporate relevant environmental information in the risk analysis process, the type of information they actively use during their assessment process, and what challenges they face in translating this information to apply it in risk analysis methodologies.

Also, an important objective of this survey was to assess up to what point financial institutions have access to and make use of relevant publicly available information and data about environmental risks (known as PAED) to make informed decision-making.

During the survey, we asked participants to identify their main sources of environmental data, the main challenges they faced when applying the relevant data to environmental risk assessments, as well as their recommendations to make the use of this data more widespread.

#### BOX 8. EXAMPLES OF PUBLICLY AVAILABLE ENVIRONMENTAL DATA<sup>63</sup>

- a. Physical asset (facility) level data, which refers to environmental information on physical assets, such as GHG emissions by power plants, oil operators (fields), refineries, and chemical plants, as well as SO<sub>2</sub>, NO<sub>x</sub> and waste water emissions by facilities such as power plants, steel, cement and textile factories.
- b. Projections of water stress and other ecosystem pressures. Water stress (shortage) situations may pose serious challenges to companies that depend on water supplies.
- c. Projections of natural disaster probabilities. Financial firms commonly use climate change scenarios and estimations of the probability and severity/impact of natural disasters (such as flooding, droughts, windstorms, wildfires and hurricanes) for environmental risk analysis.
- d. Data on solar and wind resources. Renewable energy has become a fast-growing green industry over the last decade.
- e. Database on existing green technologies.
- f. Forecasts of energy demand shift.
- g. Costs of air, water and land pollution and benefits of environmental remediation. In assessing green investment demand, it is important to quantify the environmental benefits of green projects that can deliver positive impacts, such as reductions in air, water and land pollution.

## 4.2. HIGHLIGHTS AND RECOMMENDATIONS

**RISK MANAGEMENT CHALLENGE:** Achieve an effective and system-wide implementation of processes and capabilities to identify, assess and mitigate environmental and social risks, including forward-looking scenario analysis.

#### MAIN DRIVERS ASSOCIATED WITH RISK MANAGEMENT:

- Financial institutions expect to access and utilize more ESG-related data in the next three years (92% of credit institutions and 90% of asset managers).

- Financial institutions are increasingly exposed to changes in market conditions associated with climate and environmental impacts. These changes result from new policy instruments associated with the Paris Agreement, the acceleration of technological innovation and societal behaviour changes.
- The emergence of new technologies such as big data, artificial intelligence, remote sensing, and precise weather forecasts, among others, can expand the capacity of financial institutions to better understand climate-related and environmental risks at precise geographic locations, allowing them to integrate the physical risk exposure faced by specific assets into their financial decision-making.

#### MAIN BARRIERS IDENTIFIED:

- The environmental and social risk analysis done is mostly qualitative** (88% of credit institutions and 66% of asset managers) **and has little depth**. Under 50% of credit institutions and under 30% of asset managers implement and track management and control measures included in projects to mitigate these risks. Also, coverage of environmental risks assessment by credit institutions is low (on average 34% of credit portfolio and 23.5% of asset manager's portfolio).
- The analysis of portfolio exposure to environmental risks is mostly qualitative** (61% of credit institutions and 53% of asset managers). The use of relevant data associated with environmental risks is scarce.
- Financial institutions' disclosure of policies on their environmental and social risk analysis practices is limited**. For instance, although most credit institutions (59%) have adopted exclusion lists, only 43% make these lists public and most asset managers (89%) do not publish their voting practices when representing investors in shareholders meetings (proxy voting).

#### TOWARDS A COMPREHENSIVE STRATEGY OF SUSTAINABLE FINANCE:

- Consider issuing disclosure guidance to financial institutions in line with the TCFD recommendations.
- Lead, with the participation of financial institutions and other stakeholders, the creation of an architecture or data repository of publicly available information related to climate, environmental and social risks and encourage its use by financial institutions.
- Ponder issuing guidance for asset managers to measure and disclose the alignment of their portfolios with Mexico's Nationally Determined Contributions and or other climate scenarios (i.e. CO<sub>2</sub> tons per million of revenue in their portfolio).
- Consider issuing guidance for all asset managers to publish a report to the beneficial owners and stakeholders on how they have integrated environmental, social and climate-related risk assessments into their policies embedded into the investment management strategy or to explain why they have not done so.
- Contemplate developing reporting standards associated with environmental and social risks for listed companies and financial institutions to encourage integrated reports.

#### RECOMMENDATIONS FOR FINANCIAL INSTITUTIONS:

- Increase senior risk management capacities to undertake the analysis of physical and transition risk-related data and use these capacities to identify green finance market opportunities associated with transition risks.
- Expand the implementation of the Equator Principles to other portfolio categories. The "Spirit of the Equator Principles" should ideally be embedded throughout organizations and across product categories. The CCFV and the Mexican Banking Association could promote an expanded scope beyond project finance transactions to general corporate loans, mortgages, IPOs and other investment vehicles, building asset management capacities.

3. Develop relevant metrics to assess climate-related risks and opportunities. This should be done with the support of analytical areas of institutions and the use of available digital technologies.
4. Align national development banks' credit portfolios with low-carbon and climate-resilient activities consistent with Mexico's Nationally Determined Contributions. This might include a differentiated pricing criterion for projects and activities with a high impact on climate change.
5. Establish a timeline to implement the disclosure of environmental and social risk management practices to relevant stakeholders. Fund managers should consider integrating climate, environmental and social risk considerations into their annual general meeting voting.

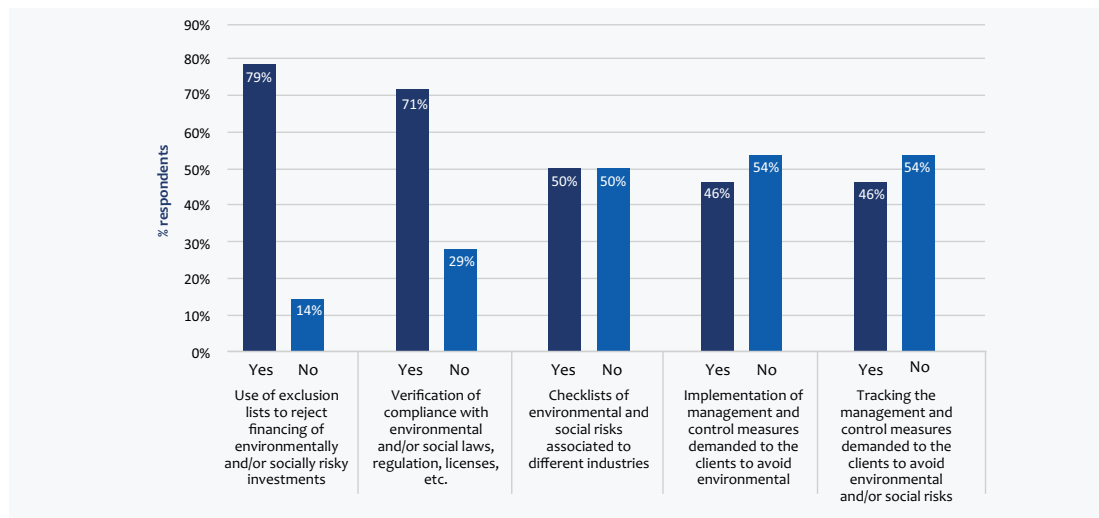
## 4.3. RESULTS

### a. Credit Institutions

#### Environmental and Social Risk Analysis (ESRA) tools applied by credit institutions in Mexico

Although 75% of respondents are believed to have risk management systems that allow them to filter, evaluate, condition, or reject clients and projects based on environmental and social criteria, the reach of the system seems to be small. Credit institutions rely predominantly on the use of exclusion and sensitive sector lists as a first filter, and focus on the verification, and compliance of laws and regulation to assess environmental and social risks.

**FIGURE 4.1** HAS YOUR ORGANIZATION ADOPTED ANY TOOLS OR MANAGEMENT METHODOLOGIES TO FACILITATE ENVIRONMENTAL AND SOCIALLY FRIENDLY CREDIT DECISION-MAKING?



Check lists and questionnaires are used by only 50% of respondents to help guide due diligence, or to develop mitigation action plans as a condition for approval.

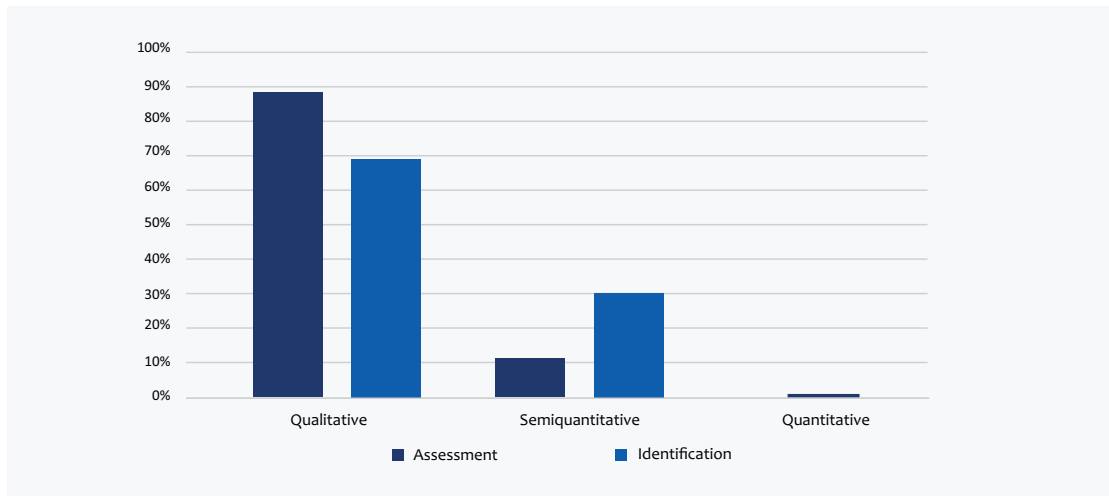
Less than 50% of credit institutions have procedures in place to monitor and track risks once credit has been disbursed.

Other support tools mentioned by credit institutions include:

- ⦿ Rating services available in the market for listed companies, (e.g. RepRisk and Sustainalytics).
- ⦿ Thematic research: a method to calculate the probabilities of achieving implied returns in infrastructure investments.
- ⦿ H-Aras (georeferencing).
- ⦿ Methodologies required by predefined second floor financing (EcoCasa – see Box 5).

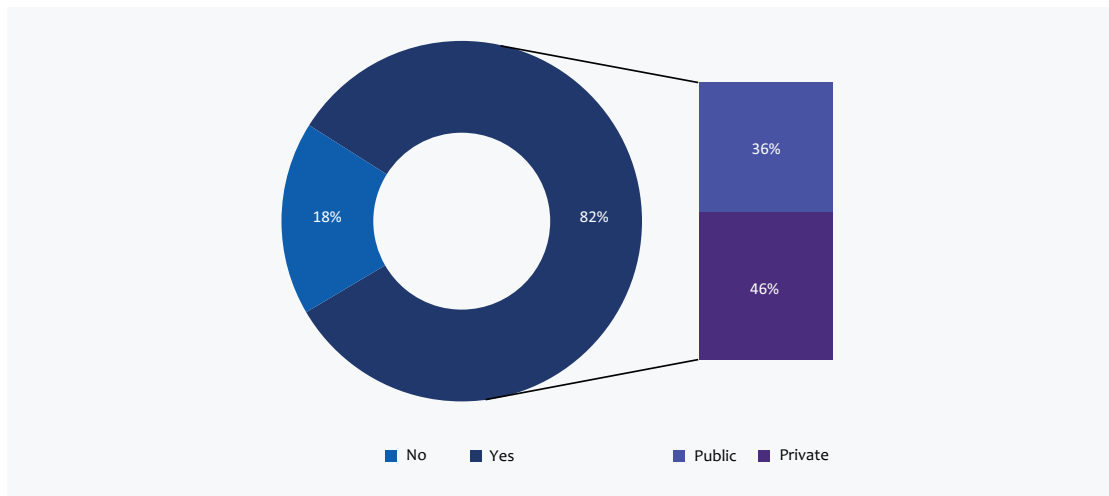
The process of environmental and social risk identification is still qualitative for most organizations, which means that very few credit institutions assess the actual financial exposure of environmental and social risks and have little opportunity to generate internal knowledge on the materiality of environmental risk.

**FIGURE 4.2** CREDIT INSTITUTIONS IDENTIFICATION AND ASSESSMENT OF ENVIRONMENTAL AND SOCIAL RISKS



Eight out of ten credit organizations have included exclusion lists in their credit approval process. However, as this is voluntary, more than 50% of banks have opted not to publish their lists (development banks claimed to have a policy in place that makes the lists available upon request).

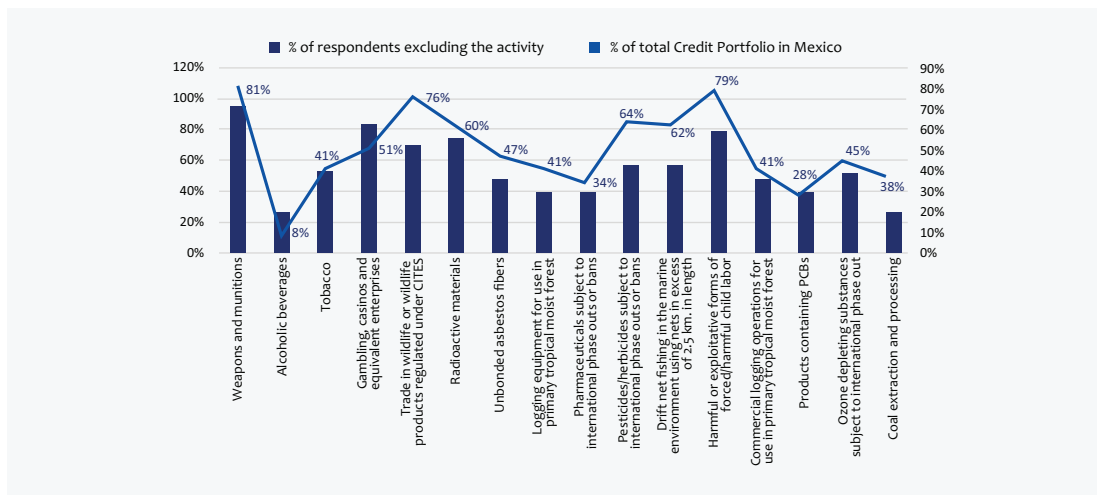
**FIGURE 4.3** DOES YOUR ORGANIZATION HAVE AN EXCLUSION LIST? IS THE EXCLUSION LIST PUBLIC OR PRIVATE?



	DEVELOPMENT BANKS	INTERNATIONAL BANKS	LOCAL BANKS
Yes	60%	91%	83%
No	40%	9%	17%
Public	20%	55%	25

Figure 4.4 illustrates some of the sectors that are excluded by credit institutions in Mexico. The left axis measures the percentage of institutions that apply exclusion lists, and the right axis measures the percentage of credit assets of the Mexican system that these percentage represent. All respondents exclude weapons and munitions, representing 81% of Mexico's credit portfolio. Gambling, casinos and equivalent enterprises, and harmful or exploitative forms of forced/harmful child labour are the activities excluded by most financial institutions. On the environmental side, it is worth noting, given Mexico's deforestation commitments, that only 41% of banking system have prohibited lending activities for commercial logging operations in the primary tropical forest.

FIGURE 4.4 SECTORS EXCLUDED BY CREDIT INSTITUTIONS IN MEXICO



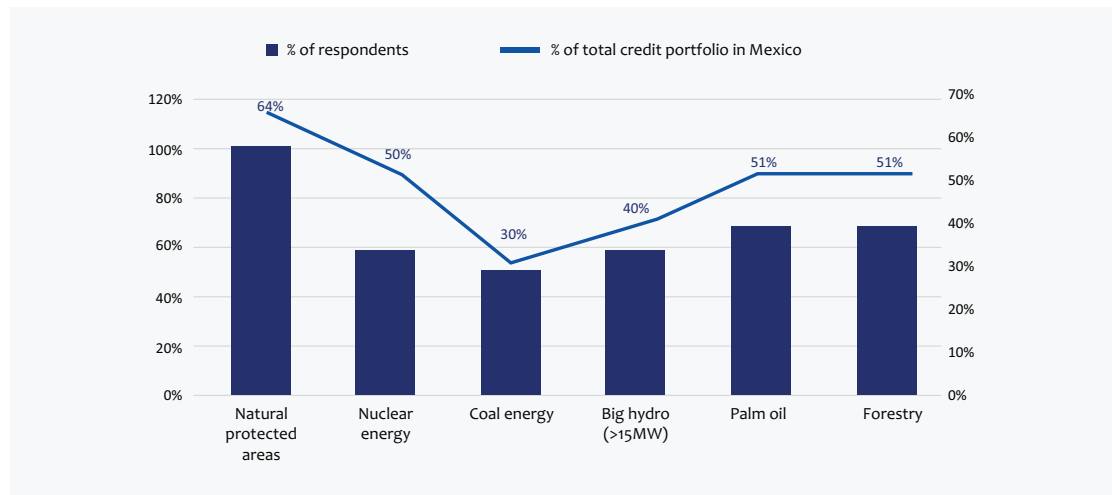
Other excluded sectors mentioned by financial institutions:

- ⦿ New coal-fired power plants and expansion of existing power plants
- ⦿ Activities with uncontrolled fire hazards
- ⦿ Exploration, production and transport of bituminous sands.
- ⦿ Environmentally hazardous substances
- ⦿ Unsustainable processes (intensive agricultural production, animal testing)
- ⦿ Asbestos extraction, processing and marketing
- ⦿ Pharmaceutical specialties.
- ⦿ Extraction and sale of native tropical species of wood without Forest Stewardship Council certification
- ⦿ Various palm oil farms.
- ⦿ New nuclear power plants
- ⦿ Single-hull oil transport vessels
- ⦿ Projects affecting World Heritage Sites
- ⦿ Fishing with explosives or kerosene

57% of credit institutions have developed a list of sensitive sectors to identify risks. These are activities that can be financed but that will require special attention during the assessment and mitigation processes.

Natural protected areas, which represent more than 10% of Mexican territory, are considered a sensitive sector by 100% of respondents that have policies for sensitive sectors, equivalent to 60% of credit assets in Mexico.<sup>64</sup> The Natural Protected Areas system defines six categories of protected areas, each one with different land use restrictions that need to be understood properly before financing projects or companies with these areas.<sup>65</sup> One of the commitments of the Mexican government under the Paris agreement is to reduce deforestation to zero, including in the 182 federal natural protected areas.<sup>66</sup>

FIGURE 4.5 SECTORS SELECTED BY CREDIT INSTITUTIONS THAT SET UP SPECIFIC POLICIES FOR SENSITIVE ACTIVITIES

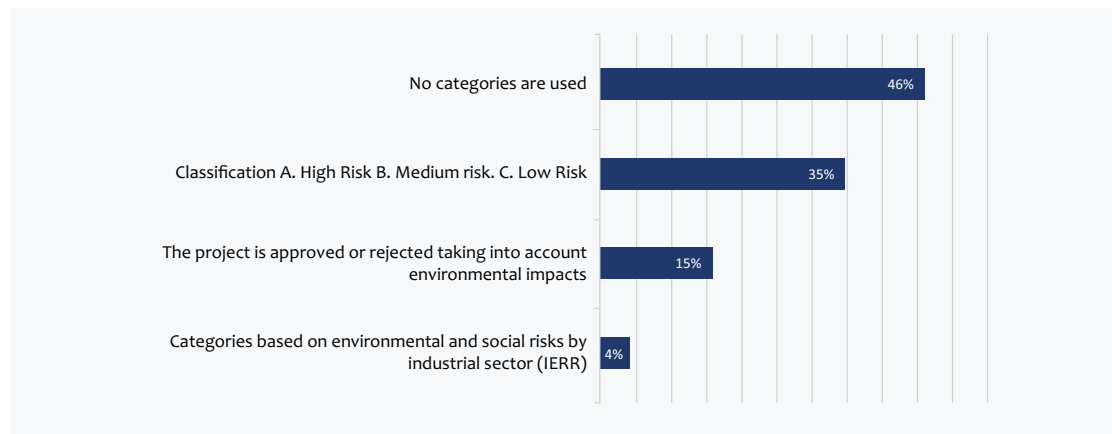


### Assessment

Most institutions (88%) define their assessment practices as a qualitative process. The use of scenario analysis is not a common practice in Mexico.

Only a third of respondents (35%) use a classification system to define risk categories of projects.

FIGURE 4.6 DETAIL HOW YOUR CREDIT INSTITUTION ASSESSES THE ENVIRONMENTAL AND SOCIAL RISK LEVEL (E.G. A, B OR C) OF ITS CREDITS





	DEVELOPMENT BANKS	INTERNATIONAL BANKS	LOCAL BANKS
Classification A,B,C	40%	27%	33%

The use of categories to classify risks is a standard practice that was developed by multilateral development banks in the 1990s to prioritize sensitive projects that required special attention and has been incorporated to various degrees of extend, by many commercial banks that are signatory to the Equator Principles.

The classification is normally prepared during the credit assessment process and is included in the credit proposal, along with a mitigation plan for high-risk projects. It is a very useful tool, which facilitates workflow, monitoring, and portfolio analysis, especially when included in digital databases, and could prove useful to credit institutions in Mexico.

Credit institutions that use classifications employ different criteria to identify projects that have higher environmental and social risks. Criteria to classify a project as high-risk mentioned by our survey respondents include the presence of indigenous communities (100%), the impact of the project on natural protected areas (89%), and exposure to certain predefined industries (89%).

#### BOX 9. SCENARIO ANALYSIS

In addition to guide individual decision-making, climate-related scenario analysis can provide financial institutions with the opportunity to engage investors more effectively on matters of business and strategic resiliency. Through scenario analysis, financial institutions assess potential business impacts of future events, using assumptions on macroeconomic, policy or technological factors. It is a valuable tool in a context of uncertainty, and increasingly used by financial institutions to understand possible impacts of climate change on individual companies or industries. Examples of scenario analysis include modelling impacts of more frequent drought on agricultural portfolios, assessing the impact of carbon tax increases in the oil and gas sector, reviewing business models according to different climate events such as higher incidence of hurricanes, among others.<sup>67</sup>

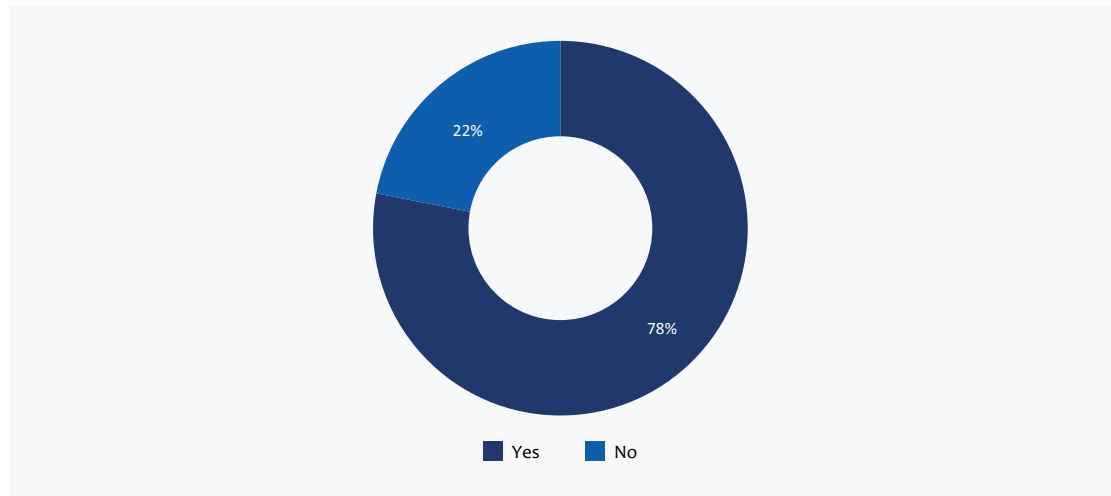
For step process for scenario analysis (adapted from the Cambridge Institute for Sustainable Leadership):

1. **Risk identification:** Qualitative review of the sources of environmental risk (physical and transition) and financial risks (business, credit, market, legal) that are most relevant for your organization.
2. **Risk assessment:** Identify the most affected environmental and financial risk interdependencies
3. **Risk exposure:** Conduct scenario analysis of identified sources of risk.
4. **Risk mitigation:** Identify indicators and tools that could be used in everyday risk management and processes, and implement them into the organizational risk management systems.

## Risk management and mitigation

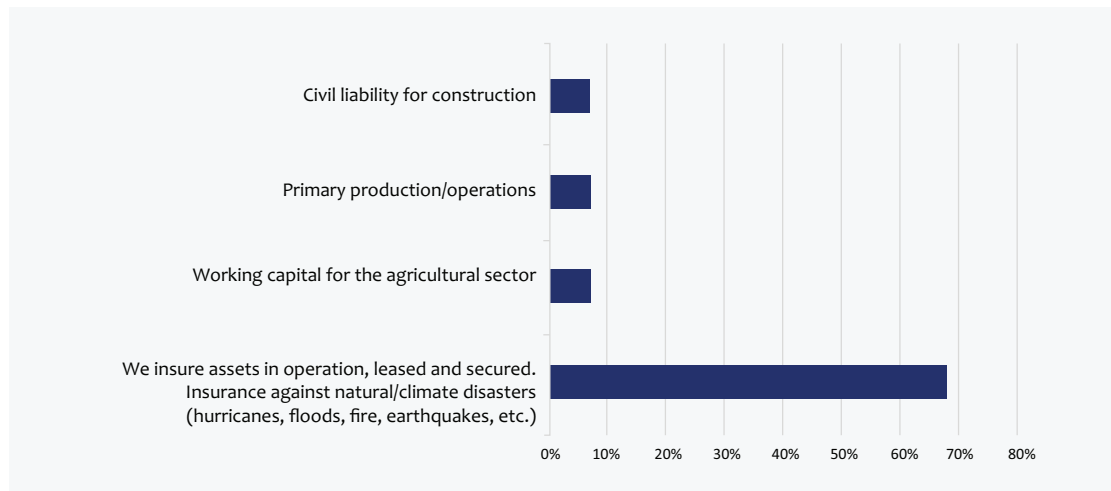
Most financial institutions negotiate insurance policies to protect the underlying assets of their loan operations as a strategy to mitigate risks.

**FIGURE 4.7** WHEN GRANTING CORPORATE LOANS HAS YOUR ORGANIZATION ESTABLISHED A POLICY REGARDING THE NEGOTIATION OF INSURANCE TO MITIGATE ENVIRONMENTAL AND CLIMATE CHANGE IMPACTS ON LOAN PERFORMANCE?



DEVELOPMENT BANKS	INTERNATIONAL BANKS	LOCAL BANKS
100%	64%	75%

**FIGURE 4.8** DESCRIBE THE TYPE OF POLICY ESTABLISHED REGARDING THE NEGOTIATION OF INSURANCE TO MITIGATE ENVIRONMENTAL AND CLIMATE CHANGE IMPACTS ON LOAN PERFORMANCE



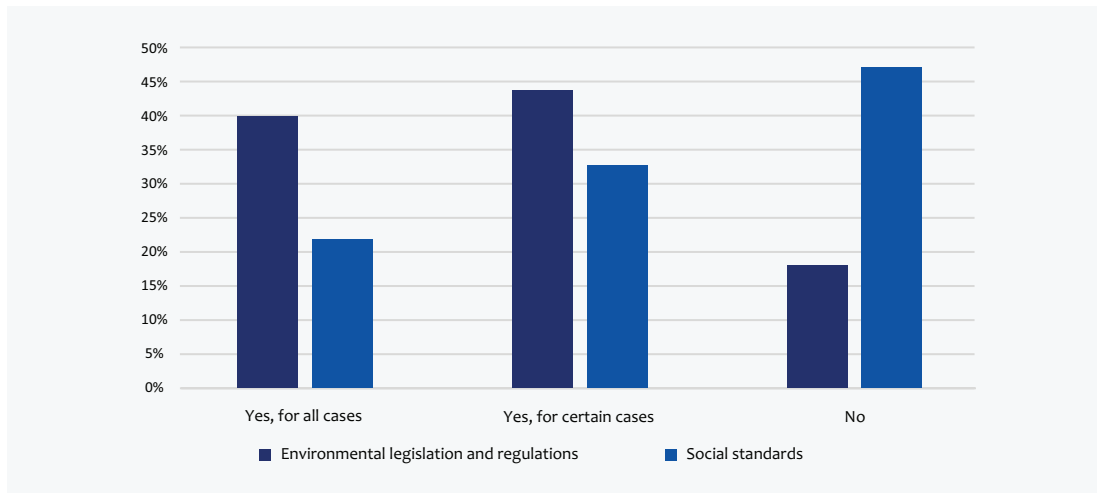
Although insurance policies can transfer or even mitigate environmental risks (by imposing better practices on insured companies), credit institutions face risks of pricing and premium increase, as well as a risk of partial coverage. Real estate, housing and mortgage sectors are particularly vulnerable in this respect. Chronic weather trends and associated rain patterns causing more frequent floods, droughts and fires, can, for instance, affect real estate portfolio risks. One example is the use of insurance to transfer the costs of floods to households. In this case, the severity and frequency of events might cause annual increases in premiums, which are not necessarily factored in when pricing long-term mortgages, affecting the repayment capacity of households and therefore potentially affecting the value of the portfolio.<sup>68</sup>

Mitigation measures mentioned by credit institutions include:

- ⦿ Requiring an environmental protection plan and periodic results report
- ⦿ Inclusion of covenants in credit agreements
- ⦿ Quantitative exposure predefined by risk appetite limits, based on risk exposure to different sectors/ industries
- ⦿ Monitoring mechanisms at credit and risk committees

## Monitoring

**FIGURE 4.9** DOES YOUR ORGANIZATION PERFORM ANY KIND OF MONITORING / VERIFICATION ON ITS CLIENT'S COMPLIANCE WITH THE ENVIRONMENTAL AND SOCIAL LEGISLATION, REGULATIONS OR OTHER COVENANTS ESTABLISHED AS PART OF THE CREDIT AGREEMENT?

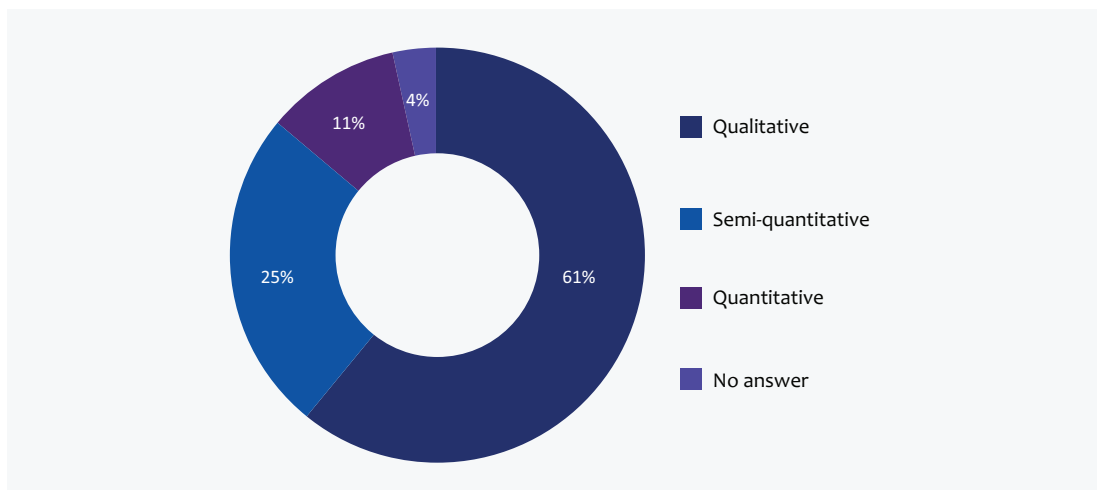


Nearly 7 out of 10 local credit institutions claim not to undertake compliance monitoring or verification on its client's compliance with the environmental legislation and regulations. The reason for this is their understanding that this is a legal responsibility of their customers, defined by contract.

## Portfolio Analysis

Credit institutions' analysis of portfolio exposures are mostly qualitative.

**FIGURE 4.10** ANALYSIS OF PORTFOLIO EXPOSURE TO SOCIAL AND ENVIRONMENTAL RISKS

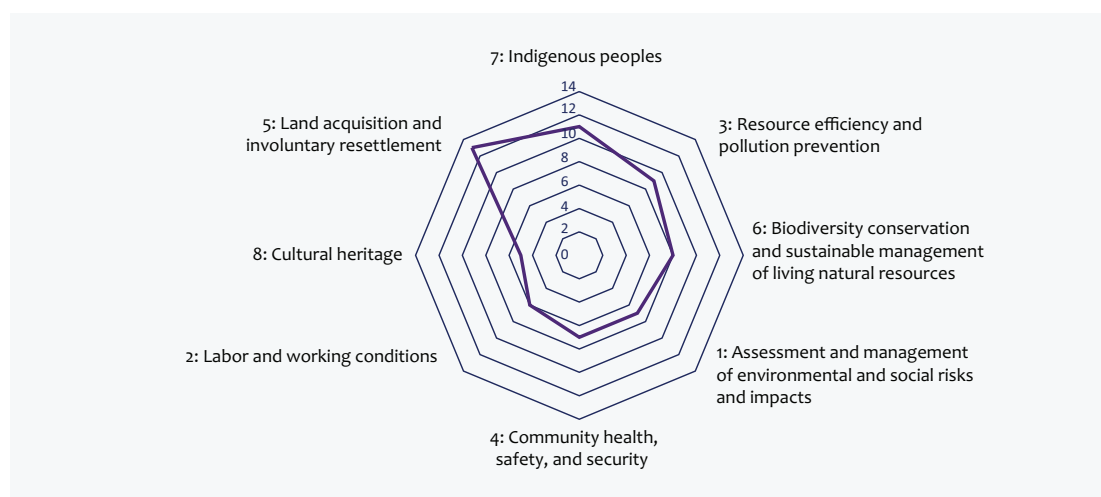


Four out of ten respondents do not perform portfolio exposure analysis, and only 14% undertake an annual statistical analysis of the types of risk approved based on the classification.

Only three institutions report making an internal environmental and social risk exposure report, annually.

The International Finance Corporation has also defined specific standards for banks that access their finance lines. Financial institutions pointed social aspects, for projects that involve land acquisitions, as the hardest to implement when applying these standards in Mexico. Given the gaps in the legal context we see in Mexico, the issue of “prior and informed consent” from indigenous communities is a cause of concern, especially in infrastructure and energy projects.

**FIGURE 4.11** WHICH OF THE IFC ENVIRONMENTAL AND SOCIAL PERFORMANCE STANDARDS DO YOU CONSIDER MOST DIFFICULT TO IMPLEMENT?



### Equator Principles (EP)

The Equator Principles are the most adopted risk management framework by financial institutions for environmental and social risk analysis. Globally close to 100 banking institutions in 36 countries have adopted the Principles and apply them to project finance or project-related corporate loans, project-related refinance, and project-related acquisition finance.<sup>69</sup>

During our survey, 11 financial institutions confirmed adopting the EP framework in Mexico. Although the Principles are mostly applied for sizeable project finance structures, elements of the framework can be applied to any credit operation.

- ⦿ Principle 1: Review and categorization
- ⦿ Principle 2: Environmental and social assessment
- ⦿ Principle 3: Applicable environmental and social standards
- ⦿ Principle 4: Environmental and social management system and Equator Principles action plan
- ⦿ Principle 5: Stakeholder engagement

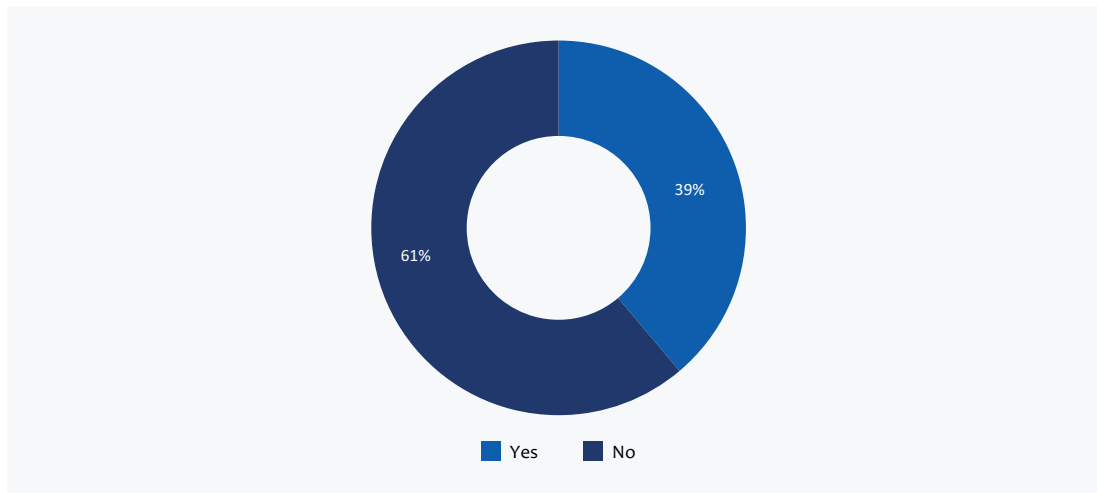
- ⦿ Principle 6: Grievance Mechanism
- ⦿ Principle 7: Independent Review
- ⦿ Principle 8: Covenants
- ⦿ Principle 9: Independent Monitoring and Reporting
- ⦿ Principle 10: Reporting and Transparency

The EP have had four revisions, the latest in November 2019. This fourth iteration of the EP reviews climate impacts and monitoring and human rights issues among others.

One of the elements emphasized by the EP is the need for disclosure and transparency of banks that adhere to the principles. Banks voluntarily report, either partially or fully, on the projects they finance.

Only 39% of credit institutions that operate in Mexico have adopted the EP, however these institutions represent close to 60% of credit assets in Mexico. Moreover, even if development banks are not signatories, most of them have implemented the EP standards and ESRA framework in their internal policies, making EP a standard practice in Mexico for project finance investments.<sup>70</sup>

**FIGURE 4.12** IS YOUR ORGANIZATION SIGNATORY TO THE EQUATOR PRINCIPLES?

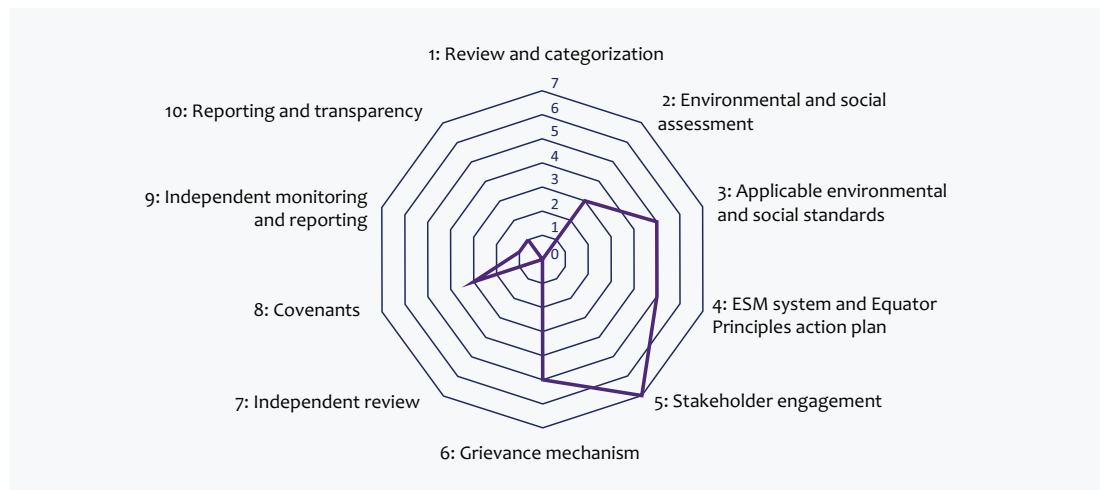


% of signatories for each segment			
	DEVELOPMENT BANKS	INTERNATIONAL BANKS	LOCAL BANKS
YES	0%	82%	17%
NO	100%	18%	83%

During the interviews, several small banks expressed concerns about losing competitiveness when implementing EP and international Finance Corporation standards, as their customers would migrate to less demanding competition. However, as the standards are adopted by institutions that represent close to 70% of total credit assets in Mexico, this concern seems to be unfounded.

Principle 5, referring to Stakeholder Engagement, was pointed by respondents as the most difficult to implement by banks that are signatories of the EP.

FIGURE 4.13 WHICH OF THE EQUATOR PRINCIPLES DO YOU CONSIDER MOST DIFFICULT TO IMPLEMENT?



### Degree of integration of processes for identifying, assessing, and managing environmental and social risks into the organization's overall risk management

In order to be effective, the process of identification, assessment and mitigation of environmental and social risks should be integrated into the organization's risk management processes. Some of the actions taken by surveyed financial institutions include:

- ⦿ Providing their staff with the tools for proper due diligence: training, questionnaires, check lists, lists of environmental risks per sector, periodic sectoral information on risk exposure, data sources, specialized support (internal or external).
- ⦿ Integrating the environmental risk assessment into the credit approval operational process, involving the credit analysis and risk departments. Institutions that delegate risk assessment with compliance or social responsibility departments that are peripheral to operations have more difficulty integrating their processes.
- ⦿ Including the environmental and social risk assessment into the electronic credit approval flow. This facilitates oversight of the process and allows for thorough monitoring of credit risks during the life of the credit, as well as the integration into portfolio risk analysis.
- ⦿ Defining clear authorities and incentives for credit officers, environmental risks specialists and senior management in general, to guarantee objective risk management.
- ⦿ Developing internal capacities to assess environmental risks using scenario planning, through the development of pilot exercises.

We noted several gaps in the way banks have approached the identification, analysis and mitigation of environmental risks in Mexico.

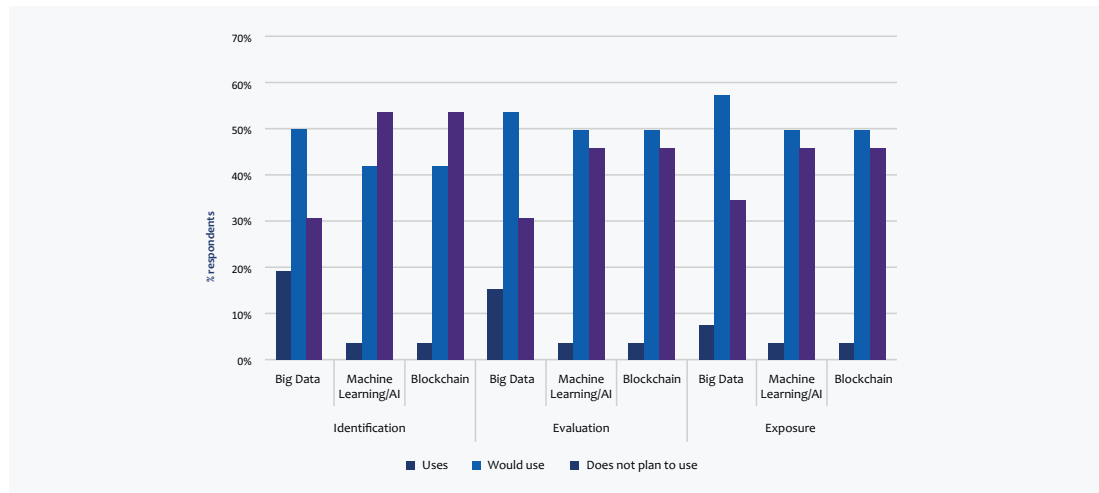
65% of respondents do not use specialized teams for ESG risk analysis (either external or internal), leaving the subject to be deliberated in the credit committee with no clarity on the tools available to properly identify the risks.

Only 57% of institutions confirm that they include a specific section on social and environmental risks in the credit proposal, and when doing so most of them lack a clear tracking process in their system for monitoring after approval.

34% of respondents require an independent opinion on ESG risks, issued by specialized areas.

Credit institutions are also missing out on the opportunity to use digital technologies, many times available in-house, for the identification and assessment of risks.

**FIGURE 4.14** WHICH OF THE FOLLOWING TECHNOLOGIES DOES YOUR ORGANIZATION USE OR WOULD USE IN THE IDENTIFICATION, EVALUATION AND ANALYSIS OF PORTFOLIO EXPOSURE TO SOCIAL AND ENVIRONMENTAL RISKS?



At the international level, most institutions are exploring ways to leverage these technologies to better assess these risks, in the development of scenario analysis and stress tests.<sup>71</sup>

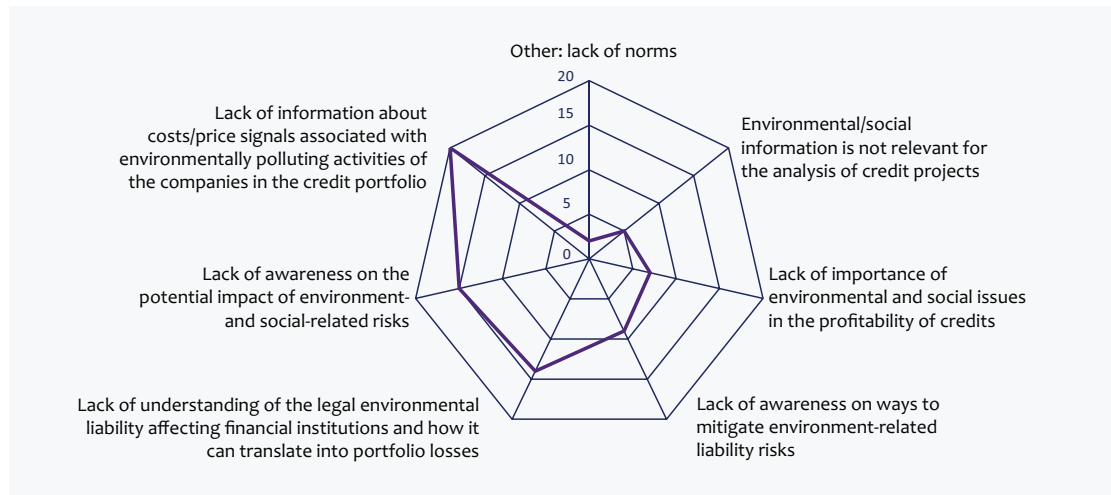
### Use of Publicly Available Environmental Data

The use of relevant data on environmental and social risks in the analysis of projects is limited. Lack of both information about sources and knowledge about environmental and social risks are the main obstacles faced by credit institutions to increase the use of relevant data.

Other reasons that explain the limited use of data are the lack of understanding of the legal environmental liability affecting financial institutions and how it can translate into portfolio losses, and the lack of awareness on ways to mitigate environment-related liability risks.

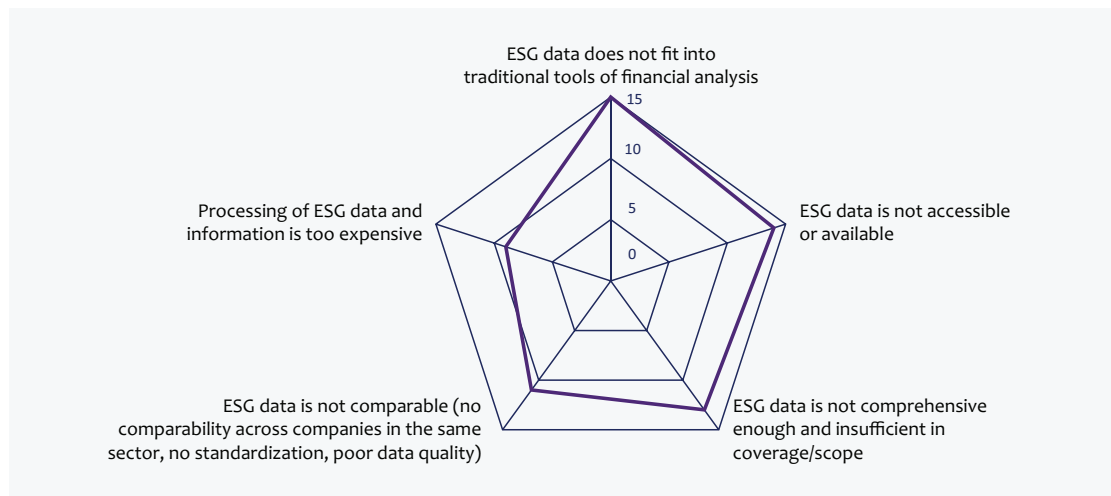
Demand for relevant data on environment-related risks should increase as financial institutions develop a better understanding of these risks and the potential financial implications.

**FIGURE 4.15** WHAT ARE THE MOST SIGNIFICANT OBSTACLES FOR SYSTEM-WIDE ADOPTION OF ENVIRONMENTAL OR SOCIAL INFORMATION FOR THE FINANCIAL ANALYSIS OF CREDIT PROJECTS?



Another reason for the limited use of PAED is the sense among credit institutions that environmental and social risks data does not fit into traditional financial analysis.

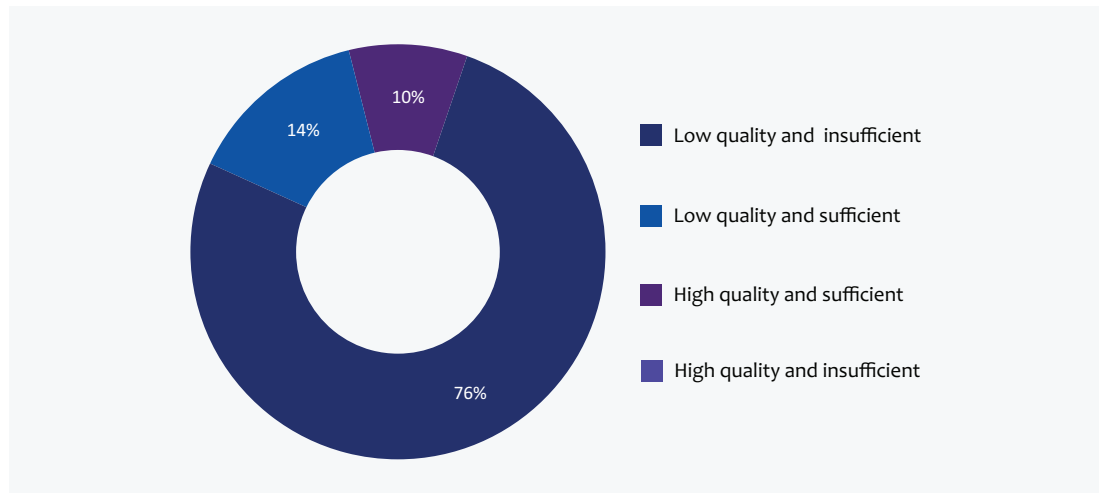
**FIGURE 4.16** WHAT ARE THE MAIN CHALLENGES OF YOUR ORGANIZATION TO INTEGRATE ENVIRONMENTAL AND SOCIAL DATA INTO FINANCIAL RISK ANALYSIS AND DECISION-MAKING?



The quality of the data is low. However, 92% of respondents believe that they will be utilizing more environmental and social data in the next three years.



**FIGURE 4.17** WHEN YOU ARE LENDING TO A PRIVATE NON-LISTED COMPANY, YOUR ACCESS TO ENVIRONMENT-RELATED INFORMATION IS



## b. Asset Managers

### Processes for identifying and assessing ESG risks and opportunities

Asset managers and asset owners can adopt several strategies to identify and manage ESG risks and opportunities, either through the use of negative screening for certain industries and companies, defining a strategy to invest in companies with good ESG ratings or through the use of an active ownership approach, participating in shareholders meetings, influencing the ESG agenda through proxy voting, or even by developing an upfront impact investing strategy.<sup>72</sup>

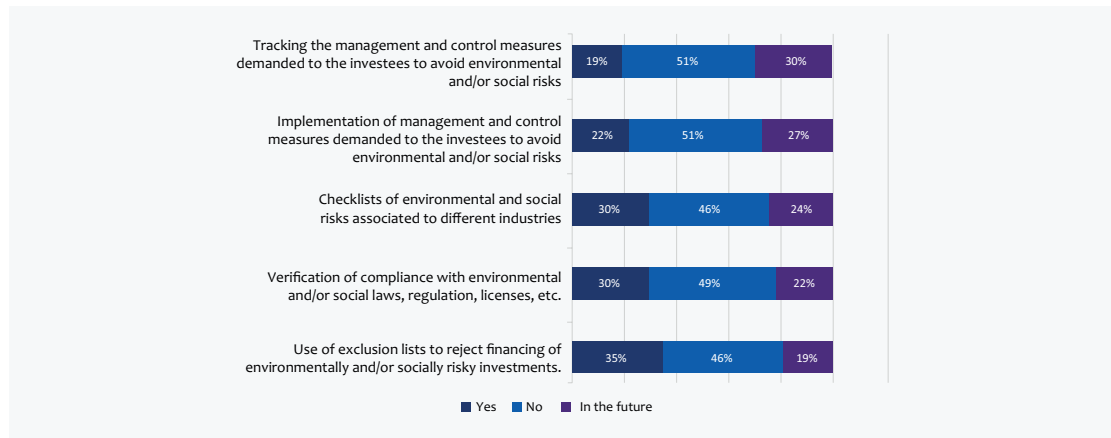
However, most asset managers have not yet set up the proper processes. A third of respondents (32%) have not established a procedure for the identification of social and environmental risks and rely on rating services and sector analysis for ESG risk analysis.

Only 18% of asset managers have the support of a team of ESG specialists.

Although 45% of respondents believe that they have risk management systems in place that allow them to filter, evaluate, condition, or reject investments based on ESG criteria, evidence suggests that the work to incorporate ESG variables in risk analysis is only beginning.

Only one in three firms rely on exclusion lists, verify compliance with ESG laws and regulations, and utilize check lists of ESG risks associated with different industries. Only one in five firms require and track management and control measures from investee companies.

**FIGURE 4.18** HAS YOUR ORGANIZATION ADOPTED ANY TOOL OR MANAGEMENT METHODOLOGIES TO FACILITATE ENVIRONMENTAL AND SOCIALLY FRIENDLY INVESTMENT DECISION-MAKING?



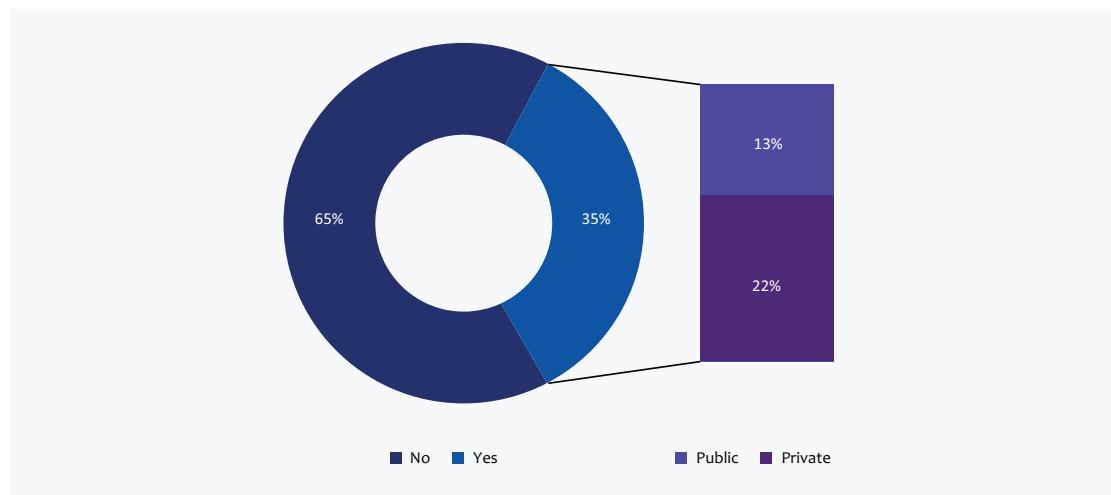
Other tools listed by respondents:

- ⦿ MSCI: ESG qualifier of debt and equity issuers to evaluate ESG practices of companies.
- ⦿ Analysis of ESG factors of portfolios through ratings from Bloomberg
- ⦿ Internal methodology based on GRI

The percentage of asset managers that confirmed using exclusion lists (35%) is small compared with other countries.

A recent global survey conducted by the Morgan Stanley Institute for Sustainable Investing and Morgan Stanley Investment Management covering 118 public and corporate pensions, endowments, foundations, sovereign wealth entities, insurance companies and other large asset owners, found that 85% employed exclusion lists.<sup>73</sup>

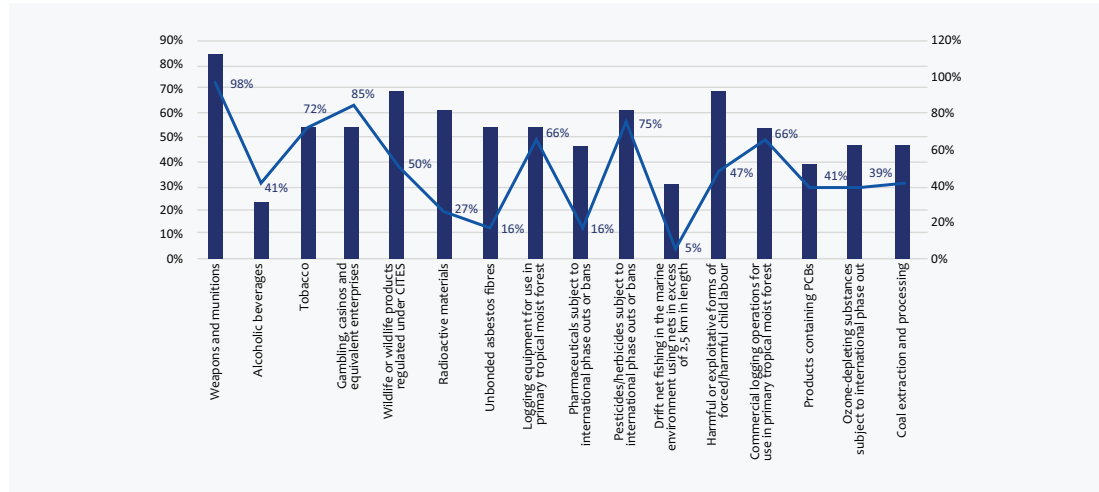
**FIGURE 4.19** DOES YOUR ORGANIZATION HAVE AN INVESTMENT EXCLUSION LIST? IS THE EXCLUSION LIST PUBLIC OR PRIVATE?



Exclusion list of the 17 organizations that claim to have an EMS			
	PENSION FUNDS	INSURANCE	AM
YES	50%	100%	50%
NO	50%	0%	50%

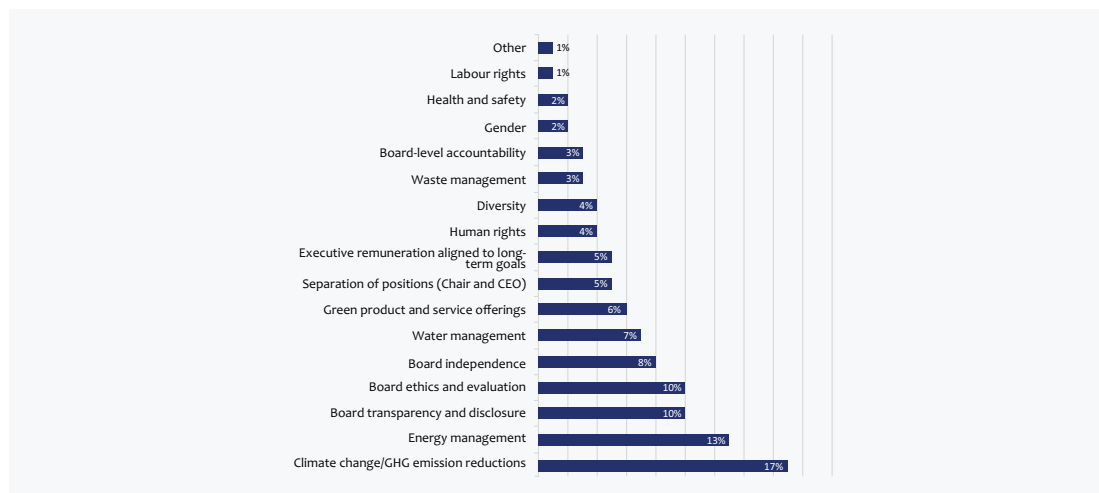
Although the percentage of asset managers that use exclusion lists is small when compared to international standards, given the large portfolios of some of these organizations, in terms of total assets under management we see a wider reach of the exclusion strategy for certain industries like tobacco, weapons and munitions, gambling and casinos, pesticides/herbicides subject to international phase outs or bans.

FIGURE 4.20 MAIN ACTIVITIES EXCLUDED BY ASSET MANAGERS, AND % OF TOTAL REPORTED ASSETS



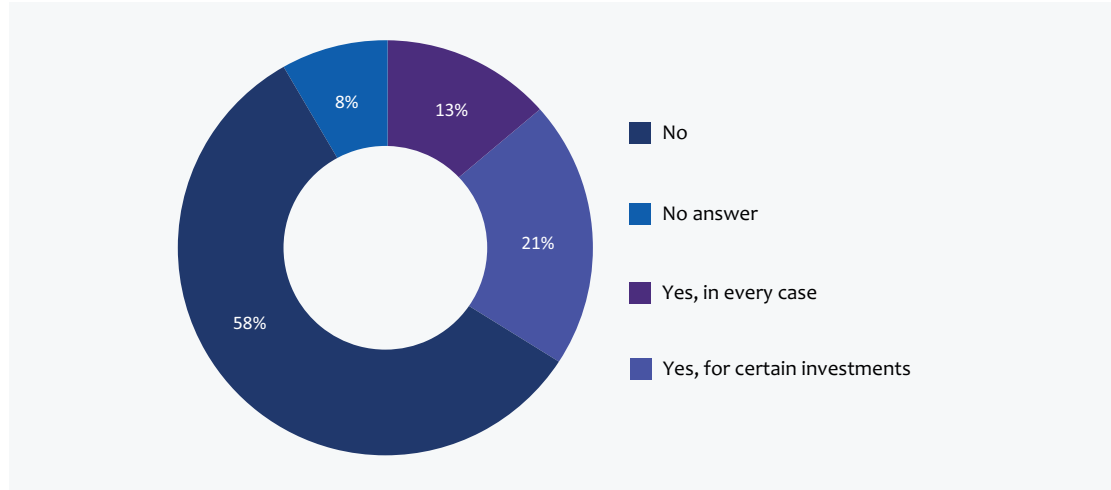
Most asset managers said their main concern with ESG assessments was the governance practices of the investee companies. Climate change and energy management are also the two most important subjects that asset managers would discuss in the engagement with portfolio companies, confirming the concerns on transition risks expressed by asset managers. In addition, it is worth highlighting that while asset managers and owners expressed their interest in engaging with their portfolio companies, (89%) do not publish their use of proxy voting.

FIGURE 4.21 WHICH ESG-RELATED ISSUES ARE YOU MOST LIKELY TO RAISE UP IN YOUR NEXT ENGAGEMENT WITH THE COMPANIES YOU ARE INVESTED IN?



As for the screening of companies in their portfolio, 58% of asset managers do not monitor or verify changes in regulations and legislation that affect the companies in which they invest.

**FIGURE 4.22** DOES YOUR ORGANIZATION PERFORM ANY KIND OF MONITORING/VERIFICATION OF ENVIRONMENTAL LEGISLATION AND REGULATIONS OF THE COMPANIES IT IS INVESTED IN?

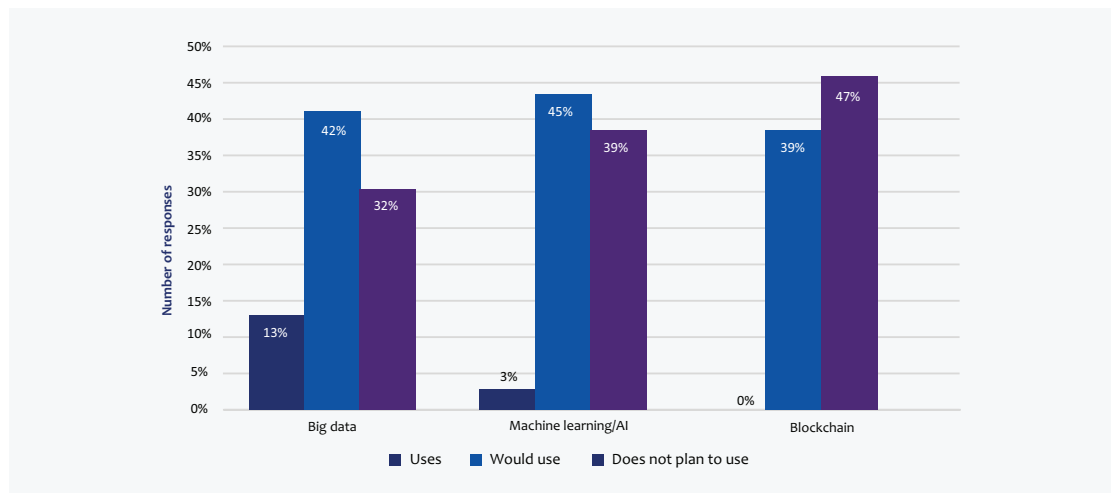


21% of respondents confirmed monitoring or verifying compliance of environmental legislation and regulations only for certain investments, which include direct investments/CKDs; investments identified by the committee and analysed individually, including those that present reputational risk; real estate developments or infrastructure projects; development projects with a high environmental impact, for areas with high biodiversity, which have not been previously affected, etc.

**Degree of integration of processes for identifying, assessing, and managing environmental and social risks into the organization’s overall risk management**

As in the case of credit institutions, asset managers have an opportunity to integrate ESG factors into their risk management tools as well as to take advantage of digital technologies.

**FIGURE 4.23** SPECIFY IF YOUR ORGANIZATION IS USING ANY OF THE FOLLOWING TECHNOLOGIES TO ASSESS ENVIRONMENTAL AND SOCIAL RISK

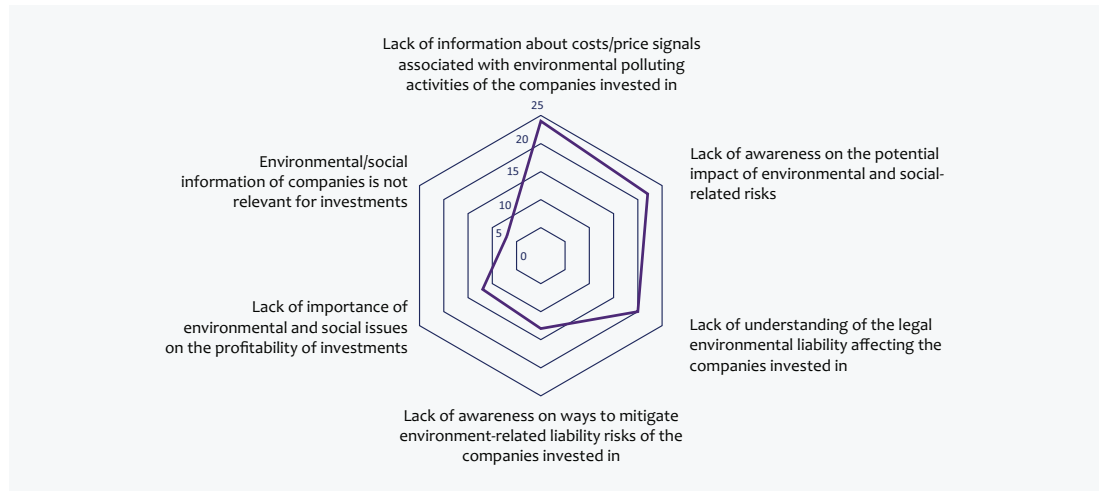


The analysis of portfolio exposure to ESG risks is still qualitative (83% of respondents), with little to no use of scenario planning or stress tests.

Six in ten respondents declared that they do not carry out an analysis of the portfolio's exposure to environmental and social risks. Only four institutions (11%) declare the use of scoring systems to assess portfolio exposure.

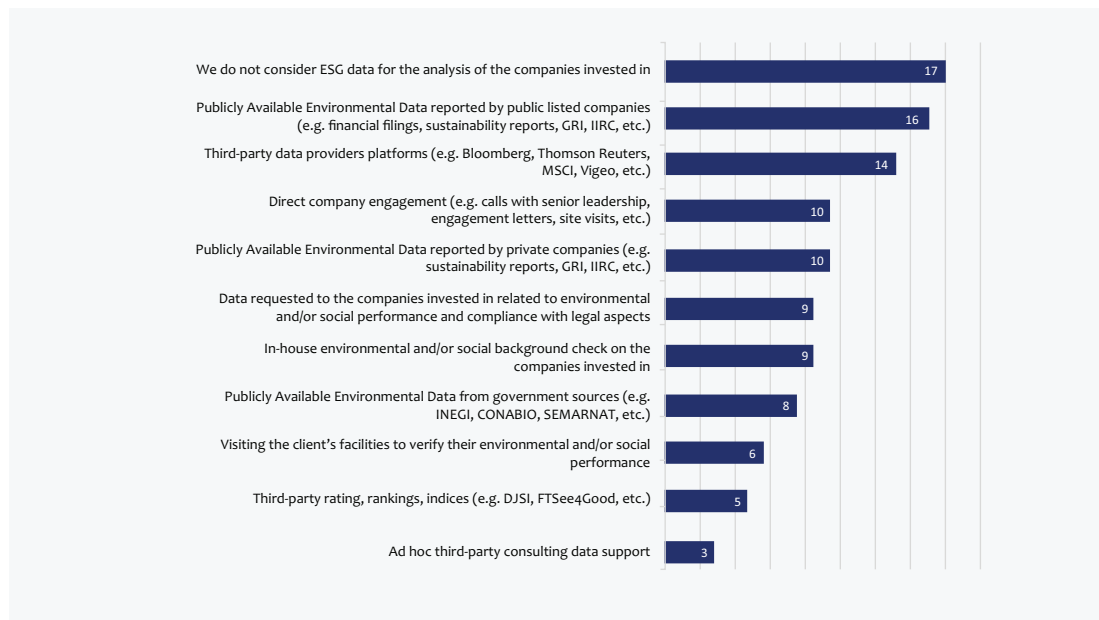
## Use of Publicly Available Environmental Data

**FIGURE 4.24** WHAT ARE THE MOST SIGNIFICANT OBSTACLES FOR SYSTEM-WIDE GENERATION OF ENVIRONMENTAL OR SOCIAL INFORMATION OF COMPANIES FOR USE BY INVESTORS?



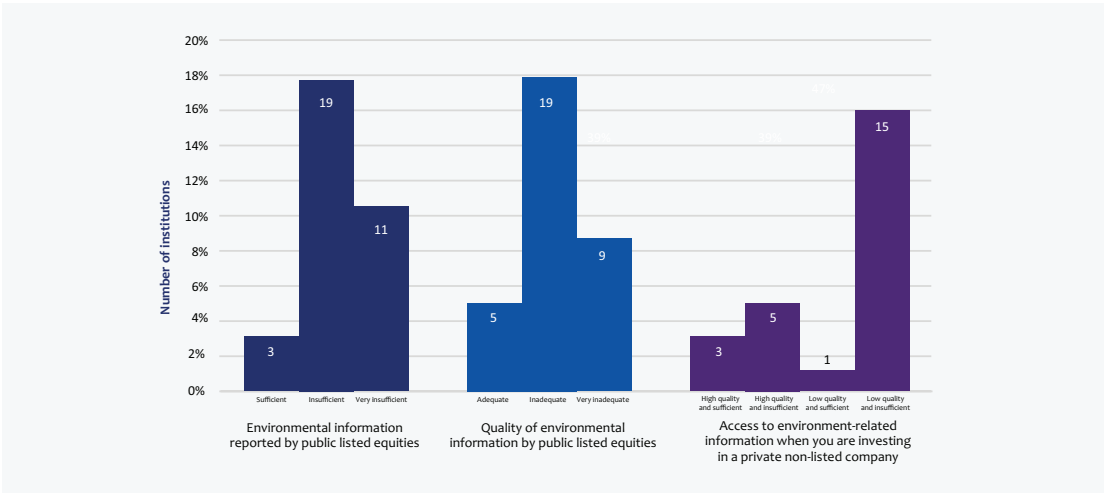
Lack of information about costs/price signals associated with environmentally polluting activities of the companies invested in, and the lack of awareness on the potential impact of environmental and social related risks are the two main obstacles for the use of PAED.

**FIGURE 4.25** MAIN SOURCES OF ENVIRONMENTAL AND SOCIAL DATA USED TO PERFORM ENVIRONMENTAL AND SOCIAL RISK ANALYSIS



Most respondents believe data on environmental risks is bad in quality or insufficient. Some 45% of respondents declared that they do not consider ESG data for investment decisions.

FIGURE 4.26 ACCESS AND QUALITY OF ENVIRONMENTAL INFORMATION



## KEY RECOMMENDATIONS FROM PARTICIPANTS IN THE SURVEY

WHAT DO YOU THINK COULD IMPROVE THE ABILITY TO ANALYSE EXPOSURE TO SOCIAL AND ENVIRONMENTAL CREDIT RISKS MORE EFFECTIVELY?

*“Better implementation of environmental and social risk analysis systems, integrated with the operational areas”*

*“Strengthening regulations to make obligatory the adoption of the Equator Principles”*

WHAT DO YOU THINK CAN IMPROVE YOUR ORGANIZATION’S ABILITY TO IDENTIFY ENVIRONMENTAL AND SOCIAL RISKS MORE EFFECTIVELY?

*“Capacity-building and exchange of experiences among financial institutions”*

*“Include the topic in the strategic agenda of my organization”*

*“Develop standards and regulations”*

*“Increase the use of publicly available environmental information”*

*“Adopt tools to assess environmental and social risks”*

*“Incorporate ESG best practices into the risk analysis of current financial products”*

WHAT CAN THE GOVERNMENT AND SOCIETY DO TO PROMOTE THE USE OF PUBLICLY AVAILABLE ENVIRONMENTAL DATA?

*“Disclosure: systematize environmental information and its main sources and make it readily available”*

*“Make companies aware of ESG issues”*

*“Create a centralized information platform”*

*“Create standards: defined between government and private initiatives, using international references”*

*“Include ESG risks as part of the credit risk rating assessment guidelines”*

*“Regulation: make ESG reporting by private companies mandatory”*

*“Transparency: provide access to resolutions of Environmental Impact Assessment, Annual Operating Orders (COAs), and fines and sanctions to which companies have been credited”*

*“Stimulus: apply a fiscal or regulatory incentive to entities that make public this type of information”*



## 5. CONCLUSIONS

The purpose of this report is twofold: to present a first in-depth diagnosis of the process of incorporation of environmental climate and social risks by Mexican financial institutions and to create awareness of the importance of capacity-building, adopting new methodologies and creating incentives within financial institutions to mainstream these risks and identify new business opportunities.

Climate change and environmental degradation are challenges at the national and global levels and are a source of financial risk. Risks include the investment, credit and reputational impacts associated with extreme weather events, rising sea levels, declining productivity of agriculture and fisheries, trade and supply chain disruptions and the degrading of ecosystems, reduced welfare of communities due to air and water pollution, and even mass migrations in the territories.

Given the financial materiality of these risks, the speed at which our economic systems are affected, and the associated policy and regulatory responses discussed at an international level to avoid even higher transition costs for our economies, Banco de México is actively involved in raising awareness among financial institutions in Mexico on these issues.

This report provides examples of the physical and transition risks that will impact financial activities in Mexico, as a result of the exhaustion of natural resources and the effects of climate change. The impacts will inevitably transform our economic systems, at the national and international level, accelerating technological innovations, regulations, and the development of adaptation strategies to climate events. Sound risk management by financial decision makers needs to take these factors into account, ultimately incorporating them into mark-to-market activities of tradeable securities, as well as on valuation of non-tradeable credit portfolios.

There is a need not only to continue to promote capacity-building and adoption of voluntary principles, such as the TCFD recommendations, the Equator Principles, the PRI, the Principles for Responsible Banking, as well as the Green Bond and Green Loan principles,<sup>74</sup> but also to explore issuing supervisory expectations and regulations particularly related to ESG disclosure by financial firms and corporates.





The more than forty interviews in this survey of financial institutions in Mexico provided a good opportunity to engage and have a productive dialogue with senior management of risk, credit, investment and compliance departments. The answers to the more than 60 questions covered in both the banks and asset manager/owner surveys offer an in-depth analysis of the governance architecture adopted so far by financial institutions in Mexico to integrate environmental and social risks in their mainstream risk management strategy, as well as of the tools and capabilities used to address these risks. These results confirm that the subject of environmental, social and governance risks is still new for many financial institutions in Mexico. Although a share of respondents claim that financial institutions have begun to assess climate and environmental risks, further action is needed to set up more solid governance and risk management processes to address them. The results and references presented in this report will serve as a guide for financial institutions and authorities to address them.

The involvement of top management and the board of directors is crucial to prepare financial institutions for the expected structural transformation of the economy associated with environmental, climate and social risks and opportunities. This means reinforcing governance competencies, as well as setting out a roadmap at the board level to integrate ESG risks and opportunities in mainstream risk management and business strategies while also reporting to stakeholders and regulators on these topics.

Financial institutions need a better understanding and management of relevant social and environmental data, setting up the proper competencies to process them, and putting in place disclosure and transparency policies. Given the forward-looking nature of these risks, it is important for financial institutions to also develop scenario analysis capabilities and strategies.

In this respect, seeking support from industry-led voluntary initiatives might be a good strategy to accelerate the learning process. Our report recommends to supplement the first steps of the Mexican Banking Association and other industry-led groups in Mexico to induce robust commitments and industry-led collective responses.

The report includes recommendations for financial institutions to address the gaps identified in the areas of governance, strategy, and risk management. For each of these areas, based on results from the survey, we have identified challenges, key drivers, and barriers, followed by specific recommendations to overcome those barriers (please refer to the Executive Summary for a consolidated list of these recommendations). In addition to capacity-building and to the development of internal competencies, a big focus should be on setting out the policies and management incentives that can result in identifying and mainstreaming environmental risk analysis and opportunities.

The report also sets out elements for a comprehensive strategy of sustainable finance which include supervisory guidance, reporting standards, and promoting best practices for the management and disclosure of environmental, social and climate risks and opportunities. Regulators can also act as catalysts to facilitate the use of climate/environmental relevant public information available in Mexico.

In addition to more specific recommendations on the areas of governance, risk strategy and risk management, the report recommends the following next steps:

- ④ Evaluate the creation of a task force led by financial authorities (SHCP, Banco de México, CNBV, CONSAR, CNSF) and involving financial institutions representatives and selected Mexican experts to develop a National Integrated Sustainable Financing Framework, which will set out the basis to mobilize finance aligned with the NDCs and the Sustainable Development Goals adopted by Mexico. One of its first assignments would be to develop a national green taxonomy of economic activities and the corresponding feasible technologies increasingly aligned with international best practices over time, as well as a roadmap for the transition of the Mexican sector to a sustainable economy.
- ④ The Mexican Banking Association should update and publish its Sustainability Protocol, its signatories, as well as disclosing the list of signatories and publishing regular updates on its compliance.
- ④ The CCFV should work with the CNBV, CNSF and CONSAR in the development of voluntary reporting standards for Mexican financial companies.
- ④ The Mexican Banking Association should also consider establishing specific precautionary requirement guidelines such as requiring borrowers to hold all environmental permits associated with their loan portfolios and comply with legal environmental requirements.
- ④ Financial regulators should explore the role that credit bureaus can have in collecting and providing to credit institutions financially material data on the environmental compliance of borrowers.
- ④ Commercial and development banks should consider establishing a timeline to incorporate physical and transitional risk assessment methodologies to lending activities.

Going forward, we identify two areas for further research:

- ④ Analyse in further detail the economic activities that are likely most affected by physical and transition risks in the Mexican economy and the financial economic measures to reduce the identified vulnerabilities.
- ④ From the opportunity side, assess the financing requirements of the economic activities with highest potential to reduce carbon emissions and pollution in Mexico and develop specific recommendations to finance them, and reduce transition costs.



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# Acronyms

<b>Acronym</b>	<b>Definition</b>
AFORE	Mexican pension fund (Administradoras de Ahorro para el Retiro)
CCFV	Green Finance Advisory Board (Consejo Consultivo de Finanzas Verdes)
CEO	Chief Executive Officer
CNBV	National Securities and Banking Commission (Comisión Nacional Bancaria y de Valores)
CNSF	National Insurance and Sureties Commission (Comisión Nacional de Seguros y Fianzas)
CONSAR	National Commission for the Pension System (Comisión Nacional del Sistema de Ahorro para el Retiro)
ESG	Environmental, social and governance
ESRA	Environmental and social risk analysis
ESRM	Environmental and social and environmental risk management
ESRMS	Environmental and social risk management system
GFMA	Global Financial Markets Association
GHG	Greenhouse gas
INECC	National Institute for Ecology and Climate Change (Instituto Nacional de Ecología y Cambio Climático)
INEGI	Mexican National Institute for Statistics (Instituto Nacional de Geografía y Estadística)
IOPS	International Organization of Pension Supervisors
IPCC	Intergovernmental Panel on Climate Change
NDC	Nationally Determined Contribution
NGFS	Network of Central Banks and Supervisors for Greening the Financial System
PRA	Prudential Regulatory Authority
PRI	Principles for Responsible Investment
SHF	Federal Mortgage Society (Sociedad Hipotecaria Federal)
SIF	Sustainable Insurance Forum

# Endnotes

- <sup>1</sup> See <https://www.blackrock.com/corporate/investor-relations/larry-fink-ceo-letter>
- <sup>2</sup> INEGI (2019). <https://www.inegi.org.mx/temas/ee/> This analysis does not take into account biodiversity loss, which is of great significance in Mexico
- <sup>3</sup> For a detailed description of the economic impacts of climate change see: Diario Oficial de la Federación, (28/04/2014). Programa Especial de Cambio Climático- PECC, 2014-2018
- <sup>4</sup> INECC (2018). Sexta Comunicación Nacional y Segundo Informe Bienal de Actualización ante la Convención Marco de las Naciones Unidas sobre el Cambio Climático, p. 337-338
- <sup>5</sup> Prepared by the authors based on information from INECC (2018). Sexta Comunicación Nacional op.cit., Chapters 4 and 5
- <sup>6</sup> Prepared by the authors based on INECC (2018). Sexta Comunicación Nacional. op.cit.
- <sup>7</sup> Prepared by the authors based on INECC (2018). Sexta Comunicación Nacional, op.cit. Chapter 5
- <sup>8</sup> World Economic Forum (2019). Global Risk Report. [http://www3.weforum.org/docs/WEF\\_Global\\_Risks\\_Report\\_2019.pdf](http://www3.weforum.org/docs/WEF_Global_Risks_Report_2019.pdf)
- <sup>9</sup> World Business Council for Sustainable Development (2018). Enterprise Risk Management, Applying enterprise risk management to environmental, social and governance-related risks
- <sup>10</sup> Network for Greening the Financial System (2019). A call for action: Climate change as a source of financial risk. [https://www.ngfs.net/sites/default/files/medias/documents/ngfs\\_first\\_comprehensive\\_report\\_-\\_17042019\\_o.pdf](https://www.ngfs.net/sites/default/files/medias/documents/ngfs_first_comprehensive_report_-_17042019_o.pdf)
- <sup>11</sup> Central Banking (2019). Climate change 2019 survey. <https://www.centralbanking.com/central-banks/economics/4237676/the-calm-before-the-storm-the-climate-change-2019-survey>. The survey of 34 central Banks shows 97% of the Central Banks that participated confirmed that although currently they did not include climate-related risks in stress tests, 59% of respondents confirmed that they were either actively considering climate-related scenarios or looking to implement climate-related scenarios in their stress-test models
- <sup>12</sup> UNEP FI/PRI (2019). Fiduciary duty in the 21st century. <https://www.unepfi.org/publications/investment-publications/fiduciary-duty-in-the-21st-century-final-report/>
- <sup>13</sup> Network for Greening the Financial System (2019). A call for action: Climate change as a source of financial risk. [https://www.ngfs.net/sites/default/files/medias/documents/ngfs\\_first\\_comprehensive\\_report\\_-\\_17042019\\_o.pdf](https://www.ngfs.net/sites/default/files/medias/documents/ngfs_first_comprehensive_report_-_17042019_o.pdf)
- <sup>14</sup> Network for Greening the Financial System (2019). A call for action: Climate change as a source of financial risk. [https://www.ngfs.net/sites/default/files/medias/documents/ngfs\\_first\\_comprehensive\\_report\\_-\\_17042019\\_o.pdf](https://www.ngfs.net/sites/default/files/medias/documents/ngfs_first_comprehensive_report_-_17042019_o.pdf)
- <sup>15</sup> International Organization of Pension Supervisors (2019). Supervisory Guidelines on the Integration of ESG Factors in the Investment and Risk Management of Pension Funds
- <sup>16</sup> Diario Oficial de la Federación (18/09/2019). Disposiciones de carácter general en materia financiera de los sistemas de ahorro para el retiro
- <sup>17</sup> International Association of Insurance Supervisors/IAIS (2018). Issues Paper on Climate Change Risks to the insurance sector
- <sup>18</sup> Task Force on Climate-related Financial Disclosures (2017). Final Recommendations Report. <https://www.fsb-tcfd.org/publications/final-recommendations-report/>
- <sup>19</sup> INEGI, Sistema de Cuentas Nacionales. <https://www.inegi.org.mx/temas/ee/>
- <sup>20</sup> Centro Nacional de Prevención de Desastres (2018). Desastres en México. Impacto Social y Económico. <http://www.cenapred.unam.mx/es/Publicaciones/archivos/318-INFOGRAFASASTRESENMEXICO-IMPACTOSOCIALYECONOMICO.PDF>
- <sup>21</sup> Extracted from: Network for Greening the Financial System (2018). First progress report. p.5
- <sup>22</sup> Extracted from: Cambridge Institute for Sustainability Leadership (2019). Transition risk framework: Managing the impacts of the low-carbon transition on infrastructure investments. <https://www.cisl.cam.ac.uk/resources/publication-pdfs/cisl-climate-wise-transition-risk-framework-report.pdf>
- <sup>23</sup> INECC (2018). Sexta Comunicación Nacional y Segundo Informe Bienal de Actualización ante la Convención Marco de las Naciones Unidas sobre el Cambio Climático, 2018, Chapter 4, p.338-359
- <sup>24</sup> INECC (2018). Sexta Comunicación Nacional y Segundo Informe Bienal de Actualización ante la Convención Marco de las Naciones Unidas sobre el Cambio Climático, 2018, Chapter 4, p.338-359
- <sup>25</sup> Banco de México (2019). Reporte de Estabilidad Financiera, Segundo Semestre. p.108-113
- <sup>26</sup> Cambridge Institute for Sustainability Leadership (2018). Embedding environmental scenario analysis into routine financial decision-making in Mexico
- <sup>27</sup> UNEP Inquiry (2018). Environmental data dialogues in Mexico. How data provision can help understand better environmental sources of financial risk and integrate them more effectively into mainstream financial decision-making
- <sup>28</sup> <https://www.banxico.org.mx/sistema-financiero/seminarios-conferencias-fin.html>
- <sup>29</sup> Comisión Nacional de Valores (December 2018). <https://www.cnbv.gob.mx/Paginas/PortafolioDeInformacion.aspx>
- <sup>30</sup> We should note that for the purpose of this survey, climate risks were included as a subgroup of environmental risks.
- <sup>31</sup> Task Force on Climate-related Financial Disclosures (2019). 2019 Status Report. p.6 <https://www.fsb-tcfd.org/wp-content/uploads/2019/06/2019-TCFD-Status-Report-FINAL-053119.pdf>
- <sup>32</sup> Extracted from: Network for Greening the Financial System (2019). A call for action: Climate change as a source of financial risk. p.7 [https://www.ngfs.net/sites/default/files/medias/documents/ngfs\\_first\\_comprehensive\\_report\\_-\\_17042019\\_o.pdf](https://www.ngfs.net/sites/default/files/medias/documents/ngfs_first_comprehensive_report_-_17042019_o.pdf)
- <sup>33</sup> Global Financial Markets Association (GFMA) 2019 Sustainable Finance Survey. <https://www.gfma.org/correspondence/gfma-2019-sustainable-finance-survey-report/>
- <sup>34</sup> Task Force on Climate-related Financial Disclosures (2019). 2019 Status Report. p.11-15
- <sup>35</sup> Citi (2018). Climate Finance for a Climate-Resilient Future – Citi’s TCFD report. <https://www.citigroup.com/citi/sustainability/data/finance-for-a-climate-resilient-future.pdf>
- <sup>36</sup> For a complete review of the legal risks associated with climate change see: <https://www.whitecase.com/publications/insight/climate-change-litigation-new-class-action>
- <sup>37</sup> Comisión Nacional Bancaria y de Valores (December 2018). <https://www.cnbv.gob.mx/Paginas/PortafolioDeInformacion.aspx>
- <sup>38</sup> United Nations Environment Programme (2016). ERISC PHASE II: Environmental Risk Integration in Sovereign Credit Analysis
- <sup>39</sup> Principles for Responsible Investment (2019). A practical guide to ESG integration in Sovereign Debt.

- <sup>40</sup> BNP Paribas (2019). Global Survey. This global survey covered 347 asset owners and managers from Asia Pacific, Europe and North America whose organizations incorporate ESG into their investment decision-making process. [https://cib.bnpparibas.com/sustain/esg-global-survey-2019-investing-with-purpose-for-performance\\_a-3-2900.html](https://cib.bnpparibas.com/sustain/esg-global-survey-2019-investing-with-purpose-for-performance_a-3-2900.html)
- <sup>41</sup> Diario Oficial de la Federación (18/09/2019). Disposiciones de carácter general en materia financiera de los sistemas de ahorro para el retiro.
- <sup>42</sup> UNEP FI/PRI (2019). Fiduciary duty in the 21st century. <https://www.unepfi.org/publications/investment-publications/fiduciary-duty-in-the-21st-century-final-report/>
- <sup>43</sup> BNP Paribas (2019). Global Survey.
- <sup>44</sup> United Nations Climate Change (2017). Bridging Climate Ambition and Finance Gaps. <https://cop23.unfccc.int/news/bridging-climate-ambition-and-finance-gaps>
- <sup>45</sup> <https://www.gob.mx/inecc/prensa/México-entre-los-paises-mas-vulnerables-ante-cambio-climatico?idiom=es>
- <sup>46</sup> For a detailed description of the economic impacts of climate change see: Diario Oficial de la Federación, (28/04/2014). Programa Especial de Cambio Climático- PECC, 2014-2018
- <sup>47</sup> Mora, F. (2019). The use of ecological integrity indicators within the natural capital index framework: The ecological and economic value of the remnant natural capital of Mexico. *Journal for Nature Conservation* 47:77-9 [https://www.biodiversidad.gob.mx/pais/indice\\_capnat.html](https://www.biodiversidad.gob.mx/pais/indice_capnat.html)
- <sup>48</sup> Prepared by the authors based on information from INECC (2018). Sexta Comunicación. op.cit, Chapter 5
- <sup>49</sup> Prepared by the authors based on information from INECC (2018). Sexta Comunicación. op.cit.
- <sup>50</sup> A scenario analysis undertaken by the Interamerican Development Bank estimated that up to 80GW of carbon-intensive energy production could be prematurely retired between 2031 and 2035.
- <sup>51</sup> INECC (2018). Sexta Comunicación Nacional y Segundo Informe Bial de Actualización ante la Convención Marco de las Naciones Unidas sobre el Cambio Climático. P.351-354
- <sup>52</sup> INECC (2018). Sexta Comunicación Nacional y Segundo Informe Bial de Actualización ante la Convención Marco de las Naciones Unidas sobre el Cambio Climático. Chapter 4
- <sup>53</sup> Banco de México (2019). Reporte de Estabilidad Financiera. Weighted average of credit to non-financial institutions as of March 2019., p.50
- <sup>54</sup> Based on INECC (2018). Sexta Comunicación Nacional. op.cit.
- <sup>55</sup> Prepared using as reference: *Housing Finance International Journal* (Summer 2018). “The role of development banks in financing sustainable and affordable housing: The EcoCasa programme. By Ernesto Infante Barbosa, Andrea Hernández, Claudia Castillo and José Cruz Tria.
- <sup>56</sup> Global Financial Markets Association (GFMA) 2019 Sustainable Finance Survey. <https://www.gfma.org/wp-content/uploads/2019/06/gfma-june-2019-sustainable-finance-survey-report.pdf>
- <sup>57</sup> The 104 banks ranged in three sub-industries: regional banks; large, diversified banks; and investment and asset management firms. The 104 banks ranged in size from about US\$4 trillion to US\$8 billion in assets, with a median asset size of over US\$200 billion in assets. For further information see: Task Force on Climate-related Financial Disclosures (2019). Status Report.
- <sup>58</sup> Extracted from [www.asobancaria.com](http://www.asobancaria.com); <https://www.asobancaria.com/wp-content/uploads/Documento-Protocolo-Verde-Firmado.pdf>
- <sup>59</sup> [https://www.ey.com/en\\_gl/assurance/does-nonfinancial-reporting-tell-value-creation-story](https://www.ey.com/en_gl/assurance/does-nonfinancial-reporting-tell-value-creation-story)
- <sup>60</sup> For a reference on the use of scenarios see: Cambridge Institute for Sustainability Leadership (2018). Embedding environmental scenario analysis into routine financial decision-making in Mexico
- <sup>61</sup> For a complete list of the principles please refer to: <https://www.unpri.org/signatories/become-a-signatory>
- <sup>62</sup> For a detail review of global practice please refer to: Cambridge Centre for Sustainable Finance (2016). Environmental risk analysis by financial institutions: a review of global practice.
- <sup>63</sup> UNEP Inquiry (2017). Improving the availability and usefulness of Publicly Available Environmental Data for Financial Analysis.
- <sup>64</sup> Comisión Nacional Bancaria y de Valores (December 2018). <https://www.cnbv.gob.mx/Paginas/PortafolioDeInformacion.aspx>
- <sup>65</sup> The six categories are: Biosphere reserves, National parks, Natural monuments, Protected areas of natural resources, Protected areas of fauna and flora, and Sanctuaries
- <sup>66</sup> Comisión Intersecretarial de Cambio Climático (2017). Estrategia nacional de reducción de emisiones por deforestación y degradación forestal 2017-2030
- <sup>67</sup> See: Citi (2018). Finance for a Climate Resilient Future. Citi’s TCFD report
- <sup>68</sup> *Financial Times* (September 2019). “Climate change could cause a new mortgage default crisis”
- <sup>69</sup> The Global Financial Markets Association (GFMA) survey conducted in May and June of 2019 confirmed this number. Close to 90% of the 22 largest globally active financial and capital market participants confirmed being signatories of the Equator Principles.
- <sup>70</sup> For a description of the Equator Principles see: <https://equator-principles.com/wp-content/uploads/2019/11/The-Equator-Principles-November-2019.pdf>
- <sup>71</sup> GFMA survey, op cit.
- <sup>72</sup> Adapted from Natixis (2019). Investing survey, 2019 <https://www.im.natixis.com/us/resources/esg-investing-survey-2019>
- <sup>73</sup> Morgan Stanley (2019). Sustainable Signals. <https://www.morganstanley.com/press-releases/morgan-stanley-survey-finds-investor-enthusiasm-for-sustainable-/>
- <sup>74</sup> Banco de México (2019). Reporte de estabilidad financiera, segundo semestre





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