



Climate Change Strategy [S2-2a]

Bank Mandiri has committed to addressing climate challenges as part of its support for the Paris Agreement to achieve Net Zero Emission (NZE) and support the Enhanced Nationally Determined Contribution (ENDC) established by the Indonesian Government to achieve a low-carbon economy and climate resilience. By the Paris Agreement's objective of preventing global temperature rise of more than 1.5°C, Bank Mandiri aspires to achieve Net Zero Emission in operations by 2030. Bank Mandiri's climate change strategy includes three primary approaches: reducing greenhouse gas emissions from its operational activities, providing financing to support customers in the transition to NZE, and encouraging activities that can absorb carbon, such as forest/land restoration or conservation.

Within its climate strategy framework, Bank Mandiri has developed a comprehensive approach that encompasses all layers of the bank to achieve net zero ambition, as well as managing and conducting climate-related risk analysis. A key emphasis is placed on collaborating with customers to identify optimal solutions and offer tailored access to capital, aligning with their specific requirements. The bank's detailed climate strategy outlines specific measures to assist customers in transitioning to a net zero.

In response to these challenges, Bank Mandiri also has a Business Continuity Management Group. Enforcing Business Continuity Management in adherence to global standards outlined in ISO 22301:2019. This framework is designed to establish a resilient organization to potential internal and external threats by ensuring the preparedness of BETH3 components (Building, Equipment, Technology, Human Resource & 3rd Parties).

To ensure resilience in its operations and business, Bank Mandiri's BCM actively engages in collaborations with external parties to mitigate the risks associated with climate change impacts, such as the Agency for Meteorological, Climatological, and Geophysics (BMKG). These collaborative efforts involve obtaining rapid climate analysis information and integrating systems between Bank Mandiri and BMKG to enable early disaster notifications directly to the Crisis Management Team members when disasters occur. Additionally, Bank Mandiri has established several alternative operational work unit locations and Data Centers to mitigate the risk of customer transaction disruptions and data loss caused by climate change.

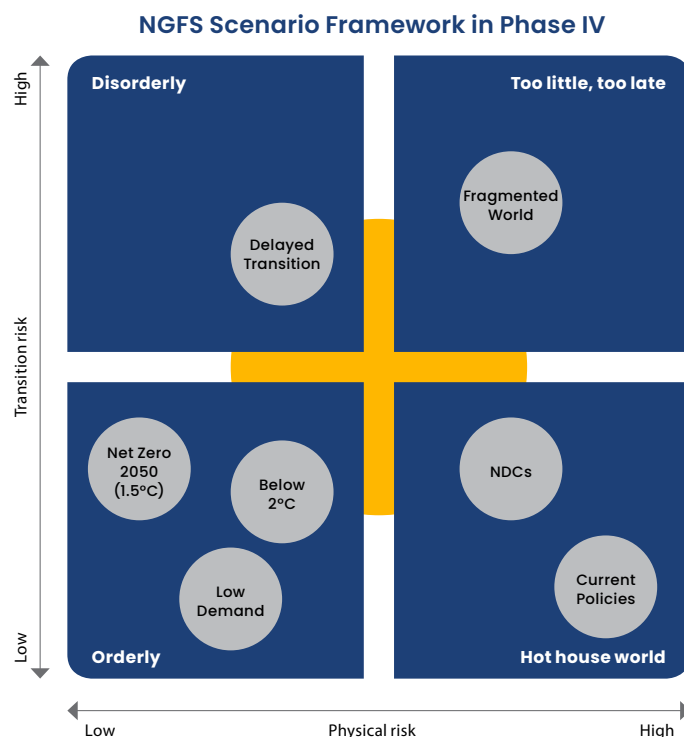
Climate Risk Stress Test (CRST) [S2-2c]

As a member of the Task Force on Climate Related Financial Risk, Bank Mandiri participated in the initial phase of the Bottom-up Climate Risk Stress Test (CRST) alongside the Financial Services Authority (OJK). This initial phase served as a collaborative learning exercise between OJK and the banking sector, aimed at building capacity for assessing the impact of climate change risks.

Bank Mandiri refers to the Network for Greening the Financial System (NGFS) climate scenarios, which categorizes the potential impacts of climate change into three categories:

"Orderly," "Disorderly," and "Hot House World." Each scenario presents a unique roadmap and variables crucial for achieving the 2050 climate goals, including changes in how climate affects the economy. These scenarios explore different assumptions about the escalation of climate policy, emission levels, and temperature increase.

During the initial phase of the Bottom-Up CRST, Bank Mandiri employed three NGFS scenarios: Net Zero 2050, Delayed Transition, and Current Policies.



A comprehensive explanation of the scenarios utilized in the initial phase of Bottom Up CRST can be seen in the following table:

Climate Risk Type	Scenario	Financial Impact
Transition Risk	Orderly – Net Zero 2050 The aim is to achieve global net-zero CO ₂ emissions by 2050 and limit global warming to 1.5°C through strict and innovative policies. Several countries such as the US, EU, UK, and Japan have achieved net-zero emissions for all greenhouse gasses.	
	Disorderly- Delayed Transition Assuming that annual emissions will not decrease until 2030, stricter policies are then implemented to limit global warming to 2°C and restrict CO ₂ emissions.	Low - Medium
	Hot House World– Current Policies Assuming the continuation of current policies without implementing any new ones, the impact on physical risks will increase.	

Climate-Related Risk and Opportunities [S2-3a], [S2-2b]

Type of Risk	Risk Triggers	Likelihood of Risk Occurrence	Description	Risk Response Strategies
TRANSITION RISK				
POLICY AND LAW				
Compliance	Enforcement of policies and regulations in Indonesia concerning climate-related risks.	Likely	The risk arising from the presence of Law No. 16 of 2016 on the Ratification of the Paris Agreement and Presidential Regulation 98/2021 on the Economic Value of Carbon (NEK) to Achieve Nationally Determined Contributions (NDC).	Bank Mandiri has developed a Sustainable Financial Action Plan (SFAP) 2024-2028 to implement sustainable financial targets and has several programs aimed at supporting the government in achieving Net Zero Emissions by 2060 or ahead of time.
			The risk arising from the presence of laws on climate change, such as Financial Services Authority Regulation (POJK) No.51/POJK.03/2017 on the Implementation of Sustainable Finance and POJK 60/POJK.04/2017 on the Issuance and Requirements of Green Bonds.	Bank Mandiri adheres to the relevant regulations in implementing Sustainable Finance, such as POJK 51/POJK.03/2017, POJK 60/POJK.04/2017, as well as regulations applicable to debtors, including guidelines for prospective debtors.
				In formulating the credit growth strategy, Bank Mandiri utilizes the Loan Portfolio Guideline (LPG) comprising Industry Classification (IC), Industry Limit (IL), Industry Acceptance Criteria (IAC), and sector-specific credit policies that support the implementation of Sustainable Finance. In its formulation, the Loan Portfolio Guideline (LPG) consistently prioritizes ESG principles, including climate change risk. In one component of the LPG, the Industry Acceptance Criteria (IAC) includes ESG aspects that require potential debtors from certain sectors to possess standard documentation related to ESG aspects that must be integrated into their business operations, such as Transition Plans, Climate Change Mitigation Actions, and the submission of a Sustainability Report.
Law	The existence of legal responsibility as part of the implementation of climate change-related policies.	Likely	The legal risk related to the reduction of national emissions under Law No. 16 of 2016 on the Ratification of the Paris Agreement.	Bank Mandiri continues to enhance the knowledge of all employees, customers, vendors, and stakeholders through the implementation of training/workshops/FGDs related to legal risk awareness, emission reduction based on e-NDC documents, and other policies related to climate change.
Credit	The decline in a debtor's financial condition impacts their ability to fulfill their obligations.	Likely	The risks arising from the impact of climate change have the potential to adversely affect the debtor's business and create credit risks for the bank.	In the credit granting process, Bank Mandiri consistently upholds the principle of prudence by integrating Environmental, Social, and Governance (ESG) aspects into its risk management policies, from the pre-screening stage and credit analysis to post-credit monitoring processes. Throughout its business operations, Bank Mandiri identifies and evaluates potential environmental and social impacts through Environment & Social Due Diligence, taking into account the significance of priority sectors and adhering to relevant regulations and standards.
				Bank Mandiri has also established sectoral policies following the Environment, Social, and Governance (ESG) aspects across 12 priority sectors, including Palm Oil, Energy and Water, FMCG, Mining (Metals and Coal), Construction, Pulp & Paper, Telecommunications, Transportation, Other Transport Industries (Shipbuilding), Pharmaceuticals and Health Services, as well as Oil and Gas.

Type of Risk	Risk Triggers	Likelihood of Risk Occurrence	Description	Risk Response Strategies
TECHNOLOGY				
Technology	Transition of technology in low-emission products.	Likely	Technology risk may have a significant impact on a company's business. The impact includes high costs associated with technology investments, potential depreciation of assets, and the need to replace products or services with lower-emission technology, leading to the cessation of asset use.	Bank Mandiri is reaching out to all its customers to communicate about its business plans, in response to transition policies and technological changes aimed at promoting green initiatives.
	Cybersecurity threats.	Likely	Bank Mandiri is transitioning to offering banking products through eco-friendly digital services due to the risks associated with transaction and data security, as well as information systems.	Bank Mandiri has established a special working unit to assist in overseeing digitalization-related risks and has achieved ISO 27001 certification for its security operations center, enabling it to effectively manage cyber security threats within its banking system and cyber operations.
MARKET				
Market Conditions	Changes in customer behavior.	Likely	Market changes pose a risk when customers shift to products with lower emissions, leading to a decrease in demand and company revenue.	<p>Bank Mandiri is committed to developing green and sustainable financial products. This commitment is evident through various initiatives, including the issuance of a Green Bond of IDR5 trillion, the inaugural issuance of a Sustainability Bond of US\$300 million, and an ESG Repo transaction of US\$500 million. Furthermore, the bank promotes financing in the Sustainable Business Activities Category (KKUB), encompassing green and social portfolios, following Financial Services Authority Regulation (POJK) 51/2017. Bank Mandiri also operates an ESG Desk, encouraging customers to transition with products, such as Sustainability-Linked Loans/ Corporate-in-Transition Financing. Bank Mandiri also offers green products on the retail side, including financing facilities for Electric Vehicles (EV) and other eco-friendly options.</p> <p>Bank Mandiri is implementing changes to digitalize its banking services, aiming to enhance accessibility for the people of Indonesia. The bank prioritizes the advancement of technology to facilitate digital transformation. This is realized through the development of innovative banking systems such as Livin', Kopra, Smart Branch (Upgraded Branch, Hybrid Branch, and Digital Box), Digital Carbon Tracking, Tap to Pay payment feature, and the extensive Mandiri Agent service. These initiatives serve as tangible demonstrations of Bank Mandiri's role as an Agent of Development and other digitalization initiatives.</p>

Type of Risk	Risk Triggers	Likelihood of Risk Occurrence	Description	Risk Response Strategies
REPUTATION				
Reputation	Adverse publication on Bank Mandiri's approach to addressing the challenges of climate change.	Likely	The risk to Bank Mandiri's reputation arises from negative publicity about its business activities or from negative perceptions of its compliance with climate change regulations.	<p>Bank Mandiri is actively promoting compliance with climate change regulations across all relevant work units, both directly and indirectly through operational activities. To address negative publications related to climate change regulations, the bank has established the ESG Group as the control tower for ESG implementation, ensuring that all bank activities comply with climate change regulations. The ESG Group engages in discussions with internal and external stakeholders, such as regulators, rating agencies, and customers, to ensure alignment with relevant provisions.</p> <p>Bank Mandiri is supported by the Corporate Secretary, responsible for minimizing potential risks to the company's reputation. In this regard, Bank Mandiri, through the Corporate Secretary, possesses the resources and expertise to analyze negative public sentiment and provide necessary strategic and structured responses.</p> <p>Additionally, Bank Mandiri utilizes an interactive control panel to monitor real-time news and opinions across various platforms, enabling strategic and proportional responses while effectively managing the company's reputation and image.</p>
PHYSICAL RISK				
Acute and Chronic Physical Risk	The impact and increased frequency of climate/extreme weather changes.	Likely	<p>The sudden and prolonged physical risks may have an impact on operational activities.</p> <p>Rising temperatures and sea levels have the potential to elevate land subsidence and the risk of flooding, impacting the value of financed assets and collateral, and potentially impeding overall bank operations.</p> <p>Bank Mandiri's extensive network of branches across Indonesia is susceptible to substantial risks arising from both acute and chronic climate change.</p>	<p>Bank Mandiri has initiated the first phase Bottom-up Climate Risk Stress Test (CRST) to identify the impact of transition and physical risks on its credit portfolios, including those in the productive sector, as well as market and operational risks.</p> <p>Bank Mandiri has established the Business Continuity Management Group to oversee the implementation of Business Continuity Management in accordance with the international standard ISO 22301:2019 and to monitor the impact of acute and chronic risks that Bank Mandiri may face. The Business Continuity Management Framework aims to establish a resilient organization capable of withstanding potential internal and external threats by ensuring the readiness of BETH3 components (Building, Equipment, Technology, Human Resource & 3rd Parties).</p>

Detailed Explanation Regarding the Implementation of CRST:

1. Transition Risk

Transition risk represents the potential challenges that arise from changes in government and stakeholder policy directions, technological advancements, and social dynamics as the world economy shifts towards a low-carbon economy. These changes demand that banks, including Bank Mandiri, adapt their policies that could potentially impact the bank's business, reputation,

and asset value. In response, Bank Mandiri actively identifies the short-term and long-term impacts of these transition risks on its credit portfolio (including the productive sector portfolio), as well as market and operational risks, during the initial phase of the bottom-up CRST. The following are potential impacts of transition risks on credit, market, and operational risks:

Potential Impact of Transition Risk

CREDIT RISK

In the realm of Credit Risk, the introduction of new climate policies, advancements in technology, and shifts in market sentiment can lead to the bank's stranded assets, particularly those in carbon-intensive industries. This situation can elevate the probability of default (PD) and increase the loss given default through diminished collateral values.

MARKET RISK

In terms of market risk, the bank recognizes the potential impact on the market value of its securities portfolio within the high-emission sector category due to government policy changes related to carbon emissions.

OPERATIONAL RISK

In Operational Risk, significant policy changes by regulators and shifts in customer and investor behavior can result in the bank facing sanctions from regulators and potentially higher error rates in transactions.

2. Physical Risk

Physical risk can be classified into two categories:

- **Acute Physical Risk:**
Risks caused by severe and frequent natural disasters.
- **Chronic Physical Risk:**
Risks caused by long-term climate pattern changes, such as temperature rise and sea-level rise.

Regarding physical risks, Indonesia has a relatively high risk of disasters due to its geographical location in a tropical area

and at the meeting point of two oceans and two continents, making it prone to floods, landslides, flash floods, extreme weather, extreme waves, and abrasion, as well as droughts that can trigger forest and land fires. Therefore, in analyzing the impact of physical risks, the bank identifies credit portfolios potentially vulnerable to floods and forest fires. The following is the identification of potential impacts of physical risks on credit and operational risks:

Potential Impact of Physical Risks

CREDIT RISK

Rising sea levels and occurrences of forest fires/ droughts impact the collateral value of debtors, potentially increasing credit risk through higher loss-given default (LGD), ultimately impacting the bank's capital.

OPERATIONAL RISK

Rising sea levels and occurrences of forest fires/ droughts can increase operational risk potential, such as damage to bank branch offices, and data centers, or hindering overall bank operations.

To measure the impact of physical risks on Bank Mandiri's financial performance, the bank maps out areas vulnerable to climate change disasters. In identifying disaster-prone areas, Bank Mandiri refers to the Indonesian Disaster Risk Index (IRBI) published by the National Agency for Disaster Management (BNPB).

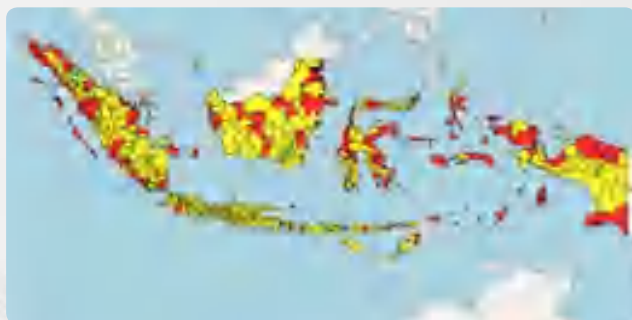
Physical Risk Assessment Results – Flood Scenario

Methodology for Determining Traffic Lights on Exposure at Risk

The method used to classify the physical risk of flooding in Indonesia involves Expert Scoring. The process for determining the risk class for geographic locations is outlined as follows:

1. Identification of parameters constituting the risk class for flooding in Indonesia. These factors include the frequency of flood events, the number of houses submerged, the extent of damage to public facilities, and the number of victims.
2. Compilation of parameter data sourced from the National Agency for Disaster Management (BNPB) - Indonesian Disaster Risk Index (IRBI).
3. Implementation of Scaling Adjustment (Scaling Score) to calibrate the parameters that shape flood risk classes in Indonesia.
4. Determination of the optimal weighting for these parameters to accurately classify flood risk classes in Indonesia.

Map of Indonesia's Flood Risk Index 2023



Source: Indonesian Disaster Risk Index (IRBI)

Snapshot Summary of Flood Risk Classes in Indonesia

No	District/City	Risk Class
1	Bandung, West Java	High Risk (Prone to Flooding)
2	Cirebon, West Java	High Risk (Prone to Flooding)
3	North Luwu, South Sulawesi	Medium Risk (Flood Alert)
4	Garut, West Java	Medium Risk (Flood Alert)
5	Lembata, NTT	Low Risk (Flood Safety Assured)
6	East Flores, NTT	Low Risk (Flood Safety Assured)
	Etc.	

Physical Risk Assessment Results – Forest Fire Scenario

Methodology for Determining Traffic Lights on Exposure at Risk

The method used to classify the physical risk of forest fires in Indonesia involves Expert Scoring. The process for determining the risk class for geographic locations is outlined as follows:

1. Identification of parameters constituting the risk class for forest fires in Indonesia.
2. Compilation of parameter data sourced from the National Agency for Disaster Management (BNPB) - Indonesian Disaster Risk Index (IRBI).
3. Implementation of Scaling Adjustment (Scaling Score) to calibrate the parameters that shape forest fires classes in Indonesia.
4. Determination of the optimal weighting for these parameters to accurately classify forest fires classes in Indonesia.

Map of Indonesia's Forest and Land Fire Risk Index 2023



Source: Indonesian Disaster Risk Index (IRBI)

Snapshot Summary Risk Class Forest Fires in Indonesia

No	District/City	Risk Class
1	Nganjuk, East Java	High Risk (Prone to Forest Fires)
2	Ponorogo, East Java	High Risk (Prone to Forest Fires)
3	Jayapura, Papua	Low Risk (Safe for Forest Fires)
4	Etc.	