



Acknowledgments

Bank of China (Hong Kong) (“BOCHK”) and S&P Global Sustainable1 would like to express their gratitude to the Hong Kong Monetary Authority, International Financial Corporation, and other organizations whose reviewers provided valuable guidance.

We would also like to thank the following people from S&P Global Sustainable1 for their contributions to this report: Jennifer Laidlaw, Matt MacFarland, Lindsey Hall, Koji Omachi, Rong Yu and Adrian Leung.

Contents

Foreword - Bank of China (Hong Kong)	3
Foreword - S&P Global Sustainable1	4
About the Report	5
Overview	5
Explanation of Data	5
Executive Summary	6
Key Findings	7
1. Introduction	8
2. Net-Zero Commitments & Scope 3 Emissions	9
2.1 Net-zero pledges are the first step for financial institutions in Asia-Pacific	9
2.2 Asia-Pacific financial institutions & financed emissions	11
3. Asia-Pacific Financial Institutions & Climate Risk	14
3.1 Climate strategy and materiality	14
3.2 Adaptation planning to meet physical climate risks	17
4. Asia-Pacific Financial Institutions & Scenario Analysis	19
4.1 Physical risk scenario analysis	19
4.2 Transition risk scenario analysis	21
5. Asia-Pacific Financial Institutions & Biodiversity Loss	23
6. Case Study: Bank of China (Hong Kong)	29
7. Conclusion	32
Glossary	33

徐海峰

Xu Haifeng

Deputy Chief Executive and Chief Risk Officer
Bank of China (Hong Kong)



In response to the accelerating impacts of climate change, financial institutions are positioned to address both the risks and opportunities it presents. By turning climate-related challenges into opportunities, banks and other financial institutions can play a pivotal role in mitigating climate risks and driving innovation and economic growth through financing the low-carbon transition and implementing sustainable practices.

As one of the cornerstone members of The Alliance for Green Commercial Banks ("The Alliance"), Bank of China (Hong Kong) has collaborated with S&P Global Sustainable¹, leveraging its forward-thinking perspectives on sustainability, risk, opportunity and impact to produce this report. This is our first thought leadership paper since we have become the cornerstone member of The Alliance in 2022.

This thought leadership report delves into how climate risks are shaping the landscape for financial institutions in the Asia-Pacific region. It emphasizes the urgency and importance for companies to understand, measure and manage the risks they face from climate change and biodiversity loss.

Furthermore, the report highlights the pivotal role that financial institutions can play in financing the transition to a low-carbon economy and promoting sustainable practices. By embracing renewable energy initiatives and integrating biodiversity considerations into their operations, financial institutions can contribute to mitigating climate risks and protecting vital ecosystems.

The report not only presents data-driven findings but also offers valuable qualitative insights from BOCHK's extensive experience and long-term commitment to green finance. We hope this report will serve as a comprehensive guide for financial institutions in the Asia-Pacific region, providing valuable insights into the complex challenges of climate change and biodiversity loss. It underscores the critical importance of understanding the diverse impacts of climate change across different economies in the region and the necessity for tailored approaches to address these challenges while seizing the opportunities for sustainable development.

Together, let us embark on a journey towards a more resilient and sustainable future, where financial institutions lead the way in fostering environmental stewardship and driving positive change in the Asia-Pacific region and beyond.

Foreword - S&P Global Sustainable1



Chris Heusler
President, S&P Global Sustainable1



The increasing physical and economic impacts of climate change and biodiversity loss present every company in the world with questions to answer and challenges to address. In this context, financial institutions are positioned to help answer some of these questions and facilitate solutions. They also can play a key role in financing the transition to a low-carbon economy and facilitating the flow of trillions of dollars in capital needed to mitigate and adapt to climate change and to address biodiversity loss.

To better understand these impacts, financial institutions and companies around the world will need more credible, comparable and transparent data, benchmarks, and analytics: to assess impact, to measure progress, and to understand business risks as well as opportunities. S&P Global Sustainable1 is positioned to provide that data and analysis, and we are proud to have collaborated with Bank of China (Hong Kong) in its capacity as a cornerstone member of The Alliance for Green Commercial Banks in writing this data-based report.

Our research demonstrates that more Asia-Pacific financial institutions are starting to have a firmer grasp on the risk of climate change and how it can impact their activities. Some already see climate change as a material business risk and are using evolving tools to build adaptation plans, such as scenario analysis of physical risks or climate transition risks. Across the region, the understanding of the link between climate risk and biodiversity risk is also growing.

However, the report also shows there is much room for progress, especially in defining targets, and explores how some leading banks in the region tackle the complex challenges of climate change and biodiversity loss.

We hope these insights and data will serve as inspiration for more financial institutions to understand the stewardship role they can play in bringing about change in the Asia-Pacific region and beyond. Financial institutions' capacity to take on that role in the coming years will be critical for the overall economy of the region.

About the Report

Overview

This report is jointly prepared by:

- **Bank of China (Hong Kong)** ("BOCHK"), a cornerstone member of the Alliance for Green Commercial Banks (the Alliance).¹ BOCHK puts sustainable development at the heart of its strategy. Through continuous innovation and diversification of its green products and services, BOCHK is committed to working with its customers to achieve a low-carbon transition, and promoting smart living and sustainable development with a view to creating value for its stakeholders and the community, and building a greener future together. For more information, please visit: https://www.bochk.com/dam/esg/index_en.html.
- **S&P Global Sustainable1**, the central source for sustainability intelligence from S&P Global. Sustainable1 matches customers with the sustainability products, insights and solutions from across S&P Global's divisions to help meet their unique needs. Our comprehensive coverage across global markets combined with in-depth sustainability intelligence provides financial institutions, corporations and governments with expansive insight on business risk, opportunity, and impact as we work towards a sustainable future. Our data and well-informed point of view on critical topics like energy transition, climate resilience, positive impact and sustainable finance allow us to go deep on the details that define the big picture so customers can make decisions with conviction. To learn more, please visit: www.spglobal.com/sustainable1

The Alliance was launched in November 2020 by:

- the **International Finance Corp. (IFC)**, a member of the World Bank Group and the largest global development institution focused on the private sector in emerging markets.
- the **Hong Kong Monetary Authority (HKMA)**, Hong Kong's central banking institution, which was also the first regional anchor for the Alliance in Asia.

The Alliance is a global initiative that convenes financial institutions, research institutions, and innovative technology providers to develop a green community in emerging markets to collectively finance the infrastructure and business solutions needed to urgently address climate and environmental risks.

Explanation of Data

This analysis classifies geographies in the Asia-Pacific region as those that the World Bank identifies as part of 'East Asia and Pacific' or 'South Asia' and that are also present in the S&P Global Corporate Sustainability Assessment universe, which is the source of much of the data in this report.

About the S&P Global Corporate Sustainability Assessment (CSA): Throughout this report, we will refer to different sample sizes of companies assessed in the CSA. This is because different CSA questions have varying response rates. The S&P Global Corporate Sustainability Assessment (CSA) is an annual evaluation of companies' sustainability practices. It covers over 10,000 companies from around the world. The CSA focuses on sustainability criteria that are both industry-specific and financially material and has been doing so since 1999. Read more about the CSA [here](#).

About the S&P Global Sustainable1 Nature & Biodiversity Risk dataset: This dataset assesses nature-related impacts and dependencies across a company's direct operations that can be applied at the asset, company, and portfolio level. The dataset applies the Nature Risk Profile, a methodology for analyzing companies' impacts and dependencies on nature, launched by S&P Global Sustainable1 and the UN Environment Programme (UNEP) in January 2023. Further reading: [nature-risk-profile-methodology.pdf \(spglobal.com\)](http://nature-risk-profile-methodology.pdf(spglobal.com))

¹ Hong Kong Monetary Authority. June 7, 2022. 'Alliance for Green Commercial Banks announces onboarding of cornerstone members, global and knowledge partners, and launch of its first thought leadership paper and website.' <https://www.hkma.gov.hk/eng/news-and-media/press-releases/2022/06/20220607-4>

Executive Summary

The global climate crisis is accelerating, and countries in Asia-Pacific face severe impacts. Asia and the Pacific remained the region most impacted by natural disasters in 2023, according to the State of the Climate in Asia 2023 report published by the World Meteorological Organization.² Floods and storms cost lives and imposed economic damages and the region faced a rising number of increasingly severe heatwaves.

Scientists are increasingly making the connection between extreme weather events and climate change. As the damage from extreme weather events becomes more apparent, the urgency increases for companies to understand, measure and manage the risks they face from climate change and the interlinked crisis of biodiversity loss.

For financial institutions like banks, the stakes are especially high. Their exposure to the wider economy through lending, investing or underwriting across industries means that they could be more exposed to the economic impacts of climate change; they also can play a key role in financing the transition and facilitating the flow of the trillions of dollars in capital needed for the world to mitigate and adapt to climate change.

Data can help financial institutions make informed decisions about how to develop effective sustainability strategies to reduce their climate and environmental risks. In this report, we use data from S&P Global Sustainable1 to understand the physical risks of climate change and how these will impact financial institutions in the Asia-Pacific region in the decades to come. The data also describes the growing risks posed by biodiversity loss and the dependencies that companies have on the ecosystem services that nature provides. Finally, we survey how companies across the Asia-Pacific region are approaching sustainability in their businesses to better understand the current landscape, and thus better understand where to focus next.

Asia-Pacific is not homogenous, and neither are the effects of climate change on the region. It is important to note that there is great diversity within Asian economies. South Asia is the most economically exposed region, facing three times more potential economic losses annually (about 12% of GDP) than the world average by 2050 under a slow transition scenario (SSP3-7.0), according to research from S&P Global Ratings.³ This is more pronounced than the GDP at risk in East Asia and Pacific or Central Asia. There is no one-size-fits-all approach that will work for financial institutions in the region, but we hope that the data presented in this report will provide a useful overview of the challenges and opportunities facing different markets.

To supplement the data-driven findings in this report, S&P Global Sustainable1 conducted interviews with Bank of China (Hong Kong). The goal of this case study is to build on the quantitative data with qualitative information about banks in the region are approaching the topic of sustainability.

² World Meteorological Organization. April 23, 2024. 'State of the Climate in Asia 2023.' <https://wmo.int/publication-series/state-of-climate-asia-2023>

³ S&P Global Ratings. Nov. 27, 2023. 'Lost GDP: Potential Impacts of Physical Climate Risks.' https://www.spglobal.com/_assets/documents/ratings/research/101590033.pdf, 2023.

Key Findings

- **About 13% of assessed financial institutions in Asia-Pacific have net-zero targets for financed emissions.**

This suggests there is room for additional target-setting that covers these companies' entire value chain. Financial institutions have relatively low Scope 1 direct emissions and Scope 2 indirect emissions, but they have much higher Scope 3 indirect emissions, which include the greenhouse gases (GHGs) emitted by businesses or projects they finance, invest in or underwrite.

- Scenario analysis is another tool that can help financial institutions understand how their business will perform under different future climate change scenarios. Among the financial institutions in our study, **35% conduct some form of physical risk scenario analysis.**

- Among Asia-Pacific financial institutions, **about 23% selected climate strategy as one of their three main material issues out of a total of 14 material topics;** climate strategy ranks as a top material issue along with risk and crisis management.

- A similar picture emerges when analyzing climate transition risk scenario analysis, which takes a forward-looking approach to how future policy, regulatory and technological changes as well as legal, market and reputational risks could impact a business. **Nearly 35% of Asia-Pacific financial institutions in our study conduct transition risk scenario analysis.**

- Adaptation planning can help financial institutions prepare for the effects of extreme weather events on their business and the broader economy. **About 19% of Asia-Pacific financial institutions have an adaptation plan,** suggesting there is room for additional investment of time and resources into adaptation efforts in the region.

- Investors and the financial community increasingly understand that climate and biodiversity risks need to be addressed in tandem. At present, roughly 6% of Asia-Pacific companies in our analysis have made biodiversity commitments. This figure is higher in some markets, such as India, **where about 17% of companies assessed have made biodiversity-related commitments,** reflecting the fact that the country has already implemented legislation to protect nature.

1. Introduction

Extreme weather events such as heatwaves, wildfires and floods continue to dominate global headlines in 2024. The world experienced the warmest January on record, with wetter-than-average conditions across much of the globe. The annual average global temperatures in May were above 1.5 degrees C above preindustrial levels, the global warming threshold scientists say will lead to the worst impacts of climate change.⁴ The 2015 Paris Agreement aims to limit the long-term temperature increase to no more than 1.5 °C above preindustrial levels.

As temperatures warm, scientists are increasingly making the connection between climate change and more frequent and intense heatwaves and storms. Responding to the impacts of a warming planet is becoming more urgent.

These trends have significant consequences for the global economy. Higher losses from physical risks are increasingly likely with time, particularly if climate mitigation and adaptation efforts are not increased. Without adaptation, between 3.2% and 5.1% of world GDP could be lost due to climate hazards annually by 2050 under a range of climate scenarios, according to research by S&P Global Ratings.⁵

Asia-Pacific is a key piece of the global decarbonization puzzle. The region is home to two of the world's largest emitters of GHGs — China and India — and produces about half of the world's CO₂. Under a slow transition scenario (SSP3-7.0), approximately 12% of South Asia's GDP could be lost annually by 2050 without adaptation, according to the same S&P Global Ratings study.

Against this backdrop, this report seeks to understand how financial institutions in Asia-Pacific are responding to evolving climate risks. The analysis uses data from S&P Global Sustainable1 to explore what strategies financial institutions in the region are taking to manage climate-related risks, from adaptation planning to conducting scenario analysis to measuring financed emissions and assessing the impact of their business on nature. The report analyzes this information for financial institutions and for a range of sectors in Asia-Pacific that financial institutions are exposed to through their loans, investments and underwriting policies.



⁴ EU's Copernicus Climate Change Service. June 6, 2024. 'Copernicus: May 2024, streak of global records for surface air and ocean temperatures continues.' <https://climate.copernicus.eu/copernicus-may-2024-streak-global-records-surface-air-and-ocean-temperatures-continues>

⁵ S&P Global Ratings. Nov. 27, 2023. 'Lost GDP: Potential Impacts of Physical Climate Risks.' https://www.spglobal.com/_assets/documents/ratings/research/101590033.pdf

2. Net-Zero Commitments & Scope 3 Emissions

2.1 Net-zero pledges are the first step for financial institutions in Asia-Pacific

To adapt to a changing climate, many financial institutions have set net-zero targets to cut their GHG emissions as close to zero as possible and offset the remainder, usually by mid-century.

Committing to net-zero can position financial institutions on a pathway to reducing their exposure to climate-related risks, especially if they are lending to or investing in carbon-intensive sectors. Science-based net-zero targets can form the basis of a clearly defined plan for reducing emissions in line with the goals of the Paris Agreement. Financial institutions can also take steps to reduce emissions throughout their direct operations — for example, by using renewable energy in their offices or ensuring their buildings are constructed with sustainable materials.⁶ These pledges can help financial institutions set goals for managing and mitigating climate risk. They can provide a roadmap for banks to transform their lending, investing or underwriting debt deals to account for the impacts of climate change and collaborate with their clients accordingly. Working with clients can help them understand the extent of their financed emissions, which are key to achieving net-zero goals because they include the GHGs emitted by businesses or projects they finance, invest in or underwrite — representing their most significant climate impact.

The establishment of organizations such as the Glasgow Financial Alliance for Net Zero, or GFANZ — a global coalition of more than 675 financial institutions with more than US\$150 trillion in managed or owned assets committed to net-zero by 2050 — has highlighted the financial sector's commitment to net-zero.⁷

Financial institutions can use alliances such as the United Nations-convened Net Zero Banking Alliance (NZBA), which operates under the GFANZ umbrella and accounts for 41% of global banking assets, to guide them in achieving net-zero targets.⁸ In March 2024, the NZBA published updated guidelines on climate target setting for banks, providing support for meeting their net-zero goals.⁹

Out of the NZBA's 144 members, about half (78) are headquartered in Europe. Among the other regions of the world, 29 members are headquartered in Asia-Pacific, 17 in North America, 15 in Latin America & Caribbean, and five in Africa & Middle East, suggesting that net-zero target setting by financial institutions has yet to go global.¹⁰

S&P Global Sustainable¹ data based on responses from 6,416 companies in the CSA (see Figure 1) shows that 13.4% of financial firms in Asia-Pacific have net-zero targets. That compares with 43.5% in Europe, 15.3% in Latin America and 15.0% in North America. The CSA's net-zero question for financial institutions specifically addresses financed emissions, which will be examined in further detail in the next section.

When comparing net-zero target setting among different sectors in Asia-Pacific, we find that financial institutions have the second-lowest percentage of net-zero goals after the healthcare sector. In comparison, high-emitting sectors such as utilities, materials and energy are ahead in setting net-zero targets, at 45.3%, 40.4% and 31.8%, respectively, reflecting the fact that these sectors will have to profoundly transform their businesses in a low-carbon economy. This disparity between sectors suggests an opportunity for financial institutions to play a central role in transforming key industries in the economy. Working on transition pathways with emission-heavy sectors to reach their net-zero goals could offer financial institutions a way to better manage their transition risks.

Around the globe, many governments have adopted policies to make their economies more sustainable but need financing to fund the transition. According to GFANZ, US\$125 trillion in investment by 2050 will be needed to meet net-zero goals.¹¹ Of that total, US\$32 trillion will be required in the next decade, with more than 40% to be allocated in Asia-Pacific. Financial institutions can play a major role in the transition by filling the financing gap, whether through specialized lending for transition projects, developing sustainable finance products for their customers or by supporting their clients' carbon-neutral transition.

⁶ Bank of China (Hong Kong). March 2024. '2023 Sustainability Report.' https://www.bochk.com/dam/bochk/desktop/top/aboutus/esg/report/SustainabilityReport2023_en.pdf

⁷ Glasgow Financial Alliance for Net Zero. Dec. 4, 2023. 'GFANZ delivers on the year of the transition plan with continued growth and progress to close key gaps in the global financial system and accelerate climate investment.' <https://www.gfanzero.com/press/gfan-zero-delivers-on-the-year-of-the-transition-plan-with-continued-growth-and-progress-to-close-key-gaps-in-the-global-financial-system-and-accelerate-climate-investment/>

⁸ S&P Global Sustainable¹ ESG Insider podcast. Feb. 3, 2023. 'How financial institutions are tackling Scope 3 financed emissions.' <https://www.spglobal.com/esg/podcasts/how-financial-institutions-are-tackling-scope-3-financed-emissions>

⁹ UNEP FI. March 13, 2024. 'Guidelines for Climate Target Setting for Banks.' <https://www.unepfi.org/wordpress/wp-content/uploads/2024/03/Guidelines-for-Climate-Target-Setting-for-Banks-Version-2.pdf>

¹⁰ UNEP FI. June 2024. 'Our Members. Net-Zero Banking Alliance.' Member list accessed June 6, 2024 <https://www.unepfi.org/net-zero-banking/members/>

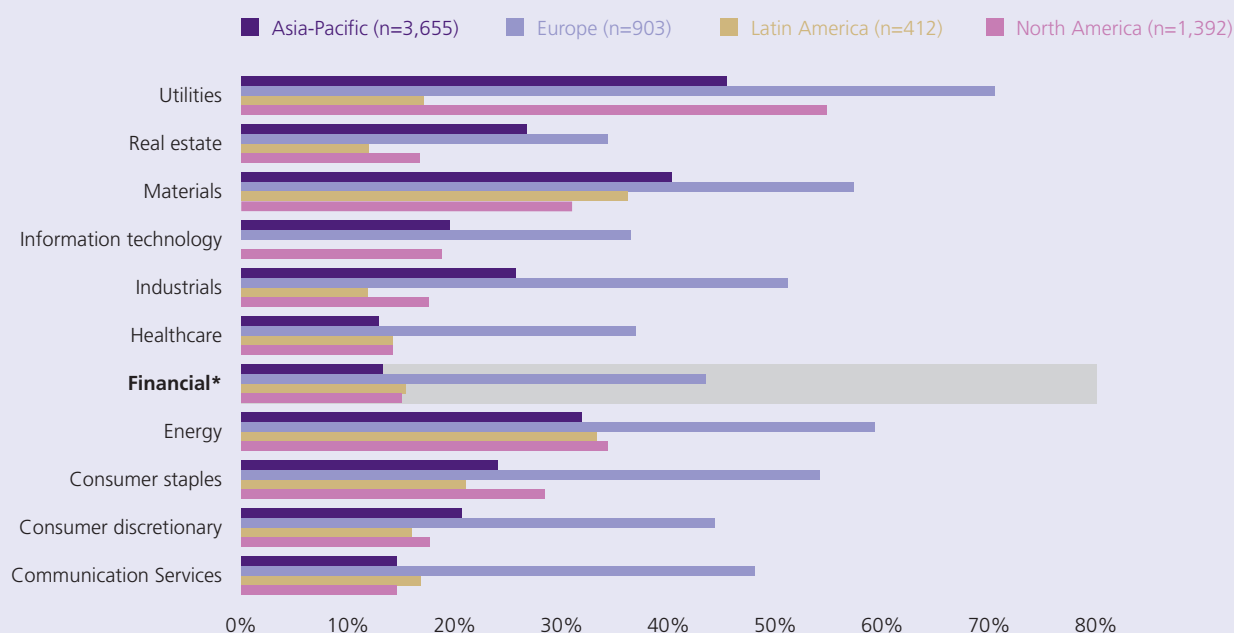
¹¹ Glasgow Financial Alliance for Net Zero. 2021. 'Race to Zero. Financing Roadmaps.' <https://www.gfanzero.com/netzerofinancing/>

FIGURE 1

Financial institutions

Net-zero targets are still uncommon in most sectors

Percentage of companies by sector and region with net-zero targets



Data as of August 2023.

Results based on responses from 6,416 companies assessed in the 2022 S&P Global Corporate Sustainability Assessment (CSA).

* Assessments for companies in the Financials sector asked if they have set net-zero targets for their Scope 3 financed emissions.

All Asia-Pacific geographies with at least one company assessed in the relevant 2022 CSA criterion are included.

This analysis classifies geographies in the Asia-Pacific region as those that the World Bank identifies as part of East Asia and Pacific or South Asia and that are also present in the CSA universe.

To read the full text of CSA criteria and questions, [click here](#).

Source: S&P Global Sustainable1.

© 2024 S&P Global.

2.2 Asia-Pacific financial institutions & financed emissions

The category of Scope 3 emissions is highly material for financial institutions. They have relatively low Scope 1 and Scope 2 emissions but significantly higher Scope 3 indirect emissions, which include GHGs emitted by businesses or projects they finance, invest in or underwrite. Scope 1 emissions are emissions from direct operations, while Scope 2 emissions are indirect emissions primarily derived from purchased energy.

Addressing Scope 3 emission reductions can be challenging, because these emissions represent companies' entire supply chains. S&P Global Sustainable1 data indicates that many financial institutions do not address Scope 3 financed emissions (see Figure 2).

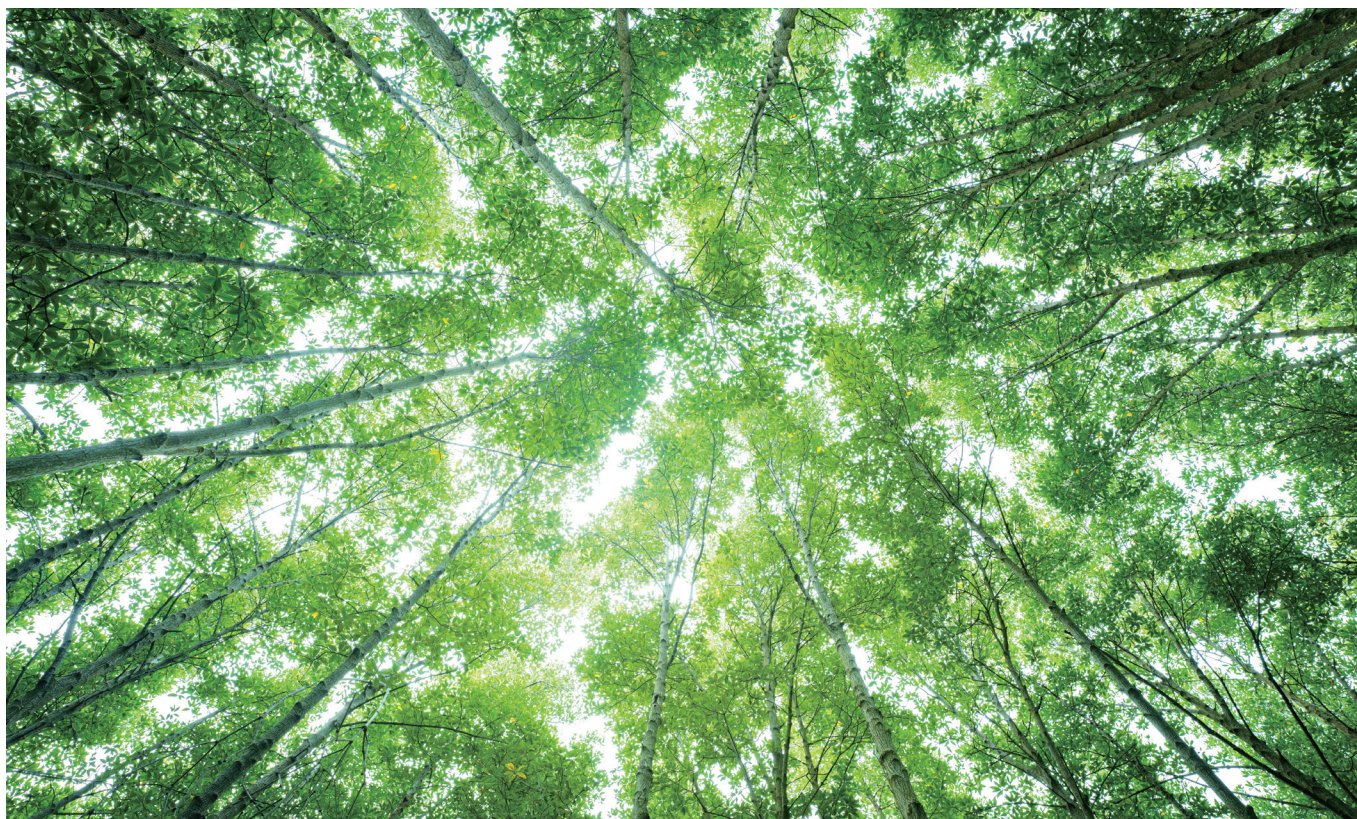
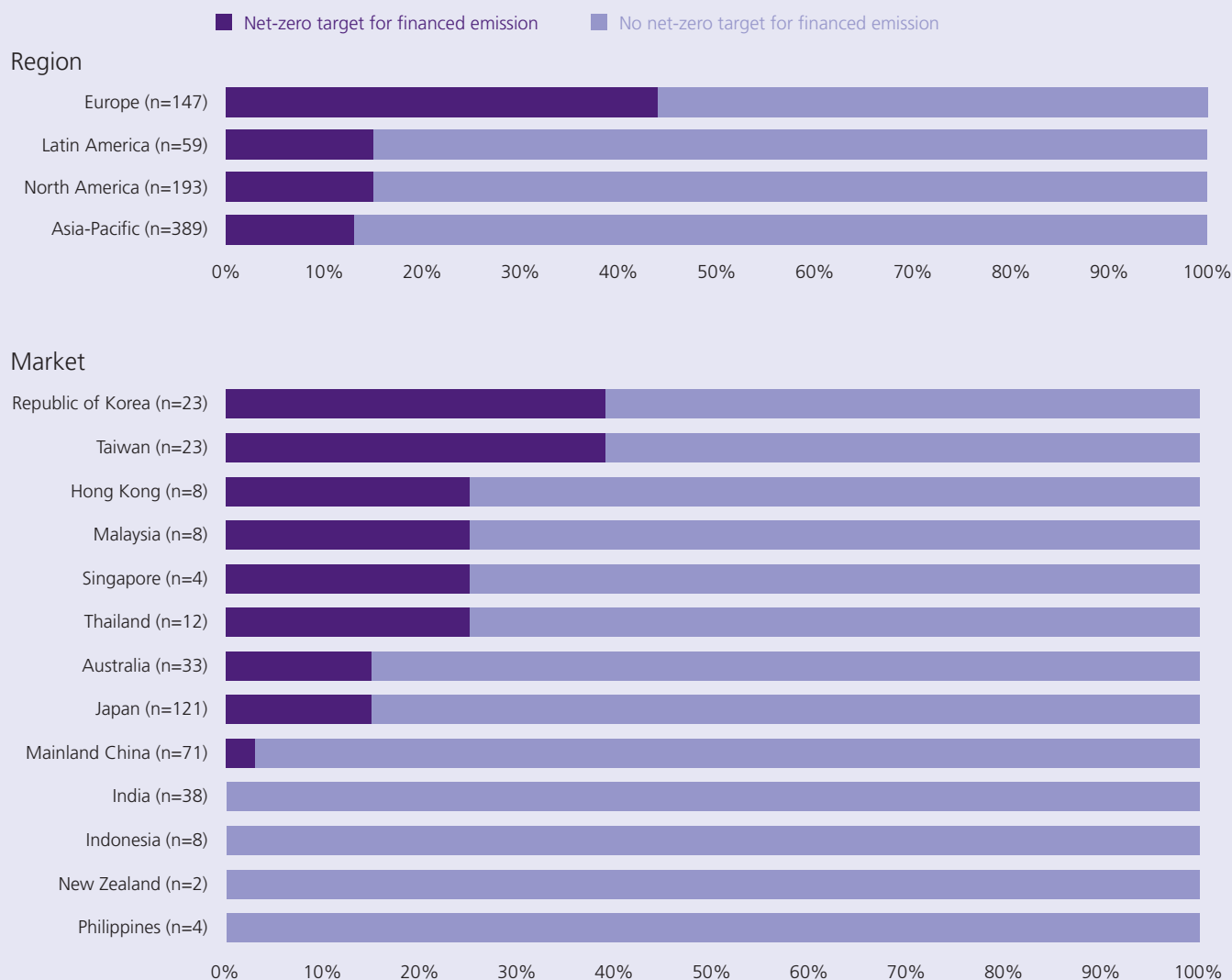


FIGURE 2

Financial institutions

Net-zero targets for Scope 3 financed emissions are rare throughout the world

Percentage of financials sector companies with net-zero targets for Scope 3 financed emissions



Data as of August 2023.

Results based on responses from 802 companies in the financials sector assessed in the 2022 S&P Global Corporate Sustainability Assessment (CSA).

All Asia-Pacific geographies with at least one company assessed in the relevant 2022 CSA criterion are included.

This analysis classifies geographies in the Asia-Pacific region as those that the World Bank identifies as part of East Asia and Pacific or South Asia and that are also present in the CSA universe.

To read the full text of CSA criteria and questions, [click here](#).

Source: S&P Global Sustainable1.

© 2024 S&P Global.

Among 802 Asia-Pacific financial institutions assessed in the CSA, 13.4% have a net-zero target, which the CSA defines for financial institutions as including financed emissions. That compares to 43.5% of financial institutions assessed in Europe and 15% in both Latin America and North America. Drilling down further within Asia-Pacific, we find that 39.1% of assessed financial institutions in the Republic of Korea and Taiwan have net-zero targets for financed emissions. A quarter of assessed financial institutions in Hong Kong, Singapore, Thailand and Malaysia have a net-zero target for financed emissions. For Japan and Australia, that figure stands at 15.0%.

In China, 3.0% of assessed institutions said they have a net-zero target for financed emissions. Among the financial institutions assessed in the Philippines, New Zealand, Indonesia and India, none in our sample were found to have net-zero targets including financed emissions.

The landscape for financial institutions' disclosure of Scope 3 financed emissions may change due to pressure from regulators and investors for consistent and comparable climate-related disclosures. For example, mandatory disclosure of climate-related risks will be phased in from 2025 for certain issuers on the Hong Kong stock exchange.¹² In Singapore, listed issuers and large non-listed companies will be required to report on Scope 3 emissions from 2026.¹³

Regulators are taking a closer look at Scope 3 emissions as a way of looking under the hood of banks' climate-related exposure.¹⁴ Climate stress tests by banking regulators in some parts of the world have shown that Scope 3 emissions for most sectors are the dominant driver of carbon intensity.¹⁵ Recent climate stress tests are showing there is more work to do:

- The People's Bank of China conducted its first climate stress test at the end of 2021, and Governor Yi Gang said in an interview in June 2022 that the biggest challenge of the climate stress test was "insufficient information disclosure."¹⁶ The climate stress test showed that if companies in the energy, steel, and cement sectors do not decarbonize, their default rates could rise significantly. However, banks would take a moderate hit to their capital ratios because their loan exposure to those industries is limited.
- In India, most banks are incorporating climate risks into their risk management, but they have yet to develop mechanisms to identify and manage those risks, according to a report by the Reserve Bank of India published on May 3, 2023.¹⁷
- The results of a climate stress test by the Hong Kong Monetary Authority published on Dec. 30, 2021, showed that under extreme scenarios, climate risks could cause "significant adverse impacts on the banking sector." Banks would need to take "early actions" to manage them, it said.¹⁸

One of those early actions for financial institutions could be measuring Scope 3 financed emissions and setting intermediate goals to assess climate-related risks across their portfolios. Short-term targets can provide a roadmap to net-zero and allow financial institutions to benchmark themselves along the way, especially if they are exposed to carbon-intensive industries.

¹² Hong Kong Stock Exchange. April 19, 2024. 'Exchange Publishes Conclusions on Climate Disclosure Requirements.' https://www.hkex.com.hk/News/Regulatory-Announcements/2024/240419news?sc_lang=en

¹³ Singapore's Accounting and Corporate Regulatory Authority. Feb. 28, 2024. 'Climate reporting to help companies ride the green transition.' <https://www.acra.gov.sg/news-events/news-details/id/778>

¹⁴ HSBC. July 19, 2022. 'Scope 3 emissions – The largest piece in the net zero jigsaw.' <https://www.gbm.hsbc.com/en-gb/insights/sustainability/scope-3-emissions>

¹⁵ European Central Bank. July 2022. '2022 climate risk stress test.' https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.climate_stress_test_report.20220708-2e3cc0999f.en.pdf

¹⁶ The People's Bank of China. June 27, 2022. 'Transcript of Governor Yi Gang's Interview by CGTN.' <http://www.pbc.gov.cn/en/3688110/3688172/4437084/4587509/index.html>

¹⁷ Reserve Bank of India. May 3, 2023. "RBI releases draft guidelines on 'Prudential Framework for Income Recognition, Asset Classification and Provisioning pertaining to Advances – Projects Under Implementation.'" <https://rbidocs.rbi.org.in/docs/PressRelease/PDFs/PR244PRUDENTIALFRAMEWORKF8F044FAC0264AF4BBC62373DF5B945A.PDF>

¹⁸ Hong Kong Monetary Authority. Dec. 30, 2021. 'HKMA publishes the results of the pilot climate risk stress test.' <https://www.hkma.gov.hk/eng/news-and-media/press-releases/2021/12/20211230-3/>

3. Asia-Pacific Financial Institutions & Climate Risk

3.1 Climate strategy & materiality

Some financial institutions in Asia-Pacific are starting to build strategies to respond to the climate risks across their loan books and investments. From a sample of 3,668 companies assessed in the CSA across all industries, about 23% of financial institutions identified climate strategy as a top material issue.

These companies selected climate strategy as one of their top three material issues out of a total of 14 topics. To add weight to how important the matter is, climate strategy ranks as their top material issue along with risk and crisis management.

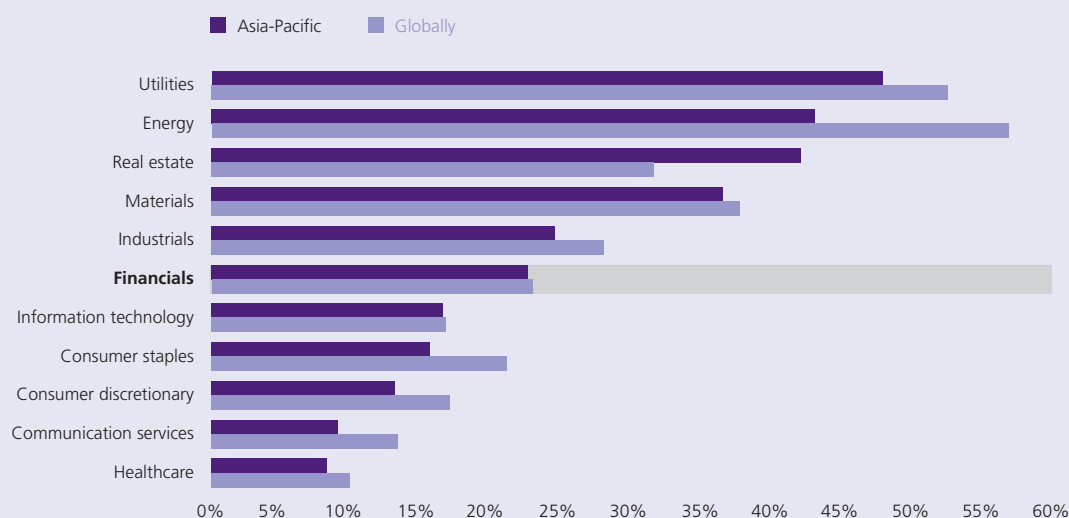
Globally, just under a quarter of financial institutions assess climate strategy as one of their top three material issues, putting those located in Asia-Pacific on par with worldwide peers. Amid a changing climate, financial institutions in the Asia-Pacific region could be subject to increased climate-related natural disasters such as wildfires or cyclones that may inflict losses on their balance sheets through asset fire sales, falling real estate values, weakening of corporate and household balance sheets and declining economic output in affected areas.

FIGURE 3

Financial institutions

A small share of financial institutions in Asia-Pacific and globally view climate strategy as a top material issue

Percentage of companies by sector in Asia-Pacific and globally that chose climate strategy as a top-3 material issue



Data as of August 2023.

Results based on responses from 6,259 companies assessed in the 2022 S&P Global Corporate Sustainability Assessment (CSA).

All Asia-Pacific geographies with at least one company assessed in the relevant 2022 CSA criterion are included.

This analysis classifies geographies in the Asia-Pacific region as those that the World Bank identifies as part of East Asia and Pacific or South Asia and that are also present in the CSA universe.

To read the full text of CSA criteria and questions, [click here](#).

Source: S&P Global Sustainable1.

© 2024 S&P Global.

Financial institutions are preparing strategies to manage and measure climate change risks as shareholders and portfolio managers are increasingly assessing their holdings for climate change risk.

And a growing number of regulators in the region are guiding financial institutions in how they can address future risks from climate change. For example, in August 2023, the Hong Kong Monetary Authority published a set of principles designed to guide banks on planning the transition to a net-zero economy.¹⁹ It requested banks set clear objectives aligned to a net-zero transition and targets aligned with the goals of the Paris Agreement on climate change. The principles also ask banks to devise appropriate initiatives and actions to achieve the objectives.

More recently, China's major stock exchanges — Shanghai, Shenzhen and Beijing — introduced requirements for environmental, social and governance disclosure requirements for listed companies, reflecting the importance of addressing climate risks in the Asia-Pacific region.^{20 21}

Other regulators throughout Asia-Pacific are taking actions to help financial institutions measure and manage their climate risks. India's central bank published on Feb. 28, 2024, a draft framework for banks and financial institutions on the adoption of the International Sustainability Standards Board (ISSB)'s first two sustainability standards, which include disclosure requirements on carbon emissions and other climate risks.²² India plans to adopt the standards for banks and financial institutions as of 2025.²³ Bangladesh's central bank issued on Dec. 26, 2023, requirements for banks and financial institutions to disclose their sustainability and climate-related risks based on the ISSB's standards, effective from Jan. 1, 2024.²⁴

The Monetary Authority of Singapore set out guidelines for banks, insurers and asset managers on Oct. 18, 2023, on transition planning for a net-zero economy.²⁵ It said it expects financial institutions to engage with clients rather than divest, to take a long-term perspective on lending or investment to account for climate risks and to provide stakeholders on what steps they are taking to manage short-, medium- and long-term climate-related risks, among others.

¹⁹ Hong Kong Monetary Authority. Aug. 29, 2023. 'Planning for net-zero transition.' hkma.gov.hk/media/eng/doc/key-information/guidelines-and-circular/2023/20230829e1.pdf

²⁰ Shanghai Stock Exchange. Feb. 8, 2024. 'SSE Solicits Public Opinions on Guidelines No. 14 of Shanghai Stock Exchange for Self-Regulation of Listed Companies — Sustainability Report (Trial) (Draft for Comments)' https://english.sse.com.cn/news/newsrelease/c/c_20240222_10751120.shtml

²¹ Shenzhen Stock Exchange. March 1, 2024. 'SZSE Seeks Public Comments on Guidelines for Sustainable Development Report to Further Consolidate the Foundation for the High-quality Development of Listed Companies.' https://www.szse.cn/English/about/news/szse/t20240301_606168.html

²² IFRS. June 2023. 'IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information.' <https://www.ifrs.org/issued-standards/ifrs-sustainability-standards-navigator/ifrs-s1-general-requirements.html/content/dam/ifrs/publications/html-standards-issb/english/2023/issued/issbs1/#about>

²³ Reserve Bank of India. Feb. 28, 2024. 'Draft Disclosure framework on Climate-related Financial Risks, 2024.' https://www.rbi.org.in/Scripts/bs_viewcontent.aspx?Id=4393

²⁴ Bangladesh Bank. Dec. 26, 2023. 'Guideline on Sustainability and Climate-related Financial Disclosure.' <https://www.bb.org.bd/mediaroom/circulars/gbcrd/dec262023sfd06e.pdf>

²⁵ Monetary Authority of Singapore. Oct. 18, 2023. 'MAS Guidelines for Financial Institutions on Transition Planning for a Net Zero Economy.' <https://www.mas.gov.sg/news/media-releases/2023/mas-proposes-guidelines-for-financial-institutions-on-transition-planning>

FIGURE 4

*Financial institutions***1 in 4 Asia-Pacific financial institutions view climate strategy as a top-3 material issue**

Percentage of companies by sector in Asia-Pacific that chose the following topics as a top-3 material issue

	Climate strategy	Environmental management	Risk and crisis management	Corporate governance	Business ethics	Human capital management	Human rights	Impacts from products & services	Innovation	Long term economic trends/issues	Long term environmental trends/issues	Long term social trends/issues	Occupational health & safety	Community engagement
Communication services (n=199)	9%	5%	12%	8%	10%	16%	4%	21%	11%	5%	1%	4%	4%	6%
Consumer discretionary (n=543)	13%	22%	4%	12%	8%	15%	4%	25%	7%	3%	4%	5%	8%	6%
Consumer staples (n=270)	16%	32%	6%	6%	7%	13%	6%	37%	9%	3%	9%	6%	8%	5%
Energy (n=65)	43%	35%	6%	12%	6%	9%	3%	5%	9%	9%	6%	3%	43%	12%
Financials (n=389)	23%	3%	23%	21%	13%	20%	1%	18%	5%	13%	4%	7%	2%	5%
Healthcare (n=244)	8%	13%	4%	9%	17%	16%	3%	34%	20%	1%	1%	5%	8%	2%
Industrials (n=652)	25%	19%	5%	15%	9%	17%	4%	15%	11%	6%	5%	3%	16%	2%
Information technology (n=502)	17%	18%	9%	13%	7%	22%	4%	17%	19%	4%	2%	6%	8%	3%
Materials (n=378)	37%	34%	2%	18%	11%	11%	3%	15%	9%	4%	4%	4%	30%	4%
Real estate (n=178)	42%	28%	6%	30%	10%	20%	3%	19%	5%	7%	3%	4%	13%	10%
Utilities (n=96)	48%	27%	13%	19%	10%	14%	2%	22%	6%	11%	9%	4%	30%	7%

Data as of August 2023.

Results based on responses from 3,516 companies assessed in the 2022 S&P Global Corporate Sustainability Assessment (CSA).

All Asia-Pacific geographies with at least one company assessed in the relevant 2022 CSA criterion are included.

This analysis classifies geographies in the Asia-Pacific region as those that the World Bank identifies as part of East Asia and Pacific or South Asia and that are also present in the CSA universe.

To read the full text of CSA criteria and questions, [click here](#).

Source: S&P Global Sustainable1.

© 2024 S&P Global.

3.2 Adaptation planning to meet physical climate risks

Financial institutions in Asia-Pacific have room to invest more resources into adaptation planning. Just as financial institutions in the region are starting to recognize climate strategy as material to their business, many are beginning to take steps to adapt their business to the physical risks of climate change.

This matters for financial institutions as they are exposed to all sectors of the economy through their loans, investments and underwriting, including high-emitting sectors such as energy or utilities, which could face challenges in the transition to a low-carbon economy.²⁶ They face higher loan impairments from the physical impacts of climate change and may have to adjust their lending portfolio to reduce exposure to hard-to-abate sectors such as coal.^{27,28} In their role as financiers to the wider economy they can take a significant role in facilitating the flow of capital needed to mitigate and adapt to climate change.

Formalized climate change adaptation planning is not yet widespread, however. Based on a universe of 3,668 companies in Asia-Pacific, data from the CSA shows there is a gap between financial institutions in Asia-Pacific that regard climate strategy to be a top material issue and those that undertake adaptation planning — about 23% of assessed financial institutions regard climate as material, while 19.1% of assessed financial institutions have an adaptation plan.

The CSA defines an adaptation plan as a plan to adapt to any climate risks across a company's value chain that the company has identified through a climate risk assessment. The plans can be specific climate-related mitigation plans included in wider risk assessments, or separate climate-specific reports.

By adapting their businesses to a changing climate, financial institutions can prepare for the effects of extreme weather events on their business and the broader economy. The physical hazards of climate change are becoming more severe and frequent across the world, and Asia-Pacific risks being the region that is the most affected globally. South Asia is over 10 times more exposed than Europe, according to research by S&P Global Ratings.²⁹

Investments in adaptation will need to increase to cope with the rising costs from physical climate hazards such as wildfires, flooding and cyclones. According to the World Meteorological Organization, climate-related disasters are now five times as frequent. If the current trend continues, the number of disasters could rise to 560 per year by 2030, up 40% from 2015. Significant funding is needed to adapt to this changing climate: For example, up to US\$340 billion per year of adaptation finance is needed by 2030 to pay for investments in technology and in transforming agriculture and water systems.³⁰

The need for financial institutions in Asia-Pacific to implement adaptation plans is growing amid the rising threat of physical climate hazards. Six of the top 10 places at the highest risk from tropical cyclones are in Asia, according to the United Nations' Intergovernmental Panel on Climate Change (IPCC).³¹

According to a report by S&P Global Ratings, South Asia faces three times more potential economic losses than the world average, with around 12% GDP at risk annually by 2050 under the IPCC's slow transition scenario.³²

For example, India will have to raise funding for adaptation, mitigation and the management of weather-related disasters, with investment between US\$7.2 trillion and US\$12.1 trillion by 2050, the Reserve Bank of India estimated.³³

Climate change is also affecting other parts of Asia-Pacific, and countries are making adaptation plans accordingly. Japan, which is vulnerable to storms, published a national adaptation plan in 2018. In Japan's Ise Bay, for example, current storm surges could result in property and business damages of about ¥100.04 billion (US\$676.73 million), with current adaptation efforts such as protective sea walls, but the figure could more than double due to climate change.³⁴

²⁶ European Central Bank. May 2021. 'Financial Stability Review.' <https://www.ecb.europa.eu/press/financial-stability-publications/fsr/html/ecb.fsr202105-757f727fe4.en.html>

²⁷ World Bank. April 18, 2023. 'Banking sector risks in the aftermath of climate change and environmental-related disasters.' <https://blogs.worldbank.org/en/developmenttalk/banking-sector-risks-aftermath-climate-change-and-environmental-related-disasters>

²⁸ S&P Global Ratings, S&P Global Commodity Insights. Nov. 16, 2023. 'Will Oil and Gas Producers Lose Access to External Financing as Lenders Decarbonize?'

²⁹ S&P Global Ratings. Jan. 13, 2023. 'Crunch Time: Can Adaptation Finance Protect Against the Worst Impacts From Physical Climate Risks?' <https://www.spglobal.com/en/research-insights/featured/special-editorial/look-forward/crunch-time-can-adaptation-finance-protect-against-the-worst-impacts-from-physical-climate-risks>

³⁰ S&P Global Sustainable1. Feb. 21, 2023. 'Adaptation planning is the next step for companies to prepare for climate risk.' <https://www.spglobal.com/esg/insights/adaptation-planning-is-the-next-step-for-companies-to-prepare-for-climate-risk>

³¹ United Nations' Intergovernmental Panel on Climate Change. Sixth Assessment Report. Chapter 10. Page 1500. 'Asia'. https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_Chapter10.pdf

³² S&P Global Ratings. Nov. 27, 2023. 'Lost GDP: Potential Impacts Of Physical Climate Risks.' https://www.spglobal.com/_assets/documents/ratings/research/101590033.pdf

³³ <https://rbidocs.rbi.org.in/rdocs/Publications/PDFs/RCF03052023395FAF37181E40188BAD3AFA59BF3907.PDF>

³⁴ United Nations' Intergovernmental Panel on Climate Change. Sixth Assessment Report. Chapter 10. Page 1500. 'Asia'. https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_Chapter10.pdf

China, too, has enacted a national climate adaption plan and will need US\$77 billion over the next five years to sufficiently address adaptation, according to the World Resources Institute.³⁵

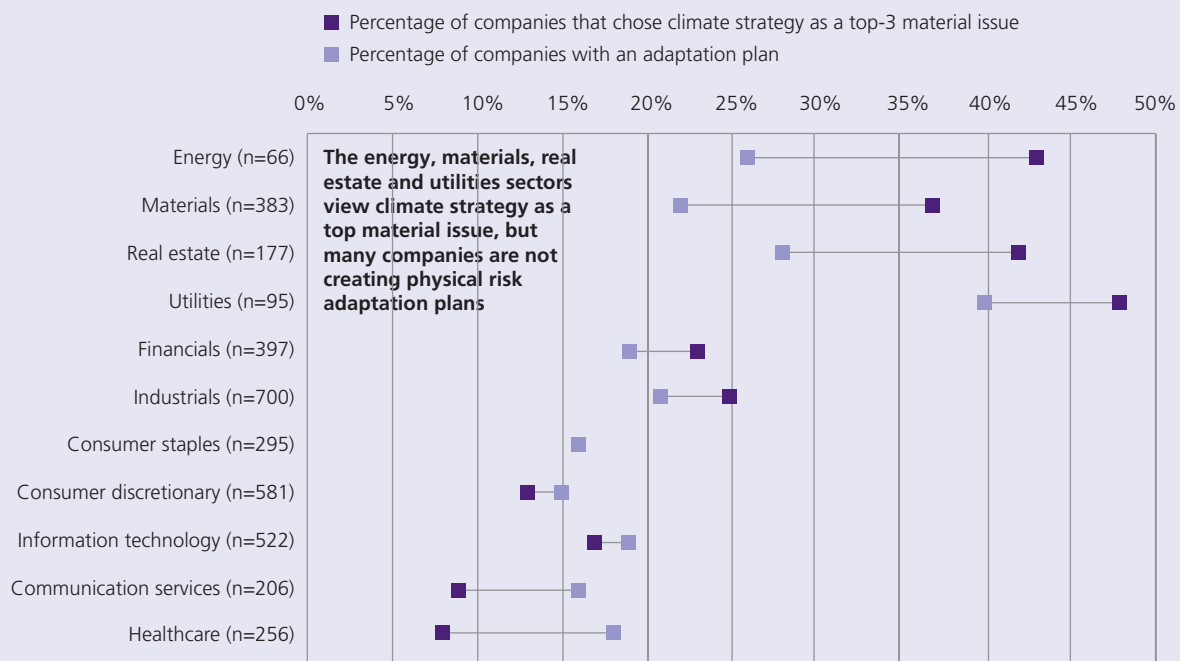
However, as major economies in Asia-Pacific are taking steps to adapt to a changing climate, many sectors are not implementing adaptation plans — despite viewing climate strategy as material to their business. For example, 43% of energy companies view climate strategy as material, but just 26% have a climate adaptation plan in place. In the materials sector, 37% of assessed companies regard climate as material to their business, but only 22% have implemented an adaptation plan. In the real estate sector, 42% of companies see climate change as material, but only 28% have an adaptation plan in place despite the high risk from extreme weather events in the coming decades.³⁶

FIGURE 5

Portfolio exposure

Some sectors in Asia-Pacific view climate strategy as material but lack physical risk adaptation plans

Percentage of companies by sector in the Asia-Pacific region that chose climate change as a top-3 material issue and that have a physical risk adaptation plan



Data as of August 2023.

Results based on responses from 3,668 companies in the Asia-Pacific region assessed in the 2022 S&P Global Corporate Sustainability Assessment (CSA).

All Asia-Pacific geographies with at least one company assessed in the relevant 2022 CSA criterion are included.

This analysis classifies geographies in the Asia-Pacific region as those that the World Bank identifies as part of East Asia and Pacific or South Asia and that are also present in the CSA universe.

To read the full text of CSA criteria and questions, [click here](#).

Source: S&P Global Sustainable1.

© 2024 S&P Global.

³⁵ World Resources Institute. June 2, 2023. China Elevates Climate Adaptation on National Agenda <https://www.wri.org/outcomes/china-elevates-climate-adaptation-national-agenda>

³⁶ XDI. May 21, 2024. 'How risky is your real estate investment? New report exposes APAC REIT vulnerability to climate change extreme weather.' <https://xdi.systems/news/how-risky-is-your-real-estate-investment-new-report-exposes-apac-reit-vulnerability-to-climate-change-extreme-weather>

4. Asia-Pacific Financial Institutions & Scenario Analysis

4.1 Physical risk scenario analysis

The impact of extreme weather events in several countries in Asia-Pacific shows the need for clear adaptation plans to manage the physical impacts of climate change. But as we have seen, there is a gap between how financial institutions consider climate strategy and how they are adapting to extreme weather events. The financial sector will come under pressure to adapt and provide scenario analysis as banking regulators step up climate stress tests, typically using scenario analyses created by the Network of Central Banks and Supervisors for Greening the Financial System (NGFS), a group of more than 100 central banks and supervisors collaborating on how to tackle climate change.³⁷ Financial institutions in Asia-Pacific can use scenario analysis as a tool to provide the foundations for implementing physical risk adaptation plans that prepare them for the effects of extreme weather events on their business and the broader economy.

Scenario analysis can help financial institutions understand how climate change will impact their business and financial performance under different potential future scenarios. Financial institutions can test for physical risks, such as rising sea levels or an increase in extreme weather events like flooding and wildfires. They can carry out quantitative scenario analysis that uses analytical models to determine a wide range of climate risk outcomes, and/or qualitative scenario analysis that uses descriptive narratives and is often the first step for organizations to explore potential future climate outcomes.

Data from the CSA shows 35% of assessed financial institutions in Asia-Pacific conduct some form of physical risk scenario analysis. Just over 10% are conducting only qualitative physical risk scenario analysis while 4.1% conduct quantitative analysis. About 20% of financial institutions in Asia-Pacific use both quantitative and qualitative scenario analysis for physical risks, according to the CSA's assessment of 797 financial sector companies. In Europe, 14.6% of financial institutions conduct qualitative physical risk scenario analysis and 7.6% conduct quantitative analysis, while 41% of financial institutions in the region conduct both.

When drilling down to different geographies in Asia-Pacific, the analysis finds approaches to scenario analysis vary between jurisdictions. For example, in Japan 21% of financial institutions take a qualitative approach, 6% take a quantitative one and 26% take a combined approach, the CSA data shows. In Mainland China, 4% of financial institutions take a qualitative approach, while none take a solely quantitative approach and 1% take a combined approach (see Figure 6).

Quantitative scenario analysis considers banks' exposure to climate-related risks and potential losses under different scenarios, while qualitative scenario analysis takes into account governance, risk tolerance and decarbonization strategies.^{38 39} (See Glossary for further information.)

Using quantitative and qualitative scenario analysis could offer financial institutions a way to prepare for climate stress tests. HKMA launched a climate stress test in April 2023 to be conducted over 2023 and 2024. In its guidelines, HKMA asked participating financial institutions to use a combination of quantitative and qualitative analyses to assess their exposure to both physical and transition risks.⁴⁰

³⁷ Network of Central Banks and Supervisors for Greening the Financial System. March 7, 2024. 'Membership'. <https://www.ngfs.net/en/about-us/membership>

³⁸ European Central Bank. July 2022. '2022 climate risk stress test.' https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.climate_stress_test_report.20220708-2e3cc0999f.en.pdf

³⁹ UNEP FI. Jan. 12, 2022. 'Climate stress testing is here: 4 ways your firm can prepare.' <https://www.unepfi.org/news/climate-stress-testing-is-here-4-ways-your-firm-can-prepare/>

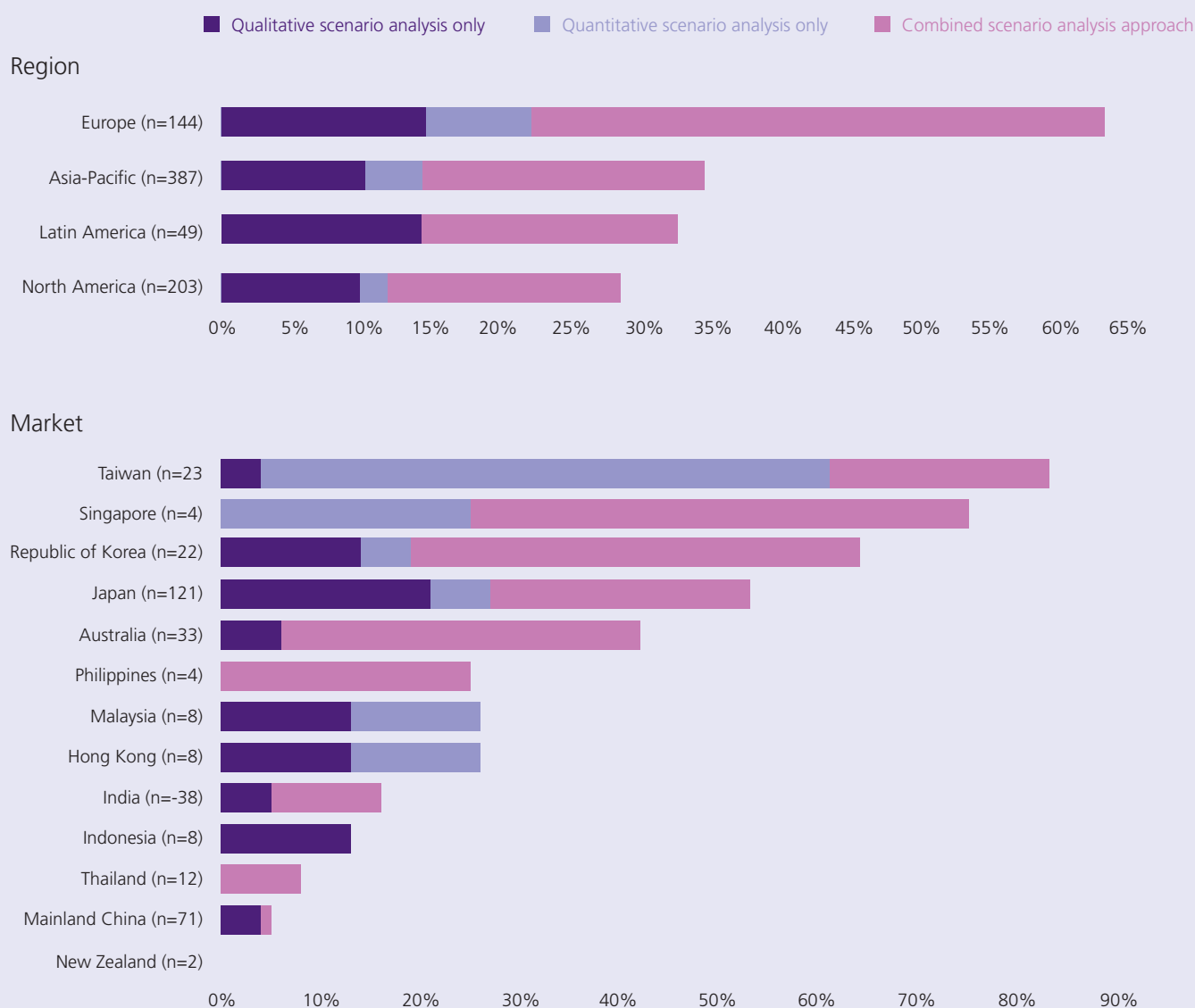
⁴⁰ Hong Kong Monetary Authority. April 2023. 'Guidelines for Banking Sector Climate Risk Stress Test.' <https://www.hkma.gov.hk/media/eng/doc/key-information/guidelines-and-circular/2023/20230421e1a1.pdf>

FIGURE 6

Financial institutions

Financial institutions in some parts of Asia-Pacific are performing climate physical risk scenario analysis

Percentage of financials sector companies conducting climate physical risk scenario analysis by geography



Data as of August 2023.

Results based on responses from 797 financials sector companies assessed in the 2022 S&P Global Corporate Sustainability Assessment (CSA).

All Asia-Pacific geographies with at least one company assessed in the relevant 2022 CSA criterion are included.

This analysis classifies geographies in the Asia-Pacific region as those that the World Bank identifies as part of East Asia and Pacific or South Asia and that are also present in the CSA universe.

To read the full text of CSA criteria and questions, [click here](#).

Source: S&P Global Sustainable1.

© 2024 S&P Global.

4.2 Transition risk scenario analysis

A similar picture emerges when analyzing climate transition risk scenario analysis. In Asia-Pacific, 34.5% of assessed financial institutions conduct transition risk scenario analysis. Transition risk scenario analysis takes a forward-looking approach to how future policy, regulatory and technological changes as well as legal, market and reputational risks would impact a business.

This is particularly important for financial institutions as they or their clients could face rising costs from changes in regulation related to the impact of climate change. Clients in high-emitting sectors could be subject to higher carbon prices that could pressure their finances and thus financial institutions' balance sheets. If financial institutions are not prepared for transition risks, they could face increasing pressure on their loan books, investments and underwriting, especially from sectors that are heavily reliant on bank financing.

In its principles to guide financial institutions on the path to net-zero, the Hong Kong Monetary Authority encourages financial institutions to use scenario analysis to develop or plan their transition strategies. It requests that financial institutions embed transition planning into their governance, accountability and risk management frameworks.⁴¹

Other regulators in the region are taking heed. The Monetary Authority of Singapore launched a consultation in October 2023 on potential guidelines designed to guide financial institutions on how they manage energy transition planning with their clients.⁴²

The Reserve Bank of India has issued draft guidelines to help the banking sector implement a strategy to address climate change risks.⁴³ The former China Banking and Insurance Regulatory Commission, which is now known as the National Financial Regulatory Administration, has published a set of green finance guidelines requiring the banking and insurance sectors to develop green finance strategies and reduce the carbon intensity of their asset portfolios, with the aim of making them carbon neutral.⁴⁴

Amid this regulatory push, data from the CSA shows 34.5% of financial institutions in Asia-Pacific conduct transition risk scenario analysis, with 20% using both quantitative and qualitative scenario analysis, according to results based the CSA's assessment of 797 financial sector companies. That compares to 41% in Europe.

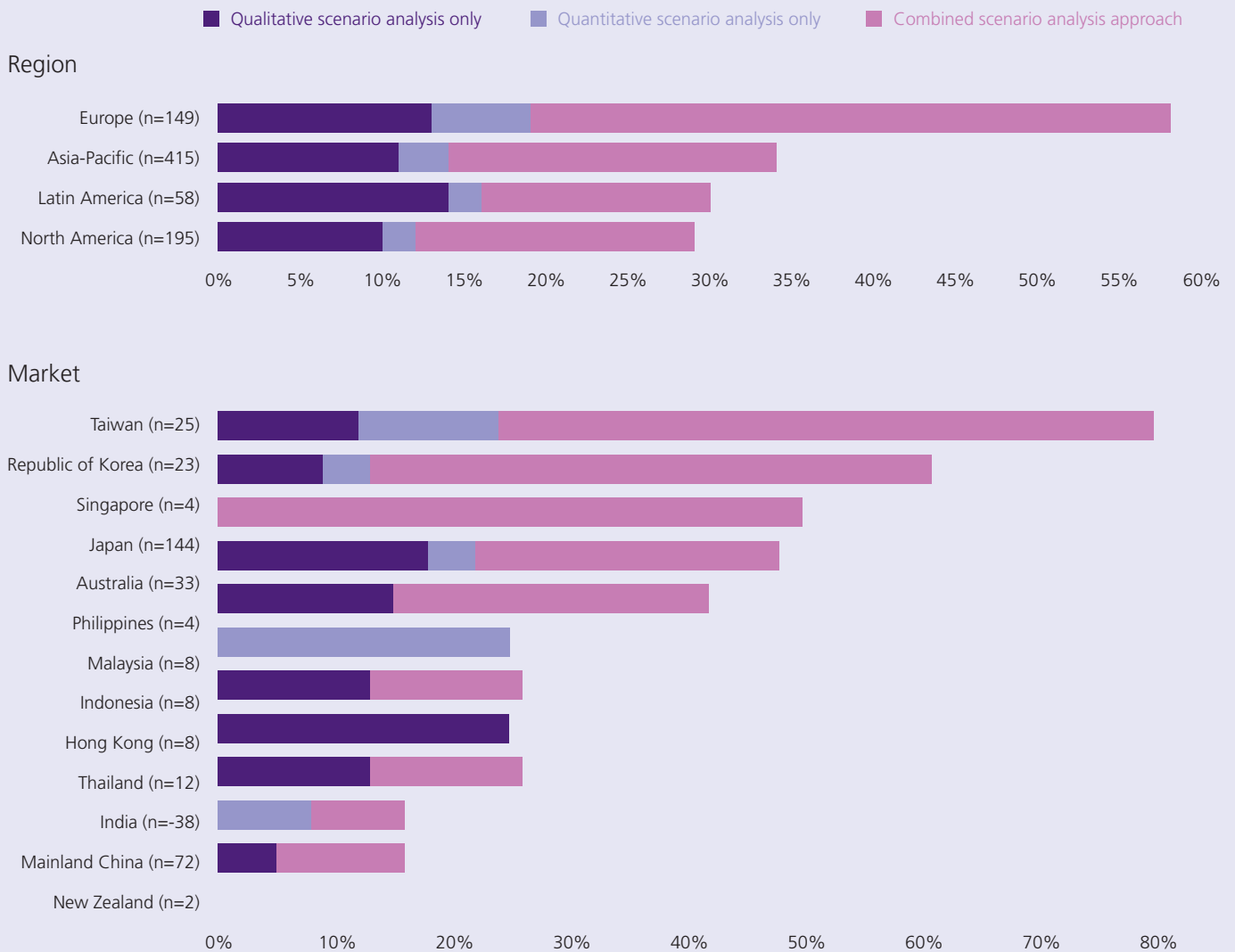
Assessed financial institutions in Australia, China, Hong Kong, India, Malaysia, Hong Kong, Japan, the Republic of Korea, Singapore and Thailand are taking a combined approach to quantitative and qualitative scenario analysis to varying degrees, while assessed firms in the Philippines are only conducting quantitative scenario analysis and assessed companies in Indonesia are only conducting qualitative scenario analysis.

⁴¹ Hong Kong Monetary Authority. August 2023. 'Planning for net-zero transition'. <https://www.hkma.gov.hk/media/eng/doc/key-information/guidelines-and-circular/2023/20230829e1.pdf>
⁴² Monetary Authority of Singapore. Oct. 18, 2023. 'MAS Guidelines for Financial Institutions on Transition Planning for a Net Zero Economy.' <https://www.mas.gov.sg/news/media-releases/2023/mas-proposes-guidelines-for-financial-institutions-on-transition-planning>
⁴³ Reserve Bank of India. July 27, 2022. 'Discussion Paper on Climate Risk and Sustainable Finance.' <https://rbidocs.rbi.org.in/rdocs/Publications/PDFs/CLIMATERISK46CEE62999A4424BB731066765009961.PDF>
⁴⁴ National Financial Regulatory Administration. June 2, 2022. 'CBIRC Releases the Green Finance Guidelines for Banking and Insurance Sectors.' <https://www.cbirc.gov.cn/en/view/pages/ItemDetail.html?docId=1055048>

FIGURE 7

*Financial institutions***Most Asia-Pacific financial institutions are not conducting climate transition risk scenario analysis**

Percentage of financials sector companies conducting climate transition risk scenario analysis by geography



Data as of August 2023.

Results based on responses from 831 financials sector companies assessed in the 2022 S&P Global Corporate Sustainability Assessment (CSA).

All Asia-Pacific geographies with at least one company assessed in the relevant 2022 CSA criterion are included.

This analysis classifies geographies in the Asia-Pacific region as those that the World Bank identifies as part of East Asia and Pacific or South Asia and that are also present in the CSA universe.

To read the full text of CSA criteria and questions, [click here](#).

Source: S&P Global Sustainable1.

© 2024 S&P Global.

5. Asia-Pacific Financial Institutions & Biodiversity Loss

The interconnectedness of climate change and biodiversity risks for financial institutions

Investors and the financial community are not just considering the risks of climate change. They are increasingly turning their attention to biodiversity because climate and nature-related risks are intertwined. The loss of forests and other ecosystems both on land and in the oceans will release more carbon emissions into the atmosphere.⁴⁵ There is a growing understanding that climate and biodiversity risks need to be measured in tandem, and investors are now taking an integrated approach to those two key sustainability issues. This recognizes the critical services that nature provides, including erosion prevention, flood protection, water purification and food supplies.

This is particularly true for Asia-Pacific, one of the most diverse regions in terms of biodiversity on the planet. The region is home to nearly half of the world's biodiversity hotspots, areas that have a high level of endemic species.⁴⁶ It includes places like Australia, Indonesia and China, which are suffering biodiversity loss as a result of climate change.⁴⁷

The IPCC's sixth annual assessment report noted that the loss of biodiversity and animals' and plants' habitats had been linked to climate change in some parts of Asia, including the loss of mammals in China, and plants in the Republic of Korea.⁴⁸

Signs are emerging that policymakers around the world are starting to address biodiversity loss. In December 2022, the UN biodiversity conference known as COP15 ended with a landmark agreement for nature, the Global Biodiversity Framework.⁴⁹ Governments committed to protect 30% of land and water considered important for biodiversity by 2030. In September 2023, the TNFD published its final recommendations to guide companies in disclosing their dependencies and impacts on nature, underlining to what extent companies need to consider biodiversity as a potential risk to their business.⁵⁰ Financial regulators and supervisors are also encouraging financial institutions to look more deeply at their exposure to nature-related risks. Also in September 2023, the NGFS published a framework to guide policies and actions of central banks toward an integrated assessment of climate and broader nature-related risks.⁵¹

Despite this, only a small share of companies globally and in Asia-Pacific have set targets to protect biodiversity or address deforestation. **Based on an assessment of 3,753 companies in the CSA, only 6.3% of companies assessed have made biodiversity commitments in Asia-Pacific, compared to 16.1% in Europe.** Drilling down further, we find that in India, 17.4% of companies assessed have made biodiversity-related commitments, reflecting the fact that the country has already implemented legislation to protect nature such as its 2002 Biological Diversity Act.⁵²

⁴⁵ Food and Agriculture Organization. 2022. 'The State of the World's Forests 2022.' <https://openknowledge.fao.org/server/api/core/bitstreams/f81551bf-0a78-498b-a0a6-17f21467389d/content>

⁴⁶ Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. 2018. 'The regional assessment report on biodiversity and ecosystem services for Asia and the Pacific.' https://files.ipbes.net/ipbes-web-prod-public-files/spm_asia-pacific_2018_digital.pdf

⁴⁷ The Royal Society. 2024. "Where is most biodiversity loss happening and why?" <https://royalsociety.org/news-resources/projects/biodiversity/where-is-most-biodiversity-loss-happening-and-why/>

⁴⁸ United Nations' Intergovernmental Panel on Climate Change. Sixth Assessment Report. Chapter 10. Page 1473. 'Asia' https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_Chapter10.pdf

⁴⁹ Convention on Biological Diversity. February 2023. 'Global Biodiversity Framework.' <https://www.cbd.int/gbf>

⁵⁰ Taskforce on Nature-related Financial Disclosures. Sept. 18, 2023. 'Final TNFD Recommendations on nature related issues published and corporates and financial institutions begin adopting.' <https://tnfd.global/final-tnfd-recommendations-on-nature-related-issues-published-and-corporates-and-financial-institutions-begin-adopting/>

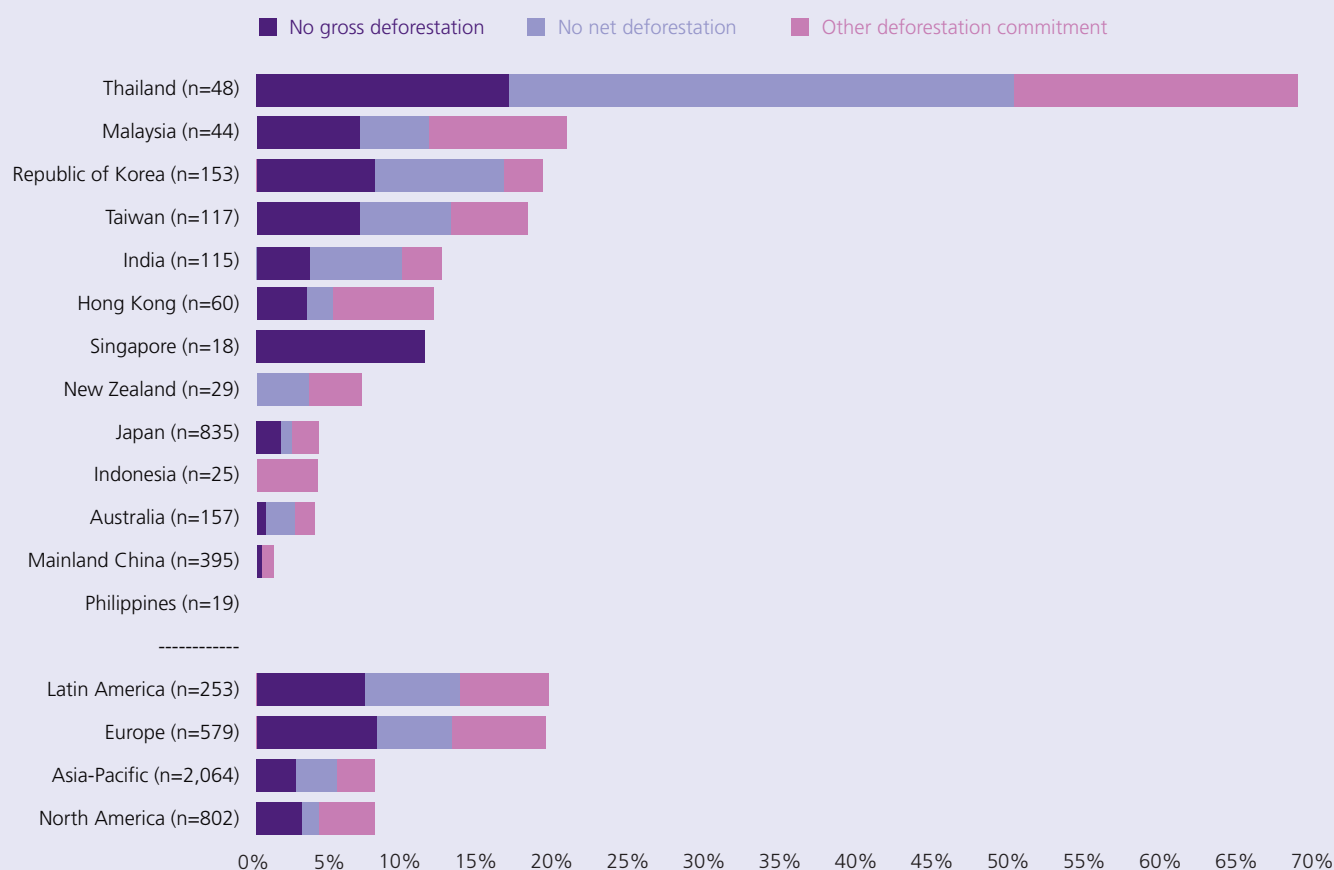
⁵¹ Network of Central Banks and Supervisors for Greening the Financial System. Sept. 7, 2023. 'NGFS publishes Conceptual Framework for Nature-related Financial Risks at launch event in Paris.' <https://www.ngfs.net/en/communique-de-presse/ngfs-publishes-conceptual-framework-nature-related-financial-risks-launch-event-paris>

⁵² India's Ministry of Law and Justice. Feb. 5, 2003. 'The Biological Diversity Act, 2002.' <https://faolex.fao.org/docs/pdf/ind40698.pdf>

FIGURE 8

*Portfolio exposure***Thai companies lead the Asia-Pacific region in deforestation-related commitments**

Percentage of companies across sectors by geography making deforestation-related commitments



Data as of August 2023.

Results based on responses from 3,729 companies assessed in the 2022 S&P Global Corporate Sustainability Assessment.

No gross deforestation means the company has made a commitment to end all deforestation. No net deforestation means that damages linked to business activity are offset by at least equivalent gains, avoiding a net loss of biodiversity and ecosystem services.

Examples of "other" commitments include: afforestation or conservation activities, the use of certified raw materials, etc.

All Asia-Pacific geographies with at least one company assessed in the relevant 2022 CSA criterion are included.

This analysis classifies geographies in the Asia-Pacific region as those that the World Bank identifies as part of East Asia and Pacific or South Asia and that are also present in the CSA universe.

To read the full text of CSA criteria and questions, [click here](#).

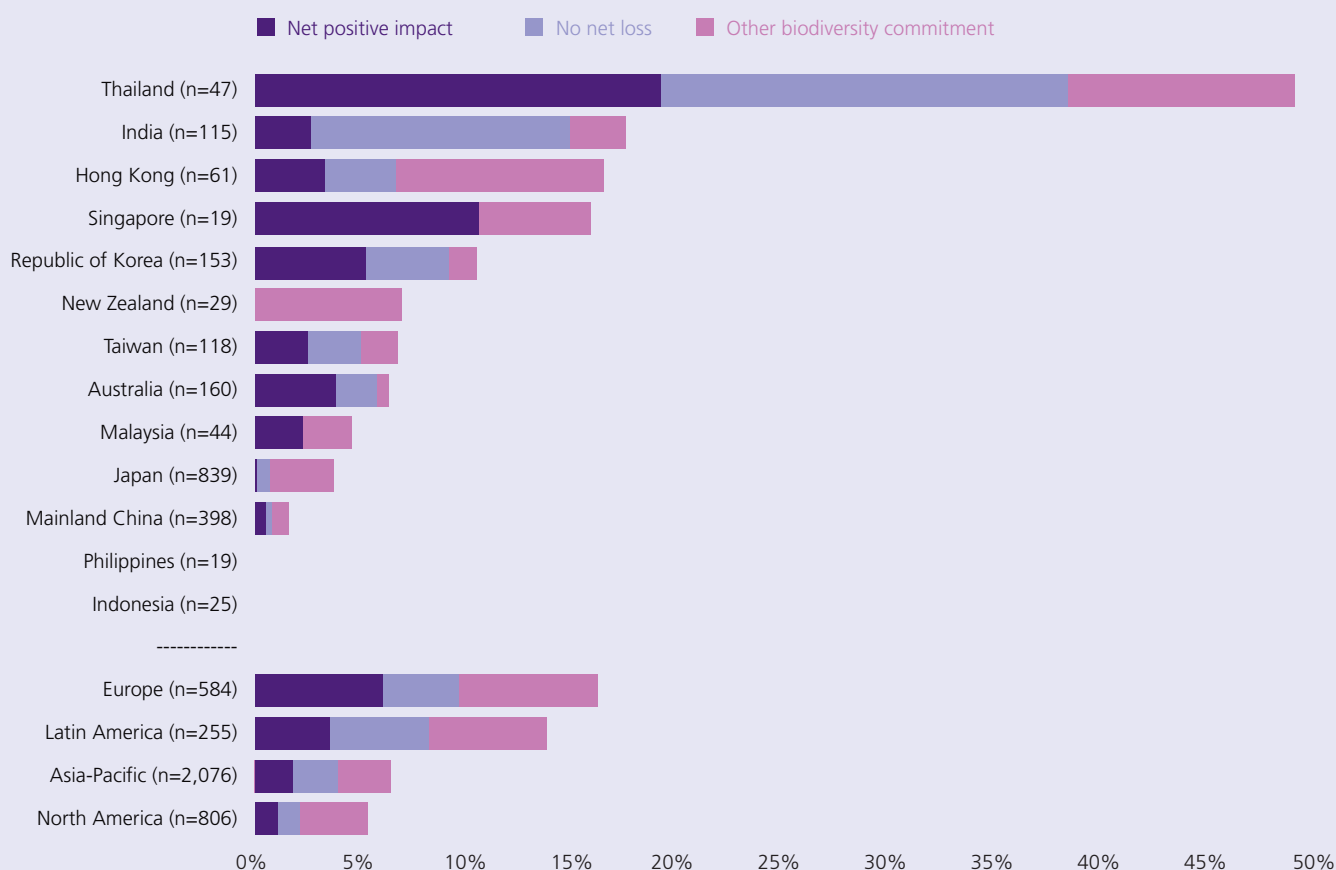
Source: S&P Global Sustainable1.

© 2024 S&P Global.

Portfolio exposure

Thai companies lead the Asia-Pacific region in biodiversity-related commitments

Percentage of companies across sectors by geography making biodiversity-related commitments



Data as of August 2023.

Results based on responses from 3,753 companies assessed in the 2022 S&P Global Corporate Sustainability Assessment.

Net positive impact means that corporate actions on biodiversity, such as habitat protection, are greater than the impact from its business activity. A commitment to net positive impact typically goes further than a 'no net loss' commitment, which means that damages linked to business activity are offset by at least equivalent gains, avoiding a net loss of biodiversity and ecosystem services.

Examples of "other" commitments include: No deforestation; no peat; no exploitation; and the use of certified raw materials, etc.

All Asia-Pacific geographies with at least one company assessed in the relevant 2022 CSA criterion are included.

This analysis classifies geographies in the Asia-Pacific region as those that the World Bank identifies as part of East Asia and Pacific or South Asia and that are also present in the CSA universe.

To read the full text of CSA criteria and questions, [click here](#).

Source: S&P Global Sustainable1.

© 2024 S&P Global.

Ignoring biodiversity could present a significant business risk for financial institutions. According to the World Economic Forum (WEF), US\$44 trillion of economic value generation, or more than half of the world's total GDP, is moderately or highly dependent on natural assets and ecosystems.⁵³

At the same time, pollution, deforestation and other unsustainable land use, paired with climate change and the spread of invasive species, have put about one million animal and plant species at risk of extinction, many within decades.⁵⁴

Financial institutions have a key role to play in working with their clients to reduce nature-related risks in their businesses. Examples include application of the Equator Principles in financing large-scale projects, as well as financing nature-based solutions in climate mitigation and adaptation projects such as coastal mangrove conservation.⁵⁵

In Asia-Pacific, 63% of the region's GDP — equivalent to US\$19 trillion — is at risk from nature loss, according to a WEF report.⁵⁶ The UN Food and Agriculture Organization estimates that Asia-Pacific currently loses 2.2 million hectares of forest a year to deforestation.

Deforestation has been a focus for financial institutions looking to integrate biodiversity-related data into their investment and lending decisions. In 2021, a group of 37 financial institutions with more than US\$8.9 trillion in assets under management pledged to eliminate agricultural commodity-driven deforestation risks in their investment and lending portfolios by 2025. A one-year progress report in November 2022 by that group indicated some members have published a list of investor expectations for companies, established internal policies related to this goal, or created new financial instruments for nature-based solutions.⁵⁷

Yet ending, slowing, or offsetting deforestation is a priority for a small number of the 3,729 companies assessed in the CSA. Only 7.9% of companies assessed in Asia-Pacific have “no deforestation” commitments, compared to 19.2% in Europe and 19.4% in Latin America. In the Republic of Korea, 19% of companies assessed have such commitments, and in Taiwan that figure is 18%.

Halting deforestation and preserving forests could cut carbon emissions by 3.6 gigatons of CO₂e annually between 2020 and 2050, according to the FAO report *The State of the World's Forests 2022 – Forest pathways for green recovery and building inclusive, resilient and sustainable economies*.⁵⁸ That includes around 14% of what is needed up to 2030 to keep global warming within the limits of the 2015 Paris Agreement on climate change and would protect more than half of the plant's terrestrial biodiversity.

In Asia-Pacific, financial institutions and their customers are operating in areas essential to biodiversity. Financial institutions can identify and manage the part of their business operating in biodiversity-rich areas to avoid legal, regulatory, reputational and market risks.⁵⁹ Their operations may overlap with areas rich in biodiversity, and they may need to assess how their assets or investments are impacting their biodiversity footprint.⁶⁰

S&P Global data shows that financial institutions in the APAC LargeMidCap index have 5.1% of assets that overlap with Key Biodiversity Areas (KBAs). KBAs are sites contributing significantly to the global persistence of biodiversity. KBAs are identified at the national, sub-national or regional level by local stakeholders based on standardized scientific criteria and thresholds. That compares to just 2.8% for S&P Global 1200 companies and 3.1% among S&P Global Broad Market Index companies. Six percent of all assets in the S&P Global APAC LargeMidCap index overlap with a KBA. That compares to a 2.4% overlap by S&P Global 1200 companies and 2.9% by S&P Global Broad Market Index companies.

⁵³ World Economic Forum. January 2020. 'Nature Risk Rising: Why the Crisis Engulfing Nature Matters for Business and the Economy.' https://www3.weforum.org/docs/WEF_New_Nature_Economy_Report_2020.pdf

⁵⁴ United Nations. May 6, 2019. 'UN Report: Nature's Dangerous Decline 'Unprecedented'; Species Extinction Rates 'Accelerating.''' <https://www.un.org/sustainabledevelopment/blog/2019/05/nature-decline-unprecedented-report/>

⁵⁵ S&P Global Sustainable1. March 18, 2024. 'Corporate support for nature-based solutions has room to grow.' <https://www.spglobal.com/esg/insights/featured/special-editorial/corporate-support-for-nature-based-solutions-has-room-to-grow>

⁵⁶ World Economic Forum. Sept. 29, 2021. 'How to address Asia Pacific's biodiversity crisis and encourage nature-positive growth.' <https://www.weforum.org/agenda/2021/09/how-to-address-asia-pacific-s-biodiversity-crisis-and-encourage-nature-positive-growth/>

⁵⁷ S&P Global Sustainable1. Dec. 15, 2022. 'Biodiversity is still a blind spot for most companies around the world.' <https://www.spglobal.com/esg/insights/biodiversity-is-still-a-blind-spot-for-most-companies-around-the-world>

⁵⁸ Food and Agriculture Organization. 2022. 'The State of the World's Forests 2022.' <https://www.fao.org/3/cb9360en/online/src/html/key-messages.html>

⁵⁹ Organisation for Economic Cooperation and Development. 2019. 'Biodiversity: Finance and the Economic and Business Case for Action.' Chapter 1.4: https://www.oecd.org/en/publications/biodiversity-finance-and-the-economic-and-business-case-for-action_a3147942-en/full-report/component-5.html#chapter-d1e1159

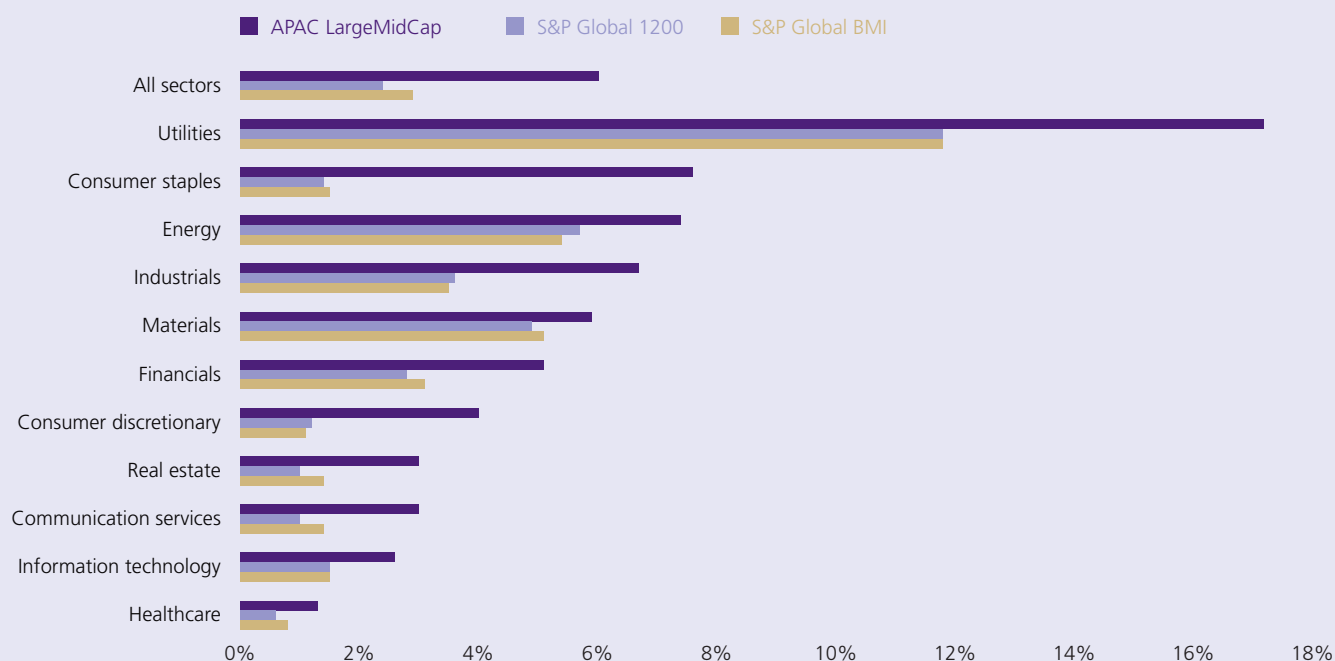
⁶⁰ Taskforce on Nature-related Financial Disclosures. March 2023. 'The TNFD Nature-related Risk and Opportunity Management and Disclosure Framework.' https://tnfd.global/wp-content/uploads/2023/07/23-23882-TNFD_v0.4_LEAP-Guidance-Annex-4.11_v4-2-1.pdf

FIGURE 9

Portfolio exposure

6% of all assets in the S&P Global APAC LargeMidCap index overlap with a Key Biodiversity Area

Percentage of assets held by companies in the S&P Global Asia-Pacific LargeMidCap, S&P Global 1200 and S&P Global BMI indices that overlap with Key Biodiversity Areas



Data as of August 2023.

Key Biodiversity Areas (KBAs) are sites deemed by the scientific community as contributing significantly to the global persistence of biodiversity. The KBA designation does not carry legal protection, but many KBAs overlap with protected areas such as national parks or wildlife reserves.

Source: S&P Global Sustainable1.

© 2024 S&P Global.

KBAs are identified by the scientific community based on biological criteria and thresholds, so the designation does not carry legal protections. However, governments have been known to use KBAs as reference points in establishing legally protected areas. Protected areas are geographically defined spaces managed through legal or other effective means to achieve long-term conservation of nature with associated ecosystem services and cultural values.

Protected areas include national parks, wilderness areas and nature reserves managed by local, state or national governments.⁶¹ A protected area can also be an area of land that is owned or managed by a private owner, NGO, for-profit organizations or Indigenous peoples.⁶² Financial institutions can influence the reduction of biodiversity risks in Asia-Pacific. They can play a key role in providing the financing needed to protect key biodiversity areas and ensuring that companies operate in areas that will not harm fragile ecosystems. This could represent a major opportunity for the industry. Financial institutions can create lending and investment products to support biodiversity and can collaborate with investors in reducing nature-related risks in portfolios. According to the World Economic Forum, US\$1.1 trillion of capital investment annually.⁶³ And financial institutions are well positioned to mobilize the financing needed to protect and nurture biodiversity.

The year 2024 could see major developments in terms of biodiversity. The UN's COP16 biodiversity conference took place in October, building on the decisions of COP15. And right after that, the annual UN climate change conference known as COP29 is due to be held in Azerbaijan. The global focus on nature, biodiversity and how relates to climate is taking center stage at these events.

⁶¹ International Union for Conservation of Nature. 2008. 'Guidelines for Applying Protected Area Management Categories.' <https://portals.iucn.org/library/sites/library/files/documents/pag-021.pdf>
⁶² S&P Global Sustainable1. May 10, 2023. 'How the world's largest companies depend on nature and biodiversity.' <https://www.spglobal.com/esg/insights/featured/special-editorial/how-the-world-s-largest-companies-depend-on-nature-and-biodiversity>
⁶³ World Economic Forum. Sept. 29, 2021. 'How to address Asia Pacific's biodiversity crisis and encourage nature-positive growth.' <https://www.weforum.org/agenda/2021/09/how-to-address-asia-pacific-s-biodiversity-crisis-and-encourage-nature-positive-growth/>

6. Case Study: Bank of China (Hong Kong)



Bank of China (Hong Kong) is a cornerstone member of the Alliance for Green Commercial Banks. The bank is present in nine countries in Southeast Asia and is managing various challenges related to climate change across the region, including regulatory frameworks, environmental conditions, economic development, and stakeholder awareness levels. The bank draws upon its risk management experience in Hong Kong to develop a strategy that will enable the transition to a low-carbon and climate-resilient economy throughout Southeast Asia.

Dr. Yu DONG, Vice President of Sustainability Strategy in the Economics & Strategic Planning Department at BOCHK, laid out the bank's strategy for climate risks and opportunities in response to questions posed by S&P Global Sustainable1. The following has been edited for length and clarity.

Key takeaways from the conversation

- BOCHK set a 2030 carbon neutrality goal as it seeks to incorporate climate change and the reduction of environmental impacts into its strategic objectives. The lender is also seeking to align its climate strategy with China's climate goals of peaking carbon emissions by 2030 and becoming carbon neutral by 2060, as well as the Hong Kong SAR government's goal of becoming carbon neutral by 2050.
- The bank is implementing business strategies to support an orderly transition for clients in carbon-intensive industries while also considering the need for energy stability and security.
- The bank is actively seeking to direct capital flows toward areas in climate change mitigation and adaptation. It has also taken measures to establish a governance structure that will oversee sustainability risks throughout the bank's portfolio.
- BOCHK works with regulators by taking part in climate stress tests and enhancing the bank's risk management policies and industry guidelines in line with regulatory policy requirements.
- BOCHK sees opportunities in biodiversity and nature through new green financial products and services such as loans or projects that support biodiversity and environmental protection.

S&P Global Sustainable1: In what ways is climate change material to BOCHK's business strategy?

Addressing climate change is indeed a material issue for BOCHK, as evidenced by our comprehensive approach to integrating climate change and sustainability into strategy planning. BOCHK has been a signatory to the Taskforce on Climate-related Financial Disclosures (TCFD) since 2021 and has progressively disclosed climate-related information based on TCFD recommendations. Our first standalone TCFD Report was released in 2023.

We have also been strengthening our asset portfolio's resilience against climate change and formulated business strategies for carbon-intensive industries to support long-term sustainability plans. We have expanded control measures and formulated midterm strategies towards sensitive sectors since October 2023 to support an orderly transition for clients in carbon-intensive industries, while considering the need for securing stable energy supplies. We are also actively seeking to direct capital flows toward climate change mitigation and adaptation, and to support clients in their low-carbon transition.

What strategies is BOCHK implementing to respond to climate-related risks?

We have established a three-tier sustainability governance structure, consisting of the board, a sustainability committee, and a sustainability executive committee to ensure oversight and implementation of sustainability initiatives across the organization. We have embedded climate risk into our five-year strategic plan and annual work plan and integrated climate change considerations into our five-year sustainability plan. We are also enhancing climate-related disclosures through regular reporting to the senior management and the board on the risk profile of the climate risk-sensitive credit portfolio.

We are working on establishing our own taxonomy and sector-specific policies to identify, assess, and manage climate challenges to align our risk management processes with the challenges climate change poses for specific sectors.

How important is a net-zero target to achieving BOCHK's strategic goals?

We have set a 2030 carbon neutrality goal for our own operations as we seek to incorporate the effects of climate change and the need to reduce environmental impacts into strategic objectives. This goal not only supports the bank's strategic objectives but also contributes to broader societal and environmental goals. We are seeking to align our climate strategy with China's climate goals of peaking carbon emissions by 2030 and becoming carbon neutral by 2060, as well as the Hong Kong SAR government's goal of becoming carbon neutral by 2050.

How is BOCHK addressing financed emissions?

We are measuring financed emissions by using a methodology created through a partnership of financial institutions, the Partnership for Carbon Accounting Financials (PCAF). BOCHK has also developed its own models based on companies' publicly disclosed GHG emissions data, GHG emissions estimated through the companies' financial data, and industry-average data to measure financial emissions. We have also carried out a pilot project using PCAF to measure financed emissions across our corporate loans and bond exposures to key industries.

How does BOCHK work with financial regulators in addressing climate risks?

We actively collaborate with financial regulators to address climate challenges by participating in climate risk stress tests. Climate stress tests by regulators provide a framework for assessing the resilience of the bank's strategy to different climate-related scenarios. These tests also help the bank optimize its scenario analysis and stress testing methodologies. We also work with regulators on enhancing our risk management policies and industry guidelines in line with regulatory policy requirements. We maintain close communication with regulators on new initiatives, such as taxonomy setting and sensitive sector policy, to ensure alignment with regulatory expectations and best practices in addressing climate change.

What roles do banking alliances play in helping you manage climate-related risks and opportunities?

We fully understand that promoting sustainability means collaborating with all sectors of the community. By supporting and participating in a wide range of projects with different partners, we are working together to put environmental philosophy into practice and achieve carbon neutrality. BOCHK is a cornerstone member of the Alliance for Green Commercial Banks. The Alliance plays a role in helping BOCHK manage climate-related challenges and opportunities by providing a platform for collaboration, sharing best practices, and promoting the development of green finance.

What business opportunities is BOCHK seeing with the energy transition?

BOCHK sees business opportunities in supporting customers' transitions to green and low-carbon operations and developing green and sustainable finance products. We have developed green finance products like the BOCHK Greater Bay Area (GBA) Climate Transition ETF, which is considered Hong Kong's first ETF tracking an ESG index with investments that help investors capture the economic growth opportunities from the climate transition.

BOCHK has developed several new lending products, including green mortgages, green personal loans, green deposits, green insurance and green retail bonds, among others. These products are part of our commitment to promoting sustainable finance and supporting the low-carbon transition in the GBA.

To what extent are you identifying biodiversity risks in your lending and investment portfolios?

We are actively identifying biodiversity risks in our lending and investment portfolios. We have a comprehensive approach to assessing ESG risks, including biodiversity, through the ESG questionnaire used when applying for loans. This questionnaire covers a wide range of factors, including the impacts on biodiversity and the natural ecosystem.

Additionally, we have formulated and implemented a climate risk stress test enhancement plan, which includes expanding the assessment scope and optimizing the content of the questionnaire to enhance the climate, environmental, and social risk assessment mechanism.

What opportunities do you see in creating a nature-positive economy? How much will it lead to new products or new ventures for you?

We see opportunities in creating a nature-positive economy by guiding and promoting the green transformation of customers in different industries. This could lead to new lending products or ventures, such as innovative green financial products and services that support biodiversity and environmental protection.

How is the TNFD helping you address risks and opportunities related to nature?

The TNFD helps financial institutions like BOCHK prepare in advance for future requirements related to biodiversity and nature-positive business. We can therefore better prepare for risks and opportunities related to nature by providing guidelines for disclosure and assessment of nature-related financial risks.

7. Conclusion

Financial institutions in Asia-Pacific have a key role to play in financing the transition to low-carbon economies. They can help fund infrastructure projects at the scale needed to have an impact on the region's economy. Asia-Pacific stands to be highly impacted by climate change given that it accounts for more than half the world's GHG emissions, 60% of the world's population and more than 40% of global GDP.^{64 65}

Addressing climate change risks can provide business opportunities for financial institutions. Green finance has grown significantly in recent years and appears poised to continue expanding. For example, green bonds — debt that finances environmentally friendly projects such as wind farms or solar power — have grown rapidly over the last 10 years, from virtually nothing in 2012 to US\$492.3 billion in 2023.⁶⁶ The Asia-Pacific region was the second-largest issuer on a regional basis, with US\$174.2 billion of green bonds for the full year, helped by China tapping the green bond market to achieve its carbon neutral goals.⁶⁷

Leading financial institutions in the region say they are making net-zero goals or carbon neutrality a strategic commitment and are seeking opportunities in renewable energy, low carbon infrastructure, clean technologies, and energy efficient projects within the region. They are implementing decarbonization strategies for heavy-emitting sectors and taking measures to end financing of new fossil fuel projects. They are also embedding sustainability into their strategies by incorporating sustainability initiatives into their governance and management processes. They are also seeking to adapt their business models to new sustainability-related regulatory requirements.

Because of the vast differences between markets within Asia-Pacific, lenders are tailoring their strategies for managing climate risks to particular countries' needs. Membership in local alliances like the Alliance for Green Commercial Banks is one tool that encourages collaboration and sharing of information and best practices among financial institutions and promotes the development of green finance.

As economies in Asia-Pacific grow, so will demand for energy, and financial institutions can play a part in ensuring that energy infrastructure needs are met through renewables like solar and wind power. By collaborating with clients on their transition paths, they can adapt their portfolios to the ways climate change is altering global markets and reduce their own carbon footprint. And importantly, they can also take stock of their dependencies and impacts on nature to contribute to efforts to preserve biodiversity and the ecosystem services that underpin the global economy.

⁶⁴ Bank of International Settlements. Oct. 5, 2022. 'Ravi Menon: Blended finance for the net-zero transition.' <https://www.bis.org/review/r221005b.htm>

⁶⁵ Asian Development Bank. June 2, 2017. 'Gross Domestic Product (GDP): 12 Things to Know.' <https://www.adb.org/news/features/gross-domestic-product-gdp-12-things-know>

⁶⁶ S&P Global Market Intelligence. Feb. 5, 2024. 'Global green bond sales to get boost in 2024 as interest rates may fall.' <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/global-green-bond-sales-to-get-boost-in-2024-as-interest-rates-may-fall-80251156>

⁶⁷ Climate Bonds Initiative. 2023. Green Bonds Market Report (10th ed.). <https://www.climatebonds.net/resources/reports>.

Glossary

Term, acronym or abbreviation	Meaning
Net-zero commitment	<p>The S&P Global Corporate Sustainability Assessment (CSA) defines a credible corporate net-zero commitment as one that includes commitments to:</p> <ul style="list-style-type: none"> • Reducing scope 1, 2, and 3 emissions to zero or to a level that is consistent with reaching net-zero emissions at the global or sector level in eligible 1.5°C-aligned pathways. • Neutralizing any remaining emissions that could not be reduced at the net-zero target year and any GHG emissions released into the atmosphere thereafter. <p>Source: https://portal.s1.spglobal.com/survey/documents/CSA_Handbook.pdf</p>
Scenario analysis	<p>Process for identifying and assessing a potential range of outcomes of future events under conditions of uncertainty. In the case of climate change, for example, scenarios allow an organization to explore and develop an understanding of how the physical and transition risks of climate change may impact its businesses, strategies, and financial performance over time. Climate-related scenario analysis should consider climate risks that are material to companies' operations and value chain.</p> <p>Source: (TCFD (2017), Recommendations of the Task Force on Climate-related Financial Disclosures)</p>
Qualitative scenario analysis	<p>Explores relationships and trends for which little or no numerical data is available. This is generally a high-level, narrative approach to scenario analysis, suitable for organizations that are familiarizing themselves with the process. For example, relying on industry trends and applying them to a specific organization or business activity, or undertaking quantitative research into a specific trend.</p> <p>Source: https://portal.s1.spglobal.com/survey/documents/CSA_Handbook.pdf</p>
Quantitative scenario analysis	<p>Assesses measurable trends and relationships using quantitative models, data sets and other analytical techniques to illustrate potential pathways or outcomes. This is a more detailed approach to conducting scenario analysis. External, third-party scenarios or data sets can be used, or companies can develop in-house modeling capabilities considering specific assumptions or parameters.</p> <p>Source: https://portal.s1.spglobal.com/survey/documents/CSA_Handbook.pdf</p>
Transition risks	<p>Transitioning to a lower-carbon economy may entail extensive policy, legal, technology, and market changes to address mitigation and adaptation requirements related to climate change. Depending on the nature, speed, and focus of these changes, transition risks may pose varying levels of financial and reputational risk to organizations. Transition risks can be divided into four categories: policy and regulatory risks, technological risks, market risks, and reputational risks.</p> <p>Source: https://portal.s1.spglobal.com/survey/documents/CSA_Handbook.pdf</p>

Term, acronym or abbreviation	Meaning
Physical risks	<p>Physical risks resulting from climate change can be event driven (acute) or longer-term shifts (chronic) in climate patterns. Physical risks may have financial implications for organizations, such as direct damage to assets and indirect impacts from supply chain disruption. Organizations' financial performance may also be affected by changes in water availability, sourcing, and quality; food security; and extreme temperature changes affecting organizations' premises, operations, supply chain, transport needs, and employee safety.</p> <p>Source: https://portal.s1.spglobal.com/survey/documents/CSA_Handbook.pdf</p>
Natural capital	<p>The stock of renewable and non-renewable natural resources (e.g., plants, animals, air, water, soils, minerals) that combine to yield a flow of benefits to people (as referenced in TNFD Beta framework).</p> <p>Source: nature-risk-profile-methodology.pdf (spglobal.com)</p>
Biodiversity	<p>The variability among living organisms from all sources, including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems</p> <p>Source: Convention on Biological Diversity, 1992</p>
Nature-related risks	<p>The TNFD defines nature-related risks as the potential threats posed to an organization linked to its and other organizations' dependencies on nature and nature impacts. These can derive from physical, transition and systemic risks. In addition to shorter-term financial risks (deemed material today), the TNFD's definition of nature-related risks includes longer-term risks presented by nature-related dependencies and nature impacts.</p> <p>Source: The TNFD Nature-related Risk & Opportunity Management and Disclosure Framework Taskforce on Nature-Related Financial Disclosures</p>
Nature-positive economy	<p>A nature-positive economy is one that underpins the importance of nature in business and financial decisions. It ensures that nature is not harmed in any way and aims to restore nature loss.</p> <p>Source: World Economic Forum, What is 'nature positive' and why is it the key to our future?</p>
Decarbonization	<p>Decarbonization is the process of reducing and removing emissions from the atmosphere and turning to renewable sources of energy instead of fossil fuels to achieve a rapid reduction in carbon emissions.</p> <p>Source: S&P Global, What is the Energy Transition?</p>

Copyright © 2024, S&P Global (and its affiliates as applicable) and Bank of China (Hong Kong) (and its affiliates as applicable). All rights reserved.

This content (including any information, data, analyses, opinions, ratings, scores, and other statements) ("Content") has been prepared by and is property of S&P Global Inc. and/or its affiliates (collectively, "S&P Global") and Bank of China (Hong Kong) and/or its affiliates (collectively "BOCHK").

S&P Global is not an affiliate or agent of BOCHK and does not guarantee, warrant, or endorse the products or services of BOCHK or any firm, organization, or person.

This Content has been prepared solely for information purposes only and S&P Global hereby disclaims all liability for any claims, losses, or damages in connection with use or application of this Content.

This Content may not be copied, modified, reverse engineered, reproduced, used as part of generative artificial intelligence or for training any artificial intelligence models or distributed in any form by any means without the prior written permission of S&P Global and BOCHK.

You acquire absolutely no rights or licenses in or to this Content and any related text, graphics, photographs, trademarks, logos, sounds, music, audio, video, artwork, computer code, information, data and material therein, other than the limited right to utilize this Content for your own personal, internal, non-commercial purposes or as further provided herein.

See additional S&P Global disclaimers at <https://www.spglobal.com/en/terms-of-use>