



SOUTH AFRICAN RESERVE BANK

## **Call for research proposals**

# **Climate change and its implications for central banks in Southern Africa**

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## Background

The South African Reserve Bank (SARB), as part of its research agenda, seeks to expand research into the implications of the climate crisis for central banking in Southern Africa. At least two broad categories of implications may be distinguished.

The first is the implications of climate-related shocks for the SARB's conduct of monetary policy and for financial system soundness. Physical and transition risks are likely to generate shocks that occur with different frequencies, amplitudes and skewness than in previous periods. They will impact price and financial stability through multiple channels and require rethinking of central bank models and policy frameworks. The SARB's research programme seeks to examine the effects and potential impacts of climate change risks on central banks, unpack the different transmission channels through which the risks could practically manifest and identify the implications for monetary policy and financial stability policies.

The second is the SARB's contribution to policies that support South Africa's transition to net zero, including the greening of the financial system. The transition requires substantial capital investment from domestic and foreign investors to finance investment in green industries and techniques. In line with international developments, the SARB may consider its role in supporting the mobilisation of savings through financial markets and institutions.

The role of central banks in countries' responses to climate change and associated risks has been a prominent subject for international policy frameworks at least since 2015,<sup>1</sup> and has generated a growing body of international research. The broad aim of this call for research proposals is to promote policy-related research relevant to central banking and climate change in South Africa and other Southern African countries, taking into account local economic, financial and climate risk characteristics.

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<sup>1</sup> Carney, M., 2015. Breaking the tragedy of the horizon-climate change and financial stability. *Speech given at Lloyd's of London, 29 September 2015.* <https://www.bankofengland.co.uk/-/media/boe/files/speech/2015/breaking-the-tragedy-of-the-horizon-climate-change-and-financial-stability.pdf>. Examples of policy institutions actively engaged with the issues include The Network of Central Banks and Supervisors for Greening the Financial System (NGFS), Bank for International Settlements and the Financial Stability Board.

The SARB has an established record of analysis in this space<sup>2</sup> and participates in international policy networks on climate and macroeconomic policy. This call for proposals marks the launch of a new stage in the SARB's work by promoting and engaging with a wide range of research on relevant topics undertaken by scholars in academic and research institutions.

## The offer

The SARB invites proposals from qualified researchers for high-quality economic research in the seven focus areas listed below that would contribute directly or indirectly to the objectives of this call for proposals.

Relevant proposals for research in related topics not specified here will also be considered.

1. What are the impacts of climate risks<sup>3</sup> (global and domestic) on key economic and financial variables in the short to medium term? For example:
  - a. How do extreme climate events impact inflation expectations of different groups?
  - b. What is the impact of global climate-related policy actions on capital flows into the economies of Southern Africa?
  - c. What are the economic and financial impacts of introducing different price and non-price instruments (for example carbon taxes and carbon budgets)?

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<sup>2</sup> See, for example, Arndt, C., Loewald, C. and Makrelov, K., 2020. *Climate change and its implications for central banks in emerging and developing economies*. Economic Research and Statistics Department, South African Reserve Bank; Anvari, V., Arndt, C., Hartley, F., Makrelov, K., Strezepek, K., Thomas, T., Gabriel, S. and Mervin, B., 2022. *A climate change modelling framework for financial stress testing in Southern Africa*. Economic Research and Statistics Department, South African Reserve Bank; Deidda, L.G. and Harris, L., 2022. *The implications of national and international carbon pricing policies for the South African Reserve Bank*. Economic Research and Statistics Department, South African Reserve Bank; Wright, J., 2022. *Technological developments to address climate change in South Africa*. Economic Research and Statistics Department, South African Reserve Bank; Gwatidzo, T. and Simbanegavi, W., 2021. *Building a competitive and dynamic green industrial sector in South Africa after COVID-19*. Economic Research and Statistics Department, South African Reserve Bank.

<sup>3</sup> Climate-related risks include both physical risks stemming from extreme events such as droughts and floods as well as transition risks from technology changes, and domestic and global policy actions.

2. How are the impacts of climate risks (global and domestic) affected by the broader policy environment (i.e. fiscal sustainability, labour market or immigration policies)?  
For example:
  - a. How do fiscal policy actions and fiscal sustainability mitigate or amplify climate shocks and the effectiveness of monetary policy in addressing them?
  - b. What role do labour market policies play in reducing adjustment costs to climate- and nature-related shocks?
3. What are the implications of climate risks (global and domestic) for the conduct of monetary policy in the Southern Africa region? Related questions include:
  - a. What are the implications for indicators such as the neutral interest rate and Taylor rules?
  - b. What are the implications for the balance sheet operations and collateral frameworks of central banks in the region?
  - c. How do central banks maintain credibility in the face of large climate-related shocks?
4. What are the implications of climate-related risks (global and domestic) and the broader policy environment for the conduct of micro and macroprudential policies in the Southern Africa region? Related questions include:
  - a. What are the propagation mechanisms through which climate change could affect financial stability in the region?
  - b. What policy instruments could be employed by central banks to mitigate the impact of climate change from both a micro and macroprudential perspective?
5. How could current central bank forecasting and policy models be modified to incorporate climate-related considerations:
  - a. in particular, the use of complexity theory to model non-linearities in climate shocks and their macroeconomic transmission; and
  - b. the use of dynamic stochastic general equilibrium (DSGE) models to reflect the more permanent impact of climate-related shocks on equilibrium levels (hysteresis)?

6. What is the impact of different monetary, micro- and macroprudential policy responses on the economy, financial firms and the distribution of income (e.g. climate-specific risk weights for banks)? What policy responses are appropriate given the economic characteristics of countries in the region?
  - a. What policy frameworks (monetary, micro- and macroprudential) are the most appropriate to mitigate the impact of climate change on central banks?
  - b. What is the economic impact of introducing strict transition plans?
7. What indicators should central banks develop for the identification of climate risk and their impacts on price and financial stability?

It is anticipated that proposals using any from a range of research methods will be accepted. The range of approaches include, but are not limited to, macroeconometric models; time series models; panel data models; finance models including asset pricing; financial market analysis; extreme event models; computable general equilibrium (CGE) models; DSGE models; agent-based models; applied climate models; case studies; interdisciplinary empirical studies; and banking sector and insurance sector risk studies.

The specific objectives of this call for proposals are to:

1. provide an opportunity for researchers to conduct policy-relevant research on topics of relevance to monetary policy and financial sector regulation in relation to climate change; and
2. facilitate policy dialogue by engaging with researchers on policy-relevant issues and ensuring that the findings from this research are communicated effectively to all stakeholders, including the academic community, policymakers and civil society via policy summaries and dialogue.

Proposals from individuals, groups of individuals, and non-profit organisations (NPOs) are welcome. Researchers can be based in South Africa or internationally and research teams can be a combination of researchers from different countries and institutions.

Special consideration will be given to research teams that include junior and early-career researchers.

Individual researchers will be issued consultant contracts as SARB Fellows, while NPOs will be issued an Institutional Contractual Agreement (ICA) by the SARB.

A total research honorarium of US\$10 000 will be paid upon delivery of a satisfactory working paper, depending on the qualifications of the lead researcher and assessment of the proposal. In addition, the SARB will provide a local expense allowance of up to US\$5 000, depending on an assessment of costs required to undertake the proposed research.

The remuneration and local expense allowance will be expected to cover all costs associated with the conduct of all research proposed under the proposal, except attendance at the work-in-progress workshop and other knowledge-sharing and dissemination events.

## **Expectations of researchers**

All successful research grant applicants will be expected to:

1. produce a relevant research paper of sufficient quality to merit publication in the [SARB Working Paper series](#);
2. attend a one- to two-day workshop in South Africa where work in progress will be presented and discussed;
3. prepare a policy summary that brings together the key findings from the research paper and the key policy lessons; and
4. participate in a workshop/policy dialogue after completion of the final paper to communicate the policy implications and lessons from the research.

## Evaluation process and criteria

The proposal evaluation will be conducted by a panel formed by the SARB that will score proposals on four criteria: technical merit; technical capabilities of the research team; policy relevance; and capacity building. During this assessment, proposals must meet both a minimum level of technical merit and research team capabilities, and a minimum total score.

The assessment of the technical aspects of the proposal will be in accordance with the following criteria:

1. Technical merit (TM) – 30 points  
(An outline of the project including its objectives, expected contribution to knowledge, method and data use should be submitted.)
2. Technical capabilities of the research team (RT) – 25 points  
(A brief CV of the Principal Researcher and other team members should be submitted.)

The proposals will need to score a minimum of 40 points out of the potential total of 55 points awarded for technical aspects (1 and 2) to be recommended by the panel. Assessments by the panel of the ability of research teams to adjust to unforeseen circumstances will form an important part of scoring under these criteria.

As the programme aims to both support policy-relevant research and contribute to the continued development of research skills within the SARB, the proposals will also be awarded points for their potential contribution to analytical capacity and their degree of policy relevance.

3. Policy relevance (PR) – 30 points
4. Capacity building (CB) – 15 points

A maximum of 100 points can therefore be awarded.

A maximum number of two proposals per researcher may be received, and only one contract per individual researcher may be awarded (the panel may consider more awards in the case where the researcher is part of multiple teams).

Proposals should clearly state the data sources required for the project and their availability. Proposals may include a request for access to specific confidential data from the SARB. While the SARB aims to provide access for successful proposals, the panel's assessment of such proposals will depend on the data's availability.

Only the final decision on whether to fund the proposal or not will be communicated to the applying researchers.

Kindly direct any queries or submissions to [erdresearch@resbank.co.za](mailto:erdresearch@resbank.co.za).

## Key dates

20 January 2024	Final opportunity for questions on the request for research proposals
20 February 2024	Proposals due
30 March 2024	Target date for informing on funding decisions
15 May 2024	Target date for completion of necessary administrative procedures
20 October 2024	Target window for submission of first draft of papers and work-in-progress workshop
15 December 2024	Target window for submission of final paper
20 January 2025	Target window for policy dialogue