

Second-Party Opinion

BNDES Sustainability Bond Framework



Evaluation Summary

Sustainalytics is of the opinion that the BNDES Sustainability Bond Framework is credible and impactful and aligns with the Sustainability Bond Guidelines 2018, Green Bond Principles 2018, and Social Bond Principles 2020. This assessment is based on the following:



USE OF PROCEEDS The eligible categories for the use of proceeds – Renewable Energy, Energy Efficiency, Sustainable Water and Wastewater Management, Pollution Prevention and Control, Clean Transportation, Environmentally Sustainable Management of Living Natural Resources and Land Use, Access to Essential Services - Health, Access to Essential Services - Education, and MSME Financing and Microfinance – are aligned with those recognized by both the Green Bond Principles and Social Bond Principles. Sustainalytics considers that the provision of financing in eligible categories will lead to positive environmental or social impacts and advance the UN Sustainable Development Goals, specifically SDGs 3, 4, 6, 7, 8, 11, 12 and 15.



PROJECT EVALUATION / SELECTION BNDES has articulated a project evaluation process that begins with its internal social and environmental risk management process. Projects are then reviewed and approved by Superintendents from the Bank’s Financial, Public Management, Socio-Environmental and Operational divisions based on the established eligibility and exclusionary criteria. Sustainalytics considers the project selection process to be in line with market practice.



MANAGEMENT OF PROCEEDS BNDES is committed to monitoring its sustainability bond proceeds through its internal tracking system. Pending allocation to eligible projects, the net proceeds of the bonds will be held in cash, cash equivalents or Brazilian government securities. This process is in line with market practice.



REPORTING BNDES intends to report on allocation of proceeds on an annual basis until full allocation. Additionally, the Bank commits to reporting on relevant quantitative outcome and impact metrics. Sustainalytics views BNDES’ allocation and impact reporting as aligned with market practice.

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Issuer Location	Rio de Janeiro, Brazil

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Introduction

Banco Nacional de Desenvolvimento Econômico e Social (“BNDES”, the “Bank” or the “Issuer”) is a federal government-owned bank in Brazil with the goal of development through the support for the country’s exports, technological innovation, sustainable socio-environmental development and public administration. Founded in 1952, the Bank provides financial support mechanisms for public and private enterprises of all sizes enabling investments in all economic sectors.

BNDES has developed the Sustainability Bond Framework (the “Framework”) under which it intends to issue green, social, and sustainability bonds in Brazil and abroad and use the proceeds to finance and refinance, in whole or in part, existing and future eligible projects that generate clear social and environmental benefits.

The Framework defines eligible green categories in the following areas:

1. Renewable Energy
2. Energy Efficiency
3. Sustainable Water and Wastewater Management
4. Pollution Prevention and Control
5. Clean Transportation
6. Environmentally Sustainable Management of Living Natural Resources and Land Use

The Framework defines eligible social categories in the following areas:

1. Access to Essential Services - Healthcare
2. Access to Essential Services - Education
3. MSME Financing and Microfinance

Sustainalytics was engaged to review the Sustainability Bond Framework, dated March 2021, and provide a Second-Party Opinion on the Framework’s environmental and social credentials and its alignment with the Green Bond Principles 2018 (GBP), Social Bond Principles 2020 (SBP), and Sustainability Bond Guidelines 2018 (SBG).¹ This Framework will be published in a separate document.²

Scope of work and limitations of Sustainalytics’ Second-Party Opinion

Sustainalytics’ Second-Party Opinion reflects Sustainalytics’ independent³ opinion on the alignment of the reviewed Framework with the current market standards and the extent to which the eligible project categories are credible and impactful.

As part of the Second-Party Opinion, Sustainalytics assessed the following:

- The Framework’s alignment with the Green Bond Principles 2018, Social Bond Principles 2020, and Sustainability Bond Guidelines 2018, as administered by ICMA;
- The credibility and anticipated positive impacts of the use of proceeds; and
- The alignment of the issuer’s sustainability strategy and performance and sustainability risk management in relation to the use of proceeds.

For the use of proceeds assessment, Sustainalytics relied on its internal taxonomy, version 1.6, which is informed by market practice and Sustainalytics’ expertise as an ESG research provider.

As part of this engagement, Sustainalytics held conversations with various members of BNDES’ management team to understand the sustainability impact of their business processes and planned use of proceeds, as well as management of proceeds and reporting aspects of the Framework. BNDES representatives have confirmed (1) they understand it is the sole responsibility of BNDES to ensure that the information provided is complete, accurate or up to date; (2) that they have provided Sustainalytics with all relevant information and

¹ The Sustainability Bond Guidelines are administered by the International Capital Market Association and are available at <https://www.icmagroup.org/green-social-and-sustainability-bonds/sustainability-bond-guidelines-sbg/>

² The Sustainability Bond Framework will be made available on BNDES’ website, <https://www.bndes.gov.br/>

³ When operating multiple lines of business that serve a variety of client types, objective research is a cornerstone of Sustainalytics and ensuring analyst independence is paramount to producing objective, actionable research. Sustainalytics has therefore put in place a robust conflict management framework that specifically addresses the need for analyst independence, consistency of process, structural separation of commercial and research (and engagement) teams, data protection and systems separation. Last but not the least, analyst compensation is not directly tied to specific commercial outcomes. One of Sustainalytics’ hallmarks is integrity, another is transparency.

(3) that any provided material information has been duly disclosed in a timely manner. Sustainalytics also reviewed relevant public documents and non-public information.

This document contains Sustainalytics' opinion of the Framework and should be read in conjunction with that Framework.

Any update of the present Second-Party Opinion will be conducted according to the agreed engagement conditions.

Sustainalytics' Second-Party Opinion, while reflecting on the alignment of the Framework with market standards, is no guarantee of alignment nor warrants any alignment with future versions of relevant market standards. Furthermore, Sustainalytics' Second-Party Opinion addresses the anticipated impacts of eligible projects expected to be financed with bond proceeds but does not measure the actual impact. The measurement and reporting of the impact achieved through projects financed under the Framework is the responsibility of the Framework owner.

In addition, the Second-Party Opinion opines on the potential allocation of proceeds but does not guarantee the realised allocation of the bond proceeds towards eligible activities.

No information provided by Sustainalytics under the present Second-Party Opinion shall be considered as being a statement, representation, warrant or argument, either in favour or against, the truthfulness, reliability or completeness of any facts or statements and related surrounding circumstances that BNDES has made available to Sustainalytics for the purpose of this Second-Party Opinion.

Sustainalytics' Opinion

Section 1: Sustainalytics' Opinion on the Sustainability Bond Framework

Sustainalytics is of the opinion that the BNDES Sustainability Bond Framework is credible, impactful and aligns with the four core components of the GBP and SBP. Sustainalytics highlights the following elements of the Framework:

- Use of Proceeds:
 - The six green categories and the three social categories eligible for the use of proceeds are recognized as impactful by the GBP 2018 and/or the SBP 2020.
 - Within the category of Renewable Energy, BNDES may finance a variety of energy-sector projects, namely:
 - Electricity generation from wind and solar energy and the production of “green hydrogen”,⁴ which are aligned with market practice.
 - Electricity generation and biogas production; from waste biomass, specifically forestry and agricultural waste. Sustainalytics considers the specifications on waste feedstock to provide assurance of likely net-positive impact and to align with market expectations.
 - Electricity generation from hydroelectricity, under which only facilities in line with the criteria of the Climate Bond Initiative standard or the UN Framework Convention on Climate Change (UNFCCC) Clean Development Mechanism (CDM)⁵ are eligible. Sustainalytics considers these criteria to provide appropriate assurance of net-positive impacts and E&S risk mitigation, and therefore views this activity positively.
 - Biofuel production from “sustainable feedstock”. The Framework defines a sustainable feedstock as one that complies with the Brazilian Forest Code, does not compete with food production, and results in a fuel with at least 50% lifecycle GHG reductions against a fossil fuel baseline.⁶ Based on these criteria, Sustainalytics views this biofuels production to be aligned with market practice.
 - Under the Energy Efficiency category, BNDES aims to finance a variety of projects that deliver energy savings or performance improvement.
 - These may include storage, cooling and heating systems as well as equipment replacement for buildings and LED street lighting, or renewable energy cogeneration and smart grids systems that deliver more efficient power systems.
 - Sustainalytics highlights that the Bank excludes financing of fossil fuel-powered technology for projects selected under the Framework, and therefore views positively the technologies which may be financed.
 - Sustainalytics also notes that projects may have a range of quantitative benefits, and that, due to the diversity of potential technologies financed, the Bank has not established quantitative energy savings thresholds. Sustainalytics therefore encourages BNDES to prioritize those that deliver the highest magnitude of energy savings.
 - The Sustainable Water and Wastewater Management category includes projects in the areas of water treatment and supply, sewerage, solid urban waste as well as sewage sludge treatment and disposal aimed at increasing access to water supply.
 - Sustainalytics considers the various water- and wastewater-sector projects to be aligned with market expectations.
 - The Framework allows for investments in energy capture facilities at conventional landfills. While Sustainalytics views best practice in the green bond market to restrict

⁴ Green hydrogen refers to the production of hydrogen gas powered by renewable energy, primarily through the electrolysis of water, which therefore has low-to-negligible carbon emissions.

⁵ The United Nations Framework Convention on Climate Change (UNFCCC), “Thresholds and Criteria for the Eligibility of Hydroelectric Power Plants with Reservoirs as CDM Project Activities”, at: https://cdm.unfccc.int/EB/023/eb23_repan5.pdf. Sustainalytics notes that the primary focus of the CDM is in the mitigation of carbon emission risks, and that other environmental and social risks should be addressed by BNDES as part of their general risk mitigation approach.

⁶ BNDES has disclosed that it may rely on the RenovaCalc model to calculate life-cycle emissions. This tool is recognized in Brazilian regulation as well as by the Climate Bonds Initiative as a robust methodology.

- eligibility to decommissioned landfills,⁷ the inclusion of operating landfill facilities with energy capture is viewed positively in the context of Brazilian waste management systems as such investments are considered to be a positive step forward to improving the country's overall waste management capability.
- The projects within the Pollution Prevention and Control category are aimed at promoting or improving the sustainability of productive and industrial processes as well as mitigating environmental pollution and emissions to water, air and soil. This includes sustainable and efficient water use projects and wastewater treatment projects. For waste management projects, the Frameworks allows for material recycling, industrial waste treatment and transformation of waste into co-products.⁸ Sustainalytics notes that industrial waste management processes powered by fossil fuel generation are not considered eligible, and therefore considers this category overall to be aligned with market practice.
 - Within the area of Clean Transportation, eligible financing under the Framework may be provided to a variety of projects that support electric or hybrid public transit, subway and railway infrastructure, infrastructure for low-emissions vehicles, active transport infrastructure such as bike paths, and infrastructure for multimodal transportation. Sustainalytics views positively the overall intents of this category, and notes the following:
 - Public transport may be fully electric or hybrid. Although best practice for hybrid vehicles involves the use of emissions thresholds, by specifying that only public transit vehicles may be financed, BNDES is aiming to prioritize efficient transportation systems.
 - The variety of infrastructure projects financed may be used by operations which are not fully electrified, in particular railways and multimodal facilities. Sustainalytics highlights the anticipated emissions reductions of these projects, and encourages BNDES to report on environmental efficiencies achieved. Additionally, Sustainalytics again highlights the Framework's exclusionary criteria on activities relating to fossil fuel production or use as providing additional assurance of the net-positive impacts.
 - BNDES intends to finance assets or projects in the areas of Sustainable Management of Living Natural Resources and Land Use, including:
 - Low-carbon agriculture activities that deliver at least 20% reduction in greenhouse gas (GHG) emissions and organic agriculture certified with Rainforest Alliance, Round Table for Responsible Soy (RTRS) and BONSUCRO. Appendix 1 provides an overview of these agricultural schemes.
 - Sustainably managed forestry holdings certified with the Forest Stewardship Council (FSC), or the Programme for the Endorsement of Forest Certification (PEFC). Sustainalytics considers the use of these schemes to be aligned with market practice; Appendix 2 provides an overview of these schemes.
 - Sustainable fishing and aquaculture projects with recognizable certification from Aquaculture Stewardship Council (ASC), GlobalG.A.P. Aquaculture, Best Aquaculture Practices⁹ and Marine Stewardship Council (MSC). Sustainalytics considers these schemes to be credible and indicative of positive impacts; an overview of these certification schemes is provided in Appendix 3.
 - Native vegetation conservation, restoration and recovery of degraded areas. Sustainalytics views these classes of activities as aligned with market expectations.
 - The Healthcare category contemplates expenditures related to public health facilities and other health projects located in municipalities with an HDI below the Brazilian average,¹⁰ with a focus on underserved communities. Projects include the construction or expansion of public hospitals, health posts, emergency care units, family clinics and philanthropic health institutions.

⁷ The Climate Bonds Initiative include this consideration in their standard for waste management, at:

<https://www.climatebonds.net/files/files/Waste%20Management%20Background%20Paper%282%29.pdf>

⁸ Sustainalytics notes that for waste recovery, BNDES financing will not include remediation or decommissioning of environmental liabilities by the party that created the liabilities in the first place.

⁹ Sustainalytics views best practice to restrict financing of BAP-certified aquaculture to those with at least two stars of certification (see appendix 3).

¹⁰ The Human Development Index measures key dimensions of development: long and healthy life, knowledge, and decent standard of living. The final score, which varies from 0 to 1, is an average of indicators in the three dimensions: life expectation index, education index and GNI index. The eligibility criteria for social categories in BNDES' Framework is based on the comparison with the Brazilian average, using the most recent HDI data available for Brazil and its municipalities at the time. The most recent Brazilian HDI, calculated for 2020, is 0.761 (<http://hdr.undp.org/en/countries/profiles/BRA>)

- Additionally, the Bank intends to finance the production of non-patented medicines and vaccines. Sustainalytics considers lending to these projects to be socially impactful in the Brazilian local context and recognizes the benefits of financing healthcare facilities in underserved areas as well as increasing access to non-patent medication.
- Within the Education category, BNDES intends to support accessible education infrastructure that targets one of the following: (i) public facilities and/or (ii) municipalities with an HDI below the Brazilian municipality average with a focus on increasing overall access to education infrastructure through targeted development. For the target population this includes project like building, upgrading or expansion, capacity building for teachers and managers, construction of internet infrastructure for public schools, purchase of software and electronic devices for educational use. Sustainalytics views this as aligned with market practice based on the focus on public facilities or other projects serving defined populations.
 - The MSME Financing and Microfinance category contemplates increasing access to financing for micro, small and medium enterprises (MSMEs).¹¹ This will be targeted at underserved municipalities based on the aforementioned HDI criteria, companies owned or led by women and/or other gender minorities.¹² Sustainalytics views positively the eligible projects under this category and considers the criteria around what MSMEs are eligible to be an appropriate definition of target populations as intended by the SBP.
 - Sustainalytics notes that BNDES has a broad list of activities excluded from the Framework, including working capital lending directed to large companies, arms trade, fossil fuels or gambling. Sustainalytics highlights that such exclusions will help prevent the net proceeds directed towards projects that could have significant environmental and/or social risks.
- Project Evaluation and Selection:
 - The Framework defines an approach from project identification and approval based on a series of sequential steps, beginning from verification of client activities through the Bank's internal procedures.
 - Eligible projects will be assessed and approved by BNDES' Superintendents from the Financial, Public Management, Socio-Environmental and Operational divisions. BNDES also has an internal environmental and social risk assessment process in place as well as a list of exclusions.¹³
 - Based on the clearly defined multi-step process leveraging internal procedures, Sustainalytics considers this to be in line with market practice.
 - Management of Proceeds:
 - BNDES' Operational Division will be responsible for the management of bond proceeds.
 - Pending allocation to eligible projects, the net proceeds of the bonds will be held in cash, cash equivalents or Brazilian government securities (financial instruments with high liquidity and low risk). Allocation of the net proceeds of the bonds will be managed by the Bank's Financial Division
 - BNDES has an internal system in place for tracking sustainability funding secured for environmentally and socially impactful initiatives. The Bank will utilize this system for monitoring bond proceeds, and intends to allocate proceeds within 36 months of issuance.
 - Based on the defined management approach and delineation of responsibility, as well as the allocation period, Sustainalytics considers this process to be in line with market practice.
 - Reporting:
 - The Bank intends to publish annual allocation and impact reporting annually until full allocation. This will be made available on BNDES website.¹⁴
 - Allocation reporting will include the total amount disbursed, the number of loans granted, and the amount allocated to each category.
 - Impact reporting will include relevant quantitative metrics, aggregated to the category level. Sustainalytics highlights that the Framework discloses impact and outcome metrics across all the eligibility categories.

¹¹ Based on BNDES's internal definition of micro, small and medium companies at:

<https://www.bndes.gov.br/wps/portal/site/home/financiamento/guia/porte-de-empresa>

¹² Under the Framework, BNDES intends to identify women-led MSMEs based on instances where women occupy the following roles or represent the major share of: (i) Managing Partners, (ii) Board (iii) President/CEO, (iv) Directors, (v) Managers, (vi) Sole Owner.

¹³ Sustainalytics notes that BNDES has strengthened the Framework by setting out thresholds and exclusions that prevent the proceeds from being directed to projects with significant environmental and/or social impacts, such as exclusion of fossil fuels and limits on biofuel production.

¹⁴ BNDES website, <https://www.bndes.gov.br/>

- Based on the commitment to allocation and impact reporting, Sustainalytics considers this process to be in line with market practice.

Alignment with Sustainability Bond Guidelines 2018

Sustainalytics has determined that the Sustainability Bond Framework aligns with the four core components of the GBP and SBP. For detailed information please refer to Appendix 4: Sustainability Bond/ Sustainability Bond Programme External Review Form.

Section 2: Sustainability Strategy of BNDES

Contribution of the Framework to BNDES' sustainability strategy and performance

Sustainalytics is of the opinion that BNDES demonstrates a strong commitment to sustainability in the way it carries out its operations as well as in its investments in projects that have positive environmental and social outcomes. The Bank has articulated in its 2019 Annual Report that its core purpose is "the sustainable development of Brazil" and attempts to align its strategy to the United Nations Sustainable Development Goals.¹⁵ In 2019, BNDES reports disbursing R\$ 9 billion and R\$ 6.5 billion to what it considers as green economy and social development projects respectively. In 2017, BNDES issued a USD 1 billion green bond in the international market and in 2020, the Bank issued a Green Financial Note in the domestic market, the proceeds of which were used to finance expenditures related to new and existing wind and solar power plants.

BNDES aims to implement its sustainability commitments through supporting a number of social and environmental projects¹⁶ and initiatives. Sustainalytics recognizes that these actions are generally aligned with the impact areas targeted by the Framework. Examples of these include:

- **Credit Lines:**
 - Financing forestry activities including reforestation, conservation and forest recovery of degraded or converted areas, and sustainable use of native areas through forestry development.
 - Supporting environmental sanitation and water resource projects aimed at investments focused on the globalization of access to basic sanitation services.
 - Supporting the management of Brazilian states to formulate and implement integrated development programmes.
- **Programmes**
 - BNDES Proplastic, a socio-environmental programme which facilitates investments aimed at the rationing of natural resources, clean development mechanisms, management systems and the recovery of environmental damage, as well as finance projects and programmes for social investments carried out by companies in the plastic production sector.
 - PACEA, a programme which provides financing for the recovery of companies in the industrial sector that are undergoing bankruptcy or closure of production plants.
 - PROVIAS, a programme which supports the acquisition of new machinery and equipment, for interventions in public streets and roads.
- **Funds**
 - The Amazon Fund which is managed by the BNDES to promote projects that prevent and combat deforestation, as well as for conservation and sustainable use of the forests in the Amazon biome.
 - The Investments and Participations Fund (Forestry FIP) which has been set up to acquire stakes in companies and/or projects focused on forestry assets.
 - The Climate Fund Program which the Bank provides to support the implementation of projects, the acquisition of machinery and equipment and technological development related to the reduction of emission of greenhouse gases and adaptation to climate change and its effects.
 - The Social Fund which is managed by the BNDES to support projects in areas such as employment and income development, urban services, health, education and sports, justice, the environment, rural development, and others linked to regional and social development.

¹⁵ BNDES 2019 Annual Report at:
https://www.bndes.gov.br/SiteBNDES/export/sites/default/bndes_pt/Galerias/Arquivos/conhecimento/bndes_em_campo/RA_Sistema_BNDES__2019V_F_inglxs.pdf

¹⁶ BNDES Support for Social and Environmental Projects at:
https://www.bndes.gov.br/SiteBNDES/bndes/bndes_en/Institucional/Social_and_Environmental_Responsibility/support_for_social_environmental_projects.html

Sustainalytics is of the opinion that the Framework is aligned with the Bank's overall sustainability initiatives. While noting positively BNDES' efforts to provide financing for various social and environmental projects in Brazil, Sustainalytics encourages the Bank to establish quantitative and time-bound sustainability targets.

Well-positioned to address common environmental and social risks associated with the projects

Sustainalytics recognizes that the projects financed by BNDES under the Framework will be directed towards eligible green and social projects that are anticipated to deliver overall positive environmental and social outcomes, and contribute to economic development in Brazil. However, by offering credit for investment in a variety of infrastructure, agricultural, forestry and resource projects, financial institutions are exposed to the possibility of financing activities that may be associated with negative environmental or social impacts.

Key environmental risks may relate to ensuring sustainable use of water, biodiversity loss from agriculture projects, degradation of natural environments (including deforestation and land use), release of pollutants (including wastewater and agricultural runoff) and greenhouse gas emissions. Additionally, some key social risks may include worker health and safety, community engagement, and broader societal impacts such as access to services. Sustainalytics considers that the following policies and procedures which BNDES has put in place will help mitigate these risks:

- Corporate Social Environmental Responsibility Policy (PRSA)¹⁷ which is aligned with the Brazilian Central Bank's Resolution 4327/2014. This regulation establishes a requirement that financial institutions create Social and Environmental Responsibility Policies (SERPs) and provides guidelines for its implementation.¹⁸ The policy integrates and articulates the breadth of the Bank's social and environmental strategy, policies, practices and procedures. The PRSA guides the BNDES' engagement with employees, clients and users of its products and services, communities impacted by its activities, suppliers and other partners.
- Socioenvironmental Policy¹⁹ which outlines the operating procedures for the Bank to conduct an efficient social and environmental analysis of projects applying for BNDES financing. This policy involves categorization of risk by adverse impact as well as the corresponding processes to reduce negative environmental and social impact of projects.
- Sustainable Purchase Policy²⁰ aimed at incorporating social and environmental sustainability criteria in the Bank's process of acquisition of goods and services, the planning and the efficient use of resources and boosting BNDES efforts to encourage the adoption of sustainable practices among its suppliers. The core guidelines center around (i) resource efficiency (reducing, reusing and recycling), (ii) planning the acquisition of goods and services as an essential instrument for sustainable development and (iii) the dissemination of the concepts and practices of sustainability in the Brazilian society.
- BNDES introduced a 'Social Clause' into its financing contracts in 2008, which requires that recipients embed practices that prevent discrimination of race or gender, child labor and slave labor in Brazil. By including the Social Clause as part of its process, BNDES is emphasizing the importance of social rights as being a crucial consideration for granting financing from the Bank, with the same relevance of the financial and economic demands made to the institution's clients.

Based on these policies and processes, and considering also the Framework's exclusionary criteria, Sustainalytics is of the opinion that BNDES has implemented adequate measures and is well-positioned to manage and mitigate environmental and social risks commonly associated with the eligible categories.

¹⁷ BNDES Corporate Social Environmental Responsibility Policy:

https://www.bndes.gov.br/SiteBNDES/bndes/bndes_en/Institucional/Social_and_Environmental_Responsibility/social_environmental_responsibility_policy.html

¹⁸ Mayer Brown, Brazilian Central Bank Publishes Guidelines for the Social and Environmental Responsibility Policies of Financial Institutions:

<https://www.mayerbrown.com/brazilian-central-bank-publishes-guidelines-for-the-social-and-environmental-responsibility-policies-of-financial-institutions-05-06-2014/>

¹⁹ BNDES Socioenvironmental Policy:

https://www.bndes.gov.br/SiteBNDES/bndes/bndes_en/Institucional/Social_and_Environmental_Responsibility/socioenvironmental_policy/

²⁰ BNDES Sustainable Purchase Policy:

https://www.bndes.gov.br/SiteBNDES/bndes/bndes_en/Institucional/Social_and_Environmental_Responsibility/sustainable_purchase_policy.html

BNDES Social Cause:

https://www.bndes.gov.br/SiteBNDES/bndes/bndes_en/Institucional/Social_and_Environmental_Responsibility/social_clause.html

Section 3: Impact of Use of Proceeds

All nine use of proceeds categories are aligned with those recognized by GBP or SBP. Sustainalytics has focused below where the impact is specifically relevant in the local context.

The impact of biofuels for energy generation in Brazil

Biofuels are liquids derived from biological matter which can be used as a substitute or supplement to fossil fuels. This energy source is more controversial than other renewable energy resources and is sometimes considered to have environmental or social impacts which outweigh its benefits.²¹ While biofuels are generally cleaner-burning than traditional diesel or gasoline,²² some studies have questioned the lifecycle carbon benefits based on the necessary energy inputs and induced land use changes.²³ Furthermore, there is some criticism about the displacement of food production for energy crops.²⁴

Sugarcane is a source of ethanol, and Brazilian sugarcane in particular, is distinct in several ways from other “first generation”²⁵ biofuels. Studies have shown that lifecycle carbon emissions for Brazilian sugarcane ethanol are much lower than for corn or sugar beet ethanol, and as much as 86% lower than gasoline refined from crude oil.²⁶ Additionally, recent reviews of the sugarcane sector have indicated that most expansion of sugarcane crops is occurring on degraded pastureland, and is not resulting in increased deforestation or decreased food crop yields.²⁷ Nevertheless, biofuels remain a renewable energy source with potential adverse environmental impacts.

Sustainalytics views positively BNDES’ reference to regulatory provisions such as the Brazilian Forest Code. Sustainalytics considers BNDES’ use of proceeds for biofuels projects to likely result in net-positive environmental benefits, and encourages the Issuer to continue to strive towards best practices that minimize social and environmental impacts, such as ensuring cropland expansion is not inducing deforestation or other negative land use changes or impacting food supplies, and conducting lifecycle carbon assessments in line with industry standards.

Importance of financing low-carbon agriculture in Brazil

The agriculture and agribusiness industry is a key driver of Brazil’s economic growth, accounting for approximately 23.5% of the country’s gross domestic product (GDP).²⁸ This also translates to a substantial proportion of Brazil’s environmental footprint representing approximately 34% of the nation’s total GHG emissions.²⁹ Recognizing the position of agriculture in its economy, the Brazilian government enacted the Low-Carbon Agriculture Plan (ABC Plan) in 2010. This is a low-interest credit scheme created to incentivize and fund the implementation of low carbon agricultural practices that contribute to the mitigation of climate change either through a reduction of GHG emissions and/or through the sequestration of carbon.³⁰ In Brazil, low-carbon agricultural practices have been identified to include a series of agriculture and forestry-related activities, such as the development of integrated crop-livestock forestry systems, commercial plantation forests, and the management and restoration of natural forests and degraded forest areas. Sustainalytics is of the opinion that financing for low carbon agriculture projects will help accelerate action in support of the country’s GHG emissions reduction targets.

Waste Management

Brazil is the fifth-largest generator of waste in the world, producing approximately 198,000 tons of municipal solid waste daily.³¹ Even though the country has made major improvements in the area of waste management

²¹ National Geographic, Biofuels explained: <https://www.nationalgeographic.com/environment/global-warming/biofuel/>

²² US Energy Information Administration, Biofuels explained, Ethanol and biodiesel: https://www.eia.gov/energyexplained/index.php?page=biofuel_home

²³ Land Clearing and the Biofuel Carbon Debt: <http://science.sciencemag.org/content/319/5867/1235>

²⁴ Oxfam, Growing a better future: <https://www.oxfam.ca/grow/learn/issues/agriculture/biofuels>

²⁵ “First generation” biofuels generally refer to biofuels made from traditional food crops such as corn or sugar; it can be contrasted with “second generation” or “advanced” biofuels from lignocellulosic biomass, woody residues, and other non-food sources.

²⁶ Nature Climate Change, Brazilian sugarcane ethanol as an expandable green alternative to crude oil use: <https://www.nature.com/articles/nclimate3410>

²⁷ Sustainability of sugarcane production in Brazil: <https://www.researchgate.net/publication/323443015/download>

²⁸ Brazilian-American Chamber of Commerce, “Brazilian Agribusiness: A Success Story that Keeps on Giving”, (2018), at: <https://brazilcham.com/wp-content/uploads/2018/12/agriculture-report-1.pdf>

²⁹ The Carbon Brief, The Carbon Brief Profile: Brazil: <https://www.carbonbrief.org/the-carbon-brief-profile-brazil>

³⁰ Climate Action, “Brazil’s Low-Carbon Agriculture Programme”, (2012) at:

https://www.climateaction.org/news/brazils_low_carbon_agriculture_programme

³¹ Waste Management in Brazil:

https://www.iswa.org/fileadmin/user_upload/World_Congress_2014_Sao_Paulo/Carlos_Carlos_Waste_management_in_Brazil_-_it_is_time_to_focus_on_waste_as_a_resource.pdf

over the last few years, 42% of all waste collected is still disposed of improperly or unsafely.³¹ Although incinerators are more effective, the final destination of waste is usually dumps or landfills, due to the lower costs associated with these disposal methods.³² Around 58% of waste is placed in sanitary landfills, 24% in controlled landfills, and 17% in various dumpsites, which translates into 75,000 tonnes of waste not being deposited in a manner that prevents environmental degradation.³³ Moreover, there is a significant population that lives in large urban areas that does not have access to sanitary sewers.³⁴ In 2018, Brazil's Supreme Federal Court ruled that the construction of landfills in areas of permanent conservation is prohibited.³⁵ As a direct consequence of this ruling,³⁶ Brazilian state governments, will have to seek out safer places to dispose of their waste. As much of the waste management services are left to the private sector,³⁷ there is a wide range of opportunities for investments into the sustainable development of the waste sector. Given this context, Sustainalytics is of the opinion that BNDES' green lending will have a positive impact on waste management in Brazil, from both an environmental and a social perspective.

The importance of supporting MSMEs in Brazil

According to the OECD, MSMEs in Brazil account for 98.5% of all legally constituted companies and 27% of the nation's GDP.³⁸ As defined in the Complementary Law 123 of 2006, micro enterprises are companies with gross annual income of up to BRL 360,000, while small businesses are those with gross annual income ranging from BRL 360,000 to BRL 4.8 million.

Despite the important role MSMEs play in supporting Brazil's citizenry and economy, these businesses face a number of challenges given the conditions of the environment in which they operate. Due to Brazil's lack of sufficient integration into the global supply chain, many MSMEs are unable to participate in international trade and successfully scale their business.³⁹ The OECD Report further cites that there is a stark productivity gap between MSMEs and large companies in Brazil, much of which has been attributed to limited innovation and export propensity amongst Brazilian MSMEs.⁴⁰ In addition, credit market conditions for such businesses are unfavorable, namely because of high interest rates, short loan maturities, a lack of credit history or property collateral, preventing many MSMEs from receiving the public and private sector-credit needed to ensure long-term viability.⁴¹ While the government has worked towards introducing various policy reforms to combat this, loan subsidies have proven to be the main direct policy instruments utilized by the federal government to encourage MSME development.⁴² For example, between 2016 and 2018, the Brazilian Development Bank's share of business loans provided to SMEs increased from 30.6% to 46.8%.⁴³

Sustainalytics is of the view that BNDES' provision of financing to MSMEs, particularly those that address low-HDI municipalities in Brazil is expected to play an important role in fostering economic opportunity and social development and reducing inequalities across, specifically for underserved municipalities.

³² Issues in Brazil, Waste Management: <https://sites.google.com/a/nygh.edu.sg/brazil--people-and-society-poverty-environmental-sustainability/main-issues/environment/waste-management-in-brazil>

³³ Waste Management in Brazil:

https://www.iswa.org/fileadmin/user_upload/World_Congress_2014_Sao_Paolo/Carlos_Carlos_Waste_management_in_Brazil_-_it_is_time_to_focus_on_waste_as_a_resource.pdf

³⁴ Issues in Brazil, Waste Management: <https://sites.google.com/a/nygh.edu.sg/brazil--people-and-society-poverty-environmental-sustainability/main-issues/environment/waste-management-in-brazil>

³⁵ Brazil Reports, Brazil's Supreme court orders sustainable waste management by law: <https://brazilreports.com/brazils-supreme-court-orders-sustainable-waste-management-by-law/>

³⁶ *Ibid*

³⁷ Issues in Brazil, Waste Management: <https://sites.google.com/a/nygh.edu.sg/brazil--people-and-society-poverty-environmental-sustainability/main-issues/environment/waste-management-in-brazil>

³⁸ The Organization of Economic Cooperation and Development (OECD), "Financing SMEs and Entrepreneurs 2020: An OECD Scoreboard", at: <https://www.oecd-ilibrary.org/sites/8153da8d-en/index.html?itemId=/content/component/8153da8d-en>

³⁹ The Organization of Economic Cooperation and Development (OECD), "SME and Entrepreneurship Policy in Brazil 2020", at: <https://www.oecd-ilibrary.org/sites/cc5feb81-en/index.html?itemId=/content/publication/cc5feb81-en>

⁴⁰ The Organization of Economic Cooperation and Development (OECD), "SME and Entrepreneurship Policy in Brazil 2020", at: <https://www.oecd-ilibrary.org/sites/cc5feb81-en/index.html?itemId=/content/publication/cc5feb81-en>

⁴¹ IDB, Brazil promotes productivity of micro, small and medium-sized enterprises with IDB support: <https://www.iadb.org/en/news/brazil-promotes-productivity-micro-small-and-medium-size-enterprises-idb-support>

⁴² OECD Library, SME and Entrepreneurship Policy in Brazil 2020: <https://www.oecd-ilibrary.org/sites/cc5feb81-en/index.html?itemId=/content/publication/cc5feb81-en>

⁴³ *Ibid*

Alignment with/contribution to SDGs

The Sustainable Development Goals (SDGs) were set in September 2015 by the United Nations General Assembly and form an agenda for achieving sustainable development by the year 2030. The bond(s) issued under the Sustainability Bond Framework advances the following SDGs and targets:

Use of Proceeds Category	SDG	SDG target
Renewable Energy	7. Affordable and Clean Energy	7.2 By 2030, increase substantially the share of renewable energy in the global energy mix
Energy Efficiency	7. Affordable and Clean Energy	7.3 By 2030, double the global rate of improvement in energy efficiency
Sustainable Water and Wastewater Management	6. Clean Water and Sanitation	6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally
Pollution Prevention and Control	12. Responsible Consumption and Production	12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse
Clean Transportation	11. Sustainable Cities and Communities	11.2. By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.
Environmentally Sustainable Management of Living Natural Resources and Land Use	15. Life on Land	15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements 15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally.
Access to Essential Services - Health	3. Good Health and Well-Being	3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all.
Access to Essential Services - Education	4. Quality Education	4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care and preprimary education so that they are ready for primary education 4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university

MSME financing and microfinance	8. Decent Work and Economic Growth	8.3. Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services
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Conclusion

The Banco Nacional de Desenvolvimento Econômico e Social has developed the BNDES Sustainability Bond Framework under which it will issue green, social and sustainability bonds and use the proceeds to finance projects in the areas of Renewable Energy, Energy Efficiency, Sustainable Water and Wastewater Management, Pollution Prevention and Control, Clean Transportation, Environmentally Sustainable Management of Living Natural Resources and Land Use, Access to Essential Services - Health, Access to Essential Services – Education and MSME Financing and Microfinance. Sustainalytics considers that the projects funded by the sustainability bond proceeds will provide positive environmental and/or social impacts.

The BNDES Sustainability Bond Framework outlines a process by which proceeds will be tracked, allocated, and managed, and commitments have been made for reporting on the allocation and impact of the use of proceeds. Furthermore, Sustainalytics believes that the Framework is aligned with the overall sustainability strategy of the Bank and that the use of proceeds categories will contribute to the advancement of the UN Sustainable Development Goals specifically 3, 4, 6, 7, 8, 11, 12 and 15. Additionally, Sustainalytics is of the opinion that BNDES has adequate measures to identify, manage and mitigate environmental and social risks commonly associated with the eligible projects funded by the use of proceeds.

Based on the above, Sustainalytics is confident that BNDES is well-positioned to issue green, social and sustainability bonds and that that Sustainability Bond Framework is robust, transparent, and in alignment with the four core components of the Green Bond Principles (2018) and Social Bond Principles (2020).

Appendices

Appendix 1: Certification Schemes for Agriculture





	Rainforest Alliance ⁴⁴	UTZ ⁴⁵	Roundtable on Responsible Soy (RTRS) ⁴⁶	Bonsucro ⁴⁷
Background	The Rainforest Alliance Seal is a global certification system for Agriculture, Forestry and Tourism. The Rainforest Alliance certification indicates compliance with the organization's standards for environmental, social and economic sustainability. Rainforest Alliance merged with UTZ in January 2018.	The UTZ Label is a global certification system for coffee, cocoa, tea and hazelnuts. The UTZ certification incorporates environmental, social, farm management and farming practices considerations. UTZ merged with Rainforest Alliance in January 2018.	The Round Table for Sustainable Soy (RTRS) works with all involved stakeholders on producing more sustainable soy through the RTRS Standard for Responsible Soy Production.	Bonsucro was developed out of the Better Sugarcane Initiative, an international multi-stakeholder NGO whose purpose is to lower the environmental and social impacts of sugarcane production. The Bonsucro Production Standard aims to ensure that the sugarcane production and sugarcane derived products are sustainably produced.
Clear positive impact	Promoting sustainable practices in agriculture, forestry and tourism.	Promoting sustainable practices in Coffee, Cocoa Tea and Hazelnut farming and trading.	Promoting sustainable soy production for human consumption, animal feed and biofuels.	Promoting sustainable sugarcane production.
Minimum standards	Rainforest alliance establishes a minimum threshold for impact through critical criteria, and requires farmers to go beyond by demonstrating improved sustainability on 14 continuous improvement criteria.	UTZ establishes a minimum threshold for impact through mandatory points and additional points, and requires farmers to go beyond by demonstrating compliance with an increasingly large proportion of both mandatory and additional points.	The RTRS soy certification sets requirements in the areas of legal compliance and good business practices, responsible labour conditions, responsible community relations, environmental responsibility, and good agricultural practices.	The Bonsucro Production Standard sets minimum requirements in the areas of legal compliance, biodiversity and ecosystem impacts, human rights, production and processing and continuous improvement.
Scope of certification or programme	Rainforest alliance addresses key risks such as human rights, child labour, pesticide use and biodiversity use through its criteria.	UTZ addresses key risks such as human rights, child labour, pesticide use and biodiversity use through its criteria.	The RTRS soy certification addresses human rights, child labour, forced labour, human health and safety, biodiversity use, soil quality, substance use (agrochemicals), GHG emissions, and resource management (energy, water, waste) through its criteria.	Bonsucro addresses key risks such as human and labour rights, ecosystem management, biodiversity and land use through its criteria.
Verification of standards and risk mitigation	Certified entities undergo third party verification to ensure compliance with	Certified entities undergo third party verification to ensure compliance with	Certified entities undergo third-party audits to ensure compliance with	Certified entities undergo third-party audits to ensure

⁴⁴ Rainforest Alliance, Sustainable Agriculture Certification: <https://www.rainforest-alliance.org/business/certification/>

⁴⁵ UTZ Certification, The UTZ Standard: <https://utz.org/>

⁴⁶ RTRS: <http://www.responsiblesoy.org/?lang=en>

⁴⁷ Bonsucro: <https://www.bonsucro.com/>

	criteria and continuous improvement.	criteria and continuous improvement.	criteria. As the certificate is valid 5 years, the certified entity is subject to annual surveillance surveys.	compliance with criteria.
Third party expertise and multi-stakeholder process	Standard setting is aligned with the ISEAL Standard Setting Code.	Standard setting is aligned with the ISEAL Standard Setting Code.	The RTRS Standard for Responsible Soy Production was developed through the efforts of producers, industry and civil society, which agreed upon the Principles and Criteria for certifying soy as a responsible crop.	Bonsucro is a full member of the ISEAL Alliance and respects the ISEAL Code of Good Practice for Setting Social and Environmental Standards and the Impacts Code.
Performance Display				
Qualitative considerations	Global recognition across 76 countries around the world. There are 763 Rainforest Alliance certified products and more than 1,354,057 people which have conducted training, certification and verification under the Rainforest Alliance standard. Rigorous on the enforcement of minimum standards and strong governance over the implementaton of social and environmental mitigation processes.	Global recognition across 131 countries around the world. There are 987,000 UTZ Certified farmers in the UTZ programme with more than 368,000 workers on the UTZ certified farms in 41 producing countries and more than 3.4 million hectares of UTZ certified crops. The UTZ name or label is present on more than 15,000 products in 131 countries worldwide. Rigorous on the enforcement of minimum standards and strong governance over the implementaton of social and environmental mitigation processes.	RTRS has more than 180 members from countries all around the world, selling over 1.3 million tonnes of RTRS certified soy. The RTRS certifications have been criticized for managing allegedly 'flawed' criteria which allow the certification of GMO and herbicide resistant crops. Additionally, the RTRS criteria allow for deforestation of secondary forest areas (not identified as primary or high conservation value). Moreover, in 2009 and 2010 two major Brazilian organisations in the soya supply chain quit the RTRS because the addition of a criteria related to deforestation. RTRS members such as Nidera, Monsanto and DuPont/Pioneer were sanctioned by Argentine authorities in the past due to forced labour, despite the fact that respecting labour laws are a condition for using the RTRS label.	Bonsucro has certified around 3.37% of global sugarcane production and covers 3.70% of global area of sugarcane, having 207 member organizations in over 20 countries.

Appendix 2: Certification Schemes for Forestry Products

	FSC ⁴⁸	PEFC ^{49,50}
Background	Founded in 1993 after the 1992 Earth Summit in Rio failed to produce any international agreements to fight against deforestation, FSC aims to promote sustainable forest management practice.	PEFC was founded in 1999 in response to the specific requirements of small- and family forest owners as an international umbrella organization providing independent assessment, endorsement and recognition of national forest certification systems.
Basic Principles	<ul style="list-style-type: none"> • Compliance with laws and FSC principles • Tenure and use rights and responsibilities • Indigenous peoples' rights • Community relations and workers' rights • Benefits from the forests • Environmental impact • Management plans • Monitoring and assessment • Special sites – high conservation value forests (HCVF) • Plantations 	<ul style="list-style-type: none"> • Maintenance and appropriate enhancement of forest resources and their contribution to the global carbon cycle • Maintenance and enhancement of forest ecosystem health and vitality • Maintenance and encouragement of productive functions of forests (wood and no-wood) • Maintenance, conservation and appropriate enhancement of biological diversity in forest ecosystems • Maintenance and appropriate enhancement of protective functions in forest management (notably soil and water) • Maintenance of socioeconomic functions and conditions • Compliance with legal requirements
Governance	<p>The General Assembly, consisting of all FSC members, constitutes the highest decision-making body.</p> <p>At the General Assembly, motions are proposed by one member, seconded by two more, and deliberated and voted on by all members. Members are entitled to vote to amend the bylaws, initiate new policies, and clarify, amend or overturn a policy decision by the board.</p> <p>Members apply to join one of three chambers – environmental, social, or economic – that are further divided into northern and southern sub-chambers.</p> <p>Each chamber holds 33.3% of the weight in votes, and within each chamber the votes are weighted so that the North and South hold an equal portion of authority, to ensure influence is shared equitably between interest groups and countries with different levels of economic development.</p>	<p>PEFC's governance structure is formed by the General Assembly (GA) which is the highest authority and decision-making body. It is made up of all PEFC members, including national and international stakeholders.</p> <p>Members vote on key decisions including endorsements, international standards, new members, statutes and budgets. All national members have between one and seven votes, depending on membership fees, while international stakeholder members have one vote each.</p> <p>The Board of Directors supports the work of the GA and together the GA and the Board make the formal approval of final draft standards. Standards are developed by working groups.</p> <ul style="list-style-type: none"> • In general, PEFC's governance structure is more representative of industry and government stakeholders than of social or environmental groups, which gives

⁴⁸ Forest Stewardship Council, FSC: <https://ca.fsc.org/en-ca>

⁴⁹ The Brazilian Forest Certification Program (CERFLOR) was formally endorsed by PEFC in 2005 and has since formed alignment. As such, Sustainalytics' analysis of PEFC's framework, guidelines and credibility can be applied to CERFLOR. See more, at: <https://www.pefc.org/discover-pefc/our-pefc-members/national-members/brazilian-forest-certification-programme-cerflor>

⁵⁰ Programme for the Endorsement of Forest Certification, PEFC: <https://www.pefc.org/>

	<p>The votes of all individual members in each sub-chamber represent 10% of the total vote of the sub-chamber, while the votes of organizational members make up the other 90%.</p> <ul style="list-style-type: none"> The members vote for the board of directors, which is accountable to the members. There is an international board elected by all members and a US board, elected by the US-based members. 	<p>industry and governments more influence in the decision-making process. However, the organization does include stakeholders from all sectors.</p>
<p>Scope</p>	<p>FSC is a global, multi-stakeholder owned system. All FSC standards and policies are set by a consultative process. There is an FSC Global standard and for certain countries FSC National standards. Economic, social, and environmental interests have equal weight in the standard setting process. FSC follows the ISEAL Code of Good Practice for Setting Social and Environmental Standards.</p>	<p>Multi-stakeholder participation is required in the governance of national schemes as well as in the standard-setting process. Standards and normative documents are reviewed periodically at intervals that do not exceed five years. The PEFC Standard Setting standard is based on ISO/IEC Code for good practice for standardization (Guide 59)⁵¹ and the ISEAL Code of Good Practice for Setting Social and Environmental Standards.</p>
<p>Chain-of-Custody</p>	<ul style="list-style-type: none"> The Chain-of-Custody (CoC) standard is evaluated by a third-party body that is accredited by FSC and compliant with international standards. CoC standard includes procedures for tracking wood origin. CoC standard includes specifications for the physical separation of certified and non-certified wood, and for the percentage of mixed content (certified and non-certified) of products. CoC certificates state the geographical location of the producer and the standards against which the process was evaluated. Certificates also state the starting and finishing point of the CoC. 	<ul style="list-style-type: none"> Quality or environmental management systems (ISO 9001:2008 or ISO 14001:2004 respectively) may be used to implement the minimum requirements for chain-of-custody management systems required by PEFC. Only accredited certification bodies can undertake certification. CoC requirements include specifications for physical separation of wood and percentage-based methods for products with mixed content. The CoC standard includes specifications for tracking and collecting and maintaining documentation about the origin of the materials. The CoC standard includes specifications for the physical separation of certified and non-certified wood. The CoC standard includes specifications about procedures for dealing with complains related to participant's chain of custody.
<p>Non-certified wood sources</p>	<p>FSC's Controlled Wood Standard establishes requirements to participants to establish supply-chain control systems, and documentation to avoid sourcing materials from controversial sources, including:</p> <ol style="list-style-type: none"> Illegally harvested wood, including wood that is harvested without legal authorization, from 	<p>The PEFC's Due Diligence System requires participants to establish systems to minimize the risk of sourcing raw materials from:</p> <ol style="list-style-type: none"> forest management activities that do not comply with local, national or international laws related to: <ul style="list-style-type: none"> o operations and harvesting, including land use conversion,

⁵¹ ISO, ISO/IEC Guide 59:2019: <https://www.iso.org/standard/23390.html>

	<p>protected areas, without payment of appropriate taxes and fees, using fraudulent papers and mechanisms, in violation of CITES requirements, and others,</p> <ul style="list-style-type: none"> b. Wood harvested in violation of traditional and civil rights, c. Wood harvested in forests where high conservation values are threatened by management activities, d. Wood harvested in forests being converted from forests and other wooded ecosystems to plantations or non-forest uses, <ul style="list-style-type: none"> • Wood from management units in which genetically modified trees are planted. 	<ul style="list-style-type: none"> ○ management of areas with designated high environmental and cultural values, ○ protected and endangered species, including CITES species, ○ health and labor issues, ○ indigenous peoples' property, tenure and use rights, ○ payment of royalties and taxes. <ul style="list-style-type: none"> b. genetically modified organisms, c. forest conversion, including conversion of primary forests to forest plantations. <ul style="list-style-type: none"> •
<p>Accreditation/verification</p>	<p>FSC-accredited Certification Bodies (CB) conduct an initial assessment, upon successful completion companies are granted a 5-year certificate. Companies must undergo an annual audit every year and a reassessment audit every 5 years. Certification Bodies undergo annual audits from Accreditation Services International (ASI) to ensure conformance with ISO standard requirements.</p>	<p>Accreditation is carried out by an accreditation body (AB). Like a certification body checks a company meets the PEFC standard, the accreditation body checks that a certification body meets specific PEFC and ISO requirements. Through the accreditation process PEFC has assurance that certification bodies are independent and impartial, that they follow PEFC certification procedures.</p> <p>PEFC does not have their own accreditation body. Like with the majority of ISO based certifications, PEFC relies on national ABs under the umbrella of the International Accreditation Forum (IAF). National ABs need to be a member of the IAF, which means they must follow IAF's rules and regulations.</p>
<p>Conclusion</p>	<p>Sustainalytics views both FSC and PEFC as being robust, credible standards that are based on comprehensive principles and criteria that are aligned with ISO. Both schemes have received praise for their contribution to sustainable forest management practices⁵² and both have also faced criticism from civil society actors.^{53,54} In certain instances, these standards go above and beyond national regulation and are capable of providing a high level of assurance that sustainable forest management practices are in place. However, in other cases, the standards are similar or equal to national legislation and provide little additional assurance. Ultimately, the level of assurance that can be provided by either scheme is contingent upon several factors including the certification bodies conducting audits, national regulations and local context.</p>	

⁵² FESPA, FSC, PEFC and ISO 38200: <https://www.fespa.com/en/news-media/blog/fsc-pefc-and-iso-38200>

⁵³ Yale Environment 360, Greenwashed Timber: How Sustainable Forest Certification Has Failed: <https://e360.yale.edu/features/greenwashed-timber-how-sustainable-forest-certification-has-failed>

⁵⁴ EIA, PEFC: A Fig Leaf for Stolen Timber: <https://eia-global.org/blog-posts/PEFC-fig-leaf-for-stolen-timber>

Appendix 3: Certification Schemes for Aquaculture





	ASC ⁵⁵	Best Aquaculture Practices ⁵⁶	MSC ⁵⁷	Global GAP Aquaculture
Background	The Aquaculture Stewardship Council (ASC) is an independent, international NGO that manages the ASC certification and labelling program for responsible aquaculture.	The BAP certification is administered by the Global Aquaculture Alliance (GAA), a non-profit organization focused on advocacy, the education and leadership of on responsible aquaculture matters.	MSC (Marine Stewardship Council) is a non-profit organization founded in 1996, that issues eco-label certifications for fisheries which are sustainable and well-managed.	GLOBAL G.A.P. is a trademark and a set of standards for good agricultural practices (G.A.P.). They are a global organization with the objective to ensure: safe, sustainable agriculture worldwide. They set voluntary standards for the certification of agricultural products around the globe.
Areas of Assessment	<p>ASC has different farm standards depending on the fish species (e.g. Abalone, Bivalve, Freshwater trout, Pangasius, Salmon, Seriola and Cobia, Shrimp, Tilapia), focusing on both the environmental and social impact of farming. Each type of farm standards has specific performance indicators (PIs). Some of the elements assessed by the ASC certification include:</p> <ul style="list-style-type: none"> ○ Biodiversity ○ Feed ○ Pollution ○ Diseases ○ Antibiotics ○ Social <p>ASC also works in partnership with MSC (Marine Stewardship Council) regarding the certification for seaweed farms. The ASC-MSC Seaweed Standard has five principles, each with specific performance indicators:</p> <ul style="list-style-type: none"> ○ Sustainable wild populations ○ Environmental impacts 	Different certifications are available for different parts of the supply chain: farms, processing plants, hatcheries, feed mills. In practice, that means that a processing plant that does not necessarily source all of its fish from certified farms can still be certified (a star rating display on the label provides this information).	<p>The MSC Fisheries Standard assesses Performance Indicators (PIs) from three principles:</p> <p>Principle 1 Sustainable target fish stocks:</p> <ul style="list-style-type: none"> • Outcome <ul style="list-style-type: none"> ○ Stock Status ○ Stock Rebuilding ○ Harvest Strategy (Management) ○ Harvest Strategy ○ Harvest Control Rules & Tools ○ Information/Monitoring ○ Assessment of Stock Status ○ Enhancement ○ Enhancement Outcome ○ Enhancement Management ○ Enhancement Information <p>Principle 2 Environmental impact of fishing</p> <ul style="list-style-type: none"> • Primary Species <ul style="list-style-type: none"> ○ Outcome ○ Management ○ Information ○ Secondary Species ○ Outcome ○ Management ○ Information ○ ETP Species 	The standard covers aquaculture compound feed production, hatcheries and farms and chain of custody

⁵⁵ <https://www.asc-aqua.org/what-we-do/our-standards/farm-standards/>

⁵⁶ Best Aquaculture Practices Certification, About Best Aquaculture Practices: <https://www.bapcertification.org/About>

⁵⁷ <https://www.msc.org/standards-and-certification/fisheries-standard>

	<ul style="list-style-type: none"> ○ Effective management ○ Social responsibility <p>Community relations and interactions</p>		<ul style="list-style-type: none"> ○ Outcome Management Information ○ Habitats ○ Outcome Management Information ○ Ecosystems ○ Outcome Management Information <p>Principles 3 Effective management</p> <ul style="list-style-type: none"> • Governance & policy ○ Legal and/or Customary Framework ○ Consultation, Roles & Responsibilities ○ Long Term Objectives ○ Fishery Specific Management System ○ Fishery Specific Objectives ○ Decision Making Processes ○ Compliance & Enforcement ○ Monitoring & Management Performance Evaluation <p>The Fisheries Certification Process (FCP) accompanies the Fisheries Standard, as it explains how the MSC Fisheries Standard should be interpreted during the assessment process.</p>	
<p>Requirements</p>	<p>The applicant's fishery receives scores based on its performance in relevant PIs. If the farm complies with the ASC requirements, then it receives the ASC label.</p>	<p>The BAP assessment has mandatory minimums, but also includes indicators which allow the proponent to define individual targets.</p> <p>As the certification process is fishery-specific, the standard may be more robust for some species. For example, the Monterey Bay Aquarium's Seafood Watch</p>	<p>The applicant's fishery receives scores based on its performance in relevant PIs. If the applicant passes the assessments in all the three areas of the MSC Fisheries Standard, then it receives the MSC label.</p>	<p>Certification process requires an initial assessment and ongoing annual third-party audits. 10% of all audits carried out annually by certification bodies must be unannounced.</p> <p>Regarding aquaculture, the Control Points and Compliance Criteria document consists of</p>

		programme recommends BAP as a reputable label for freshwater fish, mussels, and shrimp, but not salmon, scallops, or clams. ⁵⁸		3 types of control points: Major Musts, Minor Musts and Recommendations. To obtain Global GAP certification, 100% of Major Musts are compulsory, 95% of Minor musts are compulsory and Recommendations are not required.
Performance display				
Accreditation	Conformity Assessment Bodies (CAB), independent from ASC and certified by the independent organization Accreditation Services International (ASI).	BAP is administered by the Global Aquaculture Alliance (GAA).	Conformity Assessment Bodies (CAB), independent from MSC and certified by the independent organization Accreditation Services International (ASI).	
Qualitative considerations	ASC meets best practice requirements set by both ISEAL (International Social and Environmental Accreditation and Labelling) and UN FAO (United Nation's Food and Agriculture Organization).	Widely recognized within the industry. As the certification process is fishery-specific, the standard may be more robust for some species than for other. While a reputable certification overall, the standard does not fully mitigate all the risks associated with aquaculture.	MSC meets best practice requirements set by both ISEAL (International Social and Environmental Accreditation and Labelling) and UN FAO (United Nation's Food and Agriculture Organization).	On 20 April 2018 The Global Sustainable Seafood Initiative has provided formal recognition of the GLOBALG.A.P. Aquaculture Certification System for the scope of Aquaculture. GSSI's recognition shows that the GLOBALG.A.P. Aquaculture Certification System, for their GLOBALG.A.P. Integrated Farm Assurance System is in alignment with all applicable Essential Components of the GSSI Global Benchmark Tool.

⁵⁸ Seafood Watch, Eco-Certification: <https://www.seafoodwatch.org/seafood-recommendations/eco-certification>

Appendix 4: Sustainability Bond / Sustainability Bond Programme - External Review Form

Section 1. Basic Information

Issuer name:	Banco Nacional de Desenvolvimento Econômico e Social (BNDES)
Sustainability Bond ISIN or Issuer Sustainability Bond Framework Name, if applicable:	Sustainability Bond Framework
Review provider's name:	Sustainalytics
Completion date of this form:	March 12, 2021
Publication date of review publication:	

Section 2. Review overview

SCOPE OF REVIEW

The following may be used or adapted, where appropriate, to summarise the scope of the review.

The review assessed the following elements and confirmed their alignment with the GBP and SBP:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Use of Proceeds | <input checked="" type="checkbox"/> Process for Project Evaluation and Selection |
| <input checked="" type="checkbox"/> Management of Proceeds | <input checked="" type="checkbox"/> Reporting |

ROLE(S) OF REVIEW PROVIDER

- | | |
|---|--|
| <input checked="" type="checkbox"/> Consultancy (incl. 2 nd opinion) | <input type="checkbox"/> Certification |
| <input type="checkbox"/> Verification | <input type="checkbox"/> Rating |
| <input type="checkbox"/> Other (<i>please specify</i>): | |

Note: In case of multiple reviews / different providers, please provide separate forms for each review.

EXECUTIVE SUMMARY OF REVIEW and/or LINK TO FULL REVIEW (*if applicable*)

Please refer to Evaluation Summary above.

Section 3. Detailed review

Reviewers are encouraged to provide the information below to the extent possible and use the comment section to explain the scope of their review.

1. USE OF PROCEEDS

Overall comment on section (*if applicable*):

The eligible categories for the use of proceeds Renewable Energy, Energy Efficiency, Sustainable Water and Wastewater Management, Pollution Prevention and Control, Clean Transportation, Environmentally Sustainable Management of Living Natural Resources and Land Use, Access to Essential Services - Health, Access to Essential Services - Education, MSME Financing and Microfinance, are aligned with those recognized by both the Green Bond Principles and Social Bond Principles. Sustainalytics considers that the eligible categories will lead to positive environmental or social impacts and advance the UN Sustainable Development Goals, specifically SDG 3, 4, 6, 7, 8, 11, 12 and 15.

Use of proceeds categories as per GBP:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Renewable energy | <input checked="" type="checkbox"/> Energy efficiency |
| <input checked="" type="checkbox"/> Pollution prevention and control | <input checked="" type="checkbox"/> Environmentally sustainable management of living natural resources and land use |
| <input type="checkbox"/> Terrestrial and aquatic biodiversity conservation | <input checked="" type="checkbox"/> Clean transportation |
| <input checked="" type="checkbox"/> Sustainable water and wastewater management | <input type="checkbox"/> Climate change adaptation |
| <input type="checkbox"/> Eco-efficient and/or circular economy adapted products, production technologies and processes | <input type="checkbox"/> Green buildings |
| <input type="checkbox"/> Unknown at issuance but currently expected to conform with GBP categories, or other eligible areas not yet stated in GBPs | <input type="checkbox"/> Other (please specify): |

If applicable please specify the environmental taxonomy, if other than GBPs:

Use of proceeds categories as per SBP:

- | | |
|---|---|
| <input type="checkbox"/> Affordable basic infrastructure | <input checked="" type="checkbox"/> Access to essential services |
| <input type="checkbox"/> Affordable housing | <input type="checkbox"/> Employment generation (through SME financing and microfinance) |
| <input type="checkbox"/> Food security | <input type="checkbox"/> Socioeconomic advancement and empowerment |
| <input type="checkbox"/> Unknown at issuance but currently expected to conform with SBP categories, or other eligible areas not yet stated in SBP | <input checked="" type="checkbox"/> Other (please specify): MSME financing and microfinance |

If applicable please specify the social taxonomy, if other than SBP:

2. PROCESS FOR PROJECT EVALUATION AND SELECTION

Overall comment on section (if applicable):

BNDES has articulated a project evaluation process that begins with its internal social and environmental risk management process. Projects are then reviewed and approved by Superintendents from the Bank's Financial, Public Management, Socio-Environmental and Operational divisions based on the established eligibility and exclusionary criteria. Sustainalytics considers the project selection process to be in line with market practice.

Evaluation and selection

- | | |
|---|---|
| <input checked="" type="checkbox"/> Credentials on the issuer's social and green objectives | <input checked="" type="checkbox"/> Documented process to determine that projects fit within defined categories |
| <input checked="" type="checkbox"/> Defined and transparent criteria for projects eligible for Sustainability Bond proceeds | <input checked="" type="checkbox"/> Documented process to identify and manage potential ESG risks associated with the project |
| <input type="checkbox"/> Summary criteria for project evaluation and selection publicly available | <input type="checkbox"/> Other (please specify): |

Information on Responsibilities and Accountability

- | | |
|--|--|
| <input checked="" type="checkbox"/> Evaluation / Selection criteria subject to external advice or verification | <input type="checkbox"/> In-house assessment |
| <input type="checkbox"/> Other (please specify): | |

3. MANAGEMENT OF PROCEEDS

Overall comment on section (if applicable):

BNDES is committed to monitoring its sustainability bond proceeds through its internal tracking system. Pending allocation to eligible projects, the net proceeds of the bonds will be held in cash, cash equivalents or Brazilian government securities. This process is in line with market practice.

Tracking of proceeds:

- Sustainability Bond proceeds segregated or tracked by the issuer in an appropriate manner
- Disclosure of intended types of temporary investment instruments for unallocated proceeds
- Other (please specify):

Additional disclosure:

- | | |
|---|--|
| <input type="checkbox"/> Allocations to future investments only | <input type="checkbox"/> Allocations to both existing and future investments |
|---|--|

- | | |
|--|---|
| <input type="checkbox"/> Allocation to individual disbursements | <input type="checkbox"/> Allocation to a portfolio of disbursements |
| <input type="checkbox"/> Disclosure of portfolio balance of unallocated proceeds | <input type="checkbox"/> Other (please specify): |

4. REPORTING

Overall comment on section (if applicable):

BNDES intends to report on allocation of proceeds on an annual basis until full allocation. Additionally, the Bank commits to reporting on relevant impact metrics. Sustainalytics views BNDES' allocation and impact reporting as aligned with market practice.

Use of proceeds reporting:

- | | |
|--|--|
| <input type="checkbox"/> Project-by-project | <input checked="" type="checkbox"/> On a project portfolio basis |
| <input type="checkbox"/> Linkage to individual bond(s) | <input type="checkbox"/> Other (please specify): |

Information reported:

- | | |
|--|---|
| <input type="checkbox"/> Allocated amounts | <input type="checkbox"/> Sustainability Bond financed share of total investment |
| <input type="checkbox"/> Other (please specify): | |

Frequency:

- | | |
|--|--------------------------------------|
| <input checked="" type="checkbox"/> Annual | <input type="checkbox"/> Semi-annual |
| <input type="checkbox"/> Other (please specify): | |

Impact reporting:

- | | |
|--|--|
| <input type="checkbox"/> Project-by-project | <input checked="" type="checkbox"/> On a project portfolio basis |
| <input type="checkbox"/> Linkage to individual bond(s) | <input type="checkbox"/> Other (please specify): |

Information reported (expected or ex-post):

- | | |
|---|---|
| <input checked="" type="checkbox"/> GHG Emissions / Savings | <input checked="" type="checkbox"/> Energy Savings |
| <input type="checkbox"/> Decrease in water use | <input type="checkbox"/> Number of beneficiaries |
| <input type="checkbox"/> Target populations | <input type="checkbox"/> Other ESG indicators (please specify): |

Frequency:

- | | |
|--|--------------------------------------|
| <input checked="" type="checkbox"/> Annual | <input type="checkbox"/> Semi-annual |
| <input type="checkbox"/> Other (please specify): | |

Means of Disclosure

- | | |
|---|---|
| <input checked="" type="checkbox"/> Information published in financial report | <input type="checkbox"/> Information published in sustainability report |
| <input type="checkbox"/> Information published in ad hoc documents | <input type="checkbox"/> Other (please specify): |
| <input type="checkbox"/> Reporting reviewed (if yes, please specify which parts of the reporting are subject to external review): | |

Where appropriate, please specify name and date of publication in the useful links section.

USEFUL LINKS (e.g. to review provider methodology or credentials, to issuer's documentation, etc.)

SPECIFY OTHER EXTERNAL REVIEWS AVAILABLE, IF APPROPRIATE

Type(s) of Review provided:

- | | |
|--|--|
| <input type="checkbox"/> Consultancy (incl. 2 nd opinion) | <input type="checkbox"/> Certification |
| <input type="checkbox"/> Verification / Audit | <input type="checkbox"/> Rating |
| <input type="checkbox"/> Other (<i>please specify</i>): | |

Review provider(s):

Date of publication:

ABOUT ROLE(S) OF REVIEW PROVIDERS AS DEFINED BY THE GBP AND THE SBP

- i. Second-Party Opinion: An institution with sustainability expertise that is independent from the issuer may provide a Second-Party Opinion. The institution should be independent from the issuer's adviser for its Sustainability Bond framework, or appropriate procedures such as information barriers will have been implemented within the institution to ensure the independence of the Second-Party Opinion. It normally entails an assessment of the alignment with the Principles. In particular, it can include an assessment of the issuer's overarching objectives, strategy, policy, and/or processes relating to sustainability and an evaluation of the environmental and social features of the type of Projects intended for the Use of Proceeds.
- ii. Verification: An issuer can obtain independent verification against a designated set of criteria, typically pertaining to business processes and/or sustainability criteria. Verification may focus on alignment with internal or external standards or claims made by the issuer. Also, evaluation of the environmentally or socially sustainable features of underlying assets may be termed verification and may reference external criteria. Assurance or attestation regarding an issuer's internal tracking method for use of proceeds, allocation of funds from Sustainability Bond proceeds, statement of environmental or social impact or alignment of reporting with the Principles may also be termed verification.
- iii. Certification: An issuer can have its Sustainability Bond or associated Sustainability Bond framework or Use of Proceeds certified against a recognised external sustainability standard or label. A standard or label defines specific criteria, and alignment with such criteria is normally tested by qualified, accredited third parties, which may verify consistency with the certification criteria.
- iv. Green, Social and Sustainability Bond Scoring/Rating: An issuer can have its Sustainability Bond, associated Sustainability Bond framework or a key feature such as Use of Proceeds evaluated or assessed by qualified third parties, such as specialised research providers or rating agencies, according to an established scoring/rating methodology. The output may include a focus on environmental and/or social performance

data, process relative to the Principles, or another benchmark, such as a 2-degree climate change scenario. Such scoring/rating is distinct from credit ratings, which may nonetheless reflect material sustainability risks.

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Named
2015: Best SRI or Green Bond Research or Rating Firm
2017, 2018, 2019: Most Impressive Second Opinion Provider

