CACCI Country Profile
BRAZIL

Country Overview

Brazil has made significant advances in the fight against climate change. The country is highly susceptible to climate impacts due to its geographic location and diverse territory. This territory is exposed to floods, earthquakes, landslides, droughts, and diseases, which put the population and national development at risk. Most greenhouse gas emissions come from three major economic activities: agriculture, land use, and energy. These sectors are highly vulnerable to climate change as they depend on natural resources to function. The country has been working on the creation and implementation of a variety of instruments to reduce emissions and address climate impacts. These instruments take into consideration the public, private and civil society sectors.

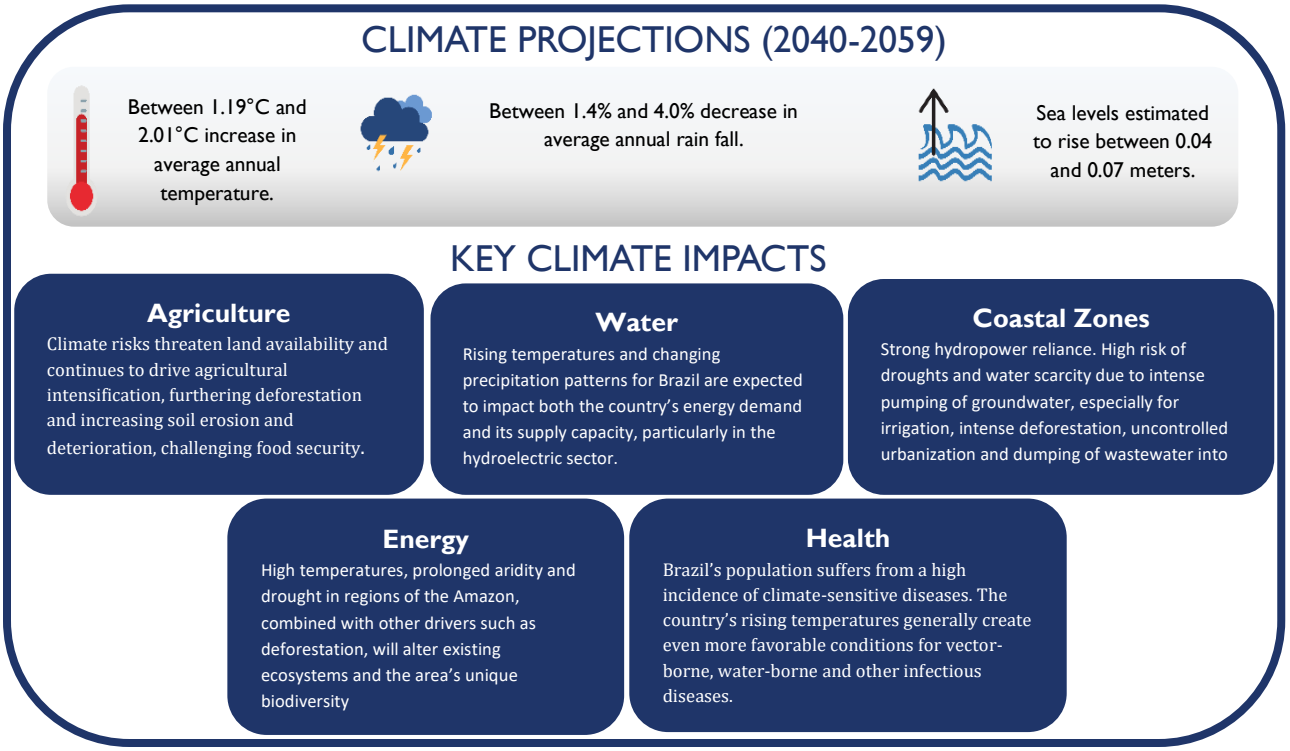
NDC Snapshot	Not available	Draft	Finalized
Frameworks			
Results Framework	☑	☐	☐
M&E framework	☑	☐	☐
MRV System	☐	☐	☑
Implementation and Coordination			
Implementation Strategy	☑	☐	☐
Climate Change Action Plan	☐	☑	☐
Multi-Stakeholder CC working group (MSWG)	☑	☐	☐

MSWG Lead	Ministry of Environment
NAP	Submitted in 2016
NDC	Updated in 2022

Climate Risk

Brazil faces enormous environmental risk due to its vast territory. Among the main climatic risks faced by this country are floods. Variation in temperatures and precipitation driven by climate change further increase the risks of droughts, floods, and landslides. Among the sectors that are most affected are agriculture (due to land degradation), energy, water, forestry, and infrastructure in rural and urban areas.

Figure 1. Climate Projections and Vulnerabilities by Key Sectors

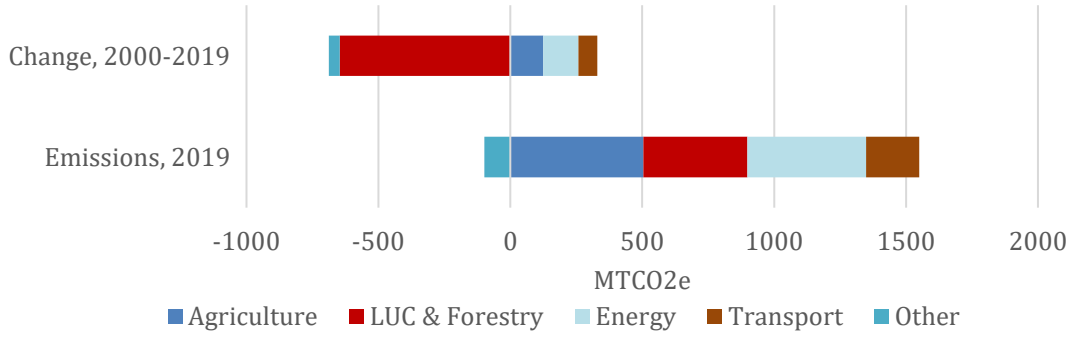


Source: World Bank climate knowledge portal country pages: https://climateknowledgeportal.worldbank.org/
NOTE: PROJECTIONS FOR TEMPERATURE AND PRECIPITATION BASED ON SSP1-2.6 AND SSP5-8.5 MODEL ESTIMATES. PROJECTIONS FOR CHANGE IN SEA LEVEL BASED ON RCP-2.6 AND RCP-8.5 MODEL ESTIMATES.

EMISSIONS BY SECTOR

Brazil's emissions come mainly from the agricultural sector, land use change and forestry, and energy. Agriculture represents approximately 35% of total emissions, land use is around 27%, and energy represents 31% of the emissions, as presented by Climate Watch.

Figure 2. Climate Emissions by Standardized Sectors (2019)



Source: Historical data emissions file downloaded from https://www.climatewatchdata.org/ghg-emissions?end_year=2019&start_year=1990.

Institutional Framework for Implementation

The development and updating of the NDCs and NAPs is carried out through an inter-institutional and inter-ministerial process. The main body in charge of these instruments is the Brazilian Ministry of Environment. The process includes actors from different areas and emphasizes the inclusion of and dialogue with civil society through strategies such as the Brazilian Forum on Climate Change. Brazil also has the Inter-ministerial Committee on Climate Change and Green Growth, responsible for establishing the institutional framework for the development and implementation of public policies on climate change. Civil society has also taken a leading role in fostering dialogue about climate solutions.

Key Sectors and priority actions

Brazil's NDC and NAP identify the following sectors and actions as high priority for climate change in the country.

PRIORITY SECTORS AND ACTIONS	
Sector	**Actions**
Agriculture	Develop and deploy an Agricultural Risk and Vulnerability Monitoring and Simulation System. Establish a Centre for Climatic Intelligence for Agriculture, for application of climate risk analysis in Brazilian Agricultural Policy.
Biodiversity and Ecosystems	Preparation of Ecosystem based Adaptation strategy measures in areas at risk of extreme events and other climate change impacts. Modelling of the impact of climate change on biodiversity for use in public policies for conservation, recovery, and sustainable use of biodiversity. Deployment of monitoring in 50 federal Conservation Units, for in situ evaluation and monitoring of the impacts of climate change on current and future biodiversity.
Vulnerable Populations	Diagnosis of Vulnerability to Climate Change of target populations of the National Territorial and Environmental Management Policy for Indigenous Lands - (PNGATI). Diagnosis of Vulnerability to Climate Change of target populations of the National Food and Nutritional Security Plan (PLANSAN). Diagnosis prepared and vulnerability to climate change reduced for vulnerable populations and beneficiaries of public policies for agroextractivism.
Water Resources	Incorporate measures for adaptation to climate change into actions carried out by the National Water Agency. Develop integrated climatic and hydrological models and assess their impact on water resources management.
Health	Expand the scope of the National Drinking Water Quality Surveillance Program (VIGIAGUA) to reach 85% of Brazilian municipalities, by 2019. Establish a study, research, monitoring and communication network on climate and health, with a view to expanding technical-scientific knowledge and inputs for health status analysis and for consolidated decision-making of the Unified Health System (SUS).

Coastal Zone	Establish Reference Centers for Coastal Management and build and organize information and tools for climate risk modelling and generation of qualified responses within the Coastal Zone. Draft, deploy and earmark funding for a strategy to harmonize continental altimetry with marine bathymetry (AltBat). Macro-diagnosis of the Coastal Zone (Macro-ZC) reviewed, considering climate change related vulnerabilities.
Cities	Promote coordination among the three levels of government. Consider adaptation to climate change in processes of rehabilitation of consolidated and degraded urban areas; during processes for promoting urbanization of precarious settlements; and during large-scale projects for production of social housing. Strengthen urban planning integrated with policies and practices for prevention of disasters and risks. Promote engineering works for containment of hillsides and formulation of Municipal Disaster Risk-Reduction Plans (PMRR). Incorporate measures for adaptation to climate change into actions for implementation of the National Basic Sanitation Plan (PLANSAB). Strengthen actions for Sustainable Urban Drainage. Support implementation and improvement of water-supply and wastewater services; actions for improvement of street cleaning and management of solid wastes; management and dissemination of information related to climate changes; studies on the impacts of climate change in different cities; and capacity building for human resources and dissemination of information management technologies. Incorporate adaptation to climate change into enhanced urban planning models.
Disaster Risk Management	Integration of policies for territorial planning, urban development, health, environment, climate change, water-resources management, geology, infrastructure, education, science and technology and other sectors, with a view to promoting sustainable development. A systemic approach to prevention, mitigation, preparation, response, and recovery actions. Closer coordination among federal, state, and municipal authorities for reducing disaster risks and providing support for affected communities. Drafting and implementation of Protection and Civil Defense Plans at the three levels of government. Creation of the Disaster Information and Monitoring System. Constant professional training and capacity building for civil defense and protection agents. Creation of a national register of municipalities with susceptible areas to major landslides, sudden flooding or related geological or hydrological processes. Inclusion of the principles of civil defense and protection in elementary and secondary-school curriculums.

Industry and Mining	Deepen knowledge on impacts and specific vulnerabilities on industrial subsectors. Establish an institutional framework to facilitate implementation of adaptation measures. Develop decision-making support tools for Adaptation in Industry. Raise awareness among micro and small businesses of adaptation topics within the sustainability agenda. Introduce climate-risk considerations into sectoral policies and encourage consideration of such risks in corporate decision-making. Provide stimulus for the capital-goods segment to increase the resilience of society. Alongside the National Confederation of Industry (CNI), promote a strategy for collaboration among Labor Unions and Industrial Employers' Federations for development of joint strategies for climate-risk management in industries located in sensitive regions. Foster Ecosystem-based Adaptation (EbA) practices as tools for strengthening territorial and industrial resilience.
Infrastructure	Assess impacts and vulnerabilities associated with climate change, from the standpoints of the Transport, Urban Mobility and Energy sectors.
Food and Nutritional Security	Promote universal access to appropriate and healthy food. Promote sustainable and structured food supply systems, based upon agro-ecological production, extraction, processing, and distribution. Institute permanent food and nutritional education processes, research and training in the fields of food and nutritional security. Promote, universalize and coordinate food and nutritional security actions targeted at quilombo and other peoples and communities. Strengthen food and nutritional actions at healthcare facilities at all levels, in coordination with other food and nutritional security measures. Promote universal access to enough high-quality drinking water. Support initiatives to foster food sovereignty, food and nutritional security and the human right to adequate food at the international level. Monitor fulfilment of the human right to adequate food.

CLIMATE POLICIES, PROGRAMS, AND INVESTMENTS

Brazil has played an important role in the development of policies, programs and other instruments related to combating the effects of climate change. These instruments are of a regional and global nature, (the Brazilian Earth System Model (BESM) is one example). This is an inter-institutional effort involving the Research Program on Global Climate Change of the Sao Paulo Research Foundation (FAPESP), the Research Program on Global Climate Change (Rede Clima), and the National Science and Technology Institute on Climate Change (INCT-MC). In this way, it is important to highlight that these efforts have been carried out considering a variety of public, private, and civil society actors, hand in hand with processes of scientific and technical research and dialogue.

Policies

Law 12.187/2009, establishing the National Policy on Climate Change (NPCC), regulated by Decree 7.390/2010

Law 12651/2012 for Protection of Native Vegetation.

Decree 8235/2014 Environmental Regularization Programme (PRA).

Law 12805/2013 National Policy for Integration of Farming Livestock and Forestry (ILPF)

Decree No. 8.375 establishes the Agricultural Policy for Planted Forests.
Law 9433/1997 The National Water Resources Policy (PNRH) and the National Water-Resources Management System (SINGREH)
Law No. 12.787/2013 on National Policy of Irrigation
Decree 7747/2012, established the National Policy for Territorial and Environmental Management of Indigenous Lands (PNGATI).

Programs

AdaptaBrasil MCTI
Brazilian Forum on Climate Change
Research Program on Global Climate Change of the Sao Paulo Research Foundation (FAPESP)
Research Program on Global Climate Change (Rede Clima)
National Science and Technology Institute on Climate Change (INCT-MC)

There are numerous opportunities Brazil could pursue to further address its climate change challenges many of which were summarized in the Brazil Country Climate and Development Report. Structural reforms could be implemented to improve economic productivity and efficiency while reducing pressures on the environment. These can be reenforced by economy-wide interventions that incentivize a transition to more sustainable and resilient economic activities among households and the private sector. Sector-specific interventions and regulations can also help promote the adoption of innovations and transformative opportunities. Ultimately both private and public capital must be mobilized and effectively directed toward these investments.

Climate Risk

Brazil (s.f) Climate Watch
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Nationally Determined Contribution (NDC) (2022) Federative Republic of Brazil.
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