Banco do Brasil’s Sustainability Credit Guidelines for Agribusiness, Irrigated Agriculture, Electric Energy, Civil Construction, Mining, Oil & Gas, Transportation, as well as Pulp & Paper, and Steel - seek to provide visibility to the business and administrative practices adopted by BB, 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 integrate BB’s 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 ethics as a 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 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 a reality based on sustainability criteria.

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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

**Potentialize**
- 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 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, Forest 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.

One of the greatest challenges faced by society today is managing humanity’s need for food, energy, water, medicine and 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 4% of the country’s GDP and 6 million jobs².

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 IFC³ 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.
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 13% 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, disorderly occupations of hills and along 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 a new and important structure to manage 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, disorderly occupations of hills and along 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.

As for agricultural activities, it is necessary to obtain a permission in order to request investment funding and defrayal for irrigated agriculture and for livestock kept in confinement. It is also necessary to follow government guidelines.

Banco do Brasil, as a financial institution with a strong presence in agribusiness and as 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 to raise the 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 gaseous waste, treated or untreated 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

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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, until it has been concluded 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 intrinsically linked to its inclusion, along with environmental sustainability, as one of the paradigms 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 unfair 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 necessary balance 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 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.

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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, prior assessment of environmental and social impacts, participation in decision-making processes, prior and informed consultation, access to the justice system 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, Banco do Brasil 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 inducing better conditions for the participation of women and respect for the rights of indigenous peoples and traditional communities. Through these practices, Brazil can achieve fair 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 banking 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 network of customers, suppliers, employees and other stakeholders to raise awareness of the Strategic Issues;
- Acting jointly with government, companies and society in order to promote sustainable development.

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

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

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.

It should be noted that the Sustainability Guidelines for credit, since 2010, 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 illegal 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.

**Socio-environmental overview**

*The Paris Agreement (COP 21)* and the Nationally Determined Contributions (NDC) presented by the Brazilian government in 2015, along with the Core Document for Implementation and Financing Strategy as well as the Sustainable Development Goals (SDG) defined by the United Nations in 2015 are the international events with the greatest impact on economic activities in Brazil in terms of socio-environmental sustainability and mitigation of climate change.

Brazil’s contribution will be to reduce greenhouse gas emissions by 37% below 2005 levels by 2025. And, by 2030, reduce emissions by 43% below 2005 levels. As for adaptation to the effects of climate change, the Brazilian NDC indicates the priority with the social sphere, while seeking to protect vulnerable populations from the negative effects of climate change, as well as strengthening their resilience capabilities. In this context, Brazil proposes to work on the development of new public policies, with reference to the National Adaptation Plan (NAP).

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The Power sector can be affected by climate change, as the hydroelectric sector 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 power plants, 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 ABC 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.

With the adoption of forest integration systems, in particular the silvopastoral system (IPF) and the agroforestry system (ILPF), 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.

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 BB Sustainability Guidelines for Credit, including companies from industrial subsectors such as Pulp & Paper.

The Chemical sector is composed of heterogeneous activities and processes, and the actions proposed by the government for this sector are more generic. 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 & Gas sector, which is part of the chemical sector, is already among the sectors for which Banco do Brasil develops sustainability guidelines for credit.

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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 and, in the urban mobility sector, the increased use of efficient public passenger transport systems.

The negotiations that culminated in the adoption of the Sustainable Development Goals (SDG) in September at the United Nations Summit on Sustainable Development were concluded in August 2015. Beginning in 2013, following the mandate issued by the Rio + 20 Conference, the SDG should guide national policies and international cooperation activities over the next 15 years, succeeding and updating the Millennium Development Goals (MDGs).

With the participation of Brazil in all sessions of the intergovernmental negotiations, the agreement resulted in 17 Objectives and 169 goals, which include topics such as eradication of poverty, food security and agriculture, health, education, gender equality, reduction of inequalities, sustainable water and sanitation, sustainable production and consumption patterns, climate change, sustainable cities, protection and sustainable use of oceans and terrestrial ecosystems, inclusive economic growth, infrastructure and industrialization, governance and means of implementation.

Although a few of the SDG’s 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 SDG, to come as one of the references for the social aspects of the Credit Directives at Banco do Brasil.

14 - Metric measure used to compare emissions of various GHGs based on global warming potential. The equivalent carbon dioxide is the result of the multiplication of tons of greenhouse gases emitted by their global warming potential. For example, the global warming potential of methane gas is 21 times greater than CO2 potential. So we say that the CO2 equivalent of methane is equal to 21. Available in: <http://ipam.org.br/glossario/co2-equivalente-co2e/> . Accessed on: 23 May 2017.
ASSESSED 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, natural 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.

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 conciliating 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 pastureland 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 2015, the average rate of growth of Brazil’s agricultural productivity was 3.98% 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 preoccupations with 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.

According to the 2017 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 46.2% of total water withdrawal.

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).

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 2015 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 agribusiness 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 12,789/13) 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 agribusiness.

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 environmental licencing 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

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End consumption of electricity in Brazil is expected to grow by around 3.7% per year until 2026. This projection, published in the 2026 Ten-Year Energy Expansion Plan (PDE 2026),\(^{19}\) considers that this growth will be mainly observed in self-produced energy, with an average annual rate of 4.5% 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 148,000 megawatts (MW) in 2016 to just over 212,000 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 120% over the same period.

Investments in energy infrastructure that will provide the expansion required before 2026 are estimated at R$861 billion, according to PDE 2026.

Therefore, considering a horizon of 10 years, a significant expansion of investments is expected. It is important to note that solar, wind and biomass energy sources are gaining traction within Brazil’s energy matrix.

In addition, the distributed power generation model is not just a national trend, but can be seen across the globe. The main factors underpinning the growth of this model in Brazil include:

- The favourable regulatory environment for self-produced energy;
- Tax incentives;
- Adjustments to tariffs on electricity provided by distributors at rates higher than inflation;
- The reduction of prices in photovoltaic energy generation systems, which are responsible for 90% of distributed power generation.

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.

According to data from the National Confederation of Transport (CNT),\(^{20}\) 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 1 billion tons, with around 20% via coastal navigation and 74% over longer distances.

Rail transport was responsible for carrying 375 billion tons (a growth of 10% 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 economy, 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%),\(^{21}\) 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 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.

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 credit 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.

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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, characterised 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 vector 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 works, particularly highways, ports, railways, basic sanitation and urban mobility – which are all fundamental for economic development – represent bottlenecks that favour activities and generate opportunities for the sector.

The sustainable consumption of energy and water, as well as clean production systems and the treatment of waste, are essential to the cellulose industry (IBA), which is associated with greater 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.

The sustained 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, corporations have sought to improve their techniques in the use of land, water, energy and other resources, conciliating 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.

The cellulose sector was 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. The area of trees planted for industrial purposes in Brazil totalled 7.84 million hectares in 2016. Of this total, 34% belonged to companies in the pulp and paper segment.

Historically, forest plantations were considered to be threats to environmental conservation, leading to these being forced to search for mechanisms to demonstrate their commitment to using best social and environmental practices.

Forest certification has been the main control mechanism found by this sector, as it provides a guarantee to buyers of timber products that they were produced legally and were sourced from well managed forests.

Certification, which benefits the whole sector, tends to grow and consolidate, considering that it is no longer a differential but is now a requirement for exports and is expected to increase in importance in the domestic market.

Oil & 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 27.5 billion cubic metres. In natural gas production, the country was in 29th 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, shaking off its dependence on imports and guaranteeing its energy security. With the discovery of the pre-salt reserves, national oil production has consistently grown in recent years.

The international importance of the oil and gas sector requires adjustment to new social and environmental conditions and the search for new areas of activity or new models of economic development.

The need for decarbonisation 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.


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$39 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 2018 and 2019 levels, higher that observed for 2015 and 2016.

Despite this drop in prices, expectations are favourable regarding the expansion of iron ore transformation into pig iron, to the production of hot laminated coils, cold or galvanized, for using in automotive products, capital goods, naval, domestic appliances and other sectors. It is a capital intensive industry and it needs significant investment in operating assets, which is a strong barrier to new comers.

Brazil offers a number of competitive advantages for companies operating in the Steel sector. Iron ore, the main raw material, is abundant in the national territory and is considered a high quality commodity (high iron content with low costs for extraction). Transportation is also favorable thanks to the location of most steel companies, close to ports and mines, with railway connections and production facilities integrated. Moreover, labor costs are low comparing to other producing countries.

According to Instituto Aço Brasil, steel production with less raw materials is a priority of companies operating in the sector. Energy conservation programs, water re-use, recycling, and use of by-products have increased the sector of “ecoefficiency”.

Additionally, other programs aim at going beyond abiding environmental law, with the development of clean technologies in cooperation with universities, research centers, and others. The objectives are to optimize energy efficiency and maximize the use of gases, water and by-products.

The steel sector plays a relevant role in Brazilian Economy, being an important supplier to other sectors, especially construction, capital goods, automotive, domestic appliances' manufacturers, among others, which represents 86% of the steel consumption in the country 35.

According to preliminary data from Instituto Aço Brasil, primary steel production has achieved 34.7 million tons in 2018, while the production of steel products has achieved 33 million tons in the same period, a growth of 1.1% and 2.4%, respectively.

Large companies operate in the Steel sector, usually vertically integrated, from iron ore transformation into pig iron, to the production of hot laminated coils, cold or galvanized, for using in automotive products, capital goods, naval, domestic appliances and other sectors. It is a capital intensive industry and it needs significant investment in operating assets, which is a strong barrier to new comers.

Brazil offers a number of competitive advantages for companies operating in the Steel sector. Iron ore, the main raw material, is abundant in the national territory and is considered a high quality commodity (high iron content with low costs for extraction).

Transportation is also favorable thanks to the location of most steel companies, close to ports and mines, with railway connections and production facilities integrated. Moreover, labor costs are low comparing to other producing countries.

According to Instituto Aço Brasil, steel production with less raw materials is a priority of companies operating in the sector. Energy conservation programs, water re-use, recycling, and use of by-products have increased the sector of “ecoefficiency”.

Additionally, other programs aim at going beyond abiding environmental law, with the development of clean technologies in cooperation with universities, research centers, and others. The objectives are to optimize energy efficiency and maximize the use of gases, water and by-products.
BB’s Sustainability Credit Guidelines are business and administrative practices adopted by Banco 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 BB’s general and specific policies. In this sense, Banco do Brasil establishes sustainability guidelines for credit approval to the following sectors.

<table>
<thead>
<tr>
<th>Guidelines</th>
<th>Sectors</th>
<th>Strategic Topics</th>
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<tbody>
<tr>
<td>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;</td>
<td>Steel</td>
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<tr>
<td>Support the expansion of irrigated areas in order to increase productivity and efficiency on an environmentally sustainable basis;</td>
<td>Irrigated Agriculture</td>
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<tr>
<td>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;</td>
<td>Civil Construction</td>
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<tr>
<td>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;</td>
<td>Electric Energy</td>
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<tr>
<td>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;</td>
<td>Oil &amp; Gas</td>
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<tr>
<td>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;</td>
<td>Transportation</td>
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<td>Pulp &amp; Paper</td>
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<td>Mining</td>
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<td>Forests &amp; Biodiversity</td>
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<td>Human Rights</td>
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</tbody>
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Labels

- Irrigated Agriculture
- Agribusiness
- Mining
- Civil Construction
- Electric Energy
- Oil & Gas
- Transportation
- Pulp & Paper
- Steel
- Forests & Biodiversity
- Water Resources
- Climate Change
- Human Rights
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, agriforest 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 (PNI), 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 licences, or due to breach of socioenvironmental requirements;

Contribute to the maintenance and/or generation of jobs and income along the agribusiness chain through increases in productivity in the field;

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;

Stimulate the use of credit for the reduction and capture of greenhouse gases to support the Sectoral Plan for Climate Change Mitigation and Adaptation for the Consolidation of a Low Carbon Economy in Agriculture (the ARC Plan) and the government’s Nationally Determined Contributions (NDC) as part of the Paris Agreement;

Demand proof of legal and sustainable origin of forest products used in financed ventures;

Demand environmental licensing and grants for water use for activities and ventures financed by the bank, where applicable;

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;
### Guidelines

- Demand, where applicable, proof of adoption of mitigation and compensatory measures for social and environmental risks and monitor the fulfilment of these;

- Include where applicable a clause in contracts for the financing of large-scale projects so that businesses will commit to decommissioning their facilities;

- Forge partnerships to guide and support rural workers that adopt practices that conserve water and soil;

- Promote the ethanol industry and the cogeneration of energy using sugarcane bagasse by established plants in the area defined by the Sugarcane Zoning Program;

- 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;

- Promote practices linked to certification relating to best agricultural practice in agricultural and forestry production;

- 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;

### Sectors

- 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, agriforestry or agriforestry 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;
Guidelines

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;

When used in production processes, incentivize the use of charcoal from reforestation sources.

Sectors

Strategic Topics

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.
## MAIN PACTS, COMMITMENTS AND VOLUNTARY INITIATIVES UNDERTAKEN BY BANCO DO BRASIL

<table>
<thead>
<tr>
<th>Pact/Initiative</th>
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<tbody>
<tr>
<td>Green Protocol</td>
<td>1995</td>
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<tr>
<td>“Empresa Amiga da Criança” Certification - Abrinq Foundation</td>
<td>1995</td>
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<tr>
<td>Global Pact</td>
<td>2003</td>
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<tr>
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<td>Equator Principles</td>
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<td>Principles of Women’s Empowerment</td>
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<td>Gender and Race Pro-Equity Certification</td>
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<td>Brazilian GHG Protocol Program</td>
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<td>Caring for Climate - The Global Compact</td>
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<td>Companies by the Climate - EPC Platform</td>
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<tr>
<td>Working Group on Sustainable Livestock (GTPS)</td>
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<td>Member of The CEO Water Mandate</td>
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<td>Sustainable Development Objectives</td>
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<tr>
<td>AMEC Code of Principles and Duties for Institutional Investors - Stewardship</td>
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<tr>
<td>Gold Community at the Global Reporting Initiative (GRI)</td>
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