

**FEDERATIVE REPUBLIC OF BRAZIL**  
**Paris Agreement**  
**NATIONALLY DETERMINED CONTRIBUTION (NDC)**

Brasília, 21 March 2022

The government of the Federative Republic of Brazil is pleased to communicate to the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC) its Nationally Determined Contribution (NDC), updated in the context of the Glasgow Climate Pact, which was adopted by the Parties to the UNFCCC and its Paris Agreement during the 26<sup>th</sup> Conference of the Parties.

Through this communication, Brazil confirms its commitment to reduce its greenhouse gas emissions in 2025 by 37%, compared with 2005. Additionally, Brazil commits to reduce its emissions in 2030 by 50%, compared with 2005. Brazil's commitments also include a long-term objective to achieve climate neutrality by 2050. Brazil's updated NDC is broad in scope and includes a consideration of means of implementation and the implementation of mitigation and adaptation actions in all economic sectors.

This contribution is communicated under the assumption that the implementation of the Paris Agreement fully respects the principles and provisions of the UNFCCC, in particular the principle of common, but differentiated responsibilities and respective capabilities. As a developing country, Brazil's historical contribution to the global problem of climate change has been small. This NDC therefore largely exceeds the level of ambition expected of a country with a small historical responsibility for the increase in the global mean surface temperature resulting from anthropogenic greenhouse gas emissions.

## Annex

### Information to facilitate clarity, transparency and understanding of Brazil's NDC

#### 1. Quantifiable information on the reference point (including, as appropriate, a base year):

##### (a) Reference year(s), base year(s), reference period(s) or other starting point(s):

The reference year for Brazil's NDC is 2005.

##### (b) Quantifiable information on the reference indicators, their values in the reference year(s), base year(s), reference period(s) or other starting point(s), and, as applicable, in the target year:

The quantification of the reference indicator is based on the total net emissions of greenhouse gases (GHG) in the reference year of 2005 reported in the "National Inventory of Anthropogenic Emissions by Sources and Removals by Sinks of Greenhouse Gases not controlled by the Montreal Protocol". Brazil will adopt the latest National Inventory Report available and submitted to the UNFCCC by the time of the assessment of the results of the NDC.

##### (c) For strategies, plans and actions referred to in Article 4, paragraph 6, of the Paris Agreement, or policies and measures as components of nationally determined contributions where paragraph 1(b) above is not applicable, Parties to provide other relevant information:

Not applicable.

##### (d) Target relative to the reference indicator, expressed numerically, for example in percentage or amount of reduction:

To reduce greenhouse gas emissions by 37% below 2005 levels in 2025, and by 50% below 2005 levels in 2030.

##### (e) Information on sources of data used in quantifying the reference point(s):

National Inventory of Anthropogenic Emissions by Sources and Removals by Sinks of Greenhouse Gases not controlled by the Montreal Protocol.

##### (f) Information on the circumstances under which the Party may update the values of the reference indicators:

Information on emissions in 2005 and reference values may be updated and recalculated due to methodological improvements applicable to the inventories.

#### 2. Time frames and/or periods for implementation:

##### (a) Time frame and/or period for implementation, including start and end date, consistent with any further relevant decision adopted by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA):

Net emissions from 01/01/2005 to 31/12/2005 compared with net emissions from 01/01/2025 to 31/12/2025.

Net emissions from 01/01/2005 to 31/12/2005 compared with net emissions from 01/01/2030 to 31/12/2030.

**(b) Whether it is a single-year or multi-year target, as applicable:**

Single-year targets in 2025 and 2030.

**3. Scope and coverage:**

**(a) General description of the target:**

Economy-wide absolute targets, consistent with the sectors present in the National Inventory of Greenhouse Gas Emissions for 2025 and 2030, always compared with 2005. The targets will be translated into policies and measures to be detailed and implemented by the Brazilian Federal government.

**(b) Sectors, gases, categories and pools covered by the nationally determined contribution, including, as applicable, consistent with Inter governmental Panel on Climate Change (IPCC) guidelines:**

CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, SF<sub>6</sub>, perfluorocarbons (PFCs) and hydrofluorocarbons (HFCs).

**(c) How the Party has taken into consideration paragraph 31(c) and (d) of decision 1/CP.21:**

The same gases previously indicated in the 2015 iNDC have been kept.

**(d) Mitigation co-benefits resulting from Parties' adaptation actions and/or economic diversification plans, including description of specific projects, measures and initiatives of Parties' adaptation actions and/or economic diversification plans:**

As a developing country, Brazil faces the challenge of contributing to the global efforts to mitigate emissions, according to the principle of common but differentiated responsibilities, and at the same time implement adaptation actions to cope with the impacts of climate change in its territory.

According to the Working Group I contribution to the Sixth Assessment Report of the IPCC, published in August 2021, parts of South America, including the Brazilian territory, will experience an increase in temperature that is above the global average, which will lead to the worsening of agricultural and ecological droughts and to the increase in the frequency of extreme climate events. The IPCC findings are aligned with studies also carried out in Brazil and reported in its 4th National Communication to the UNFCCC, which states that "Brazil's climate is changing, especially the frequency of extreme precipitation events that occur with greater intensity, just like the variability of temperatures and precipitation also seem to suffer important changes".

Adaptation actions implemented in the context of this NDC will aim at reducing vulnerability in terms of water, energy, food, social and environmental security, thus potentially generating synergies with the implementation of the 2030 Agenda and enhancing social and productive benefits. Based on the second cycle of the National Adaptation Plan (NAP), adaptation measures in Brazil will aim at strengthening the management of water resources, the

diversification of energy sources, the development of adaptation strategies in the agricultural sector with a view to ensuring food security, as well as adaptation plans for the urban landscape in Brazil to ensure the resilience of the population and infrastructure.

Adaptation policies will be based on the best available science regarding climate change and national circumstances. The AdaptaBrasil system, developed by the Ministry of Science, Technology and Innovation (MCTI) to consolidate and provide information to better understand the impacts of climate change in Brazil, including impacts projected into the future, is the scientific basis upon which national policies will be developed. The tool is maintained through the cooperative efforts of the MCTI, the National Institute of Space Research (INPE) and the National Network for Research and Teaching (RNP).

To complement the national efforts on adaptation, the federal government will also support subnational entities in their planning efforts by promoting scientific knowledge of adaptation to climate change and mainstreaming the subject into sectoral plans, as well as incorporating resilience criteria into policies and strategic plans<sup>1</sup>.

#### **4. Planning processes:**

**(a) Information on the planning processes that the Party undertook to prepare its nationally determined contribution and, if available, on the Party's implementation plans, including, as appropriate:**

**(i) Domestic institutional arrangements, public participation and engagement with local communities and indigenous peoples, in a gender-responsive manner:**

At the governmental level, the Interministerial Committee on Climate Change and Green Growth, instituted by decree 10.845, of 25 October 2021, sets the institutional framework for the elaboration and implementation of public policies on climate change.

The institutional dialogue between the Brazilian government and civil society takes place through the Brazilian Forum on Climate Change, instituted by decree 9.082, of 26 June 2017. The forum aims at raising “awareness and mobilize society and to contribute to the discussion of actions needed to deal with global climate change, in accordance with the National Policy on Climate Change, the United Nations Framework Convention on Climate Change and its resulting international agreements, including the Paris Agreement and Brazil's Nationally Determined Contributions”.

Articles 5, 231, and 232 of the Brazilian Constitution establish ample rights and guarantees for all Brazilian citizens, paying due attention to the special needs of women and indigenous peoples. Brazil is also a party to the ILO Convention 169 on Indigenous and Tribal Peoples.

**(ii) Contextual matters, including, inter alia, as appropriate:**

**a. National circumstances, such as geography, climate, economy, sustainable development and poverty eradication:**

---

<sup>1</sup> In line with Article 7, paragraph 11, of the Paris Agreement, the adaptation component of this NDC is also the first communication on adaptation presented by Brazil.

With a territory of over 8.5 million square kilometers, Brazil has equatorial, tropical, and subtropical climates with rainfall levels that range from 500 mm to 2,000 mm per year, as well as six biomes, namely the Cerrado (savannah), the Amazon (equatorial rainforest), the Caatinga (semi-arid), the Atlantic Forest (tropical rainforest), the Pantanal (seasonal wetlands), and the Pampa (subtropical grasslands). All of the six Brazilian biomes will suffer from the negative impacts of climate change, which will require the federal government to consider specific policies and measures to address their particularities when implementing this NDC.

Brazil has also signed all major multilateral environmental treaties and has enacted a wide range of laws and public policies regarding sustainable development. It has also worked to implement policies aimed at fighting poverty and reducing vulnerabilities in areas such as health, education, social security and minimum income. Brazil currently ranks 84<sup>th</sup> among 188 countries in the latest United Nations Human Development Index ranking. Brazilian figures regarding social development point to the need to ensure economic growth while promoting improvements in the life standards of its population.

In 2020, the Brazilian population was 212.6 million, and national authorities project positive growth rates until 2050, when the country's population might reach 230 million. Approximately 85% of the Brazilian population lives in urban areas, hence the urgent need for the government to implement specific policies and measures to ensure adequate conditions of sanitation and subsistence. Such concerns must be part of the implementation efforts of this NDC.

The agricultural sector plays a key role in the Brazilian economy and its pursuit of sustainable development. An increase in the global temperature interferes with the water levels and rainfall patterns in the different biomes, which, in turn, has the potential to harm the current levels of productivity and employment. Therefore, the Brazilian government considers it to be of the utmost importance to implement adaptation actions in this sector to tackle the perverse effects of climate change.

The Brazilian electric sector is among those with the highest share of renewable sources in its mix, which is largely due to the employment of hydropower. The negative impacts of climate change, including droughts and decreases in water levels, are taken into account by the federal government in the process of planning for mitigation and action to tackle climate change in the country.

**b. Best practices and experience related to the preparation of the nationally determined contribution:**

The current Brazilian NDC is the result of experience gained and lessons learned from the intended Nationally Determined Contribution (iNDC), submitted to the United Nations Framework on Climate Change in 2015, and the updated NDC, of 9 December 2020.

**c. Other contextual aspirations and priorities acknowledged when joining the Paris Agreement:**

**(b) Specific information applicable to Parties, including regional economic integration organizations and their member States, that have reached an agreement to act jointly under Article 4, paragraph 2, of the Paris Agreement, including the Parties that agreed to act jointly and the terms of the agreement, in accordance with Article 4, paragraphs 16–18, of the Paris Agreement:**

Not applicable.

**(c) How the Party's preparation of its nationally determined contribution has been informed by the outcomes of the global stock take, in accordance with Article 4, paragraph 9, of the Paris Agreement: Not applicable**

Not applicable.

**d. Each Party with a nationally determined contribution under Article 4 of the Paris Agreement that consists of adaptation action and/or economic diversification plans resulting in mitigation co-benefits consistent with Article 4, paragraph 7, of the Paris Agreement to submit information on:**

**(i) How the economic and social consequences of response measures have been considered in developing the nationally determined contribution:**

Not applicable.

**(ii) Specific projects, measures and activities to be implemented to contribute to mitigation co-benefits, including information on adaptation plans that also yield mitigation co-benefits, which may cover, but are not limited to, key sectors, such as energy, resources, water resources, coastal resources, human settlements and urban planning, agriculture and forestry; and economic diversification actions, which may cover, but are not limited to, sectors such as manufacturing and industry, energy and mining, transport and communication, construction, tourism, real estate, agriculture and fisheries:**

The need to plan for adaptation to the effects of climate change has motivated Brazil to elaborate its National Adaptation Plan (NAP) in 2016, with the aim of promoting “the reduction and management of climate risks considering the effects of climate change, by taking full advantage of emerging opportunities, avoiding losses and damages, and building instruments to prepare natural, human, productive and infrastructure systems to adapt to climate change”. The NAP involves four-year cycles for its implementation and a review exercise in the last year of each cycle. The first implementation period lasted from 2016 to 2020.

The NAP includes 55 types of policies, plans and programs of the federal government for different sectors, with a view to broadening the coherence, efficiency and synergies of adaptation strategies among public policies and in light of the Sustainable Development Goals (SDGs). The first implementation period reached its goal to improve existing knowledge regarding the reduction and management of climate risks, by taking full advantage of emerging opportunities, avoiding losses and damages, and building instruments to prepare natural, human, productive and infrastructure systems to adapt to climate change. The second cycle will contribute to the implementation strategy of the Brazilian NDC by the federal government.

**5. Assumptions and methodological approaches, including those for estimating and accounting for anthropogenic greenhouse gas emissions and, as appropriate, removals:**

**(a) Assumptions and methodological approaches used for accounting for anthropogenic greenhouse gas emissions and removals corresponding to the Party's nationally determined contribution, consistent with decision 1/CP.21, paragraph 31, and accounting guidance adopted by the CMA:**

Brazil will update its national inventories for the historical series based on the 2006 IPCC Guidelines or any subsequent guidelines that may come to replace them.

**(b) Assumptions and methodological approaches used for accounting for the implementation of policies and measures or strategies in the nationally determined contribution:**

Brazil will also apply specific assumptions and methodologies, when appropriate, when assessing progress made under the policies and measures related to the implementation of its NDC in its Biennial Transparency Reports (BTRs).

**(c) If applicable, information on how the Party will take into account existing methods and guidance under the Convention to account for anthropogenic emissions and removals, in accordance with Article 4, paragraph 14, of the Paris Agreement, as appropriate:**

See 5 (a) above.

**(d) IPCC methodologies and metrics used for estimating anthropogenic greenhouse gas emissions and removals:**

Emissions of gases covered by Brazil's NDC will be calculated based on the 2006 IPCC Guidelines. The methodological tier to be employed will depend on the availability of data in the different sectors. Brazil will make an effort to apply at least tier 2 methodologies for the key categories identified.

Emissions of the covered gases will be aggregated in terms of the 100-year time-horizon global warming potential (GWP-100), on the basis of the values stipulated in the IPCC Fifth Assessment Report, or 100-year time-horizon global warming potential values subsequently determined by the IPCC, as agreed by the CMA.

Consistent with Decision 18/CMA.1, Brazil will also continue to employ the global temperature potential (GTP), which is a more accurate metric for assessing the contribution of different gases to climate change.

**(e) Sector-, category- or activity-specific assumptions, methodologies and approaches consistent with IPCC guidance, as appropriate, including, as applicable:**

**(i) Approach to addressing emissions and subsequent removals from natural disturbances on managed lands:**

This approach will still be defined and subsequently informed.

**(ii) Approach used to account for emissions and removals from harvested wood products:**

Brazil will use the production approach, consistent with the 2006 IPCC Guidelines.

**(iii) Approach used to address the effects of age-class structure in forests:**

This approach will still be defined and subsequently informed.

**(f) Other assumptions and methodological approaches used for understanding the nationally determined contribution and, if applicable, estimating corresponding emissions and removals, including:**

**(i) How the reference indicators, baseline(s) and/or reference level(s), including, where applicable, sector-, category- or activity-specific reference levels, are constructed, including, for example, key parameters, assumptions, definitions, methodologies, data sources and models used:**

Brazil has not used any other assumptions or methodological approaches.

**(ii) For Parties with nationally determined contributions that contain nongreenhouse-gas components, information on assumptions and methodological approaches used in relation to those components, as applicable:**

Not applicable.

**(iii) For climate forcers included in nationally determined contributions not covered by IPCC guidelines, information on how the climate forcers are estimated:**

Not applicable.

**(iv) Further technical information, as necessary:**

Not applicable.

**(g) The intention to use voluntary cooperation under Article 6 of the Paris Agreement, if applicable:**

Brazil will strive to achieve its NDC through domestic measures to be coordinated and implemented by the federal government. The Brazilian government does not rule out the use of internationally transferred mitigation outcomes (ITMOs), as defined in Article 6 of the Paris Agreement, to complement national efforts in the achievement of the Brazilian NDC. Brazil can also consider the possibility of transferring international mitigation outcomes generated within the national territory. Any international transfers of mitigation outcomes obtained within the Brazilian territory will be subject to prior and formal consent by the federal government, in accordance with the terms and conditions, including legislation, to be nationally developed to that end.

**6. How the Party considers that its nationally determined contribution is fair and ambitious in the light of its national circumstances:**



**(a) How the Party considers that its nationally determined contribution is fair and ambitious in the light of its national circumstances:**

Brazil is a developing country and, as such, struggles with challenges associated with poverty eradication, the need to improve its development indexes in areas that include education, public health, employment rates, housing and social inclusion. In spite of its challenges, Brazil has contributed greatly with the global efforts to mitigate greenhouse gas emissions, thus proving that it is possible to decouple economic growth and emissions.

In the pre-2020 period, the Brazilian government has voluntarily committed to implementing sectoral initiatives that taken together could reduce the projection of Brazilian emissions by 36.1-38.9% in 2020. In most of these sectors, Brazil has exceeded its expectations, having substantially increased the share of renewable sources in its energy mix and almost doubled the restored area of degraded lands. In spite of current challenges and progress achieved so far, the Brazilian government also worked to update its NDC, in December 2020, with a view to raise its level of ambition. In light of the agreement embodied in the Glasgow Climate Pact, Brazil has now once again updated its NDC, to further increase its levels of ambition.

The Brazilian NDC is one of the most ambitious in the world. Besides its targets, Brazil is one of the few countries that adopted a commitment for 2025 as well as 2030, which will provide for a better monitoring of the mitigation efforts throughout the decade. Brazil therefore understands that it is making an important contribution to international efforts to combat climate change in both absolute and relative terms.

Currently, 30% of the Brazilian territory is covered by protected areas, such as conservation units and indigenous lands. Brazilian environmental laws are among the most advanced in the world, given that they require landowners to preserve 20-80% of their lands and that they establish additional protective measures for fragile ecosystems. Together with the protected areas established under the Brazilian Forest Code, approximately 50-60% of the Brazilian territory is under some kind of protection. Despite this, the Brazilian government has chosen to go even beyond already existing laws and policies and commit to eliminating illegal deforestation by 2028.

Still regarding the land use sector, the Low Carbon Agriculture Plan (ABC Plan) has already channeled R\$ 17 billion to implement a vast range of mitigation measures, which include recovering degraded lands, projects of nitrogen fixation, increased accumulation of organic matter (carbon) in the soil, no-till farming, the integration of forest, crops and cattle breeding, agroforestry and forest planting. By 2020, the ABC Plan had exceeded its goals by 155%, and is to be continued, from 2020 to 2030, through the Sectoral Adaptation Plan for a Low Carbon Agriculture for Sustainable Development (Plan ABC+). It is a key policy among Brazilian sectoral efforts to tackle climate change.

Brazil has one of the cleanest energy mixes in the world. In 2020, renewable sources accounted for 48.4% of the total demand for energy, three times the world average. In the electricity demand mix, the share of renewables accounted for 84.8%. As for the transport mix, it represents 25% of the sources. The production of biofuels for the transport sector has substantially increased due to RenovaBio, which uses market incentives to promote the

decarbonisation of the sector and to incentivize these kinds of fuels. The use of hydropower to generate electricity accounts for 60% of the national installed capacity and has proven to be the best available technology to compensate for the intermittency and seasonality that affect other sources of renewable sources, such as wind and solar energy, as well as biomass. Brazil has also made significant investments, nonetheless, in solar and wind energy and biomass, which already account for 20% of the country's energy mix and are experiencing rapid growth

Regarding the issue of means of implementation, the Brazilian NDC remains unconditional.

**(b) Fairness considerations, including reflecting on equity:**

Most of the current concentration of greenhouse gases in the atmosphere is a result of emissions that have taken place since the Industrial Revolution (the post-1750 period). Current generations are bearing the costs of past interference with the global climate system, resulting from human activities and consequent greenhouse gas emissions, primarily by developed countries, during the last two and a half centuries. In order to build a fair global response to climate change, it is therefore of central importance to establish a connection between cause (anthropogenic emissions) and effect (temperature increase and climate change).

The average increase in the global temperature due to anthropogenic emissions is an objective criterion to measure climate change, serving the purpose of establishing upper limits to prevent dangerous anthropogenic interference with the global climate system. The relative contribution of any individual actor to global climate change can be determined using the average increase in the global temperature as an indicator. The contribution of each individual actor to temperature increases should take into account differences in terms of starting points, population, approaches, economic structures, natural resources, the need to maintain sustainable economic growth, available technologies and other individual circumstances.

The reconstruction of the historical series of net anthropogenic emissions allows for the estimation of the relative share of the temperature increase attributable to each individual country, including in per capita terms. The relative responsibility of a given country in relation to the average increase in the global temperature can be estimated with a high level of confidence. Hence, the marginal relative contribution to the global average surface temperature increase is a relevant measure for evaluating the level of each party's responsibility in the collective effort to “[h]olding the increase in the global average temperature to well below 2°C above preindustrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels”, in accordance with Article 2.1 (a) of the Paris Agreement.

**(c) How the Party has addressed Article 4, paragraph 3, of the Paris Agreement:**

The target of reducing emissions by 50% between 2005 and 2030 represents an increase of 13 percentage points compared to the previous target of reducing emissions by 37% between 2005 and 2025. The current target is also consistent with a long-term objective of reaching climate neutrality by 2050.

**(d) How the Party has addressed Article 4, paragraph 4, of the Paris Agreement:**

Despite being a developing country, Brazil has already adopted an absolute, economy-wide target since it presented its iNDC.

**(e) How the Party has addressed Article 4, paragraph 6, of the Paris Agreement:**

Not applicable.

**7. How the nationally determined contribution contributes towards achieving the objective of the Convention as set out in its Article 2:**

**(a) How the nationally determined contribution contributes towards achieving the objective of the Convention as set out in its Article 2:**

By presenting one of the most ambitious NDCs in the world, Brazil understands it is significantly contributing to the "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system", consistent with Article 2 of the UNFCCC.

By the same token, Brazil believes to be contributing to the collective effort to hold "the increase in the global average temperature to well below 2°C above preindustrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels", consistent with Article 2.1(a) of the Paris Agreement.

**(b) How the nationally determined contribution contributes towards Article 2, paragraph 1(a), and Article 4, paragraph 1, of the Paris Agreement:**

As per Article 4.1 of the Paris Agreement, Brazil presents a sizeable emission reduction target, which largely exceeds any goals related to peaking emissions. Brazil's NDC is compatible with a long-term objective of achieving carbon neutrality in 2050.