

# The BNDES' role in the Green Economy: institutional framework, disbursements and resource mobilisation (2010-2021)\*

*O papel do BNDES na Economia Verde: institucionalidade, desembolsos e mobilização de capital (2010-2021)*

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RESUMO: Este artigo teve como objetivo analisar o papel do BNDES na promoção da 'economia verde' no Brasil na última década. Defendemos que, como banco de desenvolvimento, o BNDES é um ator essencial no incentivo a investimentos de baixa emissão, ambientalmente sustentáveis e resilientes às mudanças climáticas. Para tanto, está organizado da seguinte forma. Após a introdução, a seção 2 investiga o papel a desempenhar pelos bancos de desenvolvimento na promoção de economias ambientalmente sustentáveis e com baixas emissões de GEE. Na seção 3, os desembolsos do BNDES na economia verde são analisados. A seção 4 destaca a mobilização de recursos do BNDES para a economia verde durante o mesmo período, incluindo a gestão de fundos ambientais e climáticos, bem como a emissão de títulos verdes e sustentáveis. Por fim, são apresentadas considerações finais.

PALAVRAS-CHAVE: Bancos de desenvolvimento; economia verde.

ABSTRACT: This paper aimed to analyse the role of the BNDES in promoting the 'green economy' in Brazil over the past decade. We defend that, as a development bank, BNDES is an essential player in encouraging investments that are low-emission, environmentally sustainable, and climate-change resilient. The paper is organized as follows. After the introduction, section 2 delves into the role to be played by development banks in promoting environmentally sustainable, low GHG emission economies. Section 3 analyses the BNDES' disbursements in the green economy between 2010 and 2021. Section 4 highlights the mobilization of BNDES resources

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for the green economy, including the management of environmental and climate funds, as well as the issuance of green and sustainable bonds. Finally, concluding remarks are presented.

KEYWORDS: Development banks; green economy.

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## 1. INTRODUCTION

The advance of environmental degradation and climate change has brought to light the need to restructure development patterns towards environmentally sustainable forms that guarantee a reduction in greenhouse gas (GHG) emissions, in what is known as the transition to a low-carbon economy. In addition, adaptation efforts are needed to minimise the current and future impacts of climate change on ecosystems, cities and their infrastructure.

Therefore, the discussion on how to guarantee the necessary funding to promote investments that will enable a sustainable, low-emissions development path is becoming more relevant. Public and private resources are needed to be mobilised and directed to finance projects aimed at reducing GHG emissions and promoting an environmentally sustainable economy, resilient to climate change.

Public development banks play a crucial role in this endeavour. Besides their significant assets and financing capacity, these institutions possess non-financial advantages, such as extensive knowledge of the opportunities and barriers in their operational context. They hold vast experience working with both the public and private sectors, expertise in structuring projects, and the ability to collaborate with national authorities in formulating and implementing development plans. (Griffith-Jones; Attridge; Gouett, 2020; OCDE, 2018; Schneider et al., 2021).

That said, development banks can play multiple roles in supporting the transition towards more sustainable development patterns that are geared towards mitigating and adapting to climate change. These roles can be grouped into the following four categories: i) As financiers, development banks can define criteria that favour environmentally and climatically desirable activities; ii) As resource mobilisers, they can help to bring together funding from different sources to finance sustainable projects; iii) As managers of smaller-scale projects, development banks can take on the responsibility of managing the implementation of smaller projects, which may be too small or too risky for commercial banks to finance; and, iv) As promoters of demand for financing sustainable projects, development banks can help to raise awareness and promote the benefits of sustainable projects, which can, in turn, encourage demand for financing such projects.

The purpose of this paper is to analyse the role of BNDES in promoting the 'green economy' in Brazil over the past decade. To that purpose, it is organized as follows. After this introduction, section 2 delves into the role to be played by development banks in promoting environmentally sustainable, low GHG emission economies. Sections 3 and 4 focus on the BNDES. Section 3 analyses the BNDES'

disbursements in the green economy between 2010 and 2021. Section 4 highlights the mobilization of BNDES resources for the green economy during the same period, including the management of environmental and climate funds, as well as the issuance of green and sustainable bonds. Finally, concluding remarks are presented.

## 2. ENVIRONMENTAL AND CLIMATE CRISIS, IMPLICATIONS FOR THE FINANCIAL SYSTEM AND DEVELOPMENT BANKS

In a post-Keynesian perspective, financial systems are permeated by uncertainty, crises of confidence, and cycles caused by financial fragility and instability (Martini, 2014). Public banks, among which Public Development Banks (PDBs), can act to “(...) counter and mitigate the uncertainty and instability inherent in capitalist economies” (Deos; Mendonça, 2010, p. 64). Thus, public banks, in general, can contribute – on the one hand – to serving certain segments that are usually neglected by the private credit market and, on the other hand, they can provide greater stability to the financial system. That said, two major roles that can be played by PDBs stand out here: financing and mobilizing resources and contributing to the stability of systems and the economy. These roles are in line with the challenges posed by climate change and ecosystem degradation, their implications for the financial system, and the significant financing needs.

### 2.1 Development Banks

Banking institutions, which play a central role in granting credit only offer credit to clients and segments considered, according to their criteria, to be credit-worthy. Thus, banks may not grant credit – especially long-term credit – to certain segments and/or projects. This is a strong argument for the existence of PDBs: to serve sectors and/or projects which, as they are complex, expensive or mean a greater degree of uncertainty as to the expected results, tend to be under-financed by the private sector. These include infrastructure projects, technological innovation, support for micro, small, and medium-sized enterprises, and green economy initiatives, among others (Ferraz; Além; Madeira, 2013; Griffith-Jones, 2016a). In addition, the authors argue that PDBs can contribute to the implementation of development policies, directing credit to sectors considered strategic that are still nascent, sectors intensive in research and development.

PDBs can also play an important role in mitigating the inherent instability of the financial system. Griffith-Jones (2016a) highlights the ‘boom-bust’ trend, with periods of boom followed by periods of downturn, as presented in Minsky’s financial instability hypothesis. Thus, PDBs must act in a counter-cyclical manner, providing credit – especially long-term credit – at times of worsening financial instability (Griffith-Jones, 2016a; Ferraz; Além; Madeira, 2013).

Mazzucato and Penna (2016) highlight the main roles that PDBs have historically played, namely: countercyclical financing; capital development; support

for new ventures, and a challenge-led role. Inspired by authors such as Keynes, Minsky, and Schumpeter, they seek to explain how the actions of PDBs have promoted the creation and structuring of markets. They also highlight the PDBs' key role in developing capacities, promoting capital accumulation, and supporting technological transformations, often acting as coordinators of a network of different actors in development efforts – such as private companies, research centres, etc. When it comes to supporting new ventures, PDBs are responsible for providing long-term financing for innovation projects.

## **2.2 Environmental and climate crisis, risks for financial systems and development banks**

There already seems to be a consensus that climate change and ecosystem degradation will affect the entire economic system and pose risks to the financial system (Carney, 2015; Chenet; Ryan-Collins; Van Lerven, 2019; Feil, 2021). An important part of the literature and the actions of central banks and regulatory authorities have focused on understanding how such risks could affect financial stability, and on developing an analytical framework that allows financial institutions to adjust portfolios and risk management (Campiglio et al., 2018).

Climate-related financial risks “are unique in that they are characterised by far-reaching impact, unforeseeable nature and irreversibility” (Chenet; Ryan-Collins; Van Lerven, 2019). Two main sources of climate risks for the financial system have been identified: physical risks and transitional risks. Physical risks are those directly related to the impacts of climate change and the consequent increase in the frequency of extreme weather events – such as droughts, floods, and hurricanes – or even changes in climate patterns – such as the gradual rise in average temperatures and sea level rise (Carney, 2015; Chenet; Ryan-Collins; Van Lerven, 2019; Schneider et al., 2021). Faced with the growing physical risks associated with the advance of climate change, the transition to a low greenhouse gas (GHG) emissions economy that is resilient to inevitable climate change must be sought. From this, however, comes the second group of climate risks for the financial system: the transitional risks.

Similarly, environmental degradation can also affect economic activity and the financial system through physical risks – arising, for example, from pressure on water resources or the loss of biodiversity and its impacts on assets – or transitional risks, resulting from companies and financial institutions not aligning their strategies with advances in society aimed at reducing environmental degradation, such as new technologies, policies and regulations, and changes in consumer preferences (European Central Bank, 2020; Network For Greening The Financial System, 2022).

Climate and environmental risks – whether physical or transitional – can therefore have multiple effects on the financial system. Initially, they manifest themselves at the level of companies and their physical assets, impacting their revenues and expenses and, consequently, their access to the capital markets and their financial

value. Risk at the company level can spread to the financial system through traditional market, credit, liquidity, and operational risks, spreading through the portfolios of financial institutions, with the potential to become systemic (Chenet; Ryan-Collins; Van Lerven, 2019).

In this sense, Espagne and Aglietta (2016) develop the concept of systemic climate risk in analogy to the concept of systemic financial risk. The authors recognise three essential elements in a systemic event: the occurrence of a shock; the endogenous nature of the shock; and the contagion effects through a network of interrelationships. They claim that climate change has all three elements: global warming will increase the occurrence of extreme weather events, such as major floods and hurricanes. The existence of multiple physical interconnections – through global value chains, for example – and financial interconnections can turn an isolated extreme event into a shock of major proportions, with the potential to spread throughout the system, leading to abrupt reversals of expectations and a significant reduction in liquidity. Finally, regarding the endogeneity of systemic climate risk, the scientific community no longer has any doubts that anthropogenic action is the main cause of the rise in global temperatures (Aglietta; Espagne, 2016).

To deal with the implications of this environmental and climate crisis on the financial system, a large part of the policy frameworks and instruments that have been adopted are based on the efficient markets hypothesis, understanding environmental and/or climate risks as negative externalities that are not priced – or are priced incorrectly – by the market. From this perspective, a better pricing of these risks and the correction of relative prices between ‘brown’ and ‘green’ assets/activities would lead to a redirection of the financial flows. This approach leaves to the private capital dynamics the transition to a sustainable, low-emissions economy (Kedward; Gabor; Ryan-Collins, 2022).

Nonetheless, this argument is not only limited, but insufficient. Projects to make the transition possible involve a high degree of uncertainty, may not be creditworthy, and require patient, long-term financing, which is not usually offered by the private sector (Aglietta; Espagne, 2016; Kedward; Gabor; Ryan-Collins, 2022). A market shaping approach is therefore needed, with a strong use of the state’s capacity to promote the transformations in question. Mendonça, Feil and Pessoa (2023), when addressing the role of financial systems in the transition process, point out that incorporating climate risks – physical and transition – into regulatory frameworks and institutions’ risk management means a reactive action. However, they emphasise that the financial systems, as creators and directors of resources to finance investments, must play an active role in transforming financial flows away from GHG-intensive activities. For the authors, this active role requires the establishment of mechanisms to induce sustainable investments.

Kedward, Gabor and Ryan-Collins (2022) argue in favour of a “green credit allocation policy”, in which PDBs play a prominent role. In addition to their important counter-cyclical role, PDBs generally play an important role in creating and structuring new markets, serving segments that are usually under-financed by private banks. They can, for instance, contribute to micro, small, and medium-sized

companies; finance complex, long-term projects; and support nascent sectors and innovation projects. They can therefore be central players in implementing policies geared towards socio-environmental missions, such as those related to mitigating and adapting to climate change (Mazzucato; Penna, 2016). Therefore, to be at the forefront of the process of transforming financial flows to promote the green transition, PDBs must change their capital allocation criteria to favour financing sustainable activities that are aligned with the objectives of tackling the climate crisis (Aglietta; Espagne, 2016).

National development banks (NDBs), in particular, can play a leading role in this process. In addition to their vast knowledge of the local context and market, and their ability to mobilise public and private resources – both domestically and abroad – (Griffith-Jones; Attridge; Gouett, 2020), these institutions form part of the public sector and are often used as instruments for formulating and implementing national development strategies (Studart; Gallagher, 2016). With mission-oriented actions aimed at solving challenges such as those related to the environmental and climate crisis, NDBs can be decisive in transforming certain sectors of activity or even the economy as a whole (Mazzucato; Penna, 2016). Without aiming to exhaust the different ways in which DBs can act in this transition process, one can highlight: i) as financiers, defining criteria that favour desirable activities from an environmental and climate point of view; ii) as mobilisers of resources, both private and from multilateral mechanisms and funds; iii) aggregating smaller-scale projects, and iv) promoting demand for the financing of sustainable projects.

The following sections will discuss the BNDES' role in the green economy, analysing the disbursements and mobilisation of resources for the green economy over the last decade.

### 3. BNDES AND ITS DISBURSEMENTS IN THE GREEN ECONOMY BETWEEN 2010 AND 2021

BNDES has been acting as the main long-term financing institution in Brazil since its foundation, in 1952. Its operations have changed over time according to successive and different development approaches (Palludeto; Borghi, 2021). It was part of the national development project from its creation until the end of the 1970s. In the 1980s, it acted in line with the adjustment policies of the Brazilian economy; in the 1990s, it was in charge of a broad privatisation programme. In the period of the Workers' Party governments, between 2003 and 2015, it was a central actor in developmental actions and counter-cyclical actions during the great financial crisis of 2008-2009. Finally, from 2016 to 2021, when the country underwent a new neoliberal turn, the bank was drastically reduced in size and turned to structuring projects and carrying out privatisations.

Regarding its environmental and climate performance, despite some important criticisms, BNDES has been a pioneering financial institution in Brazil, which does not mean a complete performance. As early as the 1970s, the bank started to in-

corporate the environment as a variable into the processes of analysing and granting credit (Paiva, 2012). In the 1990s, it led a group of federal public banks in formalising the Green Protocol, to define social and environmental responsibility policies and practices for the banking sector (BNDES, 2012). In 2010, the bank was a pioneer in establishing its first Corporate Social and Environmental Responsibility Policy. More recently, the bank has centralised sustainability and tackling climate change in its policies and strategic plans.

### 3.1 BNDES disbursements (2010 to 2021)

To guide its decisions to allocate resources to the green economy, the BNDES developed its own Sustainability Taxonomy, divided into Green Economy indicators and Social Development indicators. In 2021, the bank revised these indicators to bring them into line with the taxonomy drawn up by the Brazilian Bank Association (Febraban).

Concerning the Green Economy, the BNDES has identified financial solutions related to the following categories (BNDES, 2022a, p. 4-6):

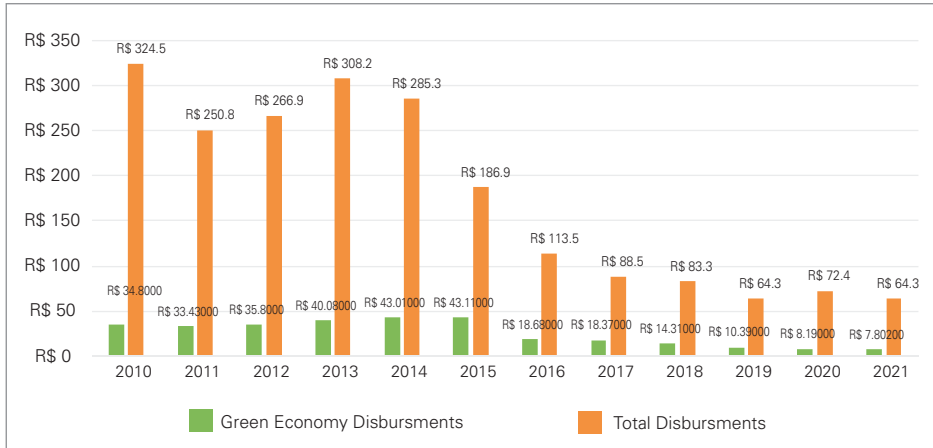
- a) Renewable energies and energy efficiency
- b) Hydroelectric plants above 30 MW
- c) Public passenger transport
- d) Cargo transport
- e) Water and sewage management
- f) Solid waste management
- g) Forestry
- h) Agricultural improvements
- i) Climate change adaptation and disaster risk management

The BNDES' disbursements in the green economy between 2010 and 2021 will be analysed according to these indicators. It fell drastically from 2016 onwards, following the shrinking moving in the wake of the turn of the economic policy after the impeachment of President Dilma Rousseff. The average annual disbursement to the green economy (at December 2021 prices) between 2010 and 2015 was approximately R\$ 38.37 B, while the annual disbursement in the green economy in that period was never less than R\$ 33 B. In the following period, from 2016 to 2021, the average annual disbursement in the green economy was only R\$ 12.96 B. While disbursements in the green economy grew annually between 2011 and 2015, they fell systematically from 2016 onwards (see Graph 1). It can therefore be seen that even though the bank's public positioning and institutional policies have given great prominence to environmental and climate issues in recent years, this has reflected in the growth of financial support given by the institution to these segments.

Except for 2015 and 2017, BNDES' disbursements to the green economy were always below 20% of the total (see Graph 2). Even so, it is possible to observe a

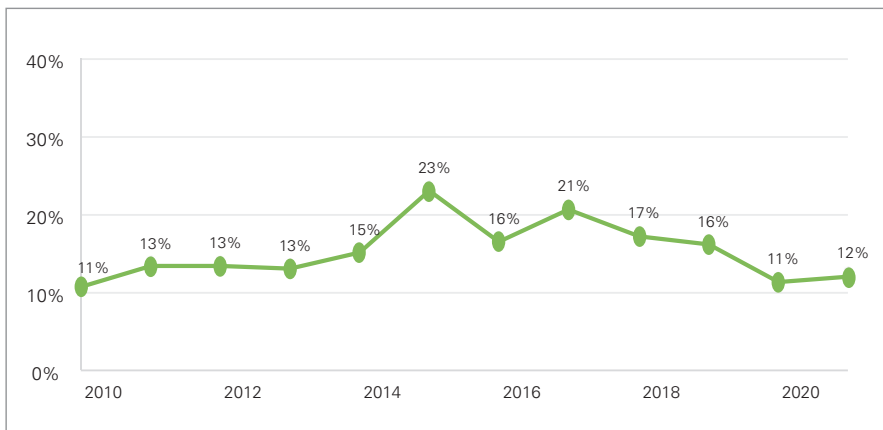
trend reversal over the period analysed: while in the first five-year period, disbursements to the green economy showed a growth trend, reversed from 2017 onwards and, by the end of 2021, the proportion of disbursements to the green economy in relation to the total was at the same level as the beginning of the period (Graph 3).

Graph 1: BNDES' Total and Green Economy Disbursements (2010 to 2021, R\$ B, values corrected by IPCA at 2021 prices)



Source: BNDES.

Graph 2: Share of BNDES disbursements to the green economy in relation to total disbursements (2010 to 2021)

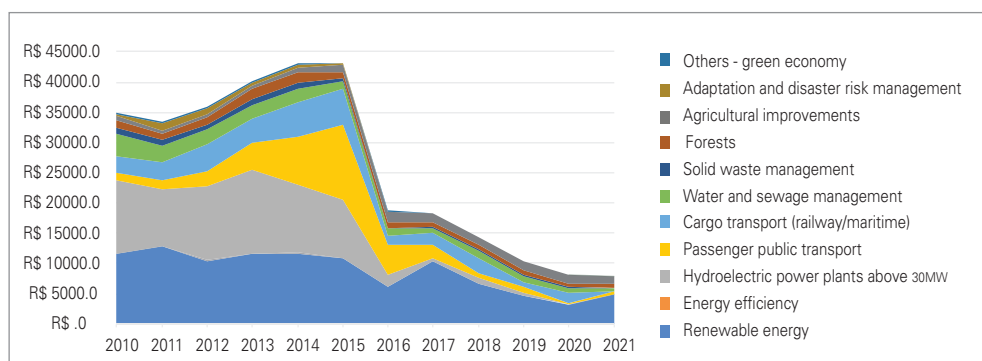


Source: BNDES.



The composition of the BNDES' green economy disbursements by indicator shows the 'agricultural improvements' indicator as the only one that suffered an increase in the disbursements, from 2010-2015 to 2016-2021, reflecting the BNDES' greater support, more broadly, for the agricultural sector observed during the years of Jair Bolsonaro's government. While the annual average of disbursements for 'agricultural improvements' between 2010 and 2015 was R\$ 673 M, this average rose to approximately R\$ 1.4 B/year in the subsequent period. This indicator refers to support for agricultural production on a sustainable basis and also for the recovery of degraded areas and therefore includes key activities for reducing GHG emissions. Worth noting that the agricultural sector is the second largest source of Brazilian emissions. Although the greater allocation of funding for sustainable agricultural practices and soil recovery is a step forward, in 2021, the BNDES' total support for agriculture was R\$ 16.7 B (second in importance) and, of this total, only R\$ 1.2 B covered agricultural activities considered 'green'.

Graph 3: BNDES disbursements by green economy indicator, 2010-2021  
in Ms of reais, values adjusted by the IPCA at 2021 prices.



Source: BNDES.

#### 4. MOBILISING RESOURCES FOR THE GREEN ECONOMY

The mobilisation capacity of public and private resources to channel into sectors and projects is among the different roles that PDBs can take on in the transition to a sustainable economy. With regard to mobilising private capital, many PDBs have resorted to issuing green bonds to expand their sustainable portfolios and encourage investor participation in green projects, while also supporting the development of local capital markets (Griffith-Jones; Attridge; Gouett, 2020).

In 2017, to finance wind and solar energy projects, BNDES issued its first green bonds on the international market. The bonds, with a total value of US\$ 1 B, were listed on the Luxembourg Green Exchange, with a seven-year term and a coupon of 4.74% per year (BNDES, 2018). Three years later, BNDES was the first

institution to launch Green Financial Bills (LFV) on the domestic market, using the same structure as the bonds issued in 2017, also aiming to finance solar and wind energy projects. The domestic issue, worth R\$ 1 B, had a term of two years and a rate of CDI + 0.45% per year (BNDES, 2022b).

Even after these two major green bond issues, it remained as a small portion of the institution's total funding from the market: in 2017, funding from the issue of green bonds corresponded to approximately 14% of the total balance of the BNDES' obligations with bonds issued abroad and financial bills issued domestically. In 2020, the issuance of LFVs corresponded to approximately 10% of total funding in the foreign and domestic markets.

Concerning to green and sustainable bonds, it is argued that, even being positive from the point of view of stimulating the development of markets for these bonds and also by raising funds from a more 'socially responsible' category of investors, there is no evidence that raising funds through these bonds mobilises additional funds that would not otherwise be raised, or that it is cheaper than issuing conventional bonds. Griffith-Jones, Attridge and Gouett (2020) therefore suggest that it may be more advantageous for PDBs to issue conventional bonds to fulfil a green mandate than to incur the high transaction costs involved in issuing green bonds.

Finally, BNDES' green bond issues came at a time when the institution has suffered an important reduction in public funding, with the end of contributions and the early return of resources previously borrowed from the National Treasury, and the strengthening of the discourse on raising funds on the market. Although issuing these bonds is important and has positive aspects in terms of channelling private resources to sustainable projects and developing a market for green bonds, these instruments are not enough – nor are they adequate – to promote the structural changes needed for the transition to an environmentally sustainable, low-emissions economy.

PDBs can also access resources through national or international cooperation, geared towards environmental and climate action, including access to non-refundable resources from multilateral funds or bilateral cooperation. BNDES has stood out in the operationalisation and management of these resources through specific funds, such as the Amazon Fund and the Climate Fund.

#### 4.1 Amazon Fund

The BNDES has managed the Amazon Fund since its establishment, being responsible for “(...) raising donations, analysing, approving and contracting projects, as well as following up, monitoring and rendering accounts” (Cardoso, 2022, p. 10). The Fund – proposed by Brazil in 2007 and authorised by the BNDES on the following year – was set up to receive donations based on previous results in reducing deforestation and intended to finance (non-reimbursable) initiatives that prevent and combat deforestation and that promote conservation and the sustainable use of land in the Legal Amazon (BNDES, 2022c, p. 6). The majority of the

Amazon Fund's resources come from donations from the government of Norway, which was responsible for around 93.4% of the R\$3.4 B the Fund had received by the end of 2021. In addition, the German government (via KfW) was responsible for 5.7% and Petrobras 0.5% of the donations received up to 2021 (BNDES, 2022c).

The portfolio supported by the Amazon Fund, at the end of 2021, consisted of 102 projects, being the allocated resources of R\$ 1.8 B. Of these 102 projects, 47 had already been completed at that moment. It should be noted, however, that the approval of new projects under the Amazon Fund was suspended in 2019, and only disbursements of resources for projects that had been previously approved were maintained (BNDES, 2022c, p. 6-9).

The halt in the approval of new projects was due to changes in the Amazon Fund's governance structure at the beginning of 2019. Until then, the Fund had a Technical Committee appointed by the Ministry of the Environment (MMA) after a consultation process with the Brazilian Climate Change Forum and responsible for "(...) certifying carbon emissions from deforestation calculated by the MMA" (BNDES, 2022c, p. 14). It also had the Amazon Fund Steering Committee (COFA), whose role was to determine the guidelines and criteria for the use of resources. This committee was made up of representatives from the federal government, the states of the Legal Amazon and civil society (BNDES, 2022c, p. 14).

In April 2019, however, both committees were abolished by a new resolution, which ended a series of collegiate bodies in the federal public administration (BNDES, 2022c; Souza, 2020). This led to a diplomatic crisis with Germany and Norway, who did not accept the then environment minister's proposal to "exclude civil society from the steering committee and use the money to pay landowners in environmental reserves" (Souza, 2020). As a result, the analysis and approval of new projects under the Amazon Fund were suspended.

In 2020, four political parties filed a Direct Action of Unconstitutionality by Omission (ADO) against the Union, as a result of the paralysis of the Fund. The decision of the trial, closed by the Federal Supreme Court (STF) in November 2022, concluded that "(...) the changes made to the format of the fund since 2019, with the unilateral extinction of committees and without the creation of another administrative body, have prevented the financing of new projects, which constitutes an omission by the government in its duty to preserve the Amazon" (Portal STF, 2022a). The STF then ordered the Federal Government to take the necessary steps to reactivate the Fund, which happened in 2023.

## 4.2 Climate Fund

The National Climate Change Fund was created in 2009 as an instrument of the National Climate Change Policy (PNMC) to finance projects, studies and undertakings to reduce GHG emissions and promote adaptation to the effects of climate change in the country (Brasil, [n.d.]). The Climate Fund is linked to the MMA and provides resources in the form of non-reimbursable funds, operated by

the MMA, and reimbursable funds, administered by the BNDES. In order to manage these resources, which come from the MMA's budget, the BNDES established the Climate Fund Programme, whose objective is “to support the implementation of projects, the acquisition of machinery and equipment and technological development related to the reduction of greenhouse gas emissions and adaptation to climate change and its effects” (BNDES, [n.d.]).

Despite being the PNMC's financial instrument, some problems have been observed in the implementation of the Climate Fund since its establishment. The first and more structural concerns the unpredictability of resources. A 2019 report by the Federal Senate's Environment Committee pointed out that, although the Climate Fund was supposed to be one of the main instruments for making it possible to fulfil Brazil's climate goals, it lacked sufficient and predictable resources, limiting its effectiveness (Brasil, 2019, p. 63-64).

As a result, between 2011 and 2018, BNDES granted funds from the Climate Fund only in 2011, 2013, 2017 and 2018. The reason was the Fund's main budget source is money from oil production compensation, as set out in the National Energy Policy (PEN) and, between 2013 and 2017, there were two revocations related to PEN transfers, which only had their flow normalised in 2018 (Colonna et al., 2022). Even with these difficulties related to the transfer of funds, the Report of the Senate Environment Committee highlights that the Climate Fund had a track record of good achievements and could therefore be improved in its strategies for raising and using funds (Brasil, 2019, p. 64). According to data provided by the BNDES, by the end of 2021, approximately R\$ 812 M had been contracted under the Climate Fund Programme.

In addition to the more structural issues involving the unpredictability of resources for the Fund, a conjectural issue was posed by the environmental (dismantling) President Bolsonaro's policy, who chose to paralyse the Climate Fund's operations in 2019 (Brasil, 2019). That year, although there was budgetary authorisation for the application of over R\$ 8 M for non-reimbursable initiatives and over R\$ 540 M in reimbursable resources, only R\$718,000 of non-reimbursable resources and R\$ 348.7 M of reimbursable resources were committed, and the allocation of these resources to the BNDES did not materialise (Brazilian Socialist Party et al., 2020, p. 17-18). This was due to changes in the governance of the Fund's Management Council, within the MMA, and the Ministry's failure to publish the Annual Resource Application Plan for 2019, without which the resources allocated in the budget cannot be used (Brasil, 2019, p. 85). As a result, extended to 2020, the BNDES approved only two new contracts under the Climate Fund Programme that year, totalling only R\$ 30 M (BNDES, 2021, p. 5).

As a result of the Fund's inoperability, four parties filed an ADO against the Federal Government in 2020, alleging irregularities and deficiencies in the operation of the Climate Fund, especially in the allocation of its resources, which resulted in its inoperability from 2019 onwards. In July 2022, the STF prohibited the contingency of the Climate Fund's resources, ordering the federal government to adopt

the measures necessary for its operation and recognising the Union's omission in not allocating the fund's resources (Portal STF, 2022b).

### 4.3 Green Climate Fund

BNDES had its accreditation with the Green Climate Fund (GCF) approved in July 2019. The GCF is the main multilateral climate fund, serving as a financial mechanism for the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement, with the aim of financing adaptation and mitigation projects in developing countries. BNDES managed to secure the highest accreditation modality with the GCF, which allows the bank to submit project proposals of up to US\$ 250 M and access the various financial instruments that the Fund offers, such as equity, guarantees, loans, and non-refundable resources (GCF, [n.d.]).

Although the BNDES' long and costly accreditation process with the GCF was completed some time ago, the bank has yet to submit a project proposal, which seems like a wasted opportunity so far to seek access to this important global climate finance mechanism. With the great capacity for project structuring acquired by BNDES throughout its history and the expertise in initiatives with a climate impact acquired with the operationalisation of the Amazon Fund, the BNDES has sufficient conditions to bring together different actors at the national level to design financing proposals that can be submitted to the GCF.

## 5. FINAL REMARKS

Climate change and the degradation of ecosystems have been on the agenda of various political and economic forums due to their current and future impacts of enormous magnitude. Overcoming these challenges requires profound changes in current production and consumption patterns, a transition to technologies with low greenhouse gas emissions and the promotion of adaptation to increase resilience to climate change. It is therefore essential that financial flows are redirected, enabling the necessary investments to promote these transformations.

These investments involve a high degree of uncertainty and require patient, long-term financing, which is not usually offered by the private sector, pointing to the need for a state action to promote the needed transformations. This action can take place, among other ways, through a 'green credit allocation policy', with broad participation by the PDBs.

In addition to their importance on counter-cyclical and stability policies, the PDBs generally play a relevant role in creating and structuring new markets, serving segments that are usually under-financed by private banks. They can therefore be central players in implementing policies geared towards socio-environmental missions, such as those related to mitigating and adapting to climate change. Therefore, to be at the forefront of the process of transforming financial flows to promote the green transition, the PDBs must change their capital allocation criteria to favour

the financing of sustainable activities aligned with the objectives of tackling the climate crisis. National development banks, in particular, can play a leading role in this process: with mission-orientated action aimed at solving challenges such as those related to the environmental and climate crisis, NDBs can be decisive in transforming certain sectors of activity or even the economy as a whole.

That said, this paper sought to analyse BNDES performance in financing the green economy.

In the period analysed, 2010 to 2021, one can observe the BNDES' performance in line with what is expected of PDBs in promoting investments for a more environmentally sustainable economy, especially in terms of financing and mobilising resources. Progress has been made, but it has been less intense than the possible and the needed and was marked by significant discontinuities. These discontinuities reflected the strategies of the different governments, given the bank's technical autonomy but limited political autonomy.

Among the discontinuities, three stand out. Firstly, the significant reduction in BNDES disbursements in the green economy from 2016 onwards, following the broader trend of a reduction in the size of the bank as a whole, which lost not only its leading role but also the opportunity to promote changes that are essential for the transition. Secondly, concerning the environmental and climate funds managed by the institution, important changes have taken place. The Climate Fund and, above all, the Amazon Fund formed an important part of the environmental policy carried out by the Worker's Party. The most profound change in this direction came in 2019: as a result of measures adopted by the then government, the funds were paralysed until 2022, when decisions by the Federal Supreme Court forced the resumption of their operations.

Lastly, there were changes in the composition of the bank's funding from 2016 onwards, as a result of the reorientation of the economic policy. The end of contributions from the National Treasury and the significant reduction in the size of the institution increased its private fundraising on the capital market. This was reflected in the two major green bond issues, one on the international market (in 2017) and the other on the domestic market (in 2020). Although the issuance of these bonds has positive aspects, such as channelling private resources into sustainable projects and developing a market for green bonds, these instruments are not enough, nor are they the most appropriate source of funds to promote the structural changes needed for the transition to an environmentally and climate-sustainable economy.

Some continuities can also be identified over the period analysed: the proportion of disbursements to the 'green economy' in relation to the BNDES' total disbursements did not change significantly between 2010 and 2021, indicating that although environmental and climate issues have gained prominence in the bank's policies and official discourse, this position is not reflected in the financing granted by the bank.

## REFERENCES

- AGLIETTA, Michel; ESPAGNE, Étienne. *Climate and Finance Systemic Risks, more than an Analogy? The Climate Fragility Hypothesis*: CEPII Working Paper 2016-10. Paris. Disponível em: <http://www.cepii.fr/CEPII/en/publications/wp/abstract.asp?NoDoc=9079>. Acesso em: 19 jan. 2023.
- BNDES. *Fundo Clima*. [s.d.]. Disponível em: <https://www.bndes.gov.br/wps/portal/site/home/financiamento/produto/fundo-clima>. Acesso em: 2 abr. 2023.
- BNDES. *Green Bond. Relatório anual 2018*. Rio de Janeiro. Disponível em: <https://web.bndes.gov.br/bib/jspui/handle/1408/14762>. Acesso em: 20 jan. 2022.
- BNDES. *Fundo Nacional sobre Mudança do Clima – FNMC. Relatório Anual de Prestação de Contas 2020*. Rio de Janeiro. Disponível em: <https://www.gov.br/mma/pt-br/acao-a-informacao/apoio-a-projetos/fundo-nacional-sobre-mudanca-do-clima/RelatorioBNDES2020.pdf>. Acesso em: 3 abr. 2023.
- BNDES. *Taxonomia de Sustentabilidade do BNDES: Revisão 2021*. Rio de Janeiro: Banco Nacional de Desenvolvimento Econômico e Social, 2022. Acesso em: 29 mar. 2023.
- BNDES. *Relatório da Letra Financeira Verde 2021*. Rio de Janeiro. Disponível em: [https://www.bndes.gov.br/wps/wcm/connect/site/887e3a6a-c959-4d46-8d35-0f879a5acfb0/BNDES\\_RELATORIO\\_LETRA\\_FINANCEIRA\\_13abr22\\_atual.pdf?MOD=AJPERES&CVID=o1RCNyx](https://www.bndes.gov.br/wps/wcm/connect/site/887e3a6a-c959-4d46-8d35-0f879a5acfb0/BNDES_RELATORIO_LETRA_FINANCEIRA_13abr22_atual.pdf?MOD=AJPERES&CVID=o1RCNyx). Acesso em: 20 jan. 2022b.
- BNDES. *Fundo Amazônia. Relatório de Atividades 2021*. Rio de Janeiro. Disponível em: [https://www.fundoamazonia.gov.br/export/sites/default/pt/.galleries/documentos/rafa/RAFA\\_2021\\_port.pdf](https://www.fundoamazonia.gov.br/export/sites/default/pt/.galleries/documentos/rafa/RAFA_2021_port.pdf). Acesso em: 4 abr. 2023c.
- BRASIL. *Fundo Nacional sobre Mudança do Clima*. [s.d.]. Disponível em: <https://www.gov.br/mma/pt-br/acao-a-informacao/apoio-a-projetos/fundo-nacional-sobre-mudanca-do-clima>. Acesso em: 23 abr. 2022.
- BRASIL. Relatório de Avaliação de Política Pública. A Política Nacional sobre Mudança do Clima. 2019.
- CARDOSO, Alessandra. *Fundo Amazônia: aprendizados, resultados e caminhos para a retomada: Série Caminhos para o Financiamento da Política Socioambiental no Brasil*. Brasília. Disponível em: <https://www.inesc.org.br/wp-content/uploads/2022/08/Fundo-Amazonia-Inesc.pdf>. Acesso em: 4 abr. 2023.
- CARNEY, Mark. *Breaking the Tragedy of the Horizon – climate change and financial stability* Londres: Bank of London, 2015. Disponível em: [www.bankofengland.co.uk/publications/Pages/speeches/default.aspx](http://www.bankofengland.co.uk/publications/Pages/speeches/default.aspx). Acesso em: 10 abr. 2022.
- CHENET, Hugues; RYAN-COLLINS, Josh; VAN LERVEN, Frank. *Climate-Related Financial Policy in a World of Radical Uncertainty: Towards a Precautionary Approach*: UCL Institute for Innovation and Public Purpose Working Paper Series (IIPP WP 2019-13). Londres. DOI: 10.2139/ssrn.3520224. Disponível em: <https://www.ucl.ac.uk/bartlett/public-purpose/wp2019-13%0A>. Acesso em: 2 fev. 2022.
- COLONNA, Julianna; TOZATO, Heloisa de Camargo; ARAÚJO, Karoline; MELLO-THÉRY, Neli Aparecida De. Fundo Clima: construção e declínio? *Confinns*, [S. l.], n. 57, 2022. DOI: 10.4000/confinns.49616. Disponível em: <http://journals.openedition.org/confinns/49616>. Acesso em: 2 abr. 2023.
- FEIL, Fernanda. *State-owned financial institutions as an arm of public policy for sustainable development*. 2021. Universidade Federal Fluminense (UFF), [S. l.], 2021. Disponível em: [https://www.researchgate.net/publication/356260349\\_State-owned\\_financial\\_institutions\\_as\\_an\\_arm\\_of\\_public\\_policy\\_for\\_sustainable\\_development\\_convention](https://www.researchgate.net/publication/356260349_State-owned_financial_institutions_as_an_arm_of_public_policy_for_sustainable_development_convention).
- GCF. *Banco Nacional de Desenvolvimento Econômico e Social – BNDES*. [s.d.]. Disponível em: <https://www.greenclimate.fund/ae/bndes>. Acesso em: 6 abr. 2023a.
- GCF. *Partners*. [s.d.]. Disponível em: <https://www.greenclimate.fund/about/partners/ae>. Acesso em: 5 abr. 2023b.
- GRIFFITH-JONES, Stephany. *National Development Banks and Sustainable Infrastructure; the case of*

- K/W: Global Economic Governance Initiative Working Paper 006. Boston. Disponível em: [www.bu.edu/gesi](http://www.bu.edu/gesi). Acesso em: 31 jan. 2022.
- GRIFFITH-JONES, Stephany; ATTRIDGE, Samantha; GOUETT, Matthew. *Securing climate finance through national development banks*. Londres. Disponível em: <http://hdl.handle.net/10419/216988>. Acesso em: 1 fev. 2022.
- KEDWARD, Katie; GABOR, Daniela; RYAN-COLLINS, Josh. *Aligning finance with the green transition: From a risk-based to an allocative green credit policy regime*.: UCL Institute for Innovation and Public Purpose Working Paper Series (IIPP WP 2022-11). Londres. DOI: 10.2139/ssrn.4198146. Disponível em: <https://www.ucl.ac.uk/bartlett/public-purpose/publications/2022/jul/aligning-finance-green-transition>. Acesso em: 26 jan. 2023.
- MAZZUCATO, Mariana; PENNA, Caetano C. R. Beyond market failures: the market creating and shaping roles of state investment banks. *Journal of Economic Policy Reform*, [S. l.], v. 19, n. 4, p. 305–326, 2016. DOI: 10.1080/17487870.2016.1216416. Disponível em: <http://dx.doi.org/10.1080/17487870.2016.1216416>. Acesso em: 4 fev. 2022.
- MENDONÇA, Ana Rosa Ribeiro; FEIL, Fernanda; PESSOA, Linnit. *Regulação Financeira e BD: reflexões sobre a construção de finanças sustentáveis*, 2023.
- PARTIDO SOCIALISTA BRASILEIRO; PARTIDO SOCIALISMO E LIBERDADE; PARTIDO DOS TRABALHADORES; SUSTENTABILIDADE, Rede. *Ação Direta de Inconstitucionalidade por Omissão da União ao não adotar providências de índole administrativa objetivando o funcionamento do “Fundo Clima”* Brasília, 2020. Disponível em: <https://jusclima2030.jfrs.jus.br/wp-content/uploads/2021/05/Peticao-Inicial.pdf>. Acesso em: 3 abr. 2023.
- PORTAL STF. STF determina reativação do Fundo Amazônia no prazo de 60 dias. *Portal STF*, Brasília, 2022. a. Disponível em: <https://portal.stf.jus.br/noticias/verNoticiaDetalhe.asp?idConteudo=496793>. Acesso em: 4 abr. 2023.
- PORTAL STF. STF proíbe contingenciamento dos recursos do Fundo Clima. *Portal STF*, Brasília, 2022. b. Disponível em: <https://portal.stf.jus.br/noticias/verNoticiaDetalhe.asp?idConteudo=489997&ori=1#:~:text=Em julgamento realizado em sessão,o pleno funcionamento do fundo>. Acesso em: 3 abr. 2023.
- SCHNEIDER, Maria E. Netto de A. C.; PORTO, Rodrigo Pereira; TRABACCHI, Maria Chiara; SCHNEIDER, Signi; SMALLRIDGE, Diana. *A Guidebook for National Development Banks on Climate Risk*. Nova Iorque: Banco Interamericano de Desenvolvimento (BID), 2021.
- SOUZA, Oswaldo Braga De. *Dinheiro paralisado por governo Bolsonaro no Fundo Amazônia chega a quase R\$ 3 bilhões*. 2020. Disponível em: <https://site-antigo.socioambiental.org/pt-br/noticias-socioambientais/dinheiro-paralisado-por-governo-bolsonaro-no-fundo-amazonia-chega-a-quase-r-3-bilhoes>. Acesso em: 4 abr. 2023.
- STUDART, Rogério; GALLAGHER, Kevin. *Infrastructure for Sustainable Development: The Role of National Development Banks*: Global Economic Governance Initiative – GEGI Policy Brief. Boston: Boston University, 2016. Disponível em: [https://www.bu.edu/pardeeschool/files/2016/08/Infrastructure.Sustainable.Final\\_.pdf](https://www.bu.edu/pardeeschool/files/2016/08/Infrastructure.Sustainable.Final_.pdf). Acesso em: 17 set. 2022.

