



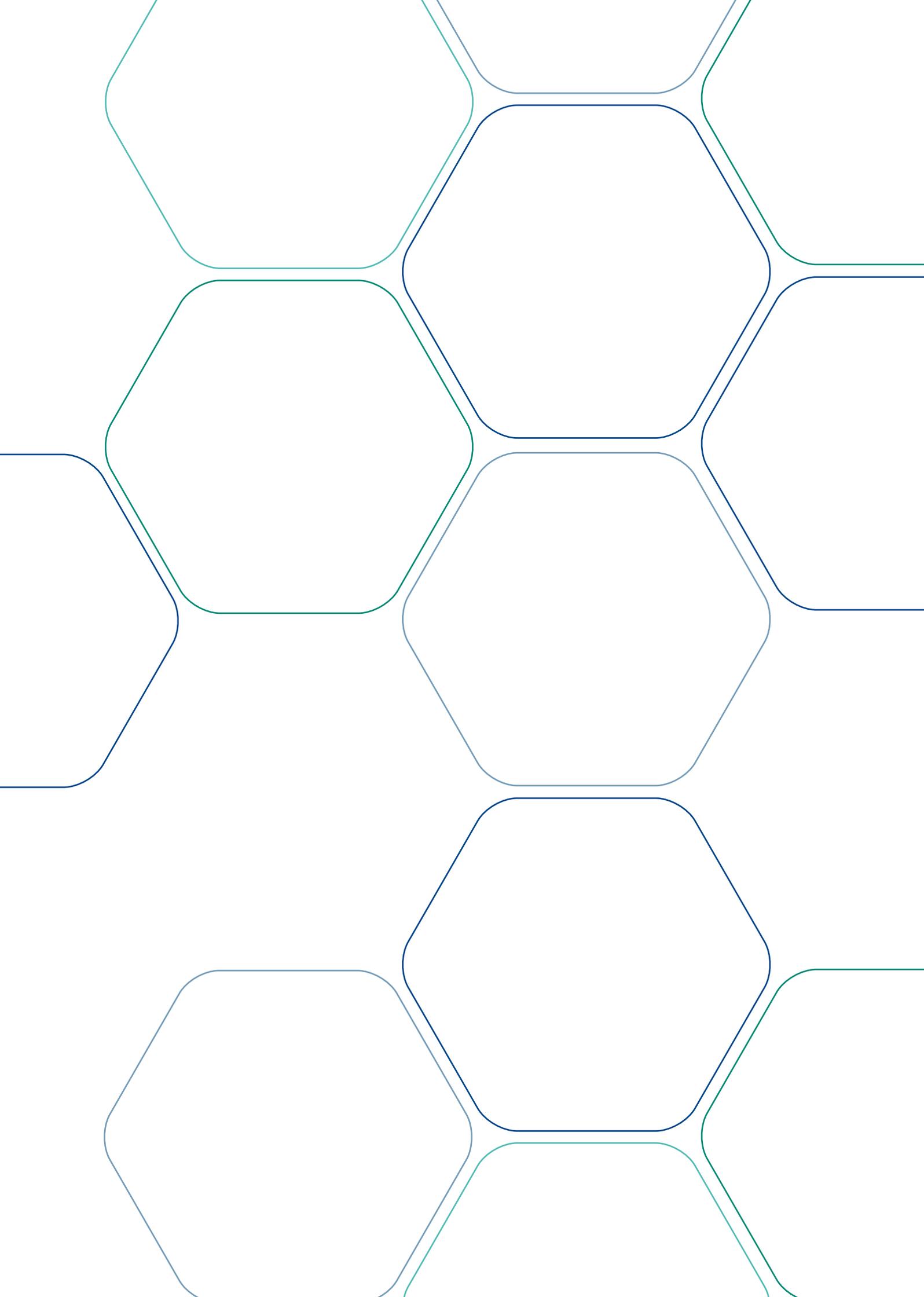
EFFECTIVENESS REPORT

2022 | 2023



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MESSAGE FROM THE PRESIDENT

The BNDES is back. And it is greener, more technological, more efficient, more inclusive, and, above all, more transparent. According to an assessment by the Association of Members of the Brazilian Audit Courts (Atricon) for 2023, the BNDES is the most transparent public institution in the Republic, and our website achieved the highest rating.¹ In an assessment carried out by the Comptroller General of the Union (CGU), the Bank obtained the maximum score in active transparency, which means that the BNDES discloses on the internet all the information required in the 49 criteria analyzed.²

The monitoring and effectiveness evaluation actions of the BNDES are part of the effort to achieve transparency and accountability to society and other stakeholders, and also aim to generate knowledge and learning from the analyses of results of projects supported by the Bank.

To ensure the constant production of information for corporate decision-making and financial reporting to society, the BNDES has sought to develop and adapt several methodologies, ranging from quantitative to qualitative instruments, applied both before (ex-ante) and after (ex-post) interventions.³ The tools include models to assess, at the outset, what is expected of a project to be supported and to verify, at a later moment, whether the initiative actually achieved the intended results. The BNDES also employs input-output models to estimate the jobs involved in implementing the supported investments, as well as studies based on counterfactual analysis, which seek to infer a causal relationship between the supported initiatives and the estimated effects. Impact evaluations on The Bank total 98 studies, 67 of which were produced by external evaluators and 31 by the institution itself. These studies can be accessed on the BNDES website.⁴

This diversity of methods for monitoring and evaluating the effectiveness of the BNDES's performance was highlighted in an analysis published by The Montreal Group (TMG),⁵ an international forum of development finance institutions that support micro, small, and medium-sized enterprises (MSME). The study revealed that the BNDES was the only institution that adopted all types of impact analysis mapped.

1 More information can be found at: <https://radardatransparencia.atricon.org.br/panel.html> and <https://agenciadenoticias.bndes.gov.br/detalhe/noticia/Para-membros-de-Tribunais-de-Contas-BNDES-e-a-estatal-mais-transparente/>.

2 The assessment considers, among other aspects, data such as revenues and expenses, institutional information, actions and programs, bids and contracts, audits, public employees, public works, and open data. More information can be found at: <https://centralpaineis.cgu.gov.br/visualizar/lai>.

3 You can learn more about these methodologies in the Special Study "Monitoramento e avaliação de efetividade no BNDES" (Monitoring and evaluation of effectiveness at the BNDES) (BNDES, 2024a).

4 Available at: <https://www.bndes.gov.br/vps/portal/site/home/transparencia/resultados-para-a-sociedade/efetividade/avaliacoes-efetividade/avaliacoes-impacto-bndes/>.

5 More information can be found at: <https://themontrealgroup.org/article/from-outputs-to-outcomes-a-global-review-of-impact-assessment-methods-in-public-development-banks/>.

The comparison involved 12 other development institutions from countries such as Canada, Mexico, France, the United Kingdom, Italy, Spain, Belgium, Japan, Morocco, Nigeria, and Saudi Arabia.

This Effectiveness Report is an important instrument that provides an overview of the BNDES's performance in the 2022-2023 biennium. The BNDES's credit concessions began to recover in 2022, a trend that was consolidated in 2023 with the Bank's new recovery strategy. Credit approvals increased across all sectors, with notable growth in infrastructure, with BRL 78.5 billion (a 23% growth); agriculture, with BRL 42.5 billion (a 53% increase); and industry, with BRL 31.7 billion (a 41% increase).

This increase involves the resumption of the capacity to support the country's development in relation to its historical contribution. The BNDES is a fundamental agent for the development of our country, committed to rebuilding the present and to agendas that look to the future. The Bank has resumed a more active role in financing green, technological, and fairer development. Examples of this include the approval of BRL 5.3 billion for innovation and BRL 13.5 billion for exports in 2023, and the resumption of the Amazon Fund's operations, with approvals and calls for action reaching a record amount of BRL 1.3 billion.

In order to be equipped with the necessary instruments to adequately fulfil its mandate, the BNDES has been working hard to expand and diversify its funding sources. This involves preserving traditional sources, such as the Worker's Assistance Fund (FAT), and using alternative sources of funding, such as resources from public funds, the issuance of incentivized fixed-income market instruments, with emphasis on the approval of the development credit letter (LCD) in the National Congress, and the resumption of international fundraising.

The New BNDES aims to combine the volume of its operations with its performance effectiveness, focusing on issues relevant to the Brazilian economy, such as ecological transformation, innovation and digital transformation, the development of a more resilient infrastructure, the process of neo-industrialization, and the strengthening of external competitiveness.

Aloizio Mercadante

President of the BNDES

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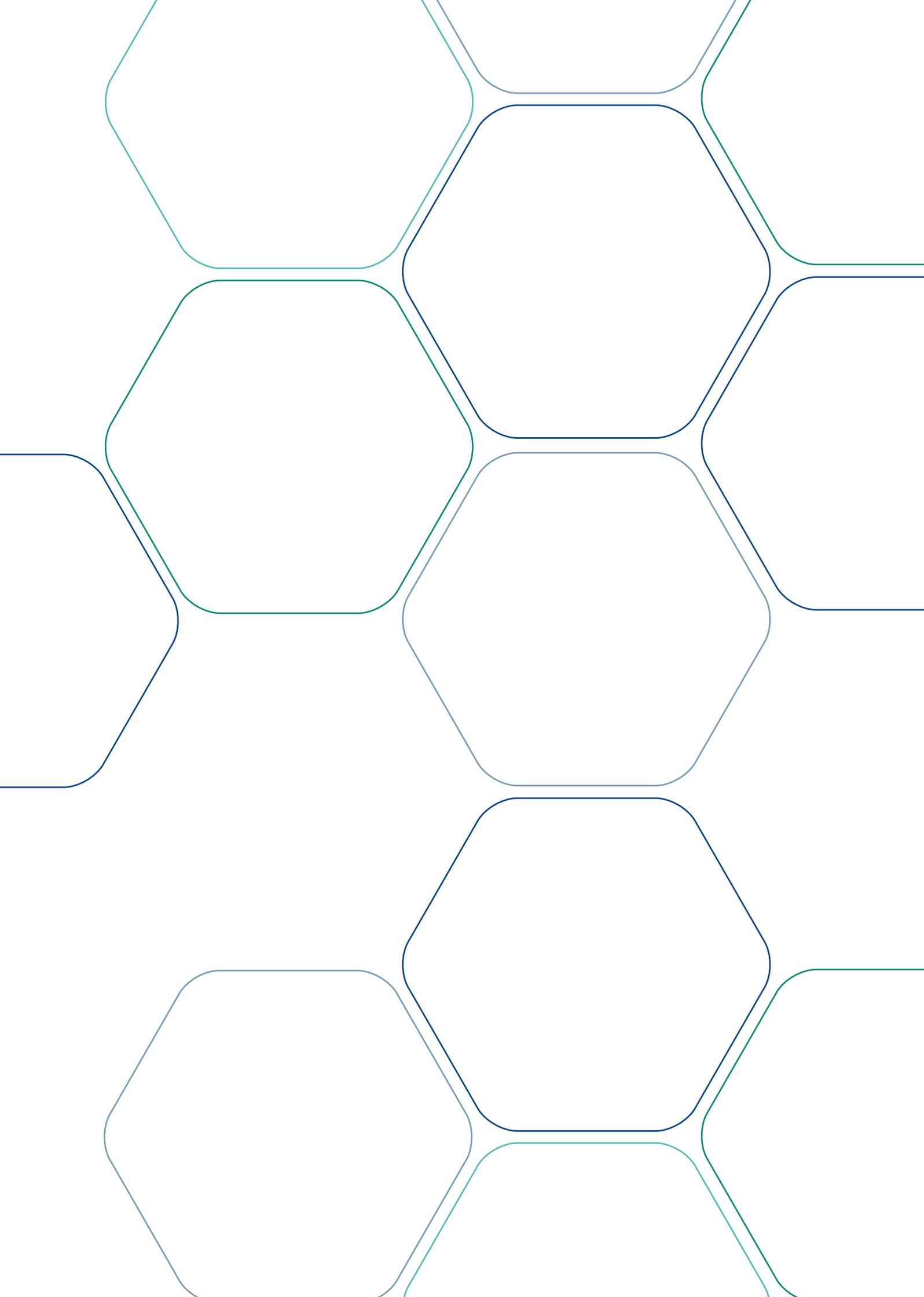
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THE BRAZILIAN ECONOMY AND THE BNDES IN THE 2022-2023 BIENNIUM

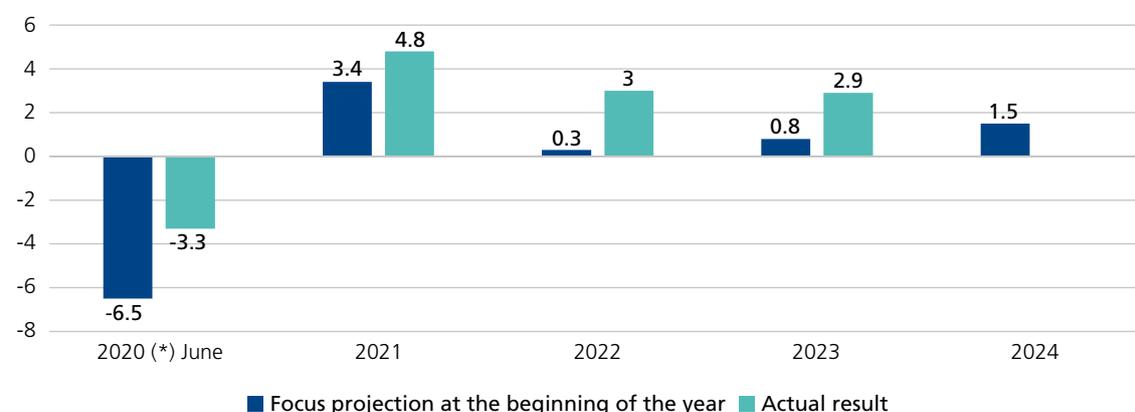




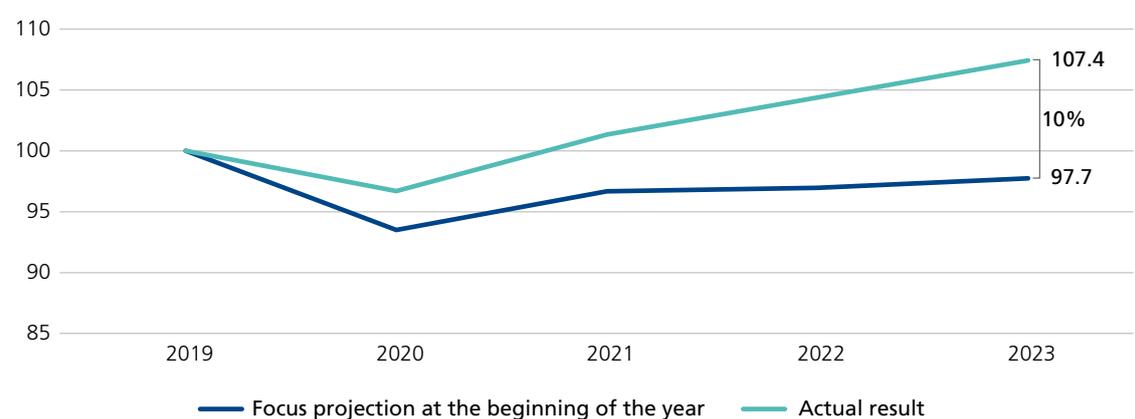
After the COVID-19 pandemic in 2020, the growth of the Brazilian economy has proven to be more resilient than in the crisis years of 2015 to 2016. The 2022-2023 biennium was marked by a stable economic growth of around 3% per year and falling unemployment and inflation rates. These results are especially auspicious when compared with the international situation of slowing global economic activity and high inflation.

Economic growth has significantly exceeded the projections of the Central Bank's Focus Bulletin. Comparing the market expectations at the beginning of each year, starting mid-2020, with the actual gross domestic product (GDP) outcomes (Graph 1A), we find an error that, in the accumulated period from 2020 to 2023, reaches around 10%. In other words, if the medians of the market projections at the beginning of each year had been confirmed, this would be equivalent to a 10% lower activity level (Graph 1B).

GRAPH 1A. GDP: FOCUS MEDIAN VS. ACTUAL RESULT (ACTUAL % VAR. Y/Y)



GRAPH 1B. GDP: FOCUS MEDIAN VS. EFFECTIVE RESULT (2019 = 100)



Source: Elaborated by the authors, based on data from the Brazilian Institute of Geography and Statistics (IBGE) and the Central Bank of Brazil (BCB). Available, respectively, at: <https://www.ibge.gov.br/estatisticas/economicas/contas-nacionais/9300-contas-nacionais-trimestrais>. and <https://www3.bcb.gov.br/expectativas2/#/consultas>. Accessed on: May 6, 2024.

(*) In Graph 1A, for 2020, the beginning of the year was not used as a reference, but rather June, when the impacts of the pandemic were reflected in the economy's performance.

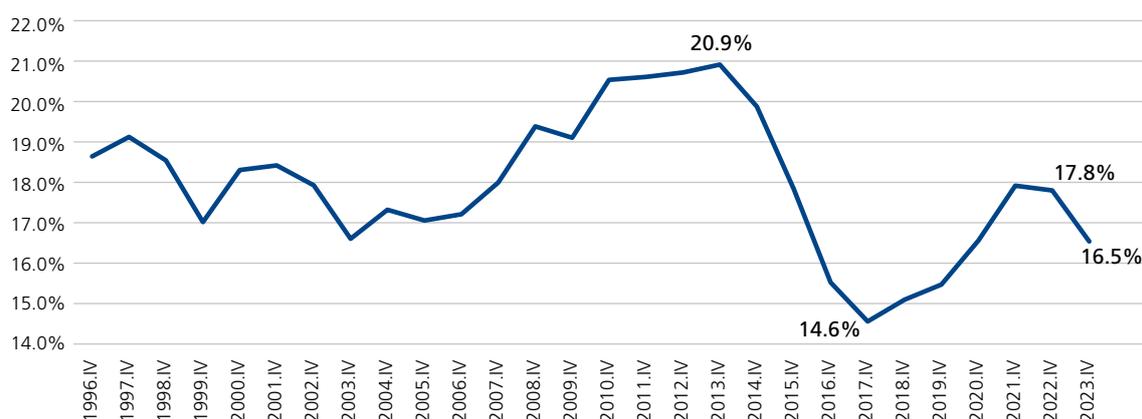
In 2022, the GDP grew 3.0%, when the expected growth at the beginning of the year had been 0.3%. On the demand side, growth was led by household consumption, which rose 4.1% in 2022. Several demand stimulus policies implemented until the beginning of the second half of 2022, such as advance payment of salary bonuses, 13th month pay, extraordinary withdrawals from the Workers' Severance Indemnity Fund (FGTS) and an increase in Auxílio Brasil with payroll-deductible loans, helped achieve this result. In addition, the improvement in the labor market, with growth in real wages, and the real expansion of credit granted to individuals also contributed to it. Gross fixed capital formation (GFCF) grew by 1.1% in 2022, compared to 12.9% in 2021. On the supply side, agriculture and livestock showed a negative growth of -1.1% in the same year, with negative contributions from soybeans, rice, and tobacco. The services sector, benefiting from the normalization of urban mobility, had a strong recovery in 2022, growing by 4.3%. Finally, industry grew by 1.5%, with positive contributions from the production and distribution of electricity, water and sewage (10.5%), and construction (6.8%), which showed the second consecutive year of strong growth.

The year 2023 had a record harvest, which led to agriculture and livestock making an extraordinary contribution in the first quarter of 2023. Thus, the first half of the year was quite dynamic, both because of agriculture and the resilience of the service sector, which has shown excellent performance in the post-pandemic period. On the demand side, 2023 saw the government's fiscal stimulus through policies to stimulate aggregate demand, such as: maintaining the Bolsa Família Program at BRL 600, with an additional BRL 150 per child up to six years old; increasing the minimum wage; and spending restoration via the Constitutional Amendment Proposal 32 of 2022 (PEC da Transição).

Inflationary dynamics were impacted by the global decompression process of supply chains and the fall in commodity prices, affecting the inflation of industrial goods and food, a fact that allowed the Central Bank of Brazil (BCB) to begin a process of monetary easing. The fall in inflation, particularly in food prices, also had a positive impact on household income, stimulating consumption, especially among people in the lowest income brackets. The dynamism of the labor market is a positive factor that also helped explain the good performance of the wage bill and, therefore, household consumption.

The economy's investment rate, however, did not keep up with this growth, slowing down in the 2022-2023 period. The GFCF, after growing 0.3% in 2022, fell 3.0% in 2023. The annual drop in the GFCF resulted in a 1.3 p.p. drop in the Brazilian investment rate (GFCF/GDP) compared to 2022, falling from 17.8% to 16.5%, when measured at current prices (Graph 2^a). The GFCF level is still 18.4% below the maximum level observed in the second quarter of 2013 (Graph 2B), and has not yet reached its 2013 nominal value.

GRAPH 2A. INVESTMENT RATE (GFCF/GDP) – CURRENT PRICES ACCUMULATED IN FOUR QUARTERS



GRAPH 2B. EVOLUTION OF THE GFCF IN BRAZIL (2Q/2013 = 100, SERIES WITH SEASONAL ADJUSTMENT)



Source: Elaborated by the authors, based on data from the IBGE. Available at: <https://www.ibge.gov.br/estatisticas/economicas/contas-nacionais/9300-contas-nacionais-trimestrais.html?=&t=resultados>. Accessed on: May 6, 2024.

Note: The numbers in Roman numerals in Graphs 2A and 2B correspond to the quarters.

This recent increase in investments points to a GFCF that is more closely associated with the replacement of depreciated capital than with the expansion of supply capacity. To make matters worse, investments in the period from 2018 to 2021 grew in accounting terms due to changes in the legislation governing the special customs regime for the export and import of goods intended for research and exploration activities in oil and natural gas deposits (Repetro), which meant that, as of 2018, oil platforms, which were not previously accounted for as GFCF, began to be accounted for without any review of the historical series. This change underestimates the figures prior to 2018 and increased the investment rate from 2018 to 2021 by up to one percentage point (BNDES, 2024b), increasing the investment gap in recent times.

Promoting new investments is thus established as one of the country's main challenges, which obviously impacts its main development bank. Since the BNDES faced a reduction in its disbursements from 2016 and 2021, its capacity to support the country's development was limited compared to its historical contribution. Recovering the BNDES's capacity to

act is necessary to address major challenges, such as reducing the gap in infrastructure investments while promoting energy transition and decarbonization of the economy; expanding the population's access to public services; and increasing the competitiveness of the production system, as outlined in the BNDES's Long-Term Strategy 2023-2027, approved in May 2023.

Support for environmental and climate projects should be expanded, combining ecological transformation and biodiversity protection. Support for social inclusion and public management projects should aim to reduce inequalities and promote citizenship. To promote decent work, income, and credit access, the BNDES should support entrepreneurship, Micro-, small-, and medium-sized enterprises (MSMEs), microcredit, and cooperatives, which also involves expanding partnerships with various institutions operating in the financial market.

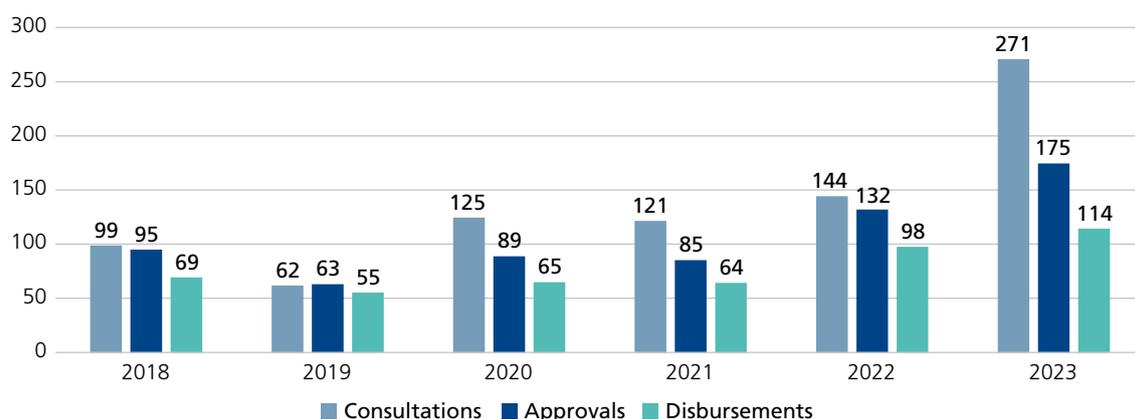
The BNDES's performance in these priority areas is the focus of this report. The following chapters will discuss the Bank's operational performance (effort) in pursuing these priorities, results monitoring, impact evaluations, and the Effectiveness Monitoring and Evaluation System (SMA) recommendations.

It is worth highlighting that the BNDES's credit concessions began recovering in 2022 and strengthened in 2023, with a strong increase in approvals and disbursements data across sectors. Some important measures were adopted in 2023, such as implementing the Reference Rate (TR)⁶ for innovation and digitalization, expanding export approvals and international fundraising, and resuming the Amazon Fund's operations to preserve, monitor, and combat deforestation.

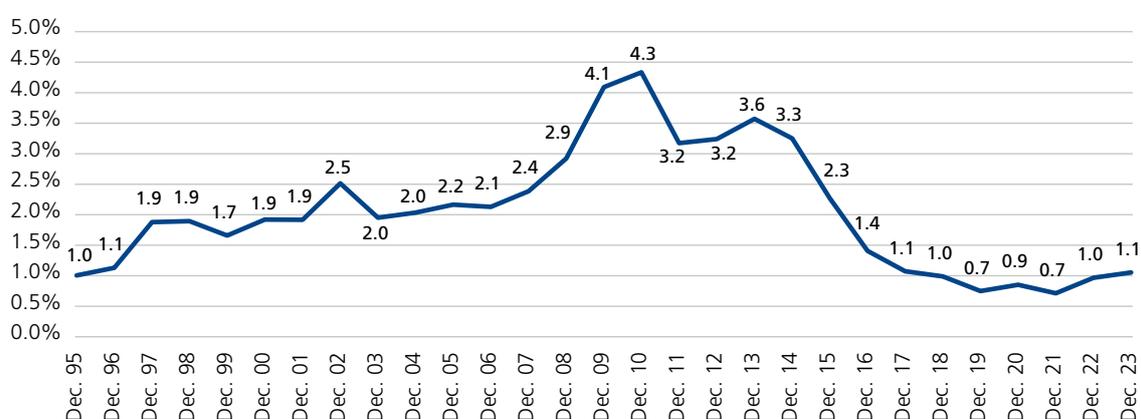
The Bank's disbursements in 2023 totaled BRL 114 billion (Graph 3A), a 17% increase compared to 2022 (BRL 98 billion), representing the highest value since 2016. Approvals reached BRL 175 billion (highest since 2015), a 32% increase compared to 2022. Graph 3B shows the share of the BNDES's disbursements as a proportion of GDP. At the end of 2023, this ratio reached 1.1%, well below historical performance. It is important to note the emphasis on transparency and impact measurement in its support throughout the process of recovering the BNDES's operational performance.

6 The TR estimation methodology was defined by the CMN Resolution 4,624, of January 18, 2018. It is a function of the basic financial rate (TBF), which, in turn, depends on the Selic and the fixed interest rate of short-term national treasury bills (LTN). An important characteristic is that its formula includes a reduction factor that increases as the TBF rises, that is, the TR is an interest rate that remains systematically below other market interest rates.

GRAPH 3A. BNDES CONSULTATIONS, APPROVALS, AND DISBURSEMENTS (2018-2023) IN CURRENT BRL BILLIONS



GRAPH 3B. BNDES/GDP DISBURSEMENTS (1997-2023)



Source: Elaborated by the authors, based on the BNDES's performance data. Available at: <https://www.bndes.gov.br/wps/portal/site/home/transparencia/centraldedownloads>. Accessed on: May 6, 2024.

The resumption of the BNDES's historical activities poses major challenges. Preserving traditional sources, such as the FAT, is important. However, the Bank has sought alternative sources of funding, such as resources from public funds, the issuance of incentivized fixed-income market instruments, and the resumption of international fundraising. This agenda should contribute to adapting the financing structure to the various missions of development banks, to reducing costs, and to expanding innovative capital market instruments. Throughout 2023, for example, the Bank began collecting incentivized resources for innovation (via the BNDES Mais Inovação Program – BNDES More Innovation Program and expanding the resources of the National Fund on Climate Change to combat climate change, with the issuance of sustainable sovereign bonds by the National Treasury.

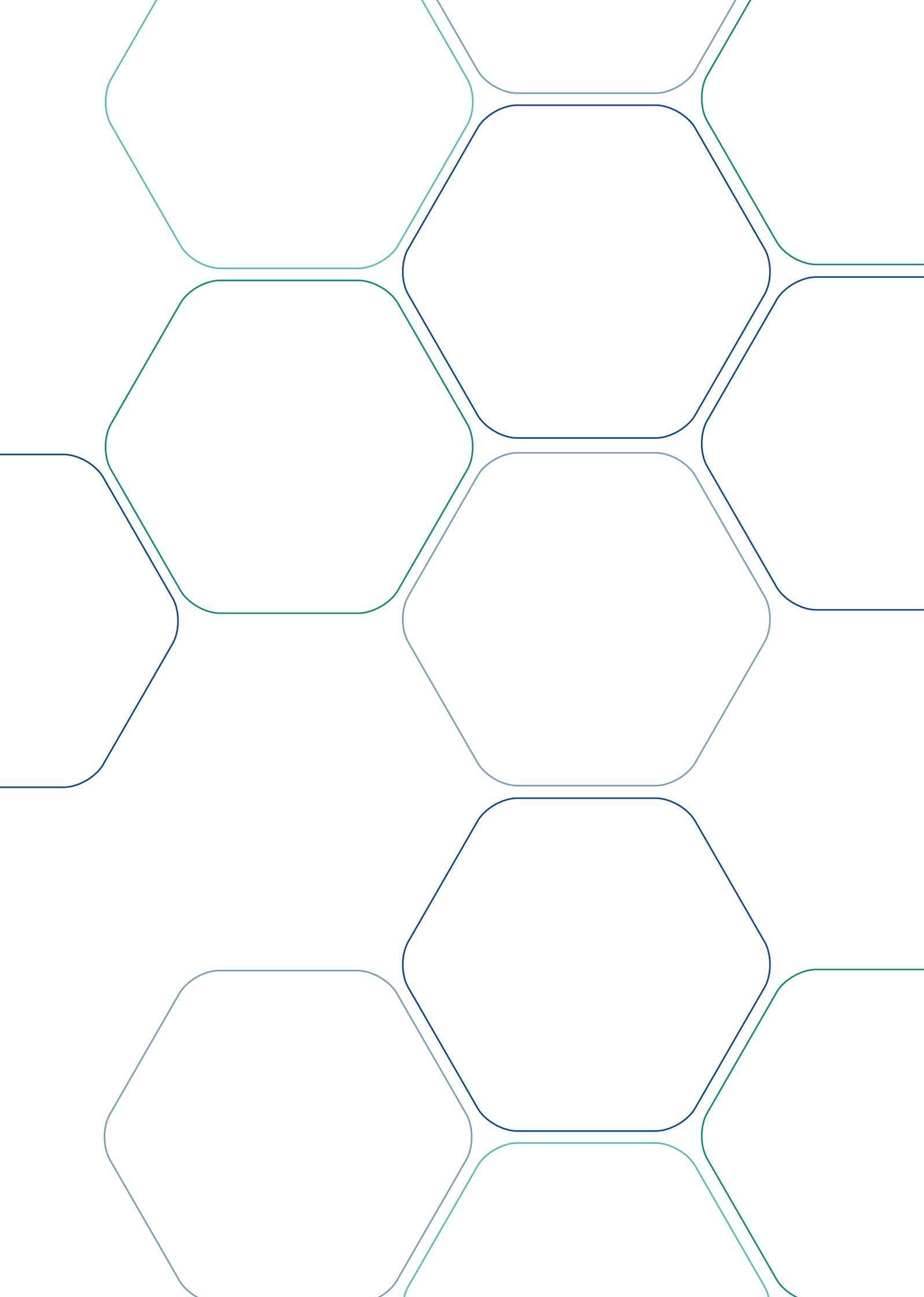
The BNDES of the future seeks to combine its volume of operations with the effectiveness of its performance, focusing on topics relevant to the Brazilian economy, such as innovation, tackling climate transition, digital transformation, infrastructure, neo-industrialization, and external competitiveness.





OPERATIONAL PERFORMANCE





This chapter presents indicators related to the operational performance of the BNDES during the 2022-2023 biennium, which reflect the efforts made by the Bank to promote sustainable development in the country during this period. Data related to both financial support and service provision, the means by which the institution promotes development, will be presented. Financial support will be divided into two categories: traditional support, through the granting of credit, and support through guarantees, with the Investment Guarantee Fund (BNDES FGI) as the main instrument. Each category will be presented separately, with detailed data by sector, region, and company size.

BNDES CREDIT

Table 1 presents the following indicators: the amount of approved financial support, the percentage relative to the GDP, and the number of clients, both in total and separated by individuals and legal entities (companies). Financial values and the GDP were updated for 2023 by the Broad Consumer Price Index (IPCA), estimated by the Brazilian Institute of Geography and Statistics (IBGE).

TABLE 1. BNDES CREDIT

Year	Financial support (BRL billion)	% GDP	Clients (thousands)	Individuals (thousands)	Companies (thousands)
2022	139.7	1.3%	140.4	97.7	42.7
2023	174.5	1.6%	164.3	118.5	45.9
TOTAL	314.2	1.5%	256.9	178.2	78.7

Source: Elaborated by the authors, based on data from the BNDES and the IBGE. Available, respectively, at: <https://www.bndes.gov.br/wps/portal/site/home/transparencia/centraldedownloads> and <https://sidra.ibge.gov.br>. Data collected in the first half of 2024.

Note: The total number of clients (individuals and companies) considered only distinct clients; therefore, except for the "financial support" column, the total does not equal the sum of both years.

In 2022, the amount of BRL 139.7 billion represented 1.3% of the GDP, with approximately 140 thousand clients served. Of these, 98 thousand were individuals and approximately 43 thousand were companies (legal entities). In 2023, we had an increase of BRL 174.5 billion in support, representing 1.6% of the GDP, and an increase in the client base to approximately 164 thousand, of which 119 thousand were individuals and approximately 46 thousand legal entities. Another segment, within the scope of legal entities, is support for cooperatives: approvals reached BRL 5.3 billion in 2022 and BRL 3.4 billion in 2023, totaling BRL 8.8 billion in the period.

In the two-year period, we provided support of BRL 314.2 billion, representing 1.5% of the GDP. Approximately 257 thousand different clients were assisted in the period, including 178 thousand individuals and 79 thousand companies.

The expansion of the indicators, in the year-on-year comparison, reflects a change in our Strategic Planning in 2023, which began including the expansion of disbursements and the credit portfolio among its guidelines. Since then, the BNDES has sought alternative sources of funding, such as resources from public funds and international fundraising. The BNDES's

Mais Inovação Program, launched in 2023, is an important example of an incentive-based program, aiming to support innovation and digitalization operations with TR-based resources. By the end of 2023, the Bank had granted approximately BRL 3.5 billion in support for innovation and digitalization projects through the Mais Inovação Program.

Composition of the support

We show in detail below the amounts of approved BNDES credit per sector, region, and client size.

Composition per sector

Table 2 shows the amount of approved credit and the corresponding share in total, according to the main sectors of the economy, according to the BNDES's classification. The table also shows the percentage of clients in relation to the BNDES total.

TABLE 2. BNDES CREDIT PER SECTOR

Sector	Financial amount (BRL billion)		% amount (of annual total)		Clients (% of total)		Companies (% of total)	
	2022	2023	2022	2023	2022	2023	2022	2023
Agriculture and livestock	27.2	40.3	19.5%	23.1%	53.0%	56.7%	1.2%	1.3%
Trade and services	17.2	21.7	12.3%	12.4%	35.6%	33.7%	66.1%	69.4%
Industry	24.0	31.3	17.2%	18.0%	4.8%	3.7%	15.7%	13.3%
Infrastructure	71.2	81.2	51.0%	46.5%	6.7%	5.9%	17.0%	15.9%

Source: Elaborated by the authors, based on data from the BNDES. Available at: <https://www.bndes.gov.br/wps/portal/site/home/transparencia/centraldedownloads>. Data collected in the first half of 2024.

Note: The total number of clients (individuals and companies) considered only distinct clients, therefore, except for the "financial amount" column, the total does not equal the sum of the two years.

The infrastructure sector had the largest share in terms of financial amount, with approximately BRL 152 billion, representing 48.5% of the total value of BNDES support in the two-year period.

In terms of participation in the total number of BNDES clients, however, the Agriculture and livestock sector was the largest, with 54%, followed by the Trade and services sector, with 39%. The percentage of companies served in the Agriculture and livestock sector, in particular, was 1.2%. This discrepancy is due to the high participation of individuals among the clients of this sector.

Composition per region

Table 3 presents the same indicators by geographical region. The Southeast received 45.5% of the total BNDES approvals during the period, with BRL 143.1 billion. However, the participation of BNDES credit in the Southeast is lower than the region's share in Brazil's GDP (52.3%)⁷ and is concentrated in the infrastructure sector (57% of the support destined for the region).

⁷ According to the IBGE Regional Accounts System, data from 2021 (the most recent available).

The South region, in turn, stands out in several variables, including number of clients (71.6% of the total), companies (55.1%), and amount (26.3%, substantially higher than the region's 17.3% share in Brazil's GDP). This prominence is due to the importance of support for agriculture in the South, which totaled BRL 31 billion in the two-year period (38% of the total approved for the region), and the stronger performance of production and credit cooperatives in the region.

Support for agriculture in the Midwest also stood out, with BRL 17.1 billion in approved amounts (which represented 46% of the total allocated to the region). In the Northeast, support for the infrastructure sector stands out, accounting for 64% of the amount approved for the region over the two-year period. In the North, there is a greater emphasis on the participation of trade and services, representing 26% of the sectoral composition of support in relation to the other regions of the country.

There was also an increase in credit concessions for all macro-regions of the country in 2023 compared to the previous year.

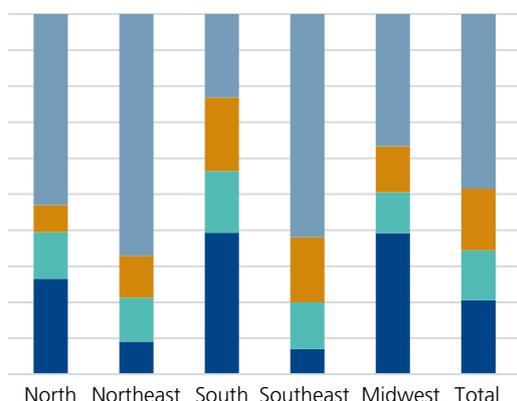
TABLE 3. BNDES CREDIT PER REGION

Region	Financial amount (BRL billion)		% amount (of annual total)		Clients (% of total)		Companies (% of total)	
	2022	2023	2022	2023	2022	2023	2022	2023
Midwest	15.6	22.3	11.2%	12.8%	6.2%	7.9%	9.3%	11.3%
Northeast	15.6	17.5	11.2%	10.0%	3.2%	3.1%	7.1%	5.9%
North	5.1	12.1	3.6%	7.0%	2.4%	2.8%	3.8%	4.5%
Southeast	64.4	78.8	46.1%	45.1%	13.6%	17.3%	22.9%	24.8%
South	39.0	43.8	28.0%	25.1%	74.7%	68.9%	56.9%	53.5%

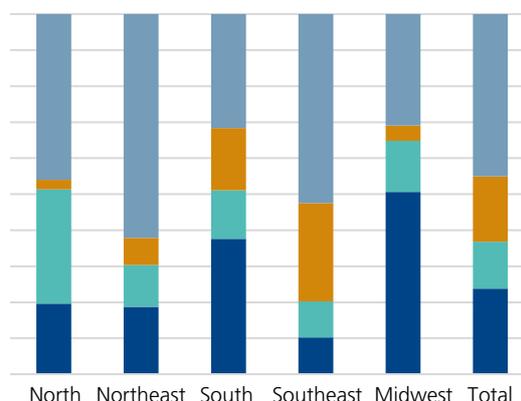
Source: Elaborated by the authors, based on data from the BNDES. Available at: <https://www.bndes.gov.br/wps/portal/site/home/transparencia/centraldedownloads>. Data collected in the first half of 2024.

Note: The total number of clients (individuals and companies) considered only distinct clients; therefore, with the exception of the "financial amount" column, the total does not equal the sum of both years.

GRAPH 4A. BNDES CREDIT PER REGION AND SECTOR – 2022



GRAPH 4B. BNDES CREDIT PER REGION AND SECTOR – 2023



■ Agriculture and livestock ■ Trade and services ■ Industry ■ Infrastructure

Source: Elaborated by the authors, based on data from the BNDES. Available at: <https://www.bndes.gov.br/wps/portal/site/home/transparencia/centraldedownloads>, collected in the first half of 2024.

Graphs 4A and 4B show the breakdown of sector participation by region in each year. Agriculture and livestock have a more important participation in the South and Midwest, whereas infrastructure predominates in the other regions. Industry has its largest participation in the Southeast and the smallest in the North, where trade and services predominate. The annex contains a table with more details. Comparing 2023 to 2022, we can highlight the growth in the participation of industry in the Southeast and agriculture and livestock in the Midwest and Northeast.

Composition per size

Table 4 presents the indicators by client size, as defined by the BNDES.⁸ Gross operating revenue (GOR) is used for companies and annual income for individuals. When this amount exceeds BRL 300 million, the client is considered a large company. Otherwise, it is considered an MSME.

TABLE 4. BNDES CREDIT PER SIZE AND MODALITY

	Ano	Financial amount (BRL billion)		% amount (of annual total)		Clients (% of total)		Companies (% of total)	
		2022	2023	2022	2023	2022	2023	2022	2023
Large	Direct	61.4	88.1	44.0%	50.5%	0.2%	0.2%	0.4%	0.4%
	Indirect	25.3	24.1	18.1%	13.8%	0.9%	1.1%	1.9%	2.2%
MSME	Direct	4.4	3.7	3.1%	2.1%	0.1%	0.0%	0.1%	0.1%
	Indirect	48.5	58.7	34.8%	33.6%	98.8%	98.7%	97.6%	97.4%

Source: Elaborated by the authors, based on data from the BNDES. Available at: <https://www.bndes.gov.br/wps/portal/site/home/transparencia/centraldedownloads>. Data collected in the first half of 2024.

Large companies account for a greater concentration of the financed volume, at 63% of the total for the two-year period, as they naturally make higher-value investments. Approximately $\frac{3}{4}$ of the support to large companies was provided via direct operations.

In turn, support for MSMEs accounted for almost 37% of the BNDES's support during the period, a significant share of the total amount approved during the biennium. Indirect operations accounted for 93% of approvals for MSMEs, which underscores the importance of the network of accredited financial agents for the reach of the BNDES's support. It is also important to highlight that 99.4% of the clients belonged to the MSME segment, a result of the institution's efforts in recent years to expand its support and develop instruments aimed at smaller clients.

⁸ The classification by size is based on the companies' gross operating revenue (GOR) or the annual income of individual clients. According to the BNDES's classification, a microenterprise has annual gross operating revenue or annual income less than or equal to BRL 360,000. A small company has revenue greater than BRL 360,000 and less than or equal to BRL 4.8 million. A medium-sized company has revenue greater than BRL 4.8 million and less than or equal to BRL 300 million. A large company has revenue greater than BRL 300 million. More details are available at: <https://www.bndes.gov.br/wps/portal/site/home/financiamento/guia/porte-de-empresa>. Accessed on: Sept. 27, 2024.

Regarding the size of the companies, it is important to note the support provided to infrastructure. Since this sector is characterized by the presence of natural monopolies or more concentrated market structures, infrastructure companies are generally larger, a pattern that is also observed in the BNDES's financial support for the sector: 81% of the credit approved for infrastructure was allocated to large clients. If infrastructure support is excluded from the estimation, the pattern is quite different: 53.4% of BNDES credit were granted to MSMEs.

GRANTING OF GUARANTEES

In addition to its traditional support through the granting of credit, the BNDES provides direct and indirect guarantees and sureties. The BNDES's FGI played a key role in providing guarantees during the period through FGI Traditional, Emergency Credit Access Program (FGI PEAC), and PEAC Crédito Solidário RS (Solidarity Credit for Rio Grande do Sul climate events) modalities.

Table 5 shows the total value of operations contracted with a guarantee from the BNDES or the guarantee funds it manages, the respective guaranteed amount, the percentage relative to the GDP, and the number of clients—both in total and separately for legal entities (companies). The financial amounts and GDP were updated to 2023 based on the IPCA.

TABLE 5. GRANTING OF GUARANTEES

Year	Modality	Financed amount (BRL billion)	Guaranteed amount (BRL billion)	% GDP	Clients (thousands)	Companies (thousands)
2022	FGI Tradicional	3.5	2.4	0.0	5.1	5.1
	FGI PEAC	17.5	13.2	0.2	16.1	16.1
	Direct	0.9	0.9	0.0	0.0	0.0
2023	FGI Tradicional	1.3	0.9	0.0	2.1	2.1
	FGI PEAC	41.8	33.4	0.4	109.1	109.1
	PEAC-CS-RS	0.5	0.4	0.0	0.8	0.8
	FGEnergia*	0.0	0.0	0.0	0.0	0.0
TOTAL		65.5	51.2	0.3	125.0	125.0

Source: Elaborated by the authors, based on data from the BNDES and the IBGE. Available, respectively, at: <https://www.bndes.gov.br/wps/portal/site/home/transparencia/centraldedownloads> and <https://sidra.ibge.gov.br>. Data collected in the first half of 2024.

* Energy Efficiency Credit Guarantee Program

Note: The total number of clients (individuals and companies) considered only distinct clients; therefore, except for the "amount" column, the total does not equal the sum of both years. The "% GDP" column refers to the amount of the credit.

In 2022, credit contracted with guarantees provided by the BNDES or guarantee funds totaled BRL 21.9 billion (0.2% of the GDP), serving just over 20 thousand clients. In 2023, this amount increased to BRL 43.6 billion, representing 0.4% of the GDP, with a significant increase in the customer base to around 111 thousand. Over the two-year period, credit

facilitated via guarantees reached BRL 65.5 billion, representing 0.3% of the GDP and serving approximately 125,000 different clients, with support being provided to almost all legal entities.⁹

The main difference between the two years is due to the FGI PEAC, which was reopened on August 22, 2022, including individual microentrepreneurs (MEI) and microenterprises as target audiences for guaranteed operations. As a result, in 2023, the FGI PEAC remained open throughout the entire year.¹⁰

Another notable aspect in 2023 was the implementation of PEAC-CS-RS, introduced in response to extreme weather events that occurred in Rio Grande do Sul state in September 2023. This initiative was part of support measures for MSMEs that suffered material losses due to the extratropical cyclone.¹¹

Composition of the support

Support provided through the granting of guarantees per sector, region, and size will be presented below.

Composition per sector

Table 6 shows the approved amounts and the share of total guaranteed concessions by main sectors of the economy, based on the BNDES's classification.

TABLE 6. GRANTING OF GUARANTEES PER SECTOR

Sector	Financial amount (BRL billion)		Amount (% of annual total)		Clients (% of annual total)	
	2022	2023	2022	2023	2022	2023
Agriculture and livestock	0.3	0.6	1.3%	1.4%	0.7%	0.6%
Trade and services	11.5	26.1	52.4%	59.8%	66.2%	74.1%
Industry	6.1	10.1	27.7%	23.1%	19.6%	12.6%
Infrastructure	4.1	6.8	18.5%	15.6%	13.5%	12.7%

Source: Elaborated by the authors, based on data from the BNDES.

The trade and services sector received the largest share of support, with BRL 11.5 billion in 2022 and BRL 26.1 billion in 2023, representing, respectively, 52.4% and 59.8% of the total granting of guarantees in the period, as well as 66.2% and 74.2% of the share of the total number of clients.

⁹ Support for individuals was only permitted in the case of independent freight transporters by the BNDES FGI (exclusively in operations for the acquisition of road freight equipment) and within the scope of PEAC-CS-RS. In tables 6, 7, and 8, we do not provide separate information regarding supported companies, given that the difference regarding the total number of clients was minimal.

¹⁰ In 2023, the PEAC FGI also became valid for an indefinite period.

¹¹ More details on the work of the BNDES FGI, in all its modalities, can be found in its accountability reports, available at: <https://www.bndes.gov.br/wps/portal/site/home/financiamento/garantias/bndes-fgi/prestacao-contas-fgi>. Accessed on: Sept. 27, 2024.

Composition per region

Table 7 presents the same indicators by geographic region. The Southeast received BRL 33.2 billion in credit based on grants over the two-year period, accounting for approximately 50% of the total amount and 44% of the total number of clients supported. The South absorbed BRL 16.3 billion during the period, approximately half of the amount allocated to the Southeast. The North region had the smallest share, with only BRL 2.6 billion over the two-year period (approximately 4% of the total amount).

TABLE 7. GRANTING OF GUARANTEES PER REGION

Region	Financial amount (BRL billion)		Amount (% of annual total)		Clients (% of annual total)	
	2022	2023	2022	2023	2022	2023
Midwest	1.7	3.4	7.6%	7.9%	8.5%	8.8%
Northeast	2.4	5.9	11.1%	13.6%	10.7%	16.0%
North	0.6	2.0	2.8%	4.5%	3.4%	4.7%
Southeast	11.7	21.5	53.5%	49.3%	44.9%	44.3%
South	5.5	10.8	25.0%	24.8%	32.4%	26.1%

Source: Elaborated by the authors, based on data from the BNDES. Available at: <https://www.bndes.gov.br/wps/portal/site/home/transparencia/centraldedownloads>. Data collected in the first half of 2024.

Composition per size

Table 8 presents more detailed indicators for MSMEs and large companies. Medium-sized companies received the highest values, corresponding to BRL 18.7 billion in 2022 and BRL 33.9 billion in 2023, representing 85.6% and 77.8% of the total, respectively, representing an increase in the amounts but a reduction in their share of the total. Small companies received BRL 2 billion in 2022 and BRL 8.4 billion in 2023, representing 9.2% and 19.2% of the total, respectively, indicating an increase in both cases. Microenterprises received BRL 200 million in 2022 and BRL 1.3 billion in 2023, accounting for 1.1% and 3.0% of the total, respectively, marking a substantial increase in both cases. In 2022, large companies received BRL 900 million, representing 4.1% of the total. In 2023, no guarantees were granted to companies of this size. Regarding the total number of customers, small companies increased their share from 36.2% in 2022 to 52.1% in 2023, microenterprises rose from 7.0% to 24.7%, while medium-sized companies decreased from 56.8% to 23.3%, indicating an effort to support smaller companies.

TABLE 8. GRANTING OF GUARANTEES PER SIZE

Size	Financial amount (BRL billion)		Amount (% of annual total)		Clients (% of annual total)	
	2022	2023	2022	2023	2022	2023
Large	0.9	-	4.1%	0.0%	0.0%	0.0%
Medium	18.7	33.9	85.6%	77.8%	56.8%	23.3%
Small	2.0	8.4	9.2%	19.2%	36.2%	52.1%
Micro	0.2	1.3	1.1%	3.0%	7.0%	24.7%

Source: Elaborated by the authors, based on data from the BNDES. Available at: <https://www.bndes.gov.br/wps/portal/site/home/transparencia/centraldedownloads>. Data collected in the first half of 2024.

PROVISION OF SERVICES

The BNDES renewed its role as a service bank for the Brazilian State, providing services to the Union, states, and municipalities in structuring projects for privatization across all modalities, including concessions, public-private partnerships (PPP), and other forms of divestiture. This section considered as indicators of the BNDES's efforts in service provision the new project structuring contracts signed with public clients throughout the two-year period, as well as the studies delivered during this time, covering the entire project portfolio.

TABLE 9. MEASUREMENT OF SERVICES PROVIDED BY BNDES PER FEDERAL ENTITY

Government level	New contracts		Studies delivered	
	2022	2023	2022	2023
State	7	12	20	9
Federal	3	2	19	7
Municipal	12	2	10	11
TOTAL	22	16	49	27

Source: Elaborated by the authors, based on data from the BNDES.

In the two-year period, 38 new contracts were signed, and 76 studies were delivered. In the latter, there is a balanced distribution, with a slight advantage for state governments. Regarding new contracts, there is a greater share of state and municipal governments.

In the breakdown by Brazilian regions, the Southeast showed the highest number of contracts, with 13 over the period, whereas the North showed the smallest, with only three. Regarding studies, the Northeast presented the greatest participation, receiving 24, whereas the North again had the smallest, with six. The multiregional category includes services provided to the Federal Government and projects spanning more than one region, accounting for eight studies delivered and two new contracts.

TABLE 10. MEASUREMENT OF SERVICES PROVIDED BY BNDES PER REGION

Region	New contracts		Studies delivered	
	2022	2023	2022	2023
Midwest	1	4	8	2
Multiregional	2	0	4	4
Northeast	6	3	11	13
North	3	0	5	1
Southeast	8	5	10	6
South	2	4	11	1
TOTAL	22	16	49	27

Source: Elaborated by the authors, based on data from the BNDES.

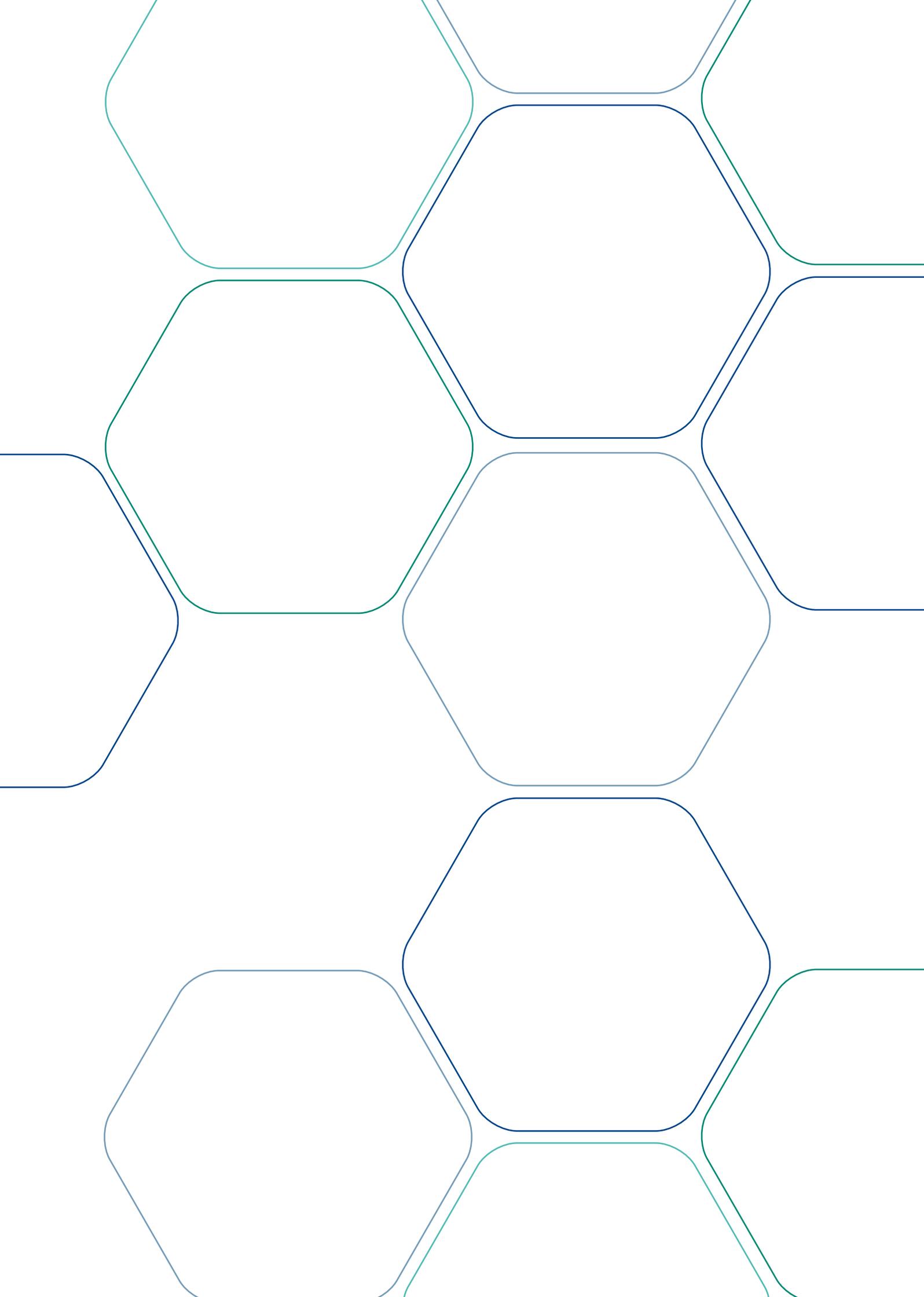






MONITORING OF THE BNDES'S SUPPORT RESULTS





Over the years, the BNDES has sought to develop and adapt several monitoring and evaluation (M&E) methodologies, ranging from quantitative to qualitative tools. These include models to assess a project’s expected impact from the outset—such as impact scoring (SI_m)—and to verify whether the initiative actually achieved its intended results, such as the results framework (QR) and the theory of change framework (QTM), which are applied both before (ex-ante) and after the interventions (ex-post).¹² The BNDES also employs input-output models to estimate the jobs generated by supported investments, as well as studies based on counterfactual analysis,¹³ which seek to infer causal relationships between supported initiatives and their evaluated impacts. Chart 1 presents these tools.

CHART 1. THE BNDES’ M&E TOOLS

Phase	Tool	Description
<i>Ex-ante</i>	Impact scoring (SI _m)	Score estimated based on the completion of a questionnaire that aims to identify potential contributions from supporting a predefined list of economic, social, and environmental impacts.
<i>Ex-ante and ex-post</i>	Results framework (QR)	Presents the objectives intended with support in terms of results, output and outcome indicators, their expected values and respective dates, and is the basis for self-evaluations of the BNDES’s direct operations.
	Theory of change framework (QTM)	Defines the objectives sought with the support, including, among others: inputs, activities, deliverables, objectives, and indicators; it is the basis for self-evaluations of indirect support programs (via financial agents).
	The BNDES input-output model	Input-output model for estimating jobs involved in the implementation of supported investments.
<i>Ex-post</i>	Counterfactual analysis	Based on econometric methods, which enable establishing cause and effect relationships between the intervention and the expected impacts.

Source: Elaborated by the authors, based on data from the BNDES’s SMA.

This chapter focuses on the output and outcome indicators of operations. Outcome indicators measure the immediate deliverables of the support, whereas output indicators assess its impacts and are associated with the objectives sought to be achieved, making them more susceptible to the influence of external factors beyond the BNDES’s support.¹⁴ These indicators will generally be examined based on the QRs of direct operations and the QTMs of indirect operations (via financial agents). The SI_m and the BNDES input-output model will be presented in specific sections. The counterfactual analysis serves as the basis for the chapter on the Bank’s impact.

The first two sections of this chapter covers operations approved in the 2022-2023 biennium, presenting indicators that portray deliverables and impacts of these operations are presented. The results of the SI_m, a tool used to identify the main expected impacts of operations, are also shown.

¹² More information on these methodologies can be found in BNDES (2024a).

¹³ Studies based on counterfactual analysis will be discussed in the next chapter.

¹⁴ For example, renewable energy generation projects commonly have installed power generation capacity as an output indicator and avoided greenhouse gas emissions as an outcome indicator—the latter associated with the objective of preventing greenhouse gas emissions.

Employment is the subject of the third section. It presents the results of the BNDES's input-output model, which estimates, based on disbursements, the jobs generated by the implementation of financed investments.

The two subsequent sections deal with the self-evaluation reports of results prepared in the 2022-2023 biennium, which generally involve operations that were approved in previous years. The results self-evaluation report is the document through which the team responsible for support presents the values achieved for the indicators and analyzes the results. There is a section dedicated to results self-evaluation reports related to operations (QR)¹⁵ and another dedicated to results self-evaluation reports related to support instruments (QTM).¹⁶ This division reflects the way in which monitoring is carried out. Monitoring by operation predominates in direct financing, whereas monitoring by support instrument is more common in indirect financing.

APPROVALS: RESULTS INDICATORS

This section presents the output and outcome indicators of the operations approved by the BNDES in the 2022-2023 biennium. The indicators shown here are estimated, in most cases, in the monitoring by operation, and there are also some estimated in the monitoring by support instrument. The indicators cover different forms of operation by the BNDES (business models). Two of them account for most indicators: “credit and financing” and “non-refundable resources.” When the indicator deals with other forms of operation—“services,” “guarantees,” or “participations and securities”—it is mentioned.

The indicators relate to operations approved in 2022 and 2023. For each indicator, its predicted value at the time of approval is considered. Specifically for project structuring services, the indicators correspond to operations auctioned during the two-year period, considering their expected values at the time of the auction.

The tables in this section present, for each indicator, its expected value and the sustainable development goals (SDG) to which it contributes. The expected value is divided into three columns: the first refers to operations approved in 2022, the second to those approved in 2023, and the third to those approved in the 2022-2023 biennium.¹⁷

¹⁵ In the case of operations, the self-evaluation reports of results are prepared up to two years after the expected date in the outcome indicators, with most of the reports analyzed referring to operations approved in 2017 and 2018.

¹⁶ In the case of support instruments, the outcome indicators, in general, depend on data from the Annual Social Information Report (RAIS) and other public databases, such as those from the IBGE, which involve a time lag of approximately two years. Thus, the reports for the 2022-2023 biennium include outcome indicators for 2020-2021. As for the output indicators, which generally depend on the BNDES's databases, the time lag is one year, with data referring to 2021-2022.

¹⁷ For the indicators related to project structuring services, the projects auctioned in each period are considered.

For most indicators, the value in the third column is the sum of the values in the previous two. The SDGs to which an indicator contributes are derived from the SDGs to which the operations that used it contribute. The methodology adopted by the BNDES in the 2022-2023 period to associate operations with the SDGs is considered.¹⁸

This section shows the most relevant indicators used in operations approved by the BNDES in the 2022-2023 biennium. For the purposes of organizing the section, the indicators were segmented based on the strategic business themes of the BNDES's 2023-2027 Long-Term Strategy, approved in May 2023. In total, five themes were considered: (i) Productive development, innovation, and foreign trade; (ii) Economic and social infrastructure; (iii) MSMEs and cooperatives; (iv) Environment and climate; and (v) Social and productive inclusion. The organization of this section reflects this segmentation of themes.

Productive development, innovation, and foreign trade

Regarding the subject Productive development, innovation, and foreign trade, the main strategic guidelines involved promoting neo-industrialization; increasing the complexity of the Brazilian industrial fabric; strengthening support for innovation; contributing to the missions defined by the National Council of Industrial Development (CNDI); and expanding support for the export of manufactured goods.

Indicators related to the topic were divided into two groups: cross-cutting and sectoral. The first group includes those related to innovation, exports, and sustainable production. The second group presents indicators for agro-industrial chains, the health economic-industrial complex, and information and communication technologies (ICT), sectors that were highlighted in the missions defined in the New Industry Brazil (NIB). It is worth highlighting that this topic gained the most traction throughout 2023, with the reinforcement of several support instruments during the period.

Support for innovation, presented in Table 11, gained momentum with the BNDES Mais Inovação Program (BNDES More Innovation Program), created in September 2023, with its first operation approved the following month. Table 11 indicates that, for operations approved in the 2022-2023 biennium, support is expected for 11.7 million hours of work in research and development (R&D), equivalent to approximately 1,400 people working full-time for four years. It is expected that companies receiving innovation support during the biennium will increase their spending on innovative activities by approximately BRL 1.1 billion, representing a 46% growth in aggregate terms, and will launch 83 new products or services on the market. The construction of laboratories and R&D centers was also reinforced, with a total of 27.4 thousand m² supported in 2023.

¹⁸ The BNDES began to adopt a new taxonomy to identify the SDGs in 2024.

TABLE 11. RESULTS INDICATORS RELATED TO INNOVATION IN THE OPERATIONS APPROVED IN 2022 AND 2023

Indicator	Expected amount			SDG associated
	2022	2023	2022-2023	
Construction of laboratories and R&D centers (m ²)	0	27,415	27,415	9. 8
Working hours supported by R&D (millions of man-hours)	5.5	6.2	11.7	9
Development and/or launch of new products and services on the market (number of products and services)	42	41	83	9. 8
Development/implementation of new processes (number of processes)	1	5	6	9. 8
Acquisition of equipment for optimization/automation of production processes (amount of equipment)	8	165	173	9. 8
Registration of invention patents (number of patents)	5	4	9	9. 8
Variation of expenditure on innovative activities (BRL millions per year)	35	1,114	1,149	9

Source: Elaborated by the authors, based on data from the BNDES's SMA.

Table 12 shows the indicators related to export support. With the operations approved during the biennium, exports of capital goods worth USD 4 billion are expected, representing approximately 12% of the country's capital goods exports in the same period.¹⁹ The increase in export approvals in 2023, which tripled compared to 2022, reflects improvements in the financial conditions of the BNDES's Exim and greater support for Embraer's exports, which jumped from nine to 67 financed aircraft. The indicator for the number of countries to which exports are destined is estimated based on disbursements made under the BNDES's Exim Post-Shipment product, given the difficulty in predicting at the time of approval. Throughout the 2022-2023 biennium, disbursements were made to support exports to 18 different countries.

TABLE 12. RESULTS INDICATORS RELATED TO EXPORTS IN OPERATIONS APPROVED IN 2022 AND 2023

Indicator	Expected amount			SDG associated
	2022	2023	2022-2023	
Exports of capital goods (USD billion)	1	3	4	17
Exports of aircraft (number of aircraft)	9	67	76	17
Countries to which exports are destined (number of countries)*	14	17	18	17
Companies invested in that become exporters (number of companies)**	10	0	10	8, 17

Source: Elaborated by the authors, based on data from the BNDES's SMA.

*Indicator estimated based on disbursements made under the BNDES's Exim Post-Shipment product.

**Indicator related to support by equity investment funds.

Table 13 shows indicators related to sustainable production. It is expected that companies that had their financing approved in the biennium will issue, within the scope of the National Biofuels Policy (RenovaBio), 486 thousand more decarbonization credits (CBIO).

¹⁹ It is worth mentioning that part of the operations approved in the biennium will be reflected in exports after 2023.

Each CBIO corresponds to one ton of CO₂ equivalent that will no longer be emitted. Energy savings of 214 thousand MW hours/year are also expected in energy efficiency projects and a waste processing capacity of 460 tons/day. In the financing for forestry programs run by pulp manufacturing companies approved in 2022 and 2023, an area of approximately 630 thousand hectares of planted forests is expected. This is an area similar to that of the municipality of Macapá. Some indicators in Table 13 are related to good practices that the BNDES seeks to promote in companies. Also noteworthy is the implementation of an internal ESG policy—an acronym for environmental, social, and governance—in invested companies and the predicted issuance of BRL 170 million in green bonds.

TABLE 13. RESULTS INDICATORS RELATED TO SUSTAINABLE PRODUCTION IN OPERATIONS APPROVED IN 2022 AND 2023

Indicator	Expected amount			SDG associated
	2022	2023	2022-2023	
Energy savings in energy efficiency projects (MW-hour/year)	16,235	197,916	214,151	12, 13
Variation in CBIO issuance under RenovaBio (thousands of credits)	0	486	486	13
Waste processing capacity (tons per day)	76	384	460	12, 13
Planted forests area (hectares)	260,419	368,963	629,382	13
Invested companies that implement internal ESG policy (number of companies)*	21	7	28	8, 12
Green bond issuances (BRL million)	170	0	170	12
Social and environmental certifications (number of certifications)	5	2	7	12

Source: Elaborated by the authors, based on data from the BNDES's SMA.

*Indicator related to support through equity investment funds.

Table 14 shows the indicators related to the agro-industrial chains. With the financing approved in 2022 and 2023, it is expected that grain storage capacity will increase by 1.2 million tons. For comparison purposes, the static storage capacity in the country in 2023 was approximately 203 million tons.²⁰ The expansion of fertilizer production capacity contributes to achieving the goals of the National Fertilizer Plan. The addition of fertilizer production capacity foreseen in the operations approved in the biennium—587 thousand tons per year—represents approximately 9% of the production, in 2023, of intermediate fertilizers in the country.²¹ Through accredited financial institutions, the BNDES financed the acquisition of approximately 13 thousand agricultural tractors and 5 thousand harvesters in the 2022-2023 biennium, equivalent to approximately 17% and 41%, respectively, of the production of these equipment in the country in the 2019-2020 period.²²

²⁰ The National Supply Company (CONAB) is the source of the data on static storage capacity in the country.

²¹ The National Fertilizer Association (ANDA) is the source of the data on national production of intermediate fertilizers.

²² The Brazilian Association of Automotive Vehicle Manufacturers (ANFAVEA) is the source of the tractor and harvester production data. The most recent year for which these data are available is 2020.

TABLE 14. RESULTS INDICATORS RELATED TO AGROINDUSTRIAL CHAINS IN OPERATIONS APPROVED IN 2022 AND 2023

Indicator	Expected amount			SDG associated
	2022	2023	2022-2023	
Grain storage capacity (thousand tons)	347	888	1,235	2, 12
Poultry slaughter capacity (million heads per year)	0	18	18	2
Fish processing capacity (thousand tons per year)	0	10	10	2
Soybean processing capacity (thousand tons per year)	0	1,330	1,330	2
Wheat processing capacity (thousand tons per year)	0	525	525	2
Fertilizer production capacity (thousand tons per year)	564	23	587	9
Production capacity of feed and other preparations used in animal feeding (thousand tons per year)	1,056	226	1,282	2
Acquisition of agricultural tractors (number of tractors)	7,402	5,376	12,778	2
Acquisition of harvesters (number of harvesters)	3,206	2,078	5,284	2
Acquisition of sprayers and irrigators (amount of equipment)	1,876	1,923	3,799	2

Source: Elaborated by the authors, based on data from the BNDES's SMA.

One of the missions defined in the NIB is to develop a resilient health economic-industrial complex to reduce the vulnerabilities of the Brazilian Unified Health System (SUS) and expand access to health. As shown in Table 15, the operations approved in the 2022-2023 biennium, the launch of 18 new medicines, and the expansion of medicine production capacity by 23.5 million cartridges per year are expected. The financing approved in 2022 and 2023 also contributes to the increase in the capacity for surgeries and exams, as well as the implementation of new hospital beds. The implementation of new beds at the Guarulhos Children's Hospital, which is the subject of a PPP structured by the BNDES, is also expected.

TABLE 15. RESULTS INDICATORS RELATED TO THE HEALTHCARE ECONOMIC-INDUSTRIAL COMPLEX IN THE OPERATIONS APPROVED IN 2022 AND 2023

Indicator	Expected amount			SDG associated
	2022	2023	2022-2023	
Launch of new medicines (number of medicines)	18	0	18	3, 9
Production capacity of medicines for human health (number of cartridges per year)	20.5	3	23.5	3, 9
Distribution center storage capacity (number of pallet positions)	4,892	7,000	11,892	3, 9
Implementation/renovation of SUS units (number of health units)	11	0	11	3, 1
Exam capacity (exams per year)	14,745	0	14,745	3, 1
Surgical care capacity (Surgeries per year)	19,000	0	19,000	3, 10
Implementation of new beds (number of beds)	150	0	150	3
Implementation of beds with the auctioned health project (number of beds)*	0	136	136	3

Source: Elaborated by the authors, based on data from the BNDES's SMA.

*Indicator related to the project structuring service.

Table 16 shows indicators related to ICTs. The data show a forecast for the construction of 10,000 m² of data centers with the operations approved in the 2022-2023 biennium. It is worth noting that this is a public policy priority, through which the country can attract investments seeking renewable energy sources (powershoring). The financed projects are expected to contribute to revenue growth for supported ICT companies. The forecast indicates an annual increase of approximately BRL 600 million—which corresponds to a 99% growth—considering the companies that had operations approved in the biennium.

TABLE 16. RESULTS INDICATORS RELATED TO ICTS IN THE OPERATIONS APPROVED IN 2022 AND 2023

Indicator	Expected amount			SDG associated
	2022	2023	2022-2023	
Construction of data centers (m ²)	0	10,000	10,000	9, 8
Update of locally developed software (number of software)	4	0	4	9, 8
Variation in operating revenue (BRL million per year)	1	633	634	9, 8

Source: Elaborated by the authors, based on data from the BNDES's SMA.

Economic and Social Infrastructure

Regarding Economic and social infrastructure, the main strategic guidelines focused on expanding access to services, promoting climate adaptation and resilience, and fostering economic integration and territorial development. The indicators were grouped into five groups: environmental sanitation; energy (generation, transmission, and distribution); logistics (land, air, and water transportation); urban mobility; and telecommunications.

Table 17 shows the indicators related to environmental sanitation. With the financing approved in the 2022-2023 biennium, it is expected an increase of more than 5,000 km in the length of the water network and pipelines and approximately 10,000 km in the length of the sewage network, interceptors, and collectors. Moreover, more than four million people are expected to gain access to water and sewage networks with the financing approved in 2022 and 2023, with most of this population located in the state of Rio de Janeiro.

Also noteworthy are the projects structured by the BNDES that were auctioned during the period. Located in the states of Ceará and Rio Grande do Sul, these projects are expected to provide approximately 5.9 million people with access to sanitation services. These initiatives contribute to achieving the goals of the National Basic Sanitation Plan (Plansab). For comparison purposes, the 4.4 million people projected to gain access to the sewage network with the financing approved in the 2022-2023 biennium represent

approximately 13% of Plansab’s goal of increasing access to the sewage collection network by 2033.

TABLE 17. RESULTS INDICATORS RELATED TO ENVIRONMENTAL SANITATION IN THE OPERATIONS APPROVED IN 2022 AND 2023

Indicator	Expected amount			SDG associated
	2022	2023	2022-2023	
Water reserve capacity (million liters)	821	93	914	6, 10, 14
Water treatment capacity (liters per second)	2,363	74	2,437	6, 10, 14
Water network and pipeline length (km)	4,035	1,406	5,441	6, 1, 10
Installation of new water meters and replacement of obsolete ones (number of water meters)	59,335	593,512	652,847	6, 10
Population that now has access to the water network (millions of people)	2.2	2.3	4.5	6, 1, 10
Sewage treatment capacity (liters per second)	6,325	864	7,189	6, 10, 14
Extension of sewage network, interceptors and collectors (km)	8,357	1,661	10,018	6, 1, 10
Population that now has access to the sewage network (millions of people)	3.8	0.6	4.4	6, 1, 10
Population that now has access to sanitation services with the auctioned projects (millions of people)*	5.9	0	5.9	6, 1, 10

Source: Elaborated by the authors, based on data from the BNDES’s SMA.

*Indicator related to the project structuring service.

In the 2022-2023 biennium, the BNDES’s support for electricity generation focused on wind and solar sources. As shown in Table 18, the credit operations approved in the period are expected to add approximately 2,500 MW of installed power generation capacity from each of these sources. To illustrate what this represents, it is worth comparing it with the increase in generation capacity forecast in the Ten-Year Energy Expansion Plan (PDE) for the 2022-2031 period. For solar sources, the addition of generation capacity by the operations approved in 2022 and 2023 corresponds to 44% of that forecast in the PDE. For wind sources, this proportion is 24%.

An outcome indicator shown in Table 18 is the number of equivalent households served. It is estimated that the electricity generation projects supported in the biennium will generate enough energy to meet the consumption of approximately 10.9 million households. Table 18 also contains the indicator of biomethane production capacity, a gaseous biofuel with an energy content similar to that of natural gas. The biomethane production capacity forecast in the financing approved in 2022 and 2023—112 million m³/year—represents an increase in capacity of approximately 8% compared to that existing in Brazil in 2021.²³

²³ The Brazilian National Agency for Petroleum, Natural Gas, and Biofuels (ANP) is the source of the data on biomethane production capacity in 2021.

TABLE 18. RESULTS INDICATORS RELATED TO THE GENERATION OF ELECTRICITY AND GAS IN THE OPERATIONS APPROVED IN 2022 AND 2023

Indicator	Expected amount			SDG associated
	2022	2023	2022-2023	
Installed wind generation capacity (MW)	1,943	645	2,587	7, 13
Installed solar generation capacity (MW)	1,357	1,203	2,560	7, 13
Installed biomass generation capacity (MW)	90	0	90	7, 13
Equivalent households served, based on physical guarantees (million households)	5.9	5	10.9	7
Biomethane production capacity (million m ³ per year)	31	81	112	7, 13

Source: Elaborated by the authors, based on data from the BNDES's SMA.

Table 19 shows the indicators related to the transmission and distribution of electrical power. It is expected that the financing approved in the biennium will increase the length of the transmission lines by more than 2,700 km, which corresponds to 8% of the expansion predicted in the PDE for the 2022-2031 period. It is worth highlighting the expected increase in the distribution network by more than 55 thousand km, equivalent to approximately ten times the distance between Oiapoque (AP) and Chuí (RS). Additionally, 6.4 million energy meters are projected to be installed.

TABLE 19. RESULTS INDICATORS RELATED TO ELECTRICITY TRANSMISSION AND DISTRIBUTION IN OPERATIONS APPROVED IN 2022 AND 2023

Indicator	Expected amount			SDG associated
	2022	2023	2022-2023	
Extension of transmission lines (km)	1,436	1,336	2,772	7
Implementation or expansion of transformation capacity in transmission (MVA)	3,568	1,125	4,693	7
Extension of the distribution network (km)	3,836	51,948	55,784	7
Implementation or expansion of transformation capacity in distribution (MVA)	445	3,814	4,259	7
Installation of energy meters (million meters)	0.4	6	6.4	7
Modernization/expansion of energy distribution substations (number of substations)	3	310	313	7

Source: Elaborated by the authors, based on data from the BNDES's SMA.

Table 20 shows logistic indicators related to air and land transportation, including airports, railways, highways, and trucks. Investments in airports during the biennium are expected to increase passenger capacity by 20.9 million per year. The financing approved in 2022 and 2023 includes the construction of 53 km of railway lines, the duplication of 99 km of railway lines, and the restoration or reconstruction of more than 1,100 km of highways. Moreover, concession projects structured by the BNDES and auctioned during the period involved more than 3,500 km of highways, with approximately half of this extension (1,805 km) being federal highways—equivalent to 9% of the highway concession target defined in the Multiannual Plan

(PPA) 2020-2023 for the period 2022-2023.²⁴ Credit operations through accredited financial institutions financed the acquisition of approximately 32 thousand trucks, representing 14% of the trucks registered in the country during this period.²⁵

TABLE 20. RESULTS INDICATORS RELATED TO AIR AND LAND TRANSPORTATION IN OPERATIONS APPROVED IN 2022 AND 2023

Indicator	Expected amount			SDG associated
	2022	2023	2022-2023	
Expansion/renovation of aircraft aprons (m ²)	270,774	0	270,774	9
Construction/renovation of landing and takeoff runways (km)	2	3	5	9
Variation in passenger movement at airports (million passengers per year)	6.0	14.9	20.9	9
Construction of railway lines (km)	0	53	53	9
Duplication of railway lines (km)	0	99	99	9
Duplication of highways (km)	531	0	531	9
Paving of highways (km)	14	118	132	9
Restoration or reconstruction of highways (km)	952	197	1,149	9
Extension of highway projects auctioned (km)*	2,080	1,511	3,591	9
Truck acquisition (number of trucks)	32,203	25,908	58,111	9

Source: Elaborated by the authors, based on data from the BNDES's SMA.

* Indicator related to the project structuring service.

Table 21 shows indicators related to waterway transportation, including ports and vessels. Investments in ports are expected to gain an increase in cargo movement of 7.9 million tons per year. The financing with resources from the Merchant Marine Fund (FMM) approved in 2022 and 2023 includes the modernization of 46 vessels and the repair of another 142.

TABLE 21. RESULTS INDICATORS RELATED TO WATER TRANSPORTATION IN OPERATIONS APPROVED IN 2022 AND 2023

Indicator	Expected amount			SDG associated
	2022	2023	2022-2023	
Construction/renovation of berths in ports (m)	0	350	350	9
Implementation of conveyor belts in ports (m)	0	4,826	4,826	9
Installed capacity for receiving cargo by rail in ports (million tons per year)	0	17	17	9
Variation in cargo movement in ports (million tons per year)	0.4	7.5	7.9	9
Vessel modernization (number of vessels)	15	31	46	9
Vessel repair (number of vessels)	44	98	142	9

Source: Elaborated by the authors, based on data from the BNDES's SMA.

²⁴ Considering the PPA target set out in the Intermediate Results Report for the base year 2023.

²⁵ The National Federation of Motor Vehicle Distribution (FENABRAVE) is the source of the data on truck registration in the country.

Regarding urban mobility, the data presented in Table 22 indicate that the financing approved in the 2022-2023 biennium included the acquisition of 288 train cars and the implementation of 19 km of double-track bus rapid transit (BRT) systems. These investments are expected to serve more than 1.7 million users each business day. The auction held by the Brazilian Urban Train Company (CBTU) involves the concession of the urban metro-rail passenger transport service in the metropolitan region of Belo Horizonte (MG). Planned improvements include the requalification of Metro Line 1, which serves Belo Horizonte and Contagem, as well as the construction of Line 2, adding seven new stations and extending 10.5 km, increasing the number of daily passengers by 82 thousand. In the 2022-2023 period, the BNDES financed, through indirect operations, the acquisition of 7,725 buses, which corresponds to approximately 17% of new buses registered in the country.²⁶

TABLE 22. RESULTS INDICATORS RELATED TO URBAN MOBILITY IN OPERATIONS APPROVED IN 2022 AND 2023

Indicator	Expected amount			SDG associated
	2022	2023	2022-2023	
Acquisition of train cars (number of cars)	288	0	288	11, 9, 13
Renovation of train stations (number of stations)	20	0	20	11, 9, 13
Implementation of double-track BRT (km)	2	17	19	11, 13
Implementation/modernization of cycle paths (km)	4	36	40	11, 13
Acquisition of buses (number of buses)	3,832	3,893	7,725	11, 9
Demand to be met by urban mobility projects (users per business day)	943,147	818,518	1,761,665	11, 13
Users of the auctioned urban mobility project (users per business day)*	82,000	0	82,000	11, 13

Source: Elaborated by the authors, based on data from the BNDES's SMA.

* Indicator related to the project structuring service.

The indicators in Table 23, related to telecommunications, are associated with financing with resources from the Fund for the Telecommunications Services Universalization Fund (FUST). With the operations approved in the 2022-2023 biennium, the installation of approximately 1,700 km of fiber optics and the expansion of the fixed broadband network in 33 municipalities with inadequate support network service for connection (backhaul) are planned.

TABLE 23. RESULTS INDICATORS RELATED TO TELECOMMUNICATIONS IN THE OPERATIONS APPROVED IN 2022 AND 2023

Indicator	Expected amount			SDG associated
	2022	2023	2022-2023	
Fiber optics installation (km)	0	1,704	1,704	9

(continues)

²⁶ The National Federation of Motor Vehicle Distribution (FENABRAVE) is the source of data on bus registration in the country.

(continued)

Indicator	Expected amount			SDG associated
	2022	2023	2022-2023	
Construction of 4G and 5G telecommunications towers (number of towers)	0	97	97	9
Expansion of the fixed broadband network in municipalities with inadequate support network service for connection (number of municipalities)	0	33	33	9

Source: Elaborated by the authors, based on data from the BNDES's SMA.

MSMEs and cooperatives

Regarding the subject of MSMEs and cooperatives, the main strategic guidelines are related to increasing access to credit, supporting the growth of MSMEs and strengthening cooperatives. Most of the indicators presented account for the MSMEs—legal entities and/or individuals—supported, as the main delivery in these operations is enabling access to credit. The indicators were divided into two groups: those related to the “credit and financing” form of operation, presented in Table 24, and those related to the other forms of operation, listed in Table 25.

In the “credit and financing” form of operation, the BNDES uses a network of accredited financial institutions to ensure that its resources reach end customers. In indirect operations, which predominate in supporting MSMEs, accredited financial institutions are responsible for customer relationships and credit risk. In the 2022-2023 biennium, approximately 77,000 legal entities classified as MSMEs received support in credit operations, which allocated resources to approximately 3,800 municipalities (68% of the total number of municipalities in the country). Operations under the National Program for Strengthening Family Farming (Pronaf) accounted for a significant portion of operations with individual MSMEs. More than 100,000 individuals had their Pronaf operations approved in 2022 or 2023, and these operations allocated resources to almost 2,600 municipalities. Through the BNDES's Microcredit program, approximately 140,000 individual and legal MSMEs were supported in the 2022-2023 biennium. Among the individuals supported, approximately 39,000 were women.²⁷ In support of cooperatives, the BNDES's Procapcred stands out. In 2022 and 2023, financing was granted to approximately 51,000 individual cooperative members to acquire shares in 128 individual cooperatives, which cover more than 1,400 municipalities.

²⁷ The BNDES's Microcredit indicators are estimated based on disbursements. It is also worth mentioning that the number of microentrepreneurs supported by the BNDES's Microcredit is not included in the indicator of number of MSMEs supported in credit operations or in the indicators of number of clients presented in the chapter “Operational Performance.”

TABLE 24. RESULTS INDICATORS RELATING TO SUPPORT FOR MSMEs AND COOPERATIVES IN OPERATIONS APPROVED IN 2022 AND 2023 IN THE FORM OF ACTION CREDIT AND FINANCING

Indicator	Expected amount			SDG associated
	2022	2023	2022-2023	
MSME legal entities supported in credit operations (number of legal entities)	41,868	44,788	77,259	8
Municipalities to which credit operations with MSME legal entities are intended (number of municipalities)	3,227	3,259	3,789	8
Farmers supported by Pronaf (number of individuals)	58,988	71,745	103,571	2
Municipalities to which operations with individuals under Pronaf are intended (number of municipalities)	2,072	2,353	2,584	2
Individual and legal microentrepreneurs supported by the BNDES's Microcredit (number of individuals and legal entities)	70,635	82,775	139,614	8, 1
Women supported by the BNDES's Microcredit (number of individuals)	17,985	23,345	38,133	8, 5, 1
Individual cooperative members supported by the BNDES's Procapcred (number of individuals)	24,784	28,249	51,184	8
Individual cooperatives supported by the BNDES's Procapcred (number of cooperatives)	95	122	128	8
Municipalities covered by individual cooperatives supported by the BNDES's Procapcred (number of municipalities)	891	1,424	1,446	8

Source: Elaborated by the authors, based on data from the BNDES.

Among other forms of activity, the major highlight is the provision of guarantees. Funds managed by the BNDES guaranteed credit operations for approximately 125 thousand MSME legal entities in the 2022-2023 biennium. In 2023, there was significant growth in the number of companies supported by the FGI PEAC, the BNDES's main guarantee instrument, which began operating in 2022 only from August onwards. Table 25 also contains indicators related to BNDES Garagem—an acceleration program for impact businesses—and credit funds aimed at operations with MSMEs, individuals, and legal entities.

TABLE 25. RESULTS INDICATORS RELATED TO SUPPORT FOR MSMEs IN OPERATIONS APPROVED IN 2022 AND 2023 VIA ACTION GUARANTEES; SERVICES; AND EQUITIES AND SECURITIES

Indicator	Expected amount			SDG associated
	2022	2023	2022-2023	
MSME legal entities supported by guarantee funds (number of legal entities)	20,165	111,122	124,898	8
Entrepreneurs and startups supported by BNDES Garagem (number of individuals and legal entities)*	44	45	89	8
MSME individuals and legal entities supported by credit funds (number of individuals and legal entities)**	10,842	4,515	13,542	8

Source: Elaborated by the authors, based on data from the BNDES.

* The value for each year is related to the acceleration cycle started in the year.

** This indicator is calculated based on disbursements.

Environment and Climate

Regarding Environment and Climate, the main guidelines involved promoting actions to prevent, monitor, and combat deforestation and promote the conservation and sustainable use of the Brazilian Amazon; develop solutions to support adaptation to climate change; and contribute to the fair transition to a carbon-neutral economy. For this topic, indicators are presented related to: (i) forests; (ii) sustainable cities and natural parks; and (iii) avoided greenhouse gas emissions.

The BNDES's support for forests in the 2022-2023 period was mainly provided by non-refundable resources from the BNDES Socioenvironmental Fund and the Amazon Fund, which had operations approved again in 2023. The information in Table 26 indicates that, with approvals in the biennium, an increase of 8.5 million hectares in the area of directly managed forest is expected, as well as the mapping of 277 million hectares with geospatial information for monitoring and control purposes.²⁸

Within the scope of the Amazon Fund, the approved operations are expected to contribute to the performance of 214 environmental inspection missions. For comparison, the PPA set a target of 1,120 environmental inspection operations for the 2022-2023 biennium.²⁹ In terms of the population benefiting from sustainable production projects, an estimated 18,600 Indigenous people and 13,500 women are supported. It is also worth noting that 16,000 hectares of vegetation cover are expected to be recovered, which corresponds to 1.7 times the area of the municipality of Vitória in the state of Espírito Santo.³⁰

Regarding projects structured by the BNDES, an auction was held for the concession of the national forests of Chapecó, Irati and Três Barras, located in Santa Catarina and Paraná. The concessionaires will be required to carry out forest management in an area of 6,000 hectares.

TABLE 26. RESULTS INDICATORS RELATED TO FORESTS IN OPERATIONS APPROVED IN 2022 AND 2023

Indicator	Expected amount			SDG associated
	2022	2023	2022-2023	
Individuals of Indigenous ethnicity to benefit from sustainable production projects (number of people)	0	18,606	18,606	15, 13, 8
Women to benefit from sustainable production projects (number of people)	550	12,964	13,514	15, 5, 8

(continues)

²⁸ This number (277 million hectares) is equivalent to 2.2 times the area of the state of Pará. In 2022, an operation was approved that foresees the mapping of areas in nine states, in order to support the environmental regularization process, through the generation of inputs for the analysis of the Rural Environmental Registry.

²⁹ Considering the PPA target contained in the Intermediate Results Report for the base year 2023 for indicator 0251 – Environmental inspection operations carried out.

³⁰ For comparison purposes, the Biodiversity Protection and Recovery and Combating Deforestation and Fires Program of the Ministry of the Environment and Climate Change has a target of 187.5 thousand hectares of native vegetation coverage in recovery by 2024.

(continued)

Indicator	Expected amount			SDG associated
	2022	2023	2022-2023	
Variation in the area of directly managed forest (million hectares)	0.0	8.5	8.5	15, 13, 8
Mapping with geospatial information for monitoring and control purposes (million hectares)	268	9	277	15, 13
Environmental inspection missions (number of missions)	0	214	214	15, 13
Flight hours in actions to combat crimes and infractions related to deforestation and forest degradation (hours)	0	6,540	6,540	15, 13
Individuals of Indigenous ethnicity to be trained in management or territorial protection of protected areas (number of people)	0	2,466	2,466	15, 13
Implementation of environmental and territorial management Instrument in Indigenous lands (thousands of people)	0	636	636	15, 13
Recovery of vegetation coverage (thousands of hectares)	0	16	16	15, 13
Management area in the auctioned forest project (thousands of hectares)	0	6	6	15, 13

Source: Elaborated by the authors, based on data from the BNDES's SMA.

* Indicator related to the project structuring service.

Table 27 shows the indicators related to sustainable cities and natural parks. The highlight here is the National Fund on Climate Change (FNMC), which the BNDES operates through the Climate Fund Program. The financing approved in the 2022-2023 period foresees the implementation or recovery of 387 thousand m² of urban green areas, which corresponds to urban spaces the size of 47 football fields like the Maracanã stadium.

In the projects structured by the BNDES involving public lighting, the concession contracts have targets related to energy efficiency gains. The public lighting projects auctioned in 2022 and 2023 cover a population of 3.9 million people. It is expected that the urban parks in which the investments in the biennium are made will increase by 2.3 million visits per year. During this period, auctions were held for concessions of parks whose projects were structured by the BNDES. These parks cover an area of approximately 250 thousand hectares and are expected to receive around 4.5 million visitors per year.³¹

TABLE 27. RESULTS INDICATORS RELATED TO SUSTAINABLE CITIES AND NATURAL PARKS IN THE OPERATIONS APPROVED IN 2022 AND 2023

Indicator	Expected amount			SDG associated
	2022	2023	2022-2023	
Planting of seedlings (number of seedlings)	0	9,150	9,150	11, 13
Implementation/recovery of urban green areas (thousands of m ²)	0	387	387	11, 13

(continues)

³¹ Annual average during the concession period.

(continued)

Bicycles provided (thousands of bicycles)	28	0	28	11, 13
Rockfill for coastal protection (km)	2	0	2	11, 13
Implementation of permeable area (thousands of m ²)	16	0	16	11, 13
Population covered by the auctioned public lighting projects (thousands of people)*	3,036	871	3,907	11, 13
Variations in visitation to urban parks (thousands of visits per year)	2,288	0	2,288	11, 13
Conservation of natural parks (thousands of hectares)	12	0	12	13, 15
Variation in visitation to natural parks (thousands of visits per year)	130	0	130	13, 15
Visitation to the auctioned natural park projects (thousands of visits per year)*	4,574	0	4,574	13, 15
Area of the auctioned natural park projects (thousands of hectares)*	251	0	251	13, 15

Source: Elaborated by the authors, based on data from the BNDES's SMA.

* Indicator related to the project structuring service.

Many of the BNDES's financing projects prevent greenhouse gas emissions by supporting the adoption of less polluting solutions. Table 28 presents projections of greenhouse gas emissions to be avoided by projects approved in the 2022-2023 biennium. These estimates consider the volume of emissions avoided over the useful life of the financed projects.³² It is estimated that, with the projects approved in the 2022-2023 biennium, emissions of approximately 35 million tons of CO₂ equivalent will be avoided. This volume corresponds to the emissions of the car fleet in the metropolitan region of São Paulo for approximately six and a half years.³³ Renewable energy projects account for most of the emissions avoided.

TABLE 28. RESULTS INDICATORS RELATED TO GREENHOUSE GAS EMISSIONS AVOIDED IN OPERATIONS APPROVED IN 2022 AND 2023

Indicator	Expected amount			SDG associated
	2022	2023	2022-2023	
Greenhouse gas emissions to be avoided in renewable energy projects (thousands of tons of CO ₂ equivalent)	25,081	9,255	34,336	13, 7
Greenhouse gas emissions to be avoided in energy efficiency projects (thousands of tons of CO ₂ equivalent)	9	19	27	13, 12
Greenhouse gas emissions to be avoided in urban mobility projects (thousands of tons of CO ₂ equivalent)	169	0	169	13, 11
Greenhouse gas emissions to be avoided in railway projects (thousands of tons of CO ₂ equivalent)	188	707	895	13, 9
Greenhouse gas emissions to be avoided in charcoal projects (thousands of tons of CO ₂ equivalent)	0	243	243	13, 9

Source: Elaborated by the authors, based on data from the BNDES's SMA.

³² The methodology for estimating avoided emissions considering the useful life of the projects was in force until 2023. In 2024, the BNDES began to adopt another methodology, in which the estimation is performed per year. Information on the methodologies for estimating avoided emissions is available at: <https://www.bndes.gov.br/wps/portal/site/home/desenvolvimento-sustentavel/clima/emissoes-evitadas-e-removidas>. Accessed on: Sept. 30, 2024.

³³ The average daily greenhouse gas emissions by cars in the metropolitan region of São Paulo in 2021 were considered, based on the publication Vehicle Emissions in the State of São Paulo (Cetesb, 2022).

Social and productive inclusion

The BNDES's work on the Social and productive inclusion area had as its main guidelines the generation of employment and income; the improvement of the quality of education; the preservation of historical heritage; the modernization of municipal and state public administration; and the improvement of public safety management. Indicators related to: (i) the generation of employment and income; (ii) education; (iii) cultural heritage; (iv) public management; and (v) public safety are presented.

In 2022 and 2023, non-refundable operations were approved with the objective of generating employment and income for vulnerable populations. Table 29 shows the indicators highlighting the focus on the productive inclusion of women, Black and Mixed-race people, traditional communities and Indigenous peoples, in addition to recyclable material collectors. The average income of the people supported is expected to grow by 32%.

TABLE 29. RESULTS INDICATORS RELATED TO EMPLOYMENT AND INCOME GENERATION IN NON-REFUNDABLE OPERATIONS APPROVED IN 2022 AND 2023

Indicator	Expected amount			SDG associated
	2022	2023	2022-2023	
Women to be supported (number of people)	15,000	782	15,782	1, 5, 10
Black and Mixed-race people to be supported (number of people)	15,000	0	15,000	1, 10
Traditional communities and Indigenous peoples to be supported (number of communities)	0	37	37	1, 10
Training (number of people)	31,400	450	31,850	1, 10
Selling of recyclable material (tons per month)	0	837	837	1, 11, 12
Variation in average income among people supported (percentage)	15	40	32	1, 10

Source: Elaborated by the authors, based on data from the BNDES's SMA.

Note: Regarding the data shown in the table, the following considerations apply: (i) the profiles of the operations vary from year to year, depending on the objective, scope, territory, and value; (ii) in 2023, the approved operations had different profiles, with more specific regional and sectoral focus, compared to 2022.

Table 30 shows the indicators related to education. With the operations approved in 2022 and 2023, approximately 2.1 million students and 7 thousand educational establishments are expected to benefit, which represents 5.7% of the total number of students and 5.2% of the total number of educational establishments in the public basic education network in 2023.³⁴ In the non-refundable operations approved in the biennium, it is expected that 74 thousand people will receive training for pedagogical activities and 460 schools will have adequate access to sanitation. This number corresponds to 7% of the total number of educational establishments in the public basic education network without access to sanitation in 2023.³⁵

³⁴ The source of the total data is the 2023 School Census. The total number of enrolments and the total number of educational establishments in the public basic education network were considered.

³⁵ The 2023 School Census is the source of the data on the total number of educational establishments in the public basic education network without access to sanitation.

It is also worth mentioning that 132 schools are expected to be connected to the broadband internet network, with most of the operations that contribute to this using FUST resources.

TABLE 30. RESULTS INDICATORS RELATED TO EDUCATION IN OPERATIONS APPROVED IN 2022 AND 2023

Indicator	Expected amount			SDG associated
	2022	2023	2022-2023	
Students to be benefited (number of people)	823,151	1,321,752	2,144,903	4, 1
Educational units to be benefited (number of educational establishments)	4,552	2,546	7,098	4, 1
Educational networks to be benefited (number of educational networks)	330	10	340	4, 1
Training of school managers (number of people)	5,480	0	5,480	4, 1
Training for pedagogical activities (number of people)	73,798	0	73,798	4, 1
Adequate access of schools to sewage systems (number of educational establishments)	460	0	460	4, 1, 6
Connection of schools to the broadband internet network (number of educational establishments)	7	125	132	4, 1

Source: Elaborated by the authors, based on data from the BNDES's SMA.

Note: Regarding the data in the table, the following considerations apply: (i) the profiles of the operations vary from year to year, depending on the objective, scope, territory, and value; (ii) in 2023, the approved operations had different profiles, with more specific regional and sectoral focus, compared to 2022.

Table 31 shows the support for cultural heritage, provided with non-refundable resources. The forecast for the preservation of 26 tangible heritage sites and four intangible heritage sites stands out with the operations approved in 2022 and 2023. Among the tangible heritage sites are the Fortress of São José de Macapá (AP), the Taubaté Railway Station (SP), the National Historical Museum (RJ), the Caruaru Central Railway Station (PE), and the Mercedários complex (PA). Among the intangible heritage sites are the Boi Bumbá Cultural complex of the Middle Amazon and Parintins and the artistic and cultural representations of Indigenous peoples. It is expected that, with the operations approved in the biennium, 416 thousand collection items will be preserved or digitalized, including part of the archival collection of the Ministry of Foreign Affairs, located in the Itamaraty Palace complex (RJ). The investments are expected to add 220,000 visits per year to the supported cultural facilities.

TABLE 31. RESULTS INDICATORS RELATED TO CULTURAL HERITAGE IN THE OPERATIONS APPROVED IN 2022 AND 2023

Indicator	Expected amount			SDG associated
	2022	2023	2022-2023	
Implementation/revitalization of cultural facilities (number of cultural facilities)	28	5	33	11, 10
Preservation of tangible heritage (number of heritage sites)	22	4	26	11, 10
Preservation of intangible heritage (number of heritage sites)	0	4	4	11
Preservation/digitalization of collections (thousands of items)	21	395	416	11
Visiting circuits created (number of circuits)	10	0	10	11
Variation in physical visitation (thousands of visits per year)	200	22	222	11

Source: Elaborated by the authors, based on data from the BNDES's SMA.

Table 32 shows the indicators related to public management. In the 2022-2023 biennium, financing was approved for the modernization of tax administration, within the scope of the Tax Administration and Management of Basic Social Sectors Modernization Program (PMAT),³⁶ which foresees the mapping or georeferencing of municipal records in an area of approximately 500 km², in addition to the re-registration of 978 thousand properties. With the actions to modernize tax administration, the supported municipalities expect an increase of BRL 192 million per year in the collection of the Municipal Property Tax (IPTU).

TABELA 32. RESULTS INDICATORS RELATED TO PUBLIC MANAGEMENT IN OPERATIONS APPROVED IN 2022 AND 2023

Indicator	Expected amount			SDG associated
	2022	2023	2022-2023	
Mapping/georeferencing of municipal records (km ²)	0	499	499	17
Re-registration of properties (thousands of properties)	900	78	978	17
Implementation of information systems in municipal public administration (number of systems)	0	33	33	17, 16
Training of municipal civil servants to use new systems (number of people)	1,220	2,000	3,220	17, 16
Training of municipal civil servants and commissioners to support citizens (number of people)	0	3,050	3,050	17
Variation in IPTU collection (millions of reais per year)	120	72	192	17, 16

Source: Elaborated by the authors, based on data from the BNDES's SMA.

Table 33 shows indicators related to public safety. Notably, two integrated command and control centers for urban services and public safety are planned through financing for municipalities approved in the 2022-2023 biennium. During this period, a project structured by the BNDES was auctioned, which deals with the administrative concession, through PPP, for the construction, operation, and maintenance of penitentiary complexes in Rio Grande do Sul, in which 1,125 places are expected.

TABLE 33. RESULTS INDICATORS RELATED TO PUBLIC SAFETY IN OPERATIONS APPROVED IN 2022 AND 2023

Indicator	Expected amount			SDG associated
	2022	2023	2022-2023	
Implementation of integrated command and control centers for urban services and public safety (number of centers)	2	0	2	16
Construction/modernization of buildings focused on public safety (number of buildings)	17	0	17	16
Vacancies in prison units with the auctioned project (number of vacancies)*	0	1,125	1,125	16

Source: Elaborated by the authors, based on data from the BNDES's SMA.

* Indicator related to the project structuring service.

³⁶ BNDES line intended for the modernization of tax administration and the management of basic social sectors.

APPROVALS: IMPACT SCORING

During the 2022-2023 biennium, the BNDES used a tool to identify the main expected impacts of operations to be approved. Called impact scoring (also known as SIm), this tool involves applying a questionnaire and estimating a score based on the answers. The questionnaire consists of objective questions—of the “yes or no” type—that seek to identify the economic, social, and environmental impacts expected from the operation. Both positive and negative impacts are considered.

In addition to explaining the expected impacts of the operation in a structured and standardized way, SIm enables considering effects for which there are no available measuring indicators. The tool is also useful for enabling aggregated analyses, such as the one presented in this section, in which the most frequent impacts in approved operations are identified. The application occurs during the analysis stage, and the SIm is included in the transaction documentation when it is submitted for approval.³⁷

The analysis of the results presented in this section is related to operations approved in 2022 and 2023. During this period, the SIm was applied 234 times, covering 256 operations.³⁸ The total amount approved in these operations was BRL 95.5 billion, which corresponds to 31% of the amount approved by the BNDES in the period.³⁹ The analysis was carried out as follows: i) among the questions that compose the questionnaire, those that identify a well-defined impact were selected;⁴⁰ ii) strongly interrelated questions were aggregated and considered as identifying a single impact.⁴¹

Thus, seven impacts were considered in the economic dimension, 11 in the social dimension and 11 in the environmental dimension. Next, the proportion of applications of the tool in which each of these impacts is expected was estimated.

Table 34 shows the three most frequent expected impacts in each dimension. There are also three columns with the percentage of applications of the tool in which the impact is expected, each one related to operations approved in a period: 2022, 2023, and 2022-2023. The identification of the three most frequent impacts in each dimension was made based on the percentage relative to the period 2022-2023.

³⁷ Additional information on the SIm is available in Barboza *et al.* (2023).

³⁸ In most cases, the SIm is applied per operation. However, when there is more than one operation associated with the same investment project, the SIm is applied to the project as a whole, covering more than one operation.

³⁹ The SIm, like the QR, does not apply to operations whose monitoring is conducted in an aggregated manner, through QTM.

⁴⁰ An example of a question that was not selected, as there is no well-defined impact, is the following: “Was or will an environmental impact study (EIS) be prepared for the operation?”.

⁴¹ As an example, two questions that were considered to identify a single impact are the following: “Does the operation involve an investment plan in innovation?” and “Does the operation foresee the introduction of a new or significantly improved product (good or service) or process for the national market?”.

The most frequently expected economic impact is chaining, that is, the capacity of the financed project to mobilize other activities upstream and downstream in the production chain. In 74% of the SIM applications in the biennium, the sector stands out, in the input-output matrix (MIP), for its chaining capacity. The percentage of applications of the tool (39%) in which the financed infrastructure is expected to have effects that spread geographically or that contribute to the solution of relevant bottlenecks is also significant. In 32% of the SIM applications in the biennium, an increase in efficiency or improvement of the client's management and governance practices is expected. This indicates that this impact is not restricted to support instruments that aim to improve management or governance.

In the social dimension, the most frequent expected impact (25% of applications) is access to energy or improvement in the quality of service. In some projects, especially in the infrastructure sector, there is a risk of pressure on the communities located in their surroundings. This potential negative impact is identified in 21% of the tool's applications in the 2022-2023 biennium. Depending on the evaluation of the operation's socioenvironmental risk, contractual obligations may be established as a way to mitigate these possible negative impacts. The reduction of social, gender, and/or racial inequalities is the third most frequent expected social impact (15%). This impact is expected mainly in operations with non-refundable resources.

The three most frequent expected impacts in the environmental dimension are positive. Mitigation or adaptation to/from climate change is expected in 38% of the tool's applications in the biennium, including operations of the Climate Fund and other support instruments. Reducing the generation of waste, effluents, air pollutants, or toxic substances (29% of applications) and reducing water or energy consumption (22%) are the two subsequent expected impacts in the frequency ordering. Both are expected in operations in various sectors, including industry and infrastructure.

TABLE 34. RELATIVE FREQUENCY OF EXPECTED IMPACTS IN SIM APPLICATIONS RELATED TO OPERATIONS APPROVED IN 2022 AND 2023

Impact	% of Sim applications		
	2022	2023	2022-2023
Economic dimension			
Chaining	70%	77%	74%
Infrastructure with geographically widespread effects or that resolves relevant bottlenecks	35%	44%	39%
Increased efficiency or improved management and governance practices of the client	27%	36%	32%
Social dimension			
Access to energy or improved quality of service	21%	28%	25%
Pressure on the local community	21%	20%	21%
Reduction of social, gender, or racial inequalities	18%	13%	15%

(continues)

(continued)

Impact	% of Sim applications		
	2022	2023	2022-2023
Environmental dimension			
Mitigation of or adaptation to climate change	35%	41%	38%
Reduction in the generation of waste, effluents, air pollutants or toxic substances	28%	29%	29%
Reduction in water or energy consumption	21%	23%	22%

Source: Elaborated by the authors, based on data from the BNDES's SMA.

The aggregate analysis of the SIm indicates the coexistence of several positive impacts on the BNDES's operations, especially economic (with emphasis on the production chain) and environmental (mainly mitigation of or adaptation to climate change). This is the case, for example, of support for renewable energy generation complexes, which also contribute to expanding access to energy (the main impact identified in the social dimension).

JOBS INVOLVED IN THE IMPLEMENTATION OF FINANCED INVESTMENTS

Input-output models have been employed by the BNDES for over two decades to identify which economic sectors have high potential for job creation and to analyze the effects of the Bank's disbursements. This type of modelling employs data from the National Accounts System (SCN)⁴² and the MIP (input-output matrix), compiled by the IBGE. Incorporating the MIP into the model enables explaining and quantifying the interdependencies that exist between the various sectors in the economy of a country or region. Thus, in addition to being able to estimate the direct and indirect effects of economic shocks based on a production structure, input-output models have the advantage of identifying the sectoral propagation they assume.

The input-output model currently employed by the BNDES considers the latest MIP released by IBGE, for 2015, as well as the employment data present in the SCN. It estimates the jobs involved in the supply chain of projects supported by the BNDES. The estimated employment volume can be broken down into two types:

- i. direct effect: occurs in the sectors that provide products and services to the BNDES's clients to execute the supported investment projects (for example, civil construction, machinery and equipment manufacturing, and engineering services); and
- ii. indirect effect: corresponds to the occupations of the production chains that serve the sectors directly in demand (for example, steel, cement, electrical materials, and components for machinery and equipment).

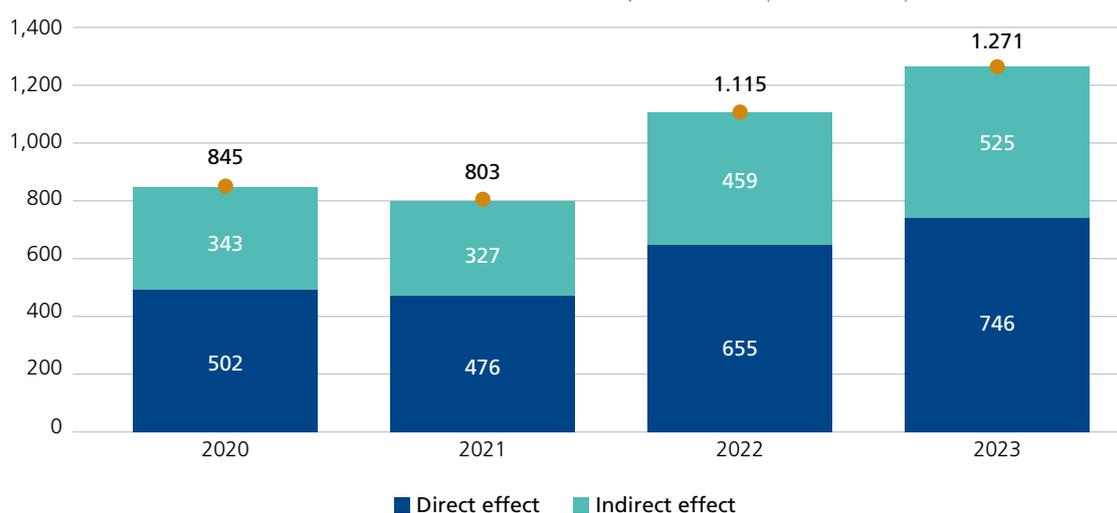
⁴² A set of statistics on a country's economy, from macroeconomic indicators to sectoral information.

Thus, the input-output analysis assumes a complementary nature to the BNDES's other forms of monitoring and evaluation, which focus on clients and/or regions directly impacted by its support. It is important to note that the results of input-output models should be interpreted as jobs associated with the implementation of investments, and not as net generation of jobs in the economy.

To estimate the impact of the BNDES's support, disbursement values for national fixed investments were first identified, such as expenses for the implementation and modernization of industrial units, construction of infrastructure, and acquisition and installation of machinery and equipment. For example, disbursements for the acquisition of imported equipment and capital market operations without associated fixed investment were disregarded. Working capital associated with investment projects was considered, while pure working capital operations were disregarded.

Graph 5 presents the employment estimates associated with the BNDES's disbursements. In 2022, it is estimated that around 1.1 million jobs were associated with supported investments, while this number rose to almost 1.3 million jobs in 2023. The 14% growth in the number of associated jobs in 2023 largely reflects the increase in the BNDES's disbursements in the period, which reached BRL 114.4 billion that year, compared to BRL 97.5 billion disbursed in 2022. Disbursements for investments considered in the model increased from BRL 91.2 billion in 2022 to BRL 102.5 billion in 2023. The ratio of jobs per million disbursements increased slightly from 10.9 in 2022 to 11.1 in 2023 (2022 disbursements adjusted to 2023 prices by the IPCA), indicating that the BNDES's support profile in 2023 was slightly more concentrated in sectors presenting a greater impact on employment in their supply chains of goods and services.

GRAPH 5. JOBS ASSOCIATED WITH BNDES DISBURSEMENTS, 2020-2023 (THOUSANDS)



Source: Elaborated by the authors, based on the application of the BNDES's input-output model.

Regarding the composition of the type of effect on employment, the year 2023 presented results very similar to 2022. Approximately 59% of jobs refer to the direct effect, that is, those generated in the supply chain directly associated with the implementation of investments, and approximately 41% refer to the indirect effect, that is, jobs that are part of other levels of the supply chain.

From a sectoral perspective, the job estimates are associated with sectors such as civil construction, mechanical and electrical machinery and equipment, trade, and services provided to companies. Together, jobs in these sectors corresponded, on average, in 2022 and 2023, to approximately two-thirds of the total.

The input-output models used by the BNDES have undergone several improvements over the years to incorporate, mainly, updates to the economic structure given by the publications of the SCN and the IBGE's MIP. A new improvement agenda is currently being implemented that will enable the estimation of even more precise projections of the effects of the BNDES. The methodological improvements will include:

- i. incorporation of annual input-output matrices estimated based on the work of Alves-Passoni and Freitas (2023), which will enable updating the economic structure on an annual basis, as the economic structure of 2015 is currently considered, date of the last MIP released by the IBGE;
- ii. development of an approach for constructing shock vectors of the BNDES's disbursements by type of financial instrument and incorporation of more types of support for the estimates, such as support for exports;
- iii. mapping of expenditures made within the scope of projects financed by the BNDES in order to build a customized sectoral allocation of the final demand for investments for the input-output model, which represents an advance on the current use of the investment absorption matrix (a tool that distributes, through pre-established averages, the demand for investment in the impacted sectors);
- iv. estimation of the impact on the country's wage bill, added value, and tax generation; and
- v. detailing the inclusion and qualification of employment results.

As part of recent trends in contemporary economic policy, the BNDES is reinforcing its role in promoting industrial and innovation policies. The use of updated, customized and multiple-results-oriented input-output models offers an opportunity to better understand the socioeconomic impacts of the BNDES's financial support. The development and consolidation of the input-output paradigm as an effectiveness evaluation tool by the BNDES has the potential to contribute to the improvement of its policies and to feed back into its strategic planning process.

SELF-EVALUATION REPORTS ON OPERATION-RELATED RESULTS

In monitoring by operation, the Self-Evaluation Report on Results is written after the financed investments have been completed and the monitoring of the indicators has been concluded. This report presents the actual values of the output and outcome indicators, which are compared with the values initially forecast. An analysis of the results is also made, with considerations that aid to explain them. The report also contains a section dedicated to lessons learned and recommendations.

In the 2022-2023 biennium, 218 self-evaluation reports on operation-related results were written. For 165 of them, the actual values of the indicators were recorded in the operational system. An aggregate analysis of the actual values of the main indicators present in these reports is available on the BNDES's website.⁴³ This section presents a comparative analysis between the expected and actual values of the indicators, based on the 165 self-evaluation reports in which the actual values were recorded.

These 165 reports cover 190 operations.⁴⁴ Since the report is written after the monitoring of the indicators is completed, the reports prepared in the 2022-2023 biennium relate to operations approved a few years earlier. Of the total analyzed, 81% relate to operations approved in 2017 or 2018.

The operations approved in 2017 were the first to have output and outcome indicators defined in the QR and, thus, the first to have self-evaluation reports of results.

To classify each indicator's performance, the methodology first estimates the variation—the difference between the actual and estimated values—divided by its estimated value. The indicators are classified into five performance categories, defined as follows for indicators with positive polarity: (i) outside and below the estimate, when the variation is less than -30%; (ii) close to and below the estimate, when the variation ranges from -30% to -10%; (iii) within the estimate, when the variation ranges from -10% and 10%; (iv) close to and above the estimate, when the variation varies from 10% and 30%; and (v) outside and above the estimate, when the variation is greater than 30%.⁴⁵

The next step in the methodology consists of estimating the percentages of indicators in each report classified into the five defined performance categories. These percentages are estimated for the set of output indicators and for the set of outcome indicators in

⁴³ www.bndes.gov.br/efetividade-resultados-2022-2023

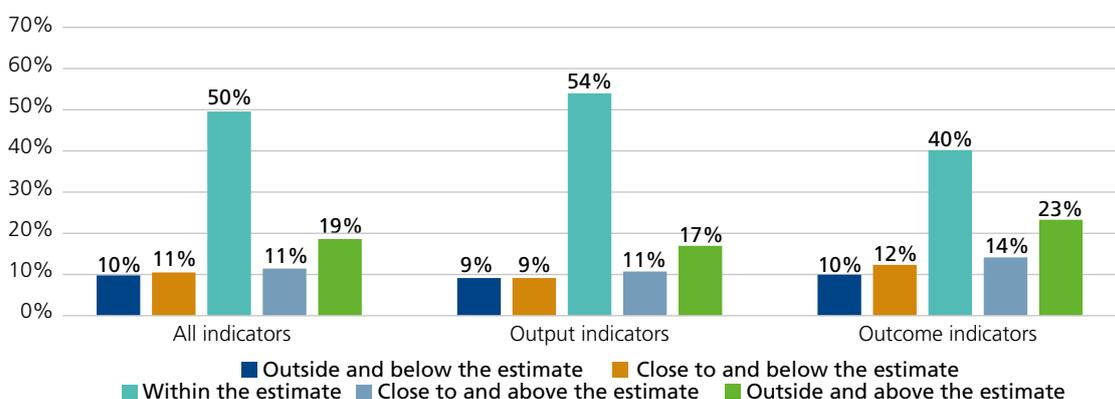
⁴⁴ A self-evaluation report of results may cover more than one operation when they are part of the same investment project.

⁴⁵ For indicators with negative polarity, that is, those for which lower values are preferable to higher values, the definitions of "beyond and below the estimate," "beyond and above the estimate," "close to and below the estimate," and "close to and above the estimate" are inverted in relation to those mentioned.

each report. Then, the averages of these two sets are computed, representing the overall percentage of indicators in each of the five performance categories. Finally, the last step consists of estimating the averages of these percentages across all self-evaluation reports analyzed.

Graph 6 shows the results of this methodology. Data indicate that, on average, 50% of the indicators were within the expected range. The percentage was higher for output indicators than for outcome indicators (54% versus 40%). Notably, outcome indicators are more influenced by external factors beyond the control of the BNDES and its clients.⁴⁶ Graph 6 also shows that the average percentage of indicators classified as above and outside the estimate is substantially higher than those classified as above and below the estimate. These percentages are, respectively, 19% and 10%, considering all indicators, and 23% and 10%, considering only outcome indicators.

GRAPH 6. AVERAGE PERCENTAGES OF INDICATORS BY PERFORMANCE CATEGORY AND TYPE OF INDICATOR, IN THE RESULTS SELF-EVALUATION REPORTS WRITTEN IN 2022-2023



Source: Elaborated by the authors, based on data from the BNDES's SMA.

Graph 7 presents results broken down by BNDES sector,⁴⁷ covering both output and outcome indicators.⁴⁸ Among the reports on operations supporting agriculture and livestock and infrastructure, the average percentage of indicators that were within expectations is higher than among those dealing with support for industry and trade and services. Several infrastructure segments are subject to regulation and have long-term sales contracts, which makes their indicators more predictable. In the case of agriculture

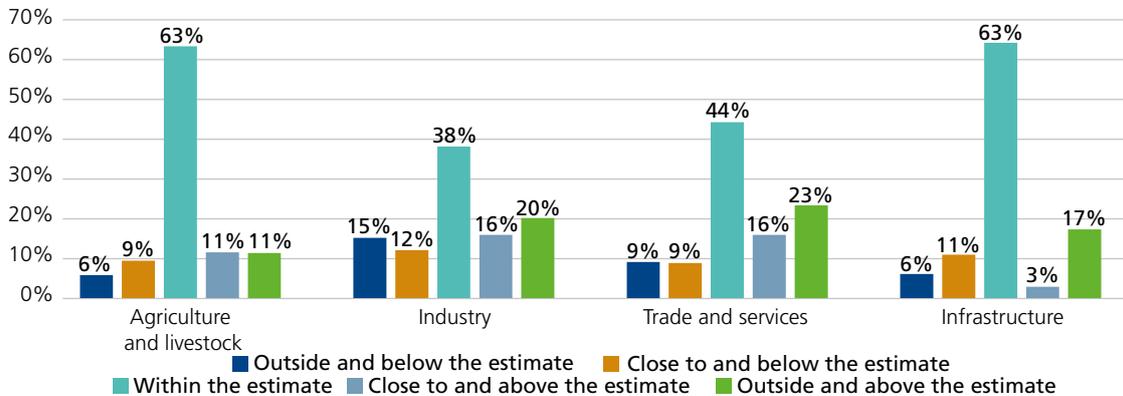
⁴⁶ For example, the company's employment rates and operating revenue, two outcome indicators that are usually adopted, can be influenced by the macroeconomic situation and the dynamics of the market in which the company operates.

⁴⁷ The correspondence between the sector classification used by the BNDES and the National Classification of Economic Activities (CNAE) is shown in the spreadsheets of contracted operations, available at: <https://www.bnades.gov.br/wps/portal/site/home/transparencia/centraldedownloads>. Accessed on: Sept. 30, 2024.

⁴⁸ The results presented in Graph 7 are, thus, comparable to those related to "All indicators" in Graph 6.

and livestock, the results seem more influenced by the characteristics of the operations and the indicators used than by the sector's profile.⁴⁹

GRAPH 7. AVERAGE PERCENTAGES OF INDICATORS BY PERFORMANCE CATEGORY AND OPERATION SECTOR, IN THE RESULTS SELF-EVALUATION REPORTS WRITTEN IN 2022-2023



Source: Elaborated by the authors, based on data from the BNDES's SMA.

Approximately half of the self-evaluation reports written in the 2022-2023 biennium contain some lessons learned or recommendations, most of which are related to monitoring and effectiveness evaluation. An analysis reveals the two most common lessons learned: (i) indicators may be affected by factors beyond the BNDES's control; and (ii) some indicator used in monitoring presented a limitation. Although less common, it is worth mentioning lessons learned and recommendations that address the following topics: (i) frequency and period of monitoring indicators; (ii) suggestions to create new indicators; (iii) alignment with the client on the indicators monitored; and (iv) recording assumptions used to formulate the expected values.

The self-evaluation reports of results have been proven to be useful M&E tools. In general, the results of the output and outcome indicators have been close to what was expected when the operation was approved. When there is a greater variation, it occurs mostly above the expected and in outcome indicators. The reports have aided to internalize M&E activities in the BNDES's operational teams, promoting organizational learning in results, as well as systematization of information during the support cycle.

⁴⁹ Approximately half of the self-evaluation reports written in 2022-2023 and that deal with agriculture and livestock are related to operations of the BNDES's Prorenova Program. These operations employed, in most cases, indicators that were within the expected range, such as expanded sugarcane plantation area, renewed sugarcane plantation area, average sugarcane plantation age, and sugarcane productivity.

SELF-EVALUATION REPORTS ON RESULTS RELATED TO SUPPORT INSTRUMENTS

For some of the BNDES's support instruments, the results analysis is performed jointly for all operations within the scope of the instrument, instead of individually for each operation. This approach is also employed, for example, in indirect support instruments, in which operations are similar and contribute to the same objective. The logic of the support instrument is portrayed in the QTM, which also defines the output and outcome indicators to be monitored. Periodically, the operational teams responsible for the instrument prepare self-evaluation reports on results, analyzing the performance of the monitored indicators.⁵⁰

In the 2022-2023 biennium, 17 self-evaluation reports on results related to support instruments were prepared. All of them are available on the BNDES's website.⁵¹ Table 35 shows the support instruments covered by these self-evaluation reports on results, highlighting that 13 of the 17 reports contain an analysis of outcome indicators,⁵² which are the focus of this section.

TABLE 35. NUMBER OF SELF-EVALUATION REPORTS ON RESULTS RELATED TO SUPPORT INSTRUMENTS WRITTEN IN 2022-2023

Support instrument	Total	Containing analysis of outcome indicators
Indirect automatic instruments for MSMEs	2	2
BNDES Microcredit	1	0
Instruments to support corporate agriculture	1	1
Instruments to support investments	1	1
BNDES Crédito Caminhoneiro	2	2
FGI PEAC – first stage	1	1
FGI PEAC – second stage	1	0

(continues)

⁵⁰ Outcome indicators generally depend on data from RAIS and other public databases, such as those from IBGE, which involve a time lag of approximately two years. Thus, the reports for the 2022-2023 biennium include outcome indicators for 2020-2021. As for output indicators, which generally depend on the BNDES's databases, the time lag is one year, and the data refer to 2021-2022.

⁵¹ Available at: <https://bndes.gov.br/wps/portal/site/home/transparencia/resultados-para-a-sociedade/efetividade/indicadores/analise-qtm/>. Accessed on: Sept. 30, 2024.

⁵² In four self-evaluation reports, only output indicators were analyzed since, at the time of preparation, the data for the outcome indicators were not available.

(continued)

Support instrument	Total	Containing analysis of outcome indicators
FGI Traditional	2	2
Credit funds for MPMEs	2	1
BNDES Credit Fund for Industry and Services	1	0
Instruments to support exports	2	2
BNDES Procaped	1	1
TOTAL	17	13

Source: Elaborated by the authors, based on data from the BNDES's SMA.

Estimating the outcome indicators of support instruments requires the use of secondary databases. The most important of these is the Annual Social Information Report (RAIS), from the Ministry of Labor and Employment (MTE), which contains information on the number of employees and the payroll of companies. RAIS data also allows us to infer whether the company remains in business (survival indicator) and to estimate its revenue, if information from other sources is included.

Table 36 shows the results of the outcome indicators whose estimation employs RAIS data.⁵³ The columns show the indicators, and the support instruments that monitor these indicators are shown in the rows. The color of each cell depends on the comparison between the performance of supported and non-supported companies whose number of employees is similar—the latter being named comparison group. Since this comparison does not involve a counterfactual analysis, it is not possible to infer causality between the BNDES's support and the observed performance.

TABLE 36. PERFORMANCE OF SUPPORTED COMPANIES AND THE COMPARISON GROUP IN OUTCOME INDICATORS, EMPLOYING RAIS DATA ON SELF-EVALUATION REPORTS WRITTEN IN 2022-2023

Support instrument	Total employment	Qualified employment	Payroll	Revenue	Survival
Indirect automatic instruments for MSMEs					
FGI PEAC – first stage					
FGI Traditional					
Credit funds for MPMEs					

(continues)

⁵³ Data from RAIS and other sources are employed in the revenue estimation.

(continued)

Support instrument	Total employment	Qualified employment	Payroll	Revenue	Survival
Instruments to support investments					
Instruments to support corporate agriculture					
Instruments to support exports					

- Performance of supported companies higher than that of the comparison group in all years analyzed.
- Performance of supported companies higher than that of the comparison group in at least one year analyzed and lower in at least one year.
- Performance of supported companies lower than that of the comparison group in all years analyzed.

Source: Elaborated by the authors, based on data from the BNDES's SMA.

Note: (i) The cell is blank if the indicator was not monitored for the support instrument. (ii) For total employment, qualified employment, payroll, and revenue, the average percentage variation of the variable between the year prior to the support and the year of the support is considered. (iii) For survival, the percentage of companies that remain active one year after the support is considered.

Among the self-evaluation reports on results written in the 2022-2023 biennium, those addressing instruments to support MSMEs stand out, including: (i) automatic indirect instruments, in which credit operations are carried out through accredited financial institutions; (ii) guarantee funds, such as FGI Traditional and FGI PEAC – first stage; and (iii) credit funds. Despite differences in how support is provided, these instruments share common objectives related to employment and MSMEs activity, leading to monitoring of employment, payroll, survival, and revenue indicators. As shown in Table 36, supported MSMEs outperformed the comparison group in employment and survival indicators. For payroll and revenue, results varied, with supported MSMEs performing better than the comparison group in some cases and not in others.

The self-evaluation report on investment support instruments covers the BNDES Finame and BNDES Automatic product lines, which finance the acquisition of capital goods and investment projects, respectively, via the automatic indirect modality. With this financing, the supported companies are expected to increase investment, revenue, and job creation. The results in Table 36 indicate that the performance of the supported companies was better than that of the comparison group in the employment indicator. For revenue, they performed better in some years, but not all.

Among the instruments to support corporate agriculture, there are several agricultural programs of the Federal Government operated by the BNDES, such as the Agricultural Tractors, Harvesters and Implements Modernization Program (Moderfrota). These instruments aim to promote agricultural production, productivity, and job creation. The monitoring employs data from the Municipal Agricultural Production (PAM), a survey conducted by the IBGE, in addition to RAIS data. Since PAM data is municipality-based

and most received support, the comparison is conducted between municipalities with more and less intense support. The self-evaluation report shows that in some years, municipalities with more intense support had, on average, a better performance—both in production value and in the ratio between production value and planted area—than those with less intense support, but this was not the case in all the years analyzed. Since employment indicator is estimated by company, the comparison is conducted between supported and non-supported companies with similar sectors and number of employees. As shown in Table 36, supported companies outperformed the comparison group in the employment indicator.

Export support instruments are expected to enhance Brazilian companies' international presence and access to new markets. They also aim to expand the export agenda of high value-added goods and generate and/or maintain qualified jobs in Brazil and for Brazilians. Monitoring relies on data from the ComexStat system and RAIS.⁵⁴ Self-evaluation reports of supported companies show that: (i) they had average export value growth, except in 2020; (ii) their number of export destination countries remained mostly unchanged, except for an increase in 2019; (iii) their total export of high value-added goods showed better performance; and (iv) total and qualified employment indicators fluctuated between the years, as shown in Table 36.

The BNDES's Crédito Caminhoneiro Program, in effect from 2019 to 2021, financed truck maintenance and upkeep expenses. Launched in a context of declining freight services profitability, the program aimed to aid supported clients stay in business. The self-evaluation reports on results indicate that the program had a limited reach, with less than two hundred clients supported during its term. Data from the National Land Transportation Agency (ANTT) showed that most supported truck drivers remained active after receiving support but showed, on average, a decrease in the registration of transport operations.

The BNDES's Procacred provides financing for cooperative members to acquire shares in individual credit cooperatives. Among other objectives, it aims to strengthen the equity structure of individual credit cooperatives and diversify credit. The data employed to estimate the outcome indicators come from the BCB. The self-evaluation report shows that supported cooperatives had, on average, greater growth than non-supported cooperatives in the value of assets, term deposits, and credit portfolio. The average variation in the Basel Index among supported cooperatives was close to zero, a result similar to that observed among non-supported cooperatives. In the absence of information on the number of members of each cooperative, municipal data was used, considering, for each cooperative, its head office location and the municipalities in which there are service stations. In municipalities covered by supported cooperatives, there

⁵⁴ Official system for extracting statistics on Brazilian foreign trade in goods. The Ministry of Development, Industry, Trade, and Services (MDIC) is responsible for this system.

was, on average, growth in the number of members with credit operations and term deposits, but the growth rate was lower than that recorded in municipalities covered by non-supported cooperatives.

The self-evaluation reports have been proven to be useful M&E tools. Effectiveness indicators associated with client companies mostly outperformed those of the comparison group, highlighting the importance of BNDES support. The reports contributed to promoting organizational learning in relation to the results achieved, systematizing information that can contribute to reviewing the forms of BNDES support in the QTMs.

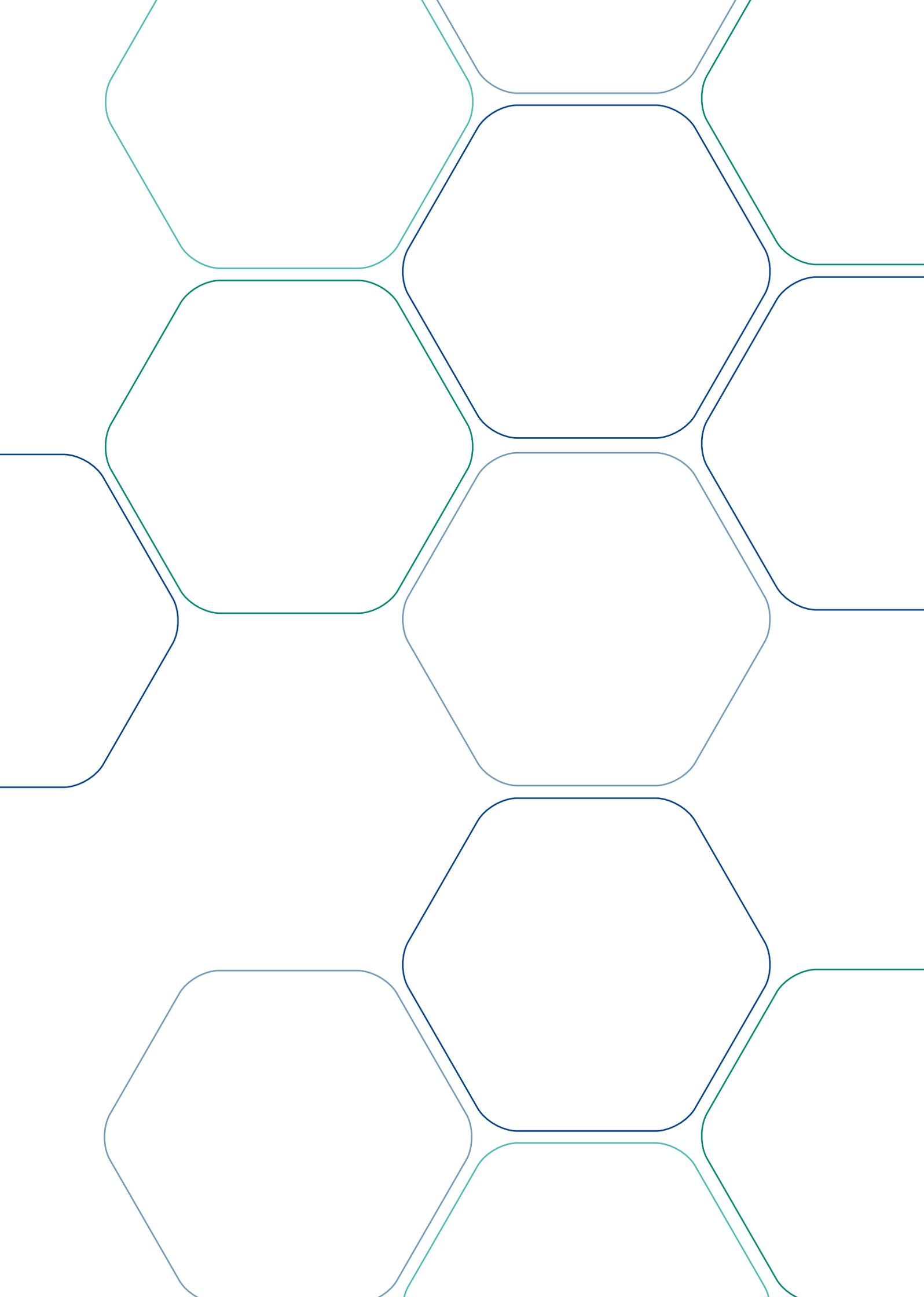






THE BNDES'S IMPACT





The BNDES has a Regulation for the Macroprocess of Effectiveness Monitoring and Evaluation, which establishes how the BNDES's System should conduct its monitoring and effectiveness evaluation activities. This scope includes the effectiveness evaluation process, which consists of a set of activities defined to enable the execution of effectiveness evaluations.

Every two years, the BNDES's Executive Board approves an Effectiveness Evaluation Plan, which establishes the set of topics to be subject to effectiveness evaluation over the biennium. To define the topics, the guidelines and priorities of the BNDES's System Strategic Planning and knowledge gaps are considered, as well as the budget and personnel availability for the execution of effectiveness evaluations. Chart 2 lists the topics prioritized in the last two plans.

CHART 2. RECENT EFFECTIVENESS EVALUATION PLANS

Effectiveness Evaluation Plan 2021-2022	Effectiveness Evaluation Plan 2023-2024
Support for logistics infrastructure	Indirect action (granting of credit)
Support for hydroelectric plants	Indirect action (granting of guarantees)
Credit products	Capitalization for Credit Cooperatives Program (Procapcred)
Support for broadband	Adaptation to Climate Change and Low Carbon Emissions in Agriculture and Livestock Program (ABC+)
Support for cooperatives in the agro-industrial complex	Climate Fund Program
Support for innovation	Support for infrastructure
Criatec Funds	Support for innovation
BNDES Garagem – second edition BNDES	Exim Pre-shipment
BNDES Connected Education Initiative	
Matchfunding Salvando Vidas (Saving Lives)	
PMAT	
Emergency support to MPMEs	

Source: Elaborated by the authors.

Effectiveness evaluations are carried out by the department responsible for managing the macro-process of monitoring and effectiveness evaluation, in cooperation with research institutions or by contracting. To understand the extent of the impacts of the support investigated, systematic examinations are conducted, whenever possible, via counterfactual analysis. At the end of the process, each evaluation is published on the BNDES Portal, through an Effectiveness Evaluation Report (RAE).

METADATA OF EVALUATIONS: LITERATURE REVIEW EVALUATING THE BNDES'S IMPACT

In addition to carrying out effectiveness evaluations, the BNDES monitors academic publications that seek to investigate the impacts of its support, with the aim of promoting institutional learning. The meta-analysis of evaluations seeks to consolidate and systematize the main results of the impact evaluations on the BNDES, whether conducted

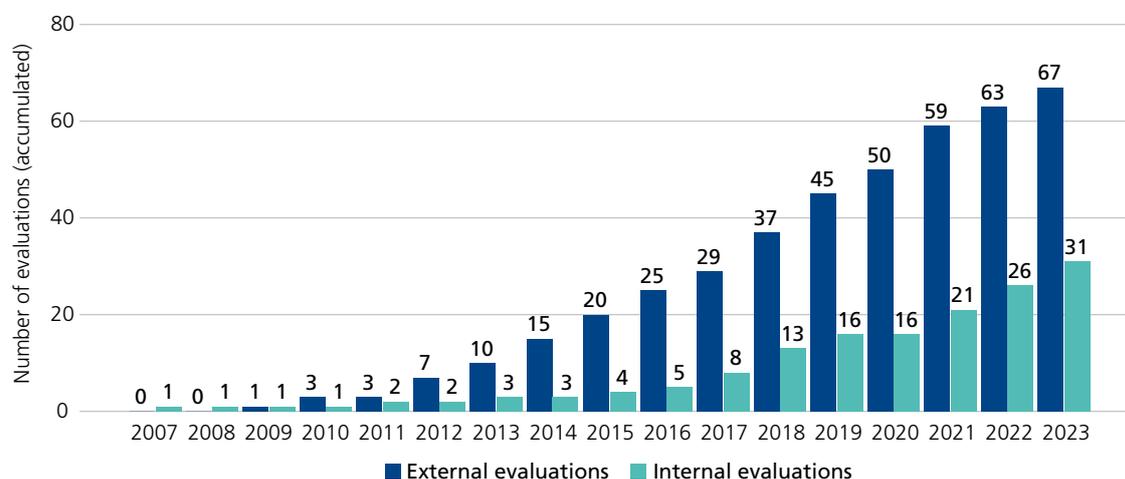
by independent researchers or within the scope of the macro-process of monitoring and evaluating the effectiveness of the BNDES's System.

An impact evaluation is considered when it meets two criteria: (i) it employs an econometric method to address selection bias; and (ii) it includes a database with information on units supported and not supported by BNDES, or, alternatively, on units supported to different degrees.

This edition of the Effectiveness Report updates the review of impact evaluations on the BNDES, considering those available online up to January 2024. A total of 98 evaluations that met the adopted criteria were mapped,⁵⁵ 16 more than those in the 2021-2022 Effectiveness Report (BNDES, 2022).⁵⁶

As shown in Graph 8, the number of studies associated with the impact and effectiveness evaluation of the BNDES's programs has continuously grown since 2007.⁵⁷ Even with the predominance of evaluations external to the BNDES's monitoring and evaluation system—around 70% of the total—the accumulated contingent of studies conducted, commissioned, or promoted by the Bank itself remained on an upward trajectory, with a growth of 24% since the last Effectiveness Report. This trajectory is the result of the Bank's efforts to provide greater transparency regarding its operations, which enabled advances in its SMA, as well as the interest of the academic community in identifying and measuring the impacts of the policies implemented by the BNDES.

GRAPH 8. NUMBER OF ACCUMULATED IMPACT EVALUATIONS, BY YEAR OF DISCLOSURE AND LINK WITH THE BNDES



Source: Elaborated by the authors, based on data from the BNDES.

⁵⁵ Table with evaluations available at: <https://bndes.gov.br/revisao-avaliacoes-impacto>. Accessed on: Sept. 30, 2024.

⁵⁶ The evaluations considered are available on the BNDES website: <https://www.bndes.gov.br/wps/portal/site/home/transparencia/resultados-para-a-sociedade/efetividade/avaliacoes-efetividade/estudos-de-efetividade/>.

⁵⁷ See, for example, data available at: <https://web.bndes.gov.br/bib/jspui/handle/1408/18901>. Accessed on: Sept. 30, 2024. During this period, there was also a progressive increase in the availability of data on the BNDES's financing on the internet.

Graph 9 highlights the number of evaluations for each combination of impact dimension (in the rows) and type of support (in the columns). A total of 195 evaluations were verified based on all combinations observed.

The most frequently evaluated dimensions are “labor,” “company growth,” and “investment,” with 39, 26, and 25 evaluations in total, respectively. This is justified both by the sources of funding that the Bank receives, with FAT being a specific factor,⁵⁸ and by its traditional support for GFCF, one of the main vectors through which it implements its purpose of “Improving the lives of generations, promoting economic, social, and environmental development.”⁵⁹

It is noticeable that the types of support with the most targeted studies are “Acquisition of capital goods financing” (37 evaluations collected), “Micro-, small-, and medium-sized enterprises (MSMEs) financing” (31 evaluations), and “Corporate financing” (29 evaluations). Not coincidentally, these segments account for the largest number of clients supported by the Bank,⁶⁰ as can be seen in the “Operational performance” chapter of this Effectiveness Report.

On the other hand, types of support such as “Infrastructure financing,” “Large corporations financing,” and “Innovation financing” have fewer evaluations. Although they account for a significant portion of the BNDES’s disbursements, they are segments with more specific characteristics. They have higher average ticket prices and fewer operations and clients, which represents an additional challenge for obtaining statistical significance, as small sample sizes make it more challenging to find statistically significant and reliable results in causal inference studies.⁶¹

58 Details of the BNDES’s sources of funding are available at: <https://www.bndes.gov.br/wps/portal/site/home/transparencia/prestacao-de-contas/fontes-de-recursos/fontes-recursos>. Accessed on: Sept. 30, 2024.

59 Available at: <https://www.bndes.gov.br/wps/portal/site/home/quem-somos/planejamento-estrategico/proposito-valores-principios-missao-visao>. Accessed on: Sept. 30, 2024.

60 The existence of a large number of supported and non-supported companies facilitates the application of impact evaluation methods.

61 In statistical studies, a smaller sample of observations leads to higher chances of random results. In other words, it becomes harder to determine whether an observed result is due to chance. When it comes to causal inference—assessing whether a type of support causes a result in a certain impact dimension—it is even more complicated. This is because it is difficult to state with confidence that the support is actually causing an impact when there is limited data to analyze. Therefore, small sample sizes make it more challenging to find statistically significant and reliable results in causal inference studies.

GRAPH 9. NUMBER OF EVALUATIONS BY TYPE OF SUPPORT AND IMPACT DIMENSION

Labor	5	7	1			3	1	9	1	5	1	3	1	2
Survival	2	2						3						1
Health						1			1	2				1
Productivity	8	3		1			1	5		3		1		
Investment	5	3	1	6	1		1	2	1	2				3
Innovation	2	2					5	1						1
Public Administration						2			7	1				
Exports		1	8					2						1
Entrants		1				1		2						1
Education	1								1	1				1
Local development	1				1	3			2	2				3
Company growth	5	3	2	4			1	1		2		2	6	
Forested areas	1					1					3			
Access to credit		2	1	4	1									3
	BK financing	Corporate financing	Exports financing	Large corporations financing	Indirect financing	Infrastructure financing	Innovation financing	MPMEs financing	Municipal financing	Project financing	Non-refundable	Local content policy	Variable income	All

Source: Elaborated by the authors.

Notes: (i) The cell color indicates the number of evaluations, with white indicating no evaluation. (ii) An evaluation is counted in more than one cell if it analyzes more than one type of support or impact dimension. (iii) The types of support and impact dimensions investigated in more than one evaluation are presented. (iv) PCL stands for local content policy. (v) The “labor” category includes evaluations on employment, average wage, payroll, and qualifications. (vi) The “public administration” category includes evaluations on tax collection and management. (vii) The “innovation” category includes evaluations on innovative efforts and innovation results. (viii) The “company growth” category includes evaluations on profitability and revenue. (ix) The “access to credit” category also encompasses evaluations on financial stability. (x) The “productivity” category includes evaluations on labor, capital, land, and total factor productivity (TFP). (xi) The “local development” category includes evaluations of state and municipal indicators such as GDP, HDI, and night-time lighting. (xii) The “all” category refers to evaluations that consider all types of BNDES financing. (xiii) The “forested areas” dimension includes both the impacts of interventions aimed directly at reforestation and/or deforestation prevention, as well as interventions that may exert pressure on forest areas. For the latter group, evidence of null effects in the evaluation is considered positive from the perspective of policy objectives, even though such interventions are not counted as positive in the meta-analysis.

Graph 10 shows the results from these evaluations. Similar to Graph 9, each combination of impact dimension and type of support is presented, but now showing the proportion of evaluations that observed positive impacts.⁶² The highlights were the dimensions “entrants” and “local development,” both presenting 100% positive results. Regarding the types of support, the highlight was “indirect financing,” also with 100% positive results. By combining the types of support with the impact dimensions, certain patterns can be identified, which were mentioned in the latest issues of the Effectiveness Report.

⁶² To be classified as positive, the impact must be statistically significant at 10% in the different specifications used.

At least half of the evaluations that investigated impacts on investment, revenue, and employment in types of support that predominate for MPMEs⁶³—“MSMEs financing,” “indirect financing,” and “acquisition of capital goods financing”—had positive results. These results are consistent with the literature that points to credit restrictions as an important limiting factor for company growth, which is even more relevant for smaller firms (Barboza *et al.*, 2020). In the “innovation” dimension, the results also demonstrated a relevant effect, with 73% of positive impacts. In relation to the effects found in the evaluations that analyze the impact on the “productivity” variables, the proportion of studies with positive results is relatively lower, regardless of the size of the supported companies. However, also according to Barboza *et al.* (2020), this situation agrees with the way in which the BNDES’s instruments are designed: in most cases, support focuses on increasing investment. Some of the Bank’s instruments are aimed at fostering employment, which is considered a denominator in some productivity indicators. Moreover, the impacts of investment on the productivity of each firm may have a time horizon longer than the evaluation period. The limited evidence of a direct relationship between investment and productivity is an important point to be explored in future evaluations.

Regarding support in which large companies predominate—“large corporations financing” and “investment projects financing”—there is a lower frequency of positive impacts. This applies both to dimensions that capture company growth (investment and revenue) and to productivity measures. However, it is essential to emphasize that most evaluations found positive results in all types of support in the dimensions of “innovation” (73%) and “exports” (75%), associated with this client profile. In any case, it is important to highlight the difficulties in obtaining statistical significance in causal inference processes in studies with a smaller number of observations, which applies to some of the evaluations focused on these types of support, especially those involving only publicly traded companies.

In relation to the BNDES’s financing to municipalities, it is worth noting that the number of evaluations on the subject tripled compared to the last Effectiveness Report. The results found were all positive for “local development,” “population health,” and “education” indicating that investment in state capacity contributes to development. Regarding “infrastructure financing,” all the results found for “public management,” “labor,” “local development,” and “population health” were positive. Therefore, the results demonstrate the importance of infrastructure in development, given the occurrence of positive externalities at the social level.

⁶³ Predominance in terms of the number of companies supported.

GRAPH 10. PROPORTION OF EVALUATIONS FINDING POSITIVE IMPACT, BY TYPE OF SUPPORT AND IMPACT DIMENSION

Labor	40%	57%	100%			100%	100%	78%	100%	40%	100%	67%	100%	50%
Survival	50%	50%						33%						0%
Health						100%			100%	100%				0%
Productivity	25%	33%		0%			0%	40%		33%		0%		
Investment	60%	33%	0%	33%	100%		100%	100%	100%	100%			33%	
Innovation	50%	50%					80%	100%						100%
Public Administration						100%			57%	0%				
Exports		100%	75%					100%						0%
Entrants		100%				100%		100%						100%
Education	0%								100%	0%				0%
Local development	100%				100%	100%			100%	100%				100%
Company growth	60%	67%	50%	25%			100%	100%		0%		50%	67%	
Forested areas	0%					0%					67%			
Access to credit		100%	100%	75%	100%								33%	
	BK financing	Corporate financing	Exports financing	Large corporations financing	Indirect financing	Infrastructure financing	Innovation financing	MPMEs financing	Municipal financing	Project financing	Non-refundable	Local content policy	Variable income	All

Source: Elaborated by the authors.

Notes: (i) The color indicate the number of evaluations that found a positive result, with white indicating no evaluation. (ii) An evaluation is counted in more than one cell if it analyzes more than one type of support or impact dimension. (iii) The types of support and impact dimensions investigated in more than one evaluation are presented. (iv) PCL stands for local content policy. (v) The “labor” category includes evaluations on employment, average wage, payroll, and qualifications. (vi) The “public administration” category includes evaluations on tax collection and management. (vii) The “innovation” category includes evaluations on innovative efforts and innovation results. (viii) The “company growth” category includes evaluations on profitability and revenue. (ix) The “access to credit” category encompasses evaluations on financial stability. (x) The “productivity” category includes evaluations on labor, capital, land, and total factor productivity (TFP). (xi) The “local development” category includes evaluations of state and municipal indicators such as GDP, HDI, and night-time lighting. (xii) The “all” category refers to evaluations that consider all types of BNDES financing. (xiii) The “forested areas” dimension includes both the impacts of interventions aimed directly at reforestation and/or deforestation prevention, as well as interventions that may exert pressure on forest areas. For the latter group, evidence of null effects in the evaluation is considered positive from the perspective of policy objectives, even though such interventions are not counted as positive in the meta-analysis.

EFFECTIVENESS EVALUATIONS CONDUCTED BY THE BNDES

In this subsection, we present the impact evaluations carried out within the scope⁶⁴ of the BNDES’s SMA and published from January 2022 to January 2024. Chart 3 summarizes the set of evaluations.

⁶⁴ Includes studies prepared by the BNDES team in cooperation with research institutions.

CHART 3. SET OF IMPACT EVALUATIONS WITHIN THE SCOPE OF THE BNDES'S SMA (2022-2023)

Evaluation title	Publication date
Effectiveness evaluations of the Plans approved by the Executive Board	
Effectiveness evaluation of the BNDES's financing for the purchase of agricultural machinery and equipment	Jan. 2022
Transportation infrastructure and employment: a market access approach	Feb. 2022
Credit and guarantees: a cost-effectiveness analysis of the BNDES's countercyclical actions during the COVID-19 crisis	June. 2022
Telecommunications infrastructure: local effects of high-speed fixed broadband access	Nov. 2022
The impact of Criatec Funds on the growth and innovation of startups: an event study analysis	Dec. 2022
Analyzing partnerships for development: the matchfunding Salvando Vidas on the frontlines of the fight against the pandemic	Dec. 2022
Municipal socioeconomic effects of the construction of hydroelectric plants supported by the BNDES	June. 2023
Building fiscal capacities: an evaluation of the PMAT's impact on Brazilian municipalities	July. 2023
Evaluation on demand	
Local impacts of support for credit cooperatives: an evaluation of the BNDES's Procapcred in the context of COVID-19	Dec. 2022

Source: Elaborated by the authors, based on data from the BNDES.

Effectiveness evaluations of the BNDES's financing for the purchase of agricultural machinery and equipment⁶⁵

The BNDES stands out as one of the main sources of rural credit resources for investment in Brazil, accounting for 55% of agriculture investment credit and 15% of livestock investment credit. In 2020, approximately 60% of the BNDES's disbursements for the sector were from BNDES Finame to finance the acquisition of agricultural machinery and equipment. Due to this relevance, the impact of BNDES Finame on several variables of production, productivity, and land use in Brazilian municipalities was analyzed.

The challenge of this evaluation lies in distinguishing the effects of credit supply from credit demand, as the objective is to assess the impact of the BNDES's credit supply on the variables of interest. To this end, a shift-share approach was adopted, which considers the interaction between national variations in credit by financial institution (BNDES Finame is operated in the indirect mode, in which resources are transferred through accredited financial institutions) and the market share of each institution in municipalities where BNDES Finame rural credit is disbursed. In other words, it is considered that the variation in the supply of local credit responds to changes in the national availability of BNDES resources by financial institution, weighted by the market share of these institutions in each municipality.

⁶⁵ The full content of the report is available at: <https://web.bnDES.gov.br/bib/jspui/handle/1408/21844>. Accessed on: Sept. 30, 2024.

The BNDES Finame rural credit financing aims to alleviate the credit constraints for producers, facilitating the acquisition of agricultural capital goods. This is expected to result in an increase in agricultural production, mainly due to the intensification of capital and consequent increase in productivity.

The results point to effects consistent with expectations. A 1% positive variation in BNDES Finame rural credit is associated with a 0.09% increase in the municipal agricultural GDP, 0.15% in the value of agricultural production, 0.22% in agricultural productivity, 0.07% in livestock productivity, and 0.01% in the proportion of crops in the municipality (with a reduction of 0.01% in the proportion of pastures).

In general, the results suggest an intensification of land use, with pastures being replaced by crops. The mechanization induced by BNDES credit is associated with significant productivity gains in the rural sector.

Transportation infrastructure and employment: a market access approach⁶⁶

Investments in transportation infrastructure are essential to promote economic development by reducing transportation costs. For this reason, a broad evaluation of the effects of transportation infrastructure on employment from 1990 and 2019 was conducted. Although not a direct evaluation of the BNDES's operations in the sector, the work is of highly relevant to the Bank, as it highlights the potential effects of logistics projects—an area in which the BNDES plays a fundamental role in providing long-term financing.

Estimating the effects of these investments is difficult, as they extend beyond the immediate vicinity of the projects, impacting the entire transportation system. To account for these effects, an interregional trade model was employed, in which trade flows are influenced by transportation costs, which, in turn, depend on the economy's transportation infrastructure. The model adopts a measure of market access, which analyzes how well connected each region is, obtained via spatial data on federal highways from 1990 to 2010, freight data, and population data.

The main results indicate that a 10% increase in market access generates a 5% to 8% increase in local employment and an 8% to 10% increase in the number of firms in the municipality. Employment gains are mainly due to the relative growth of the tradable sectors (agriculture and industry) compared to non-tradable sectors (commerce and services). A 10% increase in market access increases the share of the tradable sectors by 1.85 percentage points, with approximately 40% of the jobs generated as a result of accessibility improvements occurring in the tradable sectors.

⁶⁶ The full content of the report is available at: <http://web.bndes.gov.br/bib/jspui/handle/1408/22063>. Accessed on: Sept. 30, 2024.

Finally, the heterogeneity of the effects suggests that improvements in transportation infrastructure can aid reduce regional inequality. Smaller, poorer, and more isolated municipalities benefit more from new logistics infrastructure that enhances their market access.

Credit and guarantee: a cost-effectiveness analysis of the BNDES's countercyclical actions during the COVID-19 crisis⁶⁷

In times of crisis, obtaining credit becomes particularly difficult for smaller companies. To combat the effects of the COVID-19 crisis on credit, the BNDES employed a wide range of countercyclical instruments, with actions involving BRL 154.8 billion, equivalent to 2.1% of Brazilian GDP in 2020. The evaluation of these actions analyzed the impact on employment, the wage bill, and the survival of supported MSMEs, focusing on the two main instruments used at that time: FGI PEAC and BNDES Credit Small Enterprises (CPE), which together accounted for almost two thirds of the Bank's actions.

FGI PEAC provided guarantees that made BRL 92.1 billion in loans available to more than 114,000 companies. Meanwhile, CPE provided BRL 7.2 billion in credit to more than 25,000 companies. Combined with other countercyclical measures adopted, the BNDES's actions enabled strong growth in the credit portfolio for MSMEs.

This evaluation employed a difference-in-differences method with propensity score matching to compare firms that received bank support with similar firms (based on various observable characteristics) that were not supported. In addition to controlling for observable variables, the methodology controls for unobservable factors of the firms that are fixed over time.⁶⁸

The results suggest that both FGI PEAC and CPE effectively ensured the survival of the supported companies: FGI PEAC reduced the probability of business failure by 47%, whereas CPE reduced it by 37%. Moreover, both measures had positive and significant impacts on formal employment and wages, of the same magnitude, 7% and 19%, respectively.

The analysis based on company characteristics showed that younger and smaller companies (generally more restricted in terms of credit) tended to be the most impacted by the BNDES's countercyclical instruments, as expected.

Regarding cost-effectiveness, the results suggest that, in the context of the COVID-19 crisis, very different in nature from all recent ones, innovative action via FGI PEAC produced

⁶⁷ The full content of the report is available at: <http://web.bndes.gov.br/bib/jspui/handle/1408/22464>. Accessed on: Sept. 30, 2024.

⁶⁸ A fundamental hypothesis for this method is that, in the absence of support, the variables of interest in the estimation would present similar paths for treated and untreated firms, ensuring that the results achieved by the control group are a good estimate of what would happen to the supported firms in the absence of treatment.

a greater net aggregate impact than traditional action via free credit transfers from CPE. However, this is largely due to the significant difference in scale between the two instruments and the differing profiles of the average companies supported. Therefore, credit and guarantees should be viewed as useful and complementary instruments for future countercyclical actions—especially in severe crises, when several instruments are needed to prevent company closures and sustain employment.

Telecommunications infrastructure: local effects of high-speed fixed broadband access⁶⁹

The main expected effect of expanding internet access for companies is a drastic drop in communication costs, which impact how firms organize themselves and reach new customers and suppliers. These changes would lead to both more efficient companies and an expansion of relevant markets. Given this potential, the BNDES disbursed BRL 37.7 billion⁷⁰ to the fixed broadband sector from 2007 to 2019.⁷¹

The study assessed the effects of: (i) the BNDES's actions on the local supply of broadband internet services; and (ii) the expansion of high-speed internet in Brazil on labor market indicators in Brazilian municipalities. To determine BNDES's impact on the balance of the local broadband market, the analysis considered that the service supply is limited to companies operating (with physical infrastructure installed) in each municipality, thus assessing whether broadband supply is impacted by the BNDES's disbursements. Therefore, in this first exercise, the variables analyzed included the amount of internet consumed and the market share of the supported companies.

The second exercise leveraged the fact that companies consuming internet services are not impacted by the same limitation, identifying the extent to which greater use of broadband internet stimulates other economic sectors. This analysis suggests that greater high-speed internet usage can benefit both consumers and producers of other goods and services. In this exercise, the variables analyzed included formal employment, number of formal companies, and average salary.

The results suggest that a 10% increase in BNDES resource releases is associated with a 1.4% increase in total accesses, although this effect is not linear across all broadband speed ranges. In general, no impact on formal employment was found; instead, there is an increase in the number of companies and a decrease in the average salary.

⁶⁹ The full content of the report is available at: <http://web.bndes.gov.br/bib/jspui/handle/1408/22644>. Accessed on: Sept. 30, 2024.

⁷⁰ At December 2021 prices.

⁷¹ Disbursements to the telecommunications sector were considered, excluding wireless telecommunications and pay TV operators.

In the speed range from 2 to 34 Mbps, the impact on employment was less than 0.02%, the number of establishments was affected very limitedly, and no effects on salaries were found. In contrast, speeds above 34 Mbps showed positive effects of 0.3% on formal employment and 0.9% on the number of firms, along with negative impacts of -0.4% on the average salary.

The impact of Criatec funds on the growth and innovation of startups: an event study analysis⁷²

Criatec is a BNDES venture capital mutual fund that operates in the seed capital modality, focusing on emerging micro and small enterprises with an innovative profile. The evaluation covered the first three editions of the program⁷³, conducted from 2008 to 2021, supporting a total of 106 companies and investing BRL 408.1 million (in 2021 values). Companies in 15 Brazilian states and 11 economic sectors were supported.

The evaluation of Criatec faced two major challenges. First, support is scaled over time, as investments were directed to different groups of companies at various times. Second, its effects can be dynamic, varying according to the time elapsed since the resource contribution. To address these characteristics, the study employed a scaled difference-in-differences model, estimates the dynamic effects of the support since the first resource allocation.

The evaluation found evidence of Criatec's impact on a series of variables related to business growth: a 61.5% increase in the number of employees, 38.7% in hiring, 142.5% in average pay, and 274.7% in the wage bill of supported companies. In addition, the support had significant positive impacts on the generation of higher-skilled jobs, with a 27.8% increase in higher-level jobs and 21.4% in technical-scientific occupations. Regarding innovation (the explicit objective of the support), in addition to the effect on technical-scientific occupations, the study found a 10.1% increase in the total accumulated number of patent applications.

Dynamic effects of the support were found to last for about three or four years after the initial resource allocation. The effects on company growth variables are immediate, whereas those on innovation variables tend to show lag (smaller for technical-scientific occupations and larger for patent applications).

Results are generally more significant for younger supported companies. Finally, the results suggest that the effects vary by sector: in the ICT area, stronger impacts were found on company growth, whereas in other segments, more significant impacts were found on the innovation variables.

⁷² The full content of the report is available at: <http://web.bndes.gov.br/bib/jspui/handle/1408/22666>. Accessed on: Sept. 30, 2024.

⁷³ Criatec IV, launched in 2021, was not included in the scope of the evaluation.

Analyzing partnerships for development: the matchfunding Salvando Vidas on the front line of the fight against the pandemic⁷⁴

Launched in April 2020, the crowdfunding initiative with the matchfunding Salvando Vidas (Saving Lives) structured the fundraising and operationalized the acquisition of materials, supplies and medical and hospital equipment needed to face the COVID-19 pandemic. For every real donated by third parties, BNDES contributed BRL 1.00, up to a total limit of BRL 100 million, generating a potential support of up to BRL 200 million in the two phases of the initiative.

The evaluation, mostly qualitative, analyzes data on the implementation of the initiative, sectoral data, and responses to questionnaires applied with beneficiary institutions and large donors. Its methodology employs four evaluation criteria for programs and policies defined by the Organization for Economic Co-operation and Development (OECD): coherence, effectiveness, efficiency, and relevance. In addition, it investigates whether the evidence found is associated with the strengthening of a culture of donations in Brazil. Data up to June 2022 were analyzed, which enabled the analysis of the application of 85% of the funds raised and a comprehensive evaluation of the initiative.

In total, 17 of the 19 pieces of evidence of the effectiveness of Salvando Vidas were evaluated as positive. In the relevance criterion, it is worth noting that, of the supported institutions that responded to the questionnaire, 93% classified Salvando Vidas as “very relevant” for their organizations and for the culture of donations/philanthropy in the country, with 98% effectively employing the donated materials and equipment. In the effectiveness criterion, six of the nine expected delivery results were achieved; and 75% of the hospitals certified as philanthropic in the country were supported. In the output criterion, the highlight is the faster implementation compared to other BNDES initiatives: only three months went by between the decision to implement and the first donation, and all the processes and governance of the initiative were built during this time. In the coherence criterion, the initiative’s mobilization capacity stands out: there were four partners, three of them working on a pro bono basis. Finally, when analyzing how the initiative contributed to strengthening a culture of donations in Brazil, Salvando Vidas was the matchfunding that raised the most funds in Brazil, being successful in increasing donors’ social investments.

Only one result was evaluated as negative—the failure to achieve two of the four expected results associated with encouraging a culture of donation—and one was classified as neutral—the timeliness of donations, which were evaluated by health institutions as good in the questionnaire, although the delivery time was, in most cases, longer than expected.

⁷⁴ The full content of the report is available at: <http://web.bndes.gov.br/bib/jspui/handle/1408/22684>. Accessed on: Sept. 30, 2024.

Municipal socioeconomic effects of the construction of hydroelectric plants supported by BNDES⁷⁵

The impacts of a project on the surrounding communities and the environment are a relevant topic for the BNDES. This issue is particularly relevant in hydroelectric power plants (HPP), large-scale projects that can attract numerous workers for their construction, leading to the need for population displacement, with potential impacts on education, health, socioeconomic dynamics, and the environment.

The evaluation investigates the impacts of the construction of HPPs on local socioeconomic indicators. More specifically, the impacts of 28 HPPs whose construction began from 2002 to 2014 were assessed, selecting only projects larger than 100 MW. These 28 HPPs affected 98 municipalities in the country, considering construction sites and flooded areas. The analysis was disaggregated into municipalities that received the construction of the HPP and municipalities that were affected by flooding.

The main results point to significant economic effects, such as an increase in the municipal GDP of approximately 20% five years after the start of construction, especially in industry, in which the increase reaches 30%. In addition, there is a strong impact on the creation of formal jobs (three years after the start of construction, the increase is approximately 25%) and on the number of school enrollments (approximately 10%). Due to the increase in economic activity, the studied municipalities show increases in their tax revenue that exceed 50% between two and three years after the start of construction, returning to levels close to the initial level in the fifth year, when the works are being completed. In general, the reported results are more pronounced in the municipalities where the hydroelectric plants were built compared to those affected solely by flooding.

Building fiscal capacities: an evaluation of the PMAT's impact on Brazilian municipalities⁷⁶

In Brazil, municipalities play an important role in the provision of basic services. To do so, they rely on taxes under their jurisdiction or government transfers to generate revenue. Bearing this in mind, the BNDES created the PMAT in 1997, with the aim of supporting investment projects implemented by municipal public administrations to modernize tax management and improve the quality of public spending. From 1998 to 2021, the program carried out a total of 574 operations in 420 municipalities (which represent 43% of the Brazilian population), mobilizing BRL 4.9 billion in contracted operations.

⁷⁵ The full content of the report is available at: <http://web.bndes.gov.br/bib/jspui/handle/1408/22905>. Accessed on: Sept. 30, 2024.

⁷⁶ The full content of the report is available at: <http://web.bndes.gov.br/bib/jspui/handle/1408/23186>. Accessed on: Sept. 30, 2024.

The study assesses the PMAT's impact on tax collection, the provision of social infrastructure, and the economic growth of the supported municipalities. Via an event study analysis, it was possible to evaluate the existence of long-term effects of the program. The results show that the program had a positive effect of 14.5% on the growth of tax collection in the supported municipalities during the period analyzed. In addition, the PMAT had substantial effects on the growth of spending on education (22.9%) and health (33.6%).

The impact on the GDP of the supported municipalities was 17.6%. The evaluation found that the effects of the PMAT, in general, accelerated over time, tending to be greater for higher intensity support, for direct operations, in municipalities with a lower Municipal Human Development Index (MHDI), and in municipalities in the Northeast region.

Local impacts of support for credit cooperatives: an evaluation of the BNDES's Procapcred in the context of COVID-19⁷⁷

Credit cooperatives are an important means of promoting financial inclusion and economic development in regions with less economic dynamism, providing access to credit in regions with low availability of services via the traditional system, thus promoting a multiplier effect on local income by reinvesting resources in the communities. In view of this, the BNDES's Procapcred was created strengthen the equity structure of individual credit unions by providing financing to members for the acquisition of capital shares.

The evaluation measures the impact of the BNDES's Procapcred in the context of the economic crisis resulting from the effects of the COVID-19 pandemic (2020-2021) on the number of members and the stock of bank credit in the supported municipalities. Using data at the municipal level, the analysis compares the trajectories of variables of members in the benefited municipalities with those in similar municipalities that did not receive support but have credit cooperatives, employing a difference-in-differences methodology combined with estimators based on propensity score weighting (Hirano; Imbens, 2001).

A positive and significant impact of the BNDES's Procapcred was found on the number of members with credit operations (40%–42%) and on the number of members with term deposits (40%–45%). The impact on these variables was greater on individuals than on companies.

Moreover, the program had a greater impact on municipalities that were more dependent on services from other locations and a had less developed bank credit market. This effect suggests that credit cooperatives may play an important role in the development of areas that are less served by traditional financial institutions. Finally, the estimated effects of the

⁷⁷ Available at: https://www.anpec.org.br/encontro/2022/submissao/files_lfi10-fe5d7c83b102f3b117fcb066d3698e1b.pdf. Accessed on: Sept. 30, 2024.

BNDES's Procapcred can be associated with a mitigation of the impacts of the COVID-19 crisis, as the trajectory of the treatment groups for the variable number of members with credit operations showed a smoother behavior than that of the control group.

EFFECTIVENESS EVALUATIONS OF PROJECTS SUPPORTED BY THE AMAZON FUND

The Amazon Fund conducts effectiveness evaluations of supported projects after their completion. These evaluations are prepared within the scope of technical cooperation with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and conducted by independent professionals, with complete freedom to do their work.

Two thematic effectiveness evaluations were published in 2022: one on projects supporting Indigenous peoples and another on projects involving sustainable productive activities, covering 11 projects that received support from the Amazon Fund in previous years.

In 2023, four effectiveness evaluations were completed: the first on land use planning projects; the second on projects coordinated by municipalities; the third on projects supporting sustainable productive activities; and the fourth on a particular individual project conducted by the state of Acre, which, due to its size, required a specific evaluation. In total, 13 projects were included in these evaluations.

These effectiveness evaluations conducted within the scope of the Amazon Fund serve as a basis for improving performance, in an effort to continuously improve, in addition to reinforcing the commitment to transparency, and are made fully available on the Amazon Fund website.⁷⁸

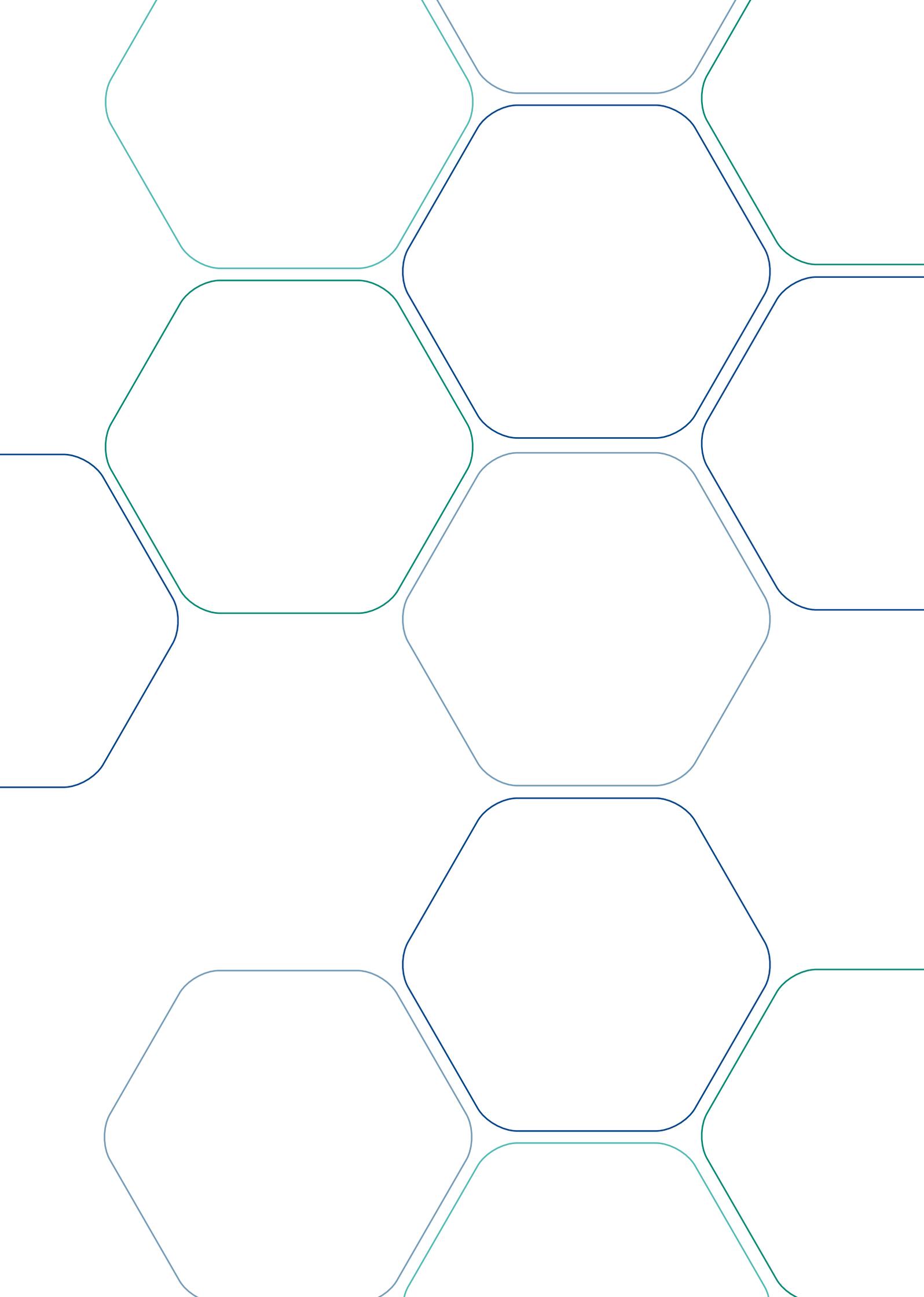
⁷⁸ Available at: <https://www.fundoamazonia.gov.br/pt/monitoramento-e-avaliacao/avaliacoes-externas/>.





RECOMMENDATIONS FROM THE EFFECTIVENESS EVALUATIONS





The 2022-2023 Effectiveness Report summarizes the main results obtained by the BNDES's SMA during this period. In previous chapters, the main deliverables of the BNDES, its results indicators, and the highlights of the effectiveness evaluations were presented.

Before presenting the recommendations and their context in which they are inserted, it is important to explain the objectives of the BNDES's SMA(2021):

- a. generate knowledge and learning from analyses of the results of the interventions supported by the BNDES's System;
- b. improve the processes for providing support from the BNDES's System, incorporating indicators that explain both the expected and effectively achieved results, enabling the evaluation of the interventions;
- c. disseminate the monitoring and evaluation techniques to the functional staff of the BNDES's System, improving their skills in defining, implementing, and analyzing objectives and result indicators;
- d. provide the BNDES System's senior management with evidence of the results achieved that contribute to improving the BNDES System's strategy, policies, and financial instruments; and
- e. provide information for reporting to society and other stakeholders.

This chapter presents the main recommendations arising from the activities carried out within the scope of the BNDES's SMA, organized according to the strategic business themes⁷⁹ outlined in the BNDES's Long-Term Strategy, approved by the Board of Directors in May 2023. The recommendations are based mainly on evidence obtained through the effectiveness evaluations, but were also prepared based on the monitoring of output, outcome, and effort indicators.

PRODUCTIVE DEVELOPMENT, INNOVATION, AND FOREIGN TRADE

Stimulating technological innovation is one of the priorities of the BNDES's Long-Term Strategy. The main guideline is to significantly expand support for innovation projects by seeking partnerships with other institutions in the National Innovation System. As an activity with the potential to generate positive externalities, promoting support for innovation is a classic activity of development banks.

The BNDES shows several financial instruments to foster an innovative culture and technological development in Brazilian companies.

⁷⁹ This classification does not include cross-cutting strategic themes and business support themes

Evidence in the literature generally indicates that the BNDES' support for innovation has a positive effect on innovative efforts, job generation, and exports among supported companies (see the chapter "The BNDES's Impact"). Criatec RAE, which investigated the effects of the BNDES's family of seed capital funds, presented results that reinforce the main findings in the literature. The evaluation found evidence of significant effects of Criatec on the total number of employees, average remuneration, total payroll, and patent applications among supported firms.

Regarding export support, most evaluations investigating the impact of the BNDES Exim on export performance found positive evidence. Support for the export of capital goods by the BNDES increased from USD 1 billion in 2022 to USD 3 billion in 2023. However, this support could be further expanded, as it had previously reached USD 12 billion in 2010 and USD 16 billion in 2015.

Recommendation: expand support for innovation and exports

The BNDES launched the Mais Inovação Program in 2023. Based on Law 14,592, enacted on May 30, 2023, it allows the use of the TR (reference rate) as an index for financing operations for innovation and digitalization with FAT resources, up to a limit of 1.5% FAT funds transferred to the BNDES. With adequate insertion in the public policies of the Federal Government, the provision of incentivized resources for financing innovation has the potential to strengthen the BNDES's support for innovation and innovative activities in the country. The creation of Mais Inovação Program aligns with a recommendation from the 2020-2021 Effectiveness Report to allocate incentivized resources for innovation support.

Moreover, in 2023, the BNDES adjusted the financial conditions applicable to export operations under the BNDES's Exim Pre-shipment line, with the aim of expanding support in this area.

ECONOMIC AND SOCIAL INFRASTRUCTURE

Throughout the 2022-2023 cycle, the BNDES published a broad set of evaluations that investigate the effects of investments in economic and social infrastructure. In general, these evaluations indicate several positive effects resulting from infrastructure investments financed by the BNDES.

The Transportation Infrastructure RAE shows an increase in employment and the number of companies in regions where investments in transportation infrastructure were made, with the effects being more pronounced in smaller, poorer, and more isolated municipalities.

The Telecommunications Infrastructure RAE shows that the BNDES's support is associated with an increase in total broadband access, with an increase in the number of companies.

The Hydroelectric Plants RAE points to several important economic effects in the AREAS affected by the construction of hydroelectric plants, such as growth in the municipal GDP (especially in industry), job creation, number of school enrollments, and tax revenue limited to the period when the projects were implemented. The evaluation also concludes that the results are more pronounced in the municipalities where the plants were built, compared to those affected only by flooding.

In short, the results corroborate the importance of infrastructure for development and bring to light some important aspects regarding lessons learned for public policies, especially considering the analysis of heterogeneous effects. In general, the evaluations indicate a greater intensity of the effects in less developed areas. This represents a challenge for the implementation of public policies aimed at regional deconcentration through credit instruments. On the one hand, public entities in less developed regions tend to have greater difficulty in converting their demands into investment projects. On the other hand, regulatory and operational requirements, which are important for implementing good banking practices, may hinder the provision of credit to less developed states and municipalities, as well as to public companies and concessionaires operating in their respective regions.

Recommendation 1: strengthen support for infrastructure, especially in regions with lower HDI

Another priority aspect for the BNDES's work is the promotion of projects and partnerships that stimulate territorial development and the reduction of regional inequalities. The PMAT RAE indicates growth in tax revenue and education and health expenditures in the municipalities supported during the period analyzed, with effects that generally accelerated over time. In addition, the evaluation concludes that the impacts of the PMAT tend to be greater in municipalities with lower HDI and those in the Northeast region.

From a territorial perspective, the allocation of credit depends on the location of ongoing investments. In other words, the granting of long-term credit for investment tends to occur in more economically dynamic regions. Therefore, for the BNDES to be a catalyst for reducing regional inequalities, its guidelines, policies, and processes must aim to encourage the granting of credit to less developed regions.

Recommendation 2: expand support for the North and Northeast regions

The BNDES's State Impact Investment Program (BNDES Invest Impacto) was launched in 2023 with the aim of contributing to the qualified resumption of public investment in the states. Through more favorable financial conditions (lower interest rates, longer repayment terms, and greater participation by the BNDES), the program prioritizes actions aimed at reducing socioeconomic vulnerabilities and adapting to and/or mitigating the effects of climate change.

BNDES Invest Impacto requires the client to present a sectoral or multisectoral investment plan. In this type of support, governments initially present a set of investments, their merits, risks, and associated investment thesis, and, after contracting the operation, submit the technical details of the individual projects for approval. Approximately BRL 7.5 billion was approved in 2023 for six investment plans in the states of Ceará, Espírito Santo, Maranhão, Mato Grosso do Sul, Pará, and Sergipe.⁸⁰

The BNDES's FUST Program, launched in August 2023, operationalizes FUST resources received by the BNDES. Its objective is to stimulate the expansion, use, and improvement of the quality of telecommunications networks and services, as well as the development and use of new connectivity technologies, to contribute to the reduction of regional inequalities and promote economic and social development. Currently, there are plans to support the expansion of the public schools' access to broadband internet; expansion of mobile service coverage to areas without service; and construction of a transportation network in poorly served municipalities, localities, or sectors. In 2023, the BNDES started a connectivity program that will bring broadband to public schools, favelas, and rural areas.⁸¹

In the same sense, the 2023-2024 Safra Plan, approved in July 2023, established a segregated budget for the North and Northeast regions, in order to ensure greater application of resources in these areas within the scope of Pronaf. Pronaf resources at the BNDES grew by over 100% this year, with a significant increase for the North and Northeast regions. Of the total BRL 11.6 billion, BRL 1.2 billion was allocated exclusively to family farmers in these regions, representing a growth of 277% compared to the total of the previous harvest.⁸²

⁸⁰ More information can be found at: <https://agenciadenoticias.bndes.gov.br/detalhe/noticia/BNDES-retoma-apoio-a-planos-de-investimento-estaduais-com-BRL-75-bi-ja-aprovados/>.

⁸¹ More information can be found at: <https://agenciadenoticias.bndes.gov.br/detalhe/noticia/Fundo-operado-pelo-BNDES-ajuda-a-levar-banda-larga-a-todas-as-escolas-publicas-do-pais/>.

⁸² More information can be found at: [https://agenciadenoticias.bndes.gov.br/detalhe/noticia/Plano-Safra-2023-2024-com-adicao-de-recursos-proprios-BNDES-tera-R\\$-384-bi-valor-recorde/](https://agenciadenoticias.bndes.gov.br/detalhe/noticia/Plano-Safra-2023-2024-com-adicao-de-recursos-proprios-BNDES-tera-R$-384-bi-valor-recorde/).

MICRO-, SMALL-, AND MEDIUM-SIZED ENTERPRISES AND COOPERATIVES

Smaller companies tend to be more restricted in terms of credit. The smaller amount of public information and the low availability of assets related to such companies make it difficult, respectively, for financiers to assess risks and for MSMEs to provide real guarantees.

Therefore, acting in this segment is one of the main focuses of development banks, with the aim of enabling investments that would not be made otherwise, promoting greater financial additionality of support. This relief from restrictions may occur, among other instruments, via the provision of credit (acting on a possible rationing of private credit for this segment) or offering of guarantees (mitigating access barriers to credit due to a lack of collateral).

Support for MSMEs is a priority issue for the BNDES, which has a broad and diverse set of instruments to facilitate access to credit, including credit provision and guarantees. Most of the evaluations that investigate the impact of BNDES on the MSME segment focus on support through financing and find evidence of a positive impact, especially on employment (see the chapter “The BNDES’s Impact”).

The “Credit and Guarantee: a cost-effectiveness analysis of the BNDES’s countercyclical actions during the COVID-19 crisis” RAE investigated the effects of two of the main instruments used to combat the effects of the pandemic, FGI PEAC (guarantees) and CPE (credit). Both were effective in ensuring the survival of the supported companies, with positive effects on total employment and wage bills. Their effects were greater for younger and smaller companies.

Support for cooperatives is also an important alternative for alleviating credit restrictions for smaller companies and individuals. Support for cooperatives, as end customers, is provided via various credit instruments. The BNDES also relies on credit cooperatives as important financial agents in its network of accredited financial institutions.

The Procapcred RAE investigated whether the instrument was effective in promoting the equity structure of individual credit cooperatives also in the context of the crisis resulting from the pandemic impacts. The evaluation indicated a positive effect on the number of members with credit operations and term deposits. It was also found that the program had a greater impact on municipalities that were more dependent on services from other locations and had less funds in the bank credit market, which indicates that credit cooperatives could play an important role in the development of locations that are less served by traditional financial institutions.

Recommendation: expand operations in guarantees and with cooperatives

FGI PEAC was scheduled to end in December 2023. Law 14,554 of April 20, 2023, however, allowed its continuity, with the use of resources already paid in by the Union. In 2023, based on Provisional Measure 1,189 of September 27, 2023, the program was expanded to create FGI PEAC Crédito Solidário RS, whose objective was to serve smaller companies impacted by climate events that occurred in municipalities in the state of Grande do Sul and that recognized a status of public calamity. BRL 100 million were invested in FGI, which guaranteed BRL 490.5 million in credit for these companies in 2023.

Procapcred was renewed and expanded twice in the biennium. In 2022, it received an additional BRL 500 million in budget and, in 2023, an additional BRL 600 million in July and another BRL 2 billion in December. Since 2015, Procapcred has approved approximately BRL 1.4 billion in operations with more than 170,000 credit cooperatives. Also, in line with the recommendation to expand support to the North and Northeast regions, a change in the product was approved to reduce the BNDES's remuneration (spread) for members located in these regions.

ENVIRONMENT AND CLIMATE

The development of solutions for climate mitigation and adaptation has been one of the priority areas of the BNDES's work; therefore, topics directly linked to climate issues have been the subject of increasing attention by our SMA.

The chapter "Monitoring of the BNDES's Support Results" in this report detailed the main indicators monitored by the Bank, including those related to the environmental and/or climate impacts of the projects supported. Among these indicators, we highlight the variation in the area of directly managed forest, which is equivalent to 1% of the total Brazilian territory (8.5 million hectares), and the avoided greenhouse gas emissions, which correspond approximately to the emissions of six and a half years of the vehicle fleet in the metropolitan region of São Paulo (35 million tons of CO₂ equivalent).

In the chapter "The BNDES's Impact," we present the highlights related to the BNDES's financing RAE for the purchase of agricultural machinery and equipment, which showed the positive effects of the Bank's rural credit on the agricultural GDP of the supported municipalities, both in the value of agricultural production and in its productivity. The RAE results also indicate that mechanization induced by the BNDES's credit is associated with significant productivity gains in the rural sector, with intensification of land use and replacement of pasture with cropland.

The evidence, therefore, indicates the relevance of the BNDES's public credit for environmental projects and those related to climate transition, especially considering the scarcity of available resources both in Brazil and worldwide, in relation to the amount of resources needed for these purposes.

Recommendation: increase support for environmental projects and clean technologies

In 2023, the BNDES resumed project approvals under the Amazon Fund, with approvals and calls worth BRL 1.3 billion, in addition to having received donations of BRL 150 million from international partners. The two public calls total more than BRL 780 million.

The Restaura Amazônia (Restoring Amazon) call for proposals⁸³ will select three partners to manage BRL 450 million in non-refundable amounts for ecological restoration projects involving native species or agroforestry systems in seven states in the Legal Amazon. This is the first initiative of the Arco da Restauração da Amazônia (Amazon Restoration Arc), built in partnership with the Ministry of the Environment and Climate Change (MMA), with the aim of restoring 24 million hectares in the Amazon. The Amazônia na Escola (Amazon at School) initiative⁸⁴ will allocate BRL 336 million to projects aimed at strengthening the production capacity of family farmers and purchasing sustainably produced food for school meals in public education systems in the Legal Amazon.

The National Climate Change Fund has had its funding increased with the forecast of more than BRL 10 billion for 2024,⁸⁵ the largest volume of resources in the history of the fund since its creation in 2009. The new phase will focus on structuring projects and the fight against climate change, strengthening public policies such as the New Growth Acceleration Program (PAC), the New Brazilian Industry (NIB), and the Ecological Transition Plan (PTE), which guide the BNDES's work. The objective is to generate competitive advantages for the country, with the development of national technology, quality green employment, and climate resilience, with a focus on the population most vulnerable to climate change. The National Climate Change Fund operates in six areas: resilient and sustainable urban development; green industry; green transport logistics, public transport, and mobility; energy transition; native forests and water resources; and green services and innovation.

⁸³ More information about the call for proposals can be found at: <https://www.fundoamazonia.gov.br/pt/como-apresentar-projetos/chamadas-publicas/restaura-amazonia/>.

⁸⁴ More information about the call for proposals can be found at: <https://www.fundoamazonia.gov.br/pt/como-apresentar-projetos/chamadas-publicas/amazonia-na-escola/>.

⁸⁵ More information can be found at: <https://agenciadenoticias.bndes.gov.br/detalhe/noticia/BNDES-e-MMA-relancam-Fundo-Clima-ampliado-e-com-novas-areas-de-atuacao/>.

Finally, the Floresta Viva (Living Forest) initiative⁸⁶, launched in 2022, has several partners for the implementation of ecological restoration projects with native species and agroforestry systems in Brazilian biomes in a matchfunding model, with a target investment of BRL 700 million in seven years. In addition to forest restoration, the initiative is focused on strengthening the technical and management structure of the restoration sector's production chain. In the 2022-2023 biennium, four calls for proposals were launched to select ecological restoration projects within the scope of the initiative. From these, two were in partnership with Petrobras, one for mangrove and restinga areas, and another for biodiversity corridors in the Cerrado and Pantanal; the third, in partnership with Eneva, includes projects for conservation units in the Amazon; and the fourth, in partnership with Energisa, Fundo Vale, and Norte Energia, allocates resources for the Xingu River basin. Together, the calls for proposals account for investments of BRL 77.5 million in restoration projects.

SOCIAL AND PRODUCTIVE INCLUSION

The BNDES works to reduce social and regional inequalities by supporting the social and productive inclusion of low-income populations. To this end, it relies on several refundable and non-refundable credit instruments, such as the Socioenvironmental Fund and the Microcredit.

The matchfunding Salvando Vidas (Saving Lives) was a crowdfunding initiative launched in April 2020, aimed at raising funds and operationalizing the acquisition of materials, supplies, and medical and hospital equipment needed to address the COVID-19 pandemic. It had the partnership of the Confederation of Santas Casas de Misericórdia, Hospitals and Philanthropic Entities, Sitawi, and Bionexo. The Salvando Vidas RAE was based on a qualitative analysis using evaluation criteria for programs and policies defined by the OECD. Of the 19 pieces of evidence of the instrument's effectiveness, 17 were assessed as positive, with emphasis on the results associated with the relevance criterion. At the time, the initiative was the matchfunding that raised the most funds in Brazil, contributing to strengthening a culture of social investment by donors.

Establishing partnerships with other agents is an important element for the BNDES's work in supporting social development and productive inclusion. The BNDES seeks to be a catalyst for sustainable development and, at the same time, has sought to reinforce its role as an articulator between raising funds from various sources and applying these funds to investments and projects of public interest.

⁸⁶ More information can be found at: <https://www.bndes.gov.br/wvps/portal/site/home/desenvolvimento-sustentavel/parcerias/floresta-viva/floresta-viva/>.

The Bank's capacity to serve as a technical and financial manager of third-party resources is recognized both nationally and internationally, in the scope of both credit and non-refundable operations.

Recommendation: strengthen partnerships to expand support for social projects

The Salvando Vidas RAE suggested that the BNDES should always aim to have at least one matchfunding action in fundraising, in order to encourage donations from the companies it holds relationships with. In the 2022-2023 biennium, there were two main matchfundings in terms of fundraising and execution: the already mentioned Floresta Viva and the Juntos pela Saúde (Together for Health),⁸⁷ which seeks to strengthen the SUS in the North and Northeast regions of Brazil, and is managed by the Institute for the Development of Social Investment (IDIS). In 2023, the initiative received five new supporters: Fundação Vale, Wheaton Precious Metals, Instituto Dynamo, Umane, and Grupo RD (RaiaDrogasil), accounting for BRL 48 million in donations, which were increased to BRL 96 million with resources from the BNDES.

The resources will be allocated to a call for proposals that will select projects in 2024 and to three new broad-reaching projects, reaching a total of around three hundred municipalities, with the objective improving SUS management and service processes in its Basic Health Units, through access to technological tools, infrastructure, and professional training.

The Sertão Vivo initiative, a partnership between the BNDES and the International Fund for Agricultural Development (IFAD), was launched in 2023 to support projects that promote increased climate resilience among the rural population in the semi-arid region of Northeast Brazil. The initiative totals BRL 1.8 billion in resources allocated to benefit approximately 439,000 families in nine states in the Northeast by tackling poverty and climate change, as well as producing healthy and sustainable food.⁸⁸ Of this amount, approximately BRL 300 million are non-refundable resources from the BNDES's Socioenvironmental Fund. By promoting sustainable agricultural practices through the development of management plans, the implementation of productive backyards, and the biological treatment of sewage, these actions will also contribute to reducing greenhouse gas emissions. Including avoided and captured emissions, the estimated reduction is around 20 million tons of CO₂ equivalent over twenty years, or almost one-third of all carbon emissions in Portugal in 2021.

⁸⁷ More information can be found at: <https://www.bndes.gov.br/wps/portal/site/home/desenvolvimento-sustentavel/parcerias/juntospelasaude/>.

⁸⁸ More information can be found at: [https://agenciadenoticias.bndes.gov.br/detalhe/noticia/BNDES-e-fundo-da-ONU-anunciam-R\\$-18-bi-para-projetos-de-seguranca-alimentar-no-Semiarido/](https://agenciadenoticias.bndes.gov.br/detalhe/noticia/BNDES-e-fundo-da-ONU-anunciam-R$-18-bi-para-projetos-de-seguranca-alimentar-no-Semiarido/).

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APPENDIX

TABLE 1A: BNDES CREDIT PER REGION AND SECTOR

Region	Sector	Amount		Amount (% of the total)		Clients (% of the region)		Companies (% of the region)	
		2022	2023	2022	2023	2022	2023	2022	2023
Midwest	Agriculture and livestock	6.1	11.3	4.4%	6.5%	54.5%	53.7%	3.0%	3.2%
	Trade and service	1.8	3.2	1.3%	1.8%	33.1%	36.5%	69.6%	72.4%
	Industry	2.0	0.9	1.4%	0.5%	5.8%	4.3%	12.9%	10.8%
	Infrastructure	5.7	6.9	4.1%	4.0%	6.6%	5.5%	14.5%	13.6%
Northeast	Agriculture and livestock	1.4	3.3	1.0%	1.9%	33.2%	47.0%	1.9%	2.4%
	Trade and service	1.9	2.0	1.4%	1.2%	48.7%	38.3%	71.4%	70.3%
	Industry	1.8	1.3	1.3%	0.8%	9.1%	6.9%	13.4%	12.8%
	Infrastructure	10.4	10.9	7.5%	6.2%	9.1%	7.8%	13.3%	14.5%
North	Agriculture and livestock	1.3	2.4	1.0%	1.4%	43.2%	46.9%	1.6%	1.9%
	Trade and service	0.7	3.8	0.5%	2.2%	47.2%	44.6%	77.9%	79.1%
	Industry	0.4	0.3	0.3%	0.2%	4.6%	3.6%	9.9%	8.1%
	Infrastructure	2.7	5.6	1.9%	3.2%	5.1%	4.9%	10.6%	10.9%
Southeast	Agriculture and livestock	4.5	8.0	3.3%	4.6%	45.0%	52.9%	1.5%	1.6%
	Trade and service	8.3	7.9	5.9%	4.5%	35.9%	34.0%	61.3%	65.7%
	Industry	11.7	21.5	8.4%	12.3%	11.2%	7.4%	22.1%	18.8%
	Infrastructure	39.9	41.3	28.5%	23.7%	7.9%	5.7%	15.1%	14.0%
South	Agriculture and livestock	15.3	16.5	11.0%	9.4%	55.8%	57.8%	0.8%	1.0%
	Trade and service	6.7	5.9	4.8%	3.4%	37.3%	36.9%	72.4%	85.0%
	Industry	8.0	7.6	5.7%	4.3%	3.2%	2.5%	14.5%	13.9%
	Infrastructure	9.0	13.8	6.4%	7.9%	3.7%	2.7%	12.3%	13.1%

Source: Elaborated by the authors, based on data from the BNDES. Available at: <https://www.bndes.gov.br/wps/portal/site/home/transparencia/centraldedownloads>. Data collected in the first half of 2024.

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