This document has been prepared by Banco do Brasil’s directorships directly involved with the analysed sectors and had the support of WWF-Brazil under the scope of the Water Brazil Program.

Banco do Brasil’s Sustainability Credit Guidelines for Agribusiness, Irrigated Agriculture, Electric Energy, Civil Construction, Mining, Oil and Gas, Transportation, as well as Pulp and Paper - seek to provide visibility to the business and administrative practices adopted by BBK, reinforcing the attention given to its public commitments and in line with the principles of social and environmental responsibility that are part of its general and specific policies.

With these good practices, Banco do Brasil seeks to mitigate risks to the environment and society and reduce the impact of its financing and investments, as well as identifying new opportunities for action in the sustainable value chain, from relevant socio-environmental issues and strategic themes for sustainable development.
Banco do Brasil's principles of social and environmental responsibility, integrated RS&G, general and specific policies, which propose to incorporate the principles of sustainable development in the planning of its activities, businesses and administrative practices, involving its stakeholders.

We understand that the socio-environmental responsibility requires having ethical commitment and respect as an attitude in relationships with employees, collaborators, suppliers, partners, clients, creditors, shareholders, competitors, the community, the government and the environment.

Banco do Brasil acknowledges that both urban and rural productive activity, while producing positive economic outcomes, can generate negative impacts on ecosystems and people’s quality of life in the long run, and engages in the society’s efforts for sustainability.

The socio-environmental criteria in the credit analysis and the evaluation of potential risks are continually improved in order to promote the enhancement of the tools for prevention, mitigation and management of social and environmental risks that may arise from credit operations. In doing so, it contributes to the establishment of parameters for the creation of policies and regulatory requirements that allow for sustainable production and that can reduce the chances of economic losses for the sectors involved over time.

This continuous improvement allows Banco do Brasil to update and adapt its practices, consolidating instruments, methods and processes aimed at mitigating socio-environmental risks. The results point to the ways in which the bank acts with its clients, in order to foster the engagement of the economic sectors and present as main results:

- More accurate knowledge on the risks involved in different forms of production and use of natural resources, and greater understanding of the benefits of responsible practices that lead to sustainability;
- Increase in the offer of financial products, which help production chains in their restructuring process, in compliance with reality based on sustainability criteria.

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EXECUTIVE SUMMARY

The definition of Banco do Brasil’s Sustainability Guidelines for Credit seeks to:

- **Mitigate** possible socio-environmental risks - in accordance with current legislations
- **Reduce** negative impacts of its financing and investments
- **Potentiate** the financial resource to employ it in ventures that provide better socio-environmental outcomes
- **Identify** new opportunities for action in the value chain of sustainable businesses, based on relevant socio-environmental issues and strategic topics for sustainable development

The elaboration and annual reviews of the document of the document involve the participation of several stakeholders (shareholders, industry experts, NGOs, clients and employees). It is understood that the sectors defined for analysis have a strong relationship with the strategic subjects adopted in this document - Water Resources, Forests and Biodiversity, Climate Change and Human Rights.

Considering the relevance of the analyzed sectors and their importance for the country’s development, Banco do Brasil seeks to align the sustainability precepts applicable to these segments, as well as to reinforce the importance of adopting socio-environmental criteria in the analysis process, grant and credit management, and thus minimize the risk of possible negative impacts on the environment and society.

STRATEGIC THEMES

**Forests and Biodiversity**

One of the greatest challenges faced by society today is managing humanity’s need for food, energy, water, medicinal raw materials while minimizing adverse impacts on biodiversity and ecosystem services.

Brazil has one of the world’s highest biodiversity and is home to the largest extension of the Amazon Rainforest in Latin America, with an area of around 7 million km². The country also has vast areas of Cerrado, Atlantic Forest, natural fields, coastal areas and coastal areas and wetlands such as Pantanal, in the state of Mato Grosso. All these ecosystems have great ecological and economic importance, with remarkable biodiversity and environmental services.

For example, if we look at the country’s economy, it is estimated that the forest-based sector, which basically operates in six production chains (firewood and charcoal, solid wood, pulp and paper, wood panels, non-wood products and environmental services), is responsible for 3% of the country’s GDP and 6 million jobs.

Therefore, this is a key subject matter to local and national development, as well as being closely linked to climate change and the commitments made by the Brazilian government to the parties involved in the Paris Agreement. Brazil’s great challenge is to integrate environmental issues into the logic of economic development in order to achieve sustainable development.

We recognize the influence that economic pressures have on the biodiversity and all types of ecosystems. We also recognize the importance of the conservation and sustainable use of ecosystem services to ensure life, economic activities and human development.

Therefore, we adopt practices that value biodiversity and environmental services and we avoid granting support to initiatives that increase the loss of biodiversity and environmental services, in accordance with the IFC’s Performance Standard Nº. 6: Conservation of Biodiversity and Sustainable Management of Natural Resources, which is part of the Equator Principles.

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3. *IFC* - International Finance Corporation, branch of the World Bank group that supports the sustainable development of the private sector.
For projects evaluated by Banco do Brasil with significant socio-environmental risks, especially those framed in the Equator Principles, the Bank requires the client to carry out a socio-environmental assessment and action plan to mitigate the identified risks and impacts, and may decide not to provide financial resources. In conformity with the law and in line with its operational guidelines, the Bank includes socio-environmental constraints in credit agreements and performs periodic monitoring of compliance with these conditions, which may lead to early termination of the operation, in compliance with the contracts signed between the parties.

Water Resources

Water resources are at the top of the environmental agenda both in Brazil and around the world. In 2015, the Sustainable Development Goals were discussed internationally, where two of the 17 goals relate to water. It is easy to justify that water is an essential natural resource. Brazil is the richest country in the world in terms of water resources, holding 12% of the fresh water available on the planet, the largest continental wetland in the world (Pantanal), the most extensive flood lands (Amazon) and an incredibly diverse aquatic fauna. Despite this, global issues related to water are also present in the country. The lack of planning in decision-making processes related to the expansion of hydroelectric plants, diversely occupied basins and major rivers and poorly designed land use practices have resulted in a reduction of flow of rivers, elimination of springs and water sources and degradation of drainage basins.

In 1997, the Brazilian Government created the National Water Resources Policy (PNRH). Law No. 9.433/97, which created several important institutions to manage these resources, providing participating processes and macroeconomic instruments that promote a more efficient use of water.

Banco do Brasil, as a financial institution with a strong presence in agronomy and the leader in the supply of credit to other sectors of the economy, is aware of the negative externalities that financing these activities can result in. As an initiative aimed at defending this important natural resource, Banco do Brasil made a commitment to raise awareness and seek solutions, alongside society, for the problems related to the subject and for the implementation of PNRH.

As for the financing of activities that use water resources, BB requires a permission granted by the Government (water grant) for cases where the activity demands:

I. deviation or capture of water for consumption, including public supply or input for production processes
II. extraction of underground aquifer water for consumption or input for production processes
III. discharge of sewage and other liquid or solid wastes to a river or into a body of water, for the purpose of dilution, transportation or disposal
IV. use of hydroelectric potential
V. other uses that affect the flow, quantity or quality of water in a body of water

Climate Change

There is strong scientific evidence that the climate change occurs due to the increased concentration of certain gases in the atmosphere resulting from human activity. Climate change affects natural resources, access to water, food production, health and the environment. Hundreds of millions of people may starve, suffer with lack of water and coastal flooding as the world warms up. The economy and societies around the world may be affected in an unprecedented magnitude. The issue of climate change began to be analyzed by its environmental dimension and, later on, studies have been made on its relation with production and consumption, including energy. It is clear that the transition to a low carbon economy is essential for humanity.

Despite being one of the leading countries in the discussions on climate change, due to its energy matrix, scientific research, abundance of natural resources, among others, Brazil is not free from the consequences of climate change. By establishing the National Policy on Climate Change and taking on the voluntary national commitment to adopt GHG mitigation actions, which is part of the country’s commitment to the Paris Agreement, and in line with the Sustainable Development Goals, it is clear that the country seeks ways to effectively mitigate climate change and ensure the well-being of its citizens in the long term.

Since we are aware of the relevance and urgency of the climate change subject, and the importance of private sector engagement in efforts to reduce GHGs and to adapt communities in areas of climate vulnerability, we have a commitment towards the transition to a low-carbon economy and the leading role that Brazil can play in the international community.

Human Rights

The strengthening of human rights in the 21st century is inherently linked to its inclusion, along with environmental sustainability, as one of the priorities for development. The development model should encompass economic growth, social justice and inclusion, as well as a sustainable environment in an equitable way. Only then will society be able to face major global challenges such as eliminating poverty, reducing social inequalities, providing equitable access to health, promoting diversity and conserving biological diversity, ecosystems and natural environments.

In order to ensure the effectiveness of human rights, environmental issues are key. Essential human rights are extremely vulnerable to environmental degradation and unbridled and inadequate access to natural resources.

Similarly, damage to the environment can lead to violations of such rights. Therefore, in order to fully comply with rights such as life, health, food, water, housing and adequate working conditions depends fundamentally on a balanced environment that supports them.

On the other hand, creating a sustainable environment involves achieving the balance of the environment so that human development and the use of natural resources enable their maintenance in adequate conditions so that the next generations can also enjoy the same conditions that are essential to their social and economic development. Sustainable environmental conservation and the sustainable use of natural resources should be considered key to ensure the rights of people and social groups to have access to the basic conditions that allow them to obtain food and

productive independence, have healthy environments for a dignified life and maintain conditions to obtain their livelihood and economic progress - that is, to fight for their human rights.

Another direct association between the assurance of human rights and environmental sustainability can be achieved by exercising rights that contribute to the elaboration of socio-environmental policies. This includes rights to freedom of expression and association, access to information, participation in decision-making processes, pursuit of economic and social interests, and access to justice and its legal tools, and independent monitoring by civil society. Therefore, the best way to address environmental issues is to ensure the participation, at the appropriate level, of all concerned citizens. Ensuring such rights is key for the formulation of public environmental policies, making them more transparent, comprehensive, well-founded and suited to the protection of human and environmental rights.

Within this framework, Brazil’s Constitution acknowledges the challenges of promoting sustainability in business, at the same time seeking to foster an economy free of relevant social issues, such as slavery, children and degrading work, and including better mechanisms for the participation of women and respect for the rights of indigenous peoples and traditional communities. Through these practices, Brazil can achieve a balanced and inclusive socio-environmental development, as well as the conservation of nature and the conscious use of natural resources.

Brazil’s Sustainability Guidelines for Credit-Strategic Activities

- Act in accordance with public policies and commitments made in the pacts and agreements related to the strategic areas and complying with the relevant legislation.
- Improve the alignment of the principles of sustainable development with the day-to-day practices of building businesses, particularly in credit operations.
- Foster sustainable business practices in the value chains of finance and investments.
- Develop new products and services focused on socio-environmental issues, with particular emphasis on curbing climate change.
- Disseminate information through its networks of customers, suppliers, employees and other stakeholders to raise awareness of the Strategic Issues.
- Act jointly with government, companies and society in order to promote sustainable development.

Brazil’s NDC includes targets related to the following sectors/activities:

- Bioenergy
- Industry
- Change in Forest and Land Use
- Electric Power
- Cattle Ranching
- Transport

It should be noted that the Sustainability Guidelines for credit, since 2000, have already included most of the sectors relevant to climate change mitigation, thus presenting a strong link with government actions to achieve the goals of the Paris Agreement.

The activities related to the Change in Forest and Land Use are relevant to Brazil’s compliance with its NDC, as well as for promoting the country’s sustainable development in the coming decades. Eliminating deforestation is a major challenge in the face of the scale and the various agents that promote, even indirectly, the illegal conversion of forests. This will require the improvement of public policies to combat illegal logging, the creation of economic incentives that discourage deforestation and foster positive externalities linked to forests.

The emphasis of the governmental and private agenda of land use for the coming decades has focused on economic incentives aimed at promoting the elimination of illegal deforestation, forest restoration with economic bias when possible, discouraging the conversion of areas, especially in regions with low agricultural aptitude and sustainable forest management.


12 - Brazil’s NDC includes targets related to the following sectors/activities: Bioenergy, Industry, Change in Forest and Land Use, Electric Power, Cattle Ranching, Transport.
The **Power** sector can be affected by climate change, as the hydroelectric generation has a close connection with the rain regimes and the climate itself. In the event that climate change affects hydroelectric generation capacity, energy efficiency will be fundamental to guarantee a lower generation increase in gas-fired powerplants, mitigating the environmental impacts of this choice.

Brazil indicated that it intends to achieve 10% efficiency gains in the electricity sector by 2030. The NDC’s base document detailed how to reach this value through: improvements in the efficiency of the equipment used by the three sectors of the economy (residential, industrial, commercial and others, including the public sector); improvements in electricity consumption habits; and public policies for energy efficiency in the electricity sector.

In the **cattle ranching** sector, according to the parameters used in the study by AKE-observatory, the recovery of 15 million hectares of degraded pasturelands (divided into 1.5 million hectares per year in 10 years) will result in a reduction of approximately 101.7 million tons of CO2 equivalent (CO2e) within 10 years.

**Forest - ILPE** corresponds to one of the main sustainable agricultural practices of the ABIC program, based on the reduction of emissions from rangeland in the Brazilian NDC to be carried out by 2030. It should be emphasized that ILPE is a production strategy that can accommodate other sustainable practices in AIC, for example, the no-tillage system and the recovery of degraded pastures, therefore, has a broader scope.

With the adoption of forest integration systems, in particular the silvopastoral system (IPS) and the agroforestry system (ILPE), it is possible to occupy the land 100% of the time. This is because, in addition to agricultural production, grazing is possible in the rainy season and in the dry season, and there is continuous development of trees in these systems throughout the year. As a result, income generation is increased through the diversification of activities and the improvement of environmental quality, which characterizes sustainable intensification.

![Image](image1.png)

The **Industrial** sector is expected to contribute with emissions reductions of 7% (2025) and 8% (2030) in relation to emissions from the sector in 2005, which represents a ceiling of 99 million CO2 by 2030, according to the Brazilian government. This sector is already represented in the RS Sustainability Guidelines for Credit, including companies from industrial subsectors such as Pulp and Paper.

The **Chemical** sector is composed of heterogeneous activities and processes, and actions proposed by the government for this sector are more general. Such heterogeneity also makes it difficult to categorize companies and activities aiming at the development of Sustainability Guidelines for Credit, unified for all. Meanwhile, the Oil and Gas sector, which is part of the chemical sector, is already among the sectors for which Banco do Brasil develops sustainability guidelines for credit.

The goals and actions proposed for the **Transport** sector reflect the Transport and Urban Mobility Sector Plan for Climate Change Mitigation (PSTM) and aim to contribute to the mitigation of GHG emissions in the sector, through initiatives that lead to the expansion of freight transport infrastructure and the greater use of more energy-efficient modes of transport.

Although a few of the NSG7 deadlines and goals for the climatic issues differ from the Brazilian NDC for the Paris Agreement, they complement and reinforce the latter. The social dimensions, for example, are more developed within the framework of the NSG, to encompass one of the references for the social aspects of the Credit Directives at Banco do Brasil.
ANALYZED SECTORS

Banco do Brasil is in favor of initiatives aimed at expanding and adapting business in the various sectors of the national economy, with a focus on good agricultural practices, national limits, integration with sectoral policies on water resources, sanitation, climate change and, above all, requirements for human consumption.

The Guidelines presented below are a commitment made by Banco do Brasil to improve its financing practices considering the socio-environmental aspects.

Agribusiness

Rises in population and per capita income forecasts for developing countries are expected to continue to stimulate growth in agricultural and livestock production.

In addition, global incentives to encourage the use of biomass as an electricity and fuel source as a way of increasing energy security and reducing greenhouse gas emissions is placing pressure on agricultural production.

Brazilian agriculture faces the significant challenge of meeting the expected rise in the global demand for food, fibres and biofuels while continuing this with the conservation of natural resources and ecosystems that are fundamental for Brazil and mankind as a whole.

Beyond its agricultural frontier, there is also great potential for Brazil’s agriculture and livestock sector to expand through increased productivity, the recovery of degraded pasture land and the adoption of techniques with a positive environmental impact.

Crop-livestock-forest integration seeks to achieve better yields, consequently reducing the pressure placed on natural ecosystems.

The potential growth has already been observed in increasing agricultural harvests over recent years as a result of advances in technological innovation in the field, increasing the resistance of harvests to pests and unfavourable environmental conditions.

Between 1975 and 2013, the average rate of growth of Brazil’s agricultural productivity was 3.88% per year. In the 2000s, this accelerated to an average of 4.08% per year.

Brazil’s agricultural production should continue to expand based on productivity, considering trends in the expansion of grain production (+27.4%) and planted area (+14.9%) for the next 10 years, according to the Ministry of Agriculture, Livestock and Supply (MAPA).

With regards to the country’s meat complex (beef, chicken and pork), it is expected that production will continue to grow rapidly over the next decade (+26.8%), particularly for chicken and pork, according to projections by the MAPA.

The observation of environmental legislation and the adoption of best practices, including proper soil and water management adequate use of agrochemicals and prophylactic results in animal welfare are fundamental in order to mitigate the impacts of this activity on natural resources, reduce emissions and increase carbon capture, based on trends identified for agribusiness.

Irrigated agriculture

According to the 2007 issue of the Brazil Water Resources Report, published on an annual basis by the National Water Agency, irrigation is responsible for the highest consumption of water in the country, corresponding to 45.2% of total water withdrawal.

A significant increase in irrigated agriculture has been observed in Brazil over recent decades, growing at rates that are consistently higher than the total area of cultivation. In 2013 alone, the total area of irrigated farming was estimated at 6.9 million hectares. Further irrigated areas of 76 million hectares may also be included if the country’s added potential for irrigated agriculture is considered.

A strategic understanding of the relationship between productivity, planted area and irrigated areas across the whole country is required, due to the continuous increase of this sector’s contribution to the country’s economic growth.

Historically, the participation of agriculture in Brazil’s GDP has been in excess of 20%. This percentage is becoming increasingly challenging as agricultural productivity expands alongside social and environmental aspects.

National Irrigation Policy (Law 12,789/12) includes among its objectives the incentives to expand irrigated areas and productivity in ways that are environmentally sustainable, the reduction of risks to the climate inherent to agricultural activities, and the rush to increase the competitiveness of Brazil’s agriculture.

In addition to irrigation, water is also used for human supply in rural and urban areas, livestock and industrial use. Considering the volume that is consumed, irrigation represents a significant percentage (67.2% of consumption).

This law also establishes that public and private irrigation projects may benefit from tax incentives, credit and rural insurance to enable their implementation, provided they meet the environmental licensing requirements and obtain prior authorisation to use water resources.

These legal instruments can be backed up through practices and technology that promote increases in efficiency and the subsequent reduction in the waste of water.

Given the tendency for areas of irrigation to expand and because the country is one of the world’s largest agricultural exporters, it is essential the efficient use of freshwater reserves for this purpose increases in Brazil’s fields.

Banco do Brasil is therefore in favour of initiatives focused on expanding and improving the country’s irrigated agriculture, with attention given to best practices and technologies that minimize the environmental footprint.
agricultural practice, natural limits and integration with sectoral policies on water resources, sanitation, climate change and the aquaculture sector, and above all, human consumption demands.

**Electric Power**

End consumption of electricity in Brazil is expected to grow by around 3.7% per year until 2026. This projection, published in the 2006 Ten-Year Energy Expansion Plan (PDE 2006), considers that this growth will be mainly observed in self-produced energy, with an average annual rate of 4.3% per year.

Therefore, the distributed power generation model is expected to gain importance in the coming years, and its expansion will be backed up by reductions in the price of solar energy, enabling small consumers to install photovoltaic panels in their homes and reduce their monthly electricity bills.

The installed capacity of Brazil's national grid, which both produces and transmits electricity, is expected to evolve from 149,900 megawatts (MW) in net generation just over 2.905 million MW in 2026, with prioritization of the expansion of alternative sources (wind, solar, biomass and small hydroelectric power plants), the production capacity of which is expected to grow by 13% over the same period.

**Transport**

Investment in transport infrastructure is essential for the country's economic development. For a nation like Brazil, that is continental in size, the transport sector has even more relevance considering its direct influence on the competitiveness of all sectors in the economy due to its role in the transport of inputs and finished products to a wide range of regions.

According to data from the National Confederation of Transport (CNT), Brazil has 1.7 million kilometres of roads, 30,500 kilometres of railroad and 65 airports (both domestic and international).

With regards to the transport of cargo, in 2017, Brazil's port installations transported over 417 million tons, with an annual growth of 2% in maritime navigation and 14% over longer distances.

Rail transport was responsible for carrying 375 million tons (a growth of 4% compared to 2016) and air transport for 821.2 million tons of cargo (a 9% increase compared to 2016).

Brazil's transport network currently presents significant problems that are generating productive bottlenecks in the country, increasing transport costs and causing greater environmental risks.

One of the main problems identified by the National Logistics Plan (PNL, 2018) is the high participation of road cargo transport within the country's logistical network (64%), which should have reduced by 50% by 2025.

On the other hand, the guidelines established to improve the country's transport infrastructure include the increased participation of rail cargo transport from 18% to 31%. The expected results of this change include a reduction in CO2 emissions by 10 million tons per year and annual savings of R$55 billion in transport costs.

In summary, Brazil urgently needs to rethink its transport network, especially considering its high dependence on road transport. Therefore, significant investments will be required in this sector over the next two years.

However, some conjunctural and structural risk factors are involved. In addition to the recent economic slowdown and the uncertain political scenario, the regulatory environment — and particularly that related to the concessions model — needs to be adjusted to promote a more stable economic environment for investors and to guarantee service provision to society involving adequate prices and quality.

**Civil Construction**

Civil construction is one of the most relevant sectors in the domestic Brazilian economy, considering not just the wide scope of its production chain, but also the direct influence it has on the generation of formal, informal and indirect employment.

The construction industry drives a range of players, including construction companies, manufacturers and traders of construction materials, machinery and equipment, specialist technical services, real estate services, project consultancy, engineering and architecture.

Recent instability in Brazil’s economy has had a significant impact on the civil construction market, which has not since demonstrated any consistent signs of recovery, limiting expansion of the gross fixed capital formation.

Despite the slightly more favourable behaviour of some indicators, including the reduction in real estate inventories observed over this year, the sector is still feeling the effects of low demand and the poor real estate market, without any strong evidence that it is starting to recover.

The slow and gradual growth of the economy and the political scenario are the main factors influencing the expectations of consumers and business, as well as the appetite to expand investment in this sector.
This context denotes the challenges that still permeate the atmosphere for new business, but construction activities are expected to trigger gradual growth at the end of the year, and this should intensify over 2019.

This is also corroborated by an improvement in economic fundamentals, characterized by a low interest rate, inflation in line with targets and real revenue growth in the economy.

Considering the importance of this sector for the economy, an improved scenario for civil construction would generate a “domino effect” across various economic activities, and would be the sector with the highest potential to drive the country’s GDP growth and urban development.

As well as the high housing deficit, the need for investment in infrastructure, particularly highways, ports, railways, basic sanitation and urban mobility – which are all fundamental for economic development – represent opportunities that favour activities and generate opportunities for the sector.

The pulp and paper sector is characterized by a high degree of investment and the integration of the stages (forestry and industrial) in its productive process. Increases in production in this sector have come about based on respective increases in the forestry base, which is associated with the removal of greenhouse gas emissions from other sources (transport, forest management and the use of fertilizers).

The industrial component involves most of the sources of GHG emissions in the sector, which mainly originate from the burning of fossil fuels to generate thermal energy through heat and steam.

These stable consumption of energy and water, as well as clean production systems and the treatment of waste generated during the process, have been the focus of large companies. Despite the sector being intensive in its use of energy, companies have sought to improve their techniques in the use of land, water, energy and other resources, consolidating this with sustainable production.

According to data provided by the Brazilian Tree Industry (IBA)* in 2017, Brazil’s production of cellulose, considering the chemical processing of short (eucalyptus) and long fibre (pines), was 19.5 million tons, 4% higher than in 2016. The volume of exports reached 13.2 million tons, representing an increase of 2.3% compared to the previous year.

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The pulp and paper sector is responsible for approximately US$6 billion in exports in 2017, while exports of paper hit a record of US$2 billion, with China as our biggest commercial partner.

Oil and gas are the world’s main source of energy. The scenario may change in the next few years, however, considering the urgent need to reduce the planet’s GHG emissions.

Responsible for historic environmental disasters, the oil and gas industry has significant investments to ensure the safety and protection of the environment.

In 2017, Brazil was the world’s 10th largest oil producer, with 2.7 million barrels/day. In natural gas production, the country was in 5th place in the international ranking, with a production of 27.5 billion cubic metres.

The country is currently in a favourable position regarding the supply of oil and natural gas, thanks to its reserves and production capacity, which are expected to continue to support the country’s energy needs.

The international importance of the oil and gas sector in Brazil is undeniable, given the need for foreign investment and the need to diversify the country’s energy mix.

The need for diversification is gaining relevance, which can be understood as a reduction in emissions relative to GDP, and the subsequent development of a low-carbon economy, which could alter current conditions and lead to impacts on all links in the production chain associated with this sector in the long term.

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The mining sector is important for Brazil’s economy as it provides the various inputs used for a range of other sectors, such as agriculture, power generation and civil construction.

According to the Mining Summary published by the National Department of Mineral Production (DNPM) in 2015, the GDP of the mining sector reached a value of US$69.1 billion, with a participation of 3.9% in the country’s GDP.

The sector also presented significant participation in exports, amounting to US$49 billion and corresponding to 20.4% of all Brazil’s exports.

Mining generates negative environmental, social and economic impacts. In the environmental sphere, the main problems generated by mining can be grouped into four categories:

- Water pollution;
- Air pollution;
- Noise pollution;
- Land subsidence.

In order to minimise these impacts, legislation and best practices should be observed.

In the specific case of Brazil, as in other sectors, there is a need for investment in infrastructure. From a governmental perspective, the main concern is with the systematic reduction of new investment in the sector, which is one of the most important for the results of Brazil’s trade balance.

The worsening of trade tensions between China and the United States have created a pessimistic perspective of this scenario. This is because the export of Chinese products with a high steel content is showing a tendency to shrink, which could herald the weakening of the price of inputs along the entire production chain, especially for iron ore.

Trade tensions, together with the slowdown of the Chinese government’s restrictions on levels of pollution and the expected gradual deceleration of the country’s economy, have led analysts to revise their projections for the price of ore over the coming periods.

However, although these revisions result in the average annual value of this commodity falling, general projections show it being maintained at 20.8 and 2019 levels, higher than observed for 2015 and 2016.

Despite this drop in prices, expectations are favourable regarding the expansion of iron ore extraction in Brazil over 2018, considering the high quality of the country’s ore and low costs.

The quality of ore has been increasing over recent years. In this scenario with falling prices and where greater efficiency is required, Brazil’s ore is expected to become even more competitive in the transoceanic market.

B&B’s Sustainability Credit Guidelines are business and administrative practices adopted by Banca do Brasil to mitigate socio-environmental risks and reduce the impacts of its financings and investments, reinforcing the discussion of relevant socio-environmental issues and topics that are seen as strategic for sustainable development.

These practices reflect the public commitments undertaken and are in line with the principles of social and environmental responsibility present in B&B’s general and specific policies. In this sense, Banco do Brasil establishes sustainability guidelines for credit approval to the following sectors:
Support the adoption of practices that enable adaptation to climate change, including: the improvement and diversification of production systems, the management of water resources and the contracting of production insurance;

Support the expansion of irrigated areas in order to increase productivity and efficiency on an environmentally sustainable basis;

Support the dissemination of information on the adaptation of rural properties to meet environmental requirements, as defined by the Forest Code, and offer lines of credit for the recuperation of Legal Reserves and Areas of Permanent Preservation;

Support the national strategy to reduce the rate of deforestation through governmental deforestation reduction plans: the Action Plan for the Prevention and Control of Deforestation in the Legal Amazon; the Plan to Protect and Combat Forest Fires and Deforestation in the Cerrado Biome, among others;

Support the modernisation and strengthening of cooperativism through participation in the development of specific programs and provision of adequate products and services for the sector;

Support business ventures that contribute to the conservation of water resources; water storage; the treatment of water, waste and sewage; recycling and the monitoring of water use;

Support business ventures that are aligned with international treaties and agreements in force in the country and best international practice, principally in relation to the environment, territorial management and climate change;

Support companies that adopt policies and practices of responsible consumption, as well as ecoefficiency in the use and disposal of their inputs;

Support companies that need to carry out investment actions and plans for the management of waste generated by exploration, development and production in the sector;

Support companies that need to carry out actions to minimise or compensate for social and environmental damage caused by their activities;

Support exploration and production projects presenting forms of control and new technologies to reduce, eliminate and compensate for the emission of gases into the atmosphere;

Support projects that adopt sustainable practices for agricultural and livestock production, including: organic agriculture, agroforestry systems, the Integrated Crop-Livestock Production System (PI Brasil) and Animal Well-Being;

Support proposals for ventures that present alternatives for the correct disposal of waste generated by transport (tyres, grease, oils and packaging);
Support proposals by companies that have a contingency plan to respond to incidents involving pollution and/or contamination by oil and its derivatives;

Support proposals by companies that have actions aimed at the reduction of CO₂ emissions, including: emissions inventory, analysis of alternative reduction solutions and the implementation of projects for compensation, adaptation and use of low CO₂-emitting vehicles, among others;

Support, with the availability of lines of credit, business ventures that preserve resources and/or reduce risks to the environment and use clean technology;

Support through credit and financial assistance projects that contribute to the development of a low carbon economy, particularly financing for low carbon agriculture, energy efficiency, renewable energy (wind, photovoltaic, biomass and small hydroelectric power plants), among others;

Consider companies that adopt systems with greater energy efficiency, including those that use subproducts from the industrial process for the generation and cogeneration of energy;

Consider the alignment of irrigation projects with the conditions established in the Irrigation Plans included in National Irrigation Policy (PIN), where available;

Consider investment projects that include Analysis of Alternative Locations and Technologies for the implementation of new transport structures focused on multimodal alternatives;

Consider proposals for ventures that include hydric risk analysis and the mitigation of environmental impacts to the river basin(s) where they are located, where applicable;

Consider the relationship between companies and their surrounding communities;

Consider if the company adopts a policy to give priority to purchases from suppliers that have some form of mechanism to manage their environmental impacts;

Consider in irrigation projects, the prior manifestation of the river basin committee involved, in cases where this exists and is active;

Consider, both for forest-based companies and rural producers, best agricultural and socioenvironmental practices, as well as forest certification;

Include clauses in instruments of credit that establish the expected expiry of operations in the case of withdrawal, suspension or cancellation of environmental licenses, or due to breach of socioenvironmental requirements;
<table>
<thead>
<tr>
<th>Guidelines</th>
<th>Sectors</th>
<th>Strategic Topics</th>
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<tbody>
<tr>
<td>Contribute to the maintenance and/or generation of jobs and income along the agribusiness chain through increases in productivity in the field;</td>
<td>![Sectors Icon]</td>
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<tr>
<td>Create mechanisms to encourage the recovery of degraded areas, Legal Reserves and Areas of Permanent Preservation, as defined in the Forest Code, and the use of clean technology;</td>
<td>![Sectors Icon]</td>
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<tr>
<td>Stimulate the use of credit for the reduction and capture of greenhouse gases to support the Sector: Plan for Climate Change Mitigation and Adaptation for the Consolidation of a Low Carbon Economy in Agriculture (the ABC Plan) and the government’s Nationally Determined Contributions (NDC) as part of the Paris Agreement;</td>
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<td>Demand proof of legal and sustainable origin of forest products used in financed ventures;</td>
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<td>Demand environmental licensing and grants for water use for activities and ventures financed by the bank, where applicable;</td>
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<td>Demand with the concession of rural credit the observance of recommendations and restrictions relating to Agroecological Zoning, the Agricultural Zoning of Climatic Risk and Ecological-Economic Zoning (ZEE), where applicable;</td>
<td>![Sectors Icon]</td>
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<td>Demand, where applicable, proof of adoption of mitigation and compensatory measures for social and environmental risks and monitor the fulfilment of these;</td>
<td>![Sectors Icon]</td>
<td>![Strategic Topics Icon]</td>
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<td>Include where applicable a clause in contracts for the financing of large-scale projects so that businesses will commit to decommissioning their facilities;</td>
<td>![Sectors Icon]</td>
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<td>Forge partnerships to guide and support rural workers that adopt practices that conserve water and soil;</td>
<td>![Sectors Icon]</td>
<td>![Strategic Topics Icon]</td>
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<td>Promote the ethanol industry and the cogeneration of energy using sugarcane bagasse by established plants in the area defined by the Sugarcane Zoning Program;</td>
<td>![Sectors Icon]</td>
<td>![Strategic Topics Icon]</td>
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<td>Promote the increase of livestock productivity and its integration with crops and/or forests as a strategy to reduce the pressure to clear new areas/deforestation;</td>
<td>![Sectors Icon]</td>
<td>![Strategic Topics Icon]</td>
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<tr>
<td>Promote practices linked to certification relating to best agricultural practice in agricultural and forestry production;</td>
<td>![Sectors Icon]</td>
<td>![Strategic Topics Icon]</td>
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<tr>
<td>Promote sustainable practices with clients involved in the value chain for agricultural and timber and non-timber forestry products that have a direct or indirect impact on water resources, ecosystems and biodiversity;</td>
<td>![Sectors Icon]</td>
<td>![Strategic Topics Icon]</td>
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</tbody>
</table>
Strengthen family farming through the transfer of resources to finance sustainable production practices and guarantee food safety for family farmers;

Encourage the adoption of differentiated production models through credit, including crop-livestock-forest integration, agroforestry or agroforestry pasture systems, no-till planting and the reduction of nitrogenated fertilizer use;

Encourage afforestation, reforestation and forest management activities through credit in order to supply the timber industry and reduce pressure on areas of natural vegetation;

Observe in the contracting of real estate credit operations the appropriate management of water, energy, materials and waste through PBQP-H Certification or ISO 9001, as appropriate;

Include in credit analyses companies that present solutions to minimise impacts where refineries and oil and gas pipelines will be constructed;

Recognise ventures that observe the value of women, people with disabilities and minorities in the workplace;

Use social and environmental criteria in processes to analyse credit limits and the concession of financing for projects, considering their potential impacts and risks and the adoption of mitigating and compensatory measures;

Value ventures that observe the guidance provided in the Urban Mobility Plan (PMU);

Value companies that have a plan/policy to monitor the health of professionals responsible for the land transport of cargo and passengers in order to avoid overworking and the use of stimulants that can cause accidents;

Decline concession of credit to individuals or companies when finances are destined for activities carried out by third parties on indigenous land, and the decline the renovation of credit conceded before the demarcation of these areas;

Decline financing to clients proven to be linked to the use of child labour, slave-like work or sexual exploitation;

Decline financing to clients proven to be responsible for serious damage to the environment.
Pacts and Agreements

Management practices that focus on sustainability have become a relevant topic in organizations, as markets present themselves in a more complex manner and new challenges emerge. Such transformation becomes evident by the demands of socio-environmental compliance in global consumer markets, stimulating companies to improve their management and governance models. This premise requires a refinement of risk management mechanisms, so that companies start to perceive the socio-environmental risk as a fundamental element in the analysis of business models.

Keeping this scenario in mind and aiming at the implementation of the voluntary commitments undertaken in its daily business practices, Banco do Brasil has created and is constantly improving its sustainability guidelines related to credit.