

MACROECONOMIC AND FINANCIAL IMPLICATIONS OF CLIMATE CHANGE

HOW CAN CENTRAL BANKS AND FINANCIAL SUPERVISORS AND REGULATORS TAKE IMMEDIATE ACTION IN ADDRESSING CLIMATE-RELATED RISK?

DECEMBER 1ST, 2022
8:30 – 20:00 GMT-6

DECEMBER 2ND, 2022
8:30 – 18:00 GMT-6

CEMLA OFFICE AT DURANGO
54, COLONIA ROMA NORTE,
06700, MEXICO CITY, MEXICO



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the European Union

Background

According to the Global Commission on Adaptation, climate events are the greatest threat to development gains in the Latin America and the Caribbean (LAC) region. Given LAC climate change vulnerabilities, the region is prone to climate-related natural disasters, such as tropical storms, floods, droughts, fires, among other consequences. Climate-related natural disasters have occurred more frequently in recent decades with a significant bearing on the population and the economy. Climate effects are expected to be increasingly severe and frequent. Therefore, the region also stands to suffer even larger economic losses and social impacts that will accelerate and accumulate over time.

By 2050, it is estimated that 17 million people (2.6% of the total population) could be displaced, and 2.6% of GDP could be lost due to climate events. This adds to the 1.7% of GDP already lost to climate-related disasters over the past two decades (equivalent to USD\$11 billion in economic damage per year)¹. Suppose the current trend in temperature increase continues (>3°C). In that case, the six largest economies in the region (Argentina, Brazil, Chile, Colombia, Mexico, and Peru) could lose on average up to 17% of GDP by mid-century².

Although the central banks and financial regulators and supervisors are becoming aware of the risks and challenges of climate change, attempts to incorporate climate-related risks, as a systemic risk, into risk management are in a very early stage in LAC. In practical terms, climate risk can probably be captured in the traditional financial risk categories - credit, market, liquidity, or reputational risks. However, several crucial limitations and challenges are coming to light when trying to quantify these risks.

Considering the above, the United Nations Environment Programme (UNEP) and its Finance Initiative (UNEP FI), the Association of Central Banks of Latin America and the Caribbean (CEMLA), the Latin American Association of Insurance Supervisors (ASSAL), and the Association of Supervisors of Banks of the Americas (ASBA), with the financial support of the European Commission through the EUROCLIMA+ Programme, created the **Climate Financial Risk Center in LAC** (CFRCenter).

This initiative is a platform that promotes open discussion, builds capacity, and shares knowledge and best practice across members of the LAC financial industry to encourage a deeper understanding of the consequences of climate-related risks across the LAC economies and financial systems and to assist in taking immediate action to safeguard the financial system.

Objectives

CEMLA and UNEP and its Finance Initiative (UNEP FI) are organizing the III Central Banks Conference on

¹ Global Commission on Adaptation, 2020

² Swiss RE Institute, April 2021. The economics of climate change: no action not an option. <https://www.swissre.com/dam/jcr:e73ee7c3-7f83-4c17-a2b8-8ef23a8d3312/swiss-re-institute-expertise-publication-economics-of-climate-change.pdf>

Environmental Risk titled **Macroeconomic and financial implications of climate change: How can central banks, financial supervisors and regulators take immediate action in addressing climate-related risk?** with the financial support of the European Commission through the EUROCLIMA+ Programme.

The objective of the conference is to facilitate the discussion on the complex issues associated with integrating climate change, biodiversity losses, and environmental degradation into central banks action. The conference follows up its last version hosted by CEMLA in which central banks discussed with experts, scientists, and policymakers the challenges posed by biodiversity losses for the financial system.

The conference will explore how climate change, biodiversity loss, and environmental degradation create financial risks, with a focus on how central banks can incorporate these emerging risks into their mandates. In addition, the conference will be part of the **Climate Financial Risk Center in LAC**, which will be officially launched during the event.

The conference will bring together senior representatives from across the financial sector - central banks and financial regulators and supervisors – business leaders, climate data providers, Scientifics, and academics, addressing key issues around climate-related risks through high-level and technical sessions.

The conference's attendees will:

- Deepen the knowledge about climate change as a source of macroeconomic and financial instability.
- Learn about global best practices on how to incorporate climate-related risk in central banks financial-risk frameworks and monetary policy.
- Learn about management and mitigation strategies from central banks and financial authorities.
- Discuss recent advances in climate-risk data and scenarios analysis models.
- Create a sense of coordinated action and explore partnerships to combat climate risks.

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The conference will have simultaneous interpretation in English, Spanish, and Portuguese. A restricted number of sessions will be live streamed via the Zoom platform.



Agenda

Thursday, December 1, Mexico City, Mexico (GMT-6)

Time	Subject	Speaker
8:00 - 8:30	Registration	
8:30 - 9:00 (30 min)	Opening remarks	<p>Dr. Manuel Ramos Francia, Director General, Association of Central Banks of Latin America, and the Caribbean (CEMLA)</p> <p>Caroline Wellemans, Head of Unit, Sustainable Finance Policy Unit, DG INTPA, European Commission</p> <p>Eric Usher, Head, United Nations Environment Programme Finance Initiative (UNEP FI)</p> <p>Chair: Matias Ossandon Busch, Director of Financial Stability, CEMLA</p>
9:15 - 09:45 (30 min)	<p>Introduction to the Network for Greening the Financial System (NGFS)</p> <p>The NGFS is a collection of over 100 central banks and supervisors focused on greening the financial system. They have created several workstreams to provide guidance and resources to enhance best practices on topics including supervision, climate scenario analysis, bridging data gaps, monetary policy, net-zero transitions, and many others. This session will explain why it is imperative for central banks and supervisors to consider climate-related risks in fulfilling their mandates. In addition, the session will provide an overview of NGFS working groups and 2022-2024 workplan, including its workplan in the LAC region. The session will explore the following topics:</p> <ul style="list-style-type: none"> • NGFS structure and working groups, • NGFS workplan for 2023-2024, • NGFS workplan for central banks in the LAC region. 	<p>Chair: Matias Ossandon Busch, Director of Financial Stability, CEMLA</p> <p>Thomas Allen, Deputy Head of Division, Climate Change Center, Banque de France, and Senior Advisor to the Head of the NGFS Secretariat</p>

09:45 - 10:15 (30 min)	Coffee Break	
10:15 - 10:45 (30 min)	<p>Impacts of climate change on the economy and financial system – How does the European Central Bank (ECB) address climate change?</p> <p>Central banks along with the financial systems they oversee are increasingly recognizing the risks that climate change poses to macroeconomic and financial stability. As a result, a growing number of central banks have started or are planning to start accounting for climate-related risks in their supervisory and policy activities. In this introductory lecture, Irene Heemskerk shares how the ECB is addressing climate change. The session will explore the following topics:</p> <ul style="list-style-type: none"> • How does the ECB incorporate climate change in its governance/organizational structure? • How is climate change affecting key macroeconomic variables in the short-term and long-term? • How does the ECB assess the readiness of the financial system for both physical hazards and low-emission transition? 	<p>Speaker: Irene Heemskerk, Head of Climate Change Centre, European Central Bank</p> <p>Chair: Matias Ossandon Busch, Director of Financial Stability, CEMLA</p>
10:45 - 11:15 (30 min)	Coffee Break	
11:15 - 12:00 (45 min)	<p>Setting the stage: Regulatory and supervisory approaches to address climate-related financial risks</p> <p>This panel presents an overview of the authorities' regulatory approaches to monitor, manage and mitigate risks arising from climate change (physical and transition risks). This panel will also provide guidance and recommendations to incorporate these risks into regulatory and supervisory approaches across sectors and jurisdictions.</p>	<p>Rosario Celedón Förster, Manager of the Financial Policy Division, Central Bank of Chile</p> <p>Carine Moreira de Almeida Bastos, Deputy-Advisor, Banco Central do Brasil, and Member of NGFS Workstreams on Supervision</p> <p>Chair: Charlotte Gardens-Landolfini, Climate Change, Energy and Financial Stability Expert, International Monetary Fund (IMF)</p>

<p>12:00- 13:15 (75 min)</p>	<p><i>Panel Discussion 1: A global exploration on monitoring climate-related financial risks</i></p> <p>This session provides an overview on how central banks and supervisory authorities are approaching the challenge of incorporating climate risk in their supervisory mandates. Panelists will discuss the potential role of their institutions within a broader climate-policy agenda, the main challenges they face, and the action plans they have developed. Speakers will provide guidance on areas such as climate stress testing, climate-related financial disclosure reporting, and other supervisory tools. The session will explore the following topics:</p> <ul style="list-style-type: none"> • Evolution of supervisory practices on climate-related financial risks • Challenges faced in developing supervisory guidance • Recent initiatives and outcomes (e.g., stress test results, responses to consultations) <p>Miguel Molico, Senior Director, Climate Analysis Team, Bank of Canada</p> <p>Chris Faint, Head of Climate Hub Division, Bank of England</p> <p>Mariana Escobar Uribe, Advisor, Financial Superintendent of Colombia</p> <p>Chair: Marcus Mølbak Ingholt, Senior Lead Climate Economist, Denmark National Bank</p>
<p>13:15</p>	<p>End of online transmission</p>
<p>13:15– 14:30 (75 min)</p>	<p>Networking lunch</p>
<p>14:30 – 15:45 (75 min)</p>	<p><i>Keynote lecture 1</i> Climate transition models and data</p> <p>Climate transition risk scenarios are an essential element for supervisors to understand if they are to assess financial system risks posed by the net-zero transition. The NGFS along with its team of leading researcher collaborators has developed a set of reference scenarios that have been incorporated into financial risk analyses and supervisory stress tests around the world. This session will present the NGFS scenarios and their main narratives, assumptions, and models. Discussants from central banks will provide insights on their experiences with scenario analyses. The session will explore the following topics:</p> <ul style="list-style-type: none"> • Supervisory and financial cases for climate transition scenarios, • Understanding the main narratives of the NGFS climate scenarios, • An overview of strengths, limitations, and <p>Speaker:</p> <p>Prof. Dr. Elmar Kriegler, Head of Research Department, Potsdam Institute for Climate Impact Research (PIK)</p> <p>Discussion remarks</p> <p>Antoine Boirard, Green Finance Specialist, Bank of France</p> <p>Laura Parisi, Team Lead at Climate Change Center, European Central Bank</p> <p>Chair: Felipe Córdova, Head of Prospective Risk Analysis Department, Central Bank of Chile</p>

	major assumptions within climate scenario models.
15:45 – 16:15 (30 min)	Coffee Break
16:15 – 18:00 (105 min)	<p>Breakout session 1 Exploring climate transition scenarios</p> <p>Participants will break out into smaller groups to explore climate risks and climate transition scenarios directly by using the IIASA scenario explorer (where the NGFS scenario data is hosted). Ahead of the breakout, there will be an overview of the tool and a series of guiding questions to frame the breakout discussion. Participants will work through the questions and explore some of the different scenarios along with their implications for LAC and their home countries. The session will explore the following topics:</p> <ul style="list-style-type: none"> • Hands on exploration of climate transition scenario narratives and their implications for different sectors • Understanding of the most prevalent transition risks within the region • Consideration of how these risks and scenarios can be integrated into effective climate change supervision in the future <p>Coordination: David Carlin, UNEP FI.</p> <p>Working groups' facilitators:</p> <ul style="list-style-type: none"> • Peter Karlström, Senior Economist, CEMLA • Carola Müller, Senior Economist, CEMLA • Mercedes García Fariña, Programme Management Officer, UNEP • Matias Ossandon Busch, Director of Financial Stability, CEMLA • Evelyn Amaro, Climate Finance Specialist, UNEP
18:00 – 20:00 (120 min)	Reception ahead of networking dinner

Friday, December 2, Mexico City, Mexico (GMT – 6)

Time	Subject	Speaker
8:30 - 9:00	Registration	
9:00 - 9:30 (30 min)	Welcoming and Presentation of the Climate Financial Risk Center in LAC	<p>Dr. Manuel Ramos Francia, Director General, Association of Central Banks of Latin America, and the Caribbean (CEMLA)</p> <p>Mercedes G. Fariña, Programme Management Officer, UNEP, LAC Office</p>

		Chair: Matias Ossandon Busch, Director of Financial Stability, CEMLA
9:30 - 10:45 (75 min)	<p><i>Panel Discussion 2</i> Understanding physical risk models and data</p> <p>This session will offer an introduction to physical risk scenarios and the narratives developed for the NGFS. Presenters will discuss some common climate hazards and the models used to assess them. In addition, data gaps and challenges will be explored with a view towards reducing these limitations in the future. Discussants from central banks will provide insights on their experiences in assessing physical risks.</p> <p>The session will explore the following topics:</p> <ul style="list-style-type: none"> • How are physical risks incorporated into the NGFS scenarios? • Major assumptions and limitations of physical risk modeling and the role of data in enhancing outputs for supervisory analysis, • Primary physical risks faced by LAC (Mexico as a case study). 	<p>Speaker: Irene Monasterolo, Climate Finance Professor, EDHEC Business School and EDHEC-Risk Institute</p> <p>Discussion remarks</p> <p>Daniel Santabarbara, Head of Advanced and Systemic Economies Unit. International Economics Division. International Economics and Euro Area Department, Bank of Spain</p> <p>Francisco Estrada Porrúa, Senior Researcher, Institute of Atmospheric Sciences and Climate Change, National Autonomous University of Mexico (UNAM)</p> <p>Chair: Mariana Escobar Uribe, Advisor, Financial Superintendent of Colombia</p>
10:45	End of online transmission	
10:45 - 11:15 (30min)	Coffee Break	
11:15 - 13:00 (105 min)	<p><i>Breakout session 2</i> Exploring physical climate scenarios</p> <p>Participants will break out into smaller groups to explore climate risks and physical hazard scenarios directly by using the Climate Analytics Climate Impact explorer (where the NGFS scenario data is hosted). Ahead of the breakout, there will be an overview of the tool and a series of guiding questions to frame the breakout discussion. Participants will work through the questions and explore some of the different scenarios along with their implications for LAC and their home countries.</p> <ul style="list-style-type: none"> • Hands on exploration of physical hazards and 	<p>Coordination: David Carlin, UNEP FI</p> <p>Working groups' facilitators:</p> <ul style="list-style-type: none"> • Peter Karlström, Senior Economist, CEMLA • Carola Müller, Senior Economist, CEMLA

	<p>their implications for different sectors</p> <ul style="list-style-type: none"> • Understanding the most prevalent physical risks within the region and at the country level • Consideration of how these risks and scenarios can be integrated into effective climate change supervision in the future 	<ul style="list-style-type: none"> • Mercedes García Fariña, Programme Management Officer, UNEP • Matias Ossandon Busch, Director of Financial Stability, CEMLA • Evelyn Amaro, Climate Finance Specialist, UNEP
13:00 - 14:15 (75 min)	Networking lunch	
14:15 - 14:45 (30min)	<p>Panel discussion 3</p> <p>Sustainable Finance Taxonomies: A framework to facilitate low-emission and climate-resilient investment in Latin America and the Caribbean</p> <p>Sustainable Finance Taxonomies provide science-based guidance to the financial sector to help avoid greenwashing and transitions towards a low-emission and climate-resilient economy. Taxonomies help increase the flow of international preferential capital towards low-carbon and climate-resilient investment by harmonising definitions for these assets, activities and projects and act as a blueprint for credible transition. Sustainable finance taxonomies are being developed globally at a rapid pace and there is an increasing need to ensure interoperability. The session explores the global developments, challenges, and opportunities with respect to sustainable finance taxonomies.</p>	<p>Sean Kidney, Co-funder and CEO, Climate Bonds Initiative</p> <p>Chair: Vishwas Vidyaranya, Senior Consultant, UNEP</p>
14:45 - 14:50	Transition break	
14:50 - 15:50 (60 min)	<p><i>High-level Panel - A call to action for central banks and financial supervisors in the LAC region</i></p> <p>In this closing high-level session, the Governor of the Central Bank of Costa Rica, the Member of the Executive Commission and the Board of the Bank of Spain, and the Director General of Financial Stability of the Bank of Mexico, chaired by the Director General of CEMLA, discuss the fundamental role of the central banks and financial supervisors in the implementation of the Paris Agreement, within the scope of their mandates, their commitments to integrate climate considerations into financial decision-making</p>	<p>Róger Madrigal López, Governor, Central Bank of Costa Rica</p> <p>Soledad Nuñez, Member of the Executive Commission and the Board, Bank of Spain</p> <p>Fabrizio López-Gallo Dey, Director General of Financial Stability, Banco de México</p> <p>Chair: Dr. Manuel Ramos-Francia,</p>

	<p>processes and support the transition to a net-zero and nature positive economy. Definitely, all of them will respond to what is next on the green agenda for central banks and financial supervisors in the LAC region.</p> <ul style="list-style-type: none"> • Can central banks support the transition to a net-zero and nature-positive economy? • How can central banks incorporate climate considerations into their decision-making processes and mandates? • Which objectives can the central bank prioritize when defining a climate action strategy? 	Director General, CEMLA
15:50 – 16:05 (15 min)	Break	
16:05 - 17:50 (105 min)	<p>Breakout session 3</p> <p>Developing an action plan for central banks and financial supervisors and regulators in the LAC region to incorporate climate risks into their regulatory and monitoring frameworks</p> <p>In this session, participants will first hear from central banks and financial regulators that have developed a roadmap to identify, measure, and assess the risks posed to the financial system by climate change. Then, participants will break into small groups to discuss a series of guided questions related to developing action plans to manage climate risks in the financial system. The aim of these small groups is to discuss tangible actions that central banks and financial supervisors and regulators can take to assess and monitor climate risks more effectively.</p> <ul style="list-style-type: none"> • Case studies on climate risk roadmaps, timelines, and prioritization • Country-specific challenges to overcome in developing climate risk roadmaps • Actions to support financial system participants in managing climate-related risks 	<p>Chair: Matias Ossandon Busch, Director of Financial Stability, CEMLA</p> <p>Antoine Boirard, Green Finance Specialist, Bank of France (TBC)</p> <p>Speaker:</p> <p>Mauricio Larraín, Vice-Chair, Financial Market Commission of Chile</p> <p>Facilitators:</p> <ul style="list-style-type: none"> • Peter Karlström, Senior Economist, CEMLA • Carola Müller, Senior Economist, CEMLA • Mercedes García Fariña, Programme Management Officer, UNEP • Matias Ossandon Busch, Director of Financial Stability, CEMLA • Evelyn Amaro, Climate Finance Specialist, UNEP

		<ul style="list-style-type: none"> • Antoine Boirard, Green Finance Specialist, Bank of France (TBC)
17:50- 18:00 (10 min)	<p>Conclusion and next steps</p> <p>This final session will reconvene the full group of participants to cover the next steps they should follow in developing their necessary forward-looking, strategic approaches and capacities to better manage climate-related risks and opportunities. It will recap the previous two days and return to the objectives laid out at the beginning of the conference. A high-level overview of the Climate Financial Risk Center's 2023 plans to support central banks and financial supervisors and regulators in the LAC region and upcoming meetings will also be covered.</p>	<p>Dr. Manuel Ramos Francia, Director General, CEMLA</p> <p>Mercedes G. Fariña, Programme Management Officer, UNEP</p> <p>Matias Ossandon Busch, Director of Financial Stability, CEMLA</p>