



2024 Climate Risk Stress Testing Exercise

Preparing for Bank Negara Malaysia's mandate to
enhance the resilience of the financial sector against
climate-related risks

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KPMG in Malaysia



Can you pass the stress test?

Preparing for the 2024 Climate Risk Stress Testing (CRST) exercise

Climate change is rapidly emerging as a threat to the stability of our financial systems, emphasizing a growing need to assess, disclose and respond to climate risks.

From rising sea levels to extreme weather changes, what was once considered the slow onset effects of climate change is now becoming increasingly potent, affecting organizations and communities alike. In Malaysia, extreme weather events have intensified over the past few years.

According a report by the World Bank and Bank Negara Malaysia (BNM), floods have accounted for 85 percent of all natural disasters since the year 2000, impacting livelihoods, potentially leading to displacement within communities and affecting the national economy. The material impacts of climate change across financial institutions are evident, with an estimated 44 percent of potential losses in the overall banking services sector.¹

Recognizing this concern, in February 2024, BNM published the '2024 Climate Risk Stress Testing Exercise – Methodology Paper' outlining the requirements of the first industry-wide CRST exercise, which is mandated for all financial institutions (FIs) in Malaysia except for licensed digital banks, licensed Islamic digital banks, and licensed investment banks where participation is optional.

By subjecting FIs to testing various climate scenarios, the CRST exercise seeks to identify vulnerabilities, enhance risk management practices and foster resilience within the financial sector.

BNM expects the exercise to be a recurring practice for FIs in Malaysia, thereby enabling them to gain vital hands-on experience in measuring the impact of climate-related risks on their assets, insurance/takaful liabilities and business operations.

1. [Managing Flood Risks: Leveraging Finance for Business Resilience in Malaysia](#), World Bank and Bank Negara Malaysia, March 2024

Read also:

2024 Climate Risk Stress Testing Exercise – Methodology Paper
Bank Negara Malaysia, 29 February 2024

[Access the methodology paper here](#)

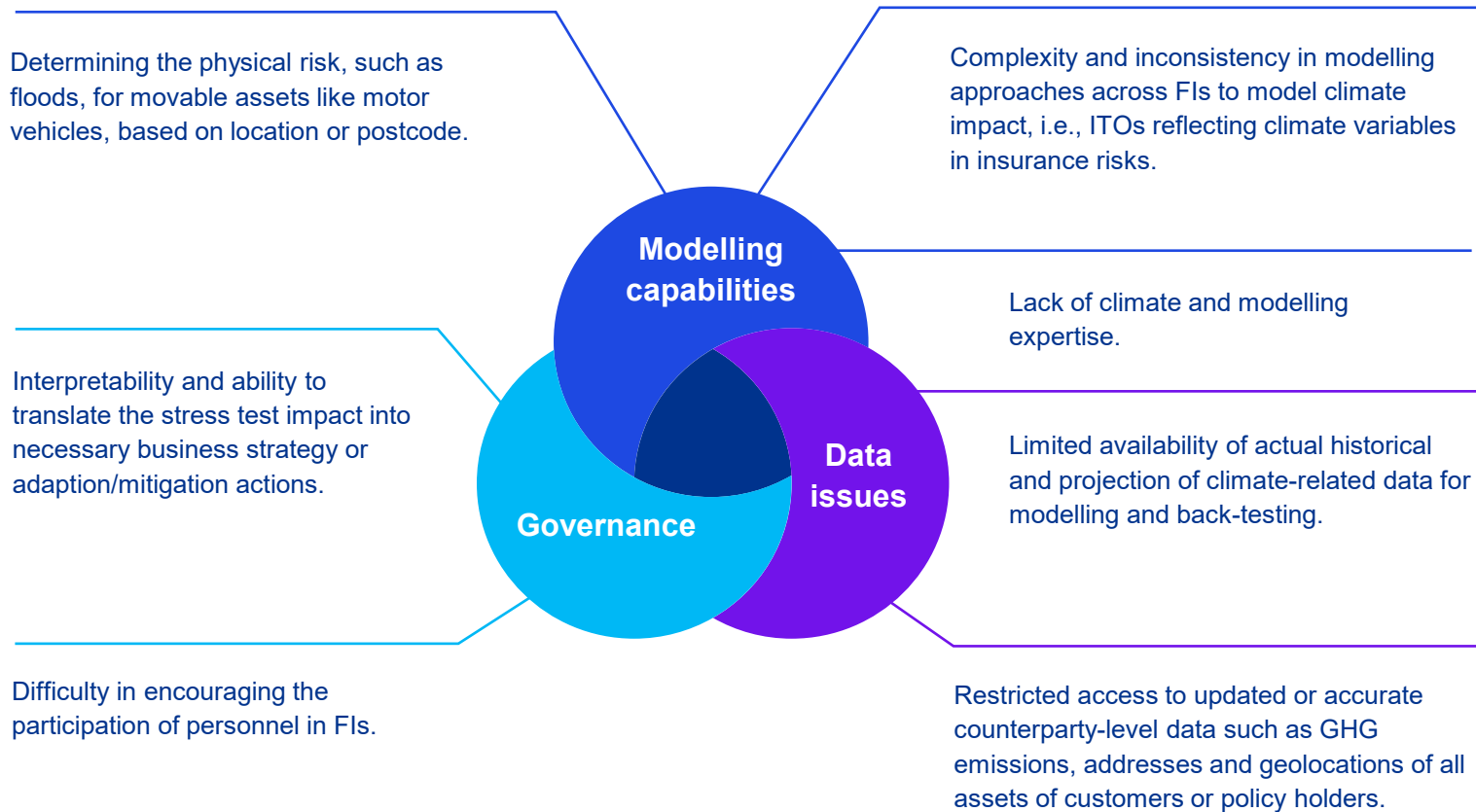
Policy Document on Climate Risk Management and Scenario Analysis

Bank Negara Malaysia, 2 December 2022

[Access the policy document here](#)

Common challenges

Common compliance challenges faced by FIs in meeting Bank Negara Malaysia's mandate



Recommended course of action

KPMG recommends a holistic approach to establish a comprehensive Climate Risk Management Framework.

For FIs to remain at the top of their game and overcome pivotal challenges within the financial landscape, they need to prepare ahead, apply astute foresight and incorporate innovative solutions.



Collection of climate-related data

FIs can make informed decisions based on climate-related and financial data aggregated from their ecosystem, customers and policyholders. This includes assessing risks such as credit, market, and real estate, as well as addressing potential data gaps.



Explore feasible ways to model climate impact

There is no single and straightforward model. FIs are required to utilize projections and scenario analysis to understand complex climate systems, especially when feasible scenarios, such as mass migration in the future, need to be considered.



Review risk management policies and procedures

As climate risks across the financial landscape continue to expand, FIs need to enhance and update their policy procedures, including the assessment of their risk appetite statements (RAS).



Perform preliminary stress tests

Conducting stress tests can help organizations assess their capabilities, such as determining whether their balance sheet is robust enough to withstand a financial crisis, and refine their models as needed before the submission.



Invest in data infrastructure

Through robust data infrastructure, financial institutions can gain insights into consumer trends, consider the risk metrics associated with their investments and portfolios, and make sound financial decision-making.



Collaboration between stakeholders

To ensure alignment with the overall strategy, collaborative actions from various organizations and stakeholders are necessary. Through knowledge-sharing sessions and leveraging on insights from regulators like JC3's Climate Data Catalogue, FIs can collectively build climate resilience with visibility.

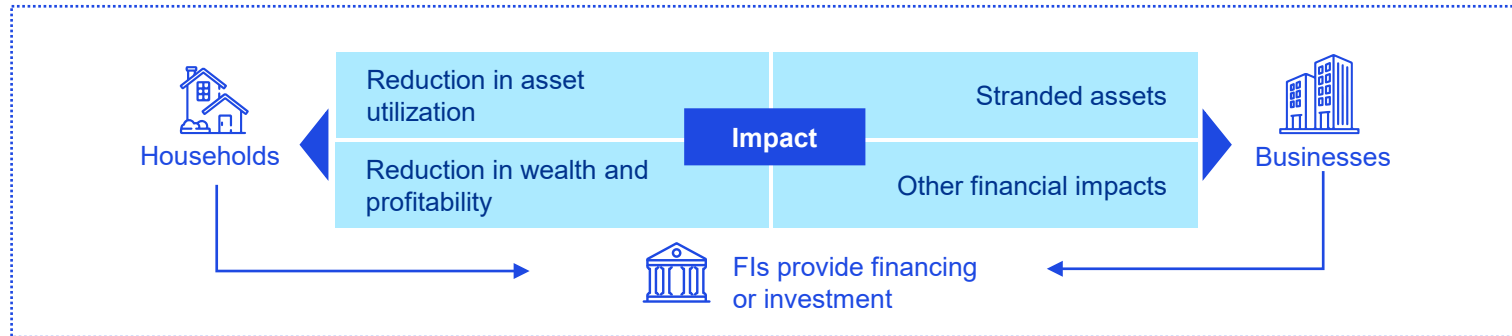


Build climate risk awareness

Organizations can conduct top-down training on climate-related topics, implement upskill programs, and foster open communication. These efforts can help cultivate a risk-aware culture without fostering a false sense of security.

Navigating the 2024 CRST exercise




Climate-related risks have profound implications on the financial system, affecting stability, asset values and investment strategies. Failure to recognize and effectively manage these risks may result in significant financial consequences.



BNM's climate risk stress test mandate: To strengthen the resilience of the financial sector

Recognizing the severe impact of climate-related risks on the financial system, BNM has mandated the CRST exercise and established a standardized approach to stress testing.

Objectives

-  Gain an understanding of how financial institutions (FIs) may be affected by climate-related risks
-  Explore innovative approaches to enhance the identification and measurement of FIs' exposure to climate risk
-  Identify current gaps and potential solutions

Submission deadline

- 30 Jun 2025 — **Submission by Cohort 1**
Domestic banking groups, selected incorporated foreign banks (LIFBs) and insurers and takaful operators (ITOs)
- 31 Dec 2025 — **Submission by Cohort 2**
Other banks, development financial institutions (DFIs) and ITOs



Navigating the 2024 CRST exercise

2024 CRST scenarios and specifications (long and short term)

FIs are required to conduct the 2024 CRST exercise based on the three long term climate scenarios from the NGFS Phase III integrated assessment model outputs released in September 2022. Details of the scenarios are as follows:

Long term climate scenarios			
NGFS Scenarios Framework	Orderly – Net Zero 2050 (NZ 2050)	Disorderly – Divergent Net Zero 2050 (DNZ 2050)	Hot House World – Nationally Determined Contributions (NDCs)
<p>The diagram plots transition risks (High/Low) against physical risks (Low/High). Scenarios include: DNZ 2050 (Disorderly, High transition, Low physical), Delayed transition (High transition, Low physical), NZ 2050 (Orderly, Low transition, Low physical), Below 2°C (Orderly, Low transition, Low physical), NDCs (High transition, High physical), and Current policies (High transition, High physical, labeled 'Hot house world'). A 'Too little, too late' region is also indicated.</p>	<p>Stringent climate policies applied immediately across all economic sectors</p>	<ul style="list-style-type: none"> Climate policies are stringent in selected economic sectors Technology advancements in carbon dioxide removal (CDR) and renewable energy are relatively lower compared to NZ 2050 	<p>Implemented and pledged policy measures are in place but remain inadequate to facilitate an orderly transition</p>
Global warming	1.4°C in 2050	1.4°C by 2050	2.6°C by 2050
Physical risk	Low	Low	High
Transition risk	High	Moderate to High	Low

The short term acute physical risk scenario is designed to account for the 1-in-200 years flood event, which is significantly more severe than past flood events in Malaysia. The specifications are detailed below:

Short term acute physical risk scenario	
Pathway	RCP 8.5, year 2050
Return period	1-in-200 years flood
Date of flood (assumption)	1 January 2024

2024 CRST exercise: Time horizon



*Note: FIs must consider the time horizon for long-term climate scenarios, spanning a 27-year period from December 2023 (as the starting point) to the year 2050.

Static balance sheet assumption

FIs are required to utilize a static balance sheet assumption for quantitative assessment, with the following assumptions in place:

- To assume that the starting balance sheet for each year of the stress test horizon mirrors the balance sheet as of 31 December 2023 (the initial balance sheet position)
- To assume that the remaining maturity of FIs' assets remains unchanged throughout the CRST horizon

Illustration of assessment

Year	Shock	Remaining Value	Estimated Loss
End-2023	-	RM 10,000	-
End-2024	Apply 10% shock	RM 9,000	RM 1,000
End-2025	Apply 15% shock	RM 8,500	RM 1,500
End-2026	Apply 0% shock	RM 10,000	RM 0

Assumptions:

- A FI starts with an exposure of RM10,000 at the end of 2023
- Shock parameters for time +1 (end of 2024), time +2 (end of 2025) and time +3 (end of 2026) are 10%, 15% and 0%, respectively
- Estimated losses are calculated based on the exposure as of the end of 2023 for each reporting period

Meeting the 2024 CRST exercise requirements

Long-term climate scenarios

Financial risk coverage – Key focus areas

Type of FIs	Quantitative assessment	Qualitative assessment
Banks	<ul style="list-style-type: none">• Credit risk	<ul style="list-style-type: none">• Market risk• Liquidity risk• Operational risk
ITOs	<ul style="list-style-type: none">• Market risk• Insurance and Takaful Risk	<ul style="list-style-type: none">• Credit risk• Liquidity risk• Operational risk

Quantitative assessment of insurance and takaful risk – ITOs

Conducted at the insurance funds or takaful sub-funds level (for life and family ITOs) and at the respective lines of business (for general ITOs).

Quantitative assessment of credit risk – Banks

- Primarily focus on the bank's exposure to **businesses** and **households**.
- Business credit risk to be assessed at the sectoral level and the counterparty level.
- Counterparty-level analysis: Assess at least the top 10 entities by exposure size in each of the BNM-identified economic sectors.
- Insurance/takaful coverage may be considered for assessed loans, based on the coverage already in place as of 31 December 2023.

Quantitative assessment of market risk – ITOs

To measure the impact from climate-related risks on their investment portfolio, taking the following aspects into consideration:

- Potential changes in the ratings and valuations of assets.
- Examination of correlations between assets.



Meeting the 2024 CRST exercise requirements

Short-term acute physical risk scenario

Quantitative assessment

- To consider riverine flooding and flash floods.
- To include key economic areas such as Selangor, Penang, Johor and Kuala Lumpur, as well as other areas where FIs have large exposures.
- To conduct assessments at the postcode level.
- Insurance/takaful coverage may be considered for assessed loans, based on the coverage already in force as of 31 December 2023 (relevant only to banks).

Portfolio coverage

Type of FIs	Required		Encouraged	
	Businesses	Households	Businesses	Households
Banks	<ul style="list-style-type: none"> • All business lending, comprising of loans, sukuk and bonds • Construction and bridging loans 	<ul style="list-style-type: none"> • Loans for the purchase of residential and non-residential properties 	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • Loans for the purchase of motor vehicles • Other types of loans that are collateralized by properties
ITOs	<ul style="list-style-type: none"> • Respective life insurance funds, family takaful sub-funds and general ITOs' lines of business (for long-term scenarios) • Property- and motor vehicle-related flood insurance policies/takaful certificates (for short-term scenarios) • Reinsurance – Claims payable within the reporting year, accounting for gross and net of reinsurance/retakaful. ITOs should also consider losses from potential defaults of re-ITOs 		<ul style="list-style-type: none"> • Contractors' all risk and engineering insurance policies/takaful certificates (applicable for short-term scenarios) 	

Leverage on KPMG's methodology

What does it mean to be climate resilient? For financial institutions, it involves navigating the challenges and opportunities presented by climate change while maintaining financial health and contributing to a sustainable and resilient economy.

01

Each financial institution has its unique characteristics that necessitates a tailored approach to CRST compliance.

KPMG's professionals are experienced to assist not only in developing stress test methodologies and frameworks but also in developing resources and integrating existing stress test tools to incorporate climate risk parameters effectively.

02

Our team of ESG specialists possess the know-how and expertise in scenario analysis to guide financial institutions to leverage the CRST exercise to assess both climate risks and opportunities.

03

When it comes to leveraging CRST findings, data and business information become invaluable assets.

Equipped with knowledge of industry-wide practices, our professionals are prepared to help FIs to go beyond meeting Bank Negara Malaysia's compliance requirements to build a resilient business anchored on data-driven decision-making.

Contact us

Reach out to our professionals to discover how you can adopt an effective climate risk framework that is tailored to your organization, helping you navigate the dynamic landscape with confidence, wherever you are in your climate journey.



Valli Suppramaniam

Executive Director, Financial
Risk Management
KPMG in Malaysia

E: vallisuppramaniam@kpmg.com.my



Phang Oy Cheng

Partner, Head of Sustainability
Advisory
KPMG in Malaysia

E: oychengphang@kpmg.com.my



Ahmad Nasri Abdul Wahab

Partner, Financial Services in
Advisory
KPMG in Malaysia

E: aabdulwahab@kpmg.com.my



Kevin Foo

Partner, Head of Financial Services
KPMG in Malaysia

E: scfoo@kpmg.com.my



Mok Wan Kong

Partner, Head of Insurance
KPMG in Malaysia

E: wmok@kpmg.com.my



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