



# BIODIVERSITY AND SUSTAINABLE FINANCE IN BRAZIL

On behalf of:



of the Federal Republic of Germany



MINISTÉRIO DA  
FAZENDA



## Biodiversity and Sustainable Finance in Brazil

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1. Supporting the strengthening of SEC sustainability issues in public policies for Brazil's financial system;
2. Deepening the integration of SEC sustainability aspects in the regulation and supervision processes of the national financial system;
3. Disseminating practical knowledge on instruments, products, and services in sustainable finance within the Brazilian financial system.

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# EXECUTIVE SUMMARY

Biodiversity encompasses the variety of life and its intricate interactions within ecosystems, being crucial for environmental integrity and food security. Natural capital provides essential ecosystem services such as climate regulation, soil fertility maintenance, pollination, carbon sequestration, and water purification, vital for agriculture, pharmacology, and environmental sustainability. It significantly contributes to mitigating climate change by controlling carbon emissions through carbon sequestration and storage. Despite its importance, the economic valuation of natural capital has been challenging. Traditional financial markets struggle to fully recognise its value, encountering difficulties in calculating cash flows or asset values using conventional methods, limiting biodiversity's incorporation into financial systems. Measuring natural capital and ecosystem services is fundamental for sustainable development. In addition, the public good nature of ecosystem services affects the quality of their provision due to the lack of direct incentives for private investment in conservation, challenges in quantifying dispersed benefits over time, and inherent limitations in global coordination and governance.

In Brazil, biodiversity conservation faces substantial obstacles, exacerbated by increased anthropogenic activities that adversely modify natural ecosystems. Brazilian biodiversity is under considerable pressure, especially due to land-use changes, with the World Bank estimating losses of 6.5 million hectares in Brazil, mainly to pastures and agricultural lands. The collapse of ecosystem services could critically impact economic development, affecting key sectors like agriculture and exacerbating regional inequalities by disproportionately affecting regions more dependent on natural resources, such as the Amazon, the Pantanal, and coastal areas. The data outlines a concerning scenario for biodiversity conservation in Brazil, indicating the urgent need for effective environmental management and conservation policies to mitigate ongoing habitat loss and combat greenhouse gas emissions.

In this context, the relationship between biodiversity and the financial sector is of special interest. This relationship can be characterised by a "double materiality", referring to the impacts of financial activities on biodiversity and the dependencies of the financial system on nature and biodiversity. Biodiversity loss impacts the financial system through three main channels: nature-related physical risks, nature-related transition risks, and reputational risks. There is a growing recognition that the financial sector is significantly exposed to nature-related financial risks and that, therefore, it needs to contribute to addressing environmental issues.

This report provides an overview of regulatory instruments and public policies related to biodiversity and sustainable finance in Brazil, exploring the strategies of six financial institutions with special attention to their possible effects on biodiversity. These institutions include the National Bank for Economic and Social Development (*Banco Nacional de Desenvolvimento Econômico e Social*), the Regional Development Bank of the Extreme South (*Banco Regional de Desenvolvimento do Extremo Sul*), the Development Bank of Minas Gerais (*Banco de Desenvolvimento de Minas Gerais*), Itaú Unibanco, the Bank of Brazil (*Banco do Brasil*) and the Bahia State Development Agency (*Agência de Fomento do Estado da Bahia*).

Regarding regulatory instruments and public policies, there is a variety of approaches aimed at the conservation and restoration of ecosystems that perform essential functions. The main Brazilian references include: (a) the Constitution of the Federative Republic of Brazil; (b) the



National Environmental Policy (*Política Nacional do Meio Ambiente*); (c) the National Biodiversity Policy (*Política Nacional de Biodiversidade*); (d) the Legal Framework for Biodiversity (*Marco Legal da Biodiversidade*); (e) the Brazilian Forest Code (*Código Florestal*); (f) the National Policy for the Recovery of Native Vegetation (*Política Nacional de Recuperação da Vegetação Nativa*); (g) resolutions and other regulations of the National Monetary Council (*Conselho Monetário Nacional - CMN*) and the Central Bank of Brazil (*Banco Central do Brasil - BCB*); (h) the National Policy on Payment for Environmental Services (*Política Nacional de Pagamento por Serviços Ambientais*); and (i) the Ecological Transformation Plan (*Plano de Transformação Ecológica*).

As for financial institutions, sustainability efforts have in recent years predominantly focussed on climate issues, often without explicitly addressing biodiversity concerns. However, these issues require their own strategies due to their unique challenges, such as habitat loss, species extinction, and ecosystem degradation. Biodiversity issues, although related to climate change, require dedicated and independent approaches for their mitigation through the implementation of policies that address their causes, impacts, and the necessary specific strategies.

Integrating biodiversity into financial practices requires improvements. One such improvement involves standardising the assessment criteria for financial institutions' biodiversity impacts to represent their efforts and prevent greenwashing practices accurately. Such criteria and independent assessments would improve transparency and ensure the robustness of institutional commitments to biodiversity. Additionally, an effective regulatory framework, specific programmes and incentives for conservation and restoration projects are deemed essential. Coordination between government, regulators and the financial sector is imperative and should promote an environmental sustainability system that protects biodiversity and fosters economic development that is both sustainable and resilient.

# PREFACE

This section outlines the final report on biodiversity and finance in Brazil, which consists of a study on biodiversity and sustainable finance in Brazil, commissioned by GIZ – *Deutsche Gesellschaft für Internationale Zusammenarbeit*. The study is part of the Strategic Environmental Dialogues Project (*Projeto Diálogos Ambientais Estratégicos - SUD*) and the Brazilian Sustainable Finance Project (*Projeto Finanças Brasileiras Sustentáveis - FiBraS II*).

The study's overall purpose is to assess the current state of sustainable finance in the context of biodiversity risks in Brazil. The specific objectives include:

1. to identify the impacts and risks associated with environmental degradation and biodiversity loss for the Brazilian financial system, also considering the intersection between climate risks and biodiversity risks;
2. to assess the current state of biodiversity-related finance in Brazil, aiming to understand how corresponding issues are being addressed; and
3. to formulate recommendations aimed at enhancing the performance of finance and financial institutions in Brazil in reducing biodiversity-related financial risks and in curbing biodiversity loss in the country.

For this report, a desk research methodology was adopted, using primary and secondary sources of information relevant to the topic of biodiversity, particularly related to finance in Brazil. The research aimed to include a comprehensive range of materials and ensure an up-to-date understanding of the topic. Primary sources include official documents, technical reports, statistical data, and pieces of legislation, usually extracted from websites of government institutions, international organisations, regulators, and national financial institutions. The selection prioritised criteria of relevance, reliability and timeliness of the documents. Secondary sources comprise other reports and scholarly publications (journal articles, books, and literature reviews) accessible through academic databases and digital libraries. Additional digital resources, including specialised websites and news portals, are used to complement the research. It is important to note that the commitment to ethical practices was maintained, ensuring the correct attribution of all sources and respecting copyright and intellectual property rights.

The report consists of five sections in addition to this preface. The introductory section (section 1) addresses the relevance of biodiversity in the global context. Section 2 discusses the risks to biodiversity in Brazil, outlining their potential negative impacts as well as the opportunities they present for the country's financial system. Section 3 presents an overview of the current state of public policies related to biodiversity and sustainable finance in Brazil, focusing on the regulatory environment and the content of these policies. Section 4 delves into the topic of sustainable finance by examining the strategies and policies of selected national financial institutions. The final section (section 5) lists recommendations to improve the integration of biodiversity into Brazil's financial sector. An appendix contains the acronyms and abbreviations used throughout the text.<sup>1</sup>

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1. In preliminary versions of this document, the consultant benefited from guidance and suggestions from Christine Majowski, Fernanda Feil and Caroline Vivaldi, which served to give final form to the text. As usual, any errors and omissions are the sole responsibility of the consultant.



A lush green forest scene with a waterfall and a stream, overlaid with a green tint. The image shows a dense forest with tall trees and thick foliage. In the foreground, a waterfall cascades over rocks into a stream. The water is blurred, suggesting motion. The overall color palette is dominated by various shades of green, from light to dark, creating a vibrant and natural atmosphere.

SECTION 1

# INTRODUCTION



**Biodiversity**, as inferred from the term itself, means the variety of life. It should be understood in a broad scope, encompassing the variety among individuals of a species, among populations, among species, and about the same species in different places, etc., with a special focus on the complex interactions present in ecosystems (see Box 1 - Definitions). Ecosystems are crucial in maintaining environmental integrity and safeguarding global food security. In addition to supporting ecosystems, biodiversity also plays an important role in mitigating climate change, particularly in relation to forest degradation, significantly contributing to limiting greenhouse gas (GHG) emissions. Therefore, a bidirectional relationship exists between climate and biodiversity, wherein climate change can negatively affect biodiversity, and the degradation of ecosystems amplifies the climate crisis.

Biodiversity should be recognised as a natural capital that requires continuous preservation to ensure ecological balance and sustain economic structures and social dynamics. Biodiversity plays a vital role in maintaining resilient economic systems and promoting social well-being by providing a wide range of ecosystem services (see Box 1 - Definitions). This interdependence underscores the need for integrated conservation policies that acknowledge biodiversity's diverse values for society and the economy. Studies like those conducted by the Millennium Ecosystem Assessment (2005) demonstrate that ecosystems with high biodiversity exhibit greater resilience and capacity to maintain their essential functions under conditions of environmental change.

**Natural capital** (see Box 1 - Definitions) can generate a continuous flow of ecosystem services, which includes, for example, climate regulation, the maintenance of fertile soils and pollination—crucial for agricultural production—and vital roles performed by forests and watersheds in carbon capturing and the purification of water and air, as well as the significance of genetic diversity for contemporary pharmacology and agriculture. In this context, the loss of biodiversity represents a pressing and wide-reaching challenge, as highlighted by a recent study from the Worldwide Fund for Nature (WWF) that reports an alarming average decrease of 69% in global populations of mammals, fish, birds, reptiles, and amphibians since 1970, signalling a "red alert" for humanity (ACEITUNO et al., 2022).





## BOX 1 – DEFINITIONS

According to the Convention on Biological Diversity, signed during the United Nations Conference on Environment and Development held in Rio de Janeiro in 1992, **biodiversity**, or **biological diversity**, consists of "the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species, and of ecosystems". The Convention was incorporated into the national legal framework by Decree No. 2.519, dated March 16, 1998 (SENADO FEDERAL, 2008).

An **ecosystem** is a dynamic complex of plant, animal and microorganism communities and their non-living environment, interacting as a functional unit. These systems are characterised by the interaction between their biotic and abiotic components, resulting in an energy flow that leads to a diversified structure and closed biogeochemical cycles (ODUM; BARRETT, 2007).

**Ecosystem services** are natural ecosystems' direct and indirect benefits to human populations. They are commonly categorised into provision, regulatory, support, and cultural services. They include, among others, the provision of natural resources, climate regulation, life support through the maintenance of biogeochemical cycles, and non-material benefits, such as aesthetic, cultural and tourist values (MILLENNIUM ECOSYSTEM ASSESSMENT, 2005).

**Natural capital** is an umbrella term that describes the planet's natural resources and ecosystems that provide a wide range of goods and services that are essential for human survival, well-being, and sustainable economic development. These resources include, but are not limited to, water, air, soil, flora, fauna, and a variety of ecosystem services such as pollination, water purification, climate regulation, and carbon sequestration (UNITED NATIONS ENVIRONMENT PROGRAMME FINANCIAL INITIATIVE – UNEP FI, 2023).

Despite its importance, the economic valuation of natural capital faces notable challenges, particularly in the context of traditional economic and financial markets, which often fail to recognise or quantify its full value. This difficulty largely stems from the absence of a defined cash flow or an asset value that can be clearly measured by conventional methodologies, thus limiting the integration of natural capital into economic and financial structures.

Measurement efforts have been undertaken in different studies. The report "Financing Nature Conservation", released by The Paulson Institute, The Nature Conservancy, and the Cornell Atkinson Center for Sustainability, complies with aggregated data based on previous studies (DEUTZ et al., 2020). It highlights a significant economic value associated with natural capital, estimating that approximately half of the global GDP depends on nature and its services to a high or moderate extent.<sup>2</sup> It also reports that the total loss of pollinators could lead to an annual decrease in agricultural production of about 0.26% of the global GDP.<sup>3</sup> Additionally, it values a ton of CO<sub>2</sub> captured at up to USD 600, which would allow valuing forests, crucial for carbon absorption, at over USD 100 trillion<sup>4</sup>, an amount close to 120% of the global

2. The estimated value of USD 44 trillion was obtained in the report by Herweijer et al., Nature risk rising: why the crisis engulfing nature matters for business and the economy, released by the World Economic Forum in 2020.

3. The estimated value of USD 217 billion was presented in Science Daily on 15/09/2008 from the Helmholtz Association of German Research Centres.

4. Estimate obtained in the study by Llavador, Romer and Silvestre, Sustainability for a warming world, published in 2015.



GDP. However, it is important to emphasise that limiting the evaluation of forests to their carbon capture role is an oversimplification, given the profound economic dependence on nature's services and resources.

The importance of measuring natural capital and ecosystem services is increasingly evident given the challenges posed by environmental degradation and the need to promote sustainable development. Following Dasgupta's approach (2021), recognising the economic value of these assets not only underscores their indispensable contribution to human well-being and the global economy but also highlights the deep interdependence between humanity and nature. Preserving the diversity of natural assets should be seen as part of a fundamental strategy to mitigate risks and uncertainties, as well as ensure conditions for productivity, resilience, and adaptability of nature. The accelerated decline of biodiversity at present threatens nature's ability to provide essential services, putting the economy and the well-being of future generations at risk. The assessment of natural capital and its integration into economic and policy decisions thus emerge as essential steps to reverse the trends of over-exploitation and ensure the sustainability of natural resources, aligning human demands with nature's regenerative capacity.

Biodiversity is particularly crucial for communities in developing regions, whose subsistence, health, and well-being directly depend on the variety of life and its maintenance. Moreover, it holds invaluable cultural and spiritual value, forming the foundation of many traditions and cultural identities. In this context, biodiversity conservation is a key element in achieving several of the Sustainable Development Goals (SDGs) proposed by the United Nations.

Brazil has a significant wealth of biological diversity. The country – considered the most biodiverse in the world – encompasses between 10% and 15% of all catalogued spe-



cies on the planet, featuring 118,847 recorded animal species (vertebrates and invertebrates) and 46,737 recorded plant and fungi species, holding the record for the highest number of plant species in the world. However, this biodiversity is under high and increasing threat, as indicated by the official list of species at risk of extinction. The degradation of national biodiversity has been observed across the country's six biomes (Amazon, Cerrado, Caatinga, Pampa, Atlantic Forest, and Pantanal), its six coastal zones, and in three sets of oceanic archipelagos and chains of underwater mountains (MMA, 2016).

Ecosystem services are often considered "public goods", meaning they are accessible to any institutional unit without excluding those who do not pay for them. Consequently, the benefits provided by ecosystem services are available equitably to all, regardless of their contribution or payment. Identifying ecosystem services as public goods brings about various challenges, leading to specific issues related to their provision, particularly concerning the phenomenon known as the "free rider problem" (CHIN, 2021). Specifically, the non-excludable nature of ecosystem services creates difficulties in valuation. Individuals and entities might refrain from contributing to their conservation, operating under the expectation that others will assume such responsibility. This situation results in a lack of economic incentives for investments in the maintenance and preservation of ecosystem services. In particular, the private sector, driven by immediate economic returns, would not have the motivation to allocate resources to the conservation of goods that are freely available.

The benefits provided by ecosystem services often manifest as long-term positive externalities whose effects, although substantial, may not be immediately apparent or quantifiable. This attribute of diffuse benefits with delayed effects can lead to the undervaluation or neglect of ecosystem services in short-term political strategies. Particularly in contexts dominated by short-term perspectives, there is a tendency to prioritise immediate gains at the expense of recognising and incorporating these extensive and enduring environmental benefits. Such a tendency is a manifestation of the "tragedy of the commons" (HARDIN, 2009), where the



effective management of shared resources is challenged by the dominance of short-term individual interests, leading to the over-exploitation and depletion of these resources. In such cases, actions driven by individual interests can lead to negative outcomes for the community at large, a phenomenon observed in relation to both natural resources and ecosystem services.

In other words, the negative externalities of natural resource exploitation are not borne by its direct beneficiaries, but the costs, sooner or later, are passed on to society as a whole. This burden manifests in various forms, including environmental degradation, biodiversity loss, and the alteration of essential natural cycles, which affect the ecosystems' ability to provide vital services for the maintenance of life and human well-being. The externalisation of costs leads to economic and social imbalances, widening disparities between those who enjoy the economic benefits in the short-term and communities that endure the negative environmental and social impacts in the long-term. The challenge, therefore, lies in developing mechanisms that promote the internalisation of these effects, ensuring that environmental and social costs are adequately reflected in economic decisions to encourage sustainable practices and the conservation of natural capital.

In the global context, the provision of ecosystem services involves additional challenges. While national governments can coordinate the provision of public goods within their borders through public policies, regulation, and taxation, global governance encounters obstacles in doing so. Global institutions often lack the legal authority and institutional capacity to impose regulations and taxes or to coordinate the needs of global citizens and future generations. A contemporary example of these challenges is found in controlling GHG emissions, which lead to climate change.

In summary, the nature of ecosystem services as public goods implies that their provision is hampered by the lack of direct incentives for private investment in their preservation, its undervaluation due to the difficulty in valuing and quantifying dispersed benefits that become evident in the long-term, and the inherent limitations of coordination and governance on a global scale. These factors underscore the challenges in implementing an integrated and collaborative approach to managing ecosystem services, which should involve public and private sectors along with civil society to ensure the preservation of these services for present and future generations.





SECTION 2

**RISKS TO  
BIODIVERSITY IN  
BRAZIL AND THEIR  
POTENTIAL EFFECTS  
AND OPPORTUNITIES  
FOR THE NATIONAL  
FINANCIAL SYSTEM**



In the Brazilian context, as well as globally, biodiversity erosion represents a major environmental crisis, posing substantial challenges for preserving natural heritage. This crisis is characterised by an alarming reduction in species diversity and the degradation of vital habitats, which threaten the integrity of ecosystems (IPCC, 2022).

The safeguarding of biodiversity in the Brazilian territory—comprising strategies, policies, and actions aimed at protecting, conserving, and restoring the country's biological diversity—faces considerable obstacles, being significantly impacted by the increase in anthropogenic activities that adversely affect natural ecosystems. The challenges include not only the need to protect species and their habitats but also to address the pressures arising from human expansion and the consequent changes in land use, which require an integrated and multifaceted approach to conservation and environmental management. The biodiversity crisis, hence, imposes significant demands for the formulation and implementation of effective policies aimed at preserving the natural balance and sustainability of Brazilian ecosystems.

Ecosystems and biodiversity in Brazil are under significant pressure, primarily due to changes in land use, a critical factor contributing to GHG emissions and the loss of natural ecosystems. In 2022, according to estimates from the System for Estimating Greenhouse Gas Emissions (SEEG), carbon dioxide equivalent (CO<sub>2</sub>e) emissions resulting from land use changes in Brazil reached 1.12 billion tons, accounting for 48% of the country's total emissions (TSAI et al., 2023). In the same year, Brazil was the sixth-largest emitter of GHG (or seventh, considering the European Union as a single entity), accounting for about 3% of global emissions. Land-use changes, including deforestation and other alterations, along with the agricultural sector, accounted for 75% of the country's GHG emissions. Much of the tropical deforestation is driven by agricultural expansion, primarily affecting the Amazon, where a substantial increase in GHG emissions is mainly explained by the advancement of livestock farming into forests. The Amazon biome's emissions were five times higher than those of the Cerrado biome in 2022, resulting from the larger deforested area and greater carbon stock in forests. Deforestation rates in the Amazon exceeded 10,000 km<sup>2</sup> between 2019 and 2022, while the Cerrado, particularly in the Matopiba region—a region that includes parts of the states of Maranhão, Tocantins, Piauí, and Bahia and is one of the country's main agricultural frontiers with increasing production of soy, corn, and cotton—saw a threefold increase in native vegetation loss (TSAI et al., 2023).

The data present a concerning scenario for biodiversity preservation in Brazil and call for the immediate adoption of effective environmental management and conservation policies to mitigate the ongoing loss of natural habitats and combat GHG emissions. The alteration and fragmentation of natural habitats, the primary risk factor for biodiversity health, result not only from converting these habitats into agricultural and urban areas but also, albeit secondarily, from frequent forest fires across various biomes. Within aquatic and coastal environments, the challenges are just as substantial, with overfishing posing a major threat to aquatic life, placing several fish and invertebrate species at risk of extinction. According to the 2014 National List of Endangered Brazilian Fauna Species (*Lista Nacional das Espécies da Fauna Brasileira Ameaçadas de Extinção*), about 9% of fish and aquatic invertebrate species are at risk of extinction, with fishing identified as the primary cause of this threat (MMA, 2016).

In addition, water pollution from industrial and domestic sources and the runoff of agricultural chemicals negatively impact the quality of water bodies and, consequently, the species that inhabit them. The construction of transport infrastructures, such as ports, and the increase in maritime traffic, combined with mining and disorganised urban development in coastal areas,



are other factors with adverse effects on marine biodiversity. Other significant risk factors include activities such as aquaculture, the introduction of invasive exotic species, and the destruction of critical ecosystems like coral reefs, estuaries, and mangroves (MMA, 2016).

The growing environmental degradation represents a scenario of both environmental and economic concern that transcends national borders. The World Bank estimates losses of about 46 million hectares of natural land worldwide between 2021 and 2030 under the premise of continuing current practices, a scenario designated as Business as Usual (BAU). This area is slightly larger than the territorial extent of Sweden and 29% larger than that of Germany. The loss is driven mainly by conversion to managed forest lands (17 million hectares), pastures (15 million hectares), and agricultural lands (13 million hectares). The greatest loss of natural lands is estimated to occur in Sub-Saharan Africa (20 million hectares), followed by Latin America and the Caribbean (12 million hectares). Specifically, Brazil is expected to lose 6.5 million hectares, mainly to pastures and agricultural lands. In sectors that directly depend on ecosystem services, global production could be reduced by 8% (equivalent to USD 602 billion) by 2030. The model also analysed potential disruptions in the production of agriculture, livestock, forestry, and fisheries sectors. The largest national losses, measured in monetary values, are expected to occur in China (9% or USD 194 billion), India (6% or USD 46 billion), the United States (8% or USD 41 billion), Brazil (15% or USD 36 billion), and the European Union (5% or USD 28 billion) (JOHNSON et al., 2021).

A scenario of ecosystem service collapse could have widespread consequences for national and global economic growth, with specific impacts on key sectors. Considering a scenario of collapse of crucial ecosystem services, the cumulative growth of global GDP between 2021 and 2030 would face an estimated loss of USD 2.7 trillion (2.4%) (CALICE; KALAN; MIGUEL,



2021; JOHNSON et al., 2021). In sectoral terms, the impacts would be widespread. In the case of Brazil, agriculture, which directly contributed to 6.8% of the GDP in 2022<sup>5</sup>, would be heavily affected. This activity intrinsically depends on services at risk such as pollination, maintenance of water quality, natural pest control, and soil fertility. Furthermore, livestock farming would suffer losses due to the degradation of pastures and water resources. The fishing and aquaculture sector, in turn, would face impacts due to its direct dependence on the health of aquatic ecosystems. Tourism, which contributed to 8.1% of the GDP, would also be severely affected, especially in regions dependent on ecological tourism and biodiversity, like the Amazon, Pantanal, and coastal areas. The timber and pulp industry, which accounted for 6.1% of the GDP, would suffer from a scarcity of timber resources and a loss of quality of these inputs. The energy sector, particularly hydropower—a significant part of the Brazilian energy matrix—would also face challenges due to changes in water regimes. Additionally, the pharmacology and biotechnology sectors, although not among the largest contributors to the GDP, would be impacted by limitations in access to new genetic and biochemical resources, which are essential for developing new medications and biotechnological products.

Considering the diversity of biomes and the socioeconomic specificities of each region in the Brazilian territory, the deterioration of ecosystem services may exacerbate regional inequalities. The collapse of these services would disproportionately affect the regions most dependent on natural resources, such as the Amazon, the Pantanal, and coastal areas, which are decisive for biodiversity, tourism, agriculture, and fisheries. Agriculture, which is crucial across the entire territory and particularly vital for the economy of the Midwest, would face severe impacts due to the loss of ecosystem services such as pollination and natural pest control, compromising productivity and, consequently, economic sustainability. Such events would induce internal migrations as populations seek alternatives in less affected regions, potentially intensifying the pressure on urban services and structures already saturated in major centres. These effects underscore the need for an integrated and multisectoral approach in public policy planning intended to alleviate environmental impacts and promote a green transition that considers regional vulnerabilities and potentialities.

The aforementioned observations underscore a strong connection between ecosystem health and Brazil's economic stability and growth. The collapse of ecosystem services would not only lead to an environmental crisis but would also trigger a chain of negative economic impacts in crucial sectors of the Brazilian GDP, thereby assuming a macroeconomic dimension. In particular, macroeconomic health<sup>6</sup> directly influences the quality of the credit market, with repercussions on financial stability. Therefore, the current trajectory of biodiversity loss could represent a systemic risk to the financial sector. The deterioration of companies' assets dependent on ecosystem services and the increase in default rates could lead to financial institutions' liquidity and even solvency crises. This process is self-reinforcing: economic uncertainty and instability would trigger liquidity contraction, impacting credit quality and increasing risk aversion that would negatively affect an already weakened production system. Biodiversity erosion, hence, can have direct and escalating implications for the economy, being increasingly recognised as a significant source of financial risk.

5. Estimates of sectoral contributions to the Brazilian GDP were extracted from the IBGE's System of Quarterly National Accounts.

6. "Macroeconomic health" refers to the overall state of an economy expressed in economic and financial indicators. Without being exhaustive, these indicators include the output growth rate, the inflation rate, the employment level, the unemployment rate, the fiscal result, the trajectory of public debt in relation to GDP, and the balance of goods and services. An economy is considered healthy when it exhibits economic growth, controlled inflation, moderate unemployment rates, and balance in public and external accounts. Effective macroeconomic policies play a crucial role in promoting macroeconomic health.

The relationship between biodiversity and the financial sector can be characterised by a "double materiality." On the one hand, changes in the stock and conditions of natural capital alter its ability to provide goods and services on which business activities rely, thus influencing the assessment of risks and profitability of companies. On the other hand, financial institutions can have adverse impacts on biodiversity and ecosystem services through their operations and financing decisions. Such circumstances translate into traditional credit, market, operational, liquidity, and reputational risks for financial institutions, which can create a vicious cycle for the economy. The various nature-related risks entail systemic implications due to the complexity, interdependence, and interconnectedness that characterize the financial system (BOLTON et al., 2020; CALICE; KALAN; MIGUEL, 2021). It is worth noting that the transmission of these risks to the financial sector is subject to significant uncertainty. Despite progress in measuring the impact of the financial sector on biodiversity at a conceptual level, the estimation of financial exposures to risks of biodiversity loss remains largely unexplored in the literature.

The loss of biodiversity can impact the financial system through two main channels. The first channel is that of physical risks related to nature, referring to the financial impact of changes in the natural capital. The loss and degradation of ecosystem services can damage fixed assets and infrastructure, and disrupt supply chains and business operations, causing losses for companies, and consequently, for financial institutions. Physical risks can be acute, such as the interruption of activities due to infectious diseases, or chronic, such as reduced soil fertility for agricultural cultivation. The banking sector exposes its balance sheets to physical risks due to providing credit to companies whose production processes depend on ecosystem services. Another channel is that of nature-related transition risks, resulting from the expected



adjustment process towards a more sustainable economy. In this case, the losses would originate from social changes with political ramifications. They could be triggered, for example, by the adoption of more stringent biodiversity-related regulations and policies, technological progress, changes in market sentiments and preferences, and litigation and reputational damage (CALICE; KALAN; MIGUEL, 2021; CARNEY, 2015, 2018; TNFD, 2023).

In addition to these two main risks, the financial system is subject to reputational risk. Such risk stems from the financing of projects with negative environmental impacts, particularly in situations that attract public attention, such as major deforestation or oil spills. Growing awareness of such risks is shaping investment decisions in the global financial landscape. In Brazil, large corporations have been pressured by investors and banks to mitigate risks associated with deforestation and to develop specific action plans (CALICE; KALAN; MIGUEL, 2021).

In 2020, Brazilian banks lent BRL 811 billion to companies whose businesses are highly dependent on one or more ecosystem services (CALICE; KALAN; MIGUEL, 2021), corresponding to 20% of the country's loan portfolio. It is estimated that 46% of the corporate credit portfolio and 20% of the total credit of the national financial system would be subject to potential financial losses due to a disruption of ecosystem services. According to Calice, Kalan and Miguel (2021), earmarked credit is marginally more exposed to the risk of biodiversity loss than non-earmarked credit (48.5% vis-à-vis 45%). The most exposed economic sectors linked to ecosystem services include utilities, manufacture of food products, and building construction, which together represent 18% of the total credit portfolio to non-financial corporates. Loss of flood and storm protection, mass stabilisation, erosion control, and water flow also present important physical risks. Brazilian banks allocate 8% of their corporate credit portfolio to economic sectors highly dependent on ecosystem services that provide flood and storm protection. Accounting for medium materiality ratings, ecosystem services for protection against floods and storms exhibit the greatest dependence among all services assessed; followed by services for erosion control and mass stabilisation, and for water flow maintenance.

There is a growing recognition that the financial sector is significantly exposed to nature-related financial risks and needs to contribute to tackling problems associated with environmental issues. In this light, it is important to highlight the Kunming-Montreal Global Biodiversity Framework, consolidated in December 2022, which represents a significant progress in the fight against biodiversity loss and holds an equivalent role to that of the Paris Agreement within the realm of climate change. This new framework stands out from its predecessors by adopting an approach that involves all segments of society, with particular emphasis on the financial sector. One of the key objectives is to ensure the adequate allocation of financial resources for its implementation, especially in developing countries, aiming to reduce the annual financial gap of USD 700 billion that should be allocated to biodiversity (UNEP FI, 2023).

The Global Biodiversity Framework sets specific targets for the financial system. These targets require policies and regulations that favour the alignment of financial flows with its objectives; demand that large companies and financial institutions carry out continuous monitoring, assessment, and transparent disclosure of risks, dependencies, and impacts on biodiversity; and call for an increase in financial resources from all sources, including the promotion of private investment in biodiversity through impact funds and other instruments. Additionally, the Framework includes strategic decisions about resource mobilisation and monit-



oring, with significant implications for the global financial architecture, particularly regarding multilateral development banks and public financing. The reporting of private financial flows related to biodiversity is also a critical component of this process (UNEP FI, 2023).

Similarly, in the effort to incorporate biodiversity-related considerations into the financial decision-making process, it is important to mention the Taskforce on Nature-related Financial Disclosures (TNFD), established in 2021 following the success and based on the framework of the Taskforce on Climate-related Financial Disclosures (TCFD). The TNFD provides a framework for companies and financial institutions to assess, manage, and report their nature-related risks and opportunities, serving as a set of tools to evaluate nature as a financial asset and manage biodiversity-related risks (TNFD, 2023).

The TNFD's recommendations align with global policy objectives and international sustainability reporting standards, grounded in scientific bases and designed to enable organisations across different jurisdictions to start their disclosure actions immediately and expand their disclosure ambition over time. Key highlights include four pillars of disclosure based on the TCFD recommendations and are consistent with the Sustainability Disclosure Standards of the International Sustainability Standards Board (ISSB). The recommendations also support the integration of climate and nature reporting and incorporate related impacts, risks, and opportunities, aligning with the goal of disclosing dependencies, impacts, and risks as envisioned in the Global Biodiversity Framework (TNFD, 2023).



SECTION 3

THE CURRENT STATE OF  
BIODIVERSITY-RELATED POLICIES  
AND SUSTAINABLE FINANCE IN  
BRAZIL I:  
**REGULATION AND  
PUBLIC POLICIES**

This section addresses the regulation and public policies related to biodiversity-associated risks and sustainable finance in Brazil. The main public policy instruments for biodiversity preservation encompass various approaches to restoring and conserving ecosystems that perform essential functions. Key Brazilian references include: (a) the Constitution of the Federative Republic of Brazil; (b) the National Environmental Policy (*Política Nacional do Meio Ambiente*); (c) the National Biodiversity Policy (*Política Nacional de Biodiversidade*); (d) the Legal Framework of Biodiversity (*Marco Legal da Biodiversidade*); (e) the Brazilian Forest Code (*Código Florestal*), including the Rural Environmental Registry (*Cadastro Ambiental Rural - CAR*) and the Environmental Regularisation Programme (*Programa de Regularização Ambiental - PRA*); (f) the National Policy for the Recovery of Native Vegetation (*Política Nacional de Recuperação da Vegetação Nativa*); (g) resolutions and other normative acts of the National Monetary Council (*Conselho Monetário Nacional - CMN*) and the Central Bank of Brazil (*Banco Central do Brasil - BCB*); (h) the National Policy for Payment for Environmental Services (*Política Nacional de Pagamento por Serviços Ambientais*); and (i) the Ecological Transformation Plan (*Plano de Transformação Ecológica*).

The most general and hierarchically superior normative framework that addresses environmental issues is the **Constitution of the Federative Republic of Brazil**, enacted on October 5, 1988. The Constitution includes a specific chapter on this topic (Chapter VI of Title VIII), consisting of Article 225. The opening paragraph (*caput*) of this article states:

“Everyone has the right to an ecologically balanced environment, which is an asset of common use of the people and essential to a healthy quality of life, and both government and community shall have the duty to defend and preserve it for present and future generations”.

The Constitution establishes common competence for the Union, the States, the Federal District and the Municipalities to "protect the environment and combat pollution in any of its forms" (art. 23, VI) and "preserve forests, fauna and flora" (art. 23, VII).

A few years before promulgating the 1988 Federal Constitution, the National Congress approved the **National Environmental Policy** (*Política Nacional do Meio Ambiente - PNMA*) through Law No. 6,938, dated August 31, 1981. Article 2 lists the ten principles that guide the policy, among which are "government action to maintain ecological balance, considering the environment as a public asset that must necessarily be assured and protected, with a view to collective use" (clause I) and "protection of ecosystems, with the preservation of representative areas" (clause IV). The law established the National Environment System (*Sistema Nacional do Meio Ambiente - Sisnama*) and the Federal Technical Registry of Activities and Defensive Environmental Instruments (*Cadastro Técnico Federal de Atividades e Instrumentos de Defesa Ambiental*), outlining the principles, objectives, instruments, and organisational structure necessary for effective environmental management. Its objectives include the reconciliation of socio-economic development with the conservation of the environment and ecological balance, the definition of priority areas for governmental action, the establishment of environmental quality criteria and standards, the encouragement of environmental research and technology, among others (Article 4). Law No. 6,938 has been amended and regulated by various subsequent norms.

At the beginning of the 21st century, principles and guidelines for implementing the **National Biodiversity Policy** (*Política Nacional da Biodiversidade - PNB*) were established in Decree No. 4.339, dated August 22, 2002. This pioneering initiative was directly based on the Conven-



tion on Biological Diversity (*Convenção sobre Diversidade Biológica* - CBD), signed at the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro in 1992. The CBD is an international treaty with three main objectives: the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising from the utilisation of genetic resources. The country's accession to this treaty was regulated by Decree No. 2.519, dated March 16, 1998.

Decree No. 4,339 lists 20 principles to be observed (Annex, 2), taking as its first principle that "biological diversity has intrinsic value, deserving respect regardless of its value to humans or potential for human use." The general objective of the PNB, aligned with the CBD, is to promote the conservation of biodiversity, the sustainable use of its components, and the fair and equitable sharing of benefits derived from the use of genetic resources. To achieve this general objective, general and specific guidelines are defined, covering aspects ranging from the knowledge and conservation of biodiversity to education, raising public awareness, and reinforcing the legal and institutional frameworks for managing biodiversity. Implementing the policy requires integrated actions from federal, state, and municipal governments as well as civil society, international cooperation, and the strengthening of the national legal framework.

In 2015, the National Congress passed a general framework that constitutes a policy for biodiversity rather than just guidelines for its implementation. The **Legal Biodiversity Framework** (*Marco Legal da Biodiversidade*), established by Law No. 13,123, dated May 20, 2015, regulates access to genetic heritage and traditional knowledge associated to biodiversity, as well as the sharing of benefits for the conservation and sustainable use of biodiversity. As such, it reflects the principles of the CBD and aims to integrate them effectively into national legislation aiming to boost the bioeconomy through incentives for the research and development of products based on Brazilian biodiversity sustainably and fairly. The law also addresses access to genetic heritage, referring to research and technological development on genetic material samples from various species. Moreover, it protects the knowledge or practices of indigenous populations, traditional communities, and traditional farmers related to the use of genetic heritage by requiring prior informed consent for access to this heritage. A central aspect of the Legal Biodiversity Framework is the sharing of benefits, determining that profits obtained from the economic exploitation of products developed from access to genetic heritage or tra-



ditional knowledge must be shared fairly and equitably. This may include monetary and non-monetary compensations, such as implementing conservation projects. To ensure compliance with regulations, activities related to accessing genetic heritage and associated traditional knowledge and exporting genetic samples require registration or prior authorisation.

Additionally, the Legal Biodiversity Framework (*Marco Legal da Biodiversidade*) created the National Benefit-Sharing Fund (*Fundo Nacional para a Repartição de Benefícios* - FNRB) to support the conservation of biodiversity and the sustainable use of genetic resources and associated traditional knowledge. In July 2023, its Management Committee approved the Operational Manual of the National Fund for Benefit-Sharing (*Manual de Operações do Fundo Nacional para a Repartição de Benefícios*), which establishes procedures for managing resources from various sources, including benefit-sharing, donations, international financial resources, budget allocations, and administrative fines related to the Biodiversity Law. The beneficiaries of the Fund's resources are indigenous populations, communities, traditional farmers, and their grassroots organisations (MMA, 2023).

The **Brazilian Forest Code** (*Código Florestal*) is another significant piece of legislation for biodiversity protection. It was established by Law No. 12,651, dated May 25, 2012, which replaced the forestry legislation 1965. This legislative milestone is crucial in Brazil's environmental management and land use, having introduced innovations and mechanisms to preserve, conserve, and recover forests and other forms of native vegetation. It set guidelines for protecting native vegetation – including Permanent Preservation Areas (*Áreas de Preservação Permanente* - APPs) and Legal Reserves – and regulated the exploitation of forest resources and the use of restricted areas. APPs are protected areas, covered by native vegetation or not, with the environmental function of preserving water resources, landscapes, geological stability, and biodiversity, facilitating the gene flow of fauna and flora, protecting the soil, and ensuring the well-being of human populations. Legal Reserves, on the other hand, are areas located within rural properties designated for the sustainable use of natural resources and biodiversity conservation.

The Brazilian Forest Code identifies and regulates existing consolidated rural areas up until July 22, 2008, setting guidelines for their environmental regularisation. These guidelines encompass implementing good agricultural practices, processes of environmental reconstitution and compensation, and using other legal instruments that promote the sustainable management of native vegetation. Additionally, the Code establishes special norms for small farmers and owners of small rural properties. In such cases, the legislation provides differentiated criteria for the regularisation of APPs and Legal Reserves, taking into account property size (EMBRAPA, n.d.).

The Brazilian Forest Code also establishes the **Rural Environmental Registry** (*Cadastro Ambiental Rural* - CAR) and the **Environmental Regularisation Programme** (*Programa de Regularização Ambiental* - PRA). The CAR is a public, electronic, and mandatory registry for all rural properties, aimed at integrating environmental information related to the status of the APPs, Legal Reserve areas, forests, and other forms of native vegetation, as well as restricted use areas. It thus consolidates data for control, monitoring, environmental and economic planning, and for combating deforestation.

The CAR sets the criteria for maintaining native vegetation on rural properties, including APPs, Legal Reserves, and restricted use areas. The management of the CAR is carried out by the National System of Environmental Information (*Sistema Nacional de Informação sobre Meio*





*Ambiente - Sinima*), and the responsibility for registration lies with the owners or holders of rural properties. Registration in the CAR is free and must be updated after changes in the information of the rural property.

The PRA, in turn, focuses on the regularisation of rural properties related to their environmental obligations, as established by the new Forest Code. The programme targets rural owners who need to adapt their lands to environmental regulations, especially in terms of recomposition, compensation, or regeneration of areas that are not in compliance with the legislation. The PRA is implemented by the states and is based on the information provided by the owners through the CAR. After registering in the CAR, the rural owner must adhere to the PRA to regularize the Legal Reserve areas, APPs, and restricted use areas that are in an irregular situation.

The Forest Code may have implications for the financial sector. Firstly, rural property owners located in buffer zones of Conservation Units are eligible to receive technical and financial support for the recovery and maintenance of priority areas. This support aims to promote sustainable natural resource use practices and biodiversity conservation, aligned with the Brazilian environmental legislation, particularly with the National System of Conservation Units (*Sistema Nacional de Unidades de Conservação da Natureza - SNUC*), established by Law No. 9,985, dated July 18, 2000. The main types of support include the following: Payment for Environmental Services (*Pagamento por Serviços Ambientais - PSA*) programmes; rural credit, such as the Low Carbon Agriculture Programme (*Agricultura de Baixa Emissão de Carbono - Programa ABC*); free or subsidised technical assistance for implementing sustainable agricultural practices, recovering degraded areas, and sustainable forest management; state and municipal tax incentives; and technical and financial support for the environmental regularisation of rural properties, including registration in the CAR and adherence to the

PRA. The availability and specific requirements of these supports can vary significantly according to state and municipal legislation and the specific policies of each Conservation Unit.

Secondly, the government can institute support programmes and financial incentives, including credit lines, to promote sustainable practices, especially in small-scale properties. These incentives represent an opportunity for financial institutions to develop specific products that meet the needs of these owners. Third, the Code has implications for the assessment of environmental risks by financial institutions, especially regarding the financing of activities related to logging, given that borrowers who do not comply with its requirements face legal and operational risks that affect their eligibility for financing. Compliance with the Forest Code can influence public perception of a company's corporate responsibility, impacting its reputation and relationship with investors.

The Rural Environmental Registry (*Cadastro Ambiental Rural* - CAR) is important in agricultural financing. Modifications to the Rural Credit Manual (*Manual de Crédito Rural* - MCR) have conditioned the granting of credit to the agricultural sector to the registration of the property in the CAR as of January 1, 2019. In addition, the Agricultural Activity Guarantee Programme (*Programa de Garantia da Atividade Agropecuária* - Proagro) guarantees these loans against damage caused by adverse weather events or outbreaks of diseases and pests. In other words, the CAR is an important factor in financial institutions' risk analysis and investment management, reinforcing that agricultural practices are aligned with environmental legislation.

Another important milestone for environmental conservation was the definition of the **National Policy for the Recovery of Native Vegetation** (*Política Nacional de Recuperação da Vegetação Nativa* - Proveg), established by Decree No. 8,972, of January 23, 2017, to guide and coordinate efforts for the recovery and regeneration of degraded or altered natural ecosystems.<sup>7</sup> One of the main objectives of Proveg is to restore and recover millions of hectares of native vegetation throughout the Brazilian territory in accordance with goals established in international agreements on environmental conservation and climate change, such as the Paris Agreement and the Convention on Biological Diversity. Its implementation includes the mapping of priority areas for restoration, the development of recovery techniques and methodologies, the promotion of economic incentives for the recovery of ecosystems, and the integration of efforts between different sectors and levels of government. In addition, it seeks to involve civil society, the private sector, and local communities, fostering a participatory and collaborative approach. Proveg also creates opportunities for financing projects that recover native vegetation. Financial institutions, both public and private, can offer specific credit lines for projects that align with its policy objectives. This includes the restoration of degraded areas, reforestation, and other activities that contribute to the recovery and preservation of biodiversity. In the financial system, the initial milestone for the incorporation of sustainable practices in finance was the adoption of BCB Resolution No. 4,327, of April 25, 2014, which published the guidelines defined by the National Monetary Council (*Conselho Monetário Nacional* - CMN) to be observed in the establishment and implementation of the

7. Objectives for the recovery and conservation of degraded areas and for the environmental regularisation of rural properties are set both in Proveg, as well as in the Environmental Regularisation Programme (*Programa de Regularização Ambiental* - PRA) and in the Rural Environmental Registry (*Cadastro Ambiental Rural* - CAR). While the PRA and CAR provide the framework for the environmental regularisation of rural properties, Proveg provides guidelines and incentives for actions to recover native vegetation, which can be implemented as part of environmental regularisation efforts. Actions and incentives within the scope of Proveg can be applied in areas of rural properties regulated by the CAR and the PRA, as well as in areas outside the scope of the PRA. In this sense, Proveg, CAR and PRA are interdependent and complement each other.





**Social and Environmental Responsibility Policy** (*Política de Responsabilidade Socioambiental - PRSA*) by financial institutions (BCB, 2014). Years later, this regulation was updated and transformed into the **Social, Environmental and Climate Responsibility Policy** (*Política de Responsabilidade Social, Ambiental e Climática - PRSAC*) through CMN Resolution No. 4.945, of September 15, 2021 (BCB, 2021). The PRSAC reflects the evolution in the regulator's expectations and responsibilities of financial institutions in relation to social, environmental and, now, climate issues.

The pioneering PRSA had established principles and guidelines to steer the adoption of responsible social and environmental practices by financial institutions, covering both their business operations and relationships with stakeholders, such as customers, employees, and the community impacted by their operations. The PRSA was to be integrated into the institution's governance, with adequate structures to implement, monitor, evaluate, and continuously improve social and environmental actions. One of the central components of the PRSA was the management of socio-environmental risk, that is, the management of the "possibility of losses (...) resulting from socio-environmental damage" (BCB Resolution No. 4.327, art. 4). This management required systems, routines, and procedures to identify, classify, evaluate, monitor, mitigate, and control risks related to social and environmental damage, and should consider the potential negative impacts of new products and services and be prepared for changes in the legal and regulatory environment. The resolution also encouraged the creation of social and environmental responsibility committees with advisory functions to monitor, evaluate, and propose improvements to the PRSA. The composition of these committees should be transparent and could include members external to the financial institution. In addition, institutions should establish specific risk assessment criteria for operations related to economic activities with a high potential to cause social and environmental damage. An action plan to implement the PRSA should be formulated and approved by the board of directors and, where applicable, by the governing board. The resolution also required the institutions to designate a director responsible for compliance with the PRSA, formalise the policy, and ensure its internal and external disclosure. All documentation related to PRSA should be accessible to the Central Bank of Brazil. The PRSA standard was complemented by BCB Resolution No. 4,557, of February 23, 2017, whose object was the implementation of robust and **integrated risk management and capital management** structures congruent with the business model, the nature of operations and the complexity of the institution's products, services, activities and processes (BCB, 2017). Institutions were urged to take a forward-looking approach to risk and capital management. This entailed the need for a continuous assessment of risks, including, but not limited to, credit, market, operational, liquidity and social and environ-

mental risks. The resolution also emphasised the need for a risk management framework to identify, measure, evaluating, monitoring, reporting, controlling, and mitigating these risks. The integrated, forward-looking approach required by the standard reflected a broader and deeper understanding of risks, including those related to the environment. Some adjustments to the regulation were soon made in accordance with BCB Resolution No. 4,745, of August 29, 2019.

In 2021, the National Monetary Council approved CMN Resolution No. 4,945, of September 15, establishing the **Social, Environmental and Climate Responsibility Policy** (*Política de Responsabilidade Social, Ambiental e Climática - PRSAC*) and repealing Resolution No. 4,327 (PRSA). The PRSAC became more comprehensive than its predecessor by bringing together a set of principles and guidelines on social, environmental and climate aspects in the operations of financial institutions, emphasising their responsibilities regarding fundamental rights, environmental preservation, environmental repair and restoration, contribution to the low-carbon economy and reduction of the impacts of climate change. In particular, it is worth noting the definitions presented in Article 3. Principles and guidelines of an environmental nature refer to "the preservation and repair of the environment, including its recovery, when possible" (item III), while those of a climatic nature relate to "the positive contribution of the institution: (a) in the transition to a low-carbon economy, in which the emission of greenhouse gases is reduced or offset and the natural mechanisms for capturing these gases are preserved; and (b) the reduction of impacts caused by frequent and severe weather or by long-term environmental changes, which may be associated with changes in weather patterns" (item IV).

Stakeholders comprise customers, employees, suppliers, investors, and others impacted by the institution's activities. Financial institutions should also continuously monitor and evaluate their actions to ensure the effectiveness of the PRSAC. Each institution affected by the standard must designate a director responsible for compliance with the resolution, with specific duties, including the implementation and improvement of the PRSAC.

In order to adapt the rule on risk management to the enactment of the PRSAC, the National Monetary Council also extended the rules of the **Social, Environmental and Climate Risk and Opportunities Management Policy** (*Gerenciamento de Riscos e Oportunidades Sociais, Ambientais e Climáticas - GRSAC*) by providing, in accordance with CMN Resolution No. 4,943, of September 15, 2021, the categories of environmental, climate, and social risk, all defined in the body of the same regulation, and make arrangements for its monitoring and mitigation. Also, in the same line of adaptations to the PRSAC, BCB Resolution No. 139, of September 15, 2021, provided for the disclosure of the Social, Environmental and Climate Risks and Opportunities Management Report (*Relatório de Gerenciamento de Riscos e Oportunidades Sociais, Ambientais e Climáticas - GRSAC*), listing topics associated with social, environmental and climate risk that must be addressed in the report of each financial institution. Besides, the BCB Normative Instruction No. 153 of September 15 defined standardised tables for the purposes of disclosing the Report. The GRSAC Report in open data format will be required from December 2024. Finally, in the context of the regulations, they are aligned with the recommendations of the TCFD.

Regarding the most recent regulations of the Central Bank of Brazil that are directly related to environmental and biodiversity issues, BCB Resolution No. 204 of March 22, 2022, and BCB Normative Instruction No. 406 of July 31, 2023, deserve mention. Resolution No. 204 established the **System of Consultation and Authorisation for Access to Rural Credit Operations** (*Sistema de Consulta e Autorização de Acesso às Operações de Crédito Rural - CACR*), which al-



allows rural producers to give third parties access to information on their credit operations in the Rural Credit Operations System (*Sistema de Operações do Crédito Rural*) and in the Agricultural Activity Guarantee Programme (*Programa de Garantia da Atividade Agropecuária - Proagro*). In accordance with the principle of open finance, the measure increases transparency and allows for a better assessment of resource providers, including entities outside the traditional financial system, regarding compliance with social, environmental, and climate criteria in the use of rural credit (BCB, 2022). As for Normative Instruction No. 406, it established guidelines for financial institutions regarding the **acquisition of gold**, including the suspension of the presumption of legality of the gold acquired and the presumption of good faith of the legal purchaser as part of the regulatory framework for the commercialisation of gold. This measure could mitigate deforestation associated with illegally mining the metal (BCB, 2023a).

In addition to issuing specific regulations, the Central Bank of Brazil (Banco Central do Brasil - BCB) has also demonstrated its commitment to promoting sustainable finance and effectively managing social, environmental and climate risks through other initiatives, including its own operations. This commitment is expressed by the **BC#Sustainability Agenda** (*Agenda BC#Sustentabilidade*), launched in September 2020, which is characterised as a dynamic instrument to incorporate sustainable variables into the institution's decision-making process (BCB, 2023b). Initiatives under this agenda emphasise promoting a balance between human activities and the environment. The BCB advocates that climate and environmental challenges also offer significant opportunities in addition to risks. In this sense, it assesses that Brazil would be well positioned to benefit from the transition to a low-carbon economy due to its environmental and climatic diversity, advanced technology applied to agriculture and livestock, and an efficient financial system. At the international level, the BCB joined the Network for Greening the Financial System (NGFS) in March 2020 and became a member of its Steering Committee in January 2022. NGFS is a collaborative network of central banks worldwide that promotes a greener financial system. It seeks to identify and quantify risks and opportunities for effective actions that reduce inequalities and balance economic activity and nature (BCB, 2023b).

Another BCB initiative is related to increased transparency in rural credit operations, with expected environmental impacts. In 2023, the BCB and the Brazilian Institute of the Environment and Renewable Natural Resources (*Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis - Ibama*) signed a Technical Cooperation Agreement aimed at sharing data from rural credit operations and Proagro, as well as from databases managed by Ibama. This agreement is part of the initiatives for developing the Green Credit Bureau (Bureau de Crédito Verde), which will assist in preventing and prosecuting environmental violations through Ibama and reinforce environmental compliance in rural credit concessions. The increase in the effectiveness of rural credit supervision will be possible through the cross-analysis of information provided by both institutions.



Moreover, the BCB has sought to improve the evaluation and supervision of socio-environmental risks and to enhance the assessment of social, environmental and climate-related risks (*Riscos Sociais, Ambientais e Climáticos* - RSAC) in the Risk and Control Assessment System (*Sistema de Avaliação de Riscos e Controles* - SRC). The BCB seeks to estimate the effects of social, environmental and climate-related risks on the economy and the national financial system by developing structured macroeconomic models to address climate issues and generating macroeconomic scenarios as input for financial stability stress tests.

Regarding recent public policy initiatives, the National Policy for Payment for Environmental Services (*Política Nacional de Pagamento por Serviços Ambientais*) and the Ecological Transformation Plan (*Plano de Transformação Ecológica*) stand out. The **National Policy for Payment for Environmental Services** was established by Law No. 14,119, of January 13, 2021, and represents a significant milestone in Brazilian environmental legislation. It defines and regulates ecosystem services – such as provision, regulation, support and cultural services – and establishes a mechanism for voluntary payment for these services. This creates opportunities for the financial sector in developing products and services aimed at environmental investments. For example, the legislation opens up space for the creation of green bonds and other financial instruments that can finance environmental conservation and recovery projects. In addition, it fosters the market for environmental services, which financial institutions can exploit to expand their sustainable investment portfolios.

The National Policy for Payment for Environmental Services also introduced the **National Registry of Payment for Environmental Services** (*Cadastro Nacional de Pagamento por Serviços Ambientais* - CNPSA) and the **Federal Programme for Payment for Environmental Services** (*Programa Federal de Pagamento por Serviços Ambientais* - PFPSA). The CNPSA serves as a centralised database that records payment contracts for environmental services, potential areas, and the respective services provided, as well as gathers methodologies and data for the valuation of environmental assets. It represents a useful tool for the financial sector by providing information for evaluating and monitoring environmental investments. The transparency and accessibility of the CNPSA allow financial institutions to identify and evaluate investment opportunities in environmental projects, facilitating the allocation of resources to sustainable initiatives.

The PFPSA aims to implement the policy about the payment for environmental services by the Union, which is managed by the central body of the National Environmental System (*Sistema Nacional do Meio Ambiente* - Sisnama). This programme paves the way for government funding of projects promoting ecosystem conservation and restoration. It also provides a framework for the financial sector to actively participate in financing strategic environmental actions, such as biodiversity conservation and sustainable water resources management. The PFPSA prioritises services provided by traditional communities, indigenous peoples, and family farmers, encouraging investment in areas that can generate significant social and environmental benefits.

In summary, these two mechanisms of the National Policy for Payment for Environmental Services (*Política Nacional de Pagamento por Serviços Ambientais*) – CNPSA and PFPSA – provide the national financial system with tools to incorporate environmental considerations into operations. They offer a foundation for creating innovative financial products, such as environmental services investment funds and green bonds, to finance environmental conservation and restoration projects. Furthermore, tax incentives associated with payment for environmental services could enhance the attractiveness of these investments to the private sector.



Brazil's **Ecological Transformation Plan** (*Plano de Transformação Ecológica*) was presented by Finance Minister Fernando Haddad at the 28th Conference of the Parties (COP28) to the United Nations Framework Convention on Climate Change (UNFCCC), held in Dubai in December 2023 (MF, 2023a). The plan embodies a comprehensive and transversal approach to foster sustainable development, aiming to simultaneously drive economic growth, enhance productivity and employment, ensure environmental sustainability, and promote social justice.

The plan is structured around six main thematic axes, each currently in different stages of implementation and development. The first axis is that of "Sustainable Finance". It focuses on developing a regulated carbon market, the innovative issuance of sustainable sovereign bonds and creating a national taxonomy for sustainable finance. The second axis is "Technological Densification," which aims to broaden technological integration and innovation in the productive sectors. The third axis, "Bioeconomy", encompasses the National Fertilizer Plan (*Plano Nacional de Fertilizantes*), which aims to strengthen the competitiveness of fertiliser production and distribution in Brazil. The fourth axis, "Energy Transition", highlights Brazil's potential to lead the transition to clean energy, emphasising projects such as the electrification of bus fleets and the "Sun for All" (*Sol para Todos*) Programme. The fifth axis, "Circular Economy", aims to intensify efforts to promote circularity in the Brazilian economy. Lastly, the sixth axis, "Infrastructure and Climate Adaptation", is dedicated to developing public policies and programmes to adapt local infrastructure to climate change and mitigate the effects of natural disasters. To achieve the objectives identified within these axes, the plan will employ five main instruments – financial, fiscal, regulatory, administrative, and operational – and a monitoring and enforcement system (MF, 2023b).

In the "Sustainable Finance" axis, creating a **Brazilian Sustainable Taxonomy** has gained prominence. One of the distinctive features of the Brazilian taxonomy is the explicit inclusion of soil protection among its central objectives, similar to the Colombian taxonomy. This approach underscores the unique importance of biodiversity for Brazil, the most biodiverse country in the world, and reinforces the need to protect and restore ecosystems and biodiversity (MF, 2023b). The inclusion of biodiversity in the taxonomy is not limited to climate change mitigation and adaptation considerations. It directly addresses the loss of biodiversity due to factors such as changes in land use, pollution, and invasive species, emphasising the urgency of concrete actions for conservation, sustainable management, and ecosystem restoration.

The emphasis placed on biodiversity in the Sustainable Taxonomy of Brazil acknowledges its critical importance for the economy and social well-being. This taxonomy will provide a reference framework for identifying sustainable investments, helping national and international investors to efficiently allocate capital to projects and companies that support biodiversity conservation and sustainable use. It will also promote transparency and accountability in financial practices, allowing investments to be assessed based on well-defined sustainability criteria. In addition, the taxonomy will stimulate innovation in sectors such as biotechnology, sustainable agriculture, and renewable energy. It will also assist in identifying risks related to biodiversity loss and climate change, empowering financial institutions to develop more resilient strategies.

Adopting a taxonomy prioritising biodiversity puts Brazil in line with global trends in sustainability and environmental, social and climate responsibility. This can increase the country's attractiveness to international investors interested in sustainable and responsible opportunities. The taxonomy also deals with social issues, contributing to more equitable social development. This integrated approach reiterates Brazil's commitment to important international agreements, such as the Paris Agreement and UN Sustainable Development Goals, reinforcing its sustainability and environmental management position.



SECTION 4

**CURRENT STATE OF POLICIES  
RELATED TO BIODIVERSITY AND  
SUSTAINABLE FINANCE IN BRAZIL II:  
POSITIONING OF  
FINANCIAL  
INSTITUTIONS**



This fourth section is dedicated to identifying the strategies and policies of national financial institutions considering the risks of biodiversity loss and investment opportunities in sustainable solutions related to biodiversity conservation. The lack of consolidated data based on the ownership type (private or public) or other characteristics of financial institutions required the analysis of individual cases. For this purpose, the following institutions were selected: National Bank for Economic and Social Development (*Banco Nacional de Desenvolvimento Econômico e Social - BNDES*), Regional Development Bank of the Extreme South (*Banco Regional de Desenvolvimento do Extremo Sul - BRDE*), Development Bank of Minas Gerais (*Banco Regional de Desenvolvimento do Extremo Sul - BDMG*), Itaú Unibanco, Bank of Brazil (*Banco do Brasil - BB*) and Desenbahia-Bahia State Development Agency (*Desenbahia-Agência de Fomento do Estado da Bahia*). Respecting the limits of this report, the selection of these institutions sought to reflect the heterogeneity of the national financial system, seeking to gather insights into the importance attributed by different types of banks to credit provision and the implementation of sustainable finance in Brazil. The selected group includes three public development banks, one large private commercial bank, one large public commercial bank and one public development agency. The review is based on information gathered from official reports of the institutions, notably management reports and specific reports on sustainability topics.

Public banks play a significant role in credit provision in the country. Since the beginning of the century, their loan portfolio has fluctuated between 40% and 55% of the total national financial system. Regarding sustainable development initiatives, these institutions have been playing a crucial role in the formulation and execution of public policies, including those aimed at protecting biodiversity and fostering sustainable finance. Subnational development banks and the development agency provide evidence of the implementation of sustainable policies in different regional contexts. Finally, the inclusion of Itaú Unibanco, one of the largest private institutions in the country, offers a perspective on the private sector's responses to demands for sustainable finance by showing how it seeks to align its operations with environmentally responsible practices.

## **NATIONAL BANK FOR ECONOMIC AND SOCIAL DEVELOPMENT (BANCO NACIONAL DE DESENVOLVIMENTO ECONÔMICO E SOCIAL - BNDES)**



The National Bank for Economic and Social Development (*Banco Nacional de Desenvolvimento Econômico e Social - BNDES*) is a federally controlled development bank. It has been proactively positioning itself in the field of climate change mitigation and adaptation, reflecting the urgency of this agenda in its strategy. Considering its long-term strategy, BNDES focuses on cross-cutting business themes, encompassing financial sustainability, social and productive inclusion, economic and social infrastructure, support for micro, small and medium-sized enterprises (MSMEs) and cooperatives, foreign trade and the just ecological transition, which includes decarbonisation and biodiversity. Its efforts are directed towards productive development and innovation, recently emphasising sustainable and family farming, "neo-industrialisation"<sup>8</sup> with a focus on decarbonisation, digital transformation, and strategic chains (BNDES, 2023b).

8. Neo-industrialisation is the term coined by the Federal Government during the third term of President Luiz Inácio Lula da Silva (2023-2026) to refer to both the objectives and policies aimed at strengthening Brazil's industrial sector.

BNDES's Social, Environmental and Climate Responsibility Policy (*Política de Responsabilidade Social, Ambiental e Climática*) establishes a cross-cutting and comprehensive programmatic and strategic framework for the bank's sustainability actions. This policy is operationalised through three-year plans and aims to guide the bank's practices according to its stakeholder's demands, including regulatory bodies. To ensure the compliance of plans with the PRSAC guidelines, the BNDES uses an integrated approach that involves teams from different units of the institution, supported by experts in socio-environmental issues. PRSAC also promotes the adoption of best practices in social, environmental and climate responsibility among suppliers, customers, accredited financial institutions, and other partners.

Considering the socio-environmental management of its operations, the BNDES adopts a policy in line with international best practices, establishing procedures for identifying and addressing the social and environmental impacts of financed operations. The bank conducts a detailed analysis of projects, considering factors such as proximity to conservation units, intervention in permanent preservation areas, vegetation suppression and groundwater pumping, among others. Operations with higher risk undergo more rigorous due diligence and monitoring processes based on their classification in terms of socio-environmental sensitivity (BNDES, 2023b).

In 2022, the Social, Environmental and Climate Responsibility Committee of BNDES was established to advise the Board of Directors on issues related to sustainability and the PRSAC. The Committee is responsible for proposing recommendations, assessing the adherence of implemented actions to the PRSAC, and supervising sustainability-related work (BNDES, 2023b).

The BNDES guidelines for climate change require aligning its actions with Brazil's target of carbon neutrality by 2050. Accordingly, the bank seeks to expand financing and engagement of clients and their supply chains towards a just climate transition. In terms of biodiversity, BNDES emphasizes the promotion of conservation, sustainable use of resources and restoration of biodiversity. The support extends to national and subnational policies and projects aligned with water preservation and supply, sewage treatment, industrial pollution control, waste management, conservation and sustainable use of natural resources, as well as microfinance for sustainable rural producers. BNDES's cross-cutting guidelines for a just transition include climate mitigation efforts in various sectors such as energy, logistics, urban mobility, changes in land use and forests, agriculture, industry, and sanitation. Decarbonising the economy, including the development of more efficient machinery and equipment, is a priority. At the same time, climate adaptation receives special attention, with a focus on nature-based solutions and the promotion of resilient urban development, especially in vulnerable urban areas (BNDES, 2023a).

Some recent initiatives deserve mention. Among them is the launching, in partnership with the national public oil company Petrobras, of the first public call of the initiative "Living Forest-Mangroves of Brazil" ("Floresta Viva-Manguezais do Brasil"), which will allocate BRL 44 million to support projects for the restoration of native vegetation in mangrove areas and sandbanks. This project aims to restore 1,800 hectares of mangroves and sandbanks, benefiting three of the country's macro-regions. Additionally, the BNDES has a portfolio of environmental assets, totalling 70 assets in structuring by the end of 2022, including parks and forests that add up to over 12 million hectares. The bank has also approved significant funding for revitalising and maintaining national park areas, contributing to biodiversity conser-



vation. Furthermore, the BNDES supports the Brazilian Forest System (*Sistema Florestal Brasileiro - SFB*) in implementing the dynamic analysis of the CAR, a crucial tool for environmental monitoring and regularisation in the country. The bank also maintains a partnership with the Institute for Conservation and Sustainable Development of the Amazon (*Instituto de Conservação e Desenvolvimento Sustentável da Amazônia - Idesam*) aiming to strengthen community forest management in the interior of the Amazon, thereby valorising biodiversity products and generating sustainable income for local communities (BNDES, 2023b).

The BNDES actively engages with international development banks and multilateral agencies, as evidenced by its participation in international meetings and conferences, such as the UN Biodiversity Conference (COP15) and Climate Conference (COP27). It also contributes to several initiatives focused on sustainable development, such as the Finance in Common Summit and the OECD Task Force on Foresight for Sustainable Development Finance (BNDES, 2023b).

## REGIONAL DEVELOPMENT BANK OF THE EXTREME SOUTH (BANCO REGIONAL DE DESENVOLVIMENTO DO EXTREMO SUL - BRDE)



The Regional Development Bank of the Extreme South is a subnational development bank, controlled by the states of Rio Grande do Sul, Santa Catarina and Paraná, which has been promoting sustainability and biodiversity in the southern region of Brazil and in the state of Mato Grosso do Sul. The BRDE's strategic planning for 2022-2026 demonstrates its commitment to sustainable development expressed in eight strategic objectives: Support for Sustainable Development; People and Knowledge; Institutional Knowledge; Economic Sustainability; +Productivity +Efficiency +Technology; Social and Environmental Responsibility 2030 Agenda; Innovation; and Public Policies.

In its usual operations, the bank finances projects relevant for both climate adaptation – for example, irrigation systems – and mitigation – for example, clean and renewable energies, commercial forest exploitation, electric public transportation, and waste use and recycling. In 2021, the BRDE began to apply its own taxonomy for the financing of sustainable projects and activities, initially limited to direct credit operations and, in the following year, advancing to indirect contracts carried out through partner institutions. Currently, all financings made by the bank are analysed and categorised from the perspective of the Sustainable Development Goals (SDGs). In 2022, 79.5% of the contracted credit amounts were aligned with at least one of the SDGs, focusing on the objectives of Zero Hunger and Sustainable Agriculture (SDG 2), Responsible Consumption and Production (SDG 12), Climate Change Action (SDG 13), Clean and Affordable Energy (SDG 7), Decent Work and Economic Growth (SDG 8), Health and Well-being (SDG 3), Quality Education (SDG 4), and Sustainable Cities and Communities (SDG 11) (BRDE, 2023).

The BRDE's Social, Environmental and Climate Responsibility Policy (*Política de Responsabilidade Social, Ambiental e Climática*) was adopted in 2015 and updated in 2022 to explicitly include climate issues. It encompasses four main pillars: the organisation's activities and processes, community engagement, business opportunities, and transparency and information

(BRDE, 2023). Since the implementation of this policy, the bank has expanded its activity in the context of climate change, adhering to the Public Administration's Environmental Agenda (*Agenda Ambiental da Administração Pública - A3P*) and creating funding lines focused on sustainability, such as the BRDE Southern Women Entrepreneurs (*BRDE Empreendedoras do Sul*) and BRDE Equity (*BRDE Equidade*). The adoption of the Social and Environmental Risk Management System (*Sistema de Administração do Risco Social e Ambiental - SARAS*) and the establishment of the Green Bank (*Banco Verde*) and the Green and Equity Fund (*Fundo Verde e de Equidade*) are other noteworthy initiatives.

The BRDE Green Bank, launched in 2022, serves as an umbrella for actions with a positive social, environmental, and climate impact, ranging from the organisation's internal climate performance to international fundraising. The protection and restoration of biodiversity and the conservation of ecosystems and species are considered priorities. Actions to mitigate and adapt to climate change are also considered essential, contributing to climate resilience and the reduction of GHG emissions. Consequently, the bank's three lines of action include mitigating its own operational environmental impact, providing financial support to socio-environmental and climate projects through the Green and Equity Fund, and promoting socio-environmental and climate projects via credit operations. In particular, the Green and Equity Fund is a tool dedicated to financially support projects with significant social and environmental impact, such as sustainable rural production, urban initiatives focused on the economic inclusion of vulnerable populations, and the protection of biodiversity and natural resources.

The BRDE's approach is structured around macro programmes, each focused on a specific investment theme. These programmes cover diverse areas such as agriculture, environmental and social sustainability, innovation, sustainable energy, tourism, municipal development, microcredit, and business. They serve as guidelines for the bank's loan portfolio, ensuring alignment with its strategic objectives.

## MINAS GERAIS DEVELOPMENT BANK (BANCO DE DESENVOLVIMENTO DE MINAS GERAIS - BDMG)



The Minas Gerais Development Bank is a public development bank under the control of the government of the state of Minas Gerais. Beyond its usual activity of financing projects for fixed capital formation, the bank pursues objectives related to promoting culture, citizenship, and social, environmental, and climate responsibility.

The Social, Environmental and Climate Responsibility Policy (*Política de Responsabilidade Social, Ambiental e Climática*), approved in August 2022, serves as a management tool that integrates economic, social and environmental dimensions into the bank's operational activities and relationships with customers, employees, shareholders, and the community. This policy prioritises operations with positive social, environmental, and climate externalities. It encompasses the assessment and management of social, environmental, and climate risks and seeks to steer the bank's business activities towards social, environmental, and climate action. In addition, it fosters strategic initiatives related to its governance and adopts internal actions to promote sustainable development. BDMG's social and environmental risk methodology, implemented



in 2016, aims to identify sustainable business opportunities and ensure their compliance with state and national environmental policies.

The BDMG assigns a prominent role to low-carbon agriculture, facilitating investments in agricultural innovation that contribute to soil regeneration, biodiversity, and the reduction of GHG emissions. In 2022, 42% of the bank's disbursements were allocated to agribusiness, with a focus on sustainable and impactful projects. LabAgroMinas, a collaborative initiative between the BDMG and the Brazilian Agricultural Research Corporation (*Empresa Brasileira de Pesquisa Agropecuária - Embrapa*), stands out as a significant effort to promote low-carbon agriculture. This programme fosters sustainable practices and innovative agricultural technologies that reduce GHG emissions and regenerate the soil. Additionally, the BDMG finances projects in energy efficiency and renewable energy generation, experiencing a recent increase in disbursements in these sectors (BDMG, 2023).

The bank is a signatory of the UN Global Compact since March 2020, demonstrating its commitment to creating a positive socioeconomic impact and fostering sustainable development. In 2022, 41% of its disbursements were directed toward initiatives that align with at least one of the SDGs, focusing on promoting clean energy, decent work, and sustainable communities (BDMG, 2024). BDMG also stands out in sustainable finance, having issued the first sustainable bonds of a Brazilian development bank in December 2020, aimed at raising funds for social and environmental projects in Minas Gerais.

## ITAÚ UNIBANCO



The Itaú Unibanco is the largest private bank in Brazil and Latin America by market value, headquartered in the city of São Paulo (SP) and operating in dozens of countries (ITAÚ UNIBANCO, 2023a). Its official documents signal a significant commitment to sustainability and biodiversity, demonstrated through a wide array of programmes and projects. Considering capital markets, the Itaú BBA – the investment banking arm of the group – stands out for structuring debt security issuances related to environmental, social, and governance (ESG) aspects, both in local and international markets, aligning with the guidelines of the International Capital Market Association (ICMA) and best market practices. These operations feature various fixed-income products with ESG labels, with the bank engaging specialised consultancies to ensure the quality and compliance of its offerings (ITAÚ UNIBANCO, 2023b). In 2022, the bank topped the Brazilian ranking of ESG bond issuances and issued Social Financial Letters to support female entrepreneurship in Brazil. In structuring ESG credit operations, Itaú BBA follows the guidelines of the Loan Market Association and integrates sustainability criteria into its financial products. Additionally, the bank's ESG Recommended Portfolio (*Carteira Recomendada ESG*) is noteworthy, providing investors with a selection of products that meet the highest ESG standards, reflecting the bank's growing commitment to sustainability in investments.

The Itaú BBA, in partnership with the International Finance Corporation (IFC), has launched the Green Entrepreneur Plan (*Plano Empresário Verde*), aimed at financing sustainable real estate developments. This plan is complemented by the Green Transfer Programme (*Programa Repasse Verde*), which offers sustainable mortgage credit at differentiated rates for buyers of apartments in certified sustainable buildings. Furthermore, the bank introduced the "legal reserve +" product, providing preferential rural credit rates to farmers who preserve more

native vegetation than required by the Forest Code. The Revert Programme (*Programa Reverte*), a collaboration between Syngenta and The Nature Conservancy (TNC), stands out as another notable initiative aimed at converting degraded pastures into productive areas in the Brazilian Cerrado. This initiative not only increases agricultural productivity but also avoids the need to clear new land for agriculture, contributing to biodiversity conservation. Furthermore, the bank participates in the Biomes Initiative, a joint venture dedicated to the restoration and conservation of Brazilian forests, and the “There Will Be Forest” (*Vai Ter Floresta*) project, which focuses on forest restoration in the Amazon region.

In the Amazon region, the Amazon Plan (*Plano Amazônia*) is a key initiative of the Itaú Unibanco, launched in 2020 as a result of a collaborative effort with two other major private banks (Bradesco and Santander) to promote sustainable development. Its governance is carried out by a Strategic Committee, composed of the sustainability leaders and CEOs of the participating banks, who meet regularly to monitor progress and define future directions. The Plan also includes an Amazon Advisory Committee, composed of experts on the region's challenges and potentials (ITAÚ UNIBANCO, 2024).

The Amazon Plan comprises three main strategic areas: support for environmental conservation and development of the bioeconomy; contributions to safeguard the basic rights of the local population; and investment in sustainable infrastructure (ITAÚ UNIBANCO, 2023a). A priority focus is combating illegal deforestation, particularly associated with the meat industry. The plan involves internal due diligence and collaboration between companies and associations to encourage commitment to zero deforestation, including assessments of deforestation management practices in supply chains and the review of policies and guidelines regarding illegal deforestation in the meat industry. Additionally, the plan promotes sustainable crops in the region through credit lines and both financial and non-financial tools, having set and surpassed an initial target of BRL 100 million in credit for clients engaged in sustainable agriculture. In addition, it supports the production of technical content and research aimed at expanding the share of Amazonian products in the global market (ITAÚ UNIBANCO, 2023b). Promoting the bioeconomy is another significant focus of the Amazon Plan. The goal is to make investments that promote partnerships and the development of technologies that boost the standing forest economy. This involves projects that encourage an innovative and entrepreneurial environment in the region, with the creation and expansion of solutions compatible with the forest economy (ITAÚ UNIBANCO, 2024).

Considering risk management and investments, the Itaú Unibanco integrates biodiversity and land use considerations into its evaluation methodologies. The bank monitors and encourages good practices related to biodiversity preservation in its loan portfolio, adopting tailored approaches for various sectors. It also works to integrate biodiversity and land use aspects into its investment process, assessing companies from an environmental impact perspective. The institution aims to understand and mitigate biodiversity-related risks, focusing on issues such as deforestation, waste management, and natural resource exploitation.

Itaú Unibanco's Social, Environmental and Climate Responsibility Policy sets the general regulatory framework for integrating sustainable practices across all aspects of the bank's business. This policy underscores a responsible and sustainable approach in business conduct and stakeholder interactions, supported by a robust governance structure to ensure the guidelines are effectively implemented and monitored.



## BANK OF BRAZIL (BANCO DO BRASIL - BB)



Banco do Brasil, a federal government-controlled institution, is the largest national public bank. Its Sustainability Plan (*Plano de Sustentabilidade*) underscores the commitment to integrating sustainable practices into the bank's operations and processes. It is designed to address sustainability challenges, drawing on national and international sustainability trends, market indices, and social demands. The plan aligns the bank's endeavours with the five pillars of the SDGs (BANCO DO BRASIL, 2022).

In June 2022, Banco do Brasil adopted its recent Social, Environmental and Climate Responsibility Policy (*Política de Responsabilidade Social, Ambiental e Climática* - PRSAC), revised in November 2023, and the respective action plan. The PRSAC guidelines unfold into initiatives that make up the BB Sustainability - Agenda 30 Plan (*Plano de Sustentabilidade - Agenda 30 BB*) and internal regulations, resulting in the integration of economic, social, environmental and climate variables in the bank's processes, products and services. The process of defining relevant sustainability topics for the bank's management and reporting involves extensive consultations with stakeholders, business strategies and updated national and international scenarios. In 2022, 23 themes were identified, of which 11 were deemed material for sustainability. These themes further delineate the challenges set in the BB Sustainability - Agenda 30 Plan (BANCO DO BRASIL, 2022).

Since 2005, Banco do Brasil has developed a Sustainability Plan, which was later renamed BB Agenda 30 and aligned with the SDGs. This plan aims to reinforce the institution's transformative role in offering sustainable products and services, transitioning to a low-carbon and inclusive economy, and creating sustainable value. The BB Agenda 30 is biennially updated through a participatory process that defines sustainability challenges and commitments. The sustainability governance at the bank is formed by the Board of Directors, Executive Board, and the Corporate Sustainability Committee, among other bodies, ensuring the monitoring and implementation of sustainability initiatives.

Banco do Brasil has adopted a sustainable finance model, establishing parameters for raising funds designated for projects classified as sustainable in the global market. This model identifies emissions as sustainable, green, or social and includes options for issuing debt instruments like Sustainability-Linked Loans (SLLP) and Sustainability-Linked Bonds (SLLB). These instruments tie interest rates to the performance of ESG indicators, such as reducing carbon footprint and enhancing diversity within the company's workforce (BANCO DO BRASIL, 2023).

In 2021, Banco do Brasil updated its sustainable finance reference framework, incorporating new trends and establishing 10 Long-Term Sustainability Commitments. These actions are aligned with the SDGs and the PRSAC, and integrated into the Corporate Strategy for 2023-2027. Sustainable funding requires commitment to advanced ESG standards and is monitored through sustainability-related performance indicators. In 2022, Banco do Brasil conducted three funding rounds with specific allocations in ESG categories, including the issuance of its first Social Bond in the capital market, directing USD 500 million to micro and small companies. The bank has also formed partnerships with multilateral organisations to finance projects in the renewable energy sector and promote the reduction of GHG emissions. It has also expanded its ESG portfolio (BANCO DO BRASIL, 2023). Banco

do Brasil applies the precautionary principle in credit analysis, guiding its operations by the BB Credit Sustainability Guidelines (*Diretrizes de Sustentabilidade BB para o Crédito*) and BB Social and Environmental Guidelines (*Diretrizes Socioambientais do BB*). These guidelines cover various economic sectors and cross-cutting issues such as forests and biodiversity, water and climate change.

## **BAHIA STATE DEVELOPMENT AGENCY (AGÊNCIA DE FOMENTO DO ESTADO DA BAHIA - DESENBÁHIA)**



The Desenbahia is the development agency controlled by the government of the state of Bahia. Its Social, Environmental, and Climate Responsibility Policy (*Política de Responsabilidade Social, Ambiental e Climática - PRSAC*) was approved in October 2022, establishing principles and guidelines that steer the financial institution's business and activities concerning social, environmental, and climate issues. The policy also extends to Desenbahia's relationship with customers and potential customers, employees, suppliers, the community, and other stakeholders. To ensure the effectiveness of the PRSAC, the Desenbahia has defined a specific governance structure, responsible for overseeing its management and the implementation of the necessary actions. Key actions to ensure the effectiveness of the PRSAC include analysing regulations, refining internal procedures, appraising actions through the PRSAC Committee, identifying and evaluating the products provided, and raising awareness within departments linked to the policy. Such actions are complemented by employee awareness events and the adaptation of its risk matrix to include climate-related aspects (DESENBÁHIA, 2023).

The Desenbahia bases its business decisions on social, environmental and climatic considerations. As such, the agency refrains from financing individuals or entities convicted of illegal activities, including harassment, discrimination, exploitation of child labour, forced labour, and environmental crimes, among others. It also imposes restrictions on companies that do not comply with pension and labour laws, that negatively impact traditional communities, or have irregularities with environmental regulatory agencies. In addition, the agency provides conditional support in sectors such as livestock, logging and mining, aiming to ensure sustainability and compliance with responsible practices. These additional restrictions vary according to the regulations of the funding sources from which Desenbahia obtains resources and also apply to rural credit operations (DESENBÁHIA, 2023).

The agency provides financial products that contribute positively to social, environmental and climate aspects, including financing for productive microcredit, support for micro and small enterprises, investments in urban infrastructure, and assistance for the sustainable development of rural activities. The Desenbahia also finances projects aimed at reducing environmental impacts in agriculture and livestock farming, developing sustainable irrigated agriculture, and reducing GHG emissions.





SECTION 5

# APPROACHES AND RECOMMENDATIONS

This fifth and final section presents recommendations to strengthen sustainable finance and mitigate biodiversity-related risks in the Brazilian context. The suggestions are directed at the government, regulatory and supervisory authorities, financial and non-financial institutions, and civil society and are presented as measures to promote financial practices aligned with sustainability and biodiversity protection in Brazil. It is assumed that the effective integration of biodiversity aspects into finance is necessary for strengthening economic and environmental resilience and mitigating the risks associated with biodiversity loss, and that its implementation requires a multifaceted approach involving different stakeholders.

In recent years, financial institutions in Brazil have focused their sustainability policies mostly on climate issues. While this approach may incorporate biodiversity, it lacks the necessary strategic alignment to consider the unique challenges and opportunities inherent to biodiversity and climate. Each area, despite their interconnections, requires specialised and focused strategies. The need to formulate and implement biodiversity policies in an independent – but interlinked – manner stems from the uniqueness of the challenges that biodiversity faces. Challenges related to habitat loss, species extinction, and ecosystem degradation can be highlighted. These problems, while exacerbated by climate change, have their own causes, impacts, and mitigation strategies, which differ to varying extents from the approaches needed to tackle climate change.

Targeted policies increase the likelihood that conservation measures will be effective by ensuring that dedicated resources of various kinds, notably financial resources, are allocated specifically for the preservation and restoration of biodiversity. This includes investments in critical areas such as habitat protection, species conservation programmes, and the restoration of degraded ecosystems. Such an independent approach would help ensure proper attention is given to the unique complexities and needs of biodiversity, thereby contributing to a broader ecological balance and, consequently, to the mitigation of climate change as well.

In the Brazilian context, the current stage involves the need to enhance the integration of biodiversity into the financial system's practices. To this end, an initial step is to conduct studies aimed at assessing the implementation of biodiversity policies – whether explicit or implicit – into concrete actions, as well as its effectiveness and impacts. A weakness in the available knowledge stems from the lack of standardisation in the way financial institutions report and assess their biodiversity-related initiatives. The absence of uniform criteria may lead institutions to arbitrarily highlight actions that suit them, emphasising their positive actions, while less favourable or less effective practices remain undisclosed or underestimated. Such a situation could involve practices of greenwashing, where declarations of commitment to biodiversity would be more rhetorical than substantive.

The adoption of a clear and consistent set of criteria for measuring and reporting biodiversity-related activities could lead to a more complete representation of the set of efforts undertaken by financial institutions. Periodic and independent evaluations are also equally important for ensuring data reliability and providing robust insights about the effectiveness of policies and actions, potentially leading to revisions in biodiversity strategies that aim for tangible and positive impacts. The standardisation of metrics and independent assessments, including those comparing the actions and results of different institutions, would improve the transparency of policies and could induce a genuine commitment to biodiversity conservation. Overall, more transparent and reliable knowledge about the environmental performance of financial institutions should be seen as an important tool for regulators, investors, and customers to identify areas for further improvement or investments.





At the level of government and regulatory authorities, there is a need to establish a clear and robust regulatory framework that not only encourages sustainable financial practices, but also discourages those that are harmful to the environment. Such a regulatory framework should promote incentives, transparency and accountability, creating an environment that supports the integration of biodiversity considerations into all facets of financial decision-making processes. A first initiative could be establishing general and sector-specific guidelines that orient financial institutions in incorporating biodiversity criteria into their investment and lending policies. Beyond guidelines, however, it is also necessary to adopt incentives of various kinds – tax, credit, etc. – for projects that actively promote the conservation of biodiversity and the sustainable use of natural resources. The design of these incentives is crucial to establishing an effective strategy that encourages investments in biodiversity.

As for financial institutions, it is imperative to develop and implement biodiversity strategies that are distinct and more specific than general climate policies, while at the same time being interlinked with such. In this effort, it is necessary to allocate resources for training and qualification of their employees on biodiversity-related matters. Such capacity building should encompass the understanding of risks associated with biodiversity loss and the importance of preserving ecosystems for environmental and economic sustainability. The integration of biodiversity-related risks into institutions' risk analysis is a key step towards aligning investment and financing strategies with the broader goal of environmental preservation, aiming to prevent damages and contribute to biodiversity restoration.

Coordination among government, regulators, supervisors and financial institutions is a necessary condition for creating a financial system that actively supports and promotes environmental sustainability in Brazil. This is particularly important considering that significant progress in protecting and conserving its rich biodiversity also ensures sustainable economic development and environmental resilience. In summary, the effective integration of biodiversity into sustainable finance in Brazil requires a collaborative and coordinated effort among various stakeholders, the adoption of effective and clear policies, the development of common metrics and regular independent evaluations, and a continuous commitment to transparency regarding purposes and actions in light of the inherent ethical dimension of socio-environmental responsibility.

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# APPENDIX – LIST OF ACRONYMS AND ABBREVIATIONS

<b>ABC</b>	Low Carbon Agriculture Programme ( <i>Programa de Agricultura de Baixa Emissão de Carbono</i> )
<b>APP</b>	Permanent Preservation Area ( <i>Área de Preservação Permanente</i> )
<b>A3P</b>	Environmental Agenda of the Public Administration ( <i>Agenda Ambiental da Administração Pública</i> )
<b>BAU</b>	Business as Usual
<b>BB</b>	Bank of Brazil ( <i>Banco do Brasil</i> )
<b>BCB</b>	Central Bank of Brazil ( <i>Banco Central do Brasil</i> )
<b>BDMG</b>	Development Bank of Minas Gerais ( <i>Banco de Desenvolvimento de Minas Gerais</i> )
<b>BNDES</b>	National Bank for Economic and Social Development ( <i>Banco Nacional de Desenvolvimento Econômico e Social</i> )
<b>BRDE</b>	Regional Development Bank of the Extreme South ( <i>Banco Regional de Desenvolvimento do Extremo Sul</i> )
<b>CACR</b>	System of Consultation and Authorisation for Access to Rural Credit Operations ( <i>Sistema de Consulta e Autorização de Acesso às Operações de Crédito Rural</i> )
<b>CAR</b>	Rural Environmental Registry ( <i>Cadastro Ambiental Rural</i> )
<b>CDB</b>	Convention on Biological Diversity ( <i>Convenção sobre Diversidade Biológica</i> )
<b>CMN</b>	National Monetary Council ( <i>Conselho Monetário Nacional</i> )
<b>CNPSA</b>	National Registry for the Payment for Environmental Services ( <i>Cadastro Nacional de Pagamento por Serviços Ambientais</i> )
<b>CRA</b>	Agribusiness Receivables Certificates ( <i>Certificados de Recebíveis do Agronegócio</i> )
<b>CRI</b>	Real Estate Receivables Certificate ( <i>Certificado de Recebíveis Imobiliários</i> )
<b>Desenbahia</b>	Bahia State Development Agency ( <i>Agência de Fomento do Estado da Bahia</i> )
<b>Embrapa</b>	Brazilian Agricultural Research Corporation ( <i>Empresa Brasileira de Pesquisa Agropecuária</i> )
<b>ESG</b>	Environmental, Social, and Governance ( <i>Ambiental, Social e de Governança - ASG</i> )
<b>FNRB</b>	National Benefit-Sharing Fund ( <i>Fundo Nacional para a Repartição de Benefícios</i> )
<b>GHG</b>	Greenhouse Gases ( <i>Gases de Efeito Estufa - GEE</i> )
<b>Ibama</b>	Brazilian Institute of the Environment and Renewable Natural Resources ( <i>Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis</i> )
<b>ICMA</b>	International Capital Market Association
<b>Idesam</b>	Institute for Conservation and Sustainable Development of the Amazon ( <i>Instituto de Conservação e Desenvolvimento Sustentável da Amazônia</i> )

<b>IFC</b>	International Finance Corporation
<b>MCR</b>	Rural Credit Manual ( <i>Manual de Crédito Rural</i> )
<b>MF</b>	Ministry of Finance ( <i>Ministério da Fazenda</i> )
<b>MMA</b>	Ministry of the Environment ( <i>Ministério do Meio Ambiente</i> ). From 2023: Ministry of the Environment and Climate Change
<b>NGFS</b>	Network for Greening the Financial System
<b>OECD</b>	Organisation for Economic Cooperation and Development
<b>PFPSA</b>	Federal Programme for Payment for Environmental Services ( <i>Programa Federal de Pagamento por Serviços Ambientais</i> )
<b>PNMA</b>	National Environmental Policy ( <i>Política Nacional do Meio Ambiente</i> )
<b>PNB</b>	National Biodiversity Policy ( <i>Política Nacional da Biodiversidade</i> )
<b>PRA</b>	Environmental Regularisation Programme ( <i>Programa de Regularização Ambiental</i> )
<b>PRSA</b>	Social and Environmental Responsibility Policy ( <i>Política de Responsabilidade Social e Ambiental</i> )
<b>PRSAC</b>	Social, Environmental and Climate Responsibility Policy ( <i>Política de Responsabilidade Social Ambiental e Climática</i> )
<b>Proagro</b>	Agricultural Activity Guarantee Programme ( <i>Programa de Garantia da Atividade Agropecuária</i> )
<b>Proveg</b>	National Policy for the Recovery of Native Vegetation ( <i>Política Nacional de Recuperação da Vegetação Nativa</i> )
<b>PSA</b>	Payment for Environmental Services ( <i>Pagamento por Serviços Ambientais</i> )
<b>RSAC</b>	Social, Environmental and Climate Risks ( <i>Riscos Sociais, Ambientais e Climáticos</i> )
<b>SARAS</b>	Social and Environmental Risk Management System ( <i>Sistema de Administração do Risco Social e Ambiental</i> )
<b>SDGs</b>	Sustainable Development Goals
<b>SFB</b>	Brazilian Forest System ( <i>Sistema Florestal Brasileiro</i> )
<b>SFN</b>	National Financial System ( <i>Sistema Financeiro Nacional</i> )
<b>Sinima</b>	National System of Environmental Information ( <i>Sistema Nacional de Informação sobre Meio Ambiente</i> )
<b>Sisnama</b>	National Environment System ( <i>Sistema Nacional do Meio Ambiente</i> )
<b>SLLB</b>	Sustainability-Linked Bonds
<b>SLLP</b>	Sustainability-Linked Loans
<b>SNUC</b>	National System of Conservation Units ( <i>Sistema Nacional de Unidades de Conservação da Natureza</i> )
<b>SRC</b>	Risk and Control Assessment System ( <i>Sistema de Avaliação de Riscos e Controles</i> )
<b>TCFD</b>	Taskforce on Climate-related Financial Disclosures
<b>TNFD</b>	Taskforce on Nature-related Financial Disclosures
<b>UNCED</b>	United Nations Conference on Environment and Development
<b>UNFCC</b>	United Nations Framework Convention on Climate Change



On behalf of:



Federal Ministry  
for the Environment, Nature Conservation,  
Nuclear Safety and Consumer Protection

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