

## **Brazil overview**

Famous for its football tradition and its annual Carnival, Brazil is more than a festive country. Combining modern institutions, commitment to sustainable development, high investment in innovation, science and technology, and economy on the rise, Brazil is today a multifaceted society engaged with the future of the new generations. With over 200 million people, it is the largest country in South America and the fifth largest in the world, at 8.5 million square kilometers. Owing to Brazil's continental dimensions, varied geography, history and people, Brazilian culture is rich and diverse.

Throughout its history, Brazil has welcomed several different peoples and cultures. The country is a melting pot of the most diverse ethnic groups, but its core culture derives from a mix of Portuguese, Indigenous and African cultures. Originally inhabited by indigenous people, mainly of the Tupi and Guarani ethnic groups, Brazil was colonized by the Portuguese. The country also benefits from the remarkable African influence. This cultural heritage stems from the estimated four million slaves who were brought to Brazil (at least four times as many as to the United States) over three centuries. As a result, Portuguese is the main spoken language in the country, but the Indigenous and African influence are remarkable and can be noticed everywhere.

In the 100 years from 1872–1972, at least 5.35 million immigrants came to Brazil, of whom 31% were Portuguese, 30% Italian, 13% Spanish, 5% Japanese, 4% German and 16% of other nationalities, such as Lebanese and Syrians. In the last 10 years, the number of immigrants arriving in Brazil increased by 160%. Today, the country still welcomes immigrants from the whole world: Haitians, Bolivians, Cubans, Colombians, Venezuelans, Chinese, Angolans and Syrians are among the main nationalities of those interested in living in Brazil.

Miscegenation brought a unique appeal to the Brazilian culture. Samba and popular music are certainly the best known strands of Brazilian culture abroad. Music which combines African, American, and European elements has gained its particular Brazilian expression. Yet, Brazilian literature, theatre, cinema, visual arts, gastronomy and fashion also reflect the rich and diverse influences that have been assimilated and transformed and often enchant tourists who visit Brazil.

## **Brazilian institutions and its modern electoral system**

Brazil is officially the Federative Republic of Brazil and its legal system is based on the Federal Constitution, promulgated in 1988. The federal government exercises control over the central government and is divided into three independent branches: executive, legislative and judicial. Executive power is exercised by the President, advised by a cabinet. Legislative power is vested upon the National Congress, a two-chamber legislature comprising the Federal Senate and the Chamber of Deputies. Judicial power is exercised by the judiciary, consisting of the Supreme Federal Court,

the Superior Court of Justice and other Superior Courts, the National Justice Council and the Regional Federal Courts.

Brazilian politics takes place in a framework of a federal presidential representative democratic republic, whereby the President is both head of state and head of government, and of a multi-party system. The political and administrative organization of Brazil comprises the federal government, the 26 states and a federal district, and the municipalities. Each state and municipality has an autonomous local government, comprising a governor or mayor, directly elected by the people to a four-year term, and a two chamber legislative body, also directly elected by the people.

The Brazilian electoral system has long been a solid foundation of democratic rule and public trust in national institutions. Under the responsibility of the Superior Electoral Court (TSE), an independent and autonomous body of the Judicial branch, it has become world-renowned for its technology and effectiveness, and has provided broad international cooperation. The flagship element of the system, the electronic voting machine, launched in 1996, has caught the attention of numerous countries and international electoral management bodies. TSE has signed more than 40 cooperation agreements, dispatched over 30 international technical missions and received an average of 50 foreign technical visits per year.

Electronic voting in Brazil is not only safe, but also provides accurate and fast official results. At the 2014 general elections, 3 hours after the closing of polling stations, 94% of all votes had been officially counted, on average nearly 50 thousand votes per second. The same gears are used in big cities and in indigenous villages alike. Over 147 million voters go to one of more than 532 thousand polling stations across the country's 5.5 thousand municipalities or installed abroad for expatriate citizens. Technological integrity measures go beyond the machines, and are now applied to ensure the identity of voters. The Biometric Identification Program virtually excludes the possibility of human manipulation and has a database of over 87 million voters – 100% coverage (147 million voters) will be reached by 2022.

### **A glance at the Brazilian economy**

As the seventh largest economy in the world and the fifth country to receive more foreign investments, Brazil has it all: a huge domestic market (with more than 208 million people), natural resources, developed industries and vast amounts of land. In 2017, after roughly two years of recession, Brazil's economy resumed its trajectory of growth. Nominal GDP has risen 1%, reaching approximately USD 2 trillion. The IMF's forecast puts Brazil on a higher path of GDP growth in 2018 (at 1.9%), in the wake of new laws and reforms – such as the New Fiscal Regime and the labor reform –, which in the past two years have allowed the Government to address public spending issues, control inflation, and promote a better environment for business and jobs.

Brazil has proven to be capable of withstanding an adverse international scenario. Inward FDI flows in Brazil totaled over USD 1.1 trillion from 2008 to 2017, averaging USD 110 billion per year. In 2010, Brazil became a net external creditor, paying off its debt to the International Monetary Fund, and has accumulated

international reserves totaling over USD 383.2 billion (approximately 20% of GDP). At the same time, conditional cash transfer welfare programs for families, such as the internationally renowned BolsaFamília, have lifted millions of Brazilians out of poverty and into an emerging middle class, substantially lowering poverty in the country. The percentage of population in extreme poverty has reduced from over 30% in the early 1980s to 4.3% in 2014, improving the domestic market and offering investors a potential customer base.

Attracting Foreign Direct Investment is a permanent objective of Brazil's economic foreign policy. The country has developed an innovative model of investment agreement –the Cooperation and Facilitation Investment Agreement (CFIA)–, and the Government has been firmly committed to improve, strengthen, and implement legislation and regulatory procedures designed to provide investors with a friendly business environment in the country.

Brazil figures next to China and India –its partners in BRICS– as the largest emerging markets in the world, with an active working age population (15-64 years old) of around 64%, above the world average. The country is also among the top producers and exporters of a wide range of commodities, including biofuels (ethanol and biodiesel), iron ore, soybeans, coffee, oranges, poultry, beef, pork, aluminum and forest products. In advanced manufacturing, Brazil hosts multinational original equipment manufacturers, as well as homegrown companies, in aerospace, automotive, capital goods, chemicals, construction, electronics, engineering, information and communications technologies, life sciences, and oil and gas.

The country is also home to world-class service industries, including construction, engineering, financial and professional business services. Agriculture and mining play a major role in Brazil's economy. It has the third-highest volume in credit to agriculture and is the second-highest exporter of food, according to the most recent study by the Food and Agriculture Organization (FAO). The agriculture and livestock sector already accounts for more than 20% of Brazil's GDP, using less than 10% of the country's area of production.

Oil and gas discoveries in the past 10 years, as well as abundant renewable energy resources, all contribute to increasing Brazil's status as a major international energy player, currently holding the 14th-largest crude oil reserve on the planet, with over 16 billion barrels. Brazil is one of the top producers and exporters of ethanol biofuel in the world. Renewable sources are now responsible for over 80% of Brazil's energy matrix, one of the highest levels in the world. With Brazil's large supply of water, hydroelectric power provides over 60% of Brazil's electricity needs. Wind, biomass and solar energy continue to grow in importance.

With inflation reined in, a rebalancing of external accounts, a solid financial system and a comprehensive agenda of reforms, Brazil's economy is primed for a return to sustainable growth.

## **Sustainable development in Brazil**

Brazil has had an unwavering commitment to sustainability since the early days of this agenda, back in 1972 at the United Nations Conference on Human Environment. This commitment was further strengthened when Rio de Janeiro hosted the UN Conference on Environment and Development, in 1992. Two decades later, again in Rio, at the UN Conference on Sustainable Development (Rio+20), the international community collectively expressed the commitment to future generations with the document "The Future We Want", a long-term agenda focused on the different dimensions of sustainable development.

The 2030 Agenda for Sustainable Development, agreed by all UN Member States, is the tangible expression of the commitments outlined in "The Future that We Want". Brazil played an important role in this negotiating process that stems from a broad participatory and inclusive exercise, involving all Member States, the United Nations system and several stakeholders from civil society, the private sector and academia. Launched in New York in 2015, at the UN Headquarters, the 2030 Agenda sets 17 Sustainable Development Goals (SDGs) and 169 associated targets that shall guide policies and actions by the international community for the promotion of sustainability in its three dimensions – social, economic and environmental.

Brazil has been very successful in implementing the Millennium Development Goals, even exceeding in the achievement of most of the targets before 2015. This important legacy, coupled with Brazil's leadership in the negotiations of the 2030 Agenda, illustrates its commitment to achieving the SDGs by 2030. Brazil's first voluntary report on its implementation, presented in July 2017, attests that sustainable development continues to be a national priority. Several measures have been taken to internalize and implement the 2030 Agenda, such as the establishment of the National Commission for the Sustainable Development Goals (SDGs) and the adoption of its Action Plan for 2017-2019.

The National Commission for the SDGs is responsible for stewarding the process of integration, engagement and dialogue with federate entities and civil society, aiming at internalizing, disseminating and conferring transparency to the implementation of the 2030 Agenda. Brazil is also aligning its public policies with the SDGs, as well as tailoring the SDG targets and indicators to its national context. This domestic process has allowed the 2030 Agenda and its SDGs to be used as tools to guide and strengthen long-term public policies for sustainable development. Brazil is taking the necessary steps to fulfill and integrate the SDGs to its national development strategies. Thanks to the efforts of many generations in 1972, 1992, 2012 and 2015, Brazil continues to be committed to delivering a more sustainable world to our future.

In the broader context of the sustainable development agenda, energy production and rational use is a cross-cutting issue in which Brazil has considerable advantages.

In the early 21st century, energy policies and strategies, particularly energy transition, have proven to be strategic assets to boost national development as well as to shape countries' international agendas. Brazil already has a remarkable share of renewable energy sources in its energy and power mix (44%, versus an OECD average

of just under 10% and a world average of 14%). And this percentage is expected to increase in the coming years, in line with the Brazilian Nationally Determined Contributions under the Climate Paris Agreement. In the country's most recent renewable energy bid, the sum of all energy projects on offer, including wind, solar and biomass, accounted for 2% of the world's installed capacity

Brazil's heavy investments in a renewable, clean energy future go hand in hand with a firm commitment to widening and strengthening energy markets of all sources, with more transparency and predictability, while opening opportunities in Brazil's energy sector to investors from all around the world. Moreover, Brazil has been modernizing its gas, oil, and power markets to become more open and competitive. The recent success of the Pre-Salt oil field bids is proof that the country is on the right path.

In the long term, the world should be leaning towards a low carbon economy. This cannot be achieved without considerable investment in renewable energy production and use, from all sources and across all sectors. Recent reports by international agencies, such as the IEA and IRENA, confirm this trend. Therefore, there is an unquestionable need to advance more rapidly on the development of new technologies that can foster this process.

The members of the Biofuture Platform, a nineteen-country multilateral coalition, which includes three BRICS countries (Brazil, China and India), have agreed, for example, that a significant increase in the deployment of sustainable, low carbon bioenergy, particularly for transportation, is crucial to attaining the world's climate goals, in any scenario and regardless of progress achieved in developing other clean energy technologies.

Brazil is doing its part. In the transportation sector, Brazil is a success story with biofuels policies that go back to the 1970's, when its first biofuel program, Pro-alcohol, was launched to increase ethanol production and consumption. More recently, following up on the Paris Climate Agreement, Brazil launched its new national biofuels policy, RenovaBio, which aims to create a regulatory framework for the biofuels market that promotes the reduction of greenhouse gases emissions and contributes to the security of domestic biofuel supply. RenovaBio was built upon the best practices available internationally and innovated by creating a secure path to reduce the carbon intensity of our transport fuel matrix by 10% by 2028, thus creating opportunities for investment and jobs and promoting sustainable development and energy security.

### **A new era of innovation in Brazil and the 4<sup>th</sup> industrial revolution**

With over 200 million people, Brazil is the most populous country and the largest market in Latin America, whose economy is undergoing a quick process of digital and technological transformation. Internet use is quite widespread (59%, the 4th in the world). Brazil is also the first country in Latin America in number of social network users and it has more mobile devices than inhabitants (ranking as the 6th biggest smartphone market worldwide). Over the last decade, Brazil has been conducting several efforts to foster innovation ecosystems as a strategic option for its sustainable socioeconomic development and breaking down stereotypes by showing that

the country is wellpositioned as one of the leading innovation nations in different sectors.

One of these stereotypes is the lack of entrepreneurship in our society. Small and medium-sized enterprises account for 27% of the country's GDP. According to the Global Entrepreneurship Monitor (GEM – 2016), 20% of the working population is involved in early stage entrepreneurship and 50% of the early stage entrepreneurs are under 34 years old, with full gender equality (52% of women). Prospects are bright.

It is no wonder, then, that the Brazilian startup scene is booming. Just this year, the Brazilian ecosystem has witnessed the birth of its first three unicorns – the term used to define startup companies that have been valued at over USD 1 billion. The success stories of 99 Taxis, PagSeguro and Nubank have driven worldwide attention to Brazil. The establishment of a dynamic and flourishing innovation ecosystem in Brazil has been picking up great speed in the past few years. This trend was already identified by major firms at the beginning of the decade when Google chose São Paulo as the site for its very first Latin American office and for a Google campus, followed by Uber, Airbnb and Instagram. Today, angel investment networks, venture capital associations, accelerators, incubators, investment firms, technological parks and government-funded initiatives form part of a thriving ecosystem with the potential to contribute to the growth of the Brazilian economy.

Public policies on innovation have not been missing in Brazil. On the contrary, public support for science, technology and innovation has expanded substantially, with steady increases in public funding and a plethora of policy instruments and programs, such as “Startup Brasil”, “Innovativa”, “FINEP Startup”, “Startup Industria”, “Startout Brasil”, among others. In fact, the level of public support for innovation (particularly to R&D activities) as a share of GDP places Brazil among the countries with the highest levels of governmental support that, however, still has to be matched by the business sector. The recent change of public policy models from “supply-oriented” to “demand-oriented” and the enhancement of the links of innovation policies with trade policies are expected to generate larger benefits in the near future yet.

In an increasingly competitive and globalized world, innovation represents an important step towards the economic development of any country. The Brazilian Government has been carrying out actions to improve the national innovation environment, which is why important Global R&D Centers have been installed in Brazil.

Within the advent of the fourth industrial revolution, as dubbed by several different international fora, the digital economy and industry 4.0 will bring opportunities and challenges for Brazil. With that in mind, the Brazilian government has had as one of its core priorities to guide and coordinate policies for industry to incorporate new technologies and systems into production lines. Today, these modern facilities account for only 5% of the sector in Brazil, but that is expected to climb to 28% by 2030. The debate about increasing productivity, efficiency and training of human capital to this changing world has been pervading the agenda of all government bodies. The emergence of a national friendly ecosystem to the boosting of startups as well as other technological companies capable of responding to the challenges brought

about by the fourth industrial revolution will be paramount for Brazil to take a technological leap to keep the economy competitive. In this sense, e-Health, smart cities, smart farming and precision agriculture as well as Industry 4.0 are considered priority areas for public investments in the field of science, technology and innovation.

The quick dissemination of the current technologies derived from the fourth industrial revolution indicates that the consolidation of these new devices will take place faster than previous cases. Brazil's potential as a global competitor will depend, therefore, on our ability to implement this change. In an increasingly connected world, collaboration between the innovator countries will be the quickest and the more affordable way to overcome the main challenges that come along with the fourth industrial revolution.

The potential collaboration in this realm within the BRICS countries, as members face similar challenges and opportunities, stands out. Joint initiatives to stimulate the exploration of synergies and connections of the respective national ecosystems would be highly advisable to increase the competitiveness of local economies and foster disruptive technologies. To this end, the proposal for the creation of networks of science parks and incubators as set forth in the BRICS Action Plan for Innovation Cooperation, in 2017, goes hand in hand with the need of gathering together the innovation ecosystems to face the challenges of the fourth industrial revolution. Brazil, during the next year's BRICS presidency, will push this project forward.