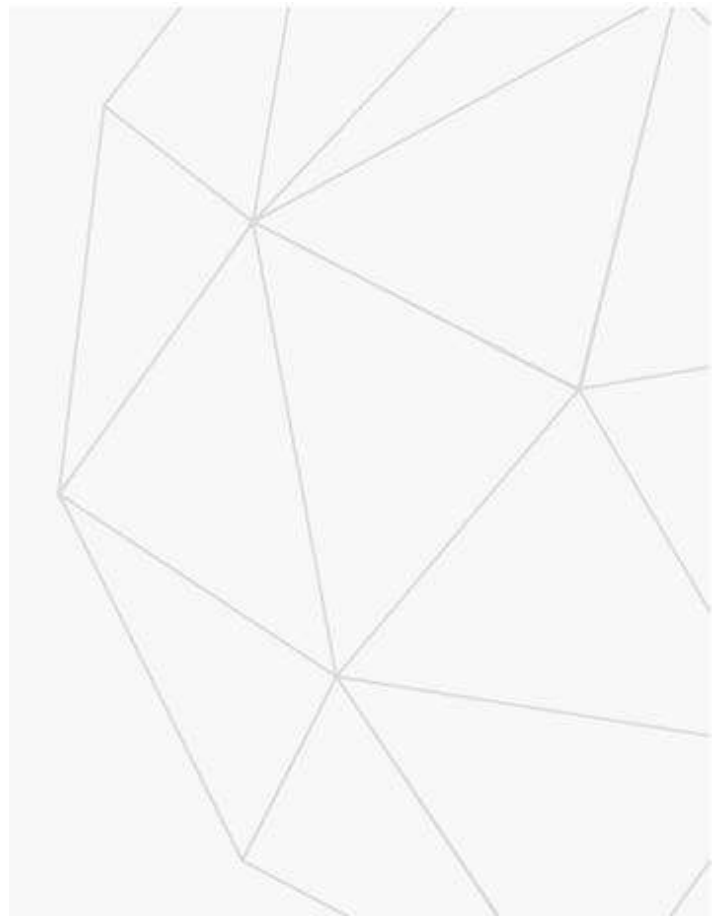


AUTORIDADE NACIONAL

Designada para o GCF

Secretaria de Assuntos Internacionais - SAIN



Brazil Country Program for the Green Climate Fund - GCF

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MINISTÉRIO DA
FAZENDA



Presentation

A fundamental principle of the Green Climate Fund is that developing countries have ownership over the results of the projects and programs financed using GCF resources (Country Ownership Principle). In this sense, each country must **set its national priorities and present its strategy for engagement with the Fund through a Country Programme**. The process of building a strategy for the GCF requires the engagement of many social stakeholders to subsidize the definition of national priorities, taking into account the views of the public sector (federal and subnational), private sector and civil society.

Thus, this document was prepared under the coordination of the Secretariat for International Affairs of the Ministry of Finance (SAIN/MF), Brazil's National Designated Authority (NDA) to the GCF. This document is the result of a broad debate with the Brazilian society during the second half of 2017, which involved four regional workshops that discussed and collected inputs, as well as two specific workshops involving indigenous peoples and a final consolidation seminar. Additionally, the draft document went through a public consultation process on the NDA website (<http://and.fazenda.gov.br>) for thirty days, hence reinforcing its collaborative character. It is worth mentioning that the inputs obtained during the process were systematized by the NDA and considered in the preparation of this Country Programme.

Therefore, the objective of this Country Programme is to present the guidelines for the Fund's activities in Brazil. The guidelines were developed in line with existing policies and strategies and according to national planning and climate change frameworks and policies. In this sense, this document seeks to present opportunities for the preparation of funding proposals to be submitted to the GCF that not only meet the Fund's criteria but are also aligned with national priorities, have economic feasibility and lead to transformational impact.

The preparation of the draft document and the organization of workshops received the support of the Inter-American Development Bank (IDB), through the Technical Cooperation Project "Strengthening Climate Change Budget Planning and Fiscal Management in Brazil" (BR-T1183).

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Context of Development and Climate Change Policies in Brazil

Brazil - basic information	
Geographic Location	South America
Area	8,515,759.090 km ²ⁱ
Population	208 million ⁱⁱ
Types of climate	Brazil has an equatorial, tropical and subtropical climate. Humid equatorial climate with frequent rains and extremely hot conditions prevails in the North of the country, especially in the region comprising the Amazon Rainforest. Tropical climate regions boast high temperatures, but with less frequent rainfall. In turn, the climate in Southern Brazil is predominantly subtropical, with the possibility of negative temperatures during winter. The Amazon Rainforest strongly contributes to the maintenance of climate conditions in South America (interfering with rainfall in the region) and the energy balance of the planet. ⁱⁱⁱ
Profile of GHG emissions	1,284,702.14 Gg CO ₂ e in 2014 according to the latest data provided by the National Emissions Registry System (SIRENE). ^{iv} Greenhouse gas emission by sector is divided as follows: Energy (36.6%); Agriculture (33.0%); Land Use, Land-Use Change and Forestry (18.1%); Industrial Processes (7.4%); Waste Treatment (4.9%).
Main emission sectors	Energy ^v ; Agriculture ^{vi} ; Land-use Change and Forestry. ^{vii}
Main climatic risks	Extreme events, temperature increase, changes in precipitation patterns (excess and scarcity of rainfall), sea level rise. ^{viii}
Vulnerable Sectors	Agricultural production (loss mainly of corn, rice, beans, cotton and sunflower production); water scarcity compromising supply for consumption, irrigation, and electricity generation ^{ix} ; loss of biodiversity; increased incidence of tropical diseases. ^x
NDA	Secretariat of International Affairs, Ministry of Finance
Main International AEs	IDB, World Bank, CAF, IFAD, GIZ, KfW, AFD, Avina Foundation, UNDP, UNEP, FAO.
Direct Access AEs	CAIXA, Funbio Under accreditation process - BNDES.

1.1. Climate Change Scenarios

Climate change scenarios: medium and long-term projections

- The effect of climate change on Brazil points to an increased recurrence of extreme events and natural disasters, generating significant environmental and socio-economic impacts.** Brazil's vulnerability to extreme climate change - heavy rainfall and dry periods, for example - was highlighted in the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC-AR5)^{xi}. The consequences of these events include droughts, floods, heavy showers, and landslides, which in turn impact the availability of water resources, electricity generation, infrastructure, cities, industry, human health, ecosystems and biodiversity, coastal zones, and oceans^{xii}. In order to better

analyze the impacts of climate change in Brazil, two scenarios developed by the IPCC AR5 were considered:¹ a high emissions scenario (RCP 8.5) and an intermediate emissions scenario (RCP 4.5)^{xiii}.

2. **Temperature increases, rainfall variations, risk of water shortages, sea level rise and changes in climate patterns are among the identified impacts.** The results of these projections indicate the following events in Brazil:^{xiv}
 - Temperature increase from +1,7°C to +6,7°C.
 - Rainfall variations, with increases during drought periods in the northeast and the eastern part of the Amazon and changes in flow rates and availability of water resources in the South and Southeast of Brazil.
 - Increased risk of water shortages due to reduced rainfall and increased evapotranspiration in semi-arid regions, impacting water supply of cities, hydroelectric power generation and subsistence agriculture.
 - Sea level rise and increased human activities on coastal ecosystems, affecting populations of fish, corals, mangroves, leisure and tourism, and disease control.
 - Changes in climate patterns, with negative impacts on human health and the emergence of diseases in previously non-endemic areas.

Temperature increase: environmental and socio economic vulnerability

3. **In the medium and long term, temperature in Brazil will rise above the global average, causing environmental changes.** The intermediate and high emission scenarios indicate that by 2100 the temperature in Brazil will rise over this period in an average of 0.65°C (RPC 4.5) and 1.1°C (RPC 8.5) above the global warming temperature average, considering the most pessimistic projections.^{xv} In the medium term, the temperature peaks will be concentrated in the Central-West region, extending to the North, Northeast and Southeast regions throughout the century, with variations between 2°C and 8°C.^{xvi} In a high emission scenario, after 2071 temperatures peaks will occur in the Cerrado region and part of the Amazon, leading to the replacement of natural Amazon vegetation by vegetation similar to that of the Cerrado region (dry forest or savannah), which is resilient to higher temperatures.^{xvii}

Variations in precipitation: increase in drought and flood events

4. **Changes in precipitation patterns can already be observed in Brazil, with an upward trend by 2100.** The regions with the greatest decrease in precipitation during the summer months are the Central-West, North, Northeast and part of the Southeast, whereas the South and southern part of the Southeast show the greatest increase in precipitation.^{xviii} Precipitation decreases and increases also impact the hydrographic basins in these regions. Despite discrepancies in terms of magnitude in the high emissions (RCP 8.5) and intermediate emissions (RCP 4.5) scenarios, projections indicate a decrease in flows in the Midwest, North and Southeast basins, and an increase in flows in the South of the country, although low flows are also a risk in this region.^{xix}
5. **The impacts of decreased precipitation in the Brazilian territory can already be observed in the reduced availability of water resources and water supply.** Medium and long-term projections point to further deficits in water availability, not only in semi-arid regions but also in other regions that previously had no supply shortage.^{xx} The 2005 drought in the Western Amazon region, one of the most intense of the last century, is an example of this impact. This led to the suspension of navigation on the Amazon, Solimões and Madeira rivers and to the declaration of a state of emergency by

¹ RCP – RCP - Representative Concentration Pathways are climate and socioeconomic scenarios that take into account high emission (RCP8.5), intermediate emission (RCP 6.0 and 4.5) and low emission (RCP 2.6) scenarios.

countries in the Amazon Region, in addition to social and economic impacts such as the lack of food and difficulties in water supply, as well as a reduction in fishing activity and hydroelectric generation in the region.^{xxi}

6. **Variations in precipitation also cause floods and natural disasters, mainly in the country's Southeast and South regions.** Extreme weather events such as heavy rains and storms cause floods and mass movements due to landslides.^{xxii} Projections point to an increase in the occurrence of these events throughout the national territory, but especially in parts of the Southeast and South of Brazil. Again, these impacts can already be observed: examples are the 2008 floods in Santa Catarina, which directly affected 1.5 million people (with 69,000 homeless and 120 deaths); and the 2011 floods and landslides in the mountainous region of Rio de Janeiro, which caused 916 deaths and left 35,000 people homeless.^{xxiii}
7. **Variations in precipitation affect the quality and access to water, increasing the incidence of diseases, thus generating socioeconomic impacts.** The reduction in precipitation patterns evidence the conflict between multiple uses of water resources and, as a result, could damage the economy due to water scarcity for agricultural and industrial uses.^{xxiv} Instabilities in water availability can also affect the energy sector due to the predominance of hydropower in the Brazilian energy matrix.^{xxv}

Aridity Index: increased risk of desertification

8. **The increase in the aridity index in Brazil enhances the risk of desertification in certain areas of the country.** Between the 1960s and 1990s, the aridity index in 74% of the Brazilian territory was below 0.9. However, by 2099 approximately 67% of the territory will be close to aridity, that is, with an aridity index between 0.9 and 2.0^{xxvi}. The most affected regions will be the Central-West and the North, where humidity will decrease during that period. The Amazon region and the states of Tocantins, Mato Grosso and Goiás are more susceptible to desertification, and the size of the areas already in process of desertification in Bahia and Pará will increase by the end of the century^{xxvii}. The desertification process is also accelerating in the semi-arid region of Brazil, which represents approximately 16% of the Brazilian territory and a population of 34.8 million^{xxviii}. Increased aridity also leads to changes in the country's vegetation, such as the savannization of the Amazon rainforest and a decrease in agricultural productivity, since the impact on producing regions will be significant.^{xxix}

Vulnerability profile: vectors of climate change, risks and impacts

9. **The different Brazilian biomes are vulnerable to climate change.** The six biomes of Brazil will be affected as a result of climate change. The most affected biomes will be the Amazon and the Atlantic Forest, where the native vegetation will be more severely affected by changes caused by increased temperatures and consequent aridity.^{xxx} The Atlantic Forest is the most endangered biome due to the low extension of remaining native vegetation and population density.^{xxxi} These changes will also lead to the loss of a portion of biodiversity.^{xxxii} The Cerrado and Caatinga will suffer minor impacts due to the characteristics of the local native vegetation, but the loss of forest enclaves can lead to the loss of endemic species.
10. **Climate change can lead to a decline in Brazil's GDP.** Projections on the impact of climate change on the Brazilian economy point to a GDP decrease of almost 6% by 2070.^{xxxiii} The two main areas to be impacted will be labor productivity and agricultural production.^{xxxiv} The agricultural sector is essential to the Brazilian economy and will be directly affected by an increase in temperature and a decrease in water availability. Possible impacts identified include: abortion of coffee and bean flowers, sow miscarriage, death of chickens, and reduction in milk production.^{xxxv} Although solutions are being researched, such as the development of crops that are more resistant to high temperatures and

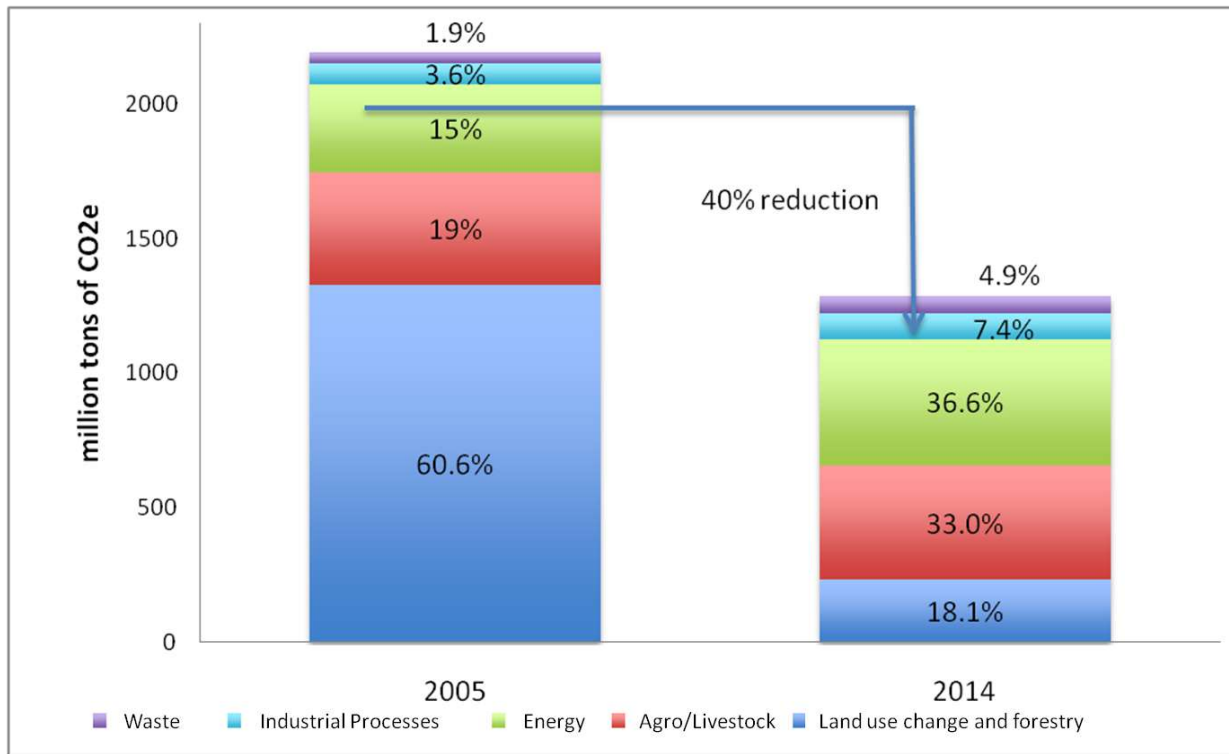
water shortage and better animal ambience, projections point to a decline in Brazilian agricultural production. Relevant crops such as corn and soybeans may experience a reduction of 90% and 80%, respectively, and impacts on coffee, sugarcane, beans, and manioc production, among other crops, are also expected.^{xxxvi}

- 11. Temperature increases, variations in precipitation and aridity directly affect indigenous peoples and traditional communities.** The indigenous population and quilombola communities are particularly susceptible to climate change due to changes in subsistence sources and water availability.^{xxxvii} In addition, the risks arising from climate change compromise the health of children, elderly and people with a history of cardiovascular and respiratory diseases, thus increasing heat-related mortality.^{xxxviii} The poorest urban population in precarious settlements, which is also a vulnerable group, is the most affected by floods and natural disasters.^{xxxix}

Emission Profile

- 12. Between 2005 and 2014, Brazil reduced its total emissions by 40%, with the following breakdown by sector:**

Graph 1 – Brazil: Net greenhouse gas emissions by source of emission and removal by sinks - 2005 and 2014



Source: MMA from the 2nd Brazilian Inventory of Anthropogenic Emissions by Sources and Removals by Greenhouse Gas Sinks (MCT 2010) and Annual Estimates of Greenhouse Gas Emissions in Brazil (MCTIC 2016).

- 13. The emissions produced by the energy, agricultural and livestock sectors are the main sources of GHGs in Brazil.** The agricultural and livestock sector is one of the two main sources of greenhouse gas emissions in the country. As the graph above shows, the sector accounted for 33% of the total net carbon dioxide equivalent emissions in 2014.^{xi} Despite the predominance of hydro generation in the Brazilian matrix, which is one of the most renewable in the world, the energy sector accounted

for 36.6% of the country's emissions in 2014, mainly due to the burning of fossil fuels and fugitive emissions.

1.2. Development Profile

Development scenario, circumstances and economic strategies

- 14. In 2016, Brazilian GNI (Gross National Income) per capita was US\$8,840,000 , placing the country in 90th place in the world ranking.**^{xlii} Brazil also ranks as 79th in the UN Human Development Index among 188 countries, with an HDI of 0.754 since 2014.^{xliii} The country's numbers reflect the need to resume growth in a sustainable manner and continue to advance in improving the living standards of the population.
- 15. Brazil has recently experienced the most serious economic crisis in its history.** The country's gross domestic product (GDP) fell 7.3% in the period 2015-2016, with consequent high unemployment rates (which exceeded 13% in March 2017).
- 16. The impact of the crisis was mitigated by the presence of a consolidated social protection network and inflation control.** The impact on the poorest population was mitigated through a stronger focus on the social safety network, especially the “Bolsa Família” Program, a direct income transfer program based on conditionalities, for families living in poverty and extreme poverty. Inflation rose above 10% at the height of the crisis in 2015, when the prices of energy, fuel and public transportation were adjusted. In 2016, inflation fell to 6.3%. The downward trend continues: the accumulated IPCA in 2017 was 2.95%, below the 3% target set by the Central Bank of Brazil.
- 17. The Federal Government proposed an ambitious suite of measures to put Brazil back on the path of sustainable growth.** Much has already been done to resume economic growth, create jobs, increase productivity and competitiveness, alleviate poverty, and guarantee the fiscal sustainability of the Brazilian state. The Constitutional Amendment No. 95/2016 imposed strict rules to limit the increase of public spending. Congress passed new legislation to make Brazilian labor laws more flexible, modern and simplified. The Investment Partnerships Program was launched to increase private sector engagement in infrastructure projects. Legislative changes to reduce the complexity of the Brazilian tax system and improve the business environment are in progress.
- 18. The combination of an improved macroeconomic environment with an agenda of deep structural reforms can trigger stronger growth in Brazil.** These measures are the cornerstone of the restructuring of Brazil's finances and the means to guarantee its fiscal sustainability, offering conditions for sustainable productivity growth by enhancing private sector engagement, raising living standards and improving job creation.
- 19. The Brazilian economic context indicates relevant opportunities for GCF financing.** The public spending limitation requires streamlining public policies in all spheres, including climate change related issues. In particular, the Brazilian Government should enhance the efficiency of its actions by increasing the impact of fiscal resources aimed at meeting the most pressing social demands, among them climate change policies. In this context, two vectors should guide the support of the GCF for the implementation of transformational changes: (i) support public policy improvement by strengthening the integration of the adaptation and mitigation dimensions into public spending; (ii) leverage the private sector engagement through long-term public-private partnerships to develop projects seeking to provide services and adequate infrastructure to the population. These opportunities will be discussed in greater detail in the following sections of this document.

1.3. Response to Climate Change

1.3.1. National Initiatives

Existing climate change mitigation and adaptation policies and monitoring systems

- 20. Brazil has been playing a decisive role in the United Nations Framework Convention on Climate Change (UNFCCC) and has made a major contribution to reduce global greenhouse gas emissions.**^{xliii} The National Climate Change Policy (PNMC), Law No. 12,187, was adopted in 2009 with the aim, inter alia, to reconcile economic and social development with the protection of the climate system; reduce anthropogenic greenhouse gas emissions in relation to its different sources; strengthen anthropogenic removals by greenhouse gas sinks in the national territory; and implement measures to promote adaptation to climate change across the three spheres of the Federation, with the participation and collaboration of economic and social stakeholders or beneficiaries, in particular those especially vulnerable to the adverse effects of climate change.^{xliv}
- 21. Law No. 12,187/2009 establishes that in order to enforce the PNMC objectives, the country shall adopt, as a national voluntary commitment, actions to mitigate greenhouse gas emissions with the purpose of reducing between 36.1% and 38.9% of projected emissions by 2020².** In this regard, in 2010 the Government of Brazil informed the Convention Secretariat its nationally appropriate mitigation actions to be communicated by the Parties to the UNFCCC. In this context, Brazil has achieved meaningful results in mitigating emissions and should meet its voluntary commitments made during the 15th Conference of the Parties in Copenhagen.^{xlv}
- 22. Considering the importance of the forest sector in Brazil's GHG emissions profile and in view of continued efforts to reduce emissions from the sector, in 2016 Brazil presented the National REDD+ Strategy (ENREDD+).** ENREDD+ aims to coordinate and promote synergies between the National Policy on Climate Change (PNMC), the Law on Protection of Native Vegetation (New Forest Code), the biome-specific plans for prevention of deforestation, as well as other laws, policies and regulations focused on reversing the loss of forests, considered as priority by the Brazilian government.^{xlvi} Aiming to implement the Warsaw Framework for REDD+ (Decisions 9 to 15/CP.19), in September 2014 Brazil also submitted to the UNFCCC the forest reference emission level for the Amazon biome;^{xlvii} that includes measuring REDD+ results during two different periods, both with verified results eligible to receive funds: 2006-2010 and 2011-2015. In regard to the 2016-2020 results period for the Amazon biome, there is an ongoing process under UNFCCC's evaluation to assess the corresponding forest reference emissions level. Additionally, Brazil also has the forest reference emission level for the Cerrado biome to demonstrate results for the 2011-2020 period assessed; and procedures to qualify the results for funding are in progress.^{xlviii}
- 23. In addition to regulatory frameworks for mitigation measures, Brazil also has a National Adaptation Plan (NAP), whose general objective is to promote the management and reduction of climate risk in the country vis-à-vis the adverse effects associated with climate change.** The Plan is based on the vision that all government policy sectors deemed vulnerable to climate change impacts should have climate risk management strategies. The Plan must ensure the coordinated implementation of sectoral and thematic risk management strategies, primarily in the areas of food and nutrition, water and energy security. Likewise, adaptation measures should be aligned with the

² These would include a 20.9% reduction of CO₂e emissions from deforestation in the Amazon biome reducing rates by 80%; and a 3.9% reduction in emissions from deforestation in the Cerrado region reducing rates by 40%. For agriculture and livestock, the reduction ratio would vary from 4.9% to 6.1%; from 6.1% to 7.7% for energy; and from 0.3% to 0.4% for the steel industry ([MMA](#)).

national targets of socioeconomic development and reduction of regional inequalities, through the coordination of public policies at the federal, state and municipal levels.^{xlix}

24. **Brazil established the National Center for Natural Disaster Monitoring and Alert (CEMADEN) to monitor natural threats in risk and disaster areas.** The Center also carries out research and technological innovations that may contribute to improve its early warning system, with the ultimate goal of reducing the number of casualties and material losses throughout the country.ⁱ
25. **Brazil has developed the National Emissions Registry System (SIRENE) to monitor and record national emissions.** The Ministry of Science, Technology, Innovation and Communications (MCTIC) is responsible for implementing and maintaining SIRENE.ⁱⁱ The System is maintained with data on greenhouse gas emissions and removals, according to estimates provided in Brazil's National Communications and Biennial Update Reports (BURs) to the UNFCCC, in the Annual Emissions Estimates under the National Climate Change Policy (PNMC) and in organizational inventories obtained through voluntary disclosure.ⁱⁱⁱ
26. **In 2015, Brazil presented one of the most ambitious NDCs in the world.** Brazil has a comprehensive Nationally Determined Contribution (NDC) that includes mitigation, adaptation and means of implementation in a consistent manner with the purpose to achieve the ultimate objective of the Convention foreseen in the [Paris Agreement \(Article 2\)](#). For the mitigation component, Brazil commits to reduce greenhouse gas emissions by 37% below 2005 levels in 2025. The country also presented a subsequent indicative contribution to reduce GHG emissions by 43% below 2005 levels in 2030. This is a cross-cutting theme with an emphasis on the environmental motivation of contributing not only to one of the main objectives of the Paris Agreement of limiting global average temperature increase to 2°C above pre-industrial levels but also to promote the country's sustainable development by encouraging the consolidation of a low greenhouse gas emission economy in the long term. The NDC annex contains a set of informative measures that can contribute to meeting the national targets:ⁱⁱⁱⁱ
 - i. increasing the share of sustainable biofuels in the Brazilian energy mix to approximately 18% by 2030, by expanding biofuel consumption, increasing ethanol supply, including by increasing the share of advanced biofuels (second generation), and increasing the share of biodiesel in the diesel mix
 - ii. In land-use change and forests:
 - a. Strengthen and enforce the implementation of the Forest Code at federal, state and municipal level;
 - b. Strengthening policies and measures with a view to achieve, in the Brazilian Amazonia, zero illegal deforestation by 2030 and compensating for greenhouse gas emissions from legal suppression of vegetation by 2030;
 - c. Restoring and reforesting 12 million hectares of forests by 2030, for multiple purposes;
 - d. Enhancing sustainable native forest management systems, through georeferencing and tracking systems applicable to native forest management, with a view to curbing illegal and unsustainable practices;
 - iii. In the energy sector, achieve 45% of renewables in the energy matrix by 2030, including:
 - a. Expand the use of renewable energy sources other than hydropower in the total energy mix to between 28% and 33% by 2030;
 - b. Expand the domestic use of non-fossil fuel energy sources by increasing the share of renewables (other than hydropower) in power supply to at least 23% by 2030, including by raising the share of wind, biomass and solar energy;

- c. Achieve 10% efficiency gains in the electricity sector by 2030.
- iv. In the agricultural sector, strengthen the Low Carbon Emission Agriculture Program (ABC Plan) as the main strategy for sustainable agriculture development, including the restoration of an additional 15 million hectares of degraded pasturelands by 2030 and by enhancing 5 million hectares of integrated cropland-livestock-forestry systems (ICLFS) by 2030;
- v. In the industry sector, promote new clean technology standards and further enhance energy efficiency measures and low carbon infrastructure;
- vi. In the transport sector, further promote efficiency measures, and improve infrastructure for transport and public transportation in urban areas.

Table 1: Summary of relevant information presented in the NDC		Estimated resource requirements USD \$
Conditional	<p>Policies, measures and actions to achieve the intended contribution will be implemented without prejudice to the use of the financial mechanism of the Convention or any other modalities of international cooperation and support, in order to enhance effectiveness and/or anticipate implementation.</p> <p>The implementation of Brazil's NDC is not contingent upon international support, yet it welcomes support from developed countries with a view to generate global benefits.</p> <p>Additional actions would demand large-scale increase of international support and investment flows, as well as technology development, deployment, diffusion and transfer. Specifically concerning the forest sector, the implementation of REDD+ activities and the permanence of results achieved require the provision, on a continuous basis, of adequate and predictable results-based payments in accordance with the relevant decisions of the Conference of the Parties.^{iv}</p>	
Unconditional	<p>Mitigation: Brazil has committed to reduce greenhouse gas emissions by 37% below 2005 levels in 2025, with a subsequent indicative contribution to reduce greenhouse gas emissions by 43% below 2005 levels in 2030.</p> <p>Adaptation: The National Adaptation Plan (NAP) aims to implement knowledge management systems, promote research and technology development for adaptation and develop processes and tools to support adaptation actions and strategies at different levels of government. Brazil is a developing country that has experienced a fast urban transition. In this context, risk areas, housing, basic infrastructure, especially in the areas of health, sanitation and transportation are key areas for adaptation policies. The Brazilian Government pays special attention to populations with lower incomes by improving their housing and living conditions, bolstering their capacity to withstand the effects of severe climate events.</p>	<p>The indicative amount of resource mobilization required to promote the actions provided in the NDC is estimated at R\$890 billion to R\$ 950 billion, corresponding to total investments of approximately 1% of the annual GDP at face value.^{iv}</p>

1.3.2. Regional Engagement

Regional approaches in mitigation, adaptation and natural resource management strategies.

27. **Brazil has traditionally engaged in the promotion of voluntary South-South cooperation and strengthening these actions becomes even more important to combat the effects of climate change.** Brazil's NDC highlights efforts to further strengthen the country's relations with developing countries in areas such as forest monitoring systems; capacity building and technology transfer in biofuels; low carbon and resilient agriculture; restoration and reforestation activities; management of protected areas; increased resilience through social inclusion and protection programs; capacity building for national communications; and other obligations under the Convention and the Paris Agreement, particularly in Portuguese-speaking countries.^{lvi}
28. **Brazil has also worked on the development of joint and regional actions for Amazon conservation.** The eight Amazon countries (Brazil, Bolivia, Colombia, Ecuador, Guyana, Peru, Suriname, and Venezuela) are part of the Amazon Cooperation Treaty Organization (ACTO).^{lvii} Several initiatives have been developed by ACTO, such as the Forest Coverage Monitoring Project in the Amazon Region, implemented with INPE in 2011 with funding from Brazil's REDD+ resources.^{lviii} Through this project, regional deforestation maps of the Amazon have been developed, along with training and exchange of experiences. Moreover, ACTO's Indigenous Regional Agenda includes projects focused on the protection of indigenous peoples in voluntary isolation and initial contact in cross-border regions; and the protection and strengthening of traditional knowledge of indigenous and tribal peoples in territorial and natural resource management, as well as in the development of life plans. Brazil also participates in the effort to integrate and strengthen protected areas in the Amazon through the Amazon Vision^{lix} led by RedParques (bringing together the leaders of the national protected areas systems of Latin America).^{lx}
29. **Brazil has also participated in regional cooperation activities on climate change adaptation.** Two regional cooperation agreements can be highlighted: (i) IPACC II, a technical cooperation project between Brazil, Peru and Colombia, with the support of the German Government, aimed to encourage the implementation of climate risk analysis and adaptation options in public investments; and (ii) CSI, cooperation between Brazil, Costa Rica, Vietnam and Nile Basin Initiative Countries, with the aim to encourage the use of national Climate Services in the planning and assessment of climate risk for infrastructure investments.

1.3.3. Access to climate change finance

30. **In Brazil, there are different national and international instruments for environment and climate finance.** For environmental issues (not limited to mitigation of GHG emissions) there are sources such as the National Environment Fund (FNMA), the National Forest Development Fund, energy efficiency and renewable energy finance, constitutional financing funds, and environment finance instruments. More recently, other financing funds and instruments have been established specifically for mitigation and adaptation actions, such as the Low Carbon Agriculture Program (ABC Program), the Amazon Fund managed by BNDES, and the National Fund on Climate Change (Climate Fund) linked to the MMA, which offers support in non-reimbursable and reimbursable financing (the latter operated by BNDES).^{lxi} Most states and large municipalities also operate environmental funds, which are fueled in part by revenues collected from environmental fines.^{lxii}
31. **Brazil is eligible to receive funding from different multilateral and international funds.** Examples include the Global Environment Facility (GEF) and the Climate Investment Funds (CIF), including its Forest Investment Program (FIP).^{lxiii} In Brazil, GEF channels its resources through different

multilateral organizations and provides technical and financial support in areas related to biodiversity, climate change, energy, forests and others. FIP was established in 2009 to reduce emissions from deforestation and forest degradation - Brazil's FIP Investment Plan focuses on the Cerrado biome and supports initiatives coordinated by the MMA, MAPA and MCTIC through projects implemented by the World Bank and the IDB.

32. **A survey carried out by the MMA identified different lines of climate change finance that can be accessed by Brazilian institutions.** The [list](#) includes multilateral, bilateral, national and international institutions. Areas covered include mitigation, adaptation, capacity building, risk disaster reduction, REDD+, clean energy, adaptation, agriculture, forest, land use, technology transfer, technical assistance, and biodiversity, among others^{lxiv}.

2. Institutional GCF arrangements in Brazil and Country Program development process

2.1. GCF Institutional Arrangements in Brazil

33. **The Secretariat for International Affairs (SAIN) of the Ministry of Finance is Brazil's National Designated Authority (NDA) to the GCF.** The role of the NDA is to act as an interface between the country and the Fund and communicate the country's strategic priorities for climate finance. The NDA's mandate includes acting effectively to promote a shift in the paradigm of national development toward sustainable low carbon development with resilience to climate change related risks.
34. **GCF funding for projects and programs in the country requires both alignment with the Country Programme and a no-objection from the NDA.** The NDA is responsible for the implementation of the no objection procedure, including the technical analysis of program and project proposals to be funded by the GCF in Brazil. This technical analysis is based on national priorities and follows criteria, guidelines and constraints established by the GCF in regular consultation with other Federal Government agencies. The NDA is also responsible for appointing national entities that seek their accreditation in the modality of direct access to the GCF.
35. **The NDA establishes broad coordination with other federal government agencies.** Considering the need for technical analysis to ensure that the work of the GCF in Brazil is in accordance with the country's policies and priorities, the NDA maintains an ongoing dialogue and promotes coordination with central and cross-cutting line ministries regarding the climate change agenda which are: Ministry of the Environment; Ministry of Science, Technology, Innovation and Communications; Ministry of Planning, Development and Management; and Ministry of Foreign Affairs. In addition, other Ministries and entities are involved according to their area of action and the scope of each proposal under consideration.
36. **More detailed information on the procedures for the preparation of proposals for the GCF in Brazil, as well as information on SAIN's activities in its role as NDA are available on the NDA website: <http://www.and.fazenda.gov.br>.**

2.2. Country Programme development process and engagement of relevant national stakeholders

37. **Brazil's Country Program document for the GCF is the result of a broad debate in Brazilian society during the second half of 2017, which succeeded in engaging various stakeholders involved with climate finance, especially civil society, the private and public sectors (Federal Government and subnational entities).** Primarily, a draft document was prepared for discussion, based on inputs from several line Ministries, namely: Environment; Planning, Development and Management; Mines and Energy; Agriculture, Livestock and Food Supply; Cities; Foreign Affairs; and Science, Technology, Innovations and Communications. Following a first round of contributions from the Brazilian

Government, this draft document was discussed with relevant stakeholders from Brazilian society in regional workshops and through online consultations on the NDA website.

38. **In order to effectively engage national stakeholders in the preparation of the document, the NDA organized four Regional Workshops to discuss Brazil's priorities for the GCF in four different regions of the country.** The document contained three strategic areas for GCF action: Agriculture and Forests; Sustainable Infrastructure; and Resilient Cities and Communities. Three thematic workshops were held in the week of November 20, 2017, in the cities of Recife (11/20 - Resilient Cities and Communities); Rio de Janeiro (11/22 - Sustainable Infrastructure); and Manaus (11/24 - Agriculture and Forestry, with a focus on Forests). A workshop on Agriculture and Forests was also held in Brasilia on November 28, focusing on Agriculture. The themes were distributed to each region according to the greater relevance of each strategic area to the local reality and the potential for the NDA to receive feedback. The selected cities are relevant economic centers in each region and of relatively easy access for participants. As foreseen during the planning stage, the workshops were attended by a diversity of stakeholders.
39. **Considering the relevant role of indigenous peoples in the climate agenda and the specific characteristics of this community, specific workshops were also held in Brasilia for indigenous peoples.** These workshops were held on two occasions, with the support of the National Indian Foundation (FUNAI) and in tandem with members of the Technical Chamber on Climate Change of the Steering Committee of the National Policy for Territorial and Environmental Management of Indigenous Lands (CG-PNGATI). The Informative Workshop for indigenous peoples was held on October 26 and 27, 2017 and the Consolidation Workshop on November 29 and 30, 2017. The events brought together 24 indigenous leaders from different ethnicities and regions of Brazil, namely: Xokleng (SC); Terena (MS); Bororo (MT); Kuikuro (MT); Xakriabá (MG); Xerente (TO); Gavião (MA); Wapichana (RR); Taurepang (RR); Wajãpi (AP); Apurinã (AC); Manchineri (AC); Tembé (PA); Munduruku (PA); Tukano (AM); Desana (AM); Baniwa (AM); Pankararu (PE); Pankará (PE); Tuxá (BA); Tabajara (EC); and Wassu-Cocal (AL). In addition, indigenous representatives participated in regional workshops in Recife, Rio de Janeiro and Manaus.
40. **The main international accredited entities operating in Brazil, as well as Brazilian entities in the accreditation process at the time (Caixa, Funbio and BNDES) participated actively in the process, including in the regional workshops.** Aiming to enhance the dialogue between entities already accredited- and those in the accreditation process - and Brazilian society, thus facilitating the emergence and subsequent preparation of national proposals for the GCF, the NDA actively involved the entities in the process, enabling them to present their area of action and expertise in the theme under discussion. Thus, the thematic workshops had presentations from the following entities: Recife - Caixa and CAF; Rio de Janeiro - IDB and World Bank; Manaus - Funbio and GIZ; Brasília - IDB; Informative Workshop for Indigenous Peoples - Avina Foundation and GIZ. It is worth mentioning that BNDES and Caixa participated in all Workshops.
41. **The discussion paper was available for online consultation on the NDA website for 30 days and a Consolidation Seminar was held in Brasilia to conclude the discussion process.** The NDA received 19 contributions as a result of the electronic consultation process from distinct segments of Brazilian society. It is worth mentioning that the inputs received during the process were systematized by the NDA and considered in the preparation of this Country Programme.

3. *Strategic Areas for GCF action*

42. **Brazil's priorities for the GCF were organized through Strategic Pillars and Investment Areas, which are summarized in Table 1 below.** The proposed organization has been developed to structure the analysis and dialogue on the priorities that the country should establish for the GCF. Therefore, the pillars and investment areas indicated should not be seen as inflexible, as the presence of cross-cutting topics that are relevant to more than one of the categories is common. The Strategic Pillars and their Investment Areas should be seen as indicative guidelines for the work of Accredited Entities and potential parties interested in accessing the Fund's resources, presenting, in a transparent manner, the main areas in which a relevant potential for operations in the Country is identified.
43. **All projects submitted must necessarily observe the GCF safeguards policy and comply with the mechanisms for consultation taking into account the opinion of the populations impacted by the project, as well as the Fund's gender policy.** Proposals of projects and programs to be submitted to the GCF that have any social or environmental impact need to include a detailed environmental and social safeguards report (ESS Report), which will be posted on the Fund's website in case the project is approved.^{lxviii} In addition, projects should be aligned with the Fund's gender policy.
44. **The Investment Areas (IA) contained in each Strategic Pillar are connected and interrelated to the themes and guidelines contained in the other Pillars, as well as to other areas in their own Pillar.** Figure 1 below explains this interrelation between the areas, establishing the connections between topics that are relevant to more than one category.

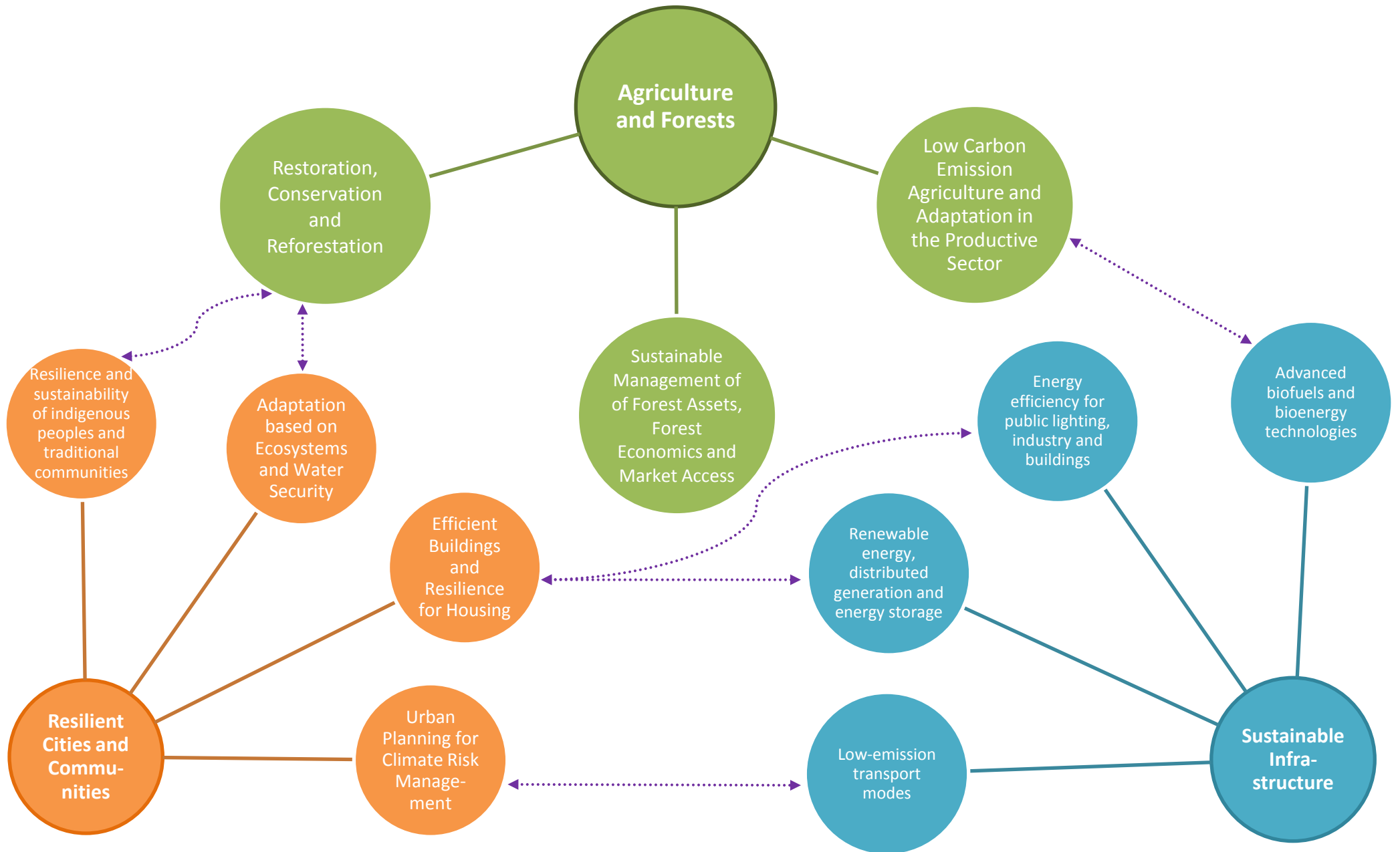
Table 1 - Strategic Pillars and Investment Areas for GCF action in Brazil

Strategic Pillar I - Agriculture and Forests	
Investment Area	Goals
Sustainable Management of Forest Assets, Forest Economy and Market Access	<ul style="list-style-type: none"> • Improve the structure of the production chain of agro-biodiversity products; • Foster sustainable timber management and extraction; • Promote market access and structuring, with emphasis on prospecting and generation of demand for these products.
Restoration, Conservation and Reforestation	<ul style="list-style-type: none"> • Implement measures for the restoration and recovery of native vegetation, as well as reforestation actions; • Strengthen mechanisms for environmental compensation and payment for environmental services; • Support indigenous peoples and traditional communities with an emphasis on land-use planning, recognizing the importance of forest assets for their survival.
Low-Carbon Emission Agriculture and Adaptation in the Production Sector	<ul style="list-style-type: none"> • Promote agricultural technologies to mitigate emissions and the adoption of systems and practices that reduce the vulnerability of agricultural systems to climate change; • Promote the technological dissemination of conservationist agricultural practices through actions such as rural extension, technical assistance and support for scientific and technological development; • Strengthen, monitor and improve the ABC Plan, including by developing complementary mechanisms (financing conditions and access to credit).

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Strategic Pillar II - Sustainable Infrastructure	
Investment Area	Goals
Low-emission transport modes	<ul style="list-style-type: none"> • Develop financial products and business models for the promotion of private investment through concessions and PPPs; • Expand the use of more efficient and resilient modes for passenger and cargo movement; • Promote the integration of transport modes.
Renewable energy, distributed generation and energy storage	<ul style="list-style-type: none"> • Promote the use of non-hydro renewable sources, including through distributed generation; • Promote energy storage solutions; • Establish financial and technical tools to increase the penetration of low carbon technologies.
Energy efficiency (EE) for public lighting, industry and buildings	<ul style="list-style-type: none"> • Develop new business models and financial products to unlock EE investments in the industry; • Encourage the use of more energy-efficient technologies; • Encourage partnerships and private investments to promote EE in public lighting and buildings.
Advanced biofuels and bioenergy technologies	<ul style="list-style-type: none"> • Foster the technological development and at-scale production of advanced biofuels; • Improve the sustainable management of solid waste, promoting electricity generation from biogas and biomethane; • Strengthen financial mechanisms to enable bioenergy generation.
Strategic Pillar III - Resilient Cities, Communities and Territories	
Investment Area	Goals
Urban Planning for Climate Risk Management	<ul style="list-style-type: none"> • Implement urban planning measures to increase resilience in cities and metropolitan areas; • Promote the dissemination of information and coordination among different stakeholders involved in urban planning, thus enabling the implementation of solutions at the local level; • Integrate the use of risk management technologies and disaster warning and prevention systems.
Efficient Buildings and Resilience for Housing	<ul style="list-style-type: none"> • Foster the use of eco-efficient building materials and low water and energy consumption technologies; • Consider housing solutions in order to increase the resilience of low-income populations; • Develop incentive structures to finance resilient and low-carbon buildings. • Establish long-term planning tools by implementing mitigation and adaptation measures;
Ecosystem-based Adaptation (EbA) and Water Security	<ul style="list-style-type: none"> • Identify specific impacts in areas of greatest vulnerability, with special emphasis on coastal zones and hydrographic basin regions; • Increase water security in regions susceptible to drought effects and changes in precipitation patterns.
Resilience and sustainability of indigenous peoples and traditional communities	<ul style="list-style-type: none"> • Support the engagement of indigenous peoples and traditional communities in issues related to sustainable economic production and natural resource management, respecting their specificities and traditional knowledge; • Promote access to electricity by populations living far from the grid, with emphasis on replacing fossil fuels by renewable sources; • Promote improvements in the quality of life of indigenous peoples and traditional communities, including their economic, infrastructure and water and energy access conditions.

Figure 1 - Connections and interrelations between Strategic Pillars and proposed Investment Areas



3.1 Agriculture and Forests

45. **Brazil is one of the world's major agricultural producers, leading the market in various commodities such as soybeans, coffee, sugar and beef, while having the largest tropical rainforest area in the world.** In this sense, actions related to these assets must be integrated in the country's strategies. The initiatives indicated by Brazil in the NDC include strengthening policies and measures to eliminate illegal deforestation by 2030 and compensating for GHG emissions from legal suppression of vegetation over the same period. Brazil will also seek to adopt restoration and reforestation measures, enhance sustainable native forest management systems and strengthen the Sectoral Plan for Mitigation and Adaptation to Climate Change for the Consolidation of a Low Carbon Economy in Agriculture (ABC Plan). These are ambitious targets that will require a high level of investment.
46. **Affordable measures should be considered to support forest restoration initiatives.** The cost of restoration varies according to the technique to be implemented and the scale of the project.³ At the same time, the mitigation potential of these investments has a significant impact on the national effort to cope with climate change - the implementation of the Native Vegetation Protection Law (LPNV), for example, has a mitigation potential of 9.1 billion tCO₂e.^{lxvi} In this sense, actions that promote technical assistance and rural extension and foster innovation to reduce vegetation recovery costs are of the utmost importance - for example through the use of native plants and species that are better adapted to climate change.
47. **Although the share of emissions from deforestation has been reduced, investments will be necessary to consolidate a Forest Economy.** Although emissions from deforestation in the Amazon fell by more than 76% between 2004 and 2017, the continued reduction in deforestation rates will require affordable investments and mechanisms aimed to consolidate a viable, diversified and productive Forest Economy,^{lxvii} capable of including social segments with a prominent role in conservation.^{lxviii}
48. **Different plans and technologies can contribute to eliminate illegal deforestation, with an emphasis on the importance of promoting capacity building at local level.** The challenge of meeting the target of the National Policy on Climate Change (PNMC) and eliminating illegal deforestation has been laid down for the country. This challenge has been coordinated in the context of the Action Plans to Prevent and Control Deforestation both in the Amazon (PPCDAm) and in the Cerrado (PPCerrado). For the agricultural sector, the strategy of increasing production by enhancing productivity should be maintained, that is, without the need to expand the area into the stock of native vegetation. This can be achieved by using low-emission technologies to increase efficiency, resilience, intercropping, diversification of the productive matrix, value added, and recovery of degraded areas. Considering this diagnosis of policies and opportunities, it is important to decentralize the environmental agenda by promoting capacity-building at the local level.
49. **Technologies and solutions should leverage the local economy and direct resources to the entire supply chain.** These challenges also offer significant opportunities and present a new economic outlook for the country by decoupling the emissions curve from the growth of agricultural production. For example, studies show that the use of technologies provided by the [ABC Plan](#) increase financial and climate resilience for producers.^{lxix} Interventions in agriculture and forestry require devising solutions that leverage the local economy and mobilize resources for investments throughout the production chain, whether for the management of forest assets, for forest economy or for low-carbon agriculture.

³ The techniques identified in the IDB report for the MMA include passive natural regeneration (low cost), active natural regeneration (between R\$858/ha and R\$3,668/ha); mechanized direct seeding (between R\$2,342/ha to R\$3,585/ha); planting of seedlings without economic use (between R\$8,036/ha to R\$17,433/ha), and planting of seedlings with economic use of Legal Reserve (LR) (high cost).

50. **The National REDD+ Strategy will contribute to demonstrate the reduction in deforestation and forest degradation.** At the international level, [Decision 9/CP.19 of the Conference of the Parties to the UNFCCC](#) encourages the GCF to play a central role in channeling adequate and predictable results-based finance for REDD+. To this end, the GCF has developed a logical framework to support REDD+ and more recently approved a REDD+ results-based payment pilot programme. This programme will provide up to US\$500 million for the group of developing countries that have demonstrated to the UNFCCC reductions of emissions from deforestation and forest degradation.
51. **Brazil can seek GCF REDD+ results-based payments.** The funds should be used in line with the countries' NDCs and their national REDD+ strategies. In the case of Brazil, and in accordance with the rules established by the National Commission for REDD+ (CONAREDD+) in its [Resolution No. 6](#), state governments and the Federal Government can only receive funds for use in policies and initiatives that contribute to forest conservation. The search for these funds is conditional on compliance with the Warsaw Framework for REDD+. Brazil already has proven results of reducing emissions from deforestation in the Amazon and is working towards validating the results of reducing emissions from the Cerrado biome. In this sense, the GCF REDD+ pilot programme is an important instrument in mobilizing resources to support the Country Programme action lines related to the forest sector.
52. **Land-use planning and land regularization are relevant and cross-cutting issues for all Investment Areas of the *Agriculture and Forests* pillar, since they directly impact not only the conservation and restoration of forests but are essential for strengthening sustainable supply chains.** The National Land Regularization Programme approved in 2017 is an important measure for implementing the Forest Code, since it aims to expedite the issuing of rural property titles, thus contributing to the Rural Environmental Registry (CAR). Protected areas, in particular conservation units, and areas occupied and used by local communities or traditional populations in a sustainable manner should also be considered in forest conservation initiatives due to their size (approximately 32.4% of the national territory).^{lxx}
53. **It is also important to recognize the historical contribution of indigenous peoples and lands, with their natural resource management knowledge, practices and systems for biodiversity conservation, the maintenance of forest carbon stocks and the containment of deforestation.** Indigenous lands are important barriers to deforestation, with lower deforestation rates than other forms of protected areas in the country.^{lxxi} In addition, it is worth pointing out the importance of supporting and strengthening community-based production systems by valuing indigenous practices and knowledge, thus generating income and guaranteeing rights.
54. **Finally, it is important to consider mangroves, tidelands, salt marshes and seagrass beds in climate change mitigation and adaptation initiatives.** These coastal ecosystems play a significant role in the global sequestration of carbon dioxide as they absorb greenhouse gases and mitigate climate change (known as "blue carbon").^{lxxii} Brazil has the second largest mangrove area in the world (approximately 1.4 million hectares), hundreds of hectares of seagrass beds and extensive tideland and salt marsh areas. Mangroves are ecosystems that provide environmental services, by maintaining the stability of our coasts, the sustainability of fish stocks, the economic systems of local communities, etc.
55. **Therefore, following the GCF mandate of promoting interventions with a transformational impact, three Investment Areas have been identified:**
 - a. Sustainable Management of Forest Assets, Forest Economy and Market Access;
 - b. Restoration, Conservation and Reforestation;
 - c. Low Carbon Emission Agriculture and Adaptation of the Productive Sector.

3.1.1: Sustainable Management of Forest Assets, Forest Economy and Market Access

56. **Priority themes in this investment area focus on innovation of the forest economy, structuring chains of wood products and social agrobiodiversity products, incentives and development of sustainable forest management of native species, taking advantage, for example, of institutional procurement mechanisms and of certification.** This includes supporting agricultural and social biodiversity products, that is, native products that have a direct relation to traditional peoples and communities' (holders of strategic areas for national development) way of life, with a view to the sustainable forest management and production of native species. The goal is to enhance diversified use of all assets that forests and the other types of native vegetation have to offer, in a sustainable manner.
57. **Proposals should focus on removing barriers to the development of production chains and the creation of markets for these products.** Proposals should focus on overcoming the bottlenecks that hinder the full development of production chains, on facilitating access and even on prospecting demand to strengthen the markets, as well as on the creation of financial mechanisms that enable low-carbon productive investments. The structuring of these chains and markets should always take into account local and biome-specific aspects.
58. **Actions should focus on creating a regional and local infrastructure to enable the use of extractive products, as well as on fostering demand for these products.** Consideration should be given to actions aimed at creating a regional and local infrastructure and feasibility in the production and extraction of timber forest products and social agrobiodiversity products, with a view to improving the quality of life of communities, in particular indigenous peoples and traditional communities, and ensuring the maintenance of ecosystems and protected areas in which they depend. In addition, proposals may address mechanisms for tracing and monitoring the production chain and the promotion of seals and certifications, in addition to associated traditional knowledge. Supply chains in forest-based production face important challenges ranging from the availability of financing for equipment to the lack of skills to structure businesses and capital flows to market access. However, efforts to overcome these barriers result in a triple gain: (a) promotion of the economic and social development of the region; (b) disincentive to practices leading to deforestation or illegal and predatory logging; and (c) conservation of biodiversity and maintenance (and possibly increase) of the region's carbon stocks.
59. **Monitoring mechanisms and technologies should be implemented to ensure the sustainable origin of forest products.** In regards to forest management and sustainable extractivism related issues, mechanisms need to be strengthened to enable monitoring of the origin of timber, tracing forest products, using remote sensing, expanding guarantees of origin, and acting in the main consumer markets (such as construction). Considering it as a deforestation control instrument, one can also take into account the possibility of turning over public forests to community management.^{lxxiii} In addition, the diversified use of forest assets requires overcoming challenges such as access to natural resources by traditional populations, as well as investing in capacity building and institutional strengthening and adding value to their products.
60. **Several public policies address and encourage sustainable forest management, forest economy and conservation.** In addition to the Native Vegetation Protection Law, sustainable forest management and other conservation activities are also addressed in a number of federal laws and decrees, such as the [Public Forest Management Law](#), [the National System of Conservation Units Law](#), [the Atlantic Forest Law](#), and [the National Environment Policy](#). In terms of communities, special emphasis should be made to the National Plan for the Promotion of Socio-Biodiversity Product Chains (PNPSB) and the [Community and Family Forest Management Programme \(PMFCF\)](#) - both of which provide for technical assistance and productive diversification and help add value to forestry production and

community- and family-based extractivism -, as well as [the National Policy on Territorial and Environmental Management of Indigenous Lands \(PNGATI\)](#).

61. **Challenges need to be overcome to enable the adoption of viable and sustainable models.** Community and industry-based sustainable forest management can create the basis for a forest value chain by combining economic development with the conservation of natural and cultural heritage. However, there are still challenges related to the unfair competition of sustainable models in relation to illegal timber production. Thus, financial mechanisms need to be created to support investments in the short term, including to improve access to credit, enabling the payment of these investments in conditions compatible with the reality of the sector, which has long-term maturity investments and high initial costs.
62. **Adaptation measures should also be considered to promote the sustainable management of forest assets.** Adaptation measures should be considered to promote forest resilience. One of the approaches provided in the PNA is the use of Ecosystem-based Adaptation, which uses the management, conservation and restoration of ecosystems and services from these ecosystems for the benefit of society. Other initiatives include the consolidation of Conservation Units and integrated forest and landscape management.^{lxiv}

3.1.2: Restoration, Conservation and Reforestation

63. **Significant investments will be needed for the restoration and reforestation of 12 million hectares.** The ambition expressed in the NDC involving the restoration and reforestation of 12 million hectares will be a major challenge. Experts estimate that investments of more than R\$ 50 billion will be necessary to meet this target, in addition to orchestrated efforts by the Federal Government and state and municipal governments.^{lxv} One of the measures to meet the restoration and reforestation target is the [National Plan for the Recovery of Native Vegetation \(PLANAVEG\)](#), which aims to strengthen financial incentives, best livestock practices and other vegetation recovery measures.
64. **Actions to meet the Brazilian target will focus on the restoration of native vegetation, reforestation and strengthening of forest economy and management.** Achieving these targets requires actions focused, for example, on the restoration of native vegetation and reforestation for multiple uses associated with the strengthening of forest economy and management; natural restoration; mechanisms to compensate vegetation deficits such as Environmental Reserve Quotas (CRAs),⁴ protection of native forests and Payments for Environmental Services (PES). It is fundamental to support those who are directly engaged in conservation and who have historically had a relationship of dependence with the forest, especially indigenous peoples and traditional communities.
65. **Access to technical assistance and incentive to innovation can reduce the cost of restoring degraded areas.** Access to information and technical assistance will be fundamental for Brazil to implement measures to reforest and restore degraded areas. Technical Assistance and Rural Extension (ATER) contributes to this process by guiding rural producers (commercial, family and indigenous) in crop planning and management techniques, for developing sustainable agricultural production and promoting the use of native species and species adapted to climate change. In

⁴ The Environmental Reserve Quota (CRA) is provided for in the Forest Code (Law no. 12,651): “The owner or possessor of property with Legal Reserve conserved and registered with the Rural Environmental Registry (CAR) provided for in Article 29, whose area exceeds the minimum required by this Law, may use the surplus area for purposes of establishing an environmental easement, Environmental Reserve Quota and other similar instruments provided for in this Law.”

addition to this effort, it is necessary to invest in technology and process innovations to reduce costs of forest restoration.

66. **In addition to investments required for restoration and reforestation activities, adequate guarantee structures need to be taken into account.** Uncertainties about economic return and long maturity period are real obstacles for obtaining funding for restoration and reforestation projects in the mainstream financial system. It is important to consider this combination of instruments in order to scale-up investments in these areas.
67. **Valuing forest conservation is another incentive against deforestation in the country.** The database of the Rural Environmental Registry may contribute to the implementation of new arrangements for Payments for Environmental Services as a complement to existing state and local initiatives. In addition, the National System of Conservation Units (SNUC)^{lxxvi} has been an effective strategy to curb deforestation in the country.^{lxxvii} Currently, about 18% of the Brazilian territory is inside conservation units (which include some marine areas), where deforestation and ecosystem degradation rates are lower than those recorded in unprotected areas.
68. **The proper and effective implementation of forest legislation in Brazil is directly related to the promotion of land regularization.** Land regularization facilitates access by farmers to finance, protects indigenous lands against illegal occupation by determining and defining property rights and reduces conflicts over land tenure. In addition, land regularization also contributes to environmental planning and to the fight against illegal deforestation.

3.1.3: Low Carbon Emission Agriculture and Adaptation in the Productive Sector

69. **Actions in the area of agriculture should focus on promoting GHG emission mitigation technologies in areas already affected by human activity that encourage the use of conservationist systems and practices and reduce the vulnerability of agricultural systems to climate change.** Priority will be given to proposals that aim to contribute to strengthening and monitoring of the Sectoral Plan for Mitigation and Adaptation to Climate Change for the Consolidation of a Low Carbon Economy in Agriculture (ABC Plan) and the Agriculture Strategy of the National Adaptation Plan (NAP), focusing on measures to reduce GHG emissions and increase agricultural resilience to climate change.
70. **Priority will be given to proposals aimed at monitoring existing policies and the efficient use of public resources, thus taking into account both their impacts and the reduction of emissions.** The initiatives indicated by the country in the NDC require investment in a comprehensive Monitoring, Reporting and Verification (MRV) system. Such a system enables calculating data in a more precise, internationally recognized way, to be used systematically, identifying bottlenecks, opportunities and also the potential for replicability in other regions and territories. In this sense, priority will be given to actions focused on the effective monitoring of the ABC Plan by strengthening the methods contemplated by the ABC Platform.
71. **Programs for the promotion, access and development of technologies that foster adaptation to climate change in the agricultural sector will also be prioritized, based on the NAP Agriculture Strategy, thus ensuring greater resilience and generating co-benefits.** Priority will be given to initiatives aimed at increasing the sector's resilience through programs that foster and encourage adaptation technologies and strengthen climate-smart tools. Actions to implement monitoring and risk and vulnerability simulation systems for the agricultural sector, combined with the availability of tools to support decision-making processes based on these scenarios can have beneficial and lasting results for the sector in relation to climate change.

72. **The expansion of Commercial Forests (including native species) can contribute significantly to meeting the targets of the agricultural sector.** According to the results of the Project “Mitigation Options of GHG Emissions in Key Sectors in Brazil”,^{lxviii} the expansion of commercial forest cultivation has a mitigation potential of 25.3 MtCO₂e by 2025 and of 23.6 MtCO₂e by 2030. Thus, actions that support measures to promote the growth of commercial forests (comprising native and exotic species) will be prioritized, considering the appropriate concessionality and respecting the technical ecological restoration specificities of each area.
73. **There are opportunities for developing mechanisms that improve the economic and financial system and that support sustainable production in the agricultural sector.** Brazil has a financial system with a well-established presence and tools that can be leveraged in order to redirect investments to low carbon emission practices. The following options can be mentioned in addition to the availability of conventional credit: securitization⁵ of receivables to allow the capitalization of small and medium producers, collateral funds, association between the interest rate level and the rate of technology adoption, among others. In addition to financial mechanisms, recognition tools such as certification and compensation can also incentivize the use of sustainable agricultural practices.
74. **Agriculture is of fundamental importance in the context of mitigation and adaptation initiatives presented in Brazil’s NDC, and the technologies proposed by the ABC Plan are amongst the main tools for achieving the proposed reductions and increasing resilience to climate change, besides fostering opportunities identified by the private sector that contribute to the same objective, in particular in regards to scaling up the use of proposed technologies.** Investing in the transformation of Brazilian agricultural production by encouraging the use of conservation practices, in addition to reducing GHG emissions and increasing resilience would enable achieving co-benefits such as increased productivity while reducing deforestation, restoring the productive quality of the soil, reducing erosion and runoff, and increasing infiltration of rainwater into the soil, among other things. It should also be noted that low carbon technologies can be used by small, medium and large farmers, as well as generate a positive replication effect in other countries.
75. **Actions aimed at family farmers should be strengthened.** This group depends on robust and comprehensive public policies to convert production systems into agroecological production models in the use and management of sustainable productive landscapes. New formulations and adjustments of public policy instruments aimed at this segment should consider the challenges that rural and traditional households face in the process of obtaining the environmental regularization of their lands.

3.2. Sustainable infrastructure

76. **The need for infrastructure investments in the coming decades presents both substantial opportunities to reduce emissions and challenges to increase resilience to the effects of climate change.** One of GCF’s main investment criteria is to promote transformational changes⁶ through its

⁵The securitization of receivables is a form of fund raising involving the issuance of negotiable instruments by the payee, which are guaranteed through collateral of receivables. Through this financial transaction, it is possible for a company to raise funds in the market without compromising its current levels of balance sheet indebtedness. (ASSAF NETO, A., 2015). An example of a securitization mechanism already available in the Brazilian market is the CRA (Agribusiness Receivables Certificate), and there are initiatives to promote the issuance of green CRAs, for example, with low-carbon receivables and assets. This mechanism can be used to capitalize small producers, who today are not covered by traditional finance systems or as a complement to those included in the ABC Program.

⁶ Transformational change according to the World Bank’s definition is characterized: improve fundamentally the lives of the poor and disadvantaged people; produce demonstration effects that can be replicated or scaled up; generate spillover effects on multiple sectors of the economy; increase government effectiveness or stimulate private investment; result in far-reaching impacts; and promote sustainable development (SAIN, 2017).

interventions.^{lxxix} For a country like Brazil, infrastructure is at the core of its development and economic growth, given infrastructure's importance to increase productivity, reduce poverty and foster regional development. At the same time, insufficient investments and the poor quality of existing infrastructure impose significant barriers to national productivity.

77. **In the context of this Country Programme, Sustainable Infrastructure refers to projects that not only incorporate environmental risks, but also consider the resilience of projects to the effects of climate change, avoiding traditional development patterns and promoting the use of disruptive technologies.** Following this logic, in line with government priorities ([Decree No. 8,874 / 2016](#)) and within the scope of action and investment criteria established in the GCF, sectors considered as priorities for investment and development of new projects include areas such as transport, urban mobility and energy.
78. **The Brazilian government created an Investment Partnerships Programme (PPI) to expand and strengthen relations between the State and the private sector in the infrastructure area.** Considering the current scenario of fiscal restraint and, therefore, the limits for the public sector to bear a large share of the infrastructure investments required to meet the demand in the coming years, the PPI aims to shift the role of the State from main investor in these projects to fostering, regulating and equalizing risks to encourage and leverage private investment in infrastructure.
79. **Significant investments are needed to take advantage of mitigation opportunities in infrastructure, where private capital will play an important role mainly through institutional investors.**⁷ The National Transport Confederation (CNT) estimates the need for investment in transport and logistics infrastructure in Brazil by 2030 at R\$ 987 billion, taking into account new projects, substitutions and retrofit.^{lxxx} Studies indicate that the transport sector has a mitigation potential of 2.05 billion tCO₂e, at an estimated total cost of R\$ 202 billion by 2050.^{lxxxii} In the energy sector, the [Ten-Year Energy Expansion Plan \(PDE 2026\)](#) estimates that in the next 10 years R\$361 billion and R\$33 billion will be necessary to meet the increase in electricity demand and the supply of liquid biofuels respectively.^{lxxxii} In this context, it is important to promote flexible financial mechanisms that combine lower transaction costs and risk mitigation, attracting private investment whenever possible.
80. **The Sustainable Infrastructure pillar will focus on four major priority areas:**
- a. Low-emission transport modes;
 - b. Renewable energy, distributed generation and energy storage;
 - c. Energy efficiency for public lighting, industry and buildings; and
 - d. Advanced biofuels and bioenergy technologies.

3.2.1. Low Emission Transport Modes

81. **Investment in transport modes should consider lower GHG emission and higher efficiency systems.** Priority will be given to proposals aimed at the implementation or expansion of systems such as: cargo transport infrastructure –shift freight operations from road to rail and waterway and modal integration, multimodal logistics platforms; infrastructure for urban passenger transport, subways and urban trains, BRTs (bus rapid transit systems), electromobility and associated infrastructure, among others. The proposals should also identify financial mechanisms that enable scaling-up financing for transport infrastructure by leveraging private sector resources, thus demonstrating the potential to contribute to the promotion of a transformational change in the sector.

⁷ Insurance Companies and Pension Funds are increasingly investing in resilient infrastructure portfolios in developing countries and there is an opportunity to leverage these funds in combination with GCF resources.

- 82. Improvement in transport infrastructure is in line with international agreements and national public policies.** Brazil's NDC highlights as a priority "to promote efficiency measures, improvements in transport infrastructure and public transport in urban areas", which complements the [National Policy on Urban Mobility](#) that guides the sustainable development of the sector, highlighting as priorities equal access to collective public transport, as well as efficiency, efficacy and effectiveness in the provision of transport services and in urban circulation.
- 83. New business models will be needed to implement necessary actions in the transport sector.** The implementation of low carbon transport systems depends on the identification of new business models that provide alternatives for integration of transportation modes, not only enabling to reduce energy consumption and emissions in the sector but also building a new model of integrated mobility between the various modals. This prospect, combined with concessional financial instruments can have a catalytic effect for large scale leveraging of private investment.
- 84. The substitution of cargo transport modal and measures for fuel efficiency and replacement can contribute substantially to reduce emissions from the sector.** Emissions from the cargo transport sector in Brazil totaled 105.2MtCO₂ in 2015, representing more than half of the emissions from the transport sector.^{lxxxiii} This is due to the predominance of the road modal, which makes up 58% of the freight transport matrix.^{lxxxiv} In addition to existing measures to increase the energy efficiency of vehicle engines and the use of less polluting fuel (e.g.increasing the share of biodiesel in the diesel mix),^{lxxxv} other solutions to reduce emissions from this sector include the use of multimodal transport,^{lxxxvi} electrification and increase of the load factor. Therefore, it is essential to focus efforts on enhancing the use and implementation of these measures.
- 85. The integration of transport modals also contributes to reduce emissions in urban transport.** Progress in urban mobility through the use of public transport, transition to electric, hybrid and fuel cell vehicles, and the development of conditions for active mobility^{lxxxvii} emerge as the main solutions to reduce GHG emissions. However, it is important to develop measures for the integration of different urban transport modals, to complement existing actions. Improving the passenger load factor⁸ is another important element to increase efficiency in the use of urban transport in Brazil.
- 86. The participation of private investment is fundamental for mobilizing resources.** In addition to the regulatory framework provided by the federal government (through PPIs, for example), the restricted capacity for long-term investment and the fundraising limitations of municipal governments, which are responsible for urban mobility projects, are barriers to the development of the transport infrastructure. In this sense, structures such as PPPs and concessions aimed at bringing together public and private capacities to secure the necessary investment may have a transformational impact, which is an essential requirement for GCF investment.
- 87. Multiple financial mechanisms will be necessary to meet the level of investment required.** Projects using innovative technologies often struggle to raise funds in the financial system, thus requiring the intervention of funds with dedicated mandates and appropriate risk perception. Given the level of investment required and the duration of infrastructure projects, multiple financial mechanisms are needed, from capital market solutions such as Green Bonds, refinancing instruments, guarantees such as first-loss coverage and, of course, long-term financing. Special emphasis should be made regarding the use of different instruments available under the GCF, thus enabling the development of blended finance mechanisms (GCF operations with reimbursable funds can be made through loans, guarantees and equity).

⁸The Passenger Load Factor is the measure of the use of the capacity of a given mode of transport.

3.2.2. Renewable Energy, Distributed Generation and Energy Storage

88. **Priority should be given to proposals that focus on greater diversification of the energy matrix, in particular through solar generation (photovoltaic and concentrated power- CSP) for both Distributed Generation (DG) and Centralized Generation (CG), generation from biomass, oceans (tides and waves), wind generation, and energy storage.** Increasing the use of renewable energy sources will be paramount not only for implementing Brazil's NDC but also for meeting the country's increasing demand for energy over the coming decades.
89. **Brazil's Ten-Year Energy Expansion Plan foresees the increase of renewable energy sources.** Increased participation of other sources of renewable energy represents not only a mitigation option but also a contribution to enhancing economic resilience and energy security, since it complements the predominant hydraulic generation in the Brazilian electricity system and reduces potential impacts from changes in precipitation patterns. The last Ten-Year Energy Expansion Plan envisages an average growth of 6.3% in the supply of these other renewables (wind, solar, biodiesel and solid waste), with the total share of renewables in the energy matrix reaching 49% in 2026.^{lxxxviii}
90. **There are financial and technical barriers to increasing the penetration of low-carbon technologies.** There are still important barriers that prevent further integration of micro- and mini-generation technologies and storage to increase the share of other renewables. These barriers include the need for high initial investments, the time needed to amortize costs, access to adequate lines of credit, and tariff flexibility to encourage new technologies (CSP for example^{lxxxix}), as well as technical barriers for accessing the grid in the case of distributed generation.
91. **Over the past five years, resolutions have been issued to promote the use of distributed generation (DG) in the country.** The regulatory resolutions issued by ANEEL ([No. 482/2012](#) and [No. 687/2015](#)), which determine the guidelines and review the conditions for the establishment of DG in the country, make up an important framework to enable large-scale access to micro and mini generation. However, once the regulatory framework has been established, important interventions are needed to unlock the implementation of these technologies on a larger scale. For energy storage there is no specific regulation, but ANEEL has issued [strategic call \(021/2016\)](#) to encourage the integration of storage systems into the electric sector.
92. **With the increased share of renewables, energy storage technologies become indispensable for the integration of intermittent energy sources and security in Brazil.** Although the development of energy storage technologies such as batteries, liquefied air, supercapacitors and flywheels are in the R&D phase in Brazil, they can play a significant role for energy security in the country as the integration of intermittent renewable sources grows. This is due to the nature of these sources, such as wind and solar, which do not generate energy constantly and do not have the same supply stability as hydroelectric plants with reservoirs. Brazil already has the world's tenth highest onshore^{xc} installed wind power capacity and 2026 Ten-Year Energy Expansion Plan estimates a 35% share of renewables in the energy matrix (from non-hydro sources), thus illustrating the importance of spurring investments in this area.
93. **The use of solar energy has increased, with different technologies under development.** Despite the significant growth that solar energy has experienced in Brazil, this technology has developed more prominently in the photovoltaic segment. Concentrated Solar Generation (CSG) technology has not followed the same pace of deployment. CSG is a promising technological solution that enhances its clean energy generation gains by being structured in a cogeneration arrangement while providing electricity and process heat. It will be important to monitor the technological and performance evolution of the different forms of solar energy generation, in order to prioritize those that are more efficient, affordable and appropriate to the Brazilian reality.

94. **Cogeneration is another alternative to meet the increased demand for energy generation.** The dissemination of cogeneration technologies is an important solution on both the generation and demand sides. Cogeneration enables reducing fuel consumption, which makes it especially relevant as an energy efficiency measure in the industrial sector. In this area, thermoelectric generation using biomass is an important input, which is currently more prominent in the sugar and ethanol industry. However, other biomass sources may also be promising, among them the restoration of degraded areas.
95. **Market solutions should be considered as alternatives to deploy low carbon technologies at scale.** Proposals should consider solutions that enable expanding these new technologies, but also help overcome constraints in the energy generation and distribution chain, as well as in capital markets (for example, financial instruments for the procurement of equipment with adjusted repayment and grace periods, adequate guarantees, tariff predictability, debentures, and green bonds for new renewables infrastructure, etc.).

3.2.3. Energy Efficiency for Public Lighting, Industry and Buildings

96. **Priority topics for financing will be those aimed at the adoption and use of energy efficiency technologies for the public, residential, commercial and industrial sectors, particularly actions to enhance energy efficiency in public lighting, industrial efficiency and civil construction efficiency.** Attention should be taken particularly on the design of financial mechanisms that help unlock investments in energy efficiency, catalyze private sector investments and reduce credit risks. Capacity-building strategies for local, federal and private sector managers, as well as the dissemination of knowledge and information on energy efficiency through technological diffusion, particularly in industry, are also relevant.
97. **New business models will be needed to unlock investments, since the design of innovative financial instruments is key to leveraging investments in energy efficiency.** Special consideration should be given mainly to actions aimed at creating new business models and financing for the public and industrial sectors by eliminating barriers to investment. For example, the use of off-balance sheet financing, such as securitization of CAPEX⁹ debts or leasing, the development of the Energy Service Companies (ESCOs) market, and Public-Private Partnerships can help to unlock financing for industry and improve the provision of services, for example in the public lighting sector.
98. **In the last decade, Brazil has developed several energy efficiency measures.**[The 2030 National Energy Plan](#) provides an energy efficiency target of 10% by 2030 and this target is reiterated in the [National Energy Efficiency Plan](#) and in the Brazilian NDC. Brazil has implemented energy conservation programmes since the 1980s, with emphasis on the Brazilian Labeling Programme, PROCEL, CONPET, the Energy Efficiency Programme of the National Electric Energy Agency (ANEEL), and [Law 10,295/2001](#), which determines minimum energy efficiency indexes for equipment sold in Brazil. In the current scenario, there is still a need for additional measures to establish a scalable market for energy efficiency, thus promoting an alignment of incentives to create a market structure connecting end users and the financial sector.
99. **The design of instruments to promote investment in energy efficiency should consider the characteristics of each sector.** In the industrial sector, for example, investment in energy efficiency is limited due to barriers that diminish the interest of end users in energy efficiency projects, as well as low attractiveness of existing financial mechanisms - linked to the high-risk perception by banks. These barriers differ according to the size of the stakeholders and industrial subsectors involved. For

⁹ Capital Expenditure.

public lighting, EE investments can be a way to engage local governments, which are responsible for municipal lighting management, while leveraging private sector participation (through PPPs, for example).

100. **The building sector presents itself as an opportunity, yet it still faces barriers.** While developed countries face a huge challenge to retrofit existing buildings in order to reduce their emissions and increase their efficiency, Brazil has a great opportunity because it is still in the process of expanding its urban development. Standard [NBR 15575](#), which came into force in June 2013, contributes to improve the performance of buildings (durability, habitability and sustainability). However, the perception of a higher initial cost for the construction of these efficient buildings, coupled with the lack of clarity about their future performance still represent significant barriers to the development of the sector.

3.2.4. Advanced Biofuels and Bioenergy Technologies

101. **Investments in bioenergy technologies will be prioritized, including biogas, biomethane, carbon capture and storage (CCS), and increasing production of advanced biofuels.** These technologies are noteworthy for their mitigation potential and relevance to GCF investment. Priority will be given to projects focused on increasing the use of these technologies, as well as their improvement for use at scale. Therefore, proposals should identify solutions to unlock financial and commercial conditions to leverage the adoption of these technologies and develop an adequate transport and storage infrastructure.
102. **Focus should be on mechanisms that reduce the risk of investment in these technologies and, in cases such as CCS for bioenergy, on reducing costs.** In addition, the various sources (e.g. urban solid waste, landfills, sugar and alcohol waste, animal waste, and sanitary and industrial effluents among others) and uses (e.g. electricity and transport –case of aviation bio-kerosene) for biogas and biomethane and new business models to enable using these sources can also be considered.
103. **The expansion of biofuels will focus on second generation technologies and beyond.** Considering the consolidated scenario of production of first generation biofuels, the development of second generation fuels will be considered a priority, particularly in the technological development and at-scale production of technologies with better use of biomass energy.
104. **The use of landfill biogas is also an alternative for renewable energy generation.** Despite the technical viability and existence of public policies in the area, such as the National Solid Waste Plan, this energy source is still underutilized. ANP Resolution 685 of 2017 should facilitate the further integration of landfill biogas as an alternative for renewable energy generation.
105. **New forms of incentives are needed to increase the share of bioenergy in Brazil.** Although there are economic incentives for biogas, biomethane and bioenergy, such as in the procurement notices issued by the National Electric Energy Agency (ANEEL) and the Studies and Projects Financing Agency (FINEP), there are limits to increasing public financing. Other business models can be developed to complement government actions and leverage private resources. For technologies such as carbon capture and storage for bioenergy, as well as for the production of advanced biofuels there is an opportunity to create conditions for the implementation of these technologies in ethanol plants, further enhancing the potential for mitigating climate change through the use of biofuels as an essential element for achieving the contributions indicated in Brazil's NDC. With the upcoming implementation of the RenovaBio programme (Law 13,576 of 12/26/2017), these business models may find greater demand and possibility of success in the market.

3.3. Resilient Cities, Communities and Territories

106. **This pillar considers adaptation and mitigation actions for strengthening cities, communities and territories in the country.** It is understood that tackling climate change should include an integrated perspective that considers, whenever possible, the co-benefits of adaptation and mitigation measures. Urban environments contain several sources of greenhouse gas emissions, and with more than half of the world's population currently living in urban centers, the mitigation and adaptation agenda in these zones represents a major challenge.
107. **In Brazil, nearly 85% of the population lives in cities.^{xcj} As a result, coping with risks related to climate change in urban areas, as well as in urban sprawl and rural (peri-urban) areas that provide ecosystem services becomes even more relevant in an adaptation context.** The Brazilian geographic space and its population distribution present numerous challenges, among them the population concentration in coastal zones, which covers about 400 municipalities and an area of 514,000 km². Coastal areas are susceptible to sea level rise, which can lead to serious damage to local infrastructure, with direct impacts on the economy and on society. For this reason, they require adequate and long-term planning and management. Considering the proportion of the Brazilian population currently living in cities, and among them those that live in coastal cities, it can be said that most of the Brazilian population may be at risk from climate change.
108. **Promoting the resilience of cities requires a broader look at the spaces producing the ecosystem services that support urban population survival.** Most of the water, food and energy that supply cities and metropolises come from ecosystems located in rural and peri-urban areas, organized in river basins or along the coastal zone, which are the main providers of these services. The possible impacts of climate change for these territories and associated river basins include the risk of disaster from prolonged droughts, with serious damage to water, food and energy security; the risk of disasters intensification associated with landslides and floods; the size of the areas exposed to disease vectors; and the loss of forest remnants due to changes in climatic niches, with harm to the production of ecosystem services.
109. **Addressing climate change in cities is not only a matter of adaptation, but there are also bottlenecks and opportunities in the short and long term for the mitigation agenda. This is why it is extremely important to seek synergies between these measures in favor of projects of more resilient cities.** As Brazilian municipalities develop, there is an opportunity to invest in better practices and efficiency gains in the urban environment. In the future, this will certainly contribute to reduce both emissions and exposure to the impacts of extreme climate change effects.
110. **According to the Brazilian Panel on Climate Change (PBMC), the impacts of climate change and the increase in extreme events in Brazilian cities will affect especially metropolitan regions and large cities.** This scenario also highlights the need for risks and vulnerabilities assessments of human populations. Still according to the PBMC, the impacts of climate change should occur on a regional scale but will affect the poorer regions and populations of Brazil, especially those living in risk areas. Adaptation strategies are needed to promote the resilience of affected regions and populations.^{xcii} Information and data produced by different institutions needs to be further disseminated, so that adaptation strategies are feasible for all sectors, including local governments and small and medium-sized enterprises, and the risks arising from climate change can be integrated to risk assessments and decision-making processes.
111. **It is necessary to increase the resilience of socio-ecological systems and the adaptation capacity of indigenous peoples, quilombolas and traditional communities, respecting the regional specificities and the characteristics of each population.^{xciii}** The importance of implementing

integrated and participatory actions to reduce the vulnerability of indigenous peoples, quilombolas and other traditional peoples and communities that are more susceptible to the adverse effects of climate change is evident. These actions must be suitable for the different historical, environmental, territorial, and socio-cultural contexts of these groups and to their specific exposure and sensitivity conditions. Additionally, actions should seek to strengthen the rights of these populations through territorial consolidation actions, as well as actions aimed at enhancing the production and marketing of agricultural biodiversity products, thus guaranteeing food security and diversifying income generation strategies.

112. Four Investment Areas are considered for this pillar:

- a. Urban Planning for Climate Risk Management;
- b. Efficient Buildings and Resilient Housing;
- c. Adaptation Based on Ecosystems (AbE) and Water Security;
- d. Resilience and sustainability of indigenous peoples and traditional communities.

3.3.1: Urban Planning for Climate Risk Management

113. It is essential that proposals in this area include aspects of resilience to the effects of climate change. The [National Adaptation Plan \(NAP\) to Climate Change](#) outlines a strategy for the territorial and thematic dimensions of cities, based on guidelines that include strengthening urban expansion planning processes; rehabilitating consolidated and degraded urban areas with installed infrastructure; supporting improvements in water supply and sanitation systems; managing water resources; urban cleaning systems and solid waste management among others.

114. Urban planning initiatives that propose integrating climate change actions with regulations related to cities and metropolitan areas are important for resilient development. Proposals in this regard should take into account structuring and replicable measures to make cities environmentally sustainable and resilient to the risk of climate change. The goal is to ensure in an integrated manner: sustainable urban planning according to the [Statute for the Cities \(Law 10.25/2001\)](#); the improvement of urban mobility by integrating modes of transportation and promoting active mobility; the implementation of urban environmental zoning and land regularization; improvement in sanitation and water resources management systems; the improvement of solid waste management by strengthening the consolidation of an integrated management system and fostering the use of new waste treatment technologies (e.g. recycling, composting, mechanical biological treatment and biodigestion); and the application of differentiated treatment to the most vulnerable urban populations.

115. Urban planning - including actions for urban mobility, expansion and revitalization, housing, sanitation, solid waste management and water supply - provides a starting point for increasing resilience in cities. Actions in this area should also include dialogue between different local actors and sectors, thus enabling the integration between them, as well as coordination between the three spheres of government (federal, state and municipal), insofar as the effective solutions depend on the coordination of their respective competences. It is also important to consider vulnerable populations in the urban context that will be even more exposed to the effects of climate change and extreme events (landslides, floods and lack of water supply in peripheral areas and precarious settlements, for example). Partnerships between governments and the private sector can be an important tool for implementing projects and initiatives in this context.

116. With the increase of extreme events due to climate change, natural disaster alert and response, and prevention and recovery systems become even more relevant in the urban context, where the number of people affected is higher and concentrated. The use of large databases can assist in

these processes, as well as in early urban development planning. "Smart" cities, which use the amount of data available from various sources (transport flows, climate variations, energy consumption, amount of waste produced, air quality, economic and social distribution, etc.) can better manage their resources by reducing their impact and increasing their economic resilience to the effects of climate change. Continuous dialogue between the public and private sectors and civil society, as well the alignment of public policies at all levels of government is important for the feasibility of these actions and for all actors involved to effectively share and use the information available.

117. **Measures should be directed towards the use of innovative technologies and the development of risk-management tools and financial instruments to strengthen local governments.** Financial instruments that assist local governments in the main bottlenecks identified, such as guarantees, technical assistance and financing for local concessionaires (water and sanitation, solid waste, transport, energy), as well as the training of urban planning agents are of fundamental importance - note that this investment area is linked to the areas highlighted in the Sustainable Infrastructure Pillar.

3.3.2: Efficient Buildings and Resilient Housing

118. **Brazil's NDC presents housing as a fundamental element for the country's adaptation policy.** According to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (AR-5), buildings contributed to 19% of greenhouse gas emissions and accounted for 32% of electricity consumption.^{xciiv} The situation is similar in the case of Brazil,^{xcv} showing the potential for efficiency advances in the sector. This includes improvements and adaptation of construction and infrastructure materials, techniques and technologies in buildings, as well as the integration of these elements in residential homes to make them more resilient and sustainable.
119. **The construction, housing and building sector should consider the use of more efficient materials.** Therefore, proposals in the area of efficient construction should focus on the implementation of mechanisms for the development of eco-efficient building materials (such as reforestation wood), which aim at a more efficient use of energy and water (for example, through energy efficiency measures and rainwater harvesting and underground storage systems), the reduction of greenhouse gas emissions, and waste production. In relation to housing, there is also a need to build new housing with ecological and smart infrastructure, integrated with green areas and existing urban plans, particularly in housing of social interest.¹⁰ Also worth mentioning is the importance of disseminating information and training professionals in the civil construction sector, in order to ensure the replicability of these interventions.
120. **Housing solutions should be considered to increase the resilience of the low-income population.** It is important to highlight the social aspect in the civil construction sector, since lower income populations in urban centers are more vulnerable to climate change, they are mostly located in socially and environmentally inadequate areas, often at risk, and have less resources for improvement. This element often makes the construction of resilient housing even more challenging because of the difficulties of adapting the existing infrastructure in these locations. Therefore, there is a need to combine urban planning that considers the risks associated with climate change with at-scale investment in bioclimatic social housing, thus encouraging actions aimed at transforming the production of new social housing including, for example, elements such as the use of solar energy for heating and photovoltaic power generation.

¹⁰ [Rule NBR 155755](#) of June 2013, which aims to improve the performance of buildings in terms of sustainability is required by the government in the My House, My LifeProgram (PMCMV).

121. **The inclusion of sustainability and adaptation components should be considered in housing finance metrics, especially housing of social interest.** The incorporation of analyzes on the selection of the construction area and the use of materials and technologies for efficient buildings in the provision of housing credit enables creating financial incentives to promote a reduction in emissions from the real estate sector, as well as an increase in the resilience of this stock of infrastructure.

3.3.3: Ecosystem-based Adaptation (EbA) and Water Security

122. **Areas in the country exposed to climate change include arid and dry sub-humid areas, which have already suffered great impact by land degradation and therefore are more vulnerable to droughts and dry spells.** These areas correspond to approximately 15% of the national territory (1,344,766 km²), covering 1,491 municipalities (CGEE, 2016) and an estimated population of 37 million (IBGE, 2016). Land degradation (soil, water and biodiversity) is one of the most serious environmental problems in Brazil, causing significant economic losses and social damage. The implementation of actions that improve the adaptation capacity of these populations and their respective territories contributes to reduce vulnerability to climate change.
123. **Measures must be implemented to ensure and enhance water security in regions particularly susceptible to the effects of droughts and changes in precipitation patterns.** The promotion of water security in Brazil has direct impacts not only on consumption, but also on the irrigation of productive systems and energy security,¹¹ in order to avoid competition between them. Considering the socioeconomic context of these areas of greater vulnerability, as in the semi-arid region, it is essential to promote actions that increase or even provide access to drinking water. At the same time, it is necessary to strengthen the economic structures on which these populations depend, especially in terms of agricultural production, so as to make them sustainable in the long run. Again, regional specificities must be considered in all proposals.
124. **Solutions founded on Ecosystem-based Adaptation (EbA) measures can assist in the development and implementation of policies that result in economic, environmental and social benefits.** They ensure the maintenance of important ecosystem services such as mitigation of heat zones, regularization of the functioning of river basins, with effects on the reduction of flood risks and maintenance of hydrological cycles; removal of greenhouse gases from the atmosphere and conservation of biodiversity. According to the PBMC, “the most important ecosystem services for coping with the impacts of climate change in Brazil include provision of drinking water and regulation of extreme events, local climate, air and water quality, erosion, and carbon sequestration.”^{xvii}
125. **The conservation of coastal zones and marine ecosystems is essential for long-term planning.** Sea level rise coupled with other effects of climate change can lead to serious infrastructure losses in coastal areas, as well as to degradation of associated ecosystems. These generate negative impacts for the population, government and the private sector, considering the complex reconstruction and reallocation of assets.^{xviii} The national territory is composed of a variety of coastal and marine ecosystems, which are particularly sensitive and fragile and harbor enormous biodiversity, in addition to providing a set of environmental services that are essential to the maintenance of life quality. The proposals in this theme should include, in addition to long-term planning, a vision of exposure and risk of coastal infrastructure, of co-benefits between mitigation and adaptation, of integrated gray and green solutions, seeking to guarantee the quality of life and health of the populations.

¹¹ Considering the high share of hydraulic generation in the electric matrix (68.1% according to the [National Energy Balance - BEN 2017](#)).

126. **The identification and monitoring of future impacts of climate change on these areas, as well as advances in the knowledge of methodologies for identifying priority coastal and marine areas, basins and ecosystems for conservation should be encouraged.** For the coastal zone, the dissemination of knowledge from Reference Centers for Integrated Coastal Management with a focus on training governmental and non-governmental players is essential for actions related to the qualification and availability of instruments that support the resilient occupation of the Brazilian coast.

3.3.4: Resilience and sustainability of indigenous peoples and traditional communities

127. **The protection of indigenous peoples, quilombolas and traditional communities from the negative effects of climate change and the promotion of the resilience of these populations is provided for in [Brazil's NDC](#).** There are gaps related to the reduction of vulnerability and adaptation of indigenous peoples and traditional populations in different regions and biomes, which requires interventions that support this goal, considering the regional and socio-cultural specificities of each community.

128. **Climate change has caused changes in important Brazilian biomes.** The impact of climate change, such as the change in rainfall patterns in certain regions, has led to water scarcity, with impacts on the productive activities of several communities, especially in the Cerrado and Caatinga biomes. In the floodplain regions of the Amazon, several communities have noticed the decrease or even disappearance of certain species of fish that are unable to spawn in the appropriate period due to the delay in the flooding of the rivers.^{xcviii} Therefore, it is essential to consider the specificities of each biome when developing projects in this area.

129. **Recent experiences involving the perception of climate change by indigenous communities with different sociocultural and territorial realities show a series of impacts in different regions.** These effects include: increase in slash-and-burn and deforestation events, extreme climatic events and desertification processes; changes in plant and animal life cycles, agricultural calendars, dynamics of water and fisheries resources, traditional medicine practices, community life organization, sustainability of productive activities, food production, food security, health conditions, etc. Therefore, indigenous peoples, recognized as playing a key role in biodiversity conservation and climate balance maintenance, are among the segments most vulnerable to the adverse effects of climate change.

130. **Measures for this investment area include sustainable management of natural resources, strengthening of local production chains and mechanisms of income generation for traditional peoples and communities.** In this sense, it is important to enhance the dissemination of good practices by strengthening chains of agricultural biodiversity products, promoting the productive inclusion and access of these communities to markets at various levels (local, regional, national), increasing income generation, and strengthening the culture and way of life of these populations. Proposals should also consider the importance of land-use planning.

131. **It is essential to invest in measures aimed at finding solutions that promote sustainability and energy security for traditional peoples and communities.** There is still a significant portion of the Brazilian population without access to energy. For example, in the rural areas of the Amazon region, more than 1 million people¹² have no access to electricity or depend on fossil-fueled generators. In view of this context, proposals for this area should consider the provision of electricity to

¹² 2010 Population Census- Characteristics and the Population and Households –Overall Results – IBGE.

communities that are distant from the power grid, the reduction and replacement of fossil fuels by renewable sources, and the increase in the use of distributed solar generation.

132. **Financial mechanisms also require specific adjustments to the needs and reality of the intended beneficiary communities.** Funding, albeit with a high degree of concessionality, may not work if implemented in isolation, although it has an important role to play. A good portion of these populations are excluded from the banking and financial systems and, therefore, insuring a lasting impact also requires investing in social, economic and business structures to implement the aforementioned interventions through training and direct technical assistance, for example.

4. Monitoring and Evaluation

133. **The process of preparing the Country Programme was essential to strengthen the communication of the NDA with Brazilian society, as well as to engage the various relevant stakeholders related to the theme.** However, it is understood that the country ownership process is neither static nor restricted to the preparation of this document. The experience gained throughout the process is expected to lay the foundation for a continuous exchange between the NDA, civil society, the private sector, the public sector (entities of the Federal Government and subnational entities) and other relevant stakeholders involved in the engagement with the GCF.
134. **The projects presented in the pipeline will be monitored on an ongoing basis by the National Designated Authority, in coordination with the Accredited Entities, while the inclusion of new projects will be informed to the GCF Secretariat in a timely manner, as new proposals are submitted.** Since the projects presented in this document are at different development stages, the pipeline will require continuous monitoring by the NDA, according to the specificities of each project and the implementation of planned activities. It is worth reiterating that the pipeline can be updated in a timely manner to include new projects, in accordance with the development of new proposals within the framework of the guidelines presented in this document.
135. **The Country Programme is expected to be reviewed by 2020, with a reassessment of the guidelines for potential GCF action in Brazil, based on the implementation status of projects in the country and the evolution of the framework of national policies and strategies related to climate change.** In this sense, the process of reviewing the guidelines is expected to be directly influenced by the results and experiences obtained from the implementation of GCF projects in Brazil. It is worth mentioning that the Country Programme reviewing process will be carried out through a broad debate with relevant stakeholders of the Brazilian society, through dialogue processes similar to those held for the preparation of this document.

5. Portfolio of projects and programmes

136. **The portfolio presented below was prepared by the NDA as a result of the dialogue with accredited entities to the GCF, relevant government agencies and civil society.** Although at different development stages, all projects presented were discussed directly with the NDA and, in a preliminary evaluation, are aligned with Brazilian climate change policies and with the guidelines contained in this document. It is worth noting that the inclusion of the projects in the following portfolio does not imply no-objection by the NDA at the time of analysis, and that the order of presentation of the projects does not consist in any kind of prioritization or ranking.

Summary table – Brazil projects/programmes pipeline			
Proposal	Accredited Entity	Status	Amount (GCF)
GEEREF NeXt (global programme)	EIB	Approved	USD 265 mi
Financial Instruments for Energy Efficiency in Brazil - FinBRAZEEC	World Bank	Approved	USD 195 mi
National REDD+ Programme – Results-based Payments	UNDP	Financing proposal submitted	USD 150 mi
Viva Marajó Clima	Fundación Avina	Concept note submitted / proposal under development	US\$ 9.5 mi
Fostering climate resilience in rural communities in the Northeast	IFAD	Concept note submitted / proposal under development	USD 42.5 mi
Technical Cooperation Project to Integrated Action for Hydrological Disaster Risk Reduction - DRRHIDRO	JICA	Concept note under development	USD 10 mi
Resilient Cities Programme	CAF	Concept note under development	TBD
Brazil - Agribusiness and Climate Resilience Project	World Bank	Preliminary proposal	USD 80 mi
Amazon Waters Monitoring Project	Funbio	Preparatory stage	TBD
Atlantic Forest Restoration Project	Funbio	Preparatory stage	TBD
Amazon Fund	BNDES	Preparatory stage	TBD
Transport Decarbonization Program	IDB	Preparatory stage	TBD

Country projects/programmes pipeline			
Project Title	Description	Accredited Entity	Submission timeframe
GEEREF NeXt (global programme)	EIB has designed GEEREF NeXt to catalyse private sector capital at scale for the development of renewable energy/ energy efficiency (RE/EE) projects across the GCF eligible countries. The Program will also build capacity at the local level and contribute to the necessary transfer of knowledge and technology, to support the evolution of the commercial environments and enabling ecosystems for clean energy in participating countries.	European Investment Bank	Approved in the 16th GCF Board Meetin, in April 2017
GCF impact area		Total Funding amount: USD 1,306 million	
(1) Energy access and power generation; (3) Buildings, cities, industries and appliances		GCF: USD 265 M USD 250 Million (equity) USD 15 Million (Grant)	Other: USD 500 M
Action	Coordination	Schedule	
Project Implementation	EIB, selected specialised funds	The estimated implementation period is of 5 years	

Brazil Country Program for the GCF

Country projects/programmes pipeline				
Project Title	Description	Accredited Entity		Submission timeframe
Financial Instruments for Energy Efficiency in Brazil - FinBRAZEEC	The proposal aims is to finance projects to increase energy efficiency in Brazilian cities, especially in two key sectors: public lighting and industries located in urban centers.	World Bank		Project approved at the 19th GCF Board Meeting held from February 27 to March 1, 2018.
GCF impact area	This support will be provided through the creation of a facility which will be managed by Caixa Econômica Federal (a Brazilian state-owned bank) and provide funds for investment projects in the above mentioned areas. In the case of public lighting, the business model is based on the establishment of Public Private Partnerships (PPPs). In turn, in the case of industry the innovation lies in the introduction of off-balance sheet financing mechanisms.	Total Funding amount: USD 1,306 million		Status
(1) Energy access and power generation; (3) Buildings, cities, industries and appliances		<u>GCF:</u> USD 195million USD 186 million (loan) USD 9 million (grant)	<u>Others:</u> USD 1,111 million USD 200 million (guarantees, DDO World Bank) USD 330 million (equity, IFC and concession holders) USD 180 million (loans, Caixa) USD 400 million (loans, private sector) USD 1 million (grant, World Bank)	Project approved at the 19th GCF Board Meeting held from February 27 to March 1, 2018. The World Bank Board of Executive Directors approved the proposal in June 2018.
Action	Coordination	Schedule		
Project Implementation	Caixa Econômica Federal	The estimated implementation period is of 7 years		

Brazil Country Program for the GCF

Country projects/programmes pipeline				
Project Title	Description	Accredited Entity		Submission timeframe
National REDD+ Programme—Results-based Payments	Develop an initiative to invest funds raised through REDD+ results-based payment in the execution of measures that contribute to the implementation of the forest component of Brazil's NDC. Brazil is one of the countries that is already capable of receiving funds available in the GCF REDD+ Pilot Programme launched in October 2017. Brazil submitted a single proposal which seeks to receive USD150 million for REDD+ results plus up to 2.5% of the payment for non-carbon benefits. The agreement on the proposal that was presented was agreed upon by the federal government and the states in the scope of CONAREDD+. The objective will be to benefit indigenous peoples, traditional peoples and communities and family farmers for environmental services they provide as a result of their ways of life, which are in harmony with the protection of forests.	UNDP		Concept Note was submitted in July 2018. Funding Proposal was submitted in August 2018.
GCF impact area		Total fundign amount: USD 50 - 100 (TBD)		Status
(4) Forests and land use (5) Most vulnerable people and communities (8) Ecosystems and ecosystem services		<u>GCF:</u> USD 150 million (grant/results-based payment) (TBC)	<u>Others:</u> Up to USD 3.75 mi (non-carbon benefits) (TBC)	The Funding Proposal was submitted and is awaiting the evaluation from ITAP.
Action		Expected Schedule		
Submission of the Conceptual Note to GCF	SMCF/MMA, SAIN (NDA)			July 2018
Agreement and construction of the concept of the full Funding Proposal	SMCF/MMA, Accredited Entity			March to July 2018
Submission of Funding Proposal	UNDP			August 2018

Brazil Country Program for the GCF

Country projects/programmes pipeline				
Project Title	Description	Accredited Entity		Submission timeframe
Viva Marajó Clima: Enhancing resilience of communities and smallholders to climate change impacts through nature-based adaptation solutions in the Marajó Island in Brazil	<p>The objective of the proposal is to increase the resilience to climate change impacts of family farmers, through ecosystem-based adaptation in the Marajó Islands.</p> <p>It is estimated that the implementation of the project will benefit around 27 thousand people in 5 years through the supported measures of ecosystem-based adaptation; the knowledge and capacity building in local communities in 3 municipalities located into Marajó Islands, as well as strengthening local governance related to climate impacts; and the strengthening and innovation of productive systems affected by climate change</p>	Fundación Avina		Dezembro 2018
GCF impact area		Total Funding amount: TBD		Status
<p>(5) Most vulnerable people and communities</p> <p>(6) Health and well-being, and food and water security</p> <p>(8) Ecosystem and ecosystem services</p>		<p><u>GCF:</u></p> <p>USD 9,5million (grant)</p>	<p><u>Others:</u></p> <p>TBD</p>	After meeting and consultations with the NDA, local and international stakeholders, to develop the proposal, Fundación Avina is working on the elaboration of the Funding Proposal which will be submitted through the Simplified Approval Process (SAP) .
Action	Coordination	Schedule		
Submission of the Concept Note for analysis by the NDA	Avina Foundation	July 2018		
Submission and feedback by the GCF Secretariat	GCF Secretariat	September 2018		
Development of SAP proposal	Fundación Avina	September/November 2018		
Submission of the proposal to the NDA	Fundación Avina	December 2018		
Analysis of the proposal by SAIN and relevant ministries	NDA (SAIN)	December 2018		
Submission of the proposal to GCF	Fundación Avina	January 2019		

Brazil Country Program for the GCF

Country projects/programmes pipeline				
Project Title	Description	Accredited Entity		Submission timeframe
Fostering climate resilience in rural communities in the Northeast	The project aims to support adaptation to climate change and increase the resilience of vulnerable populations in the Northeast region of Brazil.	IFAD		23rd Board Meeting (June 2019).
GCF Impact Area	The lines of action of the project consist of (i) increased access to water for production and (ii) transition to resilient production systems. The project is estimated to directly benefit 80 thousand households in rural areas (or 320 thousand people), with an indirect impact on an additional 300 thousand households). The expected implementation arrangement seeks to build on IFAD's experience in the Northeast region, and will have Brazil's National Development Bank (BNDES) as the Executing Entity which also has experience in the region. The project will also have the Ministry of Environment and the ministry of Social Development in its governance system, both have had experience in the implementation of projects for rural resilience in the region.	Total Funding amount: USD 202.5 million		Status
(5) Most vulnerable people and communities (6) Health and well-being, and food and water security (8) Ecosystems and ecosystem services		<u>GCF:</u> USD 42.5 million (grant) USD 60 million (loan)	<u>Others:</u> USD 30 million (loan, IFAD) USD 70 million (co-financing from the States and BNDES)	IFAD submitted the Concept Note to the GCF Secretariat on December 21, 2017, and the NDA sent the expression of interest to the GCF on January 5, 2018. The Secretariat sent its comments on the Concept Note in March 2018, and IFAD, NDA and Partner Ministries have already revised the concept note and are elaborating the funding proposal based on the Secretariat's answer.
Action	Coordination	Schedule		
Submission of the Concept Note to the GCF Secretariat	IFAD	December 2017		
Review of the Concept Note	GCF	January/February 2018		
Presentation of comments on the Concept Note	GCF	March 2018		
Review of Concept Note for submission to the GCF	NDA, MMA, MDS, IFAD	March to May 2018		
Submission of the revised Concept Note to the GCF Secretariat	IFAD	July 2018		

Brazil Country Program for the GCF

Country projects/programmes pipeline				
Project Title	Description	Accredited Entity		Submission timeframe
Technical Cooperation Project to Integrated Action for Hydrological Disaster Risk Reduction - DRRHIDRO	The project's goal is to generate innovative solutions to reduce the flood risk that affects Brazilian cities due to Climate Change, such as increased frequency of extreme meteorological events and the vulnerability of urban habitat.	Japan International Cooperation Agency - JICA		TBD
GCF impact area		Total Funding amount: USD 50-100 TBD		Status
(5) Most vulnerable people and communities (7) Infrastructure and built environment (8) Ecosystem and ecosystem services	The project proposes the development of actions that address the disaster risk management cycle, and the development of tools and methodologies for the improvement of projects and integrated management systems in disaster risk reduction in the following areas: i) scenarios considering the effects of climate change; ii) risk analysis and mapping for floods; iii) territorial planning; iv) Planning and implementation of structural countermeasures to prevent and mitigate risks; v) Monitoring and alert; vi) Disaster preparedness, response and recovery. The project is a technical cooperation between the Government of Japan, through its International Cooperation Agency (JICA), and the Brazilian government Coordinated by Geological Service of Brazil (CPRM), – Direction of Hydrology and Territorial Management in cooperation with the Ministry of National Integration, the Ministry of Cities, the Ministry of Science, Technology, Innovation and Communications.	<u>GCF:</u> USD 10 million (grant)	<u>Other:</u> USD 3 million (local partners and JICA)	Concept Note is being developed
Action	Coordination	Schedule		
Concept Note development	JICA	November/December 2018		

Brazil Country Program for the GCF

Country projects/programmes pipeline				
Project Title	Description	Accredited Entity		Submission timeframe
Resilient Cities Programme (PDCR)	The objective of Brazil's Climate Resilient Cities Program is to strengthen the adaptive capacity of Brazilian cities through investments in: (i) infrastructure; ii) planning and pre-investments; and iii) capacity building.	CAF - Development Bank of Latin America		To be determined.
GCF Impact Area		Total funding amount: To be confirmed (loan modality)		Status
(5) Most vulnerable people and communities (6) Health and well-being, and food and water security (7) Infrastructure and built environment	The funds would support COFIEX-approved municipal projects, reducing transaction costs for borrowers and strengthening the focus on project resilience. It is important to note that each subproject will have to be evaluated according to eligibility criteria established by the Programme.	<u>GCF:</u> TBC.	<u>Others:</u> TBC.	Concept note under development
Action	Coordination	Schedule		
Preparation of the Conceptual Note (first draft)	CAF, Contracted Consulting Firm	November/2018 to February/2019		
Submission of the Concept Note for evaluation by the NDA	CAF	February/2019		

Brazil Country Program for the GCF

Country projects/programmes pipeline				
Project Title	Description	Accredited Entity		Submission timeframe
Brazil - Agribusiness and Climate Resilience Project	<p>The objective of this project is to support Brazil in its effort to overcome trade-offs between agricultural development and environmental conservation. It would support agricultural intensification so as to reduce pressure on the environment and reduce deforestation, particularly through the intensification of use of pastureland.</p> <p>The project would support implementation of at least two approaches of the Low Carbon Agriculture Plan (ABC): recovery of degraded pastureland and the Integrated Crop-Livestock-Forest (ILPF).</p> <p>ABC is supporting approaches to increase competitiveness and profitability while at the same time produce environmental and climate change co-benefits. The project would build on the experience of the ABC Cerrado Project, which proved that Technical Assistance alone can induce cattle ranchers to intensify production by rehabilitating degraded pasture and improving cattle management.</p>	World Bank		2020
GCF Impact Area		Total funding amount: To be confirmed (loan modality)	Status	
(4) Forests and land use (7) Infrastructure and built environment		<u>GCF:</u> USD 80 million	<u>Others:</u> USD 200 million (World Bank) Other partners (TBD)	Preliminary proposal
Action	Coordination	Schedule		
Concept Note Review	World Bank	June 2019		
Submission of the Concept Note to the NDA	World Bank	October 2019		
Proposal Development	World Bank, Ministry of Agriculture, EMBRAPA and a local financial institution to be identified	November 2019 – July 2020		
Submission of proposal for COFIEX Deliberation and AND non-objection	COFIEX	August 2020		
GCF Approval	GCF	October 2020		

Brazil Country Program for the GCF

Country projects/programmes pipeline			
Project Title	Description	Accredited Entity	Submission timeframe
Amazon Waters Monitoring Project	Brazil has detailed forest coverage monitoring in the Amazon and this system was key to decrease deforestation in the last decade. Nevertheless, the Amazon ecosystem is based in water biogeochemical fluxes and it has impacts in all South America, being crucial for water supply for Brazil and the Southern Cone. The project aims to develop a comprehensive water monitoring system, making possible for stakeholders to have informed policy decisions regarding water trends and usage in the Amazon region, considering the impacts of climate change and adaptation needs. The project is inspired in the PRODES monitoring system.	FUNBIO	January 2020
GCF impact area		Total Funding amount: USD 40 Million	Status
(6) Health and well-being, and food and water security (8) Ecosystem and ecosystem services		<u>GCF:</u> USD 10 M	<u>Other:</u> USD 30 M
Action	Coordination	Schedule	
Concept development	Note FUNBIO/MCTIC	2019	

Country projects/programmes pipeline			
Project Title	Description	Accredited Entity	Submission timeframe
Atlantic Forest Restoration Project	Brazil has developed a set of policies that put forest restoration as a key element for land owners, especially in the Atlantic forest area, the biome with less original forest cover in the country. There is an opportunity to drive restoration with climate change strategies in mind, strengthening restored natural corridors, water recharge areas, creating long term live seedbanks, landslides protection and coastal protection.	FUNBIO	TBD
GCF impact area		Total Funding amount: USD 240 million	Status
(4) Forestry and land use (6) Health and well-being, and food and water security (7) Ecosystem and ecosystem services		<u>GCF:</u> USD 80 M	<u>Other:</u> USD 160 M
Action	Coordination	Schedule	
Concept development	Note FUNBIO	2nd quarter 2019	

Brazil Country Program for the GCF

Country projects/programmes pipeline				
Project Title	Description	Accredited Entity		Submission timeframe
Amazon Fund	<p>The Amazon Fund is a pioneer initiative for financing REDD+ actions. The Fund receives voluntary grants for non-reimbursable investment in actions to prevent, monitor and combat deforestation, besides promoting the conservation and sustainable use of the Legal Amazon.</p> <p>With the creation of the National REDD+ Committee (CONAREDD+) and the establishment of ENREDD+, the Amazon Fund became eligible for access to REDD+ results-based payments achieved by the country and recognized by the UNFCCC.</p> <p>The management of the Amazon Fund was assigned to the BNDES, which is responsible for raising and investing funds, controlling and monitoring the actions and projects supported, as well as rendering accounts and communicating the results achieved in a continuous and transparent manner.</p>	BNDES (in the accreditation process)		TBD
GCF impact area		Total funding amount: TBD		Status
<p>(4) Forestry and land use</p> <p>(5) Most vulnerable people and communities</p>		<u>GCF:</u> TBD	<u>Others:</u> TBD	
Action	Coordination	Expected Schedule		
Development of the concept of the proposal to be presented to the GCF	BNDES	To be determined.		

Country projects/programmes pipeline				
Title of Proposal	Description	Accredited Entity		Expected schedule for submission
Transport Decarbonization Program	<p>Establish a facility operated by IDB, associating GCF concessional resources and IDB's own resources to support investments in transport through concessions, focusing on (a) urban mobility, including BRT, subway, trains; (b) interregional rail passenger transport.</p>	Inter-American Development Bank - IDB.		To be determined
GCF impact area		Total funding amount : USD 600 - 900 (TBD)		Status
(2) Low emission transport		<u>GCF:</u> USD 100-150 million (reimbursable - loans/guarantees) USD 5 million (grant)	<u>Others:</u> USD 500 - 750 (TBD)	IDB prepared a preliminary concept for discussion with the Federal Government.
Action	Coordination	Expected schedule		
Preparation of Concept Note (first draft)	IDB	To be determined.		

Brazil Country Program for the GCF

Country Readiness programme pipeline			
Title	Description	Delivery Partner	Submission timeframe
Technology Needs Assessment (TNA) for the implementation of climate change response plans in Brazil	<p>The project seeks to map and analyze the technologies necessary for implementing the climate change response plans in Brazil, especially for implementation of the Nationally Determined Contribution (NDC).</p> <p>The project will be coordinated by the Ministry of Science, Technology, Innovation and Communications (MCTIC), and will conduct studies prioritizing available sectors and technologies, as well as developing Technological Action Plans for the implementation of priority technologies.</p>	UNEP	Approved in May 2017.
		Total funding amount	Status
		USD 700,000	Readiness proposal under implementation
Action	Coordination	Schedule	
Project implementation	MCTIC, UNEP	Project duration planned for 18 months	

Country Readiness programme pipeline			
Title	Description	Delivery Partner	Submission timeframe
Strengthening Brazil's Direct Access Accredited Entities	<p>The GCF Board approved the accreditation of two direct access entities from Brazil (Caixa and Funbio), and BNDES is finalizing the accreditation process.</p> <p>The readiness proposal aims to support the development by each accredited entity of a pipeline of projects for submission to the GCF, promote the synergy between Brazil's direct access AEs' Work Programmes and consolidate the internal processes for identification and preparation of proposals. Funbio will coordinate the development of the proposal and its implementation, in coordination with Caixa and BNDES.</p>	FUNBIO	TBD
		Financiamento total	Status
		Up to USD 1 million.	Dialogue between entities began in October 2018. Refinement of deliverables initiated.
Action	Lead	Timeline	
Development of readiness proposal	NDA, Funbio	November 2018 - February 2019	
Proposal submission	NDA, Funbio	February 2019	

Brazil Country Program for the GCF

Country Readiness programme pipeline			
Title of Proposal	Description	Delivery partner	Expected schedule for submission
Fostering implementation of the National Adaptation Plan (NAP)	<p>The objective of the proposal is to use the readiness window established by the GCF for the preparation of activities that directly support the implementation of the National Adaptation Plan (NAP).</p> <p>This window enables allocating up to USD3 million per country for activities that assist in the implementation of NAP, such as: sharing knowledge and disseminating information about the plan; preparing funding plans and strategies for the implementation of NAP-related projects; engaging relevant actors in the climate agenda under NAP; monitoring and evaluating, among others.</p>	To be determined	To be determined
		Total funding amount	Status
		Up to USD3 million.	
Action	Coordination	Schedule	
Preparation of the Readiness proposal and details of the activities	Ministry of Environment, NDA	TBD	

Accreditation pipeline				
Entity Name	Type	Action	Lead	Timeline
Caixa Econômica Federal	Direct (national)	Accreditation approved by GCF Board (B.21, October 2018) Negotiation of the Accreditation Master Agreement initiated.	Caixa, GCF	AMA signing – 2 nd quarter 2019
Brazilian Fund for Biodiversity (FUNBIO)	Direct (national)	Accreditation approved by GCF Board (B.21, October 2018) Negotiation of the Accreditation Master Agreement initiated.	FUNBIO, GCF	AMA signing – 2 nd quarter 2019
National Bank for Economic and Social Development (BNDES)	Direct (national)	Indication for accreditation submitted by the NDA on 07/31/2015. Entity is in Phase II of the accreditation process, application under review by the Accreditation Panel.	BNDES, GCF	Consideration of accreditation proposal at B.22 – February 2019

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