

**MOODY'S**

# Climate scenario analysis and stress testing for banks

Decode risk.  
Unlock opportunity.



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## CLIMATE RISK & OPPORTUNITY: A CALL TO ACTION FOR BANKS

The financial landscape is evolving, with climate change playing a significant role in shaping the emerging challenges and opportunities for banks. In the last three decades, climate-related events have resulted in losses exceeding \$1.4 trillion, with a notable increase in frequency and severity observed in the past five years. Coupled with the growing expectations from investors, regulators, and stakeholders, these trends highlight the importance for banks to address climate risks and opportunities within their portfolios. However, banks are often faced with the difficulty of acquiring reliable climate data and the subsequent challenge of translating such data into actionable outputs for credit analysis.

**115+**

years of credit risk expertise

## DECODE CLIMATE RISK, UNLOCK OPPORTUNITY

To help banks navigate these complexities, Moody's has developed a workflow solution that equips banks with a full view of climate risks and opportunities within their credit portfolio. This workflow offers tailored climate and credit analytics coupled with an extensive coverage of asset classes to help the Risk function:

- Conduct climate scenario analysis and climate stress tests.
- Support portfolio planning decisions and comply with regulations.

The solution combines credit risk expertise with unmatched climate science to quantify the impact of climate on capital and earnings. This approach enables commercial lenders to manage risk and identify 'best-fit' financing opportunities to grow their portfolios.

**30+**

years of climate modeling experience

### Comprehensive asset class coverage to analyze the entire portfolio.

This strategic workflow allows Risk and Portfolio Managers to analyze and strategically act on climate risks and opportunities within the credit portfolio. Users can gain an understanding of how climate will influence credit risk, optimize risk profiles, and unlock financing opportunities in a changing climate with confidence.

### (Climate + Credit) X (Technology) = Comprehensive workflow

Moody's SaaS solution enhances banks' capabilities by augmenting client data with Moody's data to facilitate rich and actionable workflows. This marks the advent of a new dimension in risk and opportunity assessment, tailored to meet the needs of today's banks.

### Built for Chief Risk Officers, by Chief Risk Officers

The vision is to assist banking CROs – analyze climate-related portfolio losses, act on the right financing opportunities that balance risk-return, comply with regulations.

**#1** **Chartis**

Ranked by Chartis Research as a category leader in credit portfolio management, climate risk modeling and climate risk analytics.

**200+** **perils**

Moody's has over 200 peril models enabling banks and other organizations to quantify the magnitude and probability of economic loss from catastrophe events.

**120+** **countries**

Over 60 trillion data points and 300+ catastrophe models collectively capture the near and long-term climate change risk outlook in more than 120 countries.

## IDENTIFY CREDIT RISK IMPACTS AT COMPANY AND AGGREGATE LEVELS

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Translate 1<sup>st</sup> order effects of climate hazard into credit impacts.



Transition scores to identify segments resilient to policy changes.



Corporate scores, hazard scores and financial impacts at asset and portfolio level.



Translate 2<sup>nd</sup> order effects of industry trends into credit impacts.



Translate 1<sup>st</sup> order effects of transition to net zero into credit impacts.



Expansion to climate pathways and impact on macro-economic variables.



Aligned to international climate regulations (IFRS/ISSB and others).



Greenhouse gas metrics including financed emissions, intensities, green asset ratio.



Integrate into existing ICAAP framework to calculate RWAs and assess impacts.



Physical and transition risk assessment on one platform.



Leverage an open modelling framework that incorporates data from alternative sources.



Delivered by a team of climate risk experts within a software-as-a-service workflow.



Net zero commitments tracking and credibility analysis.



Produce custom scenarios for more than 100 countries and 10 regional aggregates.



Use multiple data sources to leverage climate analytics for commercial real estate.

## COMPREHENSIVE WORKFLOW FOR RISK & OPPORTUNITY ASSESSMENT

### 1 ANALYZE

Identify climate concentrations and credit exposures

Assess physical and transition risk

Apply climate science across all asset classes

Obtain a full understanding of risks and opportunities

### 2 ACT

Apply climate scenario analysis

Conduct climate stress testing exercises

Compare current conditions against future scenarios to guide portfolio planning

Monitor portfolio performance in real-time

Optimize portfolio through data-driven rebalancing

Leverage what-if analysis for strategic planning

### 3 COMMUNICATE

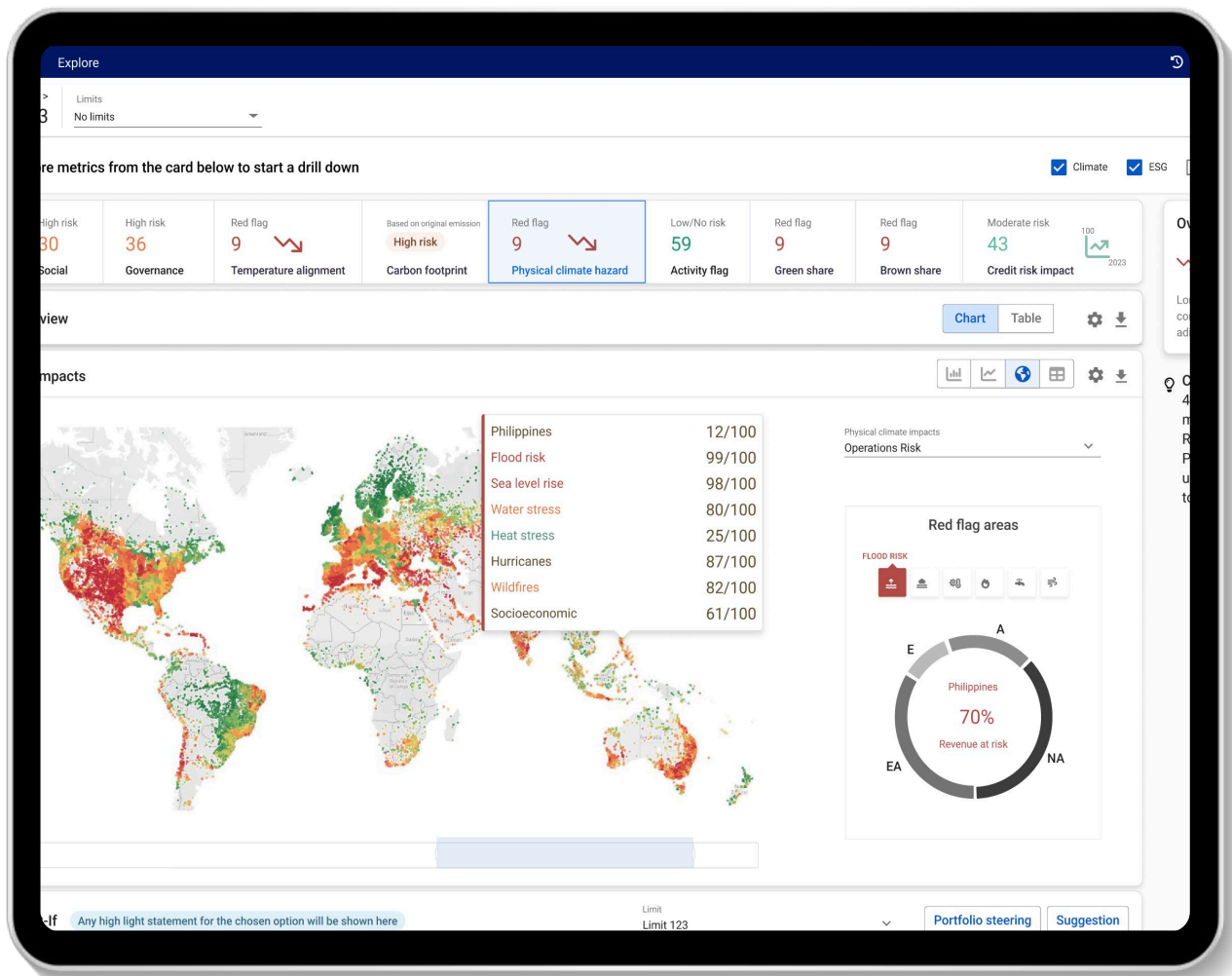
Comply with regulations

Present future direction

Review historical trends

Report on risk

Present historical trends and future direction



## ENSURE RESILIENCE: STRESS TEST ACROSS KEY ASSET CLASSES

The solution offers extensive asset class coverage and enables banks to conduct climate stress testing.



**C&I Loans**  
*PD, LGD, Financials*



**CRE Mortgage**  
*Emissions, EPC, LTV, NOI*



**Retail Mortgage**  
*PD, LGD*



**Equity**  
*Impacts on equity prices*



**Retail Non-Mortgage**  
*PD, LGD*



**Residential Mortgage**  
*Property Value, LTV, PD, LGD*



**Bonds**  
*Impact on bond values*



**Sovereign**  
*Ratings, PD*

## RISK ASSESSMENT AMPLIFIED BY BEST-IN-CLASS ADVISORY SERVICES

Moody's climate risk practitioners assess your institutional requirements and recommend the most robust climate risk analytics approach for your organization. We help you take ownership of the workflow so you can manage risk-return confidently and take informed steering decisions.



**Review requirements and asset classes**



**Complete climate module onboarding**



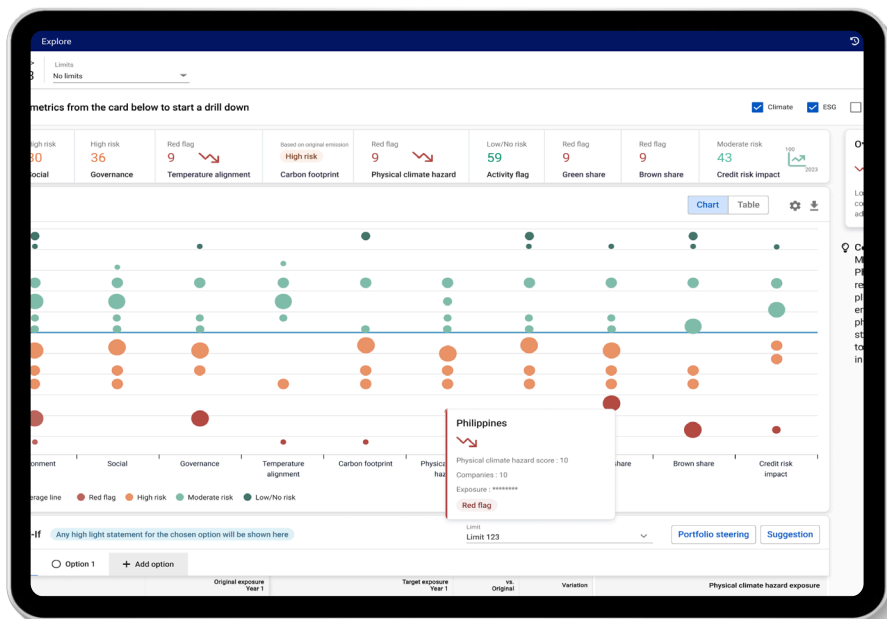
**Incorporate climate scenarios**



**Integrate models and extended asset classes**



**Transfer knowledge to end-users**



## HOW MOODY'S HAS EMPOWERED BANKS WITH CLIMATE ANALYTICS

### US Bank with C&I, Retail, CRE, Capital Markets asset classes

- **Requirement**  
Analysis of climate scenarios across different types of assets to understand how climate risks, under various scenarios and hazards, can lead to potential losses, at the asset level.

### EMEA Bank with C&I, Retail, CRE asset classes

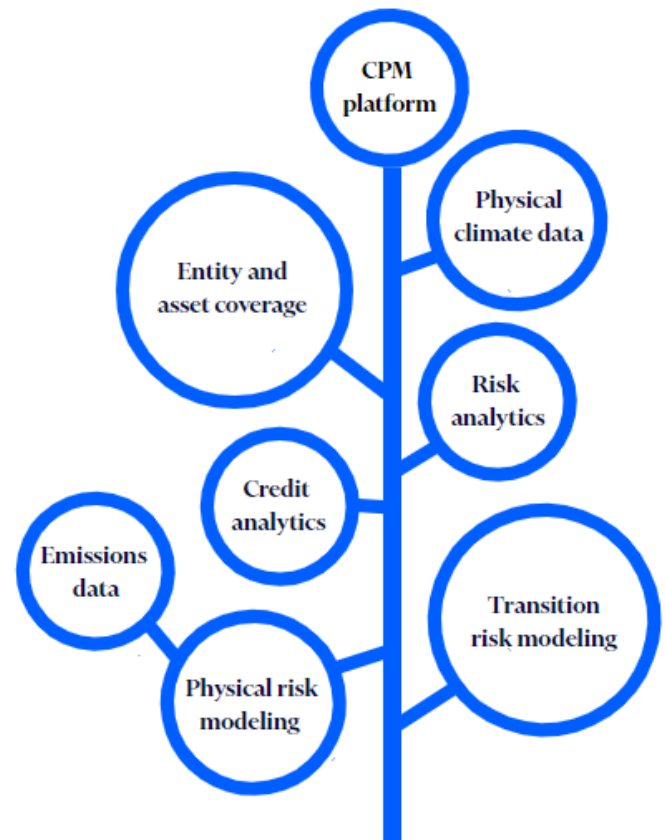
- **Requirement**  
Climate risk analytics and reporting solution to identify and measure risks and opportunities related to climate change under a range of scenarios across different time horizons.

### APAC Bank with Bond, Equity, Mortgage asset classes

- **Requirement**  
CSRD-compliant scenario methodology to support analysis and assessment of the bank's balance sheet portfolio.

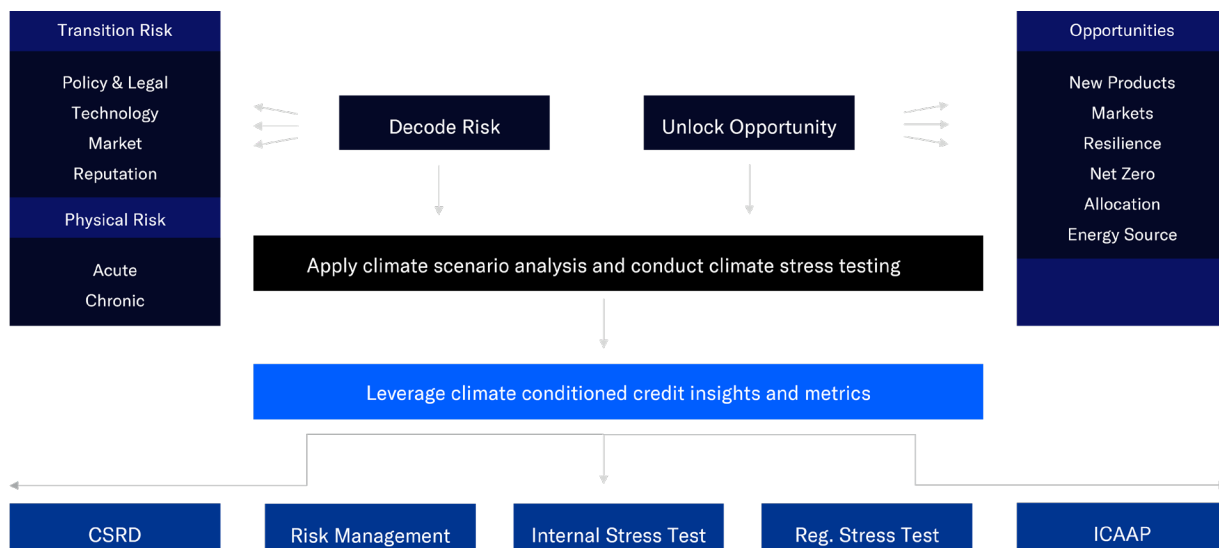
### APAC Bank with Retail, Auto Loans asset classes

- **Requirement**  
Development of ESGC risk management framework including risk identification, quantification, integration into existing ICAAP & stress testing processes.



## A FORWARD-THINKING APPROACH

Moody's workflow solution elevates your risk management framework by incorporating forward-looking climate metrics – spanning physical and transition risks – into your risk assessment. The solution enriches your credit portfolio management by offering nuanced insights, empowering your decision-making with a future focused lens on climate risk and opportunities.



## For more information on how to capture climate risks and opportunities in your credit portfolio

**VISIT OUR CLIMATE WEBSITE**

[WWW.MOODYS.COM/CLIMATERISK](http://WWW.MOODYS.COM/CLIMATERISK)

**VISIT OUR CREDIT PORTFOLIO MICROSITE**

[WWW.MOODYS.COM/PORTFOLIOSTUDIO](http://WWW.MOODYS.COM/PORTFOLIOSTUDIO)

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**Chartis**  
**RiskTech Quadrant®**  
Category Leader

Transition Risk Modeling  
Solutions, 2023

Physical Risk Modeling  
Solutions, 2023

Natural Catastrophe  
Modeling Solutions, 2023