TITLE: Local Public Finances, Natural Disasters, and Corruption: An analysis of municipalities in the Northeast Region of Brazil

RESEARCH QUESTION AND OBJECTIVE(S) [Max. 200 words]

Brazil, a developing country prone to climate-related disasters, has experienced over 67,200 events from 1991 to 2023, resulting in approximately US$561.3 billion in losses and affecting around 7,268 people annually. Climatological events account for nearly half of these disasters, with floods making up 38.6% and droughts 45.7%. The Northeast region suffers the most, facing three-quarters of all recorded drought incidents due to its semiarid climate. It is one of the most vulnerable regions to climate change in the world (IPCC, 2014). Additionally, natural disasters reduce tax revenues and increase public spending demands, particularly in developing countries (Lis and Nickel, 2010; Noy and Nualsri, 2011). In Latin America and the Caribbean, governments often require extra resources for disaster response amid declining revenues, which leads to greater debt and weakened fiscal sustainability (Cavallo et al., 2023). This is especially concerning in the Brazilian Northeast, where low fiscal capacity and frequent droughts create budgetary imbalances. This raises an important question:

i. How do natural disasters impact revenue collection and public spending, and their respective composition?

ii. Do these disasters trigger the flypaper phenomenon due to increased federal transfers to municipalities for disaster management?

iii. Also, do climate-related disasters contribute to rising corruption in this region?

RELEVANCE [Max. 400 words]

Between 1998 and 2017, climate-related and geophysical disasters resulted in 1.3 million fatalities and affected 4.4 billion people, leading to injuries and displacement. Affected countries faced direct economic losses of about $2.9 trillion (UNISDR, 2018). Low-income and developing nations suffered greater losses than developed countries, making their economies especially vulnerable to environmental shocks (TOYA and SKIDMORE, 2007; NOY, 2009; STROBL, 2012; LOAYZA et al., 2012).

The literature illustrates the significant economic impacts of environmental shocks, which warrant our attention. Natural disasters cause population displacement in both developing and developed countries, affecting household incomes and local economies (Gray and Mueller, 2012; Drabo and Mbayé, 2015). They disrupt labor markets (Halliday, 2012) and can lead to armed conflicts (Ghimire and Ferreira, 2015) while worsening poverty in vulnerable communities (Carter et al., 2006). The effects extend to future generations, influencing childhood development and pregnancy outcomes due to stress (De Oliveira et al., 2023). This underscores the importance of understanding and addressing the profound consequences of these disasters to build resilience for a better future.

The impact of natural disasters on public finances is significant and often requires increased government spending to aid affected areas (Barone and Mocetti, 2014; Noy and Nualsri, 2011). However, post-disaster spending may not be as effective as proactive measures (Healy and Malhotra, 2009; Skoufias, 2003). Governments tend to prioritize disaster relief due to the immediate political support it generates (Tanzi and Davoodi, 1997; Mauro, 1998; Cavallo and Noy, 2010). For example, in Italy, government spending increased for over a decade after earthquakes, influenced by available resources (Masiero and Santarrosa, 2019). In Brazil, local actions often depend on federal transfers during states of emergency, allowing for more flexible public procurement laws and enhanced disaster recovery efforts. Key measures include access to federal funds (Law 12,340 of 2010), swift social benefits (Decree 7,223 of 2010), lowered rural property taxes (Decree 84,685 of 1980), and prioritization in public housing (Law 11,977

of 2009). Understanding how public finance responds to natural disasters at the local level is crucial for effective resource allocation and recovery (see Bevan and Cook, 2015).

CONTRIBUTION [Max. 400 words]

In response to the damage caused by an extreme natural event, the head of the municipal or state government, along with members of the National Civil Defense and Protection System, may declare a state of abnormality. This can be a state of emergency or a state of public calamity when the damages have impaired the local authority's ability to respond effectively. The declaration of an abnormal situation establishes a special legal status to expedite public administration's response to relief efforts for affected populations. This status allows for bypassing bidding processes for necessary goods and enables requests for additional federal resources, as outlined in Law No. 12,340/2010 and the guidelines of the National Secretariat for Civil Defense and Protection.

The primary goal of this research proposal is to understand how the state of abnormality triggered by natural disasters affect public revenues and expenditures at the local level in Northeast Brazil. The findings will contribute to the growing body of literature examining the impact of natural disasters on public finances (Masiero and Santarrosa, 2019; Miao et al., 2018). Additionally, we will investigate whether the state of abnormality caused by these disasters leads to a flypaper phenomenon in affected municipalities, which often experience an influx of resources to address disaster-related damages (Masiero and Santarrosa, 2019). Importantly, we will also explore whether this state of abnormality results in an increase in corruption. This may occur due to the sudden availability of resources (Brollo et al., 2013) for managing disaster damages (Zafar et al., 2023) and the fiscal flexibility in public spending that can lead to the misallocation of extraordinary resources due to political favoritism or “rent-seeking” behaviors (Cavallo and Noy, 2010).

Our project methodologically contributes to the literature by addressing endogeneity in our "policy variable," which reflects state abnormalities from natural disasters. We use the Post-Double-Selection IV estimator, a causal machine learning technique (Belloni et al., 2014), to explore the factors leading to state of emergency declarations and their effects on municipal public finances, using as instrument the rainfall precipitation. In addition, we identify cases of corruption associated with abnormal situations caused by natural disasters, similar to the work of Colonneli et al (2020), which uses Brazil's national anti-corruption audit program to identify cases of corruption at the municipal level. Based on these reports, we will develop machine learning models to achieve high levels of performance in predicting corruption at the municipal level in public spending.

CONCEPTUAL FRAMEWORK AND TRENDS [Max. 400 words]

This study explores how climate-related disasters affect municipal finances and governance through three interconnected dimensions: fiscal impacts, transfer dependency (flypaper effect), and corruption. These axes are not independent, but establish a causal chain.. Disasters can disrupt tax collection and increase expenditure needs, weakening local fiscal balances. In response, municipalities often rely on additional federal transfers, which expand fiscal space but may also relax spending constraints. In contexts of institutional fragility, this expanded fiscal space can heighten opportunities for corruption, particularly when procurement rules are relaxed during emergencies.

To examine these dynamics, we construct an annual municipal panel from 2003 to 2018. Fiscal data will be sourced from the National Treasury Secretariat and will cover revenues (tax, capital, current, and transfers) and expenditures, both in aggregate and by sector (health, education, public safety, infrastructure, agriculture, etc.). Droughts events will be

measured using declarations of emergency and public calamity recorded in the Ministry of Integration's Integrated Disaster Information System (S2ID).

Corruption will be captured using Brazil's national anti-corruption audit program, which provides exogenous evidence of municipal corruption from 2003 to 2010. Following Colonnelli et al. (2020), we will train machine learning models on these audits and extend predictions to 2018, generating municipality-level indicators of both the occurrence and intensity of corruption. These predicted values will then be incorporated as outcomes in our empirical models, enabling us to test whether disaster-related transfers increase fiscal vulnerability to corruption.

Methodologically, we employ the Post-Double-Selection instrumental variable estimator (Belloni et al., 2014), using rainfall shocks as an instrument for emergency declarations. This addresses endogeneity in disaster reporting and allows us to isolate causal effects on revenues, expenditures, transfers, and corruption. Socioeconomic controls from IPEADATA will further account for structural heterogeneity in local vulnerability.

The final output will be a publicly available municipal panel dataset, integrating fiscal variables, disaster declarations, transfers, and corruption indicators. By making this dataset open access, the project contributes not only to academic research but also to policy design, enabling governments and international organizations to benchmark fiscal resilience and governance risks across municipalities. Important, this methodology can be adapted to be applied in others Latin American Countries.

REVIEW OF EMPIRICAL STUDIES [max. 400 words]

The literature examining the fiscal effects of natural disasters generally points to a consistent pattern: higher public spending, often supported by increased federal transfers, alongside a decline in tax revenues. Most existing studies, however, concentrate on aggregate macroeconomic outcomes at the national level, leaving less explored the local and distributional dimensions.

Lis and Nickel (2010), analyzing hydrometeorological events in 138 countries, found that disasters reduced fiscal balances by an average of 0.23% of GDP, with the impact more severe in developing economies. Similarly, Noy and Nualsri (2011), investigating a broader set of disasters, hydrometeorological, geophysical, and biological, identified contrasting patterns between developed and developing countries: in the former, revenues fell and public debt increased, while in the latter, debt declined and revenues rose. These results highlight how institutional capacity and economic structures shape fiscal responses to shocks.

At the subnational level, evidence suggests that disasters typically lead to higher government spending, largely financed through intergovernmental transfers, while own-source revenues show limited responsiveness. Studies such as Miao et al. (2020) and Masiero and Santarossa (2019) confirm this trend, stressing that local fiscal resilience depends not only on economic fundamentals but also on institutional design and the degree of socioeconomic vulnerability of municipalities. This underscores the importance of evaluating fiscal risks at more granular levels, especially in regions such as Northeast Brazil, where exposure to climate shocks intersects with structural fiscal fragility.

Beyond fiscal variables, a growing strand of research investigates the political economy of disasters, particularly their relationship with corruption. Leeson and Sobel (2008) examined the case of FEMA transfers in the United States (1990–1999) and found an increase in corruption-related convictions following disaster aid. Nguyen et al. (2017), analyzing survey data from 27,050 rural households in Vietnam, argued that disasters can open a "window of opportunity" for corruption, observing that while income losses affected all households equally, spending patterns diverged between officials and non-officials. Rahman et al. (2017), in turn, studied 130 countries from 1984 to 2009 and found no systematic effect of extreme

rainfall on corruption measured by the ICRG, suggesting heterogeneous and context-specific outcomes.

In sum, the literature highlights both the fiscal stress and the governance challenges induced by natural disasters, while pointing to significant gaps in subnational analyses. This motivates the present study, which seeks to advance understanding of how disasters affect local public finances and governance in vulnerable regions.

POLICY EXAMPLES FROM THE REGION AND POLICY RECOMMENDATIONS [Max. 400 words]

By analyzing the effects of extreme weather events on municipal budgets in a region characterized by high socioeconomic vulnerability, we seek to highlight the complexity of the fiscal responses adopted by local governments. This exercise highlights the importance of public policies and budgetary strategies that are capable of adapting to the different socioeconomic realities of the region, in order to mitigate inequalities and strengthen fiscal resilience in the face of recurring shocks. A fiscal structure not only strengthens the financial resilience of local communities, but also plays an essential role in ensuring the continuity of essential services during and after disasters.

In Latin America and the Caribbean, some experiences provide valuable lessons. In Mexico, the FONDEN (Fondo de Desastres Naturales) created a fiscal buffer dedicated to emergency spending, illustrating how earmarked funds can reduce pressure on ordinary budgets. In the Caribbean, the CCRIF SPC (Caribbean Catastrophe Risk Insurance Facility) offers parametric insurance to member countries, providing rapid liquidity after disasters. In Brazil, Law 12,340/2010 established a legal framework for federal transfers to states and municipalities in emergencies, complemented by procurement flexibility. These cases show that fiscal instruments—insurance, contingency funds, and transfer mechanisms—can play a central role in disaster risk management.

Based on these experiences, several policy recommendations emerge. First, contingency funds and countercyclical fiscal rules should be established at municipal and regional levels, ensuring resources for emergency actions without compromising planned investments. Second, insurance mechanisms—for agriculture, infrastructure, and municipal assets—should be expanded with fiscal incentives or co-participation schemes between levels of government. Third, transfer equalization formulas could incorporate climate vulnerability indicators, so that municipalities with low fiscal capacity and high exposure receive priority resources.

Governance and transparency are also critical. Since states of emergency often relax procurement and budgetary rules, policies must embed anti-corruption safeguards, such as mandatory reporting of emergency transfers, independent audits, and digital platforms for expenditure monitoring. This ensures that extraordinary resources are allocated efficiently and equitably, reducing risks of political favoritism and rent-seeking.

Finally, the design and implementation of these instruments require clear operational frameworks: intergovernmental coordination councils to negotiate cost-sharing; integration of fiscal planning with civil defense and environmental policies; and partnerships with international organizations to expand financial protection. By combining resilient infrastructure investments, fiscal instruments, and robust governance mechanisms, municipalities in the Northeast can strengthen both their adaptive capacity and their long-term fiscal sustainability, while reducing the distributive and social impacts of climate-related disasters.

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EXECUTION PERIOD AND CALENDAR OF ACTIVITIES

Activities	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13	Month 14
Data collection	X	X	X											
Literature review	X	X	X	X										
Handling of data		X	X											
Descriptive analyses and initial discussions			X	X										
Initial testing and specification adjustments				X	X									
Preliminary empirical estimates					X	X	X	X						
Interpretation and initial analysis of results						X	X	X	X					
Drafting of the preliminary version of the article								X	X	X	X			
Review and adjustments to the preliminary version										X	X	X		
Development of the online dashboard										X	X	X	X	X
Consolidation of the final version													X	X

Call for Research Proposals

Fiscal Tools to Manage Climate-Induced Disaster Risk

A Research Network Project

RG-T4566

1. Background and Justification

Most Latin American and Caribbean (LAC) countries are vulnerable to disasters caused by natural hazards and to the effects of climate variability, which include extreme weather events as well as slow-onset events. The disaster risk varies significantly across communities (such as different states or municipalities within a country), asset types, economic activities, and social groups. These differences in relative risk, coupled with the influence of anthropogenic emissions as key driver, present challenges for developing risk management strategies that enhance resiliency in an equitable and socially acceptable manner while using tools that can be implemented in practice.

By and large, LAC governments are still in the process of fully assessing how disaster risk affects their countries, including its differentiated impacts across communities and assets. As a result, they continue to face challenges in developing effective mechanisms to enhance their resilience and response capacity.

Ministries of Economy and Finance play a critical role in these efforts by directly managing fiscal risks and indirectly shaping the incentives that influence market behavior. Both are affected by shifts in climate patterns and affect a country's ability to respond to natural disasters and build climate resilience. Moreover, fiscal policy decisions significantly affect how the costs of climate adaptation and disaster response are distributed across different segments of society, including local governments, economic sectors, activities, and socio-economic groups.

Building Fiscal Tools and Strategies for Climate Risk Management

Through macro-fiscal analysis and modelling, some LAC countries have begun to examine the potential impacts of changing climate on public expenditures, GDP growth, debt levels, and cost of capital. However, these efforts typically rely on aggregate economic indicators and adopt a predominantly macroeconomic perspective. Such analyses, while informative, thus offer limited insight into the distributional and equity dimensions of climate risks, particularly regarding key policy questions such as the following: Who should bear the costs of natural disasters? How should adaptation investments be prioritized? How could cost-sharing mechanisms be designed and implemented effectively?

To understand questions such as these and develop appropriate fiscal policy responses, it is critical to:

- **Improve the understanding of climate and disaster risk, and of its distribution,** at a sufficiently granular level, across geographic areas (e.g., states or municipalities), asset types (e.g., man-made or natural), economic sectors, socio-economic groups, and individuals.
- **Establish clear linkages between these risks and fiscal variables** to assess their potential impact on government revenues, public expenditures, and the value of public assets—and conversely, how fiscal policy may influence risk exposure.
- **Identify and evaluate fiscal instruments for managing such risks**, examining their effectiveness, equity implications, and practical trade-offs from the perspective of diverse communities.
- **Analyze the operational aspects of implementation**, including how these instruments can be designed, negotiated, deployed, governed, and managed in practice within the LAC context.

In most LAC countries, data on climate vulnerabilities at the local or individual (taxpayer) level are not used to the fullest extent possible, and in many countries such data are not available. Yet more granular datasets (for example, about the disaster risk of individual buildings or businesses) and analyses based on such data can help explore alternative approaches to assess climate risks and estimate the costs of climate adaptation, disaster response or post-disaster recovery. Moreover, the availability of granular datasets enables the implementation of more sophisticated

approaches to cost-sharing, which could take the form of tax policies, incentives, insurance schemes, or regulations.

This Call for Research Proposals aims to address existing gaps in data and analytical tools, thereby improving the understanding of how fiscal instruments can be leveraged to assess and manage the physical climate risks at micro and local levels. It complements the IDB's ongoing support to LAC countries in strengthening resilience, including the recently launched *Ready and Resilient Americas* program, which promotes collaborative governance for risk prevention, disaster preparedness, and rapid response.

2. Objectives

The main objective of this Call for Research Proposals is to equip scholars and policymakers in LAC countries with datasets, evidence-based insights, and tools to articulate and implement fiscal strategies that contribute to climate adaptation and disaster response efforts, meeting countries' priorities and equity goals. The aim is to enhance the management of climate-related risks through fiscal reforms at the national or local level, enabling the development of risk-sharing mechanisms that align with countries' economic and social objectives.

The call intends to support quantitative and qualitative analyses that combine physical/climate and fiscal dimensions to develop models, methodologies, or tools (including datasets) that offer actionable insight for fiscal policy in LAC. Studies should offer policy recommendations based on rigorous evidence (when historical data can be used), or strong logical argumentation (for example when future uncertainties require decision-making under conditions of deep uncertainty). Research could explore one or more of the following areas:

I. Improve the understanding of climate and disaster risk distribution

Methodologies and models for catastrophic risk analysis are well established and support the insurance and re-insurance sectors, as well as planning and investment decisions in both the public and private sectors. However, current datasets and tools often face integration challenges with fiscal policy tools due to differences in data granularity, lack of interoperability, or technological and institutional barriers

between different areas of expertise. Both domains are currently experiencing or are expected to undergo substantial changes due to several factors such as the need to comprehensively address the impacts and uncertainties associated with global variations in climatic conditions, the emergence of artificial intelligence (AI), which can enhance predictive models, and the availability of higher computational power, which facilitates the handling of larger datasets with greater granularity. Considering this context and aiming to enhance the management of climate-related risks through fiscal policies, we are particularly interested in datasets and models that can directly support such policy decisions:

- Innovative methodologies, tools, or datasets, of sufficient granularity, to quantify and characterize disaster and climate risk for different communities, asset types, economic sectors, individuals, etc.
- Models to better analyze risk and uncertainties for different communities within a country/region, considering both well-behaved risks as well as possible system-level risks and tipping points.
- Analyses of how an extreme event may affect economic outputs, natural and man-made capital, or labor supply in different countries (or regions), given their economic and social structure and endowment of natural and man-made capital.
- Disaster and climate risk datasets designed to better integrate with (national or sub-national) financial management systems or with other fiscal analysis tools (for II below)

II. **Establish clear linkages between these risks and fiscal variables**

- Methodologies and tools to connect climate risk information (from I above) with fiscal variables such as the following:
  - Fiscal revenue that are vulnerable to natural disasters or shifts in climate conditions.
  - Public expenditures that are sensitive to natural disasters or shifts in climate conditions (e.g., expenditures related to disaster recovery).
  - Public assets that could be damaged and whose value could be diminished by natural disasters or shifts to climate conditions.

- Georeferenced fiscal risk maps that incorporate the outputs of climate models to describe and evaluate climate risks and uncertainties (e.g., value of property or business taxes that may be affected by climate variations).
- Models to better understand how individual fiscal variables may respond to natural disasters and changes to climate and how this may affect system-level fiscal risk.

III. **Identify and evaluate fiscal instruments for managing such risks**

- Frameworks and methodological approaches for sharing the risks and costs of shifts in climate conditions and natural disasters, considering goals of effectiveness, fairness, social acceptability, practicality, etc.
- Quantitative models to evaluate alternative risk management options and assess risk-sharing approaches, considering economic, social (e.g., equity), and environmental benefits, costs, and trade-offs.
- Assessments of specific risk management instruments, considering economic and social impacts, risk-sharing approaches, key trade-offs, dynamic and systemic impacts, etc. A non-exclusive list of instruments that could be considered includes the following:
    - Strategies based on tax reforms such as property tax, pollution taxes or income taxes that price climate risk
    - Burden sharing approaches to distribute risks or costs among subnational governments and between subnational governments and central governments
    - Debt-based approaches to fund public investment or PPPs with a focus on resilience
    - Insurance tools (voluntary or mandatory) to spread and manage risk

IV. **Analyze the operational aspects of implementation**

- Frameworks, methodologies or tools to analyze political economy challenges associated with the development or implementation of fiscal tools to manage disaster and climate risk.

- Governance challenges to successfully manage disaster and climate risk using fiscal tools.
- Capabilities and tools for the implementation of fiscal approaches to disaster and climate risk management.

3. Content of the Proposal

Research proposals can be submitted by LAC universities, think tanks or NGOs. Proposals can be submitted individually or by a consortium. Partnerships between academic institutions and governments (e.g., ministries or sub-national governments) or civil society are welcome.

Research institutions must submit a short proposal (maximum of 5 pages) detailing the following:

- The country/countries that will be analyzed and the main research question, explicitly stating how the research contributes to the preexisting literature on the topic.
- A description of the data that will be employed, including whether the datasets are publicly available or restricted. For the latter, the team should show that access to the data is possible and provide a detailed plan for acquiring the data.
- A detailed description of the methodology to be used specifying how the research question will be addressed and of the strategy used to respond to it, describing how relevant empirical data will be collected, as relevant, and discussing the main obstacles identified and how they will be addressed.
- How the results from the studies are expected to contribute to answering important fiscal policy questions or moving the policy debate, and practices, in new directions.
- Proposals that create new datasets or tools that will be made publicly available will be prioritized,
- **Proposals must be submitted in English.**

In addition, the proposals must include:

- The name of the research leader and a list of other researchers involved. The research institution should present a research team whose makeup is justified

by its capacity to meet the objectives of the project, including relevance of prior experience. Curricula vitae of all researchers involved in the whole project must appear in a separate annex. Subsequent substitutions for researchers originally specified in the proposal may be made with prior approval from IDB project coordinator.

- A budget (in a separate annex) indicating the time and resources that will be used within the context of the research work plan. The budget proposed by the institution should disaggregate items financed by the IDB contribution and those financed by the institution. The budget should distinguish between amounts assigned to professional honoraria, "overhead for a maximum of 15 percent of direct costs" and other major categories of research expenditures. **The proposal and corresponding budget *must* be sent in separate files** (following the indication provided in the web submission form)**.**
- Institutions must provide the name and contact information of their legal representative, with authority to sign contracts with the IDB, if selected to conduct the study.

Application Guidelines:

- For your application to be considered, please do not modify the provided format, and please respect the word limit specified in each case. Use the blank space to enter the answer in each section. **This application should not exceed 5 pages in length** (excluding CVs, work plan/schedule of execution, indicative budget, and bibliographical references that are part of the annex of this form).
- To apply, researchers and research teams must send this form (in PDF format) duly completed through the Web Submission Form. **All annexes must be included in this application form and should also be attached individually, following the instructions provided in the Web Submission Form**.
- **This form is subject to the terms and conditions of the Call, including the provision on "Arbitration, Applicable Law and IDB Privileges and Immunities."**

4. Selection Criteria

Research institutions only (including think tanks) may present proposals or lead a consortium presenting a proposal. Government institutions and other stakeholders can be part of a research consortium. The IDB seeks to produce up to five (5) studies and will contribute up to **US$25,000** (or its equivalent in local currency) for each study. The research proposals will be selected based on the following criteria:

a) Importance of the topic / research question
b) Potential for practical applicability of research output within the LAC context
c) Quality and feasibility of the proposed case.
d) Validity of the research design and methodology.
e) Experience of the research team.

5. Proposal Submission

Interested research institutions should submit a proposal through the following Web Submission Form and use the provided proposal form. Proposals are due **August 24, 2025.** Please note that there are two options within the submission form: one for institutions and another for individual researchers. Please make sure to choose the institution's option. If you are unable to submit by this means, please send an email to eltonma@iadb.org.

The research team should include the names of all the researchers and evidence of their ability to meet the objectives of the investigation (including previous relevant experience) and the curriculum vitae (CV) of each participant (maximum 3 pages per person). The CV should highlight experience and publications on the subject of this call. All members of the research team must be citizens of one of the 48 IDB member countries and must not have family members currently working at the IDB Group up to the fourth degree of consanguinity and second degree of affinity, including spouse.

While IDB specialists may collaborate on the project, they will not be eligible to receive compensation for their contribution. It is crucial to note that any change in the composition of the research team after proposal selection must be approved by the IDB. Unauthorized changes to the team may be grounds for termination of the contract.

The selected teams must be willing to receive and respond to comments from the advisors of the Call for Proposals and from the IDB Group specialist throughout the execution of the study, as well as to participate in discussion seminars.

6. Coordination

The project will be coordinated by Marco Buttazzoni from IDB's Institutions for Development sector, Fiscal Management division (IFD/FMM). The scientific committee selecting proposals includes Bridget Hoffmann and João Luiz Ayres Queiroz Da Silva from the IDB's Research Department (RES), Rudy Loo-Kung from IDB's Institutions for Development sector, Fiscal Management division (IFD/FMM), Ginés Suárez from IDB's Natural Disasters and Risk Management division (CSD/DRM), and a qualified external advisor.

7. Activities

During the execution of the research proposals, two closed discussion seminars (conducted in English) will be held to present preliminary versions of the studies and receive feedback from external advisors and IDB Group specialists. These seminars are designed to foster ideas for coordination and exchange among the participating researchers or research teams.

The intermediate and final drafts of the research study will be submitted to a peer review process by the external advisors of this call for proposals. The final product will be the presentation and approval of the publishable version of the research study, along with a response letter to all comments received in the various peer reviews, with the aim of publication in the IDB Working Paper series or Technical Notes, depending on quality.

In all cases, the final dataset employed in the analysis will be delivered to the IDB along with the research paper and replication codes (an exception may be made in the case of proprietary data, in which case the team should provide the appropriate documentation. In those cases, however, providing the replication codes and data at some level of aggregation may nonetheless be required).

The tentative schedule of activities is as follows:

- **August 24, 2025:** Due date for **receiving proposals.** Institutions should ensure that the complete documentation is submitted to the coordinating committee. Complete documentation includes the registration form with all the information requested, the research proposal, budget, and curriculum vitae (CVs up to three pages long).
- **September 8, 2025:** Announcement of **selected research proposals**.
- **October 30, 2025: Submission of signed contracts** between IDB and the awarded institution. The contract must be signed by the legal representative of each institution. Selected proposals that fail to comply with the deadline will be ineligible to receive research funds from this Call for Research Proposals.
- **November 30, 2025: Due date for receiving the paper outline.**
- **January 16, 2026: First Discussion Seminar** to be held virtually via **Zoom** with the research leaders of the studies for the purposes of presenting their proposals and the methodologies to be used in the studies, as well as brief preliminary discussions.
- **April 15, 2026:** Due date for receiving a **first draft** of research papers. The drafts should include an outline of the paper, a draft discussion of the related literature, a description of the context and institutional background, a detailed description of the methodology, and a description of the data to be used. Though welcome, results are not expected for the first draft.
- **May 15, 2026** (Date to be determined): **Second Discussion Seminar** in Washington, D.C. with the research leaders of the studies (or designated team members previously approved by the IDB) to discuss updated drafts of the research papers.
- **August 15, 2026:** Due date for receiving a **second draft** of the research papers, incorporating the changes associated with the feedback received from the coordinating team during the Second Discussion Seminar.
- **September 30, 2026:** Deadline for **final versions** of the research papers**,** including summaries that discuss policy implications. Data and replication files should be submitted by this date. Research papers must follow the **IDB Manual of Style** for working papers. Studies that are of good quality at this stage will be considered for publication in the **IDB Working Papers series**.

8. Financial Contribution and Payment Schedule

The IDB will contribute up to **US$25,000** or its equivalent in local currency as a contribution to the total budget of each study. The maximum percentage of administrative costs (overhead) is 15% of the direct costs. The payment schedule is as follows. The funds provided must be used exclusively for financing research activities, collecting primary data, and/or accessing secondary data sources. Funds may not be used to cover the costs of dissemination materials (dissemination of the products of this call will be the responsibility of the IDB), travel expenses, or the purchase of goods and services:

- **15 percent** within 30 calendar days of the presentation of the **paper outline**.
- **35 percent** within 30 calendar days of presentation and approval by the IDB of the **first draft** of the research paper.
- **30 percent** within 30 calendar days of presentation and approval by the IDB of the **second draft** of the research paper.
- **20 percent** within 30 calendar days of presentation and approval by the IDB of the **final draft** of the research paper, delivery of the datasets utilized by the study, and completion of all the conditions of the terms of reference.

9. References

- Alejos L., Cavallo E., Gabrielli V. (2025) Fiscal Policy: A Two-Way Street. In: Blackman A., Cavallo E., Hoffmann B., Vogt-Schilb A. (eds) *Peril and Promise: Tackling Climate Change in Latin America and the Caribbean.* (Chapter 10) Development in the Americas. InterAmerican Development Bank.
- Delgado R., Eguino H., Perera A.L. (2021). *Fiscal Policy and Climate Change: Recent experiences of Finance Ministries in Latin American and Caribbean* Interamerican Development Bank.
- Eguino H. (coord.) (2024) *Toward Resilient, Decarbonized Public Investment: Practices for Integrating Climate Action into Public Investment Management*. InterAmerican Development Bank
- Eguino H., Delgado R. (2023) *Fiscal Policy for Resilience and Decarbonization: Contributions to the Policy Dialogue*. InterAmerican Development Bank

- Gomez-Gonzalez J., Uribe J., Valencia O. (2025) *Asymmetric sovereign risk: Implications for climate change preparation* World Development vol. 188
- Llempén, Z., Frenk, P., Guardia, A. (2025) *Incorporación de la acción climática en la inversión pública: avances y retos de los sistemas nacionales de inversión pública (SNIP) en América Latina y el Caribe.* InterAmerican Development Bank
- Martinez-Vazquez J. (2021) *Adapting Fiscal Decentralization Design to Combat Climate Change.* International Center for Public Policy. WP 21-05. February 2021
- OECD/The World Bank (2019), *Fiscal Resilience to Natural Disasters: Lessons from Country Experiences*, OECD Publishing, Paris
- Rakes K., et al (2023). *Planning Climate Action in Cities and Regions: Towards Carbon Neutral and Resilient Territories in the face of Climate Change*. InterAmerican Development Bank.
- Rozenberg, J.; Fay, M. (2019) *Beyond the Gap: How Countries Can Afford the Infrastructure They Need While Protecting the Planet* (Vol. 1 of 2). Washington, D.C.: World Bank Group.
- Smoke P., Cook M. (2022) *Administrative Decentralization and Climate Change: Concepts, Experience, and Action.* Climate Governance Papers Series. Washington, DC: World Bank.

Project Budget

This document outlines the detailed budget and payment schedule for the project titled **Local Public Finances, Natural Disasters, and Corruption: An analysis of municipalities in the Northeast Region of Brazil**, in accordance with the guidelines of the Inter-American Development Bank (IDB).

1. Budget Breakdown by Research Activity and Member

Activities codes	PI (USD)	R1 (USD)	R2 (USD)	R3 (USD)	Total (USD)
A1, A2, A3, A4	1.125	1.125	1.125	1.125	5.625
A5, A6	1.125	1.125	1.125	1.125	5.625
A7, A8	1.125	1.125	1.125	1.125	5.625
A9	1.125	1.125	1.125	1.125	5.625
A10, A11	1.125	1.125	1.125	1.125	5.625
Overhead (10%)	2500				2500
TOTAL	8.125	5.625	5.625	5.625	25000

2. Activities

Activities Description	Justification	Total
A1. Data collection	Collecting municipal-level fiscal data, natural disaster records, and anti-corruption audit results is essential to construct the panel dataset that underpins all empirical analyses.	1.406,25
A2. Literature review	A systematic review of previous studies on disasters, fiscal responses, and corruption provides the theoretical foundation and ensures the project is well-grounded in existing scholarship.	1.406,25
A3. Handling of data	Cleaning, harmonizing, and merging fiscal, disaster, and corruption data is necessary to produce a consistent and reliable panel suitable for causal inference and machine learning estimation	1.406,25
A4. Descriptive analyses and initial discussions	Exploratory and descriptive analyses will identify key trends, fiscal vulnerabilities, and potential correlations, serving as a basis for refining the empirical strategy.	1.406,25
A5. Initial testing and specification adjustments	Preliminary testing of econometric models and adjustments to specifications are crucial to ensure methodological soundness before running full estimations.	2.812,5
A6. Preliminary empirical estimates	Early-stage estimations will validate the feasibility of the empirical strategy and guide refinements, helping to detect preliminary evidence of fiscal and governance effects.	2.812,5
A7. Interpretation and initial analysis of results	Interpreting initial results allows us to link statistical outputs to the conceptual framework, assessing the fiscal impacts of disasters and their connection with transfers and corruption.	2.812,5
A8. Drafting of the preliminary version of the article	Producing an initial draft ensures the research team consolidates findings, receives feedback, and refines arguments early in the writing stage.	2.812,5

A9. Review and adjustments to the preliminary version	Revising and improving the draft will address methodological, theoretical, and empirical feedback, strengthening the robustness and clarity of the study.	5.625
A10. Development of the online dashboard	Creating a public online dashboard guarantees dissemination and transparency, allowing policymakers and researchers to access municipal-level results and datasets.	2.812,5
A11. Consolidation of the final version	The final step integrates all revisions, ensuring the article, dataset, and dashboard are cohesive, polished, and ready for academic and policy dissemination.	2.812,5
Total		22.500

COORDENADOR:
Rafael Barros Barbosa

UNIDADE ACADÊMICA:
FEAAC

Departamento/Outras vinculações:
Departamento de Economia Aplicada

INFORMAÇÕES SOBRE O PROJETO

Título:
Local Public Finances, Natural Disasters, and Corruption: An analysis of municipalities in the Northeast Region of Brazil

Grande área de conhecimento:
Ciências Sociais Aplicadas

Resumo:
A concern in the Brazilian Northeast, where low fiscal capacity and frequent droughts create budgetary imbalances. This raises an important question:
i. How do natural disasters impact revenue collection and public spending, and their respective composition?
ii. Do these disasters trigger the flypaper phenomenon due to increased federal transfers to municipalities for disaster management?
iii. Also, do climate-related disasters contribute to rising corruption in this region?

Palavras-chave:

1ª:
Climate change

2ª:
Fiscal policy

3ª:
corruption

4ª:
disaster management

Data de aprovação no Departamento:
30/09/2025

Aprovação no Comitê de Ética:
Não se aplica

* Em caso afirmativo, preencher os dois próximos campos.

Comitê de Ética ao qual o projeto foi aprovado:
-

Número do Protocolo de Aprovação:
-

Início da vigência do Projeto:
29/09/2025

Fim da vigência do Projeto:
10/12/2026

Bolsas:

Sim

Projeto financiado:
Sim

Em caso afirmativo

Recurso Financeiro (custeio e/ou capital):
-

Tipo de Financiamento:
Internacional

Financiamento por:
Agência de fomento

No caso de agência de fomento:
Outros (Especificar no campo abaixo)

Qual?
BID

No caso de empresa:
-

Qual ?
-

Valor dos Recursos Concedidos:
137.500,00

Desembolsos (destinar uma linha para cada ano/calendário entre o início e o fim da vigência):
-

Documento assinado eletronicamente por **Rafael Barros Barbosa**, **Professor do Magistério Superior**, em 30/10/2025, às 10:35, conforme horário oficial de Brasília, com fundamento no art. 6º, § 1º, do Decreto nº 8.539, de 8 de outubro de 2015 .

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MINISTÉRIO DA EDUCAÇÃO
UNIVERSIDADE FEDERAL DO CEARÁ
FACULDADE DE ECONOMIA, ADMINISTRAÇÃO, ATUÁRIA E CONTABILIDADE
DEPARTAMENTO DE ECONOMIA APLICADA - DEA

DESPACHO

Fortaleza-CE, 29 de setembro de 2025.

Assunto: projeto aprovado pelo Colegiado do DEA/FEAAC

Encaminhe-se o presente processo à Diretoria da FEAAC, tendo em vista aprovação da matéria em reunião ordinária do Departamento de Economia Aplicada no dia 30/09/2025.

Atenciosamente,

Prof. Guilherme Diniz Irffi

Chefe do Departamento de Economia Aplicada

Av. da Universidade, nº 2431 - Bairro Benfica, Fortaleza - CE, CEP 60020-180
Telefone: (85) 3366-7800 - E-mail: deafeaac@gmail.com - http://ufc.br/

Documento assinado eletronicamente por **GUILHERME DINIZ IRFFI**, **Chefe de Departamento**, em 28/10/2025, às 14:16, conforme horário oficial de Brasília, com fundamento no art. 6º, § 1º, do Decreto nº 8.539, de 8 de outubro de 2015.

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MINISTÉRIO DA EDUCAÇÃO
UNIVERSIDADE FEDERAL DO CEARÁ
FACULDADE DE ECONOMIA, ADMINISTRAÇÃO, ATUÁRIA E CONTABILIDADE
DIRETORIA DA FEAAC

DESPACHO

Fortaleza, 28 de outubro de 2025.

Encaminhe-se o presente processo à PRPPG, tendo em vista aprovação *ad referendum* pela Diretoria da FEAAC, do Projeto de Pesquisa intitulado *Local Public Finances, Natural Disasters, and Corruption: An analysis of municipalities in the Northeast Region of Brazil*, coordenado pelo Prof. Rafael Barros Barbosa, na presente data.

Prof. Dr. Carlos Adriano Santos Gomes Gordiano
Diretor da FEAAC

Av. da Universidade, nº 2486 - Bairro Benfica, Fortaleza - CE, CEP 60020-180
Telefone: (85) 3366-7790 - E-mail: secfeaac@ufc.br - www.feaac.ufc.br

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UNIVERSIDADE FEDERAL DO CEARÁ
REITORIA
PRÓ-REITORIA DE PESQUISA E PÓS-GRADUAÇÃO

DESPACHO Nº 727/2025/PRPPG/REITORIA-UFC

Fortaleza, 30 de outubro de 2025.

Encaminhe-se à Coordenadoria de Pesquisa (CPESQ/PRPPG), para a análise da demanda.

Elias Andrade de Freitas
Secretário Administrativo

Documento assinado eletronicamente por **ELIAS ANDRADE DE FREITAS**, **Secretário Administrativo**, em 30/10/2025, às 10:37, conforme horário oficial de Brasília, com fundamento no art. 6º, § 1º, do Decreto nº 8.539, de 8 de outubro de 2015 .

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UNIVERSIDADE FEDERAL DO CEARÁ
PRÓ-REITORIA DE PESQUISA E PÓS-GRADUAÇÃO
COORDENADORIA DE PESQUISA/PRPPG

DESPACHO Nº 135/2025/PRPPG/CPESQ/PRPPG/REITORIA-UFC

Fortaleza, 11 de novembro de 2025

Interessado: **Rafael Barros Barbosa**

Assunto: Referente ao projeto de pesquisa "Local Public Finances, Natural Disasters, and Corruption: An analysis of municipalities in the Northeast Region of Brazil".

Projeto cadastrado com sucesso no Sistema de Transparência de Projetos da PRPPG.

Atenciosamente,

Documento assinado eletronicamente por **SIDIANNY MARCYA LIMA CESAR DE SOUSA**, **Assistente em Administração**, em 11/11/2025, às 11:02, conforme horário oficial de Brasília, com fundamento no art. 6º, § 1º, do Decreto nº 8.539, de 8 de outubro de 2015 .

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