

# Funding Proposal

## REDD-plus results based payments

### Version 1.0

Accredited entities are expected to develop a funding proposal in close consultation with the relevant national designated authority and REDD-plus entity/focal point, in response to the request for proposals for the Pilot Program for REDD-plus results-based payments (Decision B.18/07). The funding proposal should follow the terms of reference of that Board decision and will be assessed per Stage 2 (sections 2 – 5) of the scorecard annexed to the same Board decision.

|   |   |
|---|---|
| Program Title:                                | <u>REDD+ results-based payments for results achieved by Brazil in the Amazon biome in 2014 and 2015</u>   |
| Country:                                      | Brazil  |
| Results period in this proposal:              | 2014 – 2015   |
| National Designated Authority:                | Secretariat for International Affairs, Ministry of Finance<br>Mr. Marcello de Moura Estavão Filho<br>Secretary for International Affairs<br><a href="mailto:and.gcf@fazenda.gov.br">and.gcf@fazenda.gov.br</a>  |
| REDD-plus entity/focal point                  | Ministry of Environment<br>Mr. Jair Schmitt<br>Director, Department for Forests and Fighting Deforestation<br><a href="mailto:jair.schmitt@mma.gov.br">jair.schmitt@mma.gov.br</a><br>Ms. Monique Ferreira<br>Coordinator for Forests Transparency and Finance<br>Department for Forests and Fighting Deforestation<br><a href="mailto:monique.ferreira@mma.gov.br">monique.ferreira@mma.gov.br</a><br><a href="mailto:reddbrazil@mma.gov.br">reddbrazil@mma.gov.br</a> |
| Accredited Entity:                            | United Nations Development Program, UNDP  |
| Date of first submission/<br>version number:  | <u>2018-08-27 [V.1]</u>   |
| Date of current submission/<br>version number | <u>2018-08-27 [V.1]</u>   |



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Please submit the completed form to [fundingproposal@gcfund.org](mailto:fundingproposal@gcfund.org)  
Please use the following naming convention in the subject line and file name:  
“**[Country] REDD-plus RBP FP-[Accredited entity]-yyyymmdd**”

### A. Proposed and projected REDD-plus results

Please provide the following information:

Total volume of REDD-plus results achieved in the results period as reported in the country's BUR technical annex (tCO<sub>2</sub>e):

The total volume of REDD-plus results achieved by Brazil in the Amazon biome<sup>1</sup> during the results period reported in the 2<sup>nd</sup> Biennial Update Report (BUR) technical annex (from 2011 to 2015) was 3,154,501,726.77 tCO<sub>2</sub>e or 3.15 billion tCO<sub>2</sub>e.

The total volume of REDD-plus results achieved by Brazil in the Amazon biome that is eligible for the GCF pilot program (from 2014 to 2015) is 1,254,663,127.74 tCO<sub>2</sub>e, or 1.25 billion tCO<sub>2</sub>e.

Table 1. REDD+ results from 2011 to 2015

| Year                       | REDD+ results (tCO <sub>2</sub> e/year) |
|----------------------------|---|
| 2011                       | 622,451,671.72                          |
| 2012                       | 671,275,311.89                          |
| 2013                       | 606,111,615.42                          |
| 2014                       | 634,367,865.74                          |
| 2015                       | 620,295,262.00                          |
| <b>Total (2011 – 2015)</b> | <b>3,154,501,726.77</b>                 |
| <b>Total (2014 – 2015)</b> | <b>1,254,663,127.74</b>                 |

Source: [Brazil's 2<sup>nd</sup> BUR, REDD+ Technical Annex, 2017](#).

A= Achieved volume of REDD-plus results offered to the pilot program in this proposal (tCO<sub>2</sub>e):

Between 2006 and 2015, Brazil achieved significant results reducing emissions from deforestation in the Amazon biome (a total of 6,125,501,727.00 tCO<sub>2</sub>e).

**Only 2% of the total volume of REDD-plus results achieved between 2014 and 2015 (measured against FREL B) will be offered to the GCF in this proposal, a total of 25,093,262.55 tCO<sub>2</sub>e or 25 MtCO<sub>2</sub>e.**

Table 2. REDD+ results offered to the GCF

| Year                       | REDD-plus results (tCO <sub>2</sub> e/year) offered to the pilot program in this proposal (2% of the total REDD-plus results achieved by Brazil/ year) |
|----------------------------|--|
| 2014                       | 12,687,357.31  |
| 2015                       | 12,405,905.24  |
| <b>Total (2014 – 2015)</b> | <b>25,093,262.55</b>   |

Source: [Brazil's 2<sup>nd</sup> BUR, REDD+ Technical Annex, 2017](#)

<sup>1</sup> In addition to the Amazon biome, which comprises approximately 4,197,000 km<sup>2</sup> and corresponds to 49.29% of the national territory, Brazil has five other biomes: Cerrado (2,036,448 km<sup>2</sup> – 23.92% of the national territory), Mata Atlântica (1,110,182 km<sup>2</sup> – 13.04% of the national territory), Caatinga (844,453 km<sup>2</sup> – 9.92% of the national territory), Pampa (176,496 km<sup>2</sup> – 2.07% of the national territory), and Pantanal (150,355 km<sup>2</sup> – 1.76% of the national territory) (BRASIL, 2010, Volume 1, Table 3.85).

|   |   |
|---|---|
|   | <p>So far Brazil received payments for less than 5% of its total REDD-plus results (for more information on payments see Section B.2.2 (viii) of this proposal). All the results already paid for have been excluded from the estimate of results offered to the GCF for payments.</p> <p>Since 1988 the Brazilian National Institute for Space Research (<a href="#">INPE</a>) of the Ministry of Science, Technology, Innovation and Communication (<a href="#">MCTIC</a>) monitors deforestation rates in the Legal Amazon region. Brazil used the Amazon Deforestation Monitoring Program (<a href="#">PRODES</a>) as activity data for its REDD+ estimates.</p> <p>Every year, Brazil releases the deforestation rate for the previous year in the Legal Amazon region<sup>2</sup>. PRODES estimates are considered reliable by national and international scientists (<a href="#">Kintish, 2007</a>). This system has been shown to be of great importance for the actions and planning of public policies in the Amazon. The PRODES database is open and <a href="#">available</a> to the public.</p> <p>The methodology used by Brazil to estimate yearly deforestation rates in its REDD-plus technical submissions is modified, compared to the PRODES methodology. This was done to improve accuracy, verifiability and limit the scope to the Amazon biome, following the biome-level approach of the policies developed by Brazil to combat deforestation (more information in Section B.1.1 (ii.a) of this proposal).</p> <p>REDD-plus results are presented to the United Nations Framework Convention on Climate Change (UNFCCC) through the BUR. In 2014, after validation by the <a href="#">Working Group of Technical Experts on REDD+</a>, as part of the domestic MRV process, Brazil submitted its <a href="#">1<sup>st</sup> BUR</a> and technical annex with REDD-plus results achieved in the Amazon biome between 2006 and 2010, measured against FREL A. In 2017, Brazil's 2<sup>nd</sup> BUR technical annex presented the REDD-plus results achieved by Brazil in the Amazon biome between 2011 and 2015, measured against FREL B. The 3<sup>rd</sup> BUR is expected to be submitted to the UNFCCC in 2019 and should include REDD-plus results up to 2017, measured against FREL C.</p> |
| <p>B= Expected volume of REDD-plus results to be achieved in the following years of the eligibility period (tCO<sub>2</sub>eq):</p> | <p>Table 3 presents <b>an indication of the expected volume of REDD-plus results to be achieved by Brazil in the Amazon biome between 2016 and 2018, a total of 1,122,289,619.33 tCO<sub>2</sub>e or 1.1 billion tCO<sub>2</sub>e.</b></p>  |

<sup>2</sup> The Legal Amazon region is an area of approximately 5.217.423 km<sup>2</sup> (521.742.300 ha) that covers the totality of the following states: Acre, Amapá, Amazonas, Pará, Rondônia, Roraima and Tocantins; and part of the states of Mato Grosso and Maranhão. The Legal Amazon region encompasses three different biomes: the entire Amazon biome; 37% of the Cerrado biome; and 40% of the Pantanal biome.

|   | <p>Table 3. Expected volume of REDD+ results for the 2016 to 2018 period</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Expected volume of REDD+ result (tCO<sub>2</sub>e)</th> </tr> </thead> <tbody> <tr> <td>2016</td> <td>361,880,230.19</td> </tr> <tr> <td>2017</td> <td>392,437,303.00</td> </tr> <tr> <td>2018</td> <td>390,000,000.00</td> </tr> <tr> <td><b>Total (2016-2018)</b></td> <td><b>1,122,289,619.33</b></td> </tr> </tbody> </table> <p>Source: <a href="#">REDD+Brasil</a> and <a href="#">PRODES</a>, 2018</p> <p><b>Between 2014 and 2018, the expected volume of REDD-plus results to be achieved by Brazil in the Amazon biome is 2,398,980,660.93 tCO<sub>2</sub>e, or 2.39 billion tCO<sub>2</sub>e.</b></p> <p>This amount, greatly exceeds the limit established by the GCF pilot program for REDD-plus results-based payments per country, which is USD 150 million or 30 million tCO<sub>2</sub>e. <b>The GCF limit per country corresponds to 1.2% of the total REDD-plus results achieved by Brazil between 2014 and 2018.</b></p> <p>The REDD-plus results for year 2016 were preliminarily estimated using the FREL C and validated by the Working Group of Technical Experts on REDD-plus in February 28<sup>th</sup>, 2018 (<a href="#">Technical Note n. 285/ 2018-MMA</a>).</p> <p><b>The REDD-plus results for year 2017 have not yet been estimated by Brazil.</b> The expected volume presented here, estimated only for this proposal, are based on the PRODES deforestation rate for year 2017 and the FREL average carbon content for the Amazon biome of 151.6 tC/ ha.</p> <p>For year 2018, the emission reductions estimate was an extrapolation of 2017 results.</p> | Year | Expected volume of REDD+ result (tCO <sub>2</sub> e) | 2016 | 361,880,230.19 | 2017 | 392,437,303.00 | 2018 | 390,000,000.00 | <b>Total (2016-2018)</b> | <b>1,122,289,619.33</b> |
|---|---|------|--|------|----------------|------|----------------|------|----------------|--------------------------|-------------------------|
| Year  | Expected volume of REDD+ result (tCO <sub>2</sub> e)  |      |  |      |                |      |                |      |                |                          |                         |
| 2016  | 361,880,230.19  |      |  |      |                |      |                |      |                |                          |                         |
| 2017  | 392,437,303.00  |      |  |      |                |      |                |      |                |                          |                         |
| 2018  | 390,000,000.00  |      |  |      |                |      |                |      |                |                          |                         |
| <b>Total (2016-2018)</b>  | <b>1,122,289,619.33</b>   |      |  |      |                |      |                |      |                |                          |                         |
| <p>A+B =Total volume expected to be submitted to the pilot program (tCO<sub>2</sub>eq):</p> | <p>Between 2014 and 2018, Brazil is expected to achieve a total reduction in emission from deforestation in the Amazon biome of around 2,398,980,660.93tCO<sub>2</sub>e, or 2.39 billion tCO<sub>2</sub>e.</p> <p><b>Table 4 presents the total volume expected to be submitted to the pilot program for payments is 47,979,613.22 tCO<sub>2</sub>e. This is 2% of the expected volume of REDD-plus results to be achieved by Brazil in the Amazon biome between 2014 and 2018.</b></p> <p>This submission includes only results achieved in years 2014 and 2015.</p> <p>Brazil will submit the 2016 to 2018 REDD-plus results to the GCF for results-based payments in the future.</p>   |      |  |      |                |      |                |      |                |                          |                         |

Table 4. Total expected volume of REDD-plus results for the eligible period (2014 to 2018) and the 2% to be offered by Brazil to the GCF

| Year                     | Expected volume of REDD+ result to be achieved | Expected volume of REDD+ result to be offered to the GCF (2% of the total) |
|--------------------------|--|--|
| 2014                     | 634,367,865.74                                 | 12,687,357.31  |
| 2015                     | 620,295,262.00                                 | 12,405,905.24  |
| 2016                     | 361,880,230.19                                 | 7,237,604.60   |
| 2017                     | 392,437,303.00                                 | 7,848,746.06   |
| 2018                     | 390,000,000.00                                 | 7,800,000.00   |
| <b>Total (2014-2018)</b> | <b>2,398,980,660.93</b>                        | <b>47,979,613.22</b>   |

Source: [Brazil's 2<sup>nd</sup> BUR, REDD+ Technical Annex, 2017](#), [REDD+Brasil](#) and [PRODES](#), 2018

The terms of reference for this GCF pilot program indicate that countries “will be expected to present a significant, indicative volume of results” throughout the eligibility period. A footnote explains that in this context, significant means “that the annual indicative volume of results should be proportional to the overall level of results achieved in relevant years”.

The indicative volume of results to be presented by Brazil to the GCF is not significant if compared with the total amount of results achieved. It is, nevertheless, proportional for all years of the eligibility period.

The total payable volume per country is set by the terms of reference as 30Mt CO<sub>2e</sub> for the entire length of the pilot. There are no rules concerning the allocation of **payments** per year within the eligibility period. Countries are required to present an **indicative significant volume**, , **proportional** for all years, as stated above. Country specific allocation, however, may vary and will be determined by the GCF based on the scorecard. There are no specifications of or restrictions on the volumes of REDD+ results countries elect to offer to the GCF.

## B. Carbon elements

### B.1. Forest Reference Emission Level / Forest Reference Level (FREL/FRL)

Please provide link to the FREL/FRL submission:  
[https://redd.unfccc.int/files/redd\\_brazil\\_frel\\_final\\_19nov.pdf](https://redd.unfccc.int/files/redd_brazil_frel_final_19nov.pdf)

Please provide link to the UNFCCC Technical Assessment Report:  
<https://unfccc.int/resource/docs/2014/tar/bra01.pdf>

#### B.1.1. UNFCCC Technical Assessment and Analysis process

(i) Consistency of the FREL/FRL: *Please provide any additional information that supplements the information contained in the Technical Assessment Report in relation to the consistency of the FREL/FRL with the GHG Inventory, including the definition of forest used. If the report identifies inconsistencies,*

*explain these inconsistencies between the GHG inventory and FREL/FRL, and describe how they will be resolved in the next GHG inventory or FREL/FRL.*

Brazil values and prioritizes data consistency and transparency as crucial to ensure a high level of confidence in its REDD+ estimates.

Paragraph 8 in Decision 12/CP.17 requires that FRELS/ FRLs shall be established maintaining consistency with anthropogenic forest-related greenhouse gas emissions (GHG) by sources and removals by sinks as contained in the country's National GHG Inventory.

In the Technical Assessment Report (TAR), the assessment team (AT) noted that, overall, **Brazil's FREL maintains consistency, in terms of sources for the activity data and the emission factors, with the national GHG inventory included in Brazil's [Second National Communication \(SNC\)](#)**, the national GHG inventory available when Brazil submitted its FREL (FREL A and B) to the UNFCCC in 2014. In 2016, Brazil submitted to the UNFCCC its [Third National Communication \(TNC\)](#) with an updated national GHG inventory.

In 2018, Brazil submitted to the UNFCCC an updated FREL that will be used to estimate results achieved through reducing emissions from deforestation in the Amazon biome from 2016 to 2020 ([FREL C](#)).

Brazil applied the IPCC definition of consistency (IPCC, 2006) which is that an inventory should be internally consistent in all its elements over a period of years. *"An inventory is consistent if the same methodologies are used for the base year and all subsequent years and if consistent data sets are used to estimate emissions or removals from sources or sinks. An inventory using different methodologies for different years can be consistent if it has been estimated in a transparent manner considering the guidance in Volume 1 on good practice in time series consistency"* (IPCC Glossary, 2006).

Below is an assessment of the differences in emissions from gross deforestation in the Amazon biome as presented in Brazil's FREL and its Second National GHG Inventory (Box 1).

#### **Box 1. Emissions from gross deforestation as presented in the Second National GHG Inventory and in the FREL**

Table 3.97 from the Second National GHG Inventory provides the following information for the Amazon biome:

For the area of primary forest converted to other land uses:

- Total area of managed and unmanaged primary forest land (FM and FNM, respectively) converted to other land uses from 1994 to 2002, inclusive = 164,997.14 km<sup>2</sup>.
- Average annual primary forest land area converted to other land uses from 1994 to 2002, inclusive = 164,997.14/8 years = 20,624.64 km<sup>2</sup>.

The corresponding data in the FREL submission is as follows:

- Total area of managed and unmanaged primary forest deforested (adjusted deforestation increment) for all years from 1996 to 2002, inclusive = 137,860.00 km<sup>2</sup>.
- Average annual area deforested in this period is 137,860.00/7 years = 19,694.29 km<sup>2</sup>.

It is also important to note that the Second and the Third National GHG Inventories included emission estimates from the conversion of forest land (natural, secondary, subject to selective logging, planted) to other land-use categories. However, for REDD-plus purposes, Brazil only included emissions from conversion of natural forests to other land uses, given its importance. **The relative contribution of emissions from the conversion of other than primary forests to the total emissions from deforestation in the Amazon biome is low (only 1.57% – refer to Table 3.98 in the Second National GHG Inventory).**

#### ***Analysis of the differences***

It is important to note that the analysis of the transition areas and associated emissions provided in the transition matrices in the Second National GHG Inventory (Table 3.97 and Table 3.98, respectively) was carried out only for two years (1994) and (2002), and the area changes were not adjusted for the different dates and/or the presence of clouds. Rather, a reporting category has been introduced in the transition matrix, referred to as areas not observed due to cloud cover.

The difference between the average annual area deforested (adjusted deforestation increment) from the submission and the average annual area of forest land converted to other land-uses from the Second National GHG Inventory was 930.36 km<sup>2</sup>. This corresponds to a percent difference of 4.72% relative to the average annual area deforested in the period 1996 to 2002 presented in the FREL.

Table 5 provides the CO<sub>2</sub> emissions reported in the Second National GHG Inventory for the period 1994 to 2002, inclusive (Table 3.98) from conversion of Forest Land (FNM and FM) to Grassland (Ap), Cropland (Ac), Settlements (S), Reservoirs (R) and Others (O) which total 8,175,002,260.0 tCO<sub>2</sub>. Thus, the average annual emission is 1,021,875,828.5 tCO<sub>2</sub> yr-1.

Table 5 also provides the CO<sub>2</sub> emissions for years 1996 to 2002 inclusive, estimated for the FREL, which total 7,141,038,666.2 tCO<sub>2</sub>, providing an annual average emission of 1,020,148,380.9 tCO<sub>2</sub> yr-1.

The difference between the average annual emission from the SNC and the FREL is nearly zero, or 0.17%.

Table 5. Average annual emissions: FREL for the Amazon biome vs National GHG Inventory

| <i>Forest land conversion to:</i> * |             | Ap              | Ac            | S            | Res         | O           | Total emissions from 1994 to 2002 (tCO <sub>2</sub> )             | Average annual emissions from 1994 to 2002 (tCO <sub>2</sub> )             |
|-------------------------------------|-------------|-----------------|---------------|--------------|-------------|-------------|---|--|
| <b>Second Inventory **</b>          | <b>FNM</b>  | 6,882,784,770.0 | 904,422,860.0 | 11,047,800.0 | 5,610,690.0 | 4,605,170.0 | 8,175,002,260.0   | 1,021,875,282.5  |
|                                     | <b>FM</b>   | 322,777,250.0   | 39,564,070.0  | 1,101,070.0  | 145,090.0   | 2,943,490.0 |   |  |
| <b>FREL</b>                         | <b>1996</b> | 979,523,413.9   |               |              |             |             | <b>Total emissions from 1996 to 2002 - FREL (tCO<sub>2</sub>)</b> | <b>Average annual emissions from 1996 to 2002 - FREL (tCO<sub>2</sub>)</b> |
|                                     | <b>1997</b> | 979,523,413.9   |               |              |             |             |   |  |
|                                     | <b>1998</b> | 979,523,413.9   |               |              |             |             |   |  |
|                                     | <b>1999</b> | 979,523,413.9   |               |              |             |             |   |  |
|                                     | <b>2000</b> | 979,523,413.9   |               |              |             |             |   |  |
|                                     | <b>2001</b> | 908,964,139.9   |               |              |             |             |   |  |
|                                     | <b>2002</b> | 1,334,457,456.9 |               |              |             |             |   |  |
| <b>Percent Difference</b>           |             |                 |               |              |             |             |   | <b>0.17%</b>   |

\* Grassland (Ap), Cropland (Ac), Settlements (S), Reservoirs (R) and Others (O).

\*\* Note that the emissions in Table 3.98 in the Second National GHG Inventory are reported in Gg CO<sub>2</sub>, and have been converted to t CO<sub>2</sub> in the present table.

Source: FREL, 2014 and BRAZIL, 2010, Brazil's SNC, MCTIC.

The percent difference of 0.17% is indicative of results that are very similar despite the minor (but consistent) change in the methodology used for the purposes of the Second National GHG Inventory and the one applied to the FREL.

It is important to reiterate, and as the AT also noted, that the sources for the activity data and the emission factors are consistent between the Second National GHG Inventory and the FREL, with the activity data based on the analysis of remotely sensed data and the emission factors based on the same carbon map.

Brazil adopted Approach 3 for land representation, meaning that all the data on land conversions and lands remaining in a same land-use category between inventories are spatially explicit. The basis for all activity data in the Second National GHG Inventory, as well as the assessment of deforestation for the purposes of its FREL, was remotely sensed data of the same spatial resolution (Landsat-class, up to 30 meters).

The same national institutions and team engaged in the development of the land use, land use change and forestry (LULUCF) estimates for the Second National GHG Inventory were in charge of the annual estimation of the rate of gross deforestation for PRODES, ensuring an even greater consistency between the estimates for the Second National GHG Inventory and those used for the generation of PRODES data, which are the basis for estimating the gross CO<sub>2</sub> emissions from deforestation for the Amazon biome included in the FREL. The minimum mapping unit was defined as 1 mm<sup>2</sup> for the printed maps, which is equivalent to 6.25 ha on the surface. The digital PRODES data maintained this threshold to ensure consistency of the time series. Since 2008, the small deforestation patches under the minimum mapping area are monitored by INPE and are retrieved later by PRODES if they evolve into an area larger than 6.25 ha. The AT commended Brazil for its effort and encouraged Brazil to continue monitoring small deforestation events and to provide information on the extent of deforestation areas that are not retrieved later by PRODES, with the aim of showing that no significant deforestation is excluded from the FREL. This is being done by INPE/MCTIC.

Furthermore, the experts from the institutions responsible for the development of the Second National GHG Inventory and the PRODES data are also part of the Working Group of Technical Experts on REDD+ that supported the development of the FREL submission and its quality control.

LULUCF reporting under Brazil's Second National GHG Inventory covered the period 1994 to 2002 and included land-use transition areas and net CO<sub>2</sub> emissions for each individual biome. Hence, the figures provided in the Second National GHG Inventory for the area deforested in both managed and unmanaged forest land represent the area converted or maintained in the same land-use category for the 8-years interval between years 1994 and 2002. In addition, the figures provided in the Second National GHG Inventory considered both the emissions from the conversion to a new land-use category as well as removals from this new category. The Amazon biome data presented in the FREL refers only to gross emissions. The emissions associated with forest land converted to other land-use categories in the Second National GHG Inventory and those estimated for gross deforestation in Brazil's FREL for the Amazon biome are based on the same carbon map.

The forest definition used by Brazil in the construction of the FREL was the same as the one that Brazil used in its Second National GHG Inventory (i.e. minimum area of 0.5 ha, height of 5 m or more and at least 10 per cent canopy cover).

**Area for future improvement:** The AT considered the treatment of non-CO<sub>2</sub> gases as an area for future technical improvement.

**Brazil's response:** The FREL included only CO<sub>2</sub> emissions, consistent with the Second National GHG Inventory. The Third National GHG Inventory, submitted to the UNFCCC in 2016, two years after Brazil's submission of a FREL for results achieved between 2014-2015, included estimates of non-CO<sub>2</sub> emissions from biomass burning resulting from deforestation in the Amazon biome, but only for a single year (2010).

Box 2 below presents some considerations regarding the treatment of non-CO<sub>2</sub> gases. More information can be found in the next sections of this proposal.

#### **Box 2. Consideration regarding non-CO<sub>2</sub> gases**

Paragraph 29 of the TAR of the FREL submitted by Brazil to the UNFCCC indicated the treatment of emissions of non-CO<sub>2</sub> gases as an area for future technical improvement of the FREL. An analysis of the impact of non-CO<sub>2</sub> emissions of carbon monoxide (CO), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O) and NO<sub>x</sub> for year 2010, included in the Third National GHG Inventory indicates the following emissions: 8,400 Gg; 549 Gg; 16 Gg; and 129 Gg, respectively.



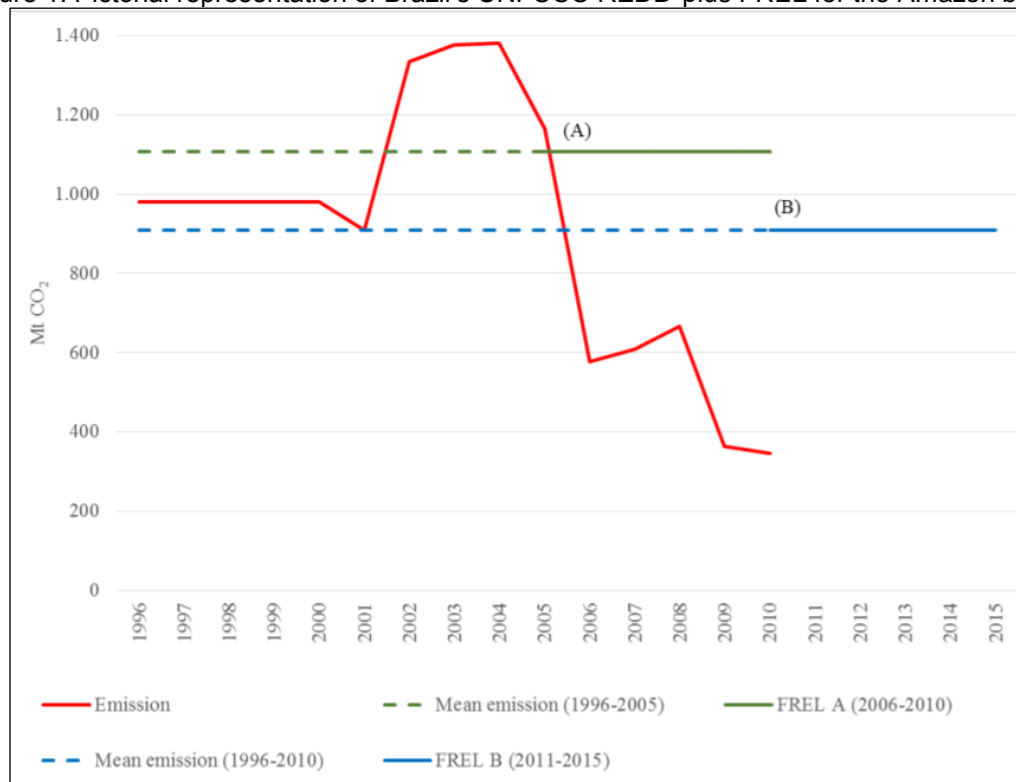
Non-CO<sub>2</sub> emissions from deforestation in the Amazon biome are not available for other years and hence, recalculation of the emission estimates to include non-CO<sub>2</sub> emissions would not be possible, nor would it be consistent overtime.

Estimation of non-CO<sub>2</sub> emissions from fire resulting from deforestation is expected to be improved in the next national GHG inventories. These estimates will be included in the national FREL to be submitted by Brazil to the UNFCCC in 2020 if consistency of the time-series can be assured and if deemed significant.

(ii.a) Data source of the FREL/FRL: *Please provide any additional information that supplements the information contained in the Technical Assessment Report in relation to the data used for to the construction of the FREL/FRL, specifying whether the FREL/FRL is based on historical data and is equal to or below the average annual historical emissions during the reference period.*

For results achieved in the period from 2011 to 2015, **the FREL (Figure 1) is equal to mean historical annual emissions from gross deforestation in the Amazon biome for the period 1996–2010 (historical data) and corresponds to 907,959,466 tCO<sub>2</sub> (FREL B).**

Figure 1. Pictorial representation of Brazil's UNFCCC REDD-plus FREL for the Amazon biome



Source: FREL, 2014

The gross emissions from deforestation in the Amazon biome were estimated by combining activity data (i.e. the area of annual gross deforestation) with the appropriate emission factors (i.e.CO<sub>2</sub> emissions associated with the corresponding forest type).

#### Activity data

The **activity data** used for the construction of the FREL for the Amazon biome were based on a historical time series from INPE/ MCTIC. Through PRODES, INPE/ MCTIC has been assessing annual gross

deforestation (clear cut in areas of primary forests) in the Legal Amazon since 1988 using Landsat-class satellite data on a wall-to-wall basis, with a minimum mapping unit of 6.25 ha.

The area of the Legal Amazon region (5,217,423 km<sup>2</sup>) is 24.3% bigger than the Amazon biome, as it includes areas from the Cerrado and Pantanal biomes. The Amazon biome comprises approximately 4,197,000 km<sup>2</sup> and corresponds to 49.29% of the national territory.

For the construction of its FREL, Brazil used the PRODES data for the Legal Amazon region excluding the areas from other biomes. Activity data (area deforested) are available in analogue format until 1997 and in digital format from 1998 onwards. Only since 2001 are data in digital format available annually. No ground truthing was required for the Amazon biome owing to the unequivocal identification of the clear-cut patches through visual interpretation.

In response to technical inputs by the AT, Brazil clarified that gross deforestation under cloud-covered areas has been estimated, so as not to under- or overestimate deforestation in any particular year, by **using an approach (adjusted deforestation increment) that evenly distributes the area of the deforestation polygons observed in the satellite image for the first time over previously cloud-covered areas over the year of the observation and all previous year(s) with persistent cloud cover in the same area.** For more information on the different methodologies used to estimate the area of gross deforestation in the Amazon biome, see Box 3 below.

### Box 3: Approaches to estimate the area of gross deforestation in the Amazon biome

There are several approaches to estimate the area deforested and different results may be obtained depending on the approach adopted. For example, the annual deforested area can be estimated from the annual increments of deforestation; from the annual rate of deforestation; or from the adjusted deforestation increment. The explanation provided below is meant to clarify these different approaches and terminologies.

- (1) **Deforestation Polygons (at year t):** refers to new deforestation events identified from the analysis of remotely sensed data (satellite images) at year t as compared to the accumulated deforestation mapped up to year t-1. Each deforestation polygon is spatially identified (geocoded), has accurate shape and area representations, and has an associated date of detection (the date of the satellite image from which it was mapped). For each year, a map containing all deforestation polygons (deforestation map) is made available in shapefile format for PRODES (and hence, for the Amazon biome, after exclusion of the areas associated with the Cerrado and Pantanal biomes) at (<http://www.obt.inpe.br/prodesdigital/cadastro.php>). **This map does not include deforestation polygons under cloud covered areas.** However, the deforestation map also renders spatially explicit distribution of the cloud covered areas.
- (2) **Deforestation Increment or Increments of Deforestation (at year t):** refers to the sum of the areas of all observed deforestation polygons within a given geographical extent. This geographical extent may be defined as the boundaries of a satellite scene which has the same date as the deforestation polygons mapped on that scene; or the entire Amazon biome, for which the deforestation increment is calculated as the sum of the individual deforestation increment calculated for each scene that covers the biome. **The deforestation increment may underestimate the total area deforested (and associated emissions), since it does not account for the area of deforestation polygons under clouds.**
- (3) **Adjusted Deforestation Increment or Adjusted Increments of Deforestation (at year t):** this adjustment is made to the deforestation increment at year t-1 (or years t-1 and t-2, etc., as applicable) to account for deforestation polygons in areas affected by cloud cover and that are observable at time t. It is calculated according with the following equation:

$$Inc_{adj(t)} = Inc_{(t)} - \sum_{\Delta=1} A_{CC(t-\Delta),(t)} + \sum_{\Delta=1} \frac{A_{CC(t-\Delta),(t)}}{\Delta+1} + \sum_{\Omega=1} \frac{A_{CC(t+\Omega),(t)}}{\Omega+1}$$

Source: Rectangular Strip

Where:

$Inc_{adj(t)}$  = adjusted deforestation increments at year t; km<sup>2</sup>

$Inc_{(t)}$  = deforestation increment at year t; km<sup>2</sup>

$\sum ACC(t-\Delta),(t)$  = area of the deforestation polygons observed (cloud-free) at year t over cloud-covered areas at year t-  $\Delta$  ; km<sup>2</sup>. Note that when  $\Delta = 1$ ,  $ACC(t-1),(t)$  equals the area of the deforestation polygons observed at year t over cloud-covered areas at year t-1 (but which were under cloud-free at year t-2); for  $\Delta = 2$ ,  $ACC(t-2),(t)$  equals the area of the deforestation polygons observed at year t over an area that was cloud-covered at both years t-1 and t-2.

$ACC(t+\Omega),(t)$  = area of the deforestation polygons observed at year t+  $\Omega$  over cloud-covered areas at year t; km<sup>2</sup>. Note that when  $\Omega = 1$  , the  $ACC(t+1),(t)$  provides the area of the deforestation polygons observed at year t+1 over the area that was cloud-covered at year t; when  $\Omega = 2$  , the term  $ACC(t+2),(t)$  provides the area of the deforestation polygons observed at year t+2 over the area that was cloud-covered at years t and t+1.

$\Delta$  = number of years that a given area was persistently affected by cloud cover prior to year t but was observed at year t;  $\Delta = 1, 2, \dots$

$\Omega$  = number of years until a given area affected by cloud cover at year t is observed in subsequent years (i.e., is free of clouds);  $\Omega = 1, 2, \dots$

As an example, suppose that the area of the deforestation increment observed at year t,  $Inc_{(t)}$ , is 200 km<sup>2</sup> and that 20 km<sup>2</sup> of this occurred over primary forest areas that were cloud covered at year t-1 (but are cloud-free at year t). Since these 20 km<sup>2</sup> may accumulate the area of the deforestation polygons under clouds at year t-1 and the area of the deforestation polygons that occurred at year t, the deforestation increment may overestimate the total area deforested area (and associated emissions) at year t.

- (4) **Deforestation Rate (at year t):** was introduced in PRODES to sequentially address the effect of cloud cover; and, if necessary, the effect of time lapse between consecutive images. The deforestation rate aims at reducing the potential under or over-estimation of the deforested area at year t. The presence of cloud-covered areas in an image at year t impairs the observation of deforestation polygons under clouds, and may lead to an **underestimation** of the area deforested; while the presence of clouds in previous years (e.g., at 17-year t-1) may lead to an **overestimation** of the area deforested if all deforestation under clouds at year t-1 is attributed to year t.

This over or under-estimation may also occur if the dates of the satellite images used in subsequent years are not adjusted. To normalize for a one-year period (365 days) the time lapse between the images used at years t and t+1, the rate considers a reference date of August 1st and projects the cloud corrected increment to that date, based on a model that assumes that the deforestation pace is constant during the dry season and zero during the wet season.

As an example of cloud correction, suppose that the primary forest area in an image is 20,000 km<sup>2</sup> and that 2,000 km<sup>2</sup> of this occurred over primary forest areas that were cloud covered. Suppose also that the observed deforestation increment is 180 km<sup>2</sup>. As part of the calculation of the rate, it is assumed that the proportion of deforestation measured in the cloud-free forest area (18,000 km<sup>2</sup>) is the same as that in forest under cloud (2,000 km<sup>2</sup>). Therefore, the proportion  $80/18,000 = 0.01$  is applied to the 2,000 km<sup>2</sup>, generating an extra 20 km<sup>2</sup> that is added to the observed deforestation increment. In this case, the adjusted increment of deforestation is 200 km<sup>2</sup>.

**IMPORTANT REMARKS:**

- (1) Note that at any one year, an estimate based on the adjusted deforestation increment may be higher or lower than the rate of gross deforestation.
- (2) For the sake of verifiability, Brazil's FREL submission introduced a slight change in the methodology used in PRODES to estimate the annual area deforested. **The PRODES methodology to annualize observed deforestation and to consider unobserved areas due to cloud cover is not directly verifiable unless all the estimates are adjusted backwards.**
- (3) The approach applied in Brazil's FREL submission relies on a verifiable deforestation map and does not annualize the time lapse between consecutive scenes. It deals with the effect of cloud cover by equally distributing the area of the deforestation polygons observed at year t over cloud-covered areas at year t-1 (or to years where that area was persistently cloud covered) among years t and t-1.
- (4) **The use of the adjusted deforestation increments to estimate the gross deforestation area and associated gross CO<sub>2</sub> emissions is appropriate for the purposes of REDD-plus, since the areas covered by clouds in the Amazon biome were significant and non-consideration of deforestation under clouds could result in an underestimation of the annual emissions.**
- (5) As seen in Table 6, in recent years, the availability of data from similar spatial resolution sensors to Landsat is reducing the need for adjustments, as deforestation under cloud-covered areas is assessed using alternative satellite data.

Table 6. Deforestation increment trends

**Distribution of deforestation increments  
from 2000 to 2016**

| Y                          |         |                  |
|----------------------------|---------|------------------|
| <b>E<br/>A<br/>R<br/>S</b> | ano2000 | <i>(0.0)</i>     |
|                            | ano2001 | <i>(54510.6)</i> |
|                            | ano2002 | <i>(25714.0)</i> |
|                            | ano2003 | <i>(30378.6)</i> |
|                            | ano2004 | <i>(27165.7)</i> |
|                            | ano2005 | <i>(23890.3)</i> |
|                            | ano2006 | <i>(10898.7)</i> |
|                            | ano2007 | <i>(11500.1)</i> |
|                            | ano2008 | <i>(13300.8)</i> |
|                            | ano2009 | <i>(6550.8)</i>  |
|                            | ano2010 | <i>(6334.6)</i>  |
|                            | ano2011 | <i>(5608.6)</i>  |
|                            | ano2012 | <i>(4454.5)</i>  |
|                            | ano2013 | <i>(5410.2)</i>  |
|                            | ano2014 | <i>(5126.0)</i>  |
|                            | ano2015 | <i>(6143.2)</i>  |
|                            | ano2016 | <i>(7266.8)</i>  |

Source: INPE/ MCTIC, 2018

The AT sought several clarifications on the estimation of activity data from Brazil. Brazil clarified that PRODES considers deforestation not only as the clear-cut in "intact" primary forest, but also as the clear-cut areas of primary forest that may have been previously subjected to a process of degradation (e.g. selective logging). The emissions from deforestation of these areas are estimated using the same carbon map.

**Area for future improvement:** The AT noted that the carbon density of the areas previously subjected to selective logging is likely to be lower than the carbon density of corresponding intact primary forests. Consequently, **the AT noted that for these areas the emission estimates used in the construction of the FREL include both the emissions from deforestation (clear cuts) and the emissions from degradation processes that occurred previously. The AT acknowledges the complexity of separating emissions between the two activities. The AT considers better understanding of the relationship between degradation and deforestation as an area for future technical improvement of the FREL.**

**Brazil's response:** The modified FREL submission clarified **that the extent of degraded area that is subsequently deforested is small** (see Table 7). Brazil continues its efforts to progress discussions on the best tools to generate estimates of forest degradation that are as accurate as possible. The major challenge of monitoring and addressing forest degradation adequately (in particular in relation to the anthropogenic contribution to the associated emissions) lies in the ability to accurately assess the changes of carbon stock in the areas affected by degradation, particularly aboveground biomass. Degradation may have different intensities, from very low (where few trees are removed) to very high (where, most likely, the land will be deforested at some point in time). As mentioned on the previous sections of this proposal, forest degradation is an area in which the Working Group of Technical Experts on REDD+ has worked intensively over the past few years and which will be included in Brazil's national FREL submission to the UNFCCC in the future.

Table 7. Percentage of the areas identified as degraded by DEGRAD and subsequently converted to clear-cut (deforestation) and included in PRODES, from 2007 to 2012.

| % conversion of the area degraded (DEGRAD) to clear cut (PRODES) |      | PRODES (year) |      |      |      |      |      |
|--|------|---------------|------|------|------|------|------|
|  |      | 2008          | 2009 | 2010 | 2011 | 2012 | 2013 |
| DEGRAD (year)  | 2007 | 12            | 2    | 2    | 2    | 1    | 2    |
|  | 2008 |               | 1    | 2    | 1    | 1    | 1    |
|  | 2009 |               |      | 2    | 2    | 2    | 2    |
|  | 2010 |               |      |      | 3    | 1    | 2    |
|  | 2011 |               |      |      |      | 2    | 4    |
|  | 2012 |               |      |      |      |      | 4    |

Source: FREL, 2014

The AT considered the exclusion of degraded areas conservative in the context of constructing the FREL.

#### **Emission factors**

Data from the Second National GHG Inventory (in tonnes of carbon per unit area, tC ha<sup>-1</sup>) were used to calculate the **emission factors**. The emission factors in the FREL were defined as the carbon densities in living biomass (above and below-ground biomass) and litter, consistent with those adopted in the Second National GHG Inventory. The carbon stock of the different forest types in the Amazon biome were estimated by combining sample-plot information (i.e. circumference at breast height (CBH)) from RADAMBRASIL (conducted between 1970 and 1985 this project collected geo-referenced data from 2292 sample plots, including CBH and height of all trees above 100 cm in CBH), with various equations (equations 5 to 9 in the modified FREL submission).

Box 4 below presents detailed information on the selection of the allometric equation to estimate aboveground biomass.

#### **Box 4. Choice of the Allometric Equation to Estimate Aboveground Biomass**

Four statistical models (linear, non-linear and two logarithmic) selected from thirty-four models in Santos (1996) were tested with data from 315 trees destructively sampled to estimate the aboveground fresh biomass of trees in areas near Manaus, Amazonas State, in the Amazon biome (central Amazon). This area is characterized by typical dense "terra firme" moist forest in plateaus dominated by yellow oxisols.

In addition to the weight of each tree, other measurements such as the diameter at breast height, the total height, the merchantable height, height and diameter of the canopy were also collected. The choice of the

best statistical model was made based on the largest coefficient of determination, smaller standard error of the estimate, and best distribution of residuals (Santos, 1996<sup>3</sup>).

In the case of each model, the difference between the observed and estimated biomass was consistently below 5%. In addition, the logarithm model using a single independent variable (diameter at breast height - DBH) produced results as consistent and as precise as those with two variables (DBH and height) (Higuchi, 1998<sup>4</sup>).

Silva (2007)<sup>5</sup> also demonstrated that the total fresh weight (above and below-ground biomass) of primary forest can be estimated using simple entry (DBH) and double entry (DBH and height) models and stressed that the height added little to the accuracy of the estimate. The simple entry model presented percent coefficient of determination of 94% and standard error of 3.9%. For the double entry models, these values were 95% and 3.7%, respectively. It is recognized that the application of the allometric equation developed for a specific area of the Amazon biome may increase the uncertainties of the estimates when applied to other areas.

In this sense, the work by Nogueira et al. (2008)<sup>6</sup> is relevant to be cited here. Nogueira et al. (2008) tested three allometric equations previously published and developed for dense forest in Central Amazon (CA): Higuchi et al. (1998), Chambers et al. (2001)<sup>7</sup> and Silva (2007). All three equations developed for CA tend to overestimate the biomass of the smaller trees in South Amazon and underestimate the biomass of the larger trees. Despite this, **the total biomass of the sampled trees estimated using the equations developed for CA was like those obtained in the field (-0,8%, -2,2% e 1,6% for the equations from Higuchi et al., 1998; Chambers et al., 2001 and Silva, 2007, respectively, due to the compensation of under and over-estimates for the small and larger trees.** However, when the biomass per unit area is estimated using the equations developed for the CA, the estimates were 6.0% larger for the equations from Higuchi et al. (1998); 8.3% larger for Chambers et al. (2001); and 18.7% for Silva (2007).

The AT noted that the “carbon map” used in the FREL, based on the RADAMBRASIL database, combined with an allometric equation (to relate above-ground fresh biomass to carbon densities), represented a significant effort aimed at recognizing the heterogeneity in carbon densities within the Amazon biome, and commended Brazil for this. In response to questions raised by the experts regarding apparent inconsistencies in the carbon map, Brazil explained that these were partly associated with the specific circumstances of the region (e.g. soil types, climatic conditions and flood regimes), and noted that the widely used RADAMBRASIL database is the best information available now.

**Area for future improvement:** The AT considers better understanding of the relationship between degradation and deforestation as an area for future technical improvement of the FREL. The AT noted that, when emissions from degradation are included in the FREL, Brazil will need to demonstrate how double counting of emissions included under degradation and deforestation is avoided (e.g. for forests that were subject to selective logging and subsequently clear cut).

The LULUCF experts encouraged Brazil to continue its efforts to improve its carbon map for the Amazon biome. The AT acknowledged the significant efforts made thus far by Brazil to assess the spatial distribution in carbon densities in the Amazon biome and commended Brazil for continuing to work on updating and

<sup>3</sup> SANTOS, J. 1996. Análise de modelos de regressão para estimar a fitomassa da floresta tropical úmida de terra firme da Amazonia brasileira. Tese de Doutorado, Universidade Federal de Viçosa, 121 p.

<sup>4</sup> HIGUCHI, N. DOS SANTOS, J., RIBEIRO, R.J., MINETTE, L., BIOT, Y. 1998. Aboveground biomass of the Brazilian Amazon rainforest. Acta Amazonica 28 (2), 153- 166.

<sup>5</sup> SILVA, R. P. 2007. Alometria, estoque e dinâmica da biomassa de florestas primárias e secundárias na região de Manaus (AM). Tese de Doutorado. Universidade Federal do Amazonas (UFAM), Instituto Nacional de Pesquisas da Amazônia (INPA), Manaus. 152 p. CDD 19. ed. 634.95.

<sup>6</sup> NOGUEIRA, E.M., FEARNside, P.M., NELSON, B.W., BARBOSA, R.I., KEIZER, E.W.H., 2008. Estimates of forest biomass in the Brazilian Amazon: New allometric equations and adjustments to biomass from wood-volume inventories. Forest Ecology and Management 256, 1853-1867.

<sup>7</sup> CHAMBERS, J.Q., SANTOS, J., RIBEIRO, R.J., HIGUCHI, N., 2001. Tree damage, allometric relationship, and above-ground net primary production in central Amazon forest. Forest Ecology and Management 152, 73-84.

improving the carbon map based on new and improved ground data from its [first National Forest Inventory \(NFI\)](#).

**Brazil's response:** Brazil explained that the time series available is too short to allow an adequate understanding of the degradation process. Since 2015, Brazil has been working on building an understanding of forest degradation trends to allow for the construction of a credible time series for the Amazon and the Cerrado biomes and ensure that there is no double counting of emissions when considering deforestation and forest degradation. This included a Technical-Scientific Seminar on Degradation and Forest Regrowth (Secondary Vegetation) in the Amazon and the Cerrado biomes held in October 2017. Experts from well-known research centers, non-government organizations, the academia and other countries in the Amazon basin were invited by Brazil to participate in this seminar. In three days of work, the individual presentations from researchers as well as results from group discussions provided valuable inputs to create or improve Brazilian policies on climate change and forests. The objective was to better understand the forest dynamics to provide inputs for future REDD-plus submissions to the UNFCCC.

Experts agreed that, unlike the case of deforestation, better understanding of forest degradation and forest regrowth may require the production of new data by research institutions, as well as the assessment of the latest remote sensing products. **The major challenge of monitoring and addressing forest degradation adequately (in relation to the anthropogenic contribution to the associated emissions) lies in the ability to accurately assess the changes of carbon stock in the areas affected by degradation, particularly aboveground biomass.** Degradation may have different intensities, from very low (where few trees are removed) to very high (where, most likely, the land will be deforested at some point in time).

With regards to improvements in the carbon map, Brazil indicated that this will be possible with the conclusion of the country's first NFI, which is currently collecting the necessary data for the whole national territory. In the absence of new and reliable data, partial improvements in the carbon map have already been done through statistical adjustments for the TNC (finalized in 2016 after the submission of Brazil's FREL and 1<sup>st</sup> BUR).

(ii.b) If a country is considered HFLD: *Please provide the basis/justification for this classification.*

Not applicable. Brazil's is not a HFLD country.

(ii.c) FREL/FRL adjustments for a HFLD country: *If adjustments made, please provide information that the adjustment does not exceed 0.1% of the carbon stock over the eligibility period in the relevant area and/or exceed 10% of the FREL/FRL to reflect quantified, documented changes in circumstances during the reference period that likely underestimate future rates of deforestation or forest degradation during the eligibility period*

Not applicable. Brazil's is not a HFLD country.

(iii) FREL/FRL in accordance with 12/CP.17: *Please provide any additional information that supplements the information contained in the Technical Assessment Report in relation to the quantified estimate of the FREL/FRL. Include whether the FREL/FRL was constructed in accordance with the guidelines in Decision 12/CP.17; specifically on the modalities for FREL/FRL and whether the raised issues were material or not material to the quantified estimate of the FEEL/FRL.*

Brazil followed the modalities for forest reference emission levels from section II of Decision 12/ CP.17 for the submission of information on reference levels as contained in the Annex to the same decision. Brazil structured its FREL following the guidelines for submission of information on reference levels as presented in the Annex of Decision 12/ CP. 17 to include: (a) information that was used in constructing a FREL; (b) complete, transparent, consistent, and accurate information, including methodological information used at the time of construction of FRELS; (c) pools and gases, and activities which have been included in FREL; and (d) the definition of forest used in the construction of FREL.

**The AT noted that the data and information used by Brazil in constructing its FREL are transparent and complete and are in overall accordance with the guidelines contained in the annex to decision**

**12/CP.17.** All the elements in the annex of decision 12/ CP.17 were considered in the constructions of Brazil's FREL.

Brazil recalled in its FREL that paragraphs 10 and 11 of Decision 12/CP.17 (FCCC/CP/2011/9/Add.2) “agrees that a step-wise approach to a national FREL may be useful, enabling Parties to improve the FREL by incorporating better data, improved methodologies and, where appropriate, additional pools” and “acknowledges that subnational FRELS may be elaborated as an interim measure, while transitioning to a national FREL”.

Brazil is a country of continental dimensions and with a large diversity of forest types, which makes the development of data at the national level a huge challenge. Brazil submission a subnational FREL for the Amazon biome comprised approximately 4,197,000 km<sup>2</sup> and corresponds to 49.29% of the national territory (a total of 8.516 million km<sup>2</sup>, the fifth-largest country in the world, 2 times the size of the total area of the European Union).

In 2014, Brazil's FREL submission to the UNFCCC, included an Annex detailing the approach that the country plans to undertake to construct its national FREL for reducing emissions from deforestation. Six individual FRELS, one for each of the six biomes (see Figure 2) in the Brazilian territory will be constructed and their subsequent sum will be the national FREL.

Figure 2. The Brazilian biomes



Source: FREL submission, 2014, Brazil.

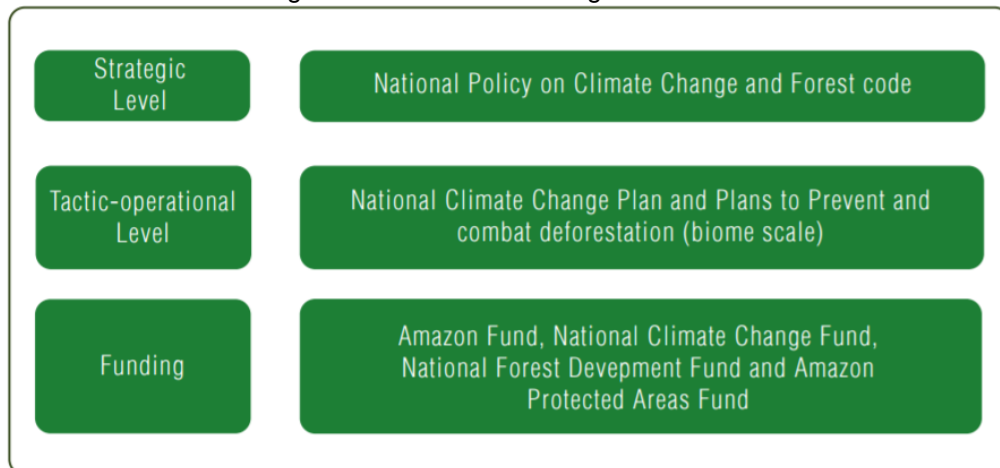
In 2015, Brazil launched its [National Strategy for REDD+ \(ENREDD+\)](#) with the objective to scale up the implementation of policies to reduce deforestation and forest degradation from the Amazon and Cerrado biomes to the national level. To do that, the [National REDD+ Committee \(CONAREDD+\)](#) was established and representatives from all biomes were invited to participate in this governance structure. A series of policies, laws, regulations, actions and initiatives from various stakeholders contribute to REDD-plus implementation in Brazil, both at the national and local levels. Figure 3 presents a pictorial summary of the main policies, laws, regulations and funds that contribute to REDD-plus implementation in Brazil.

At the **strategic level**, the [National Policy on Climate Change](#) outlines the objectives and guidelines for addressing climate change in Brazil, providing the force of law to the national voluntary commitment of reducing GHG emissions by 36.1% to 38.9% in relation to the projected emissions until 2020. Regarding



specific REDD-plus actions, Brazil has the commitment to achieve, by 2020, a reduction of 80% in the rate of deforestation in the Amazon biome, to be measured against the historical average between 1996 and 2005 (19,625 km<sup>2</sup>), and 40% in the Cerrado biome, to be measured against the average between 1999 and 2008 (15,700 km<sup>2</sup>). For the other biomes, it seeks to stabilize emissions at 2005 levels.

Figure 3. The ENREDD+ legal framework



Source: Brazil's [ENREDD+](#), 2015

Brazil's sovereign commitment to the protection of native vegetation and the integrity of the climate system for the well-being of present and future generations was reiterated by [Law No. 12.651/2012 \(Forest Code\)](#)<sup>8</sup>. The national law established restrictions to the use of certain areas of private properties, which should be covered by native vegetation. The Permanent Preservation Areas (APP) and Legal Reserve (RL), as defined by the law, must be maintained by the landholders. The proportion of RL depends on the region in which the rural properties are located. In the Amazon biome, the share of RL corresponds to 80% of the property located in forest covered regions, 35% of the ones situated in savanna-like regions and 20% of those in native grass covered regions. In all regions outside of the Amazon biome, the share of RL is 20%.

Promoting the environmental regularization of private rural areas is crucial for improving land use practices in the country and a key component of Brazil's strategy to keep deforestation under control. To this end, the Forest Code established mandatory registration on the Rural Environmental Registry (CAR) for all rural landholdings (Article. 29, Law No. 12.651/2012). The rural properties that have environmental liabilities relating to the insufficiency of APP and RL shall present a Degraded or Altered Area Recovery Project, which is an instrument of the Environmental Regularization Program, in accordance with Federal Decrees [n. 7.830/2012](#) and [n. 8.235/2014](#).

Faced with the challenge of implementing the Forest Code the Federal Government has instituted the National Policy for the Recovery of Native Vegetation, known as Proveg, through [Federal Decree n. 8.972/2017](#). Proveg aims to articulate, integrate and promote policies, programs and actions that encourage the recovery of forests and other forms of native vegetation and to promote the environmental regularization of Brazilian rural properties, under the terms of the Forest Code, in a total area of at least 12 million hectares, by December 31, 2030. The main instrument of implementation of Proveg is the National Plan for the Recovery of Native Vegetation (Planaveg), launched through [Inter-ministerial Ordinance No. 230, dated](#)

<sup>8</sup> Beyond the revision of the Forest Code, in 2012, a series of advances in environmental policies and law occurred in the last twenty years, namely: the [Law of Environmental Crimes](#) (Federal Law n. 9.605/1998); the [National System of Conservation Units](#) (Federal Law n. 9.985/2000); the [Law on Data and Information of the National Environment System](#) (Federal Law n. 10.650/2003); the [Priority Areas for Conservation, Sustainable Use and Biodiversity Benefits Sharing](#) (Federal Decree n. 5.902/2004 and MMA's Ordinance n. 09/2007); [Law on Public Forests Management](#) (Federal Law n. 11.284/2006); the [National Policy for Environmental and Territorial Management of Indigenous Lands](#) (Federal Decree n. 7.747/2012); the [Amazon Region Protected Areas Programme - ARPA](#) (Federal Decree n. 8.505/2015), among others.

[November 14, 2017](#). This funding proposal will support the continuation of the implementation of the Forest Code, by creating a program to incentivize forest conservation and restoration, providing positive incentives to smallholders, indigenous peoples and traditional communities, having as a basis the information from the [National Rural Environmental Registry System \(SICAR\)](#).

At the **tactical-operational level**, Brazil has developed biome-wide action plans for the prevention and control of deforestation, which are, at present, **the main instruments to promote integration and coordination of REDD+ initiatives**. The Amazon and the Cerrado are the biomes that have action plans under implementation. In addition to that, the nine states in the Legal Amazon region have similarly structured state plans.

The national and state plans feature analyses on land tenure issues, forest governance, the dynamics of deforestation and its main drivers, as well as about indigenous peoples and traditional communities. The plans also present a logical framework that guides the design and prioritization of actions to address the drivers identified; a detailed operational plan, assigning which body is responsible for each action, and the necessary resources for its implementation. The plans are reviewed and updated periodically.

Due to their relevance, the [Action Plan for the Prevention and Control of Deforestation in the Legal Amazon \(PPCDAm\)](#) and the [Action Plan for the Prevention and Control of Deforestation and Forest Fires in the Cerrado \(PPCerrado\)](#) were incorporated as instruments of the PNMC. They interface with the following Sectoral Plans: Climate Change Mitigation and Adaptation to Establish a Low-Carbon Economy in Agriculture ([ABC Plan](#)) and Steel Sector Emission Reductions ([Charcoal Plan](#)). Together, these plans form the pillars of the PNMC for mitigation in the LULUCF sector, contributing directly to REDD-plus.

The Action Plans will continue to be developed, as appropriate, at the biome level, to ensure that the particularities and the diversity of the different regions are considered in the definition of the policies and measures aimed at addressing the drivers at the local level. In other biomes, for example, the REDD-plus activities that will be prioritized may be different. Creating incentives for scaled up forest regrowth is key in the Atlantic Forest for example. At the same time, the national REDD+ scheme is in place to ensure that the same standards, principles and safeguards are followed by all biomes, and that the experience from the Amazon and the Cerrado biome could positively influence the other regions.

In 2015, to improve environmental monitoring at the national level, [the Brazilian Biomes Environmental Monitoring Program](#) was established, by the Ministry of the Environment of Brazil (MMA) Ordinance No. 365/2015. The [strategy](#) is to implement this program through partnerships between the MMA, MCTI through INPE, MAPA through Embrapa, and IBAMA, and other institutions, when appropriate. The funding will come from the Federal Budget, as well as from international cooperation and established funds, such as the Amazon Fund and the National Climate Change Fund. The Brazilian Biomes Environmental Monitoring Program is aligned with the objectives of the ENREDD+ and will deliver the enhancement and improvement of systems and monitoring protocols – particularly for the extra-Amazonian biomes – necessary for achieving the desired national scale. These initiatives will also provide important information to improve, at the national level, policies to combat deforestation and forest degradation and to foster forest recovery.

In 2017, as a sign of its commitment to the scaling up of REDD+ to the national level and using the data produced as part of the program detailed above, Brazil submitted to the UNFCCC a FREL for reducing emissions from deforestation in the Cerrado biome ([FREL Cerrado](#)). FREL Cerrado was technically assessed by two LULUCF experts selected from the UNFCCC roster. The results reducing emissions from deforestation in the Cerrado biome are expected to be submitted to the UNFCCC as part of the country's 3<sup>rd</sup> BUR in 2019.

Together, the **Amazon and the Cerrado biomes account for approximately 73% of the total national territory, an area of almost 6 million km<sup>2</sup>.**

In 2018, following paragraph 12, of Decision 12/ CP.17, Brazil presented an updated version of its Amazon biome FREL ([FREL C](#)) for results achieved between 2016 and 2020. The FREL C is currently going through the UNFCCC technical assessment.

In FREL C Brazil indicated that its approach to scale up REDD-plus to the national level does not imply that the same pools and/or gases will be included in each individual FREL, due to the very different characteristics and dynamics of REDD+ activities in each biome. **Two important elements, in the view of Brazil, must be ensured: (i) the same reference period maintained for all the biome FRELs, and (ii) emission reduction results presented at biome level in the future are consistent with the corresponding biome FREL.**

Regarding the inclusion of other REDD-plus activities, Brazil will include reducing emissions from forest degradation in the biomes where this activity is considered by the Working Group of Technical Experts on REDD+ as a significant source of emissions. The same applies for pools and non-CO<sub>2</sub> gases. Until 2020, Brazil will focus its efforts to have a better understanding of and methods for accounting for the processes related to deforestation and forest degradation, including regrowth of secondary forests, which would result in a transition from gross to net emissions.

**The AT commended Brazil for showing a strong commitment to continuous improvement of its FREL estimates, in line with the step-wise approach.**

(iv) FREL/FRL transparency: *Please provide any additional information that supplements the information contained in the Technical Assessment Report in relation to the transparency of the FREL/FRL and whether significant issues were raised and resolved. If applicable, provide a plan on how to address and overcome issues that were not material to the transparency of the FREL/FRL raised in TA Report that couldn't be resolved due to time and data restrictions.*

**The AT noted that the data and information used by Brazil in constructing its FREL are transparent.** [Digital PRODES](#) allowed INPE/ MCTIC to make available through the web the deforestation maps in vector format, as well as all the satellite images used, thus ensuring full transparency to the public in general. For Brazil, the most important elements, before accuracy, are ensuring consistency and transparency of the data submitted.

**The AT also considered that the additional information provided by Brazil in the modified submission after the inputs from the LULUCF experts considerably increased the transparency of its FREL and clarified the difference between FREL and PRODES data**, without the need to alter the approach used to construct the proposed FREL.

The information provided in the FREL, including through the [data made available on websites](#) and the examples on how CO<sub>2</sub> emissions from deforestation were estimated, **increased the reproducibility of FREL calculations.**

Below are details about where and how all the information used by Brazil in the construction of its FREL can be easily accessed from websites that are freely and openly available to the public:

- **Satellite Imagery.** Remotely sensed data is the major source of information used to map deforestation polygons every year. The availability of all satellite images used since 1988 allows for the verification and reproducibility of annual deforestation polygons over primary forest in the Amazon biome as well as the cloud covered areas. Since 2003, INPE adopted an innovative policy to make satellite data publicly available online. The first step in this regard was to make available all the satellite images from the China-Brazil Earth Resources Satellite (CBERS 2 and CBERS 2B) through INPE's website (<http://www.dgi.inpe.br/CDSR/>). Subsequently, data from the North American Landsat satellite and the Indian satellite ResourceSat 1 were also made available. With this policy INPE became the major distributor of remotely sensed data in the world.
- **Deforestation polygons.** All deforestation polygons mapped for the Amazon biome (i.e., aggregated until 2007; aggregated for years 1998, 1999 and 2000; and annual from 2001 until 2010) are available at <http://www.mma.gov.br/redd/index.php/en/forest-reference-emission-levelsfrel/spatial-information>. This information is a subset of that made available since 2003 by INPE for PRODES at <http://www.obt.inpe.br/OBT/assuntos/programas/amazonia/prodes>. At this website, for each satellite image, a vector map in shapefile format is generated and made available, along with all the previous deforestation polygons, the areas not deforested, the hydrology network



and the area of non-forest. For PRODES, this information is provided for each State of the Federation and for the Legal Amazon.

- **Deforestation polygons by forest type and RADAMBRASIL volume.** To ensure transparency in the calculation of the annual adjusted deforestation increment and associated emission, a file that associates each deforestation polygon with its forest type and corresponding RADAMBRASIL volume has been generated for each year since 2000. Since these files are large in size, the file for 2003, containing 402,176 deforestation polygons, was made available through the following link: <http://www.mma.gov.br/redd/index.php/en/forest-reference-emission-levels-frel/spatialinformation>, as tab “2003” in file “*calculo\_def\_increment\_emission\_2003.xls*”.
- **Information for the calculation of the adjusted deforestation increment.** The information used to calculate the annual adjusted deforestation increment is provided in the website <http://www.mma.gov.br/redd/index.php/en/forest-reference-emission-levels-frel/spatial-information> for years 2001, 2002, 2003, 2004 and 2005 (shapefiles “*SPAgregado2012\_CO2AmazoniaCompleto\_pol\_split1*”, “*SPAgregado2012\_CO2AmazoniaCompleto\_pol\_split2*” and “*SPAgregado2012\_CO2AmazoniaCompleto\_pol*”).
- **Carbon map.** The map with the biomass density of living biomass (including palms and vines) and litter mass used to estimate the CO<sub>2</sub> emissions from deforestation is the same as that used in the Second National GHG Inventory to estimate CO<sub>2</sub> emissions from conversion of forest land to other land-use categories. The data collected by RADAMBRASIL were documented in 38 volumes. RADAMBRASIL data is provided for the relevant volumes at: <http://www.mma.gov.br/redd/index.php/en/forestreference-emission-levels-frel/spatial-information>
- **RADAMBRASIL data.** RADAMBRASIL collected a significant amount of data for each one of the 2,292 sample units. The relevant RADAMBRASIL data is provided for the sample units in the 31 relevant RADAMBRASIL volumes at site <http://www.mma.gov.br/redd/index.php/en/forest-reference-emission-levels-frel/spatialinformation>, i.e., the volumes most affected by deforestation (volumes 4, 5, 16, 20, 22 and 26) and the information relevant for the FREL, particularly CBH.

(v) FREL/FRL completeness: *Please provide any additional information that supplements the information contained in the Technical Assessment Report in relation to the understanding of the FREL/FRL and whether significant issues were raised and resolved. If applicable, provide a plan on how to address and overcome issues that were not material to the completeness of the FEL/FRL raised in TA Report that couldn't be resolved due to time and data restrictions. Include information that allows for the reconstruction of the FREL/FRL.*

Brazil's data is presented in a transparent and verifiable manner, allowing the reconstruction of all its technical REDD-plus submissions. **All the information was made available online and the sequence of steps to construct the FREL was presented in detail in section b.1 (p.26) of the modified submission developed during the TA, to allow for the full reconstruction of the results.** The following data and information were used in the construction of the FREL and are available for download at <http://www.mma.gov.br/redd/index.php/en/forest-referenceemission-levels-frel/spatial-information>:

- (1) All the satellite images used to map deforestation polygons in the Amazon biome between 1996 and 2010;
- (2) Accumulated deforestation polygons until 1997, inclusive;
- (3) Accumulated deforestation polygons for years 1998, 1999 and 2000;
- (4) Annual deforestation polygons for the period from 2001 to 2010, inclusive;
- (5) Deforestation polygons by forest type attributes and RADAMBRASIL volume;
- (6) Information that allow for the calculation of the adjusted deforestation increments for years 2001, 2002, 2003, 2004 and 2005 with a detailed example of the calculation done for year 2003 (see “*calculo\_def\_increment\_emission\_2003*” through the FTP link available on the website above);
- (7) Map with the carbon densities of different forest types in Amazon biome (carbon map) consistent with the Second National GHG Inventory;
- (8) Samples of relevant RADAMBRASIL data used as input for the allometric equation.

The AT noted that the emission factors used varied along the time series. To understand the reason behind this variation, the AT asked Brazil to provide information on annual deforestation area by forest type. In response to this request, Brazil provided a very detailed example for the year 2003 (in annex II of the modified FREL submission) showing how emissions from deforestation were calculated (item 6 listed above). This example included data on deforestation areas by forest type, RADAMBRASIL volume and the associated carbon densities.

The AT commended Brazil for this huge effort. The AT also noted that providing basic information on deforestation area (e.g. by forest type only) for all years would further improve the transparency and reproducibility of future FREL submissions. This recommendation was followed by Brazil and the basic information to allow for the re-calculation of the adjusted deforestation increments for years 2001 to 2005 (point 6 above) was included in the modified FREL and the REDD+ Brasil website.

The information provided in Brazil's FREL allows for the reconstruction of Brazil's FREL. One should bear in mind that the exact value may not be necessarily reproduced due to rounding errors and the extensive amount of data in Annex II.1 of the revised FREL, as presented in the example of the independent reconstruction for year 2003.

The AT noted that the completeness of information improved significantly in the modified FREL submission and commends Brazil for the efforts made. **The AT considered that the information provided in the modified FREL submission on “verification activities” performed (e.g. comparison of the carbon map with data from the scientific literature) is useful, because it helps to build confidence in the estimated emissions.**

(vi) FREL/FRL consistency: *Please provide any additional information that supplements the information contained in the Technical Assessment Report in relation to the consistency of the methodology used over the time series used for the construction of the FREL/FRL, and whether significant issues were raised in the report and resolved. If applicable, provide a plan to address and overcome issues that were not material to the consistency of the FREL/FRL raised in TA Report that couldn't be resolved due to time and data restrictions.*

In assessing the extent to which the FREL is consistent with the information and descriptions provided by Brazil, the AT compared the time series of deforestation in the FREL (for the Amazon biome) with PRODES/INPE/ MCTIC deforestation rate data (for the Legal Amazon).

The consistency of the PRODES time series is ensured by using the same deforestation definition, same minimum mapping area, similar satellite spatial resolution, same Forest/Non-Forest vegetation boundaries, and same methodological approach to analyze the remotely sensed data at every new assessment.

Forest areas affected by forest degradation that do not have a clear-cut pattern in the satellite imagery are not included in PRODES. A separate project, named [DEGRAD](#), is carried out by INPE/ MCTIC to address forest degradation. This ensures the consistency of the PRODES deforestation time series over time.

At the start of PRODES, deforestation polygons were identified by visual interpretation on false color composites of Landsat imagery at the scale of 1: 250,000 and mapped on overlays that contained the aggregated deforestation up to the previous year. Subsequently these deforestation polygons were manually digitized in a Geographic Information System (GIS) developed by INPE. This analogical approach to assess deforestation (Analog PRODES) was employed from 1988 until 2002.

Due to the increased computing capability built by INPE, it was possible to transition to digital annual assessments of deforestation (Digital PRODES) after 2000, which was preceded by a 1997 digital base map.

**Digital PRODES maintains full consistency with the Analog PRODES data.** This includes consistency with the forest boundaries in Analog PRODES and the aggregated deforestation polygons. Despite the evolution to a digital assessment, the identification of the deforestation polygons continued to be carried out

through visual interpretation in the screen and not through digital classification methods. This ensured even greater consistency between the Analog and Digital PRODES.

Due to the large volume of analog data when Digital PRODES started, INPE decided to map the deforestation polygons from years 1998 to 2000 on an aggregated deforestation map until 1997 (digital base map). Hence, the deforestation polygons for these years were lumped into a single digital database, with no discrimination of the specific year when deforestation occurred.

From year 2000 onwards, the deforestation polygons have been annually assessed and included in the Digital PRODES database. The Digital PRODES allows for the visualization of the deforestation polygons every year, in a single file. Thus, the geographical expansion of deforestation, as well as its spatial pattern, can be assessed and monitored.

In summary, the digital database does not have individual deforestation information for years prior to 1997, inclusive; it has information for years 1998 to 2000 in an aggregated format; and information (deforestation polygons) for all years since 2000 on an annual basis.

Digital PRODES allowed INPE to make available through the web the deforestation maps in vector format, as well as all the satellite images used, thus ensuring full transparency to the public in general. **Since 2003, INPE began to publish the annual deforestation rate on the web, together with all the satellite imagery used to generate the information, and the maps with the identification of deforestation polygons.** Annually INPE provides for the download of approximately 215 Landsat satellite images of Landsat5/7/8 (or similar data as CBERS/CCD, ResourceSat/LISS3 and DMC). Each image is accompanied by the associated map containing all past deforestation. INPE continuously improves its tools to better manage large-scale projects. A few non-governmental organizations, state level entities and research centers have reconstructed and independently verified parts of the database of PRODES. For more information on the efforts of INPE to make deforestation data more accessible please see: <https://blog.globalforestwatch.org/data/official-deforestation-data-for-the-brazilian-amazon-now-available-on-global-forest-watch>

Deforestation rates were not the basis for the FREL calculations. The FREL was constructed based on adjusted deforestation increments (see detailed differences in Box 3 in section B.1.1. (iia), above) and these are two different approaches.

PRODES maps up to 2001 were analogic and constrained the integration with the carbon map adopted in this FREL. As an exercise, the annual CO<sub>2</sub> emissions per year were calculated taking as a basis the deforestation rates from PRODES and applying the average carbon stock per unit area (tC ha<sup>-1</sup>). This was done to assess the average difference in CO<sub>2</sub> emissions using the annual rates of gross deforestation from PRODES and the emission estimates presented in this submission for years 1996 – 2010 based on the adjusted increments. The formula<sup>9</sup> used was:

$$\text{Deforestation rate (ha)/year} * 151.6 \text{ tC/ha} * 44/12$$

Table 8. Comparing emission estimates: PRODES deforestation rates versus the adjusted deforestation increment used as a basis for the FREL

<sup>9</sup> 151.6 tC/ha was the average carbon content for the whole Amazon biome considering different forest types. The FREL used spatialized information for the yearly estimates, not the average.

| Year                  | Deforestation Rates PRODES (ha) | Deforestation Increments FREL (ha) | Emission PRODES (tCO <sub>2</sub> e) using average 151.6tC/ha | Emission FREL (tCO <sub>2</sub> e) |
|-----------------------|---------------------------------|------------------------------------|---|------------------------------------|
| 1996                  | 1,816,100.00                    | 1,874,013.00                       | 1,009,509,453.33  | 979,523,618.00                     |
| 1997                  | 1,322,700.00                    | 1,874,013.00                       | 735,244,840.00  | 979,523,618.00                     |
| 1998                  | 1,738,300.00                    | 1,874,013.00                       | 966,263,026.67  | 979,523,618.00                     |
| 1999                  | 1,725,900.00                    | 1,874,013.00                       | 959,370,280.00  | 979,523,618.00                     |
| 2000                  | 1,822,600.00                    | 1,874,014.00                       | 1,013,122,586.67  | 979,523,849.00                     |
| 2001                  | 1,816,500.00                    | 1,949,332.00                       | 1,009,731,800.00  | 908,964,575.00                     |
| 2002                  | 2,165,100.00                    | 2,466,605.00                       | 1,203,506,920.00  | 1,334,458,299.00                   |
| 2003                  | 2,539,600.00                    | 2,558,848.00                       | 1,411,678,986.67  | 1,375,224,078.00                   |
| 2004                  | 2,777,200.00                    | 2,479,432.00                       | 1,543,752,906.67  | 1,380,142,199.00                   |
| 2005                  | 1,901,400.00                    | 2,176,233.00                       | 1,056,924,880.00  | 1,163,879,135.00                   |
| 2006                  | 1,428,600.00                    | 1,033,687.00                       | 794,111,120.00  | 576,136,731.00                     |
| 2007                  | 1,165,100.00                    | 1,088,546.00                       | 647,640,253.33  | 609,101,478.00                     |
| 2008                  | 1,291,100.00                    | 1,237,179.00                       | 717,679,453.33  | 669,215,058.00                     |
| 2009                  | 746,400.00                      | 608,155.00                         | 414,898,880.00  | 373,066,457.00                     |
| 2010                  | 700,000.00                      | 610,642.00                         | 389,106,666.67  | 362,507,087.00                     |
| <b>Average</b>        | 1,663,773.33                    | 1,705,248.33                       | 924,836,136.89  | 910,020,894.53                     |
| <b>Difference (%)</b> |                                 | -2.492827549                       |   | 1.601931603                        |

Source: [Section I, Annex I of Brazil's FREL submission, 2018, p.82.](#)

The average emissions from deforestation between 1996 and 2010, using PRODES rates was 924,836,136.89 tCO<sub>2</sub>. The average emissions from deforestation between 1996 and 2010 presented in the FREL was 910,020,894.53 tCO<sub>2</sub>. Since the FREL uses the average emissions, these differences balance out, resulting in only a **1.6 per cent difference**.

**Area for future improvement:** The AT noted that information provided for the years 1996 and 1997 is less accurate (as the data were not based on measured data) and less consistent over the time series compared to the time series constructed from 1998 onwards. Overall, the AT considers that a better estimation of deforestation estimates for the years 1996–1997 (i.e. through the digitalization of the deforestation maps) is an area for future technical improvement.

**Brazil's response:** In response to this observation, Brazil indicated to the AT that it was seeking finance to complete the annual digital time series with data from 1996 to 2000, and that this would improve the accuracy of the estimates provided in the submission for the years 1996 and 1997, as well as for the individual years 1998, 1999 and 2000.

Since then, Brazil received inputs from various international stakeholders, with the general understanding that historical information before year 2000 should not be used in a future national FREL submission from Brazil to the UNFCCC in 2020.

Brazil's efforts now are focused on building deforestation data for all Brazilian biomes to scale up REDD-plus to the national level, rather than improving the historical data before year 2000 for the Amazon biome.

(vii) FREL/FRL accuracy: *Please provide any additional information that supplements the information contained in the Technical Assessment Report in relation to the accuracy of the FREL/FRL and whether significant issues were raised and resolved. This should include information on whether the data and methodologies used neither over- nor under-estimate emissions and/or removals during the reference period. If applicable, provide a plan to address and overcome issues raised in TA Report that were not material to the accuracy of the FREL/FRL and that couldn't be resolved due to time and data restrictions.*

The FREL accuracy can be estimated by assessing the accuracy of the activity data (adjusted deforestation increments) and of the emission factors (based on the RADAMBRASIL map and the allometric equation).

The REDD-plus decisions under the UNFCCC value the continuous update and improvement of relevant data and information over time. **Brazil is committed to continuously improve the accuracy of the estimates for all carbon pools included in the FREL. Work is underway as part of the process of development of Brazil's first NFI, to assess and reduce uncertainties and this process. This will contribute to improve the data for the construction of Brazil's national FREL.**

#### ***Accuracy of the activity data***

Brazil uses the information from PRODES as a basis for its activity data. **The use of adjusted deforestation increments as activity data to estimate emissions from gross deforestation provides a more accurate, verifiable figure for the deforested area through time than the deforestation rate. As the analysis is carried out retrospectively, deforestation increments can be redistributed over time. See Box 3 for more details.**

Due to the characteristics of the time series data (e.g., annual wall-to-wall assessments, adjustment for different dates between annual assessments), the use of annual adjusted deforestation increments (instead of the data from the National GHG Inventories that do not present annual estimates but consider annual average estimates for periods of time) is **considered to be the most accurate for the purposes of the FREL construction for the Amazon biome.**

Brazil assumes that the biomass immediately after the forest conversion is zero and does not consider any subsequent CO<sub>2</sub> removals after deforestation (immediately after the conversion or thereafter). This assumption is made since Brazil has a consistent, credible, accurate, transparent, and verifiable time-series for gross deforestation for the Legal Amazon, PRODES (and hence, for the Amazon biome). A [study](#) conducted by Adami et al. (2017)<sup>10</sup> analyzed the accuracy of PRODES data, taking the data for the year of 2014 for the state of Mato Grosso as an example. Independent random samples from the 2014 satellite images were classified by independent evaluators as forest or deforestation in 2014.

Results show a global accuracy of 94.5% ± 2.05, consistent with the high-level accuracy estimated by expert judgment in the FREL. Adami et al. (2017), did not use the adjusted increments of deforestation, since the focus of their study was on the accuracy of the deforestation increment mapping using satellite imagery. Since the same class of satellite data was used for the FREL construction, as well as the same deforestation definition and minimum mapping area, it is expected that the accuracy of the deforestation increment mapping is very close to that which resulted from Adami et al. (2017) study (94.5 ± 2.05%).

INPE is currently working on a plan to assess the accuracy of PRODES data for the whole Legal Amazon region. PRODES maps will be compared against remotely sensed satellite data with finer spatial resolution. Recently, satellite data with resolution of up to 3 meters and frequency and coverage that are suitable for this type of accuracy assessment has become available. A sampling design is being constructed to define the number of high resolution maps and information that will be required for this assessment. High resolution data are not freely available, so a cost estimate is currently underway to define the scope of the assessment. This accuracy assessment methods are being tested for robustness and functionality to grant full capacity to operationalize accuracy on a yearly basis starting with the 2019 PRODES map. The resources received through this proposal will be in part used to support this plan in the process of the development of the national FREL by 2020.

#### ***Accuracy of emission factors***

<sup>10</sup> ADAMI, M.; GOMES, A. R.; BELLUZZO, A. P.; COELHO, A. S.; VALERIANO, D. M.; RAMOS, F. S.; NARVAES, I. S.; BROWN, I. F.; OLIVEIRA, I. D.; SANTOS, L. B.; EDUARDO, L. A confiabilidade do PRODES: estimativa da acurácia do mapeamento do desmatamento no estado Mato Grosso. In: SIMPÓSIO BRASILEIRO DE SENSORIAMENTO REMOTO, 18. (SBSR), 2017, Santos. Anais... São José dos Campos: INPE, 2017. p. 4189-4196. Internet. ISBN 978-85-17-00088-1. IBI: .



Estimating the emission factors accuracy in the Amazon region is a complex task. The emission factors were developed based on RADAMBRASIL, with data collected in the 1970's. Brazil's is currently working on its First National Forest Inventory. The data collected in this process will allow Brazil to construct a new carbon map for the Amazon region, which will include an accuracy assessment. This information should be available at the time of submission of the national FREL by 2020.

The methodology used in the Second National GHG Inventory, based on the RADAM data resulted in large differences in biomass with respect to the other maps, and large changes in biomass between adjacent surveyed areas and regions (corresponding to different RADAM data sheets) within the map. Nevertheless "the large apparent disparities in biomass calculated for the carbon map were not propagated into CO<sub>2</sub> emissions as the deforestation front in the analysis had not advanced to these areas." Indeed, the analysis of the deforestation polygons (per volume and forest type) for years 2002 to 2005 have consistently shown that deforestation concentrates mainly in the so called "Arc of Deforestation", corresponding to RADAM volumes 4, 5, 16, 20, 22 and 26. In addition, even within these volumes, the forest types affected by deforestation have been very consistent.

More details related to the uncertainty assessment of emission factors and the carbon map can be found in Section B.1.2 (xv) of this proposal.

(viii) Sources of emissions: *Please provide any additional information that supplements the information contained in the Technical Assessment Report in relation to whether all activities listed in paragraph 70 of UNFCCC decision 1/CP.16 ('REDD-plus activities') that are a significant source of emissions were included. If they were not, justify whether activities that are significant sources of emissions were not included due to lack of data and/or whether the omission overestimates emissions or underestimate removals. Provide also a plan to include all data on all REDD-plus activities that are significant sources of emissions in future FREL/FRL submissions.*

**The TAR stated that Brazil included the most significant activity (reducing emissions from deforestation) of the five activities identified in paragraph 70 of decision 1/CP.16, in accordance with national capabilities and circumstances.**

The AT noted that the current exclusion of degradation appears to be conservative in the context of constructing the FREL.

Brazil explained that other systems are in place to track forest degradation and logging in forest management plans in the Amazon biome. Brazil has, through INPE, implemented since 2008 a system to assess the areas affected by degradation in the Amazon biome, using satellite imagery of the same spatial resolution as that used to assess deforestation increments (Landsat, up to 30 meters). This system, referred to as DEGRAD, provides detailed maps of areas under a degradation process. **The time series is still too short to allow a better understanding of the degradation process (more details were presented in Section B.1.1 of this proposal).** Brazil explained at the time of the assessment that it intended to improve this understanding with time, as new data becomes available, allowing for the future inclusion of degradation in the national FREL.

**The AT noted that, based on the data currently available, degradation trends are not uniform; but overall, for the Amazon biome, there has been a decreasing trend in forest degradation in recent years.** Based on the available information, the AT noted that, so far, there is no evidence of displacement of emissions (i.e. decreased deforestation in the Amazonia biome resulting in increasing degradation).

The AT acknowledged the intention expressed by Brazil to: (i) continue monitoring forest degradation to assess whether the reduction of deforestation is leading to an increase in forest degradation activities (displacement of emissions) and (ii) include emissions from degradation in future FREL submissions when new, adequate data and better information become available.

(ix) Significant pools: *Please provide any additional information that supplements the information contained in the Technical Assessment Report in relation to the inclusion of the most significant pools. If applicable, justify whether significant pools were not included due to lack of data and/or the omission does not*

*overestimate emissions or underestimate removals. In addition, provide a plan to include all significant pools in future FREL/FRL submissions.*

Brazil's FREL for the Amazon biome included the pools "above-ground biomass", "below-ground biomass" and "litter", while "dead wood" and "soil organic carbon" are not included. These were the pools included in the carbon map from the Second National GHG Inventory, using information from RADAMBRASIL.

In assessing the pools and the gases included in the FREL, pursuant to paragraph 2(f) of the annex to decision 13/CP.19, **the AT acknowledged that Brazil included in the FREL the most significant pools in terms of emissions from forests.** The AT noted that the current omissions of pools and gases is likely to be conservative in the context of the FREL.

### **Soil organic carbon**

Brazil explained in its FREL C (2018) that it has limited information on subsequent land-use after deforestation and its dynamics for the period considered in the FREL. However, Brazil mentioned two sources of information that were used as proxies to estimate the fate of soil carbon of the conversion from forest to other uses. First, there is the Second National GHG Inventory (2010) – the latest one at the time of the submission of the FREL, which includes data from a spatially explicit database for conversion to other lands from 1994 to 2002 per biome, including the Amazon. This source shows clearly that the main conversion in this period was from forest land to grassland (88.5 per cent). The second source of information is [TerraClass](#), which estimated forest transitions for 2008 and 2010, according to which, the dominant conversion for 2008 and 2010 is again from forest land to grassland (approximately 80 per cent).

Given this information, Brazil carried out a literature review to assess the impact of forest conversions to pasture on soil organic carbon stocks. **This literature review indicated that, while generally there is a loss of carbon after the first years of conversion, the subsequent trend is strongly influenced by pasture management, with carbon levels under pasture being lower, similar to or even higher than those under native forests.** The soil depth and the timespan considered also influence this analysis. The conclusion by Brazil is that the **available literature has limitations and may not be representative of many situations that might occur in the Amazon biome.**

**Area for future improvement:** The AT identified the improvement in the understanding of soil carbon dynamics after the conversion of forest to non-forest as an area for future improvement of Brazil's REDD+ submissions to the UNFCCC. **The AT considered that the exclusion of soil organic carbon was adequately justified by Brazil and commended the efforts to obtain better information on this pool in the future, with the aim of including it as part of the step-wise approach.**

**Brazil's response:** In its FREL C (2018), Brazil stated that it plans to intensify efforts to better understand the dynamics of carbon in soils after conversion, including expanding the literature review and stimulating new research, bearing in mind that changes may not occur rapidly after the conversion and that they are dependent on pasture management.

### **Dead wood**

Regarding emissions from dead wood, the AT requested clarification on the reasons for the omission of this pool. Brazil explained that the rationale behind the non-inclusion was the consideration that emissions from dead wood are not avoided when deforestation is reduced, as they are part of the natural process of decomposition (i.e. "the issue is related only to the time when the emissions are released").

The AT considered that when deforestation occurs, there are emissions from dead wood to the atmosphere that would need to be estimated. Furthermore, the AT noted that the IPCC good practice guidance for LULUCF provides a method for estimating carbon stock changes in dead wood (refer to chapter 3.4.1.2.1 for forest land converted to grassland: dead wood "should be assumed oxidized following land conversion") and the corresponding default emission factor (refer to table 3.2.2: 18.2 t C/ha for dead wood stock in tropical forests).

**Area for future improvement: The AT noted that the current omissions of pools and gases is likely to be conservative in the context of the FREL.** Nevertheless, the AT identified the treatment of emissions from dead wood (i.e. the inclusion of this pool or the provision of more information on the justification of its omission) as an area for future technical improvement.

**Brazil's response:** Following this recommendation, Brazil explained in more details the justification for the omission of dead wood pool in its FREL C (2018) submission. The Third National GHG Inventory (2016) included dead wood pool. The emission factors used in the Third National GHG Inventory for the Amazon biome were applied to the deforestation data from 2002 and 2015.

The effect of the carbon map in the Second and Third National GHG Inventory is presented in Table 9. Since the carbon map in the Third National GHG Inventory includes living biomass, litter and dead wood, the effect was assessed as follows:

- (i) maintain the same carbon pools, i.e., excluding the dead wood pool from the carbon map in the Third National GHG Inventory; and
- (ii) maintain the carbon map from the Third National GHG Inventory, with the four carbon pools.

In the Third National GHG Inventory, the percent contribution of the dead wood pool to the total biomass per hectare was discriminated for dense and non-dense forests. The mean ratios of the carbon in the dead wood pool to the carbon in dry biomass were estimated as 7.1% and 8.6% for dense and non-dense forests, respectively. Since the dead wood pool was included in the carbon map, together with living biomass and litter, a preliminary evaluation was made of the effect of the use of the carbon map in the Second and the Third National GHG Inventories with consideration of the same pools (living biomass and litter), as well as with the addition of the dead wood pool. The emission estimates have been generated from the deforestation increments and not from the adjusted deforestation increments. The results can be found on directory "Other relevant information and data" <http://redd.mma.gov.br/en/infohub>, file "WORKSHEET\_FREL\_C", rows 36 - 55, columns B – L.

Table 9. Differences in estimates from the Second and the Third National GHG Inventory

|      | t CO <sub>2</sub><br>II Inventory<br>(living<br>biomass and<br>litter) | t CO <sub>2</sub><br>III Inventory<br>(living<br>biomass and<br>litter) | %<br>difference<br>(II – III) <sup>38</sup> | t CO <sub>2</sub><br>III Inventory<br>(living biomass,<br>litter and dead<br>wood) | %<br>difference<br>(II – III)<br>with dead<br>wood<br>included |
|------|--|---|---|--|--|
| 2001 | 914,948,218  | 937,847,755   | 2.50  | 1,030,601,928  | 12.64  |
| 2002 | 1,206,821,066  | 1,219,576,620   | 1.06  | 1,340,194,088  | 11.05  |
| 2003 | 1,509,152,483  | 1,516,114,474   | 0.46  | 1,666,059,861  | 10.40  |
| 2004 | 1,339,437,300  | 1,330,016,121   | -0.70                                       | 1,461,556,177  | 9.12   |
| 2005 | 1,145,213,623  | 1,140,289,111   | -0.43                                       | 1,253,064,957  | 9.42   |
| 2006 | 563,497,470  | 571,609,609   | 1.44  | 628,142,427  | 11.47  |

|             |                    |                    |              |                    |              |
|-------------|--------------------|--------------------|--------------|--------------------|--------------|
| 2007        | 588,196,437        | 597,720,394        | 1.62         | 656,835,597        | 11.67        |
| 2008        | 657,188,945        | 665,213,444        | 1.22         | 731,003,785        | 11.23        |
| 2009        | 354,487,621        | 347,810,179        | -1.88        | 382,208,988        | 7.82         |
| 2010        | 341,843,471        | 340,429,142        | -0.41        | 374,097,959        | 9.44         |
| 2011        | 310,756,848        | 303,414,099        | -2.36        | 333,422,087        | 7.29         |
| 2012        | 226,677,963        | 224,889,100        | -0.79        | 247,130,880        | 9.02         |
| 2013        | 282,107,626        | 278,471,430        | -1.29        | 306,012,561        | 8.47         |
| 2014        | 268,450,749        | 266,352,017        | -0.78        | 292,694,524        | 9.03         |
| 2015        | 328,223,858        | 319,749,663        | -2.58        | 351,373,256        | 7.05         |
| <b>Mean</b> | <b>669,133,578</b> | <b>670,633,544</b> | <b>-0.22</b> | <b>736,959,938</b> | <b>-9.68</b> |

Source: [FREL C](#) submission, 2018

**With the mean difference of less than 10%, Brazil considers that the dead wood pool is not a significant source of emissions and hence, does not include it in the FREL. Furthermore, by not including this pool, Brazil is being conservative with its estimates for the FREL.**

(x) Emissions from gases: *Please provide any additional information that supplements the information contained in the Technical Assessment Report in relation to the inclusion of all gases that are significant sources of emissions. If not all of the gases were included, justify whether gases that are significant sources of emissions were not included due to lack of data and/or whether the omission overestimates emissions or underestimates removals. Provide also a plan to include all significant pools in future FREL/FRL submissions.*

Brazil's FREL for the Amazon biome includes CO<sub>2</sub> emissions. Non-CO<sub>2</sub> emissions in the Amazon biome are normally associated with the recurrent burning of tree residues left on the ground after deforestation activities. **The exclusion of non-CO<sub>2</sub> gases is conservative because a decrease of deforestation is associated with a decrease of non-CO<sub>2</sub> gases.**

**Area for technical improvement:** The AT considers the treatment of non-CO<sub>2</sub> gases as an area for future technical improvement to maintain consistency with the GHG inventory included in the national communication.

**Brazil's response:** Following this recommendation, Brazil presented in FREL C (2018) an analysis of the impact of non-CO<sub>2</sub> emissions of carbon monoxide (CO), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O) and NO<sub>x</sub> for year 2010, included in the Third National GHG Inventory indicates the following emissions: 8,400 Gg; 549 Gg; 16 Gg; and 129 Gg, respectively. **Non-CO<sub>2</sub> emissions from deforestation in the Amazon biome are not available for other years and hence, the recalculation of the emission estimates to include non-CO<sub>2</sub> emissions would not be possible at this point.**

Estimation of emissions from fire resulting from deforestation is expected to be improved in the next National GHG Inventory, and if possible, non-CO<sub>2</sub> emissions from fire will be included in the national FREL, for the biomes where this is a significant source of emissions if consistency of the time-series can be assured and if deemed relevant.

(xi) IPCC guidance for FREL/FRL: *Please indicate if the whether the construction of the FREL/FRL (data, methodologies and estimates) was guided by 2003 GPGs or 2006 GLs.*

For the construction of the FREL of the Amazon biome, Brazil followed the methodological guidance contained in the IPCC Good Practice Guidance for Land Use, Land-use Change and Forestry (IPCC, 2003) as a basis for estimating changes in carbon stocks in forest land converted to other land-use categories, the same methodology used in the Second National GHG Inventory.

For any land-use conversion occurring in a given year, GPG LULUCF considers both the carbon stocks in the biomass immediately before and immediately after the conversion.

Brazil adopted approach 3 for land representation, meaning that all the land conversions and lands remaining in a same land-use category between inventories are spatially explicit.

(xii) Issues related to applying IPCC guidance: *Please mention any significant issues related to the application of IPCC GLs/GPGs as raised in the TA report. Include any significant issues that are material to the alignment with the methodologies of the IPCC GLs/GPGs that were raised in the TA report and whether significant issues were raised and resolved. If applicable, provide a plan to address and overcome issues raised in TA Report that were not material to the application of IPCC guidance and that couldn't be resolved due to time and data restrictions.*

As detailed in section B.1.1, (ix) of this proposal, the AT noted that the IPCC good practice guidance for LULUCF provides a method for estimating carbon stock changes in dead wood (refer to chapter 3.4.1.2.1 for forest land converted to grassland: dead wood "should be assumed oxidized following land conversion") and the corresponding default emission factor (refer to table 3.2.2 18.2 t C/ha for dead wood stock in tropical forests).

**Area for technical improvement:** The TA report considered the treatment of emissions from dead wood (i.e. the inclusion of this pool or the provision of more information justifying its omission) as an area for future technical improvement of the FREL.

**Brazil's response:** Considering that the mean difference with the inclusion of deadwood is less than 10%, Brazil considers that this pool is not a significant source of emissions. Furthermore, by not including this pool, Brazil is being conservative on its estimates for the FREL.

#### B.1.2. Additional criteria related to FREL/FRL

(xiii) Reference period for the FREL/FRL: *Please indicate the reference period (number of years) applied for the construction of the FREL/FRL.*

The reference period used by Brazil in the construction of the FREL for the Amazon biome was 1996 to 2010, a total of 15 years.

(xiv) If previous reference level submitted: *Please indicate whether a previous reference level applying to the same area was submitted. If so, describe the difference between the emissions and removals used for the previous one and the current one. Describe any adjustments made to the current FREL/FRL compared to the previous one, if applicable.*

The FREL for the Amazon biome (FREL A and B) was the first reference level submitted to the UNFCCC in the context of results-based payments. This submission, in June of 2014, came right after the rules and procedures for the implementation of the Warsaw Framework for REDD-plus had been agreed upon by Parties in December of 2013 at COP 19. No previous reference levels had been submitted to the UNFCCC by any Party before that.

Even though REDD+ UNFCCC decisions do not require developing countries to be conservative in their approach to construct their FREL/FRL, Brazil's FREL for the Amazon biome included an adjustment downwards every five years. FREL B (object of this proposal) is lower than FREL A. This downwards adjustment was included in Brazil's FREL methodology to reflect the progress made in the implementation of policies and measures to reduce deforestation in the Amazon region since 2005.

In 2018, Brazil submitted to the UNFCCC an updated FREL (FREL C) for the Amazon biome so that results from 2016 to 2020 could be measured. FREL C includes new data for years up to 2015 and more detailed information about ongoing processes to continuously improve the REDD-plus technical submissions towards building a national FREL by 2020.

(xv) *Uncertainties: Please indicate whether the country has provided information on aggregated uncertainties of the emissions or removals estimate, considering national capabilities and circumstances, and if so, indicate the percentage of aggregate uncertainties and provide information on assumptions and sources. If applicable, indicate the process implemented to minimize systematic and random errors.*

The AT commended Brazil for the information provided in the revised FREL submission on ongoing efforts to estimate carbon densities, including detailed information on uncertainties.

**There is a low level of uncertainty associated with the activity data used for the construction of the FREL for the Amazon biome.** The definition of deforestation adopted for PRODES and maintained in the FREL (i.e., clear cut), in conjunction with the annual wall-to-wall assessment of deforestation based on satellite imagery of high spatial resolution (up to 30 meters) allows deforestation polygons to be identified and mapped with very high accuracy. No ground-truth is required for the Amazon biome since there is an unequivocal identification, based on visual interpretation, of the clear-cut patches in the Landsat imagery from one year to another. Only new polygons of deforestation are mapped each year on the aggregated deforestation map containing deforestation up to the previous year. Brazil is working to develop a protocol for accuracy assessment of PRODES data, which will significantly reduce the uncertainties associated with the activity data estimates. These efforts are described in section B.1.1 (vii) of this proposal.

The literature on uncertainties indicates that the largest uncertainties for REDD+ activities relate to the spatial distribution of biomass and to the spatial pattern of forest cover change, rather than to total globally or nationally summed carbon density<sup>11</sup>.

Uncertainties associated with the carbon map may arise from the allometric equation. It is recognized that the application of the allometric equation developed for a specific area of the Amazon biome may increase the uncertainties of the estimates when applied to other areas. In this sense, the work by Nogueira et al. (2008)<sup>12</sup> tested three allometric equations previously published and developed for dense forest in Central Amazon (CA): Higuchi et al. (1998), Chambers et al. (2001)<sup>13</sup> and Silva (2007). All three equations developed for CA tend to overestimate the biomass of the smaller trees in South Amazon and underestimate the biomass of the larger trees. Despite this, **the total biomass of the sampled trees estimated using the equations developed for CA was like those obtained in the field (-0,8%, -2,2% e 1,6% for the equations from Higuchi et al., 1998; Chambers et al., 2001 and Silva, 2007, respectively, due to the compensation of under and over-estimates for the small and larger trees.** However, when the biomass per unit area is estimated using the equations developed for the CA, the estimates were 6.0% larger for the equations from Higuchi et al. (1998); 8.3% larger for Chambers et al. (2001); and 18.7% for Silva (2007). More details on the choice of allometric equation were presented in Box 4 above.

Other sources of uncertainty in the REDD+ estimates include: (1) data collection, sampling design; (2) aggregated forest type; (3) rules used to estimate the carbon density of the forest types per RADAMBRASIL volume. **It is difficult to associate uncertainties to most of these elements.** RADAMBRASIL data, for instance, was collected under strenuous circumstances in the 1970s, by different teams. Also, by that time the technologies that exist today were not available or accessible (GPS, for example). The aggregation of the diverse forest types in the Amazon forest classes may also generate uncertainties, but these are difficult

<sup>11</sup> Edward TA Mitchard, Sassan S Saatchi, Alessandro Baccini, Gregory P Asner, Scott J Goetz, Nancy L Harris and Sandra Brown. Uncertainty in the spatial distribution of tropical forest biomass: a comparison of pan-tropical maps (2013).

<sup>12</sup> NOGUEIRA, E.M., FEARNESIDE, P.M., NELSON, B.W., BARBOSA, R.I., KEIZER, E.W.H., 2008. Estimates of forest biomass in the Brazilian Amazon: New allometric equations and adjustments to biomass from wood-volume inventories. *Forest Ecology and Management* 256, 1853-1867.

<sup>13</sup> CHAMBERS, J.Q., SANTOS, J., RIBEIRO, R.J., HIGUCHI, N., 2001. Tree damage, allometric relationship, and above-ground net primary production in central Amazon forest. *Forest Ecology and Management* 152, 73-84.

to access without a NFI. **This is one area where improvements may be expected in the medium term, with the completion of Brazil's first NFI. The new data will be used a basis for Brazil's national FREL submission by 2020.**

Estimating the uncertainty associated with the carbon map is extremely complex. There are several carbon maps for the Amazon biome published in the literature. Most of them constructed using satellite data, including the airborne LIDAR data and plot information. Some incorporate only aboveground biomass, whereas others include living biomass and other pools. The accuracy of the map can be assessed in case adequate and representative ground datasets for calibration are available. This may exist in some areas in Amazon but do not exist for the entire Amazon biome.

A paper (Ometto et al., 2014)<sup>14</sup> examines the influence of the use of different biomass maps for the Amazon biome on uncertainty in carbon emission calculations due to land cover change in recent years and in future scenarios. Five maps are compared (Saatchi et al. (2007; 2011); Nogueira et al. (2008); MCT (2010); and Baccini et al. (2012). Some results indicate that the map used in the FREL (MCT (2010) and that from Nogueira et al. (2008) have similar spatial distribution of the biomass density classes. The paper indicates that the methodology used in the Second National GHG Inventory, based on the RADAM data resulted in large differences in biomass with respect to the other maps, and large changes in biomass between adjacent surveyed areas and regions (corresponding to different RADAM data sheets) within the map.

It concludes that the methodology used to construct the carbon map, based on the RADAM data (1: 1,000,000) "resulted in large differences in biomass with respect to the other maps, and large changes in biomass between adjacent surveyed areas and regions (corresponding to different RADAM volumes) with the carbon map." And continues to say that "the large apparent disparities in biomass calculated for the carbon map were not propagated into CO<sub>2</sub> emissions as the deforestation front in the analysis had not advanced to these areas." Indeed, the analysis of the deforestation polygons (per volume and forest type) for years 2002 to 2005 have consistently shown that deforestation concentrates mainly in the so called "Arc of Deforestation", corresponding to RADAM volumes 4, 5, 16, 20, 22 and 26. In addition, even within these volumes, the forest types affected by deforestation have been very consistent.

The REDD-plus decisions under the UNFCCC value the continuous update and improvement of relevant data and information over time. **Work is underway as part of the process of development of Brazil's first NFI, to assess and reduce uncertainties. Brazil will contribute to improve the data for the construction of national FREL.**

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<sup>14</sup> Ometto, J.P.; Aguiar, A.P.; Assis, T.; Soler, L.; Valle, P.; Tejada, G.; Lapola, D.M.; Meir, P. Amazon forest biomass density maps: tackling the uncertainty in carbon emission estimates. *Climatic Change* (2014) 124:545-560. DOI 10.1007/s10584-014-1058-7.

(xvi) Please indicate whether different FREL/FRLs have been used for different funding sources or other purposes, and if so, list and describe them.

**The Amazon Fund Baseline (2008)**

The [Amazon Fund](#) is a REDD-plus mechanism created by Brazil in 2008 ([Federal Decree n 6527/ 2008](#)) to raise donations for non-reimbursable investments in efforts to prevent, monitor and combat deforestation, as well as to promote the preservation and sustainable use in the Brazilian Amazon. The Amazon Fund is managed by BNDES, the Brazilian Development Bank, which is responsible for raising and investing funds, monitoring the projects supported, rendering accounts and communicating results obtained. The main donors of the Amazon Fund are the governments of Norway and Germany, and the Brazilian company Petrobras.

The Amazon Fund has a Guidance Committee – COFA, responsible for establishing guidelines and monitoring the results obtained; and a Technical Committee – CTFA, in charge of certifying the calculations made by the MMA concerning the reductions of carbon emissions from deforestation. Every year the MMA estimates these emissions using a **baseline and method** (see Table 10 for more information) that were bilaterally agreed upon and included in the Amazon Fund Project Document **before the UNFCCC rules for the MRV for REDD-plus were agreed upon in 2013 with the adoption of the Warsaw Framework for REDD+ in COP 19.**

The Amazon Fund baseline utilizes a conservative carbon content and does not correct for cloud coverage. It is based on an average carbon content rather than the emission factor being derived from the carbon map. The Amazon Fund baseline differs in terms of pools and carbon content to Brazil's Second National GHG Inventory and Brazil's REDD+ FREL to the UNFCCC. The Amazon Fund method to estimate results from reducing emissions from deforestation does not fulfill all the guidance and modalities established by the Warsaw Framework for REDD+ in 2013. This conservative approach adopted for the Amazon Fund through a bilateral agreement was justified by the need to more easily communicate and inform the public about the climate change mitigation impact of reducing deforestation.

The idea was to have a proof of concept of the potential impact that REDD-plus could have as a finance mechanism to incentivize forest conservation in developing countries. The Amazon Fund has been successful showing the world how effective REDD-plus can be. The general concept of this bilateral agreement was the basis for the logic that created the Warsaw Framework for REDD-plus.

Table 10 provides a detailed comparison of the elements used in the Amazon Fund baseline and Brazil's REDD+ reference level for the Amazon biome.

Table 10. Amazon Fund baseline vs Brazil's FREL to the UNFCCC

| Elements       | Amazon Fund Baseline                              | Brazil's FREL for REDD-plus under the UNFCCC              |
|----------------|---|---|
| Area           | Legal Amazon region<br>5,217,423 km <sup>2</sup>  | Amazon biome<br>4,197,000 km <sup>2</sup>                 |
| REDD+ activity | Reducing emissions from deforestation             | Reducing emissions from deforestation                     |
| Activity data  | PRODES<br>Annual deforestation rate <sup>15</sup> | PRODES<br>Adjusted deforestation increments <sup>16</sup> |

<sup>15</sup> See detailed explanation in Box 3 of this funding submission. The PRODES methodology to annualize observed deforestation and to consider unobserved areas due to cloud cover is not directly verifiable unless all the estimates are adjusted backwards.

<sup>16</sup> See detailed explanation in Box 3 of this funding proposal. The use of the adjusted deforestation increments to estimate the gross deforestation area and associated gross emissions is appropriate for the purposes of REDD-plus, since the areas covered by clouds in the Amazon biome were significant and non-consideration of deforestation under clouds could result in an underestimation of the annual emissions.



|                                       |  |   |
|---------------------------------------|--|---|
| <b>Emission factor</b>                | <p>The carbon content was defined as an average for the whole Legal Amazon region.</p> <p>From 2006 to 2010: 100tC/ha<sup>17</sup><br/>From 2011 to 2014: 132,3tC/ha<sup>18</sup></p> <p>OBS: These are extremely conservative values considering the average carbon content presented in the literature for the Amazon region, which corresponds to 320 tC/ha.</p>                    | <p>Brazil adopted Approach 3 for land representation (spatially explicit) to increase the accuracy of its REDD-plus estimates.</p> <p>The carbon stocks of the different forest types in the Amazon biome was combined with sample-plot information from Brazil's carbon map (RADAMBRASIL), allometric equations and data from the Second National GHG Inventory.</p> <p>OBS: As a reference for comparing values, the FREL mean average carbon content for the Amazon biome is 151.6 tC/ ha. This average was not used for the FREL estimates.</p> |
| <b>Years included</b>                 | <p>Average of previous <u>10 years</u> of deforestation rates (in ha), updated every five years, as follows:</p> <ol style="list-style-type: none"> <li>1) 1996-2005, for results achieved between 2006 and 2010;</li> <li>2) 2001-2010, for results achieved between 2011 and 2015.</li> </ol> <p>This is a moving 10-year average, with the base year changing every five years.</p> | <p>Dynamic mean of historical carbon dioxide emissions (in tCO<sub>2</sub>) from gross deforestation in the Amazon biome since 1996, updated every five years, using data from the INPE/MCTIC, as follows:</p> <ol style="list-style-type: none"> <li>1) 1996-2005, for results achieved between 2006 and 2010 (10 years);</li> <li>2) 1996-2010, for results achieved between 2011 and 2015 (15 years).</li> </ol>   |
| <b>Results estimate for 2014-2015</b> | <p>For year 2014 = 558,786,690.00 tCO<sub>2</sub>e<br/>For year 2015 = 500,817,240.00 tCO<sub>2</sub>e<br/><b>Total = 1,059,603,930.00 tCO<sub>2</sub>e</b></p>  | <p>For year 2014 = 634,367,865.74 tCO<sub>2</sub>e<br/>For year 2015 = 620,295,262.00 tCO<sub>2</sub>e<br/><b>Total = 1,254,663,127.74 tCO<sub>2</sub>e</b></p>   |
| <b>Difference (%)</b>                 | <p>For year 2014 = 11.9%<br/>For year 2015 = 19.2%<br/>Total (2014 – 2015) = 15.5%</p>   |   |
| <b>% offered to the GCF</b>           | <p><b>The total of 25,093,262.55 tCO<sub>2</sub>e that will be offered by Brazil to the GCF in this proposal corresponds to 2.36% of the total results estimated using the baseline of the Amazon Fund and 2% of the total results estimated using the UNFCCC FREL for years 2014 and 2015.</b></p>  |   |

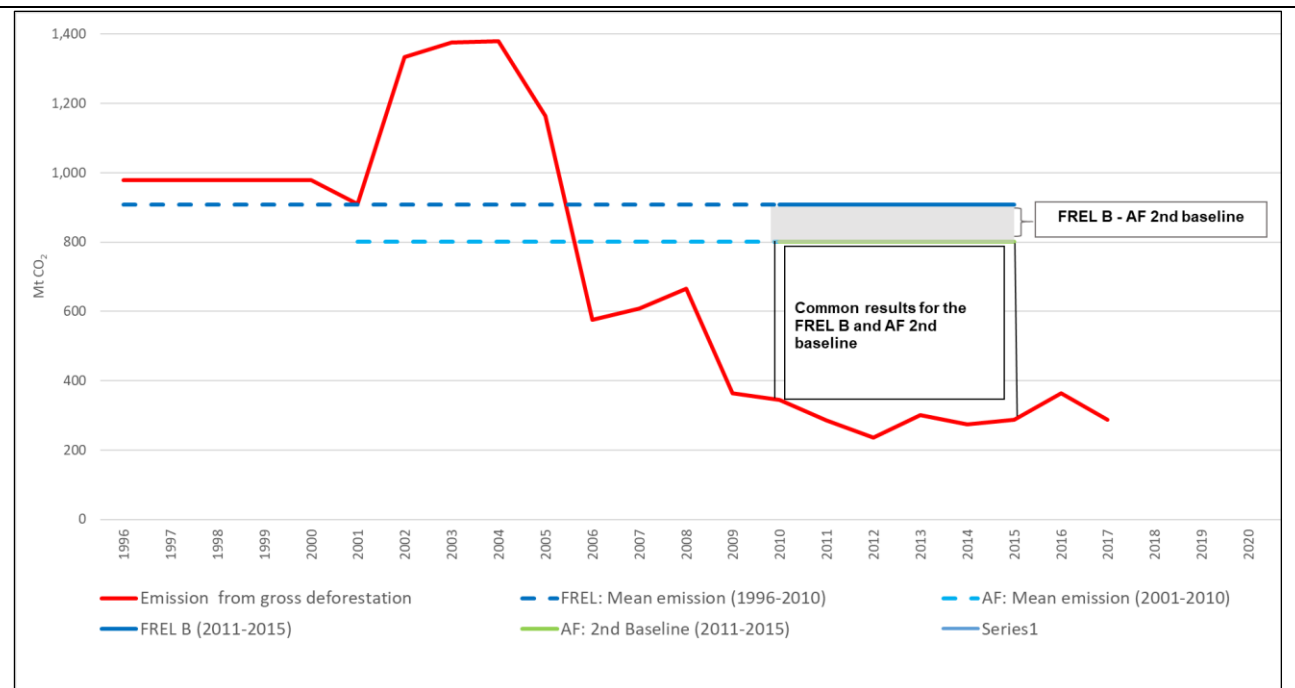
Source: [Amazon Fund project document](#) and [REDD+Brasil](#)

The Figure 4 is a pictorial representation of the difference between the Amazon Fund baseline and the reference level for the results period included in this proposal.

The 2% of total REDD-plus results achieved by Brazil and offered to the GCF in this proposal (2014-2015) is very conservative, it falls well below both the Amazon Fund baseline and the reference level. **It corresponds to 2.36% of the total results attested by the Amazon Fund Technical Committee (CTFA) in years 2014 and 2015.** Figure 4. Pictorial representation of the differences between the Amazon Fund baseline and Brazil's FREL to the UNFCCC for years 2014 and 2015.

<sup>17</sup> As stated in the [Amazon Fund project document](#) this was extremely conservative value considering the average carbon content presented in the literature for the Amazon region, which corresponds to 320 tC/ha. This was defined bilaterally for the Amazon Fund to ease the computation method and understanding of the public.

<sup>18</sup> This change was recommended by the Technical Committee to the Amazon Fund (CTFA) to ensure some level of consistency between the Amazon Fund the Brazil's National Climate Change Policy.



Source: [Amazon Fund project document](#) and [REDD+Brasil](#)

After launching its ENREDD+ and establishing the CONAREDD+, responsible for coordinating and monitoring the implementation of ENREDD+, the Brazilian government started working with donors to fully integrate the Amazon Fund into Brazil's national REDD-plus scheme.

The eligibility of the BNDES/ Amazon Fund to access REDD-plus results-based payments achieved by the country and recognized by the United Nations Framework Convention on Climate Change was recognized in the Federal [Decree n.8576/2015](#) that created the CONAREDD+.

All the results paid for through the Amazon Fund have already been recognized by the CONAREDD+ and inserted both into the Info Hub Brasil and the Lima REDD-plus Information Hub, independently of the methodological differences mentioned above, **but providing the information that were different methods**<sup>19</sup>.

The CONAREDD+ is also working through its Thematic Advisory Body on Safeguards to include all information on safeguards from the Amazon Fund into Brazil's Safeguards Information System for REDD-plus (SISREDD+) and integrate the BNDES processes with the national process to address and respect all the Cancun safeguards.

Lastly, **the MMA, with the assistance from the Working Group of Technical Experts on REDD+, is also working to provide the conditions for the alignment of the Amazon Fund with Brazil's national MRV scheme for REDD-plus.**

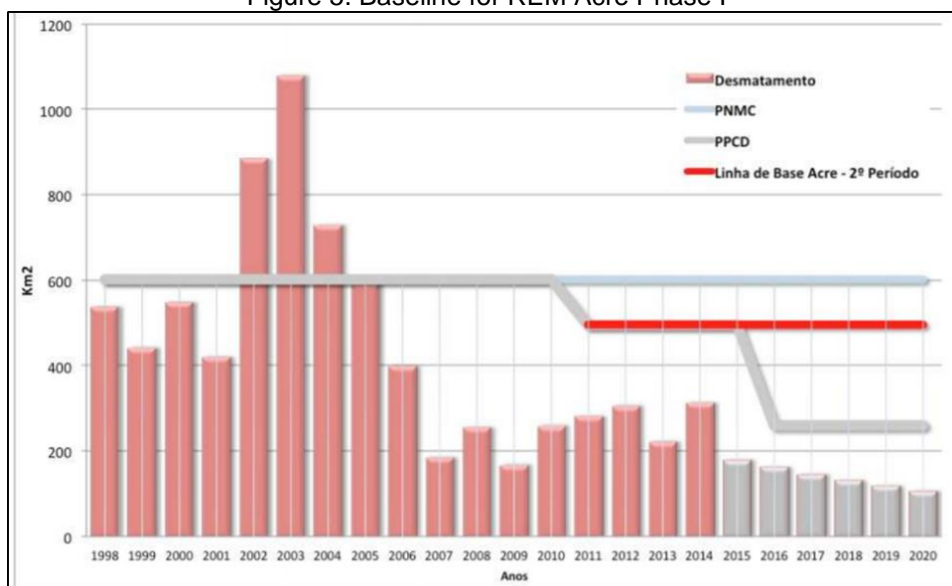
#### **REDD+ for early movers (REM) and Acre (2012)**

In 2012, the State of Acre developed its own methodology to account for reducing emissions from deforestation (see Figure 5). The Acre Carbon Standard - ACS was the tool used to guide the Phase I of the REM Acre Program. The ACS is considered conservative and has a historical baseline. Emission reductions

<sup>19</sup> See the explanatory note provided in Lima REDD+ Info Hub ([https://redd.unfccc.int/files/explanatory\\_note\\_norways\\_payments\\_to\\_brazil-20180301.pdf](https://redd.unfccc.int/files/explanatory_note_norways_payments_to_brazil-20180301.pdf)).

were estimated using an average carbon biomass (123 tCO<sub>2</sub>e / ha) and verified by the SISA Scientific Committee.

Figure 5. Baseline for REM Acre Phase I



Note: Historical base line of 602 km<sup>2</sup> for the first phase (2006 to 2010) in blue and historical baseline of 496 km<sup>2</sup> for the second phase (2011 to 2020) in red.

Source: [Markit](#), 2018.

In 2014, Brazil submitted to the UNFCCC its FREL for the Amazon biome. After establishing the CONAREDD+, responsible for coordinating and monitoring the implementation of the ENREDD+, the federal government started working with Acre and donors to fully integrate the REM into Brazil's national REDD-plus scheme.

The eligibility of the State of Acre to access results-based payments has been approved by the CONAREDD+ through [Resolution n.10 of December 7<sup>th</sup>, 2017](#). The CONAREDD+ allocated 2% of the total REDD-plus results achieved between 2011 and 2015 to the State of Acre for fundraising. The payments made through REM have been discounted from Acre's total limit. The GCF payments will be discounted from the federal government total limit (40% of the total results). Hence, there is no risk of double payment.

The FREL is the basis for accounting for the REM Acre Phase II Program. Similarly, the REM Acre Phase II Program will also be supported by the next REDD + safeguards summaries sent to the UNFCCC, in accordance with the Warsaw Framework for REDD-plus and other decisions under the UNFCCC, which will successively integrate the sub-national information generated by SISA with the support of the Program REM Acre Phase II.

## B.2. REDD-plus Results reporting

Please provide link to the BUR technical annex containing REDD+ results:  
[https://unfccc.int/sites/default/files/resource/BUR2-ING-02032017\\_final.pdf](https://unfccc.int/sites/default/files/resource/BUR2-ING-02032017_final.pdf)

Please provide link to the UNFCCC Technical Analysis Report:  
<https://unfccc.int/resource/docs/2017/tatr/bra.pdf>

### B.2.1. UNFCCC Technical Analysis

(i) Consistency of results with FREL/FRL: *Please provide any additional information that supplements the information contained in the Technical Analysis Report in relation to the consistency of the reported results in the technical annex to the BUR with the FREL/FRL (including the inclusion of same pools, activities and gases).*

**The LULUCF experts noted that Brazil has ensured overall consistency between the FREL and the estimation of results from the implementation of the activity reducing emissions from deforestation in the Amazon biome during the period 2011–2015.** This includes:

- (a) Using consistent methodologies and data to generate activity data on gross deforestation of primary forests, in particular the same forest monitoring system (the PRODES), which detects deforestation as areas with a clear-cut pattern; using the same approach (adjusted deforestation increments) to assess the deforestation area for each year; using the same minimum mapping unit (6.25 ha); and using a spatially explicit identification system for identifying deforestation;
- (b) Using consistent methodologies and data to generate emission factors, the same carbon map and the same stratification of primary forest of the Brazilian Amazon biome into 22 different forest types with different carbon stocks depending on forest type and location;
- (c) Including the same three carbon pools: above-ground biomass, below-ground biomass and litter;
- (d) Including the same gases: CO<sub>2</sub> only;
- (e) Covering the same area of primary forests: the Brazilian Amazon biome of approximately 4,197,000 km<sup>2</sup>;
- (f) Using the assumption that all carbon from the three carbon pools is lost in the year of the deforestation event and not including any subsequent removals of CO<sub>2</sub> in the area;
- (g) Using a forest definition that is fully consistent with the forest definition used for the construction of the FREL.

In view of the above, the LULUCF experts concluded that the presentation of the results from the implementation of the activity reducing emissions from deforestation is consistent with the assessed FREL for the Amazon biome.

**The LULUCF experts commended Brazil for ensuring full consistency of the data and methodologies described in the FREL for the years 1996–2010 and in the technical annex with the results from the implementation of the activity reducing emissions from deforestation for the years 2011– 2015.**

(ii) Transparency of the data: *Please provide any additional information that supplements the information contained in the Technical Analysis Report in relation to the transparency of the data and information provided in the technical annex (i.e. whether information has been provided to provide an understanding of how UNFCCC guidance on results reporting has been addressed). Include information on significant issues raised in the Technical Analysis Report and whether these were raised and resolved. If applicable, provide a plan on how to address and overcome issues raised in the Technical Analysis Report, that were not material to the transparency of the data on results and that could not be resolved due to time and data restrictions.*

The TAR states that the data and information provided in Brazil's REDD+ Technical Annex to the 2<sup>nd</sup> BUR, containing results achieved reducing emissions from deforestation in the Amazon biome between 2011 and 2015, are transparent, consistent, complete and accurate to the extent possible.

**The LULUCF experts commended Brazil for its efforts to increase the transparency of the data and information provided.**

Brazil created a [guide](#) on its website ([www.redd.mma.gov.br](http://www.redd.mma.gov.br)) to facilitate stakeholders' free access to the information and data used by REDD-plus technical submissions to the UNFCCC for the Amazon biome. The steps included in this guide for accessing information and data used for all REDD+ technical submission for the Amazon biome are detailed below.

#### **Step 1. Submissions for download**

[Brazil's 1<sup>st</sup> submission of a forest reference emission level for deforestation in the Amazonia biome \(FREL A and B\)](#)

[1<sup>st</sup> Technical Annex pursuant to decision 14/CP.19 \(1<sup>st</sup> Biennial Update Report of Brazil - submitted in December 2015\)](#)

[2<sup>nd</sup> Technical Annex pursuant to decision 14/CP.19 \(2<sup>nd</sup> Biennial Update Report of Brazil - submitted in February 2017\)](#)

Brazil's submission of a forest reference emission level for deforestation in the Amazonia biome for results achieved between 2016 and 2020 (FREL C – submitted in January 2018)

### **Step 2. Access to the data and information repository**

The link <http://geoweb.funcate.org.br/frelamazonia> presents the data used in the calculation of emissions from gross deforestation year by year, components of the forest reference emission level. Use the following log in detail to access:

**Username:** frelamazonia

**Password:** fr3lr34d0nly

### **Step 3. Folders included**

[Click here for more details on data and information](#)

#### **Deforestation polygons**

This folder presents items 1 to 7 of those listed under Section 6 of the REDD+ Technical Annex to the 2<sup>nd</sup> BUR "Necessary information that allows for the reconstruction of the results".

#### **Deforestation under cloud cover**

This folder presents information and data regarding deforestation under cloud cover and the calculation of the adjusted deforestation increment (WORKSHEET-PLANILHA-CALCULO.xlsx). The information presented also allows the calculation of the adjusted deforestation increment for years 2011, 2012, 2013, 2014 and 2015. The content of this folder covers the items 7 and 9 of Section 6 of the REDD+ Technical Annex "Necessary information that allows for the reconstruction of the results".

#### **Other relevant information and data**

This folder contains other relevant information, related to the process of developing the FRELs for the Amazon biome and the 1<sup>st</sup> and 2<sup>nd</sup> Technical Annexes, as well as **a simple guide to the calculation of the adjusted deforestation increment**.

### **Step 4. Complementary information on deforestation monitoring and the processing of images**

#### **TerraAmazon**

A GIS tool developed by the National Institute for Space Research (INPE) to handle vectoral data using multi-temporal satellite images. It is the software used in the processing of images required for the calculation of the FREL.

[Access TerraAmazon](#)

#### **Deforestation Monitoring System**

[Access the annual deforestation rates according to PRODES](#)

**Caveat:** Only data referring exclusively to the Brazilian Amazon biome have been used to calculate the reference level submitted by Brazil. The limits of the biome and of the Legal Amazon region differ substantially. The Legal Amazon region covers three different biomes: the whole of the Brazilian Amazon biome, 37% of the Cerrado biome and 40% of the Pantanal.

#### **CBERS images**

The deforestation data for the Amazon, produced by PRODES, is based on information obtained from images by China-Brazil Earth Resources Satellite (CBERS) satellites.

[Access the CBERS image bank](#)

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Beyond the transparency of information and data used in the construction of the FREL and of the REDD+ technical Annex to the BUR, the LULUCF experts also noted that Brazil provided a description of the forest monitoring system and a summary of the institutional roles in and responsibility for the measurement, reporting and verification of the results in the technical annex, together with weblinks for accessing further information. **The LULUCF experts found that the roles and responsibilities of the agencies and institutions involved were transparently reported.**

The LULUCF experts noted that the estimation of results from the implementation of the activity reducing emissions from deforestation of primary forests in the Amazon biome has been undertaken using well-established sources of data and a transparent and consistent methodological approach, as with the assessed FREL for 1996–2010.

Brazil has a consistent, reliable, credible, accurate, transparent and verifiable historical time series for annual gross deforestation in the Legal Amazon (and, consequently, for the Amazon biome). PRODES is part of a larger program (Amazon Program) developed at the INPE/ MCTIC to monitor gross deforestation in areas of primary (natural) forest in the Legal Amazon through use of satellite imagery. Since 2003, INPE began to publish the annual rate of deforestation [online](#), together with all the satellite imagery used and the maps with the observed deforestation polygons, ensuring complete transparency of the deforestation estimates and access by the general public.

Approximately 215 Landsat 5/7/8 scenes (or similar data, as for instance, from CBERS/CCD, ResourceSat/LISS3 and DMC) are annually available and each scene is accompanied by the respective mapping of the observed deforestation in that year and previous one.

INPE continuously improves its tools to better manage large-scale projects such as PRODES. Its latest development, the TerraAmazon, is a system that manages the entire workflow of PRODES, annually storing approximately 600 images (e.g., Landsat, CBERS, DMC, ResourceSat). It performs geo-referencing, pre-processing and enhancement of images for subsequent analysis in a multi-task, multi-processing environment. The database stores and manages approximately 4 million polygons.

PRODES, which for decades has generated reliable deforestation data for the Amazon, is key in the context of expanding land cover monitoring to the other Brazilian biomes. The Project, open coded and evaluated by national and international experts, ensures the quality of the data used by Brazil on its REDD-plus submissions.

**The LULUCF experts commended Brazil for its significant long-term efforts to build up a robust NFMS that can provide data for transparent estimation of emissions from deforestation.**

(iii) Completeness of the data: *Please provide any additional information that supplements the information contained in the Technical Analysis Report in relation to the completeness of the data and information provided in the technical annex (i.e. whether information has been provided that allows for the reconstruction of the results). Include information on significant issues raised in the Technical Analysis Report and whether these were raised and resolved. If applicable, provide a plan on how to address and overcome issues raised in the Technical Analysis Report, that were not material to the completeness of the data on results and that could not be resolved due to time and data restrictions.*

For REDD-plus purposes, complete information means the provision of data that allows for the reconstruction of the FREL and the REDD-plus results.

The [links to the database and the information that allows for the reconstruction of the results](#) are listed in Section b.1 of the FREL for the Amazon biome and have been detailed in previous sections of this proposal.

A list with the 9 elements that allow for the reconstruction of Brazil's REDD+ results for years 2014 and 2015 is presented in the REDD+ Technical Annex (see below) and made available at [Info Hub Brasil](#):

1. Satellite imagery used in the identification of deforestation polygons in the Amazon biome, from 1996 to 2015. The images (approximately 220 per year) are made publicly available by INPE.

2. Accumulated deforestation polygons until 1997 (inclusive) presented in a map hereinafter referred to as the digital base map (for more details, see Part I of Annex I of the FREL).
3. Accumulated deforestation polygons for years 1998, 1999 and 2000 are presented in the digital base map.
4. Annual deforestation polygons (annual maps) for the period from 2000 to 2005.
5. Annual deforestation polygons (annual maps) for the period 2006-2010.
6. Annual deforestation polygons for the period 2011 a 2015.
7. Information regarding deforestation under cloud cover and calculation of the adjusted deforestation increment.
8. Map with the carbon stocks for the different types of forest in the Amazon biome (Carbon Map), consistent with that used in the Second National GHG Inventory, the most recent at the time of the FREL was constructed.

IMPORTANT NOTE 1: All the maps listed under (2), (3) and (4) above are available in shapefile format (.shp), ready to be incorporated in a Geographical Information System for analysis. All the satellite images cited in (1) above are available in full resolution in format GeoTIFF at INPE's site. Any specific deforestation polygon can be verified using the corresponding satellite image.

IMPORTANT NOTE 2: The maps cited in (2), (3) and (4) above are a subset of the maps produced by INPE for PRODES (for more information access <http://www.obt.inpe.br/prodes/index.php>, Portuguese only) and refer only to the Amazon biome, object of this submission. The information in (2) and (3) above is available as a single file.

9. Information that allows the calculation of the adjusted deforestation increment for years 2011, 2012, 2013, 2014 and 2015.

The LULUCF experts noted that, as part of the TA process, Brazil provided additional information, on:

- (1) adjusted increments of deforestation related to cloud-covered areas;
- (2) territorial forest area covered;
- (3) plans for continued improvements and potential future FREL submissions;
- (4) how to reconstruct the results for 2011–2015;**
- (5) possible displacement of emissions; and
- (6) uncertainty assessment.

The LULUCF experts commend Brazil for its efforts to increase the transparency of the data and information provided and **ensure the completeness of the data and information provided, allowing for the reconstruction of the results.**

The LULUCF experts consider that the data and information provided in the technical annex are transparent, consistent, complete and accurate to the extent possible.

*(iv) Consistency of the data: Please provide any additional information that supplements the information contained in the Technical Analysis Report in relation to the consistency of the data and information provided in the technical annex (i.e. data and methodologies were applied consistently over the results time series). Include information on significant issues raised in the Technical Analysis Report and whether these were raised and resolved. If applicable, provide a plan on how to address and overcome issues raised in the Technical Analysis Report, that were not material to the consistency of the data on results and that could not be resolved due to time and data restrictions.*

**The LULUCF experts found that the data and information provided in the technical annex are consistent with the guidelines referred to in paragraph 11 of decision 14/CP.19.**

Brazil provided data and information on all the elements according to the guidelines contained in the annex to decision 14/CP.19, namely: summary information from the final report containing the assessed FREL; results in tCO<sub>2</sub> per year, consistent with the assessed FREL; a demonstration that the methodologies used to produce the results are consistent with those used to establish the assessed FREL; a description of forest monitoring systems and the institutional roles in and responsibilities for measuring, reporting and verifying the results; necessary information that allows for the reconstruction of the results; and a description of how the elements contained in decision 4/CP.15, paragraph 1(c) and (d), have been taken into account.

In the TAR for the REDD-plus Technical Annex, the **LULUCF experts noted that the estimated results from the implementation of the activity reducing emissions from deforestation for the period 2011–2015 were consistent in terms of sources for the activity data and emission factors with the GHG inventory included in Brazil's SNC to the UNFCCC.** Additionally, the LULUCF experts noted that Brazil provided additional data for the years 1996–2010 on adjusted increments of deforestation to avoid overestimating or underestimating emissions due to the non-observation of potential deforestation polygons in areas covered by cloud.

In the technical annex, Brazil provided information on how the annual increments of deforestation in the period 2011–2015 were adjusted, **consistent with the method adopted in the construction of the FREL.** Table 11 provides details about these small differences after the adjustment was applied.

Table 11. Difference between the emissions calculated from the observed increments of deforestation (emission) and from the adjusted increments of deforestation (adjusted emission) for the periods 1996-2010 and 1996-2015



|                          | FREL (B) - MEAN 1996 - 2010  |                                       | FREL (C) - MEAN 1996 - 2015  |                                       |                          |
|--------------------------|------------------------------|---------------------------------------|------------------------------|---------------------------------------|--------------------------|
|                          | EMISSION (tCO <sub>2</sub> ) | ADJUSTED EMISSION (tCO <sub>2</sub> ) | EMISSION (tCO <sub>2</sub> ) | ADJUSTED EMISSION (tCO <sub>2</sub> ) |                          |
| 1996                     | 979,523,413.88               | 979,523,618.48                        | 1996                         | 979,523,413.88                        | 979,523,618.48           |
| 1997                     | 979,523,413.88               | 979,523,618.48                        | 1997                         | 979,523,413.88                        | 979,523,618.48           |
| 1998                     | 979,523,413.88               | 979,523,618.48                        | 1998                         | 979,523,413.88                        | 979,523,618.48           |
| 1999                     | 979,523,413.88               | 979,523,618.48                        | 1999                         | 979,523,413.88                        | 979,523,618.48           |
| 2000                     | 979,523,413.88               | 979,523,849.37                        | 2000                         | 979,523,413.88                        | 979,523,849.37           |
| 2001                     | 908,964,139.89               | 908,964,575.38                        | 2001                         | 908,964,139.89                        | 908,964,575.38           |
| 2002                     | 1,334,457,456.93             | 1,334,458,298.72                      | 2002                         | 1,334,457,456.93                      | 1,334,458,298.72         |
| 2003                     | 1,375,223,214.70             | 1,375,224,078.19                      | 2003                         | 1,375,223,214.70                      | 1,375,224,078.19         |
| 2004                     | 1,380,140,945.68             | 1,380,142,199.34                      | 2004                         | 1,380,140,945.68                      | 1,380,142,199.34         |
| 2005                     | 1,163,873,339.68             | 1,163,879,134.73                      | 2005                         | 1,163,873,339.68                      | 1,163,879,134.73         |
| 2006                     | 576,097,126.38               | 576,136,731.11                        | 2006                         | 576,097,126.38                        | 576,136,731.11           |
| 2007                     | 608,266,397.26               | 609,101,478.18                        | 2007                         | 608,266,397.26                        | 609,101,478.18           |
| 2008                     | 666,005,315.39               | 669,215,058.08                        | 2008                         | 666,005,315.39                        | 669,215,058.08           |
| 2009                     | 364,340,477.19               | 373,066,456.69                        | 2009                         | 364,340,477.19                        | 373,066,456.69           |
| 2010                     | 344,406,512.43               | 362,507,086.87                        | 2010                         | 344,406,512.43                        | 362,507,086.87           |
| <b>TOTAL 1996 - 2010</b> | <b>13,619,391,994.9</b>      | <b>13,650,313,420.55</b>              | 2011                         | 285,353,855.18                        | 285,353,855.18           |
| <b>MEAN</b>              | <b>907,959,466.33</b>        | <b>910,020,894.70</b>                 | 2012                         | 236,684,154.44                        | 236,684,154.44           |
| <b>DIFFERENCE</b>        |                              | <b>2,061,428.37</b>                   | 2013                         | 301,847,850.91                        | 301,847,850.91           |
| <b>% DIFFERENCE</b>      |                              | <b>0.227039692</b>                    | 2014                         | 273,591,600.59                        | 273,591,600.59           |
|                          |                              |                                       | 2015                         | 287,664,204.33                        | 287,664,204.33           |
|                          |                              |                                       | <b>TOTAL 1996-2015</b>       | <b>15,004,533,660.3</b>               | <b>15,035,455,086.00</b> |
|                          |                              |                                       | <b>MEAN</b>                  | <b>750,226,683.02</b>                 | <b>751,772,754.30</b>    |
|                          |                              |                                       | <b>DIFFERENCE</b>            |                                       | <b>1,546,071.28</b>      |
|                          |                              |                                       | <b>% DIFFERENCE</b>          |                                       | <b>0.206080551</b>       |

Source: REDD+ Technical Annex to Brazil's 2<sup>nd</sup> BUR, 2014

(v) Accuracy of the data: *Please provide any additional information that supplements the information contained in the Technical Analysis Report in relation to the accuracy of the data and information provided in the technical annex (i.e. whether it neither over- nor under-estimates emissions and/or removals). Include information on significant issues raised in the Technical Analysis Report and whether these were raised and resolved. If applicable, provide a plan on how to address and overcome issues raised in the Technical Analysis Report, that were not material to the accuracy of the data on results and that could not be resolved due to time and data restrictions.*

**The TATR of Brazil's REDD+ Technical Annex for results achieved in 2014 and 2015 concluded that these results are accurate to the extent possible, based on the activity data, emission factors, methodologies and assumptions used, which are consistent with the assessed FREL for the Amazon biome.**

The LULUCF experts noted that Brazil uses a wall-to-wall approach for accurately tracking gross deforestation of primary forests over time. This ensures that only gross deforestation of primary forests is included in the estimates.

The increments of deforestation were adjusted to avoid the overestimation or underestimation of emissions from deforestation due to the non-observation of potential deforestation polygons in areas covered by cloud, enhancing the accuracy of the data.

Brazil explained that it is possible that the results for 2011–2015 will need some adjustment due to cloud-covered areas being detected in images after 2016. **The risk of such adjustments is nevertheless minimal because it now uses new technology with more images and with a longer observation window.** The LULUCF experts commended Brazil for the clarification provided and encourage Brazil to

provide such clarification on adjustment of estimates for cloud-covered areas in future FREL and results submissions.

The LULUCF experts noted that **Brazil has continued to develop its NFMS and made remarkable progress in the areas identified in the FREL assessment for future improvement**, including the development of new carbon maps, data on deadwood and non-CO2 gases and ongoing work on forest degradation.

The LULUCF experts commended Brazil on the progress reported in these areas identified for technical improvement. They encourage Brazil to use these improvements for its future FREL and results submissions to enhance transparency and improve the accuracy of the estimates.

More information on accuracy of data and information used on the REDD+ estimates for the Amazon biome can be found in Section B.1.1 (vii) of this funding proposal.

**Area for future improvement:** The LULUCF experts note that Brazil could consider the continuation of the ongoing efforts in developing the NFMS to improve estimates of forest degradation to improve the accuracy of the results as an area for future technical improvement.

**Brazil's response:** Brazil continues its efforts to progress discussions on the best tools to generate estimates of forest degradation that are as accurate as possible. The major challenge of monitoring and addressing forest degradation adequately (in relation to the anthropogenic contribution to the associated emissions) lies in the ability to accurately assess the changes of carbon stock in the areas affected by degradation, particularly aboveground biomass. Degradation may have different intensities, from very low (where few trees are removed) to very high (where, most likely, the land will be deforested at some point in time). As mentioned in the previous sections of this proposal, forest degradation is an area in which the Working Group of Technical Experts on REDD+ has worked intensively over the past few years and which will be included in Brazil's national FREL submission to the UNFCCC in the future.

**The LULUCF experts concluded that the data and information provided in the technical annex are accurate to the extent possible.**

(vi) Indicate the number of years that took place between the last year of the FREL/FRL period, and the year corresponding to the results being proposed for payments:

The last year of the FREL for the Amazon biome is 2010, and the years corresponding to REDD-plus results submitted to the GCF for payments are 2014 and 2015, respectively, 4 and 5 years from the last year of the FREL.

#### B.2.2. Additional criteria related to the achieved results

(vii) **Uncertainties:** *Explain whether the country has provided information on aggregate uncertainties of the results, taking into account national capabilities and circumstances. Include the percentage of aggregate uncertainties and provide information on assumptions and sources. If applicable, indicate the process implemented to minimize systematic and random errors.*

As part of the TA process, Brazil provided additional information related to uncertainty estimation considering decision 4/CP.15, paragraph 1(d).

Brazil clarified that the uncertainty analysis for its REDD-plus submissions related to the Amazon biome is undertaken during the mapping phase and for the biomass values. The deforestation data on the Amazon biome were subject to strict quality control by researchers from the INPE/ MCTIC to reduce uncertainties.

Uncertainties associated with the biomass values are usually related to the absence of studies for some phyto-physiognomies (entailing the use of values from other biomes and phyto-physiognomies with similar structure and composition) and to limitations in the spatial representativeness of the secondary data obtained from the scientific literature.

**The LULUCF experts concluded that the REDD-plus results presented by Brazil on its 2<sup>nd</sup> BUR (including years 2014 and 2015) are accurate to the extent possible.**

**Area for future improvement:** The LULUCF experts commended Brazil for sharing this information on ongoing work relating to uncertainty assessment and encouraged Brazil to continue its efforts to provide uncertainty estimates as encouraged in decision 17/CP.8, annex, paragraph 24.

**Brazil's response:** Work is underway to assess and reduce uncertainties and this process will contribute to the improvement of the data in future submissions. New and important information from secondary literature was added in Brazil's most recent FREL submission to the UNFCCC in "section b.4. Accurate information". A summary of this information and the plan to address and overcome issues raised regarding activity data were presented in the above sections of this proposal. Another important ongoing work that will contribute to reduce uncertainties associated with REDD-plus estimates is Brazil's first NFI. The forest inventory will provide important information on biomass values for all Brazilian biomes and will also result in reduce the uncertainties associated with the use of secondary data for REDD-plus technical submissions to the UNFCCC.

(viii) Preventing double payments:

- *Provide information on payments that have been, or are expected to be received from other sources of funding for results recognized by the country for the same area for the same period, for which the country is applying for payments from the GCF.*
- *Include relevant information regarding the payments paid or expected to be paid, including the year(s), results volume in tCO<sub>2</sub>e, quantities for which payments were received/are expected to be received, and entity/entities paying for the results as well as any type of agreement involved.*
- *Provide sufficient assurances that the results that have been paid, or are expected to be paid for by other sources (or are under any type of analogous agreement) been excluded from the volume offered to the GCF.*
- *Provide a description of measures to ensure that the results paid by the GCF will not be transferred, offered for future payment or otherwise used (for example for offsets) and information on how the results proposed for payment by the GCF will be treated or used.*
- *Provide information on how different financing contributed to the achieved results.*

**Avoidance of double payments for the same REDD-plus results**

Tables 12 and 13 provide detailed **information on payments** received by Brazil for results achieved reducing emissions from deforestation in the Amazon biome in 2014 and 2015. This information is available on [Info Hub Brasil](#), an online tool developed for the *REDD+ Brasil* website to ensure full transparency of the information and prevent double counting of results and double payments for the same results. This tool is currently going through a revision to improve its security and accessibility.

Table 12 shows that only 4% and 4.5% of the total REDD-plus results achieved reducing emissions from deforestation in the Amazon biome in years 2014 and 2015 respectively have been paid for. About 95% of the total results achieved in these two years are still available for payments, a total of 1.2 billion tCO<sub>2</sub>e.

The total amount of REDD-plus results that Brazil will offer to the GCF corresponds to only 2% of the total results achieved reducing emissions from deforestation in the Amazon biome in years 2014 and 2015.

These payments will be discounted from the 40% of total results allocated to the Federal Government by the CONAREDD+ Resolution n.6, of July 6<sup>th</sup>, 2017 (more details below) for fundraising.

The large amount of total REDD+ results achieved by Brazil assures that **there is no risk of double payments. Even after receiving payments from the GCF, Brazil would still have more than 90% of its total REDD+ results from 2014 and 2015 available for other payments.**

Table 12. REDD-plus results and results-based payments received for years 2014 and 2015<sup>20</sup>

| Year of results          | REDD+ results (tCO <sub>2</sub> e) | Total REDD+ results paid for (tCO <sub>2</sub> e) | % of total REDD+ results that have already received payments | REDD+ results not paid for (tCO <sub>2</sub> e) | REDD+ results offered to the GCF (tCO <sub>2</sub> e) = 2% of total REDD+ results |
|--------------------------|------------------------------------|---|--|---|---|
| 2014                     | 634,367,865.74                     | 25,464,000.00                                     | 4.01   | 608,903,865.74                                  | 12,687,357.31   |
| 2015                     | 620,295,262.00                     | 28,194,763.27                                     | 4.55   | 592,100,498.73                                  | 12,405,905.24   |
| <b>Total (2014-2015)</b> | 1,254,663,127.74                   | 53,658,763.27                                     |  | 1,201,004,364.47                                | 25,093,262.55   |

Source: [Info Hub Brasil](#), last accessed on July 18<sup>th</sup>, 2017.

**The payments received by Brazil, were part of bilateral agreements (Amazon Fund and REM) signed with donors using methods to estimate the REDD+ results that are different from Brazil's FREL for REDD+ under the UNFCCC. This was done before the Warsaw Framework for REDD-plus was agreed upon under the UNFCCC. The details about these methods are presented in section B.1.2 (xvi) of this proposal. To simplify the recognition of these payments, independently from the method used, all tonnes of CO<sub>2</sub>e that have been paid for, have been included in the Info Hub Brasil, as 1 per 1, and discounted from the total amount available for new payments.**

The payments made to the Amazon Fund were discounted from the 40% limit assigned to the Federal Government for fundraising by CONAREDD+ Resolution n. 6/2017. The payments made to Acre as part of the REM program were discounted from the 2% limit assigned to this state by the same CONAREDD+ Resolution. Moving forward, technical adjustments are being made, in coordination with donors, to fully integrate these important bilateral REDD+ initiatives into Brazil's national REDD+ framework.

The new phase for REDD-plus results-based payments through the Amazon Fund (2016 to 2020) does not include new payments for years 2014 and 2015. Donors to the Amazon Fund only pay for the results achieved in the year before the payment, before the completion of the REDD+ MRV process under the UNFCCC.

In the case of the REM Program with the State of Acre, one more payment is scheduled for the results achieved in 2015 and the retirement of emission reductions from 2014 and 2015. This will be discounted from the 2% that were allocated to Acre by the CONAREDD+ Resolution n.6/ 2017, which is not part of this proposal.

For more details on REDD+ results-based payments and the bilateral agreements signed so far, see Table 13.

Table 13. Detailed information about REDD-plus results-based payments received by Brazil by 2018

<sup>20</sup> This funding proposal encompasses REDD+ results achieved in years 2014 and 2015 by Brazil in the Amazon biome which have already been fully MRVed under the UNFCCC. The information on payments presented here is limited to the years included in this funding proposal. For more information on different years, see Info Hub Brazil.

| Year | REDD+ results (tCO <sub>2</sub> e) | Total REDD+ results paid for (tCO <sub>2</sub> e) | Entities that paid for REDD+ results achieved by Brazil                | REDD+ results paid per entity (tCO <sub>2</sub> e) | Donations (USD)/ Diplomas <sup>21</sup>   | Entities that received REDD+ results-based payments/ Details of the agreements  |
|------|------------------------------------|---|--|--|---|---|
| 2014 | 634,367,865.74                     | 25,464,000.00                                     | Government of Norway   | 24,000,000.00 <sup>22</sup>                        | 120,000,000.00<br><a href="http://www.fund.oamazonia.gov.br/export/sites/default/pt/galerias/documentos/diplomas/Noruega_11Doacao_Diploma_2015.pdf">http://www.fund.oamazonia.gov.br/export/sites/default/pt/galerias/documentos/diplomas/Noruega_11Doacao_Diploma_2015.pdf</a> | Amazon Fund<br><a href="http://www.fund.oamazonia.gov.br/en/amazon-fund/">http://www.fund.oamazonia.gov.br/en/amazon-fund/</a><br><a href="http://www.fund.oamazonia.gov.br/en/donations/">http://www.fund.oamazonia.gov.br/en/donations/</a>   |
|      |                                    |   | Federal Republic of Germany/ KfW/REDD Early Movers Program – Phase One | 1,464,000.00 <sup>23</sup>                         | 3,663,000.00  | Acre Environment State Secretary<br><a href="https://www.kfw-entwicklungsbank.de/PDF/Entwicklungsfinanzierung/Themen-NEU/REDD-Early-Movers-Acre-Fact-Sheet.pdf">https://www.kfw-entwicklungsbank.de/PDF/Entwicklungsfinanzierung/Themen-NEU/REDD-Early-Movers-Acre-Fact-Sheet.pdf</a> |
| 2015 | 620,295,262.00                     | 28,194,763.27                                     | Government of Norway   | 19,590,670.23                                      | 97,953,351.16<br><a href="http://www.fund.oamazonia.gov.br/export/sites/default/pt/galerias/documentos/diplomas/Noruega_12Doacao_Diploma_2016.pdf">http://www.fund.oamazonia.gov.br/export/sites/default/pt/galerias/documentos/diplomas/Noruega_12Doacao_Diploma_2016.pdf</a>  | Amazon Fund<br><a href="http://www.fund.oamazonia.gov.br/en/amazon-fund/">http://www.fund.oamazonia.gov.br/en/amazon-fund/</a><br><a href="http://www.fund.oamazonia.gov.br/en/donations/">http://www.fund.oamazonia.gov.br/en/donations/</a>   |
|      |                                    |   | Federal Republic of Germany/ KfW                                       | 7,964,093.04                                       | 39,820,465.20   | Amazon Fund<br><a href="http://www.fund.oamazonia.gov.br/en/amazon-fund/">http://www.fund.oamazonia.gov.br/en/amazon-fund/</a><br><a href="http://www.fund.oamazonia.gov.br/en/donations/">http://www.fund.oamazonia.gov.br/en/donations/</a>   |

<sup>21</sup> BNDES issues diplomas recognizing the contribution of the donors to the Fund. All diplomas and details about the agreements with donors can be found in the Amazon Fund website and REDD+ Brasil website through the Info Hub Brasil.

<sup>22</sup> The payments received by the Amazon Fund was based on the Amazon Fund methodology. For more details see the [explanatory note](#).

<sup>23</sup> As per REM agreement with the State of Acre, half of this total results have been effectively paid for and half have been retired as a management risk, so, for accounting purposes, the total amount of emission reductions is considered paid for and no longer available for new payments. For more information, see [Detailed information on payments, risk management, etc.](#)

|                          |                  |               |  |                          |                |  |
|--------------------------|------------------|---------------|--|--------------------------|----------------|--|
|                          |                  |               | Federal Republic of Germany/ KfW/REDD Early Movers Program – Phase One | 640,000.00 <sup>24</sup> | 1,590,000.00   | Acre Environment State Secretary<br><a href="https://www.kfw-entwicklungsba nk.de/PDF/Ent wicklungsfina nzierung/Themen- NEU/REDD- Early-Movers- Acre-Fact- Sheet.pdf">https://www.kfw- entwicklungsba nk.de/PDF/Ent wicklungsfina nzierung/Themen- NEU/REDD- Early-Movers- Acre-Fact- Sheet.pdf</a> |
| <b>Total (2014-2015)</b> | 1,254,663,127.74 | 53,658,763.27 |  | 53,658,763.27            | 143,026,816.36 |  |

Source: [Info Hub Brasil](#), 2018

**Measures to ensure that the results paid by the GCF will not be transferred, offered for future payment or otherwise used (for example for offsets) and information on how the results proposed for payment by the GCF will be treated or used**

The CONAREDD+ is responsible for authorizing eligible entities to access REDD-plus results-based payments achieved by Brazil and recognized by the UNFCCC. So far, only the States of Acre and Mato Grosso and the MMA have received approval from the CONAREDD+ to access resources from results-based payments for REDD-plus ([Resolution n.10 of December 7<sup>th</sup>, 2017](#)). The Brazilian development Bank (BNDES)/ Amazon Fund, by its turn, had its eligibility assured by Article 5 of the Federal Decree that created the CONAREDD+ ([Federal Decree, n. 8576/2015](#)). The Amazon Fund was already authorized to receive results-based payments donations by [Federal Decree n. 6527/2008](#).

This means that according to national legislation on REDD+, only four entities may receive REDD-plus results-based payments in Brazil: the State of Acre, the State of Mato Grosso, the MMA and the Amazon Fund. The results paid for are registered in Brazil's national repository for REDD+, [Info Hub Brasil](#) and no longer available for payments. The Secretariat of the UNFCCC is also informed of these payments which are also registered into the [Lima REDD-plus Information Hub](#).

Since there is no transfer of results/ emission reductions to the entities that paid for it, there is no need to track these results through serial numbers. The results that have been paid for, are simply discounted from the total amount of results achieved in a given year. The deduction will be done from the limit allocated to the entity that received such payment. This information per entity and per donor is presented in the Info Hub Brasil, together with the details of each agreement, and summarized here in this proposal.

The [Amazon Fund](#) compiles in a transparent and complete manner all the information about the [donations](#) received since 2009. BNDES issues diplomas recognizing the contribution of the donors to the Fund. The diplomas issued are nominal, nontransferable, nonnegotiable, and they shall grant no ownership rights or any kind of credit. All diplomas and details about the agreements with donors can be found in the Info Hub Brasil and in the Amazon Fund website.

In the near future, all diplomas recognizing payments received for REDD-plus results achieved by Brazil will be issued by the Executive Secretariat of the CONAREDD+. Article 4 of Federal Decree 85776/ 2015 establishes that the MMA, as the Executive Secretariat of the CONAREDD+, will (V) issue diplomas recognizing REDD+ results-based payments achieved by Brazil. Article 6 of this Federal Decree establishes that **REDD+ results-based payments and their respective diplomas may not be used, directly or indirectly, to fulfil mitigation commitments of other countries to the UNFCCC**. Article 7 also states that

<sup>24</sup> As per REM agreement with the State of Acre, half of this total results have been effectively paid for and half have been retired as a management risk, so, for accounting purposes, the total amount of emission reductions is considered paid for and no longer available for new payments. For more information, see [Detailed information on payments, risk management, etc.](#)

the diploma referred to in item V of the caput of art. 4<sup>o</sup> **will be nominal and non-transferable, will not generate rights or credits of any nature**, will contain the amount equivalent to the payment by result and can be consulted on the MMA website.

Furthermore, Brazil emphasized in its [Nationally Determined Contribution \(NDC\)](#) to the UNFCCC and its Paris Agreement that “*any transfer of units resulting from mitigation outcomes achieved in the Brazilian territory will be subject to prior and formal consent by the Federal Government. **Brazil will not recognize the use by other Parties of any units resulting from mitigation outcomes achieved in the Brazilian territory that have been acquired through any mechanism, instrument or arrangement established outside the Convention, its Kyoto Protocol or its Paris agreement.***”

The CONAREDD+ has approved a few [Resolutions](#) that reinforce this understanding (Figure 6).

Figure 6. The CONAREDD+ resolutions

|   |   |  |   |
|---|---|--|---|
| <p><b>Resolution #1</b></p> <ul style="list-style-type: none"> <li>Establishes the creation of Thematic Advisory Boards (CCTs)</li> </ul>                                       | <p><b>Resolution #2</b></p> <ul style="list-style-type: none"> <li>Creates the Thematic Advisory Board on Safeguards</li> </ul>   | <p><b>Resolution #3</b></p> <ul style="list-style-type: none"> <li>Creates the Thematic Advisory Board on the Federative Relations</li> </ul>                                    | <p><b>Resolution #4</b></p> <ul style="list-style-type: none"> <li>Creates the Thematic Advisory Board on Fundraising and Distribution of Non-Reimbursable Resources</li> </ul> |
| <p><b>Resolution #5</b></p> <ul style="list-style-type: none"> <li>Establishes general principles to implement REDD+ National Strategy through CONAREDD+ and its CCT</li> </ul> | <p><b>Resolution #6</b></p> <ul style="list-style-type: none"> <li>Establishes the distribution of limits of REDD+ results-based payments fundraising for the Amazon biome</li> </ul>         | <p><b>Resolution #7</b></p> <ul style="list-style-type: none"> <li>Sets eligibility rules for Amazonian states and federal bodies to access results-based payments.</li> </ul>   | <p><b>Resolution #8</b></p> <ul style="list-style-type: none"> <li>Sets guidelines for use of REDD+ results payment resources and monitoring of payment agreements.</li> </ul>  |
| <p><b>Resolution #9</b></p> <ul style="list-style-type: none"> <li>Adopts the interpretation of Cancun safeguards in the Brazilian context</li> </ul>                           | <p><b>Resolution #10</b></p> <ul style="list-style-type: none"> <li>Approves the eligibility for fundraising of the states of Acre and Mato Grosso and the Ministry of Environment</li> </ul> | <p><b>Resolution #11</b></p> <ul style="list-style-type: none"> <li>Renews the mandate of two Thematic Advisory Boards: on Safeguards and on the Federative Relations</li> </ul> | <p><b>Resolution #12</b></p> <ul style="list-style-type: none"> <li>Defines the distribution of limits of RED results-based payments for the year 2016</li> </ul>               |

Source: [Brazil's 2<sup>nd</sup> Sol](#), 2018

Below are key elements from each of these CONAREDD+ Resolutions.

[Resolution n. 5, of December 16<sup>th</sup>, 2017: General principles for the implementation of the National REDD+ Strategy through the CONAREDD+ and its Thematic Advisory Boards](#)

Article 1, V. *The results paid for will be discounted from the fundraising limit allocated to the different eligible entities by the CONAREDD+.*

Article 1, VI. *Results-based payments do not constitute an international transfer for the fulfillment of mitigation commitments of other countries.*

Article 1, VII. *The mitigation benefits achieved through REDD+ activities implemented in Brazil will be reflected in the national accounting of emissions by sources and removals by sinks for demonstrating the fulfillment of Brazil's Nationally Determined Contribution to the Paris Agreement.*

[Resolution n.6, of July 6<sup>th</sup>, 2017: Defines the distribution of fundraising limits for REDD+ results achieved in the Amazon biome](#)

Article 2. *The fundraising limits for results achieved reducing emissions from deforestation in the Amazon biome will be distributed between the Federal Government and the States of Acre, Amapá, Amazonas, Maranhão, Mato Grosso, Pará, Rondônia, Roraima e Tocantins.*

Article 3. *The distribution of fundraising limits for results achieved reducing emissions from deforestation in the Amazon biome do not generate ownership or guarantee of income.*

*Article 5, paragraph 2. The Parties mentioned in Article 2 that have interest to raise resources using voluntary or regulated carbon offset schemes shall declare, when filling out the application Annex to this Resolution to apply for eligibility, that they are aware that this fundraising is limited to a modality of finance.*

*Article 5, paragraph 3. The payments for REDD+ results made based on the limits established in this Resolution do not generate, to the Parties mentioned in Article 2, the right to internationally transfer these results, for the fulfillment of international mitigation commitments, and will not affect the national accounting for demonstrating the fulfillment of Brazil's Nationally Determined Contribution to the Paris Agreement.*

*Article 5, paragraph 4. The Parties mentioned in Article 2 shall inform all the Parties involved in REDD+ results-based payments agreements of the term of this Resolution, and other norms established by the CONAREDD+.*

*Article 5, paragraph 5. In case of no compliance with the obligation established in the previous paragraph, the interested Party will be considered ineligible by the CONAREDD+ to access REDD+ results-based payments.*

[Resolution n. 7, of July 6<sup>th</sup>, 2017: Defines the eligibility rules for access to direct fundraising for results-based payments](#)

*Article 4. The Amazon States or federal entities eligible assume full legal responsibility for managing and investing the resources raised through results-based payments, respecting the REDD+ safeguards and providing accounting information.*

*Sole Paragraph. The Amazon States or federal entities eligible shall inform in a transparent manner the roles and attributions of all entities directly involved in fundraising and executing the results-based payments agreements signed by them.*

*According to the Annex of this Resolution, entities applying to receive the approval of the CONAREDD+ and be eligible to access results-based payments need to sign the following: "I declare to be aware that the fundraising for REDD+ results-based payments achieved by Brazil represent exclusively a modality of finance and that I will inform all the Parties involved in the REDD+ results-based agreements about the terms of the Resolution n.6 and other norms established by the CONAREDD+."*

[Resolution n.8 of December 7<sup>th</sup>, 2017: Defines the guidelines for use of resources and monitoring of REDD+ results-based payments.](#)

*Article 6. Results-based payments agreements shall be submitted to the CONAREDD+ after their formalization.*

***Finance that directly and indirectly may have contributed to the achievement of REDD+ results in years 2014 and 2015***

It is impossible to attribute specific REDD+ results achieved in different years to specific sources of finance. A variety of finance sources, both national (federal, state and municipal level public budget, NGOs, private sector) and international (donor countries, multilateral organizations, non-governmental organizations, private sector) have contributed directly and indirectly to the Brazilian government efforts to reduce deforestation in the Amazon biome.

These resources are difficult to track since the sources do not always report this information to the Federal Government. Brazil has been working on accounting methodologies to estimate the total amount of climate finance received for its forestry sector, including REDD+ in the Amazon biome, as part of its national efforts to compile climate finance information for its BURs. Table 14 presents the relevant information extracted from Brazil's 2<sup>nd</sup> BUR.

Table 14. Climate finance received by Brazil for the forestry sector in 2014 and 2015



| FINANCIAL SUPPORT RECEIVED THROUGH BILATERAL CHANNELS IN 2014    |  |   |  |                     |                                |                                |   |                             |
|--|--|---|--|---------------------|--------------------------------|--------------------------------|---|-----------------------------|
| Institution  | Type of support (mitigation, adaptation, cross-cutting, other) | Sector (energy, transport, industry, agriculture, forestry, water and sanitation, cross-cutting, other, not applicable) | Project name                               | Total funding (USD) | Climate-specific component (%) | Climate-specific funding (USD) | Financial instrument (grant/ concessional loan) | Date of commitment/ receipt |
| Germany (KfW)  | Mitigation   | Forestry  | Contribution to the Amazon Fund            | 11,120,181.53       | 100%                           | \$11,120,181.53                | Grant   | Received in January/2014    |
| Germany (KfW)  | Mitigation   | Forestry  | Contribution to the Amazon Fund            | \$5,385,692.98      | 100%                           | \$5,385,692.98                 | Grant   | Received in July/2014       |
| Japan (JBIC)   | Cross-cutting  | Energy  | JBIC Green II                              | \$300,000,000.00    | 100%                           | \$300,000,000.00               | Loan  | Signed in March/2014        |
| Norway   | Mitigation   | Forestry  | Contribution to the Amazon Fund            | \$108,839,740.46    | 100%                           | \$108,839,740.46               | Grant   | Received in December/2014   |
| Norway   | Mitigation   | Forestry  | Contribution to the Amazon Fund            | \$108,839,740.46    | 100%                           | \$108,839,740.46               | Grant   | Received in December/2014   |
| FINANCIAL SUPPORT RECEIVED THROUGH MULTILATERAL CHANNELS IN 2015 |  |   |  |                     |                                |                                |   |                             |
| Institution  | Type of support (mitigation, adaptation, cross-cutting, other) | Sector (energy, transport, industry, agriculture, forestry, water and sanitation, cross-cutting, other, not applicable) | Project name                               |                     | Climate-specific component (%) | Climate-specific funding (USD) | Financial instrument (grant/ concessional loan) | Date of commitment/ receipt |
| CAF  | Adaptation   | Forestry  | Reunión de áreas protegidas de la OTCA     |                     | 100.00%                        | \$20,000.00                    | Grant   | Approved in 2015            |
| FINANCIAL SUPPORT RECEIVED THROUGH BILATERAL CHANNELS IN 2015    |  |   |  |                     |                                |                                |   |                             |
| Institution  | Type of support (mitigation, adaptation, cross-cutting, other) | Sector (energy, transport, industry, agriculture, forestry, water and sanitation, cross-cutting, other, not applicable) | Project name                               |                     | Climate-specific component (%) | Climate-specific funding (USD) | Financial instrument (grant/ concessional loan) | Date of commitment/ receipt |
| Germany (KfW)  | Cross-cutting  | Forestry  | ARPA - Fundo de transição ARPA para a vida |                     | 50%                            | \$17,584,026.50                | Grant   | Signed in August/2015       |
| Germany (KfW)  | Cross-cutting  | Forestry / agriculture  | Projeto CAR                                |                     | 50%                            | \$12,756,516.92                | Grant   | Signed in August/2015       |
| Norway   | Mitigation   | Forestry  | Contribution to the Amazon Fund            |                     | 100%                           | \$14,893,881.10                | Grant   | Received in March/2015      |
| Norway   | Mitigation   | Forestry  | Contribution to the Amazon Fund            |                     | 100%                           | \$120,000,000.00               | Grant   | Received in December/2015   |

Source: [Brazil's 2<sup>nd</sup> BUR](#), 2017, Section 4.2.

Since 2006, Brazil has invested large amounts of its own national budget to reduce deforestation in the Amazon biome. The [PPCDAm](#) is the key policy of the Federal Government for the implementation of REDD+ in the Amazon biome. Table 15 shows the detailed comparison of the various investments made in the prevention and control of deforestation in the Amazon biome between 2009 and 2017 from different sources.

Table 15. Investments in the prevention and control of deforestation in the Amazon biome (in R\$)

| Prevention and Control of Deforestation in the Amazon  |             |             |             |             |               |               |               |             |             |               |
|--|-------------|-------------|-------------|-------------|---------------|---------------|---------------|-------------|-------------|---------------|
| Financial resources received from RBP trough the Amazon Fund (not the year of results paid, but the year when these R\$ was received) vs National budget allocated per year in R\$ |             |             |             |             |               |               |               |             |             |               |
| Sources (R\$/ year)  | 2009        | 2010        | 2011        | 2012        | 2013          | 2014          | 2015**        | 2016**      | 2017**      | Total         |
| NOR (RBP to AF)  | 36,448,350  | 49,600,536  | 0           | 118,253,646 | 1,449,642,401 | 288,991,279   | 501,984,780   | 330,161,565 | 139,272,703 | 2,914,355,262 |
| GER (RBP to AF)  | 0           | 6,644,100   | 0           | 0           | 15,954,600    | 38,098,800    | 0             | 0           | 131,992,896 | 192,690,396   |
| BRA (institutional)**  | 919,833,396 | 975,216,618 | 993,113,908 | 871,746,443 | 884,084,762   | 886,208,555   | 880,679,920   | 883,657,746 | 883,515,407 | 8,178,056,756 |
| BRA (PPCDAm actions)**   | 905,029,671 | 972,489,465 | 770,500,125 | 888,179,818 | 1,025,753,028 | 1,145,442,843 | 1,064,574,578 | 998,464,497 | 768,817,663 | 8,539,251,689 |
| F.A. (disbursed)   | 23,666,667  | 23,666,667  | 23,666,667  | 71,000,000  | 81,000,000    | 168,000,000   | 128,000,000   | 134,000,000 | 224,000,000 | 877,000,000   |
| F.A. (disbursed to Fed Gov projects)   |             |             |             |             |               |               |               |             |             | 180,000,000   |

\*\* 18 PPCDAM related action funded by the national budget

\*\* total sum of administrative costs, with personnel and capacity building, for the main agencies involved in the implementation of PPCDAM, including soma de recursos administrativos, pessoal e capacitação de MMA, INCRA, ICMBio, IBAMA e Funai.

\*\* the data from "BRA" 2015, 2016 e 2017 are projected values based on the budget cuts in MMA finalistic actions. The data was not verified in each institution but follow the tendency of reducing in a context of economic crisis and budget cuts in Brazil.

Source: MMA, 2018, based on the Ministry of Planning and Budget Multi-year Budget Plan/ PPA, 2017 and the Amazon Fund, 2017

The Amazon Fund also made significant investments that have directly and indirectly contributed to the achievement of REDD-plus results in Brazil in years 2014 and 2015. Figure 7 of the [Amazon Fund Portfolio Report](#) shows that in 2014, a total investment of USD 113 million and in 2015 a total investment of USD 61 million were made, aligned with PPCDAM.

Figure 7. Amazon Fund Portfolio Report in 2014 and in 2015

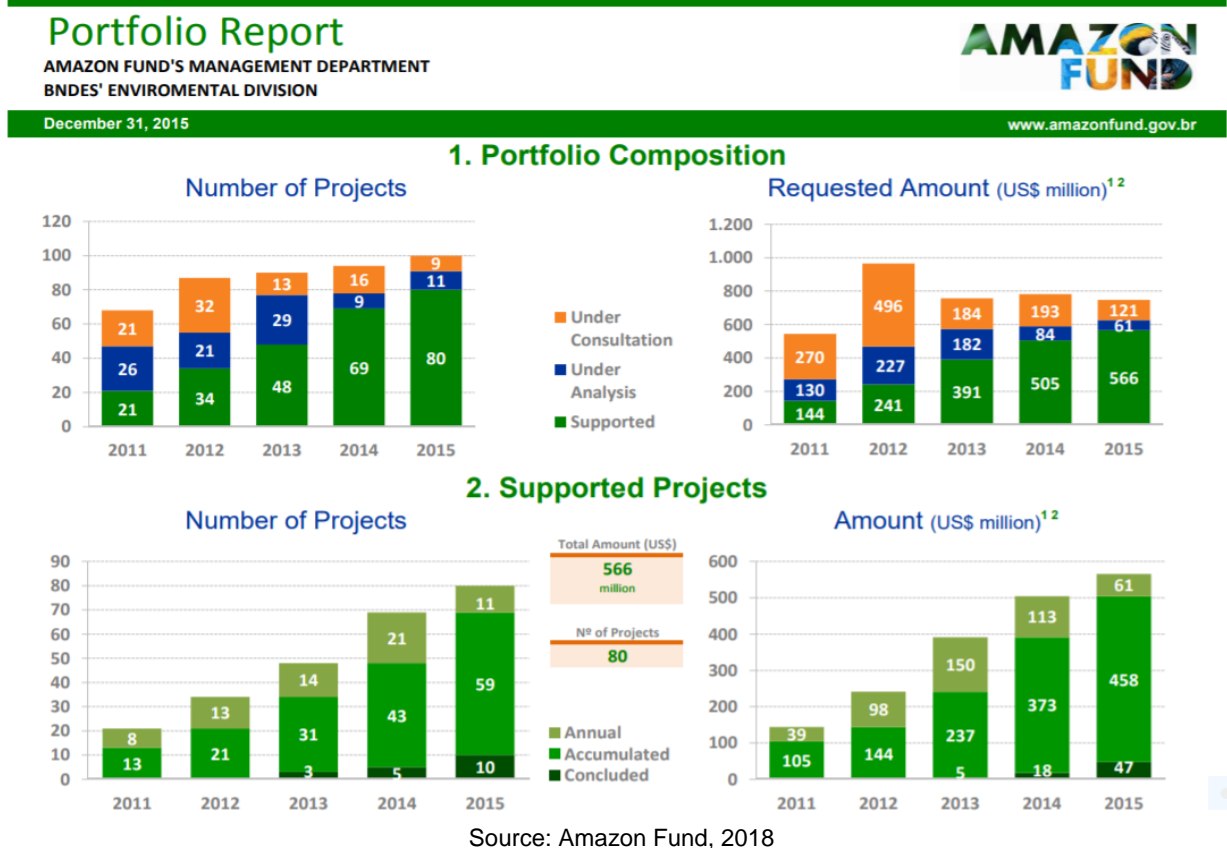
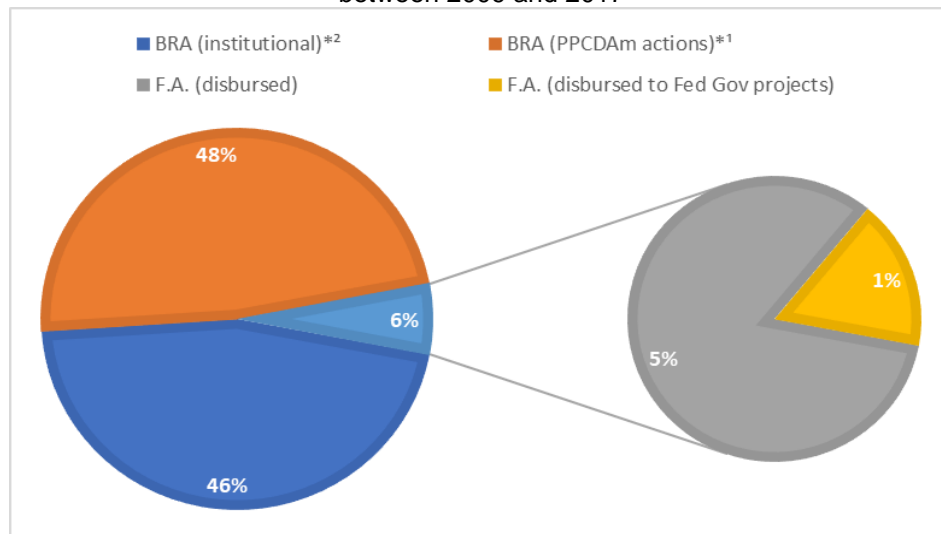


Figure 8 shows that 94% of the total investments made in the implementation of PPCDAM between 2009 and 2017 were financed through Brazil's national budget. This includes actions on the ground (PPCDAm actions) and institutional costs from the entities involved in the implementation of PPCDAm.

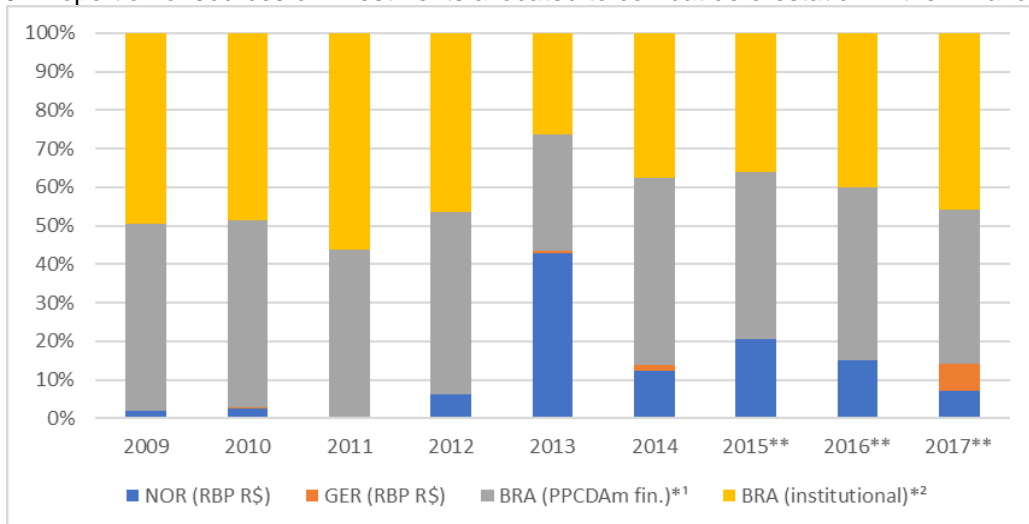
Figure 8. PPCDAm investments made with resources from the national budget vs international donations between 2009 and 2017



Source: MMA, 2018, based on the Ministry of Planning and Budget Multi-year Budget Plan/ PPA, 2017 and the Amazon Fund, 2017

As indicated in Figure 9, in the last five years, the relative contribution of international finance to combating deforestation in the Amazon biome has increased. This was due to an economic crisis that started in 2014 and that Brazil is still currently going through. This resulted in cuts in the budgets of entities directly involved in actions related to the prevention and control of deforestation in the Amazon biome, followed by an increase in deforestation rates (more details in the sections below).

Figure 9. Proportion of sources of investments allocated to combat deforestation in the Amazon biome



Source: MMA, 2018, based on the Ministry of Planning and Budget Multi-year Budget Plan/ PPA, 2017 and the Amazon Fund, 2017

To maintain the low rates of deforestation in Brazil, high and continuous investments are needed, to support command and control operations on the ground (including the teams, helicopters, vehicles, technology, etc.), the production of new and better data (INPE, Embrapa, etc.), and the implementation of positive incentives mechanisms created.

In this context of economic crisis and budget cuts in all areas of the federal budget spending, climate finance becomes even more essential. This nevertheless does not mean that Brazil has reduced its

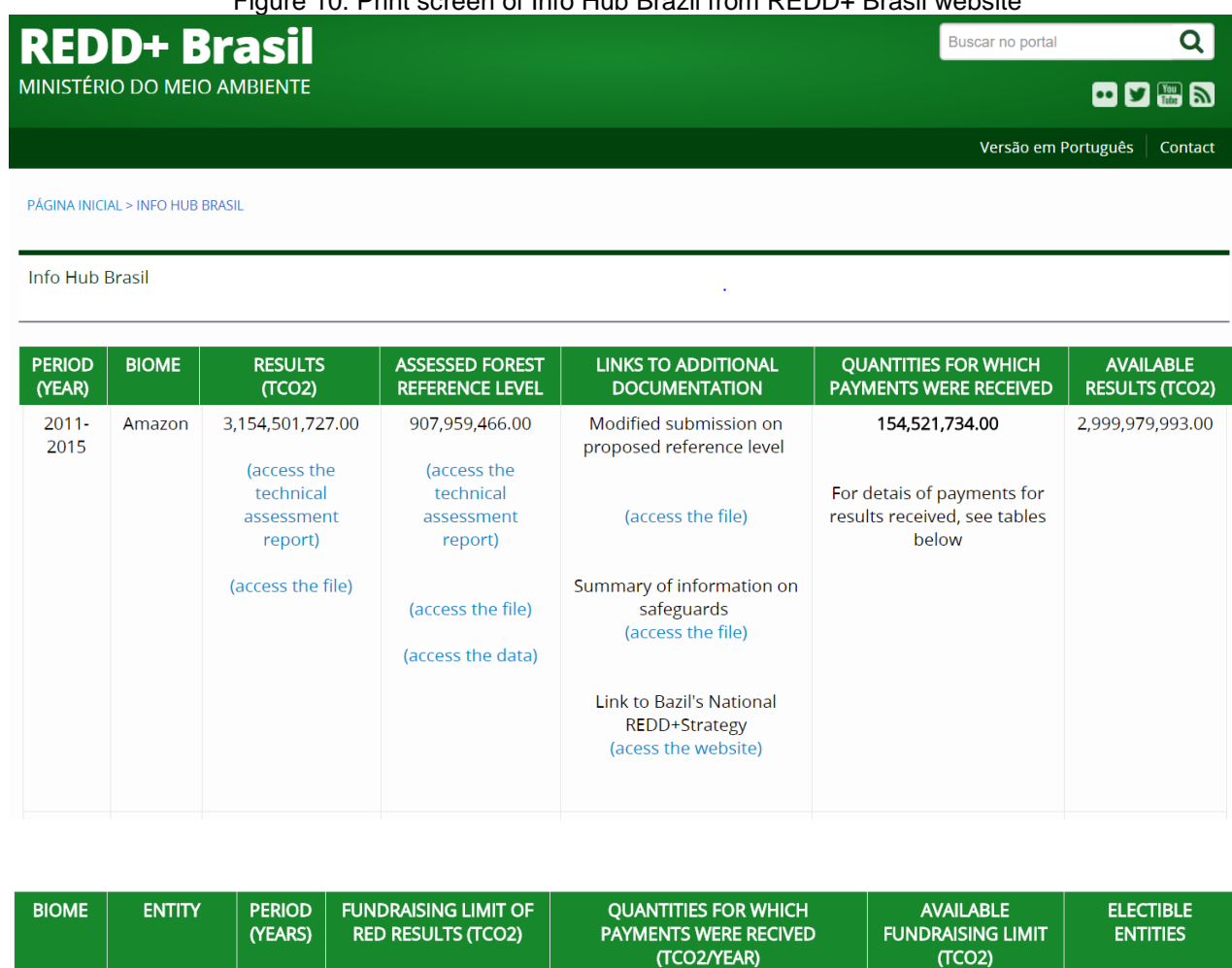
commitment to invest its own resources in combating deforestation. In years 2014 and 2015 more than 80% of the total resources allocated for the prevention and control of deforestation in the Amazon biome (to support PPCDAm actions and cover institutional costs) came from the national budget (BRA).

(ix) Tracking emissions reductions: *Indicate whether the achieved results are included in a registry or similar system that tracks emissions reductions and corresponding payments, and ensures that there is no past or future double payment or use of such results, including information to identify the area where the results were achieved, the entity eligible to receive payment, year(s) generated, source(s) of payments received, and identifying code, where possible. Provide the link or information where to find the registry or similar system*

As mentioned in the previous sections of this funding proposal, Brazil tracks the emission reductions achieved reducing emission from deforestation in the Amazon biome through the [Info Hub Brasil](#), a repository created in the REDD+Brasil website.

Below is a print screen that shows the relevant information for results achieved in 2014 and 2015 available in Info Hub Brasil at the time of the development of this funding proposal.

Figure 10. Print screen of Info Hub Brazil from REDD+ Brasil website



The screenshot shows the 'Info Hub Brasil' page with a table of results for the Amazon biome. The table has seven columns: PERIOD (YEAR), BIOME, RESULTS (TCO2), ASSESSED FOREST REFERENCE LEVEL, LINKS TO ADDITIONAL DOCUMENTATION, QUANTITIES FOR WHICH PAYMENTS WERE RECEIVED, and AVAILABLE RESULTS (TCO2). The data row shows results for 2011-2015 in the Amazon biome, with a total result of 3,154,501,727.00 TCO2 and an assessed forest reference level of 907,959,466.00 TCO2. The table also includes links to technical assessment reports, additional documentation, and a link to Brazil's National REDD+ Strategy.

| PERIOD (YEAR) | BIOME  | RESULTS (TCO2)  | ASSESSED FOREST REFERENCE LEVEL  | LINKS TO ADDITIONAL DOCUMENTATION   | QUANTITIES FOR WHICH PAYMENTS WERE RECEIVED  | AVAILABLE RESULTS (TCO2) |
|---------------|--------|---|--|---|--|--------------------------|
| 2011-2015     | Amazon | 3,154,501,727.00<br><a href="#">(access the technical assessment report)</a><br><a href="#">(access the file)</a> | 907,959,466.00<br><a href="#">(access the technical assessment report)</a><br><a href="#">(access the file)</a><br><a href="#">(access the data)</a> | Modified submission on proposed reference level<br><a href="#">(access the file)</a><br>Summary of information on safeguards<br><a href="#">(access the file)</a><br>Link to Brazil's National REDD+ Strategy<br><a href="#">(access the website)</a> | 154,521,734.00<br><br>For details of payments for results received, see tables below | 2,999,979,993.00         |

At the bottom of the screenshot, there is a table with the following columns: BIOME, ENTITY, PERIOD (YEARS), FUNDRAISING LIMIT OF RED RESULTS (TCO2), QUANTITIES FOR WHICH PAYMENTS WERE RECEIVED (TCO2/YEAR), AVAILABLE FUNDRAISING LIMIT (TCO2), and ELECTIBLE ENTITIES.

|                    |      |                |               |                |             |
|--------------------|------|----------------|---------------|----------------|-------------|
| Federal Government | 2011 | 248,980,669.00 | 33,363,022.00 | 215,617,647.00 | Amazon Fund |
|                    | 2012 | 268,510,125.00 | 32,733,224.00 | 235,776,901.00 |             |
|                    | 2013 | 242,444,646.00 | 24,746,724.31 | 217,697,922.00 |             |
|                    | 2014 | 253,747,146.00 | 24,000,000.00 | 229,747,146.00 |             |
|                    | 2015 | 248,980,669.00 | 27,554,763.27 | 220,563,341.53 |             |
|                    | 2016 | 144,752,092.08 | 8,358,200.96  | 136,393,891.12 |             |
| State of Acre      | 2011 | 12,449,033.44  | 0.00          | 12,449,033.44  |             |
|                    | 2012 | 13,425,506.24  | 1,000,000.00  | 12,425,506.24  |             |
|                    | 2013 | 12,122,232.31  | 9,020,000.00  | 3,102,232.31   |             |
|                    | 2014 | 12,687,357.32  | 1,464,000.00  | 11,223,357.32  |             |
|                    | 2015 | 12,405,905.24  | 640,000.00    | 11,765,905.24  |             |

| ELECTIBLE ENTITIES               | YEAR OF THE RESULT | DONOR ENTITIES  | DONATION (USD)  | RECEIVED RESULTS (TCO2) | INFORMATION ON THE RECEIVING   |
|----------------------------------|--------------------|---|---|-------------------------|--|
|                                  | 2014               | Government of Norway                                      | 120,000,000.00  | 24,000,000.00           | Amazon Fund  |
|                                  | 2015               | Government of Norway                                      | 97,953,351.16   | 19,590,670.23           |  |
|                                  | 2015               | Federal Republic of Germany - kfW                         | 39,820,465.20   | 7,964,093.04            |  |
| Acre Environment State Secretary |                    | Federal Republic of Germany/kfW/REDD Early Movers Program | Associated with results-based payment for 2013 results* | 1,464,000.00*           | ISA Carbono Program<br>REM Program Fase I<br>*Detailed information on payments, risk management, etc |
|                                  |                    |   | 2,470,000.00  |                         |  |
|                                  |                    |   | 25,071,000.00   |                         |  |
|                                  |                    |   | 3,663,000.00  |                         |  |
|                                  | 2014               |   | 1,464,000.00*   |                         |  |
| 2015                             |                    | 640,000.00*   |   |                         |  |

Source: <http://redd.mma.gov.br/en/infocenter>, last accessed on August 8<sup>th</sup>, 2018

Info Hub Brasil is currently going through technical improvements, but its temporary display already showcases all the information needed to track emission reductions (including year, biome, data and technical information, additional documentation), corresponding payments, results available for payments, fundraising limit per entity eligible to receive payments, information on results-based agreements already signed, and links to the diplomas issued by the Amazon Fund.

All results achieved by Brazil and respective payments are also displayed in the Lima Information Hub in the REDD+ Web Platform of the UNFCCC. Figure 11 is a print screen of this information.

Figure 11. Print screen of Lima Information Hub, UNFCCC

# REDD+

WEB PLATFORM

HOME
FACT SHEETS
SUBMISSIONS
INFO HUB
FORUM
MEETINGS
CONTACT

| Country | Date (Year) | Results (t CO <sub>2</sub> eq/year) | Assessed forest reference level (t CO <sub>2</sub> eq/year) | Quantities for which payments were received (t CO <sub>2</sub> eq/year) | Entity paying for results  | Links to documentation   |
|---------|-------------|-------------------------------------|---|---|--|--|
| Brazil  | 2006        | 529,930,490.25                      | 1,106,027,616.63  | 23,911,039.60<br>1,388,636.02   | Government of Norway (see explanatory note)<br>Petróleo Brasileiro S.A.    | <a href="#">FCCC/SBI/ICA/2015/TATR.1/BRA</a><br>Biennial update report with submission of REDD+ results<br><a href="#">FCCC/TAR/2014/BRA</a><br>Submission on proposed reference level<br>Modified submission on proposed reference level<br>1st Safeguards information summary<br>2nd Safeguards information summary<br>National REDD+ Strategy<br>Rectangular Snip |
|         | 2007        | 497,761,219.37                      | 1,106,027,616.63  | -   | -  |  |
|         | 2008        | 440,022,301.24                      | 1,106,027,616.63  | -   | -  |  |
|         | 2009        | 741,687,139.44                      | 1,106,027,616.63  | 28,347,560.00<br>3,188,874.00   | Government of Norway (see explanatory note)<br>Government of Germany - KfW |  |
|         | 2010        | 761,621,104.20                      | 1,106,027,616.63  | 33,363,022.00   | Government of Norway (see explanatory note)                                |  |

Source: <https://redd.unfccc.int/info-hub.html>, last accessed on July 30<sup>th</sup>, 2018.

### C. Non-carbon elements

Please provide link to the summary on information on safeguards:  
[https://redd.unfccc.int/files/2sumariosalv\\_br\\_final.pdf](https://redd.unfccc.int/files/2sumariosalv_br_final.pdf)

#### C.1. Cancun safeguards

**C.1.1. Compliance with Cancun safeguards.** *Please provide any additional information that supplements the information included in the “summary of information on safeguards” that allows understanding how each of the safeguards below was addressed and respected in the full period during which results were generated in a way that ensures transparency, consistency, comprehensiveness and effectiveness:*

- (i) That actions complement or are consistent with the objectives of national forest programs and relevant international conventions and agreements.

**Comments:**

From a strategic level, the National Policy on Climate Change and Brazil’s Forest Code provide the overarching guidelines for Brazil’s REDD+ actions. At the tactical-operational level the main instrument to coordinate REDD+ initiatives on the biome scale is the Action Plan for Prevention and Control of Deforestation in the Legal Amazon (PPCDAm is the acronym in Portuguese). The PPCDAm is an overarching suite of programs, policy measures and regulatory instruments that ensures consistency and complementarity of all REDD+ actions in the Amazon region with national and sub-national forest programs, international conventions and agreements. The actions which make up PPCDAm integrate the efforts of thirteen Brazilian ministries and work along 3 main axis, including land tenure regularization and land use planning, monitoring and control, as well as the promotion of sustainable productive activities. Each of the 9 states in the Legal Amazon also has their own state-level action plans, which are similar to the federal level plan to ensure further consistency. The PPCDAm at the federal level, as well as these state level plans, approach deforestation vectors through a range of thematic areas, which are coordinated with other relevant public polices, including the Low-Carbon Agriculture Plan (ABC), the Community and Family Forest Management Program (PMFC), the National Policy for Territorial and Environmental Management of Indigenous Lands (PNGATI), the Legal Land Program, the Environmental Conservation Support Program (Bolsa Verde or Green Grant), the Policy

to Guarantee Minimum Prices for Socio-biodiversity Products (PGPMBio) and the Amazon Protected Areas Program (ARPA), among others. The description of the full range of programs and activities, of which there are over 200, can be found at: <http://combateadodesmatamento.mma.gov.br/>.

Brazil's National REDD+ strategy (ENREDD+) is also structured along three main action lines, the first of which is "Coordinating Climate Change, Biodiversity and forest related Public Policies, including Safeguards" further cementing Brazil's commitment to a coherent and comprehensive deforestation policy, which supports broader international agreements, such as the United National Framework Convention on Climate Change (UNFCCC), the United Nations Convention on Biological Diversity (UNCBD) as well as the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). Furthermore, the National REDD+ Committee (CONAREDD+), established through the Presidential Decree 8.576 in 2015, was created with the purpose of coordinating, tracking and monitoring ENREDD+ implementation. In doing so, one of its principle roles is to promote, the integration and synergy among public policies on forests, biodiversity and climate change across administrative levels, which is further supported through the work of Thematic Consultative Chambers (CCT) or advisory boards. Accordingly, the stated objective of the [Thematic Advisory Board on Safeguards](#) (CCT-Safeguards) is to provide inputs for the accompaniment of how the Cancun safeguards are being addressed and respected by Brazil.

Through its work, the CCT-Safeguards advisory board has selected relevant policies, programs and international agreements to be assessed and provided examples of how processes were implemented to ensure consistency, coordination and complementarity at the various levels. The substantive challenges related to the implementation of this safeguard were also identified by CCT-Safeguards in Section 5 of the 2<sup>nd</sup> SOI, including the harmonization and compatibility of national and subnational policies related to REDD+. This is an ongoing process, currently under further revision and discussion in the [Thematic Advisory Board on Federative Relations](#) (CCT-Pact), which serves as an additional forum for debate, participation and transparency between the federal, state and local entities to align their policies.

For further information on the definition, objectives and details related to the interpretation of safeguard (a) by Brazil please refer to Section 4.1 of the 2nd Summary of Information on Safeguards (SOI). Section 5 of the 2nd SOI presents an in-depth overview of how safeguard (a) has been addressed and respected by the policies and initiatives aimed at reducing deforestation in the Amazon biome. Additional information on the complementarity and consistency with PLRs can be found in the Environmental and Social Assessment (ESA) of PPCDAm found in the Annex to this FP.

- (ii) Transparent and effective national forest governance structures, taking into account national legislation and sovereignty.

Comments:

The CCT-Safeguards advisory board considers the general objective of this safeguard as follows: Ensuring broad participation in the [national REDD+ governance structure](#) by society, compliance with the applicable laws, and the guarantee of rights and sustainability, according to the fundamentals and objectives of the Federal Constitution. Ensuring this broad participation, fundamental to the transparency and efficacy of forest governance structures, CONAREDD+ (the National REDD+ Committee) relies on coordination, discussion and information sharing between the Ministry of Environment (who chairs the committee) with the Ministry of Foreign Affairs, Ministry of Agriculture, Livestock and Food Supply, Ministry of Finance, Ministry of Science, Technology Innovation and Communications, Ministry of Agrarian Development (current the Special Secretariat for Family Farming and Agrarian Development/Chief of Staff), Government Secretariat and the Office of the Chief of Staff of the Presidency. In addition to ensuring the transparency and efficacy of REDD+ actions at the federal level, CONAREDD+ also involves participation of state and local governments, and Brazilian civil society. In addition, the composition of the CONAREDD+ is currently being revised to enlarge participation to guest members to further enhance transparency and participation. Brazil's interpretation of this safeguard also explicitly recognizes the importance of indigenous people, traditional peoples and communities, and traditional and family farmers in the processes of planning, implementing, monitoring and assessing policies. This is accomplished by ensuring the CCT-Safeguards advisory board not only includes experts on biodiversity, environmental monitoring, transparency and forest governance, and public policy

among other key topics, but also representatives from indigenous peoples, traditional peoples and communities and family farmers. One of the main tasks of ENREDD+ is the development of a public policies impact matrix, to continuously monitor and report on the effectiveness of the implementation of policies and measures for REDD+. A [tool for assessing impact of state level policies](#) has also been developed by civil society and the integration with the national level tools has been discussed.

The consolidation of Brazil's overarching National REDD+ strategy ([ENREDD+](#)) has also greatly enhanced the transparent and effective implementation of forest policies, by producing and organizing additional information and data and making these data sets and analysis more widely available to the public. The REDD+ Brazil website consolidates and presents information on the latest REDD+ related news, CONAREDD+ resolutions, as well as producing a monthly newsletter. Additionally, all minutes of meeting are available for the various thematic advisory boards. To further promote transparency, ENREDD+ information is distributed via the following entities: REDD+ Brazil Portal (<http://redd.mma.gov.br/en>), which includes SISREDD+ (<http://redd.mma.gov.br/pt/salvaguadas>) and its ombudsman, Info Hub Brazil (<http://redd.mma.gov.br/en/infohub>) and in the future also via the Matrix of Public Policies Impact.

As stated above, PPCDAm is the guiding plan for controlling deforestation in the Amazon biome, and the results achieved in 2014 and 2015 were part of the 3<sup>rd</sup> Phase of PPCDAm (2012-2015). Previous phases of the implementation of PPCDAm are subject to both the annual monitoring of actions, as well as general evaluations, including an independent assessment of the second phase of implementation, which is publicly available and directly informed the design of the third phase. A key recommendation in regards to governance was to facilitate the exchange of information, and resolution of conflict that may arise between federal and state agencies, which has become a focus of the fourth phase of PPCDAm implementation. PPCDAm Phase 4 will focus on transparency and coordination, including more regular meetings, and as well as state representatives from existing technical boards such as law enforcement and sustainable forest management, among other actions.

It should also be noted that the Amazon Fund is also subject to regular assessment and audit, with annual accounting and compliance audits publicly available, and an Amazon Fund Activity Report produced annually (as noted in the Second SOI). Compliance audits conducted by independent consultants assess whether BNDES has met the requirements listed in Decree # 6,527 / 2008 regarding the supporting actions, guidelines and criteria established by the Amazon Fund Steering Committee (COFA). This transparency is extended to the project level, by which evaluations reports of individual projects carried out under the Amazon Fund are also publicly available, in addition to an overarching evaluation of the effectiveness of completed projects, which is available at: <http://www.fundoamazonia.gov.br/en/monitoramento-e-avaliacao/independent-evaluations/>.

Finally, in addition to the transparency and information sharing promoted through the platforms of ENREDD+, the thematic boards, Info Hub Brazil, SISREDD+ and the evaluations of PPCDAm and the Amazon Fund, in 2011 Brazil has enacted a Federal Law to promote Access to Information Law (Law n. 12,527/2011). This law regulates access to information, as established in Item XXXIII of Art. 5, Item II in Paragraph 3 of Art. 37, and Paragraph 2 of Art. 216 of the Federal Constitution. Request for access to information can be made on the Access to Information Law website: <http://www.acessoainformacao.gov.br/>. According to this law, requests for public information must be responded by the GOB within 20 days. The federal government of Brazil has also created a website (Transparency Portal) in which all information on public spending, public policies, public servants and others can be found: <http://www.portaltransparencia.gov.br/>

For further information on the definition, objectives and details related to the interpretation of safeguard (b) by Brazil please refer to Section 4.1 of the 2<sup>nd</sup> SOI. Section 5 of the 2<sup>nd</sup> SOI presents details about how safeguard (b) has been addressed and respected by the policies and initiatives aimed at reducing deforestation in the Amazon biome. Figure 9 of Brazil's 2<sup>nd</sup> SOI shows the detailed information about social participation and revision cycles of PPCDAm, highlighting transparency in participation as well continuous improvement of governance structures. Section 5 of the 2<sup>nd</sup> SOI also discusses the main challenges related to the implementation of this safeguard as identified by the CCT-Safeguards advisory board. Additional information on transparency and national forest governance structures can also be found in the ESA of PPCDAm found in the Annex.

- (iii) Respect for the knowledge and rights of indigenous peoples and members of local communities, by taking into account relevant international obligations, national



circumstances and laws, and noting that the United Nations General Assembly has adopted the United Nations Declaration on the Rights of Indigenous Peoples.

Comments:

Approximately 450,000 Indigenous Peoples live in the Brazilian Amazon, making up 60% of Brazil's indigenous population and covering over 400 indigenous lands over an expanse of 115 million hectares (over 98% of the indigenous lands nationally and representing over a fifth of the Amazon Region)<sup>25</sup>. In addition, Brazil has its own definition of local communities, established in Federal [Decree 6040/2007](#), which includes traditional peoples and communities as well as traditional and family farmers. Given the staggering diversity, scale and central importance of these groups in accomplishing Brazil's National Deforestation Plan (PPCDAm) and ENREDD+, ensuring that the plurality of traditional knowledge and rights of these groups is respected in the context of implementing REDD+ actions in Brazil, is of central importance. Accordingly Brazil not only recognizes the critical importance of traditional knowledge, including the management of genetic heritage and territories, as well as the local knowledge associated with the sustainable use of biodiversity, it also takes an expansive definition of the rights of these groups. That is, Brazil's interpretation of this safeguard includes prohibition of restrictions on the use of management of territories, emphasis on the right to self-determination, recognizing rights to collective tenure and benefit-sharing, as well procedural rights such as the right to Free, Prior and Informed Consent (FPIC). Furthermore, Incorporating this knowledge into national level safeguards system (SISREDD+) is a focus of the CCT-Safeguards advisory board and is further supported by an array of national laws and international agreements. The knowledge and rights of indigenous peoples, traditional peoples and communities, and traditional and family farmers, are acknowledged by the following international and national instruments: Articles 231 and 48 of ADCT of the Federal Constitution; Legislative Decree # 2/1994; Decrees # 5,051/2004, 6,040/2007, 6,476/2008, 7,747/2012; Laws # 11,326/06, 13,123/15; and the United Nations Declaration on the Rights of Indigenous Peoples.

The [National Policy for Territorial and Environmental Management of Indigenous Lands \(PNGATI\)](#) and The [National Council of Traditional Peoples and Communities – CNPCT](#), are particularly relevant for addressing and respecting this safeguard, and contributed to the implementation of the 3rd Phase of PPCDAm (2012-2015). PNGATI aims to guarantee and promote protection, recovery, conservation and sustainable use of the natural resources found in indigenous lands and territories, ensure integrity indigenous heritage, improvement of quality of life and respect of sociocultural autonomy. Another important initiative is Terra Legal, which aims to legalize the use of 55 million hectares of state-owned land by granting land titles to some 160,000-smallholder families. It should be noted however that these ongoing processes of land demarcation, including the ongoing Indigenous Land Titling process, and other efforts to improve land tenure (such as the registration of populations living in Sustainable Conservation Units) is an enormously complex and challenging undertaking, not least because of the spatial scale of the Legal Amazon, and the isolation of many communities. More information regarding the governance structures for the implementation of PNGATI and CNPCT can be found on the table of Section 5 of the 2<sup>nd</sup> SOI. The main challenges related to the implementation of this safeguard identified by the CCT-Safeguards group are the increasing land conflicts in the Amazon region. Brazil therefore recognizes the need to governance systems in this regard and to create an ombudsman to report the violation of safeguards in REDD+ initiatives.

Finally, it is worth noting that knowledge and rights of IPs and traditional communities is also integrated in a crosscutting manner in other relevant national laws and policies. Particularly relevant is the National Biodiversity Policy, Decree # 4,339/2002, which aims to promote, in an integrated manner, the conservation of biodiversity and the sustainable use of its components, with the fair and equitable sharing of benefits derived from the use of genetic resources, components of genetic heritage and traditional knowledge associated with these resources. Also relevant is the Access and Distribution of Biodiversity Benefits Act, Law # 13,123/2015, which establishes rules to access genetic heritage, access the corresponding traditional knowledge, and share benefits. It sets the national definition of associated traditional knowledge, incorporating indigenous peoples, traditional communities and traditional farmers and sets the terms for access, with the definition of parameters for prior and informed consent, and the fair and equitable sharing of benefits.

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<sup>25</sup> Amazon Sustainable Landscapes Project Document, 2017

For further information, please refer to the definition, objectives and details related to the interpretation of safeguard (c) by Brazil as presented in section 4.1 of the 2nd SOI as well as Section 5 of the 2nd SOI, which presents details about how safeguard (c) has been addressed and respected by the policies and initiatives aimed at reducing deforestation in the Amazon biome. Additional information on the respect for the rights of indigenous peoples and local communities in the implementation of the activities eligible for results-based payments can also be found in the ESA of PPCDAm found in the Annex, which includes a project-level review of the “Catalyzing the Contribution of Indigenous Lands to the Conservation of Brazil’s Forest Ecosystems” drawing the traditional knowledge of IPs.

- (iv) The full and effective participation of relevant stakeholders, in particular indigenous peoples and local communities, in the actions referred to in paragraphs 70 and 72 of 1/CP.16.

Comments:

Ensuring the full and effective participation, voice and leading role of stakeholders, including the public and private sectors and the third sector, especially indigenous peoples, traditional peoples and communities, and traditional and family farmers, to promote shared management and social control in the implementation of REDD+ actions and their safeguards, is the principle objective of this safeguards as defined by Brazil in the 2nd SOI. The governance of the CONAREDD+ and the creation of Thematic Advisory Boards (including the CCT-Safeguards advisory board) by the CONAREDD+ are primary indications of progress in this direction. The ENREDD+ interactions with both the Climate Change Technical Chamber of the Management Committee of PNGATI and with the Indigenous Committee on Climate Change is particularly strong, as noted in the 2nd SOI. Furthermore CONAREDD+ more broadly, as well as CCT-Safeguards advisory board itself, include representatives from state and local governments, indigenous peoples and traditional peoples and communities. Civil society representatives have also been elected by the Brazilian Forum of Climate Change (FBMC; <https://www.fbmc.com.br/>), which also appointed the representatives from indigenous peoples and traditional peoples and communities to be part of CONAREDD+.

In regards to Free, Prior and Informed Consent, Brazil legislation has provisions that support these instruments, including the Federal Constitution, Art. 231; Decree n. 5051/2004 promulgating ILO Convention 169, Decree n. 6040/2007, Act n. 13.123/15 and Decree n. 8772/16, the last two specific for access to traditional knowledge associated with biodiversity. Of particular interest in this regard is Chart 6 of Brazil’s 2nd SOI, which presents consultation protocols developed since 2014 by indigenous peoples and traditional peoples and communities in Brazil.

A groundbreaking initiative in Brazil, that also supports full and effective participation of stakeholders, in particular indigenous peoples, is the practice of creating Indigenous Environmental and Territorial Management Plans (PGTAs). The National Policy on Territorial and Environmental Management of Indigenous Lands (PNGATI), mentioned above, was developed by a collation including 150 indigenous groups and other institutions to endorse indigenous-led conservation, natural resource management and environmental restoration, while officially recognizing the PGTAs. The PGTAs reflect the specific visions Indigenous Peoples’ for their lands, covering three main priorities: 1) Territorial control and protection, including indigenous-led surveillance and monitoring practices 2) Sustainable management of natural resources for the promotion of food security and income generation, as well as conservation, restoration and sustainable land use and 3) Capacity building and institutional strengthening for local organizations. To implement the policy and plans, the Ministry of Environment (MMA) and the Brazilian Foundation for Indigenous Affairs (FUNAI), along with the Global Environment Facility (GEF), the Nature Conservancy and UNDP implemented PGTAs in 32 indigenous lands, serving as a pilot phase for policy implementation to be shared throughout the almost 700 indigenous lands in Brazil<sup>26</sup>

<sup>26</sup> Indigenous Lands Developing Environmental and Territorial Management Plans, The Nature Conservancy: <https://www.nature.org/.../land.../indigenous-environmental-and-territorial-plans.pdf>

For further information, please refer to the definition objectives and details related to the interpretation of safeguard (d) by Brazil are presented in section 4.1 of the 2nd SOI. The CCT-Safeguards advisory board has also defined in more detail in section 4.1 of the 2nd SOI actions to ensure the full and effective participation of all relevant stakeholders including determining specific criteria for representativeness (e.g. regional distribution, gender and different forms of knowledge). Section 5 of the 2nd SOI presents details about how safeguard (d) has been addressed and respected by the policies and initiatives aimed at reducing deforestation in the Amazon biome. The main challenges related to the implementation of this safeguard identified by the CCT-Safeguards advisory board are also presented in the table in Section 5 of the 2nd SOI. Finally, additional information on this safeguard is also provided in the ESA found in the Annex.

- (v) That actions are consistent with the conservation of natural forests and biological diversity, ensuring that the actions referred to in paragraph 70 of this decision are not used for the conversion of natural forests, but are instead used to incentivize the protection and conservation of natural forests and their ecosystem services, and to enhance other social and environmental benefits.

Comments:

Ensuring that REDD+ actions are not implemented to convert natural ecosystems into systems with low levels of biodiversity (although they may represent a high potential for GHG mitigation), nor into activities that could compromise the provision of ecosystem services or the guarantee of rights, is recognized as the principle objective of this safeguard, as defined by the CCT-Safeguards advisory board. It is also important to note that Brazil expands its definition not only to what may be considered standing forest, but also considers other natural vegetation, which provides key ecosystem services. That is, Brazil's definition explicitly values the standing forest, its multiple functions and benefits, and the livelihoods associated with it and interprets the term "natural forests" as "encompassing natural ecosystems, their structures, functions and dynamics that contribute to environmental and social benefits."

Significantly, subnational REDD+ initiatives, notably in the state of Acre that has established a State System of Incentives for Environmental Services of Acre (SISA/AC), and the development of the pilot Environmental Services Incentive Program for Conservation and Recovery of Native Vegetation (Floresta+), as presented in this FP, are also pivotal to furthering a approach which incentivizes the conservation of natural forests and their ecosystem services. The SISA/AC, which was established by State Law # 2,308/2010, comprises seven different programs of incentives to environmental services, which work together to reduce deforestation rates and forest fires in Acre, forest conservation and sustainable management, paving the way for environmental and social for those who live in the forest. In addition to 1) Carbon benefits, the incentives program also recognizes social and environmental benefits such as the 2) Conservation of Natural Scenic Beauty, 2) Conservation of Sociobiodiversity, 3) Conservation of Water and Water Services, 4) Climate Regulation, 5) Traditional Ecosystem Knowledge and Cultural Valuation and 6) Soil Conservation and Enhancement. Another wide-ranging policy that fostered conservation and sustainable use during the results period, was the Green Grant (Bolsa Verde) program that supported the conservation of more than 33 million hectares in Sustainable Use Conservation Units and Rural Settlements Projects, over 90% of which were in the Legal Amazon.

Brazil has a host of other policies and programs, which incentivize the protection, and conservation of natural forests as described in the 2nd SOI, including the creation of Protected Areas in the Amazon, encompassing 1) Integral Protection Conservation Units, 2) Sustainable Use Conservation Units: 3 Conservation Units, 3) Private Reserve of Natural Heritage and 4) Indigenous Lands.

In regards to the conservation of biological diversity, in addition to the recommendations made by CBD Decision XI/19, the coherence of REDD+ and biodiversity actions is further ensured through the integration of actions of the National Biodiversity Policy, the National Biodiversity Strategy and Action Plan (NBSAP) and the guidelines from the National Commission for Biodiversity (with information provided by the Brazilian Biodiversity Information System – SiBBr), programs and policies that have as objectives the identification, monitoring and conservation of endemic, rare or endangered and high biodiversity value species or ecosystems.

Policies and programs that guarantee livelihoods associated with natural ecosystems are also included in the 2nd SOI. For example, the Amazon Fund supports, among other action: (1) creating and consolidating the management of protected areas; (2) recovering deforestation areas; and (3) conserving and sustainably using biodiversity. The ARPA (Amazon Protected Areas Program), also support actions in conservation units that encourage the balance between forest conservation and sustainable use of part of the natural resources.

For further information of the definition, objectives and details related to the interpretation of safeguard (e) by Brazil please refer to Section 4.1 of the 2nd SOI. This section also includes more details about this approach and determines that analyses of synergies and potential conflicts between REDD+ actions and programs and impacts on biodiversity and socio-environmental rights which will be part of the SISREDD+. Section 5 of the 2nd SOI presents information about how safeguard (e) has been addressed and respected by the policies and initiatives aimed at reducing deforestation in the Amazon biome. Data on the creation of protected areas, implementation of conservation units and development of policies to support biodiversity conservation are some of the indicators presented in this analysis. The information mentioned in the tables of Section 5 of the SOI demonstrates Brazil's efforts to increase the conserved and reforested areas. Section 5 of the 2nd SOI also presents the main challenges related to the implementation of this safeguard, which include unifying the systematization of data regarding the creation and homologation of territories of traditional peoples and communities amongst the various institutions responsible for managing these areas. Other challenges include the legal suits initiated by certain sectors operating in the Legal Amazon who goals are contrary to conservation, and whose actions aim to reverse the demarcation of protected areas in the Amazon region. Further information on this matter is also described in the ESA of the PPCDAm found in the Annex, which includes a project-level review of the "Going Green" project designed to strengthen institutional capacity to promote environmental adjustment of rural properties through adherence to the Rural Environmental Registry (CAR).

(vi) Actions to address the risks of reversals.

Comments:

Promoting the long-term reduction of GHG emissions within the scope of REDD+ actions, and ensuring consistent and continuous results is considered the principle objective of this safeguard, as defined by the CCT-Safeguards advisory board. Several federal laws and instruments promote and support activities to ensure that the results of REDD+ actions endure, including the Atlantic Forest Law (Lei da Mata Atlântica), which has provisions to protect recovered and restored forests, and the Forest Code (which applies to the Amazon Biome) stipulating that rural landholdings must conserve 80% of their area with native vegetation cover, as a legal reserve, applying to landholdings located in originally forested areas. Furthermore, the PPCDAm includes a host of actions to monitor, analyze and improve the coordinated actions for maintaining reduced deforestation rates. Each phase of PPCDAm serves as an opportunity to analyze both the main causes of deforestation and the risks of reversals, which leads to iterative improvement of the action plan, and targeting of activities in new phases.

It should be noted that Brazil has one of the most advanced systems for satellite forest monitoring in the world, the Amazon Deforestation Monitoring Program (PRODES), which is described above as used in the construction of the FREL. PRODES historically used Landsat 5 images, but now also incorporates imagery from Landsat 7 and 8, CBERS-2, CBERS-2B, Resourcesat-1, and UK2-DMC, with all PRODES data is publicly available online. Furthermore, Brazil has a Real Time System for Detection of Deforestation (DETER), a satellite-based system that enables frequent and quick identification of deforestation hot spots, greatly enhanced monitoring and targeting capacity, making it easier for law enforcers to act upon areas with illegal deforestation activity. The Environmental Control and Monitoring pillar of PPCDAm was principally responsible for the marked deforestation reduction observed in the first phases of the plan. Recently, Assunção et al (2017) evaluated the effects of the monitoring and law enforcement between 2007 and 2011, showing that monitoring and enforcement efforts avoided an average of 22,000 km<sup>2</sup> of deforestation per year between 2007 and 2011.

The deforestation data (presented in Figure 12 of the 2nd SOI) is the main indicator to assess potential risks of reversal, confirming that the four lowest deforestation rates in Brazilian history were observed in the 3rd PPCDAm phase (2012, 2013, 2014 and 2015). The recent increase in the deforestation rate observed in 2016 marks a deviation from this trend, however it should also be noted that an increase in deforestation in

one single year does not necessarily present a trend of reversal, given the complexity of economic and political drivers influencing deforestation rates, which may be related to temporally limited and atypical circumstances, such as budget, the approval of specific rules or even commodities prices. After a slight increase in 2015 (still the fourth lowest deforestation rate since 1988), deforestation rates were higher again in 2016, but reduced in 2017. This reduction was in part a result of changes implemented after the 4th Phase of PPCDAm as explained in Section 5 of the 2nd SOI. Regardless, possible causes of identified in the 2<sup>nd</sup> SOI include the possibility that deforesters are adjusting their practices to monitoring strategies. Assunção et al (2017) performed an experiment that reinforces this hypothesis, with study results indicating an increase in the relative participation of areas smaller than 25 ha (limit of DETER detection) in small, medium and large properties in Mato Grosso and Para States between 2005 and 2012. As a result, Brazil is taking action to further improve monitoring systems and strategies. Finally, operationalizing REDD+ results-based payments through the Floresta+ program will be a central strategy to address the risk of reversal.

For further information of the definition, objectives and details related to the interpretation of safeguard (f) by Brazil are presented in section 4.1 of the 2nd SOI, which also provides details about the approach defined by the CCT-Safeguards advisory board to address and respect this safeguard, including the effective, comprehensive, frequent and accurate monitoring of all relevant areas and promoting complementary and synergistic action of the SISREDD+, Matrix of Public Policies Impact, and Info Hub Brazil, as established in the ENREDD+. Section 5 of the 2nd SOI presents information about how safeguard (f) has been addressed and respected by the policies and initiatives aimed at reducing deforestation in the Amazon biome. The main challenges related to the implementation of this safeguard identified by the CCT-Safeguards advisory board and presented in the table in Section 5 of the 2nd SOI are maintaining the high level of investments in law enforcement activities and other initiatives to reduce deforestation, including through the support received from results-based payments.

(vii) Actions to reduce displacement of emissions.

Comments:

The CCT-Safeguards advisory recognizes that the principle objective of this safeguard is promoting legislation and actions, which prevent the implementation of REDD+ activities in one area, having the opposite effect in another, more vulnerable, area. Given that almost 60% of the Brazilian territory is covered by natural and planted forests, accounting for the second largest forested area in the world, and that Brazilian forests are distributed throughout six biomes, with distinct characteristics, land use dynamics and deforestation trends, presenting unique technical challenges, Brazil is currently implementing REDD+ per biome as an interim measure. Biome boundaries are therefore the territorial unit used to assess emission displacement. In order to address and reduce the displacement of emission to other biomes, Brazil is committed to expanding the implementation of REDD+ activities to all biomes in the future, with the scaling-up of the REDD+ implementation to the national level following a step-wise approach, noting the importance of adequate and predictable support. The implementation of the Action Plan for the Control of Deforestation in the Cerrado biome (PPCerrado), the engagement of stakeholders beyond the Amazon in the ENREDD+, the establishment of the Rural Environmental Registry (CAR) and the creation of a national forest monitoring system (NFMS) are some of the elements detailed in Section 5 of the 2nd SOI that demonstrate how Brazil is expanding its policies and initiatives beyond the Amazon biome.

To address both the risk of displacement between biomes, as well as potential trans boundary displacement to adjacent national territories not yet as advanced in the operationalization of REDD+, Brazil has also invested in south-south cooperation initiatives for forests and climate change, through results-based payments received by the Amazon Fund. Just over 20% of the total resources received through results-based payments by the Amazon Fund can now be used to support the development of deforestation monitoring and control systems in other Brazilian biomes and other countries. In this regards, Brazil has invested USD 12 million in the development of the capacity to monitor deforestation, changes in the use of land and forests of other countries in the Amazon basin<sup>27</sup>.

<sup>27</sup> For more information see: <http://www.amazonfund.gov.br/en/projeto/Monitoring-Forest-Coverage-in-the-Regional-Amazon/> and <http://www.otca-oficial.info/assets/documents/20170508/70c7925ed598a0813cc675a434b5746b.pdf>, last accessed on July 25<sup>th</sup>, 2018.

Section 4.1 of the 2nd SOI presents more details about the approach defined by the CCT-Safeguards advisory board to address and respect this safeguard, including the scaling up of the implementation of REDD+ from the biome to the national level, in a stepwise manner. Section 5 of the 2nd SOI presents information about how safeguard (g) has been addressed and respected by the policies and initiatives aimed at reducing deforestation in the Amazon biome. The main challenges related to the implementation of this safeguard identified by the CCT-Safeguards advisory board are also presented in the table in Section 5 of the 2nd SOI. Key challenges are related to the availability of resources to support the national implementation of REDD+ and reconciling production and environmental protection in the Cerrado biome.

#### C.1.2. Stakeholder involvement.

*Please describe and provide evidence that the Cancun safeguards information was made transparently available to stakeholders.*

Stakeholder engagement and discussions regarding REDD+ safeguards in Brazil began in 2009, before safeguards were formally defined under the UNFCCC, in December 2010. This process was initiated by non-governmental organizations, engaging social movements, smallholders, private sector actors, environmental NGOs and research institutions in workshops, meetings and a public consultation, and produced the report "[REDD+ Social and Environmental Principles and Criteria](#)".

In 2011, the MMA promoted the workshop "[Implementing Social and Environmental Safeguards in the National REDD+ Strategy](#)", with the participation of several civil society organizations. In 2012, the MMA and the National Indigenous Peoples Foundation ([FUNAI](#)) held a seminar to discuss the indigenous peoples' issues related to the implementation of REDD+ in Brazil. The workshop resulted in the drafting of the document "[Set of principles and premises for the implementation of REDD+ in Indigenous Lands](#)". In 2012, the MMA also coordinated a Technical Panel with experts from civil society organizations. The Panel conducted a [survey of information and gaps related to the implementation of safeguards and the development of the SISREDD+](#). In 2014, Brazil submitted to the UNFCCC its [1<sup>st</sup> SOI](#) as a compilation of the outcomes from all the discussions held up to then.

After that, in 2016, the CONAREDD+ established the CCT-Safeguards advisory board to coordinate a participatory process for the systematic implementation of REDD+ safeguards in Brazil. This includes the conceptualizing the safeguards in the Brazilian context (Section 4 of the 2<sup>nd</sup> SOI), developing the SISREDD+ and reviewing the summary of information on the safeguards, among other activities.

The CCT-Safeguards advisory board when summarizing past consultations and discussions, considered the work previously conducted on the topic and updated it. The first step in the consultation process was the participatory definition of the safeguards in the Brazilian context by the CCT. This exercise is the basis for all the systematization of the safeguards implementation in Brazil. Brazil's understanding is that the implementation of the safeguards encompasses a large set of laws, policies and programs established in the national context, and the rationale is that all those laws, policies and programs implemented together ensure addressing and respecting the safeguards. As suggested by the CCT-Safeguards advisory board, the interpretation of Cancun safeguards in the Brazilian context presents a "Definition", "Objectives" and "Further details" for each of the safeguards, aiming at providing a clear scope for the implementation and monitoring of the safeguards by Brazil. It should be mentioned that the three sections (definition, objective and further details) are equally important and complementary.

[Brazil's 2<sup>nd</sup> SOI](#), submitted to the UNFCCC in 2018, is equally the result of a participative process, guided by the CCT-Safeguards advisory board. In addition to ordinary meetings, a specific workshop about the content of the summary on the safeguards was conducted with the CCT members and other stakeholders. The document was made available on the Internet for contribution for two months, making use of social media and REDD+ Brazil monthly newsletter (which has over 900 subscribers) as means to communicate the collection of face-to-face and virtual contributions. It is also important to mention through this process relevant stakeholders would provide inputs and suggestions to both interpretation of the safeguards (section 4) and their implementation (section 5). The CCT-Safeguards advisory board members were also encouraged to consult with their peers and to take a proactive role as multipliers of information throughout the process. Brazil's 2<sup>nd</sup> SOI was developed in a progressive manner, enhancing information and processes used to elaborate the 1<sup>st</sup> SOI, while acknowledging that further enhancements are yet to come along with awareness

about the topic in the country and with the full implementation of the SISREDD+. The methodology for the development of Brazil’s 2<sup>nd</sup> SOI was created by the CCT-Salv and is described in section 3.2 of the 2<sup>nd</sup> SOI. This section details how the information from actions and initiatives that contribute to the achievement of the results (PPCDAm, ENREDD+, etc.) and the investments made through payments received for these results (Amazon Fund) were assessed to determine how the Cancun Safeguards had been addressed and respected by Brazil for results achieved from 2011.

With the conclusion of the conceptualization of safeguards in the Brazilian context and the contributions to the 2<sup>nd</sup> SOI, the CCT-Safeguards advisory board is now entirely dedicated in the SISREDD+ improvement. To assist the CCT and to ensure a broad and participatory process for the definition of indicators for the SISREDD+, a series of workshops has been conducted, bringing together a range of stakeholders from the national to local level, and including representatives of Indigenous People, traditional communities, state governments, NGOs, academia and the private sector. Table 16 presents the number of representatives per sector that participate in these workshops.

Table 16. REDD+ safeguards representatives per sector/ group

| Sector/Group  | Number of representatives |
|---|---------------------------|
| Indigenous people                                     | 21                        |
| State government                                      | 49                        |
| Federal government                                    | 8                         |
| Traditional people and communities and family farmers | 31                        |
| University  | 17                        |
| Private sector  | 8                         |
| Grassroots movements                                  | 4                         |
| NGOs  | 20                        |
| <b>Total</b>  | <b>158</b>                |

Source: MMA, 2018

These 158 representatives mentioned above came from eighteen different states<sup>28</sup> of Brazil, with 80 female and 78 male stakeholders, ensuring regional and gender balance. Further information on stakeholder involvement and information sharing with stakeholders can be found in the ESA found in the Annex.

## C.2. Use of proceeds and non-carbon benefits

### C.2.1. General description:

*Provide a description on how the proceeds will be reinvested in activities consistent with the country’s NDC, national REDD-plus strategy and/or low carbon development plans and policies. The description should also include how the proceeds will be used in a manner that contributes to the long-term sustainability of REDD-plus activities, including non-carbon benefits.*

The [ENREDD+](#) was approved in the end of 2015 with the overall objective to contribute to climate change mitigation by eliminating illegal deforestation, promoting conservation and restoration of forest ecosystems and fostering a low-carbon and sustainable forest economy, while delivering environmental, social and economic benefits. This will be done through three specific objectives: (i) improving the monitoring and impact assessment of public policies for REDD+; (ii) integrating governance structures for climate change, forests and biodiversity in all levels; (iii) contributing to the mobilization of resources at the scale compatible with Brazil’s commitments to mitigate climate change in accordance with Brazil’s NAMAs by 2020.

<sup>28</sup> Brazil has 26 states and the Federal District. The Amazon region comprises 9 states.

Also, in 2015, Brazil submitted its NDC to the UNFCCC. Brazil's NDC intends to reduce GHG emissions by 37% below 2005 levels in 2025 and a subsequent reduction of GHG emissions by 43% below 2005 levels in 2030<sup>29</sup>.

Brazil's NDC is economy-wide, based on flexible pathways to achieve its objectives. In the annex of its NDC Brazil presented additional information **meant only for clarification purposes – these are not sectorial targets**. With regards to the forest sector, the following measures have been preliminarily identified for the implementation of Brazil's NDC:

- strengthening and enforcing the implementation of [Brazil's Forest Code \(Law 12.651/2012\)](#), at federal, state and municipal levels;
- strengthening policies and measures with a view to achieve, in the Brazilian Amazon, zero illegal deforestation by 2030 and compensating for GHG emissions from legal suppression of vegetation by 2030;
- restoring and reforesting 12 million hectares of forests by 2030, for multiple purposes;
- 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.

Eliminating illegal deforestation, promoting the enhancement of forest carbon stocks and fostering a sustainable forest economy are common objectives of both Brazil's ENREDD+ and the NDC. Both the ENREDD+ and the NDC also have the implementation of the Forest Code as a strategic element. REDD+ is considered by Brazil as means for the implementation of its NDC. Brazil's NDC states that "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 COP decisions".

The results-based payments received by Brazil from the GCF will contribute to the implementation of the forest sector actions of Brazil's NDC. This project proposal has two main outputs:

1. Development of a pilot of an Environmental Services Incentive Program for Conservation and Recovery of Native Vegetation (Floresta+); and
2. Strengthen the implementation of Brazil's ENREDD+ through improvements in its governance structure and systems.

These two outputs will contribute to the achievement of the ENREDD+ overall objective and the country's NDC. More details are provided below.

#### ***Output 1: Floresta+ Pilot Program***

The Floresta+ is a new and innovative pilot program that aims to provide incentives for environmental services (IES) in the Legal Amazon region, in accordance with Brazil's Forest Code, the ENREDD+ and Brazil's NDC. This IES pilot program will have the following specific objectives:

1. provide monetary compensation to incentivize native vegetation conservation and recovery and improvement of ecosystems that generate environmental services (including but not limited to carbon);
2. prevent the occurrence of deforestation, forest degradation and forest fires through financial incentives;
3. incentivize the conservation and recovery of native vegetation of rural properties, conservation areas, indigenous lands, land settlements and traditional people and community lands;
4. promote compliance with the environmental legislation, especially that related to the protection and recovery of native vegetation (Forest Code);

<sup>29</sup> These estimates are based on Brazil's Second National GHG Inventory which was part of the SNC to the UNFCCC.



5. offer a financial mechanism to foster the development and implementation of public policies aimed at conservation and recovery of native vegetation.

The target audience for the Floresta+ Pilot Program is comprised of:

1. small farmers, according to art. 3º, V, of the Forest Code (Law nº 12.651/2012), up to 4 fiscal modules<sup>30</sup>
2. indigenous peoples;
3. traditional peoples and communities according to I, do art. 3º, of decree nº 6.040/2007 (that use their territory collectively); and
4. public institutions or agencies (including States and municipalities), civil associations, cooperatives and private law foundations that act in topics related to conservation and recovery of native vegetation.

The prioritization of areas to be selected as beneficiaries for the Floresta+ pilot program will consider:

- a) regions with high pressure from deforestation, forest degradation and forest fires;
- b) priority areas for biodiversity conservation and for the recovery of native vegetation, according to norms defined by the MMA;
- c) buffer zones around protected areas;
- d) regions with higher density of small farmers;
- e) regions with higher concentration of traditional peoples and communities;
- f) integration with other public policies related to the conservation and recovery of native vegetation.

The Floresta+ Pilot Program will operate through resource distribution modalities such as:

1. **Modality 1 (Floresta+ Conservation):** incentives to landowners and land users of rural properties according to the classification of item V, of article 3º, of the Forest Code (Law nº 12.651/2012), with the objective of conserving native vegetation remnants additional to the legal requirements;
2. **Modality 2 (Floresta+ Recovery):** incentives to landowners and land users of rural properties according to the classification of item V, of article 3º, of the Forest Code (Law nº 12.651/2012), with the objective of recovering Permanent Preservation Areas (e.g. riparian forests, mountain tops and steep inclines);
3. **Modality 3 (Floresta+ Communities):** support to associations and representative entities of indigenous peoples and traditional peoples and communities;
4. **Modality 4 (Floresta+ Innovation):** support innovative actions and arrangements to develop, implement and leverage public policies for conservation and recovery of native vegetation.

Additional criteria and priority areas will be developed and refined in consultation with the relevant stakeholders, including indigenous peoples and traditional peoples and communities, civil associations, state government representatives, federal agencies, non-governmental organizations, among others.

Direct payments will be calculated based on the area of native vegetation remnants and environmental liabilities to be recovered, in hectares, according to the data in the [National Rural Environmental Registry System \(SICAR\)](#). Amount of payment per hectare will be defined in norms to be published by the Project Advisory Committee and should consider:

- a) the relationship between the preserved native vegetation area and the area of deforested, degraded or burnt native vegetation within the rural property limits;
- b) the opportunity cost of land use in areas with alternative land use;
- c) the reference values of other programs of incentives for environmental services, when applicable.

<sup>30</sup> A fiscal module is an agrarian unit used in each municipality in Brazil, defined according to the terms of article 50, section 2, of Law No. 6,746 of December 10, 1979. (Law No. 6.746/1979) This measure is meant to ensure Floresta+ is focused on small and medium households instead of larger land owners. Indeed 90% of farms have up to four fiscal modules according to INCRA.

Modalities 1, 2 and 3 of the Floresta+ Pilot Program should represent about 80% of the program funding allocation.

***Floresta+ Pilot Program alignment with the ENREDD+, and Brazil's NDC***

As of the time of the submission of this proposal, policies and measures to reduce deforestation in the Amazon region have heavily focused on command and control actions. Studies suggest that enforcement actions are very effective but also have an intrinsic limit on the fight against illegal deforestation. A high degree of continuous investments is needed, to support command and control operations on the ground while also providing positive incentives to the people that contribute to forest conservation and enhancement of forest carbon stocks. Investments in positive incentives are key to maintain and further expand the REDD-plus results achieved in the Amazon region. This will be the core of this GCF proposal.

The Floresta+ Pilot Program will incentivize conservation and the recovery of native vegetation in accordance with Brazil's Forest Code and Proveg. This will contribute to reduce the pressure on native forests therefore consistent with the ongoing efforts to eliminate illegal deforestation and promote the restoration/ recovery of ecosystems, which are part of the general objective of Brazil's ENREDD+ and are listed as potential activities in the forest sector for the achievement of Brazil's NDC and national policies.

***Output 2: The implementation of Brazil's ENREDD+***

About 43 developing countries have signed and in part already received a total of USD 400 million from readiness funds from the Forest Carbon Partnership Facility (FCPF) from the World Bank<sup>31</sup> and other readiness initiatives to develop all the elements for REDD+ including a national REDD+ strategy (NRS), FREL/FRL, NFMS and SISREDD+.

Brazil was not part of any international REDD+ readiness fund or initiative. All REDD+ elements were developed by the country itself, using its own limited national budget (details presented in section B.2.2 (viii) of this proposal) and human resources. With a small part of the resources to be received from the GCF through REDD+ results-based payments, Brazil intends to improve its REDD+ elements to strengthen the implementation of the ENREDD+ and contribute to a more effective and transparent implementation of its NDC.

The resources received by Brazil from the GCF through REDD+ payments will be in part directed to support the:

- 1) Expansion of the forest monitoring system and MRV to include additional REDD+ activities, pools and gases, considering the mapping products produced under the Brazilian Biomes Environmental Monitoring Program, for all biomes, as appropriate, following the guidance from the Working Group of Technical Experts on REDD+. The aim is to submit a national FREL to the UNFCCC by 2020.
- 2) Development of a tool to monitor and measure the impacts of REDD-plus policies and investments and inform decision-making regarding the forest component of Brazil's NDC.
- 3) Improvement Brazil's Safeguards Information System for REDD+ (SISREDD+) and its ombudsman, making it more complete, transparent and accessible.
- 4) Enhancement of the capacities and access of the various stakeholders for participating in the CONAREDD+ and its Consultative Chambers, including the revision of the National REDD+ Strategy in 2020.
- 5) [South-south Cooperation Program in Forests and Climate Change](#) designed by the MMA and the Brazilian Agency of Cooperation of the Ministry of Foreign Affairs (ABC/MRE)

A stronger governance structure and more transparent data and information systems will contribute to the long-term sustainability of these investments. **It will also contribute for the effective implementation of the measures needed in the forest sector for the achievement of the national target indicated in Brazil's NDC.**

The REDD-plus results-based payments from the GCF will also fund a [South-south Cooperation Program in Forests and Climate Change](#) designed by the MMA and the Brazilian Agency of Cooperation of the Ministry

<sup>31</sup> For more information see: <https://www.forestcarbonpartnership.org/about-fcpf-0>, last accessed on August 1<sup>st</sup>, 2018.

of Foreign Affairs (ABC/MRE). This Program has as its overall objective contributing to the reduction of global GHG emissions and the achievement of Parties commitments under the UNFCCC and its Paris Agreement, through their NDCs, by strengthening the technical and institutional capacities of developing countries to achieve REDD-plus results. The Program is aligned with Brazil's NDC and ENREDD+. Brazil's NDC recognizes the complementary role of South-South cooperation, based on solidarity and common sustainable development priorities, for the achievement of the ultimate objective of the Convention.

The GCF resources will allow the MMA and the ABC to develop knowledge materials in English, Spanish and French to share with other developing countries the Brazilian experience developing and implementing effective public policies to protect its forests and curb deforestation and in forest monitoring and MRV systems for REDD+. Regional workshops and exchanges, including site visits, will also be promoted.

The implementation of Brazil's ENREDD+ should represent less than 10% of the total funding allocation.

**C.2.2. Expected outputs and outcomes:**

Please provide the following information:

| Component(s)   | Outputs  | Outcomes  |
|--|--|---|
| Forest sector actions to contribute to the implementation of Brazil's Nationally Determined Contribution | Output 1 Implementation of the Floresta+ Pilot Program           | M5.0 Strengthened institutional and regulatory systems <ul style="list-style-type: none"> <li>• Projects supporting local and indigenous organizations in the implementation of the National Policy on Environmental and Territorial Management of Indigenous Land.</li> <li>• Projects supporting local and indigenous organizations in the strengthening of socioenvironmental management, housing and green infrastructure, cultural manifestations and economic sustainability to local and traditional communities.</li> <li>• Projects supporting the improvement and the adoption of innovative instruments for public policies related to forest conservation and restoration (e.g. PPCDAm, Planaveg, Forest Concessions, National Forest Inventory, SICAR, Sinaflor, etc.).</li> <li>• REDD+ systems and tools improved (SISREDD+, Public Policy Matrix)</li> <li>• ENREDD+ revised.</li> <li>• Representatives actively engaged in the CONAREDD+ and CCTs meetings and activities.</li> <li>• Information and lesson learnt materials produced in different languages.</li> </ul><br>M9.0 Improved management of land and forest <ul style="list-style-type: none"> <li>• Increased area of forests supported with Incentives for Ecosystem Services for conservation.</li> <li>• Increased area of land supported with Incentives for Ecosystem Services for restoration.</li> <li>• Mapping products produced.</li> </ul> |
|  | Output 2 Implementation of the National REDD+ Strategy (ENREDD+) |   |
|  | Output 3 Program management*                                     |   |

|  |  |   |
|--|--|---|
|  |  | <ul style="list-style-type: none"> <li>Estimates of GHG from REDD+ activities carried out.</li> </ul> |
|--|--|---|

\* Project Management is described in section G below.

### C.2.3. Timeframe of implementation (for monitoring and reporting purposes):

Please provide the following information:

| Outputs  | Expected year to be achieved |
|--|------------------------------|
| Output 1 Implementation of the Floresta+ Pilot Program           | Year 6                       |
| Output 2 Implementation of the National REDD+ Strategy (ENREDD+) | Year 6                       |
| Output 3 Program Management                                      | Year 6                       |

If needed, provide any additional comments/explanations:

#### Output 1:

The first 12 months of implementation of Floresta+ will be used to conduct extensive stakeholder consultations and social and environmental impact assessments in line with the ESMF, in order to establish detailed and operational safeguards management plans and to inform the broader design of Floresta+, including the selection of the beneficiaries in the Modalities 1, 2, 3 and 4. It includes the establishment and operation of a governance structure; the definition of values and priority areas for direct payments; upgrades in SICAR for registering and monitoring processes; the development of a simplified online platform to register the proposals for direct payments; the selection process of the beneficiaries and projects; the establishment of the contracts.

The direct payments for each household in Modalities 1 and 2 will be made up to four years during the project, considering the period between the admission and the end of the project. From that, annual payments will be based in the monitoring results of forest conservation and restoration. The projects' duration in Modalities 3 and 4 will be determined in the specific criteria and guidelines for each public.

#### Output 2:

The activities in this output will follow the calendar established in the ENREDD+ and CONAREDD+. The activities are currently underway, and the project will support to enhance the products and processes. The focus of the first year is to support the preparation of the national FREL and to improve the implementation of SISREDD+, including exploring synergies with the Grievance Redress Mechanism and safeguards requirements for GCF. After that, the Public Policy Matrix and the revision of the National REDD+ Strategy will be conducted taking into consideration the Brazil's NDC. The enhancement of the capacities and access of the various stakeholders for participating in the CONAREDD+ and its Consultative Chambers and the South-South Cooperation initiatives are cross-cutting issues and will be implemented during all the project.

### C.2.4. Budget estimate (for monitoring and reporting purposes):

| Output   | Indicative cost (USD) | GCF proceeds | Co-financing (if any) |        |
|--|-----------------------|--------------|-----------------------|--------|
|  |                       | Amount       | Amount                | Source |
| Output 1 Floresta+ Incentives                                    | 130 million           | 130 million  | 0                     | 0      |
| Output 2 Implementation of the National REDD+ Strategy (ENREDD+) | 10.9 million          | 10.9 million | 0                     | 0      |
| Output 3 Program Management                                      | 9.1 million           | 9.1 million  | 0                     | 0      |
| <b>Indicative total cost and currency (USD or EUR)</b>           | 150 million           | 150 million* | 0                     |        |

\*150 million is the estimated payments to be received through this pilot program, in accordance of its Terms of Reference. It is not necessarily expected that this total amount will be received through the current proposal.

#### C.2.5. Implementation arrangements:

*List and describe the institutions involved in the activities that will be funded with proceeds from this pilot program, and explain their anticipated roles and interactions with one another, including the flow of funds.*

The Government of Brazil (GOB), through MMA, has requested UNDP's assistance for the design and implementation of this Project after a selection process, which showed UNDP's comparative advantage, including vast experience in supporting the Government in project implementation in Brazil, its in-country presence, its large portfolio of biodiversity, climate change and REDD-plus, both nationally and globally, and its role as GCF Accredited Entity (AE). The selection process conducted by MMA is described in the section E.1.3.

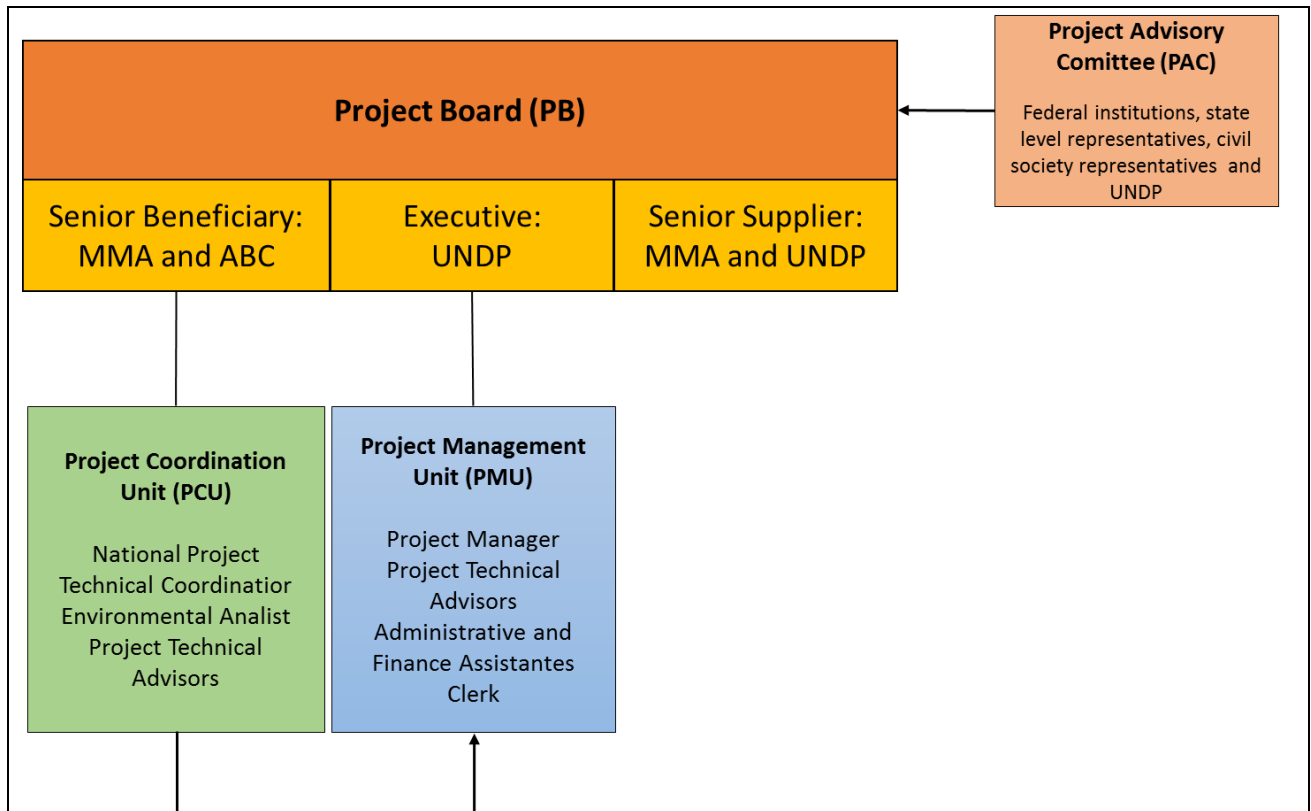
The project will be implemented under UNDP's Direct Implementation modality (DIM). As such the main Executing Agency/ Implementing Partner for this project will be UNDP. The Implementing Partner is responsible and accountable for managing this project, including the monitoring and evaluation of project interventions, achieving project outcomes, and for the effective use of the project resources.

MMA will be UNDP's lead government partner and will operate as the Technical Responsible for this project. The Technical Responsible oversees making decisions regarding the project actions related to the forest public policies. MMA will also support technical oversight and management through its role on the Project Board; in chairing the Project Advisory Committee; and in designating a wide range of staff for delivery of different project activities and coordination of technical outputs.

In addition, UNDP may enter into agreements with other organizations or entities, known as "Responsible Parties", which may carry out project activities and produce project outputs on behalf of the Implementing Partner. Responsible Parties are accountable directly to the Implementing Partner. Given the nature of this project, appropriate responsible parties will be selected and indicated by MMA and UNDP, as per UNDP rules and regulations.

In line with UNDP Internal Control Framework (ICF) there will be a clear division between UNDP's oversight function as GCF AE and its role as Implementing Partner. The management arrangements, described below and summarized in Figure 12, constitute the Project Board; Project Coordination Unit, Project Management Unit, and a Project Advisory Committee.

Figure 12. Project management arrangements



### Project Board (PB)

Project Board is responsible for making by consensus or majority, management decisions when guidance is required by the Project Manager, including recommendations for UNDP/Implementing Partner approval of project plans and revisions, and addressing any project level grievances. To ensure UNDP's ultimate accountability, Project Board decisions should be made in accordance with standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition. Specific responsibilities of the Project Board include:

- Provide overall guidance and direction to the project, ensuring it remains within any specified constraints;
- Address project issues as raised by the project manager;
- Provide guidance on new project risks, and agree on possible countermeasures and management actions to address specific risks;
- Agree on project manager's tolerances as required;
- Review the project progress, and provide direction and recommendations to ensure that the agreed deliverables are produced satisfactorily according to plans;
- Appraise the annual project implementation report, including the quality assessment rating report; make recommendations for the workplan;
- Provide ad hoc direction and advice for exceptional situations when the project manager's tolerances are exceeded; and
- Assess and decide to proceed on project changes through appropriate revisions.

**The Project Board (PB)** will provide overall managerial guidance for project execution. It will: (i) analyze and discuss the development of the Project activities and recommend changes as required based on project monitoring and evaluation processes and products and in line with UNDP policies; (ii) discuss and approve the Annual Work Plans ensuring that required resources are committed; (iii) discuss and approve the Progress Reports and Final Report of the Project; (iv) analyze Project achievements and assure these are used for performance improvement, accountability and learning; and (v) settle controversies arbitrating

on any conflicts within the project or negotiating a solution to any problems with external bodies. To ensure UNDP's ultimate accountability for the project results, PB decisions will be made in accordance to standards that shall ensure management for development results, fairness and integrity.

The PB will be composed of UNDP, the Brazilian Agency for Cooperation (ABC) and the MMA and their respective alternate members. The Board can be expanded, upon agreement between the Parties. UNDP will represent the main Executing Agency for the project, chairing the PB and organizing its meetings at least once a year or upon request of either of the Parties. The ABC is the institution responsible, within the government, for following up on the activities for this Project; and the MMA is responsible for the provision of technical expertise and guidance for the project. For this, the MMA will appoint a National Project Technical Director (NPTD) who will be a senior staff member and will be responsible at the highest level for providing guidance on the technical feasibility of the project and ensuring its implementation leads to the achievement of project's results. He/she will represent the MMA on the PB; will chair the Project Advisory Committee (PAC); will keep the MMA updated on Project advances and challenges as needed and will represent the Project at high-level national and international meetings. This is a part-time contribution continuing for the duration of the Project. The Project Board's role in project management will be complemented by inputs and recommendations from a Project Advisory Committee (PAC) (see below). In addition, the PB will approve the appointment and responsibilities of a Project Manager who will be responsible for the daily project execution.

The composition of the Project Board will include the following roles:

Executive: The Executive is an individual who represents the main Executing Agency of the project who will chair the Project Board. The Executive for this project is UNDP. The Executive is ultimately responsible for the project, supported by the Senior Beneficiary and Senior Supplier. The Executive's role is to ensure that the project is focused throughout its life cycle on achieving its objectives and delivering outputs that will contribute to higher level outcomes. The executive must ensure that the project gives value for money, ensuring cost-conscious approach to the project, balancing the demands of beneficiary and supplier.

Specific Responsibilities (as part of the above responsibilities for the Project Board):

- Ensure that there is a coherent project organization structure and logical set of plans;
- Set tolerances in the AWP and other plans as required for the Project Manager;
- Monitor and control the progress of the project at a strategic level;
- Ensure that risks are being tracked and mitigated as effectively as possible;
- Brief relevant stakeholders about project progress;
- Organize and chair Project Board meetings.

Senior Supplier: The Senior Supplier is an individual or group representing the interests of the parties concerned which provide funding and/or technical expertise to the project (designing, developing, facilitating, procuring, implementing). The Senior Supplier's primary function within the Board is to provide guidance regarding the technical feasibility of the project. The Senior Supplier role must have the authority to commit or acquire supplier resources required. If necessary, more than one person may be required for this role. Typically, the implementing partner, UNDP and/or donor(s) would be represented under this role. However, considering it to be a project of REDD-plus results-based payments, MMA will also perform this role.

Specific Responsibilities (as part of the above responsibilities for the Project Board):

- Make sure that progress towards the outputs remains consistent from the supplier perspective;
- Promote and maintain focus on the expected project output(s) from the point of view of supplier management;
- Ensure that the supplier resources required for the project are made available;
- Contribute supplier opinions on Project Board decisions on whether to implement recommendations on proposed changes;
- Arbitrate on, and ensure resolution of, any supplier priority or resource conflicts.

Senior Beneficiary: The Senior Beneficiary is an individual or group of individuals representing the interests of those who will ultimately benefit from the project. The Senior Beneficiary's primary function within the Board is to ensure the realization of project results from the perspective of project beneficiaries. The Senior Beneficiary role is held by a representative of the government or civil society.

The Senior Beneficiary is responsible for validating the needs and for monitoring that the solution will meet those needs within the constraints of the project. The Senior Beneficiary role monitors progress against targets and quality criteria. This role may require more than one person to cover all the beneficiary interests. The Senior Beneficiary for this project are the MMA and the ABC. Specific Responsibilities (as part of the above responsibilities for the Project Board):

- Prioritize and contribute beneficiaries' opinions on Project Board decisions on whether to implement recommendations on proposed changes;
- Specification of the Beneficiary's needs is accurate, complete and unambiguous;
- Implementation of activities at all stages is monitored to ensure that they will meet the beneficiary's needs and are progressing towards that target;
- Impact of potential changes is evaluated from the beneficiary point of view;
- Risks to the beneficiaries are frequently monitored.

### **Project Assurance**

UNDP provides a three – tiered supervision, oversight and quality assurance role involving UNDP staff in Country Offices and at regional and headquarters levels. Project Assurance must be totally independent of the Project Management function. The quality assurance role supports the Project Board and Project Management Unit by carrying out objective and independent project oversight and monitoring functions. This role ensures appropriate project management milestones are managed and completed.

### **Project Advisory Committee (PAC)**

The MMA through its NPTD in the PB; and the Project Technical Advisors (PTAs), in collaboration with the Project Manager (PM), in the PMU will take the lead regarding technical responsibilities during the execution of the project and ensure alignment with relevant national policies and programs. In this role, the MMA, as chair of the PAC, will closely coordinate the Committee composed by: Brazilian Forest Service, FUNAI, ICMBio, state level representatives, civil society representatives and UNDP. The Committee can be expanded, upon agreement between the Parties. The vehicle for this coordination will be a Project Advisory Committee (PAC) to be constituted at Project inception as the highest level for supporting technical coordination of the project. The PAC will play a critical role in facilitating inter-institutional coordination and ensuring complementarity of actions among different stakeholders and co-financiers. The main responsibility of the PAC is to see that the project's activities lead to the required outcomes as defined in the Project Document. The Technical Committee will also advise the PM on ensuring coordination between the project and other related initiatives and current and emerging projects.

The PAC will meet, at least, twice a year to review progress and obstacles and to advise on strategic and critical Project issues. Matters of institutional concern (i.e., going beyond the Project's scope and contents) will be addressed at the appropriate levels of dialogue between UNDP and the GOB. The PAC will provide recommendations to the PB on progress and on any changes that may be required for improving efficiency and effectiveness. The NPTD will instruct the PTAs to provide detailed project information to the PAC as needed, to convene meetings and to prepare PAC minutes. He/ she will be assisted by the PM in these. Extraordinary PAC meetings can be held if deemed necessary by one of the PAC members. If appropriate, the PAC can invite external consultants to assist in the monitoring process.

### **Project Coordination Unit (PCU)**

A Project Coordination Unit (PCU), created within the administrative structure of the MMA, will be responsible for the strategic orientation and overall technical coordination of the project, ensuring that progress, implementation and results are agreed in a timely and consistent manner and contribute to compliance strategic objectives of the project.



The MMA will be a Technical Coordinator of the Project and will have responsibility for, among others: (i) general strategic guiding and technical coordinating of the project; (ii) preparing the Annual Operational Plans (AOP) and work plans, in agreement with the UNDP; (iii) approving a terms of reference for consultants hiring and acquisitions; (iv) analyzing and approving the products and services contracted by UNDP; and (v) reviewing the final version of the progress reports.

The PCU will be led by the National Project Technical Coordinator (NPTC) and composed of an environmental analyst and two project technical advisors. The coordinator and the environmental analyst will be MMA staff, while the two project technical advisors will collaborate with the MMA in project technical coordination.

The PCU will be responsible for the overall management and implementation of the project's activities and requesting disbursement of the Project's resources for their execution. The PCU will collaborate with the PMU in project implementation, offering technical inputs and guidance into the planning and execution of project activities

### **Project Management Unit (PMU)**

A Project Management Unit (PMU) will be responsible for overseeing the day-to-day execution of Project activities. The PMU will have responsibility for, among others: (i) operational planning, managing and executing the project including the direct supervision of project activities subcontracted to specialists and other institutions, as well as those that are to be implemented through the MMA, if applicable; (ii) coordinating the management of financial resources and procurement; (iii) reporting on the application of resources and results achieved; (iv) preparing management reports for the PCU, PAC, PB, GCF, Brazil's DNA to the GCF and UNDP including annual reports and any proposals for the adaptive management of the Project, if required and based on inputs from the Project M&E plan; (v) promoting inter-institutional linkages; and (vi) disseminating project results.

The PMU will consist of one Project Manager, Project Technical Advisors (PTAs), Administrative Financial Assistants, clerks, and technical consultants responsible for specific deliverables and hired with GCF resources. The PTA will collaborate with the PMU in project implementation, channeling PCU's technical inputs and guidance into the planning and execution of project activities. The PTA will hold internal meetings in the MMA as needed to integrate the MMA specialists' guidance into project implementation and ensure consistency between the various project elements and activities provided or funded by other donors. Upon request of the MMA implementation will be through the DIM modality with UNDP providing direct project services, such as procurement and hiring of consultants following best value for money, transparency and effective competition. These will follow current UNDP policies and procedures including those for cost recovery. Upon request of the MMA, UNDP will also provide technical backstopping during the implementation of the project. The costs corresponding to this technical support towards project execution will be recovered following UNDP's policy.

The PMU will be led by the Project Manager (PM) and will be responsible for the overall management and implementation of the project's activities and requesting disbursement of the Project's resources for their execution, according with the PCU's technical inputs and guidance into the planning and execution of project activities.

Under the PM's lead and guidance the PMU team will support the PCU in the preparation of the Annual Operational Plans (AOP) for the effective and efficient implementation of the project activities to achieve stated objectives; will be responsible for all substantive reports from the Project, to be submitted to approval of the PCU; will prepare and/or oversee the development of Terms of Reference for consultants, subcontractors and partnerships hired for specific technical assignments and their close monitoring, in accordance with the PCU guidance, ensure consistency between the various project elements and activities provided or funded by other donors; and develop reports on project progress on the project for the PB and technical meetings, and other appropriate fora. This is a full-time position continuing for the duration of the Project, reporting directly to UNDP.

The Project Manager has the authority to run the project on a day-to-day basis on behalf of the Project Board within the constraints laid down by the Board and in accordance the guidelines of the PCU. The

Project Manager is responsible for day-to-day management and decision-making for the project. The Project Manager's prime responsibility is to ensure that the project produces the results specified in the project document, to the required standard of quality and within the specified constraints of time and cost.

**Property of Equipment and Goods:** Goods and equipment purchased as part of this project will initially belong to the UNDP Country Office. During the implementation phase, transfer to national beneficiaries will be undertaken in accordance with UNDP procedures and policies, subject to prior agreement with the PCU. Only national organizations will be considered as beneficiaries.

**Audit:** According to UNDP's general corporate audit regulations, internal and external audits will be carried out and these costs will be covered by the project. The audit will be performed in accordance with UNDP financial regulations and rules and applicable to audit policies on UNDP and GCF projects. The audit will be conducted by a specialized and certified audit firm. UNDP will be responsible for making audit arrangements for the project in communication with the PCU. UNDP and the PCU will provide audit management responses and the National Project Manager and project support team will address audit recommendations, as applicable.

**Learning and knowledge-sharing:** Results from the project will be disseminated within and beyond the project intervention zone through existing information-sharing networks and forums. The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation though lessons learned. The project will identify, analyze and share lessons-learned that might be beneficial in the design and implementation of similar future projects. There will also be a two-way flow of information between this project and other projects/programs of a similar focus.

**Communications and Visibility Requirements:** The project will comply with UNDP's (see <http://intra.undp.org/coa/branding.shtml>), the MMA and GCF Branding Guidelines: Specific guidelines on UNDP logo use can be accessed at: <http://intra.undp.org/branding/useOfLogo.html>. Amongst other requirements, these guidelines describe when and how the UNDP and the logos of donors to UNDP projects are used. Specific guidelines on the MMA logo use can be accessed at <http://www.secom.gov.br/atuacao/publicidade/orientacoes-para-uso-da-marca-do-governo-federal>. Full compliance will also be observed with the GCF's Communication and Visibility Guidelines. To accord proper acknowledgement to the GCF for providing funding, a GCF logo will appear on all relevant project publications, including, among others, project hardware and equipment purchased with GCF funds. Any citation on publications stemming from the project will also accord proper acknowledgment to the GCF.

For an entity to be engaged as an implementing partner or responsible party on a UNDP project, a capacity assessment must be performed. Parties concerned with project formulation and design, particularly the UNDP office, the government and the institution that will manage the project, must review needed capacities. They first determine which tasks apply to the project. For each applicable task, the parties define any additional measures to ensure that tasks can be performed. The measures must be documented for follow-up action. This may be done, for example, through an action plan, an annex to the project document or through minutes of a design meeting or workshop. Additionally, UNDP assures that its partners are screened against UN Sanctions and Eligibility through a UN Security Council online system that contains a wide database of possible violators. In addition, UNDP has access to the United Nations Global Marketplace to verify if any supplier has been involved in terrorism and corruption. Moreover, UNDP has a policy on Due Diligence and Partnerships with Private Sectors in which a Risk Assessment Tool is applied before any agreement is made. This tool includes the following exclusionary criteria:

- Controversial weapons or their components;
- Armaments and/or weapons or their components, including military supplies;
- Replica weapons;
- Tobacco or tobacco products;
- Violations of UN sanctions, UN ineligibility lists or UNDP vendor sanctions list;
- Pornography;
- Substances subject to international bans or phase-outs, and wildlife or products regulated under the CITES;
- Gambling (excluding lotteries with charitable objectives);

- Violation of human rights or complicity in human rights violations;
- Forced or compulsory labor;
- Child labor.

#### C.2.6. Non-carbon benefits:

*Provide information on the non-carbon benefits associated with the implementation of REDD+ activities, explaining their nature, scale and importance for the long-term sustainability of REDD-plus activities and providing evidence to this regard.*

**The main objective of Brazil's ENREDD+ is to contribute to climate change mitigation by eliminating illegal deforestation, promoting conservation and restoration of forest ecosystems and fostering a low-carbon and sustainable forest economy, delivering environmental, social and economic benefits.** The REDD-plus policies and measures implemented by Brazil to reduce deforestation in the Amazon biome since 2004 have produced important results in the three pillars of sustainability: economic, environmental and social. These benefits are further detailed below. Most of the information on economic and social indicators were extracted from the [2016 SUDAM summary report](#).

#### **Environmental benefits**

Implementation of REDD-plus activities in Brazil have contributed to the Aichi biodiversity targets including:

- National objective 5: Brazil has reduced deforestation in the Amazon well over the aim to achieve 50% reduction compared to the 2009 rate.
- National objective 11: Conservation of 30% of lands in the Amazon through protected areas.

For additional information on environmental benefits of REDD+ implementation please refer to Annex XIIIh.

Beyond biodiversity conservation, PPCDAm has also contributed to the enhancement of forest carbon stocks in previously deforested areas. The [TerraClass](#) data indicates that on average 22% of the total deforested area before 2004, has been replaced by secondary vegetation in the subsequent years (see Table 17). This enhancement of forest carbon stocks, due to reduced pressure on forests since the establishment of PPCDAm, represents an important contribution beyond climate change mitigation, to enhance resilience and produce multiple environmental benefits to local, regional and the global community.

#### **Economic benefits**

The regional economic growth of the last decade was based on the production and export of raw materials. In 2014, more than 28% of the raw materials exported by Brazil came from the Amazon region, especially soybeans, iron ore and wood. In this context, PPCDAm initiatives and other related ones, such as the sustainable roundtable for soy, had a key role to ensure that production and protection were reconciled in the Amazon region during that period.

The reduction in deforestation was combined with an increase in agricultural production in the northern region of Brazil. Decoupling the production of agricultural commodities from deforestation is a major challenge faced by most developing countries with tropical forests. The forests are often seen as opportunity cost rather than a resource. The value of the forests standing is lower than the cleared land. By increasing the costs associated with conducting illegal activities in the Amazon region (through command and control actions, restrictions to access credits in public banks, etc.) the GOB has significantly increased the transaction costs associated with opening new forest areas for agriculture.

#### **Social benefits**

The large reduction in deforestation in the Amazon region through the implementation of REDD-plus policies and measures have not negatively affect the social development in the region. **Since 2000, the HDI for the Amazon region has improved faster than the rest of Brazil.** Three states had a variation of more

than 30% between 2000 and 2010, and Roraima was the only state in which the increase was the same as the national level. For all other states this variation was much higher than the national average.

Education levels have improved in the whole Amazon region since 2000 but remained lower than the national average in 2010. The variation/ improvement was higher in the Amazon region than in the national average (in four states above 70%, while the national average was about 40%). Since 2000, longevity has also increased on average in the Amazon region more than the national average. The income indicator has also seen important progress during that decade. The increase in income in the municipalities of the Amazon region between 2000 and 2010 was higher than the national average, except for two states, which had similar results to the national average.

### **Governance benefits**

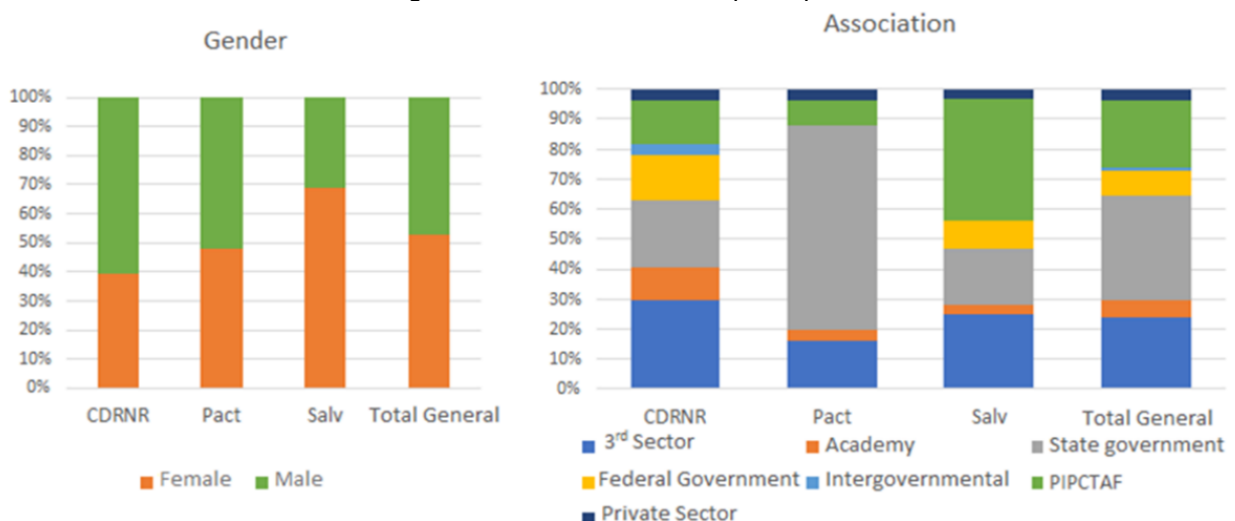
REDD-plus has contributed to better integrate the governance structures of climate change, forest and biodiversity related policies, seeking to promote consistency and synergies among them at the federal, state and municipal levels. These efforts are ongoing and will be reinforced through the implementation of this proposal, with the aim to contribute to the implementation of Brazil's NDC in the forest sector.

PPCDAm 3<sup>rd</sup> phase (2012-2015) revised this policy governance structure to promote greater integration and coordination among the agencies and entities participating in the actions. The PPCDAm 3<sup>rd</sup> phase governance model was divided into three spheres: Executive, Consultative and Transparency. This sought to facilitate the exchange of information, adjustments of paths, decision-making by the MMA as a coordinating body and the solution of problems and conflicts that may arise between federal agencies and even between federal and state agencies.

The governance for the implementation of REDD-plus, by its turn, is one of the most participative structures created by the Brazilian government for implementing policies in the forest sector. Figure 13 presents the profile of participants in the CCTs created by the CONAREDD+ in 2016.

Strengthen existing governance instances of indigenous peoples and traditional peoples and communities, CNPCT, CNPI and CG PNGATI, has been a key element of REDD+ implementation in indigenous territories. The increased participation of indigenous representatives in the governance for REDD+ implementation indicates progress in that direction.

Figure 13. Profile of the CCT participants



Source: Brazil's 2<sup>nd</sup> Sol, 2018

## D. Investment Framework

*Describe in this section how the proposed REDD-plus results-based program aligns with each of the criteria of the Investment Framework for the activities that lead to the achieved results for the full period over which the results being submitted in this proposal were achieved.*

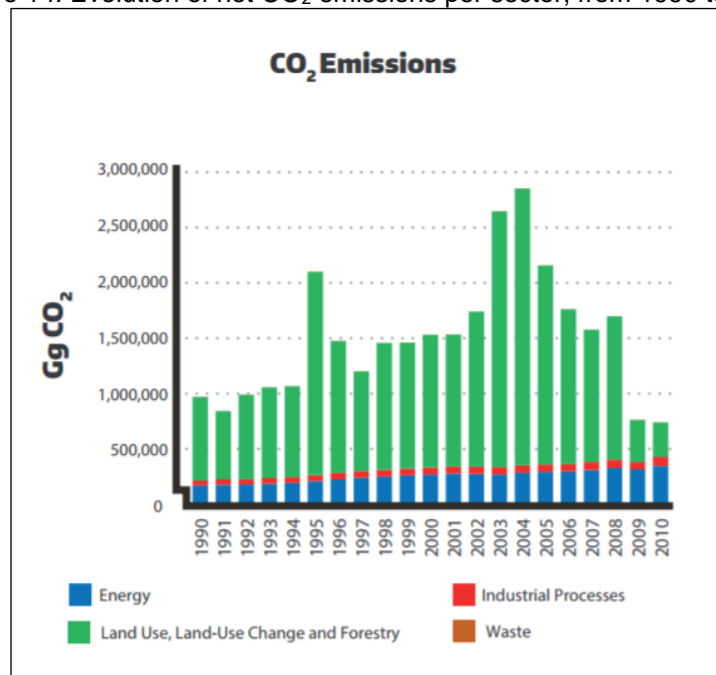
### D.1. Impact potential

*Describe the potential of the program to contribute to the achievement of the Fund's objectives and results areas.*

Since 2006, Brazil has achieved significant results through reducing emissions from deforestation in the Amazon biome. **Between 2006 and 2015, Brazil reduced a total of 6,125,501,727.00 tCO<sub>2</sub>e of emissions from deforestation in the Amazon biome.** This total result, achieved by Brazil in 10 years, corresponds to half of the total CO<sub>2</sub> emissions from all Annex I countries in 2012 (UNFCCC, 2018).

According to data from the Third National GHG Inventory, the LULUCF sector represented 83% of Brazil's total CO<sub>2</sub> emissions in 2005 and 42% in 2010. The implementation of REDD+ policies and measures in the Amazon biome had an important impact in Brazil's national GHG emission profile, as shown in Figure 14. Because of the policies and measures implemented by Brazil to reduce deforestation in the Amazon biome, the forest sector is no longer the highest emitting sector in Brazil.

Figure 14. Evolution of net CO<sub>2</sub> emissions per sector, from 1990 to 2010



Source: [Brazil's TNC to the UNFCCC](#), 2016

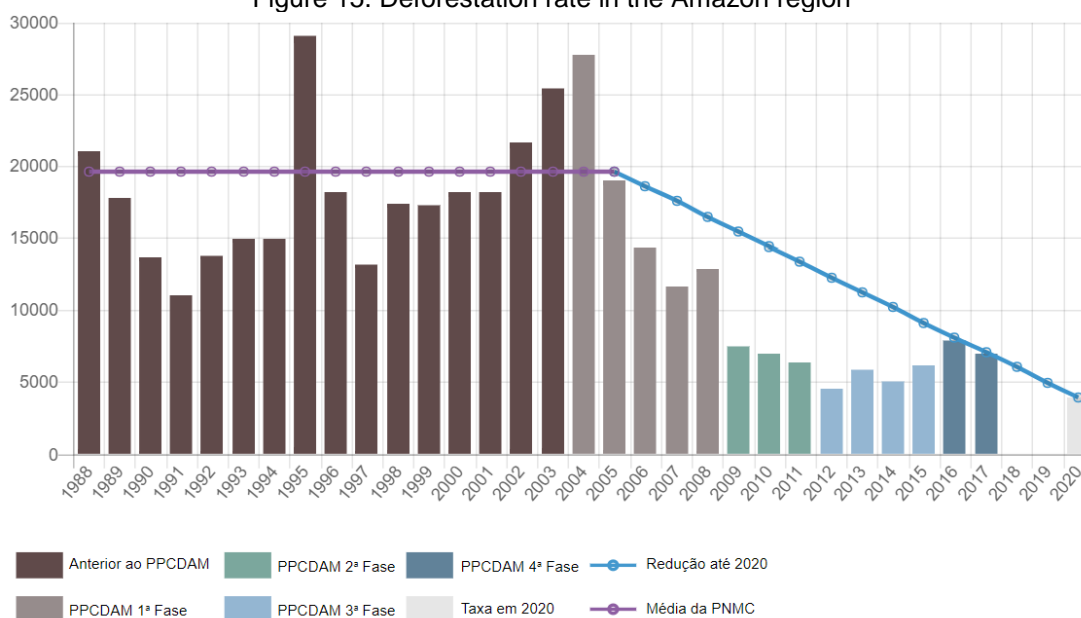
The PPCDAm, launched in March 2004, has the objective of reducing the rates of deforestation in the Amazon, by implementing actions related to land use and territorial planning, fostering sustainable production activities and environmental monitoring, control and enforcement. The PPCDAm is reviewed periodically to reflect the changes in the dynamics of the drivers of deforestation in the Amazon, the lessons learned from the actions being implemented and the progress made.

Although PPCDAm 3<sup>rd</sup> phase made important progress (2012-2015), the maintenance of low rates of deforestation will continue to depend on the improvement of integrated actions related to the identification and repression of illegal activities and organized crime, the promotion of a forest-based economy and land-use planning of the territory that allows for better land-use planning and management.

For its 4<sup>th</sup> phase (2016-2020), a new Action Axis was included in PPCDAm aimed to create regulation and economic acts to combat deforestation. In addition to the reduction of gross deforestation, one of the major challenges for this 4<sup>th</sup> phase of PPCDAm is to distinguish between illegal and legal deforestation, so that the illegal deforestation can be effectively eliminated, and policies promoted to reduce legal suppression of native vegetation, without undermining regional development. Figure 15, presents the PRODES deforestation rates for the Amazon region considering the different phases of the implementation of PPCDAm.

It is important to note that REDD+ results cannot be directly attributed to a single policy or measure for multiple reasons. From a conceptual standpoint, there is not always a direct and linear relationship between a specific project component and emission reductions. Rather emission reductions result from a series of interrelationships of different enabling policies (e.g. inter-institutional coordination) and direct investments made in the field (e.g. subsidies to farmer).

Figure 15. Deforestation rate in the Amazon region



Source: [MMA, 2018](#)

REDD-plus results-based payments received by Brazil from the GCF will be used to create a pilot Environmental Services Incentive Program for Conservation and Recovery of Native Vegetation that will be key in the implementation of Forest Code and PPCDAm 4<sup>th</sup> phase, therefore contributing to achieve the objective of the ENREDD+ and Brazil's NDC. This will also contribute to the sustainability of the results already achieved by Brazil in the long-run.

## D.2. Paradigm shift potential

*Describe the degree to which the REDD-plus activity catalysed impact beyond a one-off program investment.*

The Brazilian Amazon is home to about 27 million people (PNAD, 2013)<sup>32</sup>. Several regional developing programs and the global demand for agricultural commodities have increased the pressure on natural forests over the years, leading to the expansion of cattle ranching, agriculture and urbanization into forest areas. Table 17 presents data from [TerraClass](#), a program created by INPE/ MCTIC and Embrapa/ MAPA

<sup>32</sup> For more information see: <http://www.sudam.gov.br/conteudo/destaques/arquivos/boletim-amazonia-n02-2016.pdf>

to track the subsequent use of deforested areas to improve the understanding of the dynamic of drivers of deforestation in the Amazon region.

Through TerraClass it is possible to understand the dynamics of land use and coverage in the Brazilian Amazon. Five years of land use and coverage have already been mapped (2004, 2008, 2010, 2012 and 2014). With these results it is possible to make an evaluation of the dynamics of the land use and occupation of the deforested areas in the 10 years of the implementation of the PPCDAm.

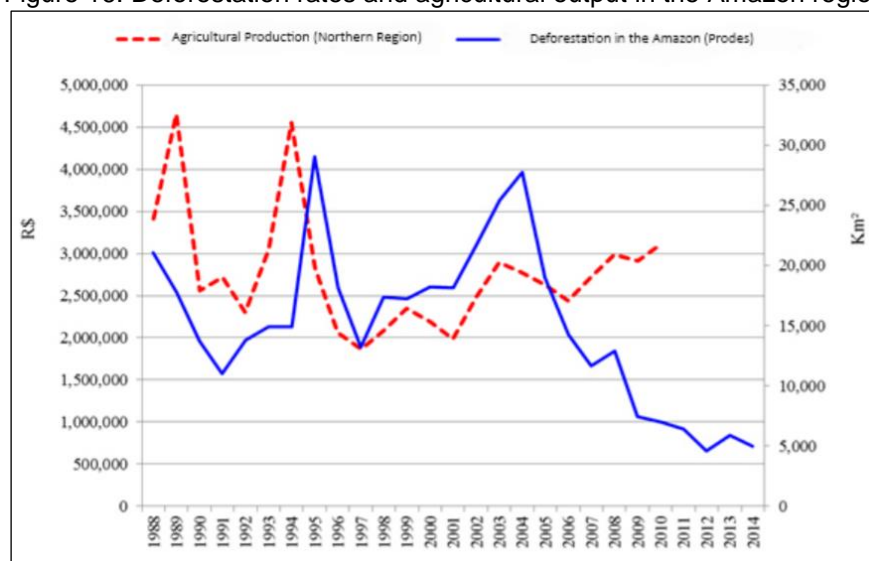
Table 17. Evolution of areas mapped by TerraClass between 2004 and 2014

| Classes                    | Area (km <sup>2</sup> ) |                |                |                |                | Proportions (%) |              |              |              |              |
|----------------------------|-------------------------|----------------|----------------|----------------|----------------|-----------------|--------------|--------------|--------------|--------------|
|                            | 2004                    | 2008           | 2010           | 2012           | 2014           | 2004            | 2008         | 2010         | 2012         | 2014         |
| Perennial crops            | 18,354                  | 34,927         | 39,978         | 42,346         | 45,050         | 3.0             | 4.9          | 5.4          | 5.6          | 5.9          |
| Non-observed area          | 48,566                  | 45,406         | 45,849         | 69,132         | 30,056         | 7.9             | 6.4          | 6.2          | 9.2          | 4.0          |
| Settlements                | 2,579                   | 3,818          | 4,474          | 5,341          | 6,010          | 0.4             | 0.5          | 0.6          | 0.7          | 0.8          |
| Mining                     | 799                     | 731            | 967            | 1,049          | 1,272          | 0.1             | 0.1          | 0.1          | 0.1          | 0.2          |
| Mosaic                     | 16,284                  | 24,417         | 17,963         | 9,590          | 16,256         | 2.7             | 3.4          | 2.4          | 1.3          | 2.1          |
| Other                      | 4,637                   | 478            | 2,731          | 6,113          | 7,752          | 0.8             | 0.1          | 0.4          | 0.8          | 1.0          |
| Pasture                    | 422,036                 | 447,160        | 459,467        | 442,403        | 479,760        | 69              | 63           | 62           | 59           | 63           |
| Pastures with bare soil    | 106                     | 594            | 373            | 43             | 63             | 0.0             | 0.1          | 0.1          | 0.0          | 0.0          |
| Pastures clean             | 306,039                 | 335,715        | 339,852        | 345,420        | 377,470        | 49.8            | 47.4         | 45.9         | 46.0         | 49.6         |
| Pastures dirty             | 55,250                  | 62,824         | 56,077         | 50,472         | 60,199         | 9.0             | 8.9          | 7.6          | 6.7          | 7.9          |
| Pastures with regeneration | 60,641                  | 48,027         | 63,165         | 46,468         | 42,028         | 9.9             | 6.8          | 8.5          | 6.2          | 5.5          |
| Reforestation              | 0                       | 0              | 3,015          | 3,176          | 2,922          | 0.0             | 0.0          | 0.4          | 0.4          | 0.4          |
| Secondary vegetation       | 100,674                 | 150,815        | 165,229        | 172,190        | 173,387        | 16.4            | 21.3         | 22.3         | 22.9         | 22.8         |
| <b>Total</b>               | <b>613,928</b>          | <b>707,752</b> | <b>739,673</b> | <b>751,340</b> | <b>762,464</b> | <b>100.0</b>    | <b>100.0</b> | <b>100.0</b> | <b>100.0</b> | <b>100.0</b> |

Source: INPE, 2018, available at: [http://www.inpe.br/cra/projetos\\_pesquisas/arquivos/TerraClass\\_2014\\_v3.pdf](http://www.inpe.br/cra/projetos_pesquisas/arquivos/TerraClass_2014_v3.pdf)

The greatest challenge faced by the Amazon region is to maintain the ecosystem services provided by the natural forest while also supporting the needs and priorities of the growing human population and the economy of the region. The REDD-plus policies and measures, specially PPCDAm for the Amazon region, had an important paradigm shift impact, making the case for reconciling protection of natural forests with production, maintaining the upward trend in agricultural output in States in the northern region of Brazil in years of lower deforestation rates. This shift is presented in Figure 16, where clearly in 2004, there is a change in pattern, agricultural output trends are no longer following deforestation trends.

Figure 16. Deforestation rates and agricultural output in the Amazon region

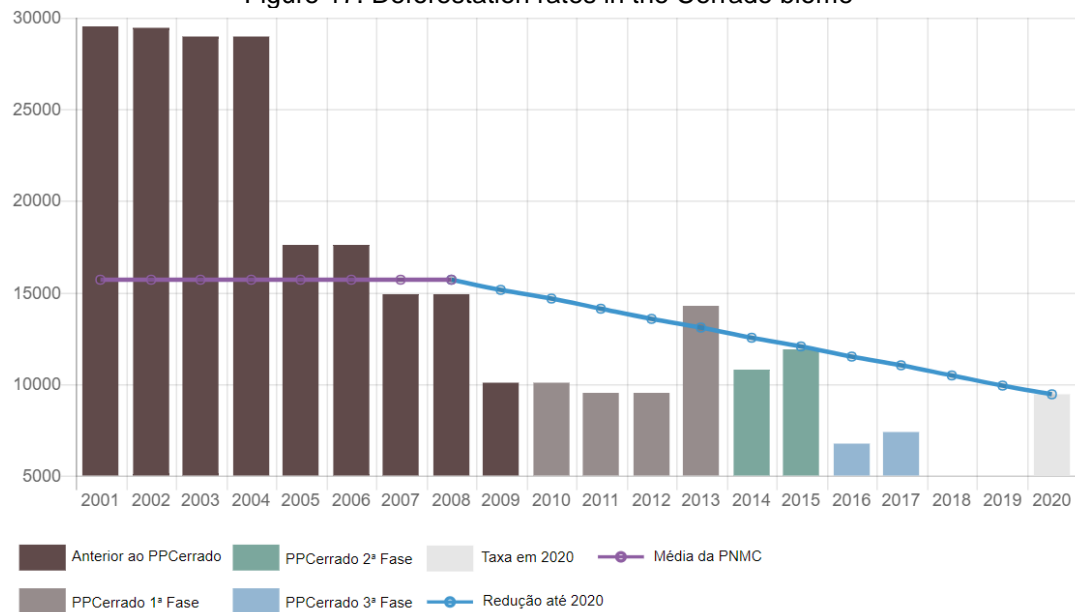


Source: Brazil's ENREDD+, 2015

The success story of the Amazon biome led to emission reductions in the Cerrado biome even before the PPCerrado was created in 2010. Figure 17 shows the deforestation rates in the Cerrado biome from 2001 to 2017. The values are biennial averages of deforestation measured by INPE.

In 2004, deforestation rates started to decrease in the Cerrado biome, in the absence of a specific policy to combat deforestation. According to experts, it can be inferred that PPCDAm had a positive impact or positive leakage to the Cerrado biome, the paradigm shift went beyond the Brazilian Amazon.

Figure 17. Deforestation rates in the Cerrado biome



Source: [MMA, 2018](#)

The paradigm shift triggered by Brazil's experience with the implementation of the REDD+ policies and measures in the Amazon biome goes beyond the national boundaries. INPE/ MCTIC has worked with countries in Africa, Latin America and Asia since the 1990's to assist them in the development of their own forest monitoring data using TerraAmazon. This information served as a basis for many countries REDD+ policies and their technical REDD+ submissions to the UNFCCC.

Brazil has also invested in south-south cooperation initiatives for forests and climate change through results-based payments received by the Amazon Fund. 20% of the total resources received through results-based payments by the Amazon Fund can be used to support the development of deforestation monitoring and control systems in other Brazilian biomes and other countries. Brazil has invested USD 12 million in the development of the capacity to monitor deforestation, changes in the use of land and forests of other countries in the Amazon basin<sup>33</sup>. One of the main outcomes of this project was the production of a regional deforestation map for the Amazon basin, which allows for the understanding of potential regional displacement trends.

Beyond that, the MMA and the Brazilian Agency of Cooperation of the Ministry of Foreign Affairs of Brazil have worked on the development of a [South-south Cooperation Program in Forests and Climate Change](#). The Program has as its overall objective to contribute to the reduction of global GHG emissions and the achievement of Parties commitments under the UNFCCC and its Paris Agreement, through their NDCs, by

<sup>33</sup> For more information see: <http://www.amazonfund.gov.br/en/projeto/Monitoring-Forest-Coverage-in-the-Regional-Amazon/> and <http://www.otca-oficial.info/assets/documents/20170508/70c7925ed598a0813cc675a434b5746b.pdf>, last accessed on July 25<sup>th</sup>, 2018.



strengthening the technical and institutional capacities of developing countries to achieve REDD+ results. This proposal includes support to finance this south-south cooperation program and ensure that this impact beyond the national boundaries is maintained in the long-run.

### D.3. Sustainable development potential

*Describe the wider benefits and priorities, including environmental, social and economic.*

Sustainable development impact of the implementation of REDD-plus policies that lead to emission reductions were discussed in section C.2.6. Those results are summarized further here. For more information please refer to the Annex XIIIh.

**The main objective of Brazil's ENREDD+ is to contribute to climate change mitigation by eliminating illegal deforestation, promoting conservation and restoration of forest ecosystems and fostering a low-carbon and sustainable forest economy, delivering environmental, social and economic benefits.** The REDD-plus policies and measures implemented by Brazil to reduce deforestation in the Amazon biome since 2006 have produced important results in the three pillars of sustainability: economic, environmental and social. These benefits are further detailed below. The information on economic and social indicators was extracted from the [2016 SUDAM summary report](#).

#### **Economic benefits**

The Gross Domestic Product (GDP) of the states in the Amazon region grew 100% between 2005 and 2012 (Table 18). The relative share of the Amazon states in the national's GDP had an increase from 7,8% to 8,4%. This process needs to be further fostered so that the Amazon can increase its economic potential in a sustainable way. This economic growth should not be sought at any cost. Reconciling the needs of the local Amazonian population for a better quality of life while respecting the environment and protecting the Amazon forest is the key challenge that the REDD-plus policies and measures aim to address. Furthermore, the economic potential of the Amazon region includes activities that are not yet adequately accounted if observing only the GDP, such as extractivism, payment for ecosystem services, and part of the family's agricultural production.

Table 18. Gross Domestic Product (GDP) of the states in the Amazon region from 2005 to 2012

| Unidade da Federação | 2005                 | 2006                 | 2007                 | 2008                 | 2009                 | 2010                 | 2011                 | 2012                 |
|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Acre                 | 4.482.920            | 4.834.620            | 5.760.501            | 6.730.108            | 7.386.436            | 8.476.515            | 8.794.362            | 9.629.239            |
| Amapá                | 4.361.255            | 5.260.017            | 6.022.132            | 6.764.834            | 7.404.389            | 8.265.965            | 8.968.032            | 10.419.539           |
| Amazonas             | 33.352.137           | 39.156.902           | 42.023.218           | 46.822.569           | 49.614.251           | 59.779.292           | 64.555.404           | 64.119.836           |
| Maranhão             | 25.334.591           | 28.620.246           | 31.606.026           | 38.486.010           | 39.854.677           | 45.255.942           | 52.187.204           | 58.819.683           |
| Mato Grosso          | 37.465.937           | 35.257.614           | 42.687.119           | 53.386.488           | 57.294.192           | 59.599.990           | 71.417.805           | 80.830.108           |
| Pará                 | 39.121.138           | 44.369.675           | 49.507.144           | 58.518.557           | 58.401.830           | 77.847.597           | 88.370.610           | 91.009.014           |
| Rondônia             | 12.884.047           | 13.107.441           | 15.002.734           | 17.887.799           | 20.236.194           | 23.560.644           | 27.839.144           | 29.361.936           |
| Roraima              | 3.179.287            | 3.660.083            | 4.168.599            | 4.889.301            | 5.593.491            | 6.340.601            | 6.951.190            | 7.313.836            |
| Tocantins            | 9.060.926            | 9.604.690            | 11.094.063           | 13.090.266           | 14.571.366           | 17.240.135           | 18.059.159           | 19.529.689           |
| <b>Amazônia (1)</b>  | <b>169.242.238</b>   | <b>183.871.288</b>   | <b>207.871.536</b>   | <b>246.575.932</b>   | <b>260.356.826</b>   | <b>306.366.681</b>   | <b>347.142.910</b>   | <b>371.032.880</b>   |
| <b>Brasil (2)</b>    | <b>2.147.239.292</b> | <b>2.369.483.546</b> | <b>2.661.344.525</b> | <b>3.032.203.490</b> | <b>3.239.404.053</b> | <b>3.770.084.872</b> | <b>4.143.013.337</b> | <b>4.392.093.997</b> |
| <b>(1)/(2) - %</b>   | <b>7,88%</b>         | <b>7,76%</b>         | <b>7,81%</b>         | <b>8,13%</b>         | <b>8,04%</b>         | <b>8,13%</b>         | <b>8,38%</b>         | <b>8,45%</b>         |

Fonte: IBGE (2012)

Source: SUDAM, 2016

In addition, about 200 jobs are created for every 1,000 hectares recovered, most of them for low-income people (Planaveg, 2017). Besides that, 92% of landslides occur in areas with ecosystem change, so forest recovery would bring greater security to the population by avoiding natural disaster.

### Environmental benefits

In 2015, the country presented its [5<sup>th</sup> National Report to the CBD](#). The information in section C.2.6 above highlighted the relationship between the progress made by Brazil for the achievement of Aichi Targets and the reduction of deforestation in the Amazon biome promoted by policies such as PPCDAm. Maintaining these REDD-plus results through new and additional investments in positive incentives for forest conservation is the core of this GCF proposal.

### Social benefits

The large reduction in deforestation in the Amazon region through the implementation of REDD-plus policies and measures have not negatively affect the social development in the region. The information in section C.2.6 above highlighted that **since 2000, the HDI for the Amazon region has improved faster than the rest of Brazil**. Education levels have also improved in the whole Amazon region since 2000 but remained lower than the national average in 2010. The variation/ improvement was higher in the Amazon region than in the national average (in four states above 70%, while the national average was about 40%). Since 2000, longevity has also increased on average in the Amazon region more than the national average. The income indicator has also seen important progress during that decade. The increase in income in the municipalities of the Amazon region between 2000 and 2010 was higher than the national average. The Figure 18 presents this information in more details.

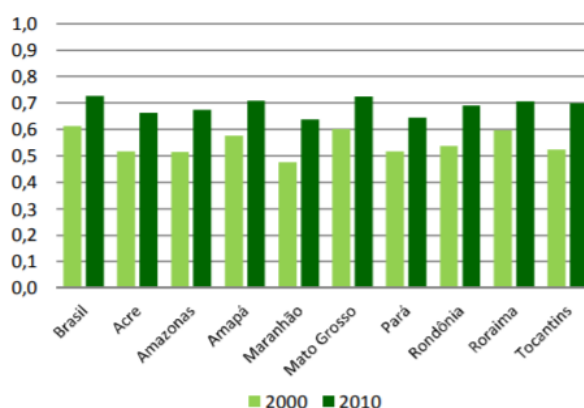
Since 2004, a series of programs, plans and funds, including the PPCDAm and the [Sustainable Amazon Plan](#) (PAS), were created observing the social context in the Amazon region, helping the improvements in the social area also attributed to social programs developed by the federal government that lead to the increase of the national minimum wage.

Figure 18. Human Development Index (HDI) in the states of the Amazon region vs the national average from 2000 to 2010, and its income component.

| Unidades da Federação | IDHM         |              |               |
|-----------------------|--------------|--------------|---------------|
|                       | 2000         | 2010         | Variação (%)  |
| Acre                  | 0,517        | 0,663        | 28,24%        |
| Amazonas              | 0,515        | 0,674        | 30,87%        |
| Amapá                 | 0,577        | 0,708        | 22,70%        |
| Maranhão              | 0,476        | 0,639        | 34,24%        |
| Mato Grosso           | 0,601        | 0,725        | 20,63%        |
| Pará                  | 0,518        | 0,646        | 24,71%        |
| Rondônia              | 0,537        | 0,690        | 28,49%        |
| Roraima               | 0,598        | 0,707        | 18,23%        |
| Tocantins             | 0,525        | 0,699        | 33,14%        |
| <b>Brasil</b>         | <b>0,612</b> | <b>0,727</b> | <b>18,79%</b> |

Fonte: Atlas do Desenvolvimento Humano no Brasil 2015.

Gráfico 12 - IDHM dos estados da Amazônia e Brasil, 2000 e 2010.



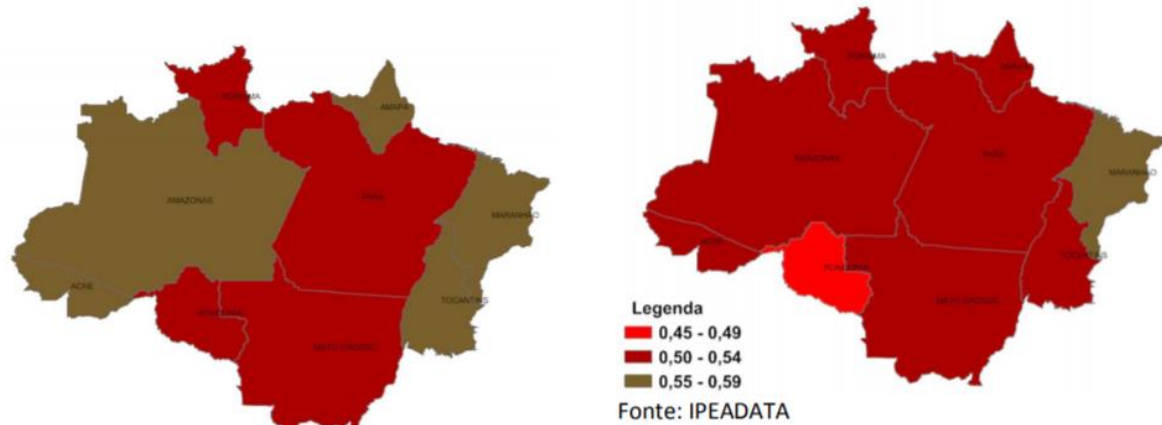
Fonte: Atlas do Desenvolvimento Humano no Brasil.

Source: SUDAM, 2016

Beyond average income, it is also important to access inequality, using the Gini coefficient (Figure 19). Even though some improvements were made both at the national level and in the Amazon region since 2003, this remains an important challenge for Brazil. Comparing the 2003 and the 2013 data, less states in the Amazon region now have levels above 0.55. But the Gini for the state of Maranhão remained high.

PPCDAM has contributed to bring more attention to the people from the Amazon region, through the implementation of social policies and projects aimed to provide alternative livelihoods to poor communities who still rely on illegal activities in forested areas. This is an ongoing process that will be further strengthened through the implementation of this project with the support from the results-based payments to be received by Brazil from the GCF.

Figure 19. Gini coefficient in states of the Amazon region, 2003 vs 2013



Source: SUDAM, 2016

#### D.4. Needs of the recipient

*Describe the vulnerability and financing needs of the beneficiary country and population.*

Maintaining and further expanding the results achieved reducing emissions from deforestation in the Amazon biome requires large scale investments as presented in section B.2.2 of this proposal. A [study](#) shows that the net present value of the net marginal cost of the command and control actions to reduce deforestation in the Amazon biome between 2014 and 2017 was R\$ 4.3 billion (USD 2.9 billion).

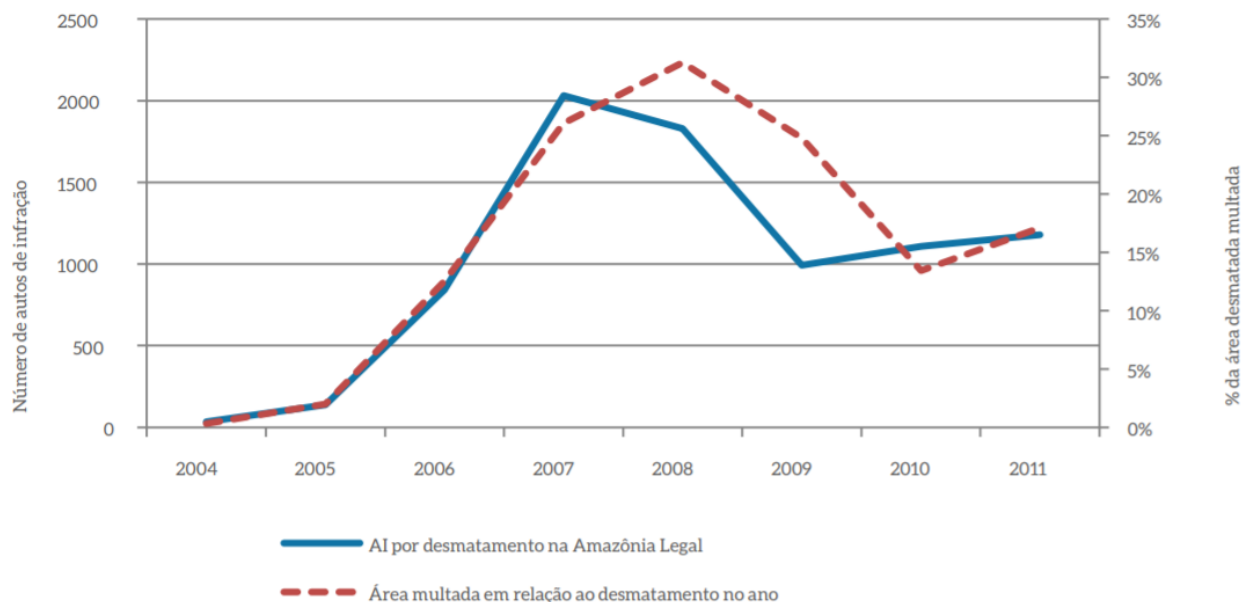
As in all countries around the globe, the budget assigned by the Brazilian Government to the MMA has always been small if compared with the total expenditure. Most of the national budget is spent on social security, health and education ([BRASIL](#), 2018). The total budget executed by the MMA from 2014 to 2017 was on average R\$ 2.5 billion (USD 750 million) per year, which corresponds on average to 0.11% of the total yearly public expenditures. A large proportion of this budget is spent on activities related to forest protection, especially in the Amazon biome.

Brazil is currently going through an economic crisis that resulted in significant reductions in government spending. Government cuts have been imposed on most ministries to reduce a growing deficit. Some Ministries lost up to 30 per cent of their budgets in 2017, including the MMA.

Studies point to the role of command and control actions carried out by the environmental enforcement agency, the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA/ MMA) in reducing deforestation in the Amazon region between 2008 and 2015. Figure 20 shows the relationship between the command and control actions and the reduction in deforestation in the Amazon region. The IBAMA/ MMA relies on teams of inspectors on the ground to monitor and tackle illegal activities in the vast Amazon region.

Although these studies suggest a linear relationship between fines and reduction in deforestation, there is also evidence that enforcement actions have an intrinsic limit on the fight against illegal deforestation. Investments in positive incentives are key to maintain and further expand low deforestation rates. High and continuous investments are needed, to support command and control operations on the ground (including the teams, helicopters, vehicles, technology, etc.) but also the production of new and better data (INPE, Embrapa, etc.) and the provision of positive incentives to forest conservation.

Figure 20. Illegal Deforestation Offenses in the Legal Amazon (solid line) and Percentage of the Area Gross by IBAMA in relation to Deforestation Measured by PRODES (dotted line)



Source: [Rajão, et. al. 2015](#)

The national budget cuts from 2014 onwards were followed by an increase in deforestation rates in 2016. This nevertheless does not mean that Brazil has reduced its commitment to invest its own resources in combating deforestation. In years 2014 and 2015 more than 80% of the total resources allocated to the federal government for the prevention and control of deforestation in the Amazon biome (to support PPCDAm actions and cover institutional costs) came from the national budget (BRA in Figure 9). Still, in this context of economic crisis and budget cuts in all areas of the federal budget spending, climate finance becomes even more essential.

The Amazon Fund resources were extremely important in this scenario of contingency. Considering the budget difficulties and the urgency of the matter, in April 2016 COFA exceptionally reassessed the rule of additionality of the resources from the Amazon Fund to allow for the support of public agencies in projects that aim to continue or improve environmental and deforestation control<sup>34</sup>. This allowed for investments to be made in IBAMA and other command and control/ law enforcement activities at the federal and state levels. Thanks in part to this support from the donors and the fast reaction from the government to maintain the level of investments, deforestation rates went down again in 2017.

Brazil's fiscal scenario for 2018/ 2019/ 2020 is very challenging and the government will have to cut expenses again in all areas to meet the spending limit set by law. At the same time, meeting the ambitious targets set by Brazil's NDC will require large scale investments, including in the forest sector. In this scenario, the USD 150 million that Brazil can receive from the GCF through REDD-plus results-based

<sup>34</sup> COFA approved a new focus of the Amazon Fund in the 2016/2017 biennium in the following terms: "projects aimed at continuing or improving environmental monitoring and control of deforestation, presented by federal or state public bodies or institutions with a legal mandate to carry out under the National Environmental System - SISNAMA, may exceptionally be exempted from the minimum condition of additionality of resources, mentioned in item B8. For this purpose, a technical justification formally presented by the Ministry of Environment will be required, as well as a statement from the said proponent body / institution that there is no source of funds available for the financial support requested. The technical justification and statement are mandatory and joint documents to the proposal formally filed with BNDES." For more information see: [http://www.fundoamazonia.gov.br/export/sites/default/pt/galleries/documentos/cofa/RET\\_20a\\_Reuniao\\_COFA.pdf](http://www.fundoamazonia.gov.br/export/sites/default/pt/galleries/documentos/cofa/RET_20a_Reuniao_COFA.pdf), last accessed on July 25<sup>th</sup>, 2018.

payments for reducing emissions from deforestation in the Amazon biome is essential for the effective implementation of Brazil's ENREDD+ and NDC.

#### D.5. Country ownership

*Describe the beneficiary country ownership of, and capacity to implement a funded project or program (policies, climate strategies and institutions).*

REDD-plus was created to encourage **developing country Parties** to contribute to mitigation actions in the forest sector (Decision 1/ CP.16 para 70). **REDD-plus implementation should be country-driven and implemented at the national level.** The subnational scale is accepted as an interim measure. Developing countries should aim to scale-up their activities in accordance with their national circumstances and the support received, on a stepwise manner. REDD+ is implemented by developing countries, through policies and programs, not projects. For developing country Parties undertaking the REDD+ activities with the aim to obtain and receive results-based finance, these actions should be fully measured, reported and verified and countries should have in place all REDD+ elements (Decision 2/ CP.17).

The PPCDAm, Brazil's core REDD+ policy for the Amazon region, was first launched in 2004 by the Brazilian government. This initiative, was led by the Chief of Staff of the Presidency and it involved the various ministries and entities that had direct or indirect competencies that affected forest conservation in the Amazon region. Hence, it has full country ownership. Overtime, the governance of PPCDAm has been revised and streamlined to make it more efficient. The MMA has been responsible for coordinating the implementation of PPCDAm and PPCerrado since 2014. PPCDAm is now on its 4<sup>th</sup> phase.

The PPCDAm is in full consistency with the ENREDD+ and Brazil's NDC to the UNFCCC and its Paris Agreement. REDD-plus is a means for the implementation of Brazil's NDC in the forest sector. The resources from REDD-plus results-based payments already received by Brazil through the Amazon Fund are reinvested in initiatives and projects that are in alignment with PPCDAM and the ENREDD+. The same will be done for the Floresta+ Pilot Program, to be funded with the GCF payments that Brazil will receive for its REDD-plus results.

This project proposal is fully aligned with the ENREDD+, Brazil's NDC, the resolutions approved so far by the CONAREDD+ and will be implemented by the MMA with the support from UNDP. The MMA received approval from the CONAREDD+ to access resources from results-based payments for REDD+ ([Resolution n.10 of December 7<sup>th</sup>, 2017](#)). The MMA has been fully involved in the preparation of this funding proposal, leading the discussions on use of proceeds as well as providing all input necessary to inform sections on policies and actions implemented which lead to emission reductions.

It is worth mentioning that this proposal is in full alignment with the strategic areas of investment of the [Brazil's Country Program to the GCF](#), developed by the National Designated Authority in consultation with the Brazilian society, and the proposal is also included in the Project Pipeline of the referred Country Program.

#### D.6. Efficiency and effectiveness

*Describe the economic and, if appropriate, financial soundness of the program.*

REDD-plus is implemented by developing countries, through policies and programs, not projects. Assurance that mitigation results have indeed been achieved is a fundamental element for a results-based payment scheme and is done before the resources are disbursed.

Result-based payments are a new modality of climate finance through which resources are received ex-post for mitigation results achieved in the past, like payments for environmental services. Developing countries willing to receive payments for REDD-plus results must submit their FRL/ FREL to undergo an assessment by two LULUCF experts appointed by the UNFCCC. This evaluation process is conducted annually, following the procedures set out by decision 13/CP.19. The mitigation results will be measured against this reference level and reported on a Technical Annex to the BUR. This Technical Annex also includes the REDD+ activities selected by the developing country, the calculation of results, information on the national forest monitoring system, institutional roles, among other information.

The processes for assessing the FRL/FREL (decision 13/CP.19) and for Measuring, Reporting and Verifying (MRV) of REDD+ results (decision 14/CP.19) are essential to reduce uncertainties and to provide an adequate level of confidence in the system, with a view to attract scaled-up investments. This approach assures the highest level of efficiency and effectiveness to forest initiatives. Countries will aim to achieve the highest possible level of results, so that they can receive more payments/ financial resources, therefore efficient. Because payments will only be made for fully MRVed results, the mitigation impact is guaranteed before the resources are disbursed, and, therefore, effective.

#### **E. Compliance with GCF policies**

*Describe how the REDD-plus results-based program that generated the results submitted in this proposal or will be supported with the proceeds earned by them aligns with GCF policies for the activities that led to the achieved results and for the use of proceeds.*

#### **E.1. Environmental and social safeguards**

##### **E.1.1. For the period of the achieved results**

*Summarize the main findings of the environmental and social assessment (ESA) report describing the extent to which the measures undertaken to identify, assess, and manage environmental and social risks and impacts, in the context of the REDD-plus proposal, were consistent with the requirements of the applicable GCF ESS standards. This supplements information about the country's own assessment as to how the Cancun safeguards were addressed and respected in the REDD-plus activities.*

The environmental and social assessment (ESA) report, which is included as an Annex to this FP, describes the extent to which the measures undertaken to identify, assess, and manage environmental and social risks and impacts, in the context of the REDD-plus proposal, were consistent with the requirements of the applicable GCF ESS standards. To be accredited to the GCF, accredited entities (AEs) must demonstrate that their entity-level environmental and social safeguards are consistent with the GCF's safeguard framework.<sup>35</sup> UNDP, as an AE to the GCF, therefore applies its own environmental and social safeguards to GCF-supported activities. Accordingly, the annexed ESA reviews retroactive compliance, with a focus on policy alignment, with the UNDP SES. In order to ensure a robust approach, which reflects the importance of the Cancun safeguards in the achievement of results, the ESA provides a PLR analysis matrix, which maps to Cancun safeguards, with indicators developed to encompass the UNDP Social and Environmental Standards. Further evidence of the alignment with UNDP SES is shown by considering a sample of representative projects, carried out under the Amazon Fund as one of the main financial instruments of national REDD+ implementation, by assessing project activities and achievements against UNDP's principles and project-level standards. The ESA found general consistency with the UNDP SES, and hence with the GCF ESS standards. Potential areas of improvement are highlighted in the ESA, and used to guide the measures recommended in the development of a comprehensive Environmental and Social Management Framework (ESMF).

##### **E.1.2. For the use of proceeds**

*Provide adequate and sufficient information describing how environmental and social risks and impacts will be identified, screened, assessed and managed in a manner consistent with the GCF's ESS standards, including the determination of the relevant environmental and social risk category of the proposed activities and the appropriate environmental and social assessment tools and management plans.*

As an accredited entity of the GCF, UNDP's Social and Environmental Standards (SES) were reviewed by the GCF accreditation panel and deemed sufficient to accredit UNDP to submit 'low' and 'moderate' risks projects. The overall social and environmental risk category for this project has been deemed to be Moderate. A preliminary ESMF has been prepared for this FP, which includes an indicative assessment of potential social and environmental risks, as well as their associated mitigation measures based on UNDP's Social and

<sup>35</sup> GCF's Environmental and Social Policy is available at <https://www.greenclimate.fund/safeguards/environment-social> and the GCF's interim environmental and social safeguards are available at [https://www.greenclimate.fund/documents/20182/818273/1.7 - Environmental and Social Safeguards.pdf/e4419923-4c2d-450c-a714-0d4ad3cc77e6](https://www.greenclimate.fund/documents/20182/818273/1.7_-_Environmental_and_Social_Safeguards.pdf/e4419923-4c2d-450c-a714-0d4ad3cc77e6). GCF's Indigenous Peoples Policy is available at <https://www.greenclimate.fund/safeguards/indigenous-peoples>.

Environmental Screening Procedure (SESP). It also provides guidelines for additional consultations, and assessments that will be necessary to complete in the first phase of implementation.

Guidance from key national stakeholders and UNDP's SES provided the basis for the draft Environmental and Social Management Framework (ESMF). As a Moderate Risk Project, further impact assessment and management measures are required to assess and manage risks effectively at an early stage of project implementation, as well as throughout the project cycle. The first steps during project inception will be to conduct a comprehensive environmental and social impact assessment (ESIA). The ESIA will be carried out by qualified experts and will involve desk-based and field-based data collection and extensive stakeholder consultations and engagement, with a range of stakeholder including direct beneficiaries of the project. The ESIA will cover the activities planned by the project as described in the FP, including all relevant aspects of the Floresta+ pilot program as listed above, and assess the social and environmental risks and benefits around the intended activities. Benefits and risks will be assessed pertaining to, among other things: biodiversity conservation and natural resource use, forest restoration and avoided deforestation efforts, overall land use planning, management of land rights over resources and potential land conflicts, benefit sharing and governance matters affecting all stakeholders including state and municipal governments, as well as indigenous peoples, traditional communities, family farmers and private actors such as small business enterprises, as well as impacts on cultural heritage. The ESIA will also screen for gender sensitivity at the various stages of the project's activities, and aim to implement gender responsive actions based on a completed and updated gender assessment. An indicative outline of the intended content of the ESMF report, including outlines of management plans, can be found in the Annex. It will be modified accordingly before being attached to the experts' Terms of Reference.

The draft ESMF also includes an indicative approach to stakeholder engagement, including the stakeholder consultations that much occur at an early stage to validate key elements of the Floresta+ pilot program, ongoing consultation with stakeholders the consultations required for the Gender Assessment and Action Plan, which is in accordance with the GCF's Gender Policy. A project Grievance Redress Mechanism, as described within the ESMF, will also be established and will complement the traditional grievance redress mechanisms already in place and being developed under the SISREDD+.

The ESMF implementation will be overseen by UNDP. The project team will include a senior environmental and social safeguards expert, as well as local level safeguards officers, responsible for monitoring and implementation of the ESMF as well as ensure that a working mechanism for receiving and handling complaints is in place and for coordination with the SISREDD+, and a gender expert responsible for the implementation of the Gender Action Plan. This team, as well as other experts as required, will be dedicated to the formulation and follow-up of these frameworks and to the bi-yearly evaluation these actions with oversight from the Project Board. Roles will be designated across stakeholder groups such as indigenous communities' organization, traditional community organizations as well as Federal, State and Municipal level governments. Furthermore, the implementation of the Environmental and Social Management Framework for the use of proceeds will contribute directly to the SISREDD+, with information generation from the implementation of the ESMF. The project will also be called upon to produce reports for summaries of information on safeguards that will be included in Brazil's future communications to the UNFCCC.

The preliminary findings and conclusions of the annexed ESMF will be reviewed again based on the findings of the ESIA and as appropriate, modifications will be made to the ESMF and its associated management plans. At present, the preliminary findings of the ESMF concludes that the following management plans will be needed: A Stakeholder Engagement Plan, a Biodiversity Action Plan, a Gender Action Plan, a Cultural Heritage Management Plan, and an Indigenous Peoples Plan. A preliminary Gender Assessment and Action Plan has also been prepared as part of the proposal submission, that will be updated through gender-specific consultations.. Consistent with UNDP SESP requirements, no activities that may cause adverse social and environmental impacts will proceed until the ESIA has been completed and per the revised ESMF, adoption of appropriate mitigation and management measures are completed. Additionally, as evidenced by the ESMF, budget disbursements are scheduled to incentivize and ensure timely completion of all social and environmental risk measures –including the prompt completion of the ESIA, the review and modification (as needed) of the ESMF and associated management plans, and the adoption and readiness of all recommended mitigation measures. Close coordination will be required with the national participative process, held through the CCT-Safeguards advisory board, in deciding SISREDD+ indicators, so that there is not a duplication in efforts and that monitoring and mitigation measures are

coherent and complementary to existing national, state and local level systems. To ensure inclusive stakeholder participation in the design and implementation of the project going forward, roles will be designated across stakeholder groups, with particular emphasis on the inclusion of primary beneficiaries, including indigenous peoples, traditional communities (and their representative organizations) and family farmers. Representatives of non-UNDP and MMA stakeholders (especially the primary beneficiaries and partners) will be incorporated into the Project Board and Technical Advisory Committee and other “working groups” in order to strengthen project governance.

### E.1.3. Consultations with stakeholders

*Provide adequate and sufficient information on the consultations undertaken with all the relevant stakeholders, describing who are the identified stakeholders, what the issues and concerns raised and how these are responded to and considered in the proposed activities. Information on the stakeholder engagement plan or framework will also need to be provided, describing how the activities will continue to engage the stakeholders, further consultations, communication and outreach, and process for grievance redress.*

National REDD+ Strategy development in Brazil, as well as pioneering jurisdictional REDD+ programs, have had a long history of broad stakeholder engagement since their inception, as shown in Appendix A of the 2<sup>nd</sup> Sol. The Federal Decree 8576/ 2015 created the National REDD+ committee (CONAREDD+) for coordinating and monitoring the implementation of the ENREDD+ in Brazil. The governance for the implementation of REDD+, including regular meetings of CONAREDD+ and the thematic advisory boards, is one of the most participative structures created by the Brazilian government for the implementation of policies in the forest sector. As explained above, the CONAREDD+ and the CCTs participants are numerous, diverse and strive to be representative of Brazilian society. Furthermore, the strengthening of existing governance structures of indigenous peoples, traditional communities and local populations has been a key element of REDD+ implementation. Consultative processes have also increasingly prioritized the participation of indigenous representatives and traditional community representatives in the governance for REDD+ implementation, particularly in regards to the activities in indigenous territories and sustainable conservation units throughout the Legal Amazon.

Through CONAREDD+ and its CCTs, a participatory process was conducted to create the rules for decentralizing the fundraising of payments for REDD-plus results. This process lasted a few months and actively involved more than 30 stakeholders from various sectors, through a Consultative Chamber on Fundraising and Distribution of Non-Reimbursable Resources (CCT-CDRNR). The principles and rules for access to direct fundraising (i.e. having the appropriate policies in place, presenting results, etc.), as well as rules regarding fundraising (that is, after having been authorized by CONAREDD+, and without the transfer of results, etc.) and how investments should be made with these resources (reinvested in initiatives that lead to more results, contribute to the implementation of ENREDD+ and NDC, in compliance with safeguards, etc.) were defined through CONAREDD+ Resolutions 6 to 8. The driving force behind these consultations was to create a coherent but decentralized process, with a set of common rules and principles, in order to enhance effectiveness, with the participation of all the States in the Amazon region, for raising new and additional large-scale resources to support Brazil’s efforts in the forest sector.

This funding proposal is fully aligned with CONAREDD+ principles and guidelines and it directly contributes to the implementation of the ENREDD+ and Brazil’s NDC. The MMA began consultations regarding the access of resources for this pilot program through CONAREDD+, in parallel to obtaining eligibility approval through CONAREDD+ Resolution n.10 of December 7th, 2017. The discussions continued in the following CONAREDD+ meeting, which was held April 2018. The final concept of the proposal will once again presented to the CONAREDD+ on its VI ordinary meeting on September 27th, 2018. In parallel, the meetings of the CCT advisory boards have been ongoing, including the CCT-Safeguards advisory board, which has been developing indicators for the SISREDD+ system in a participatory manner, in order to incorporate local knowledge, identify gaps and strengthen existing systems.

Prior to submission of this FP, and according to discussions held through the CONAREDD+ meetings, CONAREDD+ has approved the development and submission of a single funding proposal by the MMA to the GCF for REDD+ results-based payments. As the submission of a proposal to the GCF must be performed



by an Accredited Entity, the MMA invited 13 Accredited Entities to the GCF to participate in the selection process. The invited entities were already accredited to the Fund, or at an advanced stage of accreditation. The simplified selection process was based on technical parameters and divided into two stages as follows: 1. Completion of an on-line form and 2. An Interview. As result of on-line form stage, MMA received 7 filled out forms. After the analysis of the forms, the MMA invited the top 4 Accredited Entities that best met the evaluation criteria. As result of the process, the United Nations Development Programme (UNDP) was identified as the entity to submit the funding proposal from Brazil for the pilot programme for REDD-plus results-based payments of GCF. In addition to the consultation with CONAREDD+, the plans to submit a proposal to the GCF were discussed with the environmental state secretaries in the Legal Amazon states. Likewise, the proposal was presented and discussed with the relevant technical divisions of MMA and with representatives of the National Indigenous People Foundation (FUNAI) and some representatives of civil society. The Management Committee of the National Policy for Territorial and Environmental Management of Indigenous Land also had the opportunity to discuss the process and the proposal in the meeting held on August 16<sup>th</sup>. All stakeholders consulted were in agreement with the principles of the proposal and indicated their interest in continued participation in the design and implementation of the project after GCF approval. These established national processes and forums will act as the foundation for stakeholder participation going forward.

A critical factor in the success of the Floresta+ pilot program and other activities as described in the FP will be the full and effective participation of stakeholders in the design and implementation of the program. This will involve additional consultations with state governments, NGOs and CSOs, academia and other relevant stakeholders. A focus of the stakeholder consultations for the design of the Floresta+ pilot program, as well as the establishment of the ESMF, will be the consultations of direct beneficiaries of the Floresta+ pilot, including representative consultations which each of the beneficiary groups identified in the initial design of the program, which includes Indigenous Peoples, Traditional Communities, Family Farmers and local institutions (NGOs, CSOs and private sector actors that may also be eligible for results –based payments), throughout the Legal Amazon. An indicative plan for the Stakeholder Engagement is provided as part of the preliminary ESMF, submitted as an Annex to this proposal. The Stakeholder Engagement Plan will be initiated immediately upon project approval. Consultations with primary beneficiaries are planned in the first year of project implementation, in order to receive inputs for Floresta+ design, as well as to ensure engagement and the establishment of necessary mitigation measures for the operationalization of management plans.

## E.2. Risk assessment

### E.2.1. For the period of the achieved results

*Provide adequate and sufficient information that allows for an assessment of the historical performance of the activities undertaken and their track record against the risk tolerance levels specified in the Risk Appetite Statement and the criteria outlined in the Risk Guidelines for Funding Proposals. Please note that you should consider only the applicable and relevant parts of the two above documents to the feedback you provide.*

Brazil has a comprehensive Anti-Money Laundering (AML) regulatory regime in place. In 1998, the GOB enacted Federal Law n. 9.613 criminalizing money laundering related to drug trafficking, terrorism, arms trafficking, extortion, and organized crime. Federal Law n. 9.613/ 1998 also created a Financial Intelligence Unit (FIU), the Financial Activities Control Board (COAF), which is housed within the Ministry of Finance.

The COAF consists of representatives from regulatory and law enforcement agencies, including the Central Bank and Federal Police. The COAF regulates those financial sectors that are not under the jurisdiction of another supervising entity. This law was updated in 2002. Then, Federal Law 12.683 was amended in July of 2012, providing a more wide-ranging definition of the types of illicit activity that fall under the category of "harmful acts."

Federal Law n. 10,701/ 2003 criminalizes terrorist financing as a predicate offense for money laundering. This law also establishes crimes against foreign governments as predicate offenses, requires the Central Bank to create and maintain a registry of information on all bank account holders, and enables the Brazilian FIU to request from all government entities financial information on any subject suspected of involvement in criminal activity. On October 16, 2015, Federal Law 13.170 which provides procedures for freezing assets

relating to UNSCRs and for information provided bilaterally, was signed, closing a longstanding gap in Brazil's ability to confront terrorist financing.

Besides the Criminal Code, the Brazilian Legal System also have several instruments against corruption, such as Law n. 8,429/1992 (Administrative Improbability Act), the laws that define so-called crimes of responsibility (Law n. 1,079/1950 and Decree - Lei nº 201/1967), LC nº 135/2010 ("Clean Sheet Law"), which amended LC No. 64/1990 to establish new hypotheses of ineligibility, among other legal instruments.

#### Achievement of target impact

Through the application of several policies, notably the PPCDAm, Brazil dramatically reduced deforestation in the Legal Amazon region. The total volume of REDD+ results achieved by Brazil in the Amazon biome that are eligible to the GCF pilot program (from 2014 to 2015) is 1,254,663,127.74 tCO<sub>2</sub>e, or 1.25 billion tCO<sub>2</sub>e, which represents a substantial contribution to the GCF's mitigation objectives at a global scale.

#### Policy and regulatory support

The PPCDAm is fully anchored in Brazil's policy and regulatory framework, the Brazilian federal government created a Permanent Inter-Ministerial Working Group, established by a Presidential Decree as of July 3rd, 2003. The measures proposed by that Working Group were gathered in the PPCDAm. Throughout three execution phases (2004 to 2008; 2009 to 2011; and 2012 to 2015), the PPCDAm has played a significant role in dramatically reducing deforestation in the Amazon. Besides the PPCDAm, in 2010 the PPCerrado was launched. These two plans are considered the main instruments, on an operational level, to coordinate existing REDD+ initiatives and stop deforestation on the ground in the Amazon and Cerrado biomes.

The PPCDAm and the PPCerrado provided for the participation of more than 15 ministries (unnumbered Decrees of 3 July 2003 and 15 September 2010, respectively). Initially under the coordination of the Office of the Chief of Staff of the Presidency, the Decree No. 7.957/2013 assigned the MMA as the coordinator for the plans, serving as Chair of the respective Executive Committees. The Committees functioned as the governing body of the plans, monitoring progress and seeking to promote coordination and synergies among the different activities being implemented. The PPCDAm was monitored through a monitoring framework that monitored

Institutional capabilities to implement the program were reflected by the number of Brazilian institutions involved (each with specialized technical teams and established institutional capacities), and ultimately reflected in the achieved results.

#### Execution and country specific risks

Execution and country-specific risks were identified for the period of the achieved results through the analytical work conducted by the inter-ministerial working group that designed the PPCDAm and oversaw its execution.

#### E.2.2. For the use of proceeds

*Provide adequate and sufficient information that details how the plan for the use of proceeds does not violate the risk tolerance levels specified in the Risk Appetite Statement and allows for performance monitoring and evaluation against the criteria outlined in the Risk Guidelines for Funding Proposals. Please note that you should consider only the applicable and relevant parts of the two above documents to the feedback you provide.*

The results-based payments received by Brazil through this proposal will be used to fund a pilot of the Floresta+ program (Environmental Services Incentive Program for Conservation and Recovery of Native Vegetation) and to strength both implementation and governance of the ENREDD+.

Floresta+ is a pilot program managed by the MMA, while the funds will be managed by a national bank for Modalities 1 and 2 and by institutions which best suits the needs of Modalities 3 and 4, that will be better known after the consultations to implement this proposal.

Regulation of engagement in prohibited practices is described in section E4.

UNDP as accredited entity, will support the implementation of this project following its program and operations policies and procedures, which include provisions for procurement, monitoring, evaluation and auditing.

Below is a summary of the main project's identified risks and proposed mitigation measures

|   |                             |  |
|---|-----------------------------|--|
| 1 | Risk category               | Execution risks: Operations  |
|   | Description                 | Slow start of project given decentralized mechanisms that need to be in place for execution  |
|   | Probability/Impact/Priority | Somewhat Unlikely/Somewhat Disruptive/Medium   |
|   | Mitigation                  | Preparation of detailed plans and agreements with responsible parties as soon as the project is approved by GCF  |
| 2 | Risk category               | Country specific execution risks: Political  |
|   | Description                 | With upcoming elections, political scenario will bring some turnover at institutions that might affect project implementation in the first months, mostly at the local level.  |
|   | Probability/Impact/Priority | Somewhat likely/ Somewhat Disruptive/High  |
|   | Mitigation                  | Project strategy is based on pre-tested mechanisms for implementation. In the first months of implementation, the project shall have an inception phase for wider consultation that will enable the dissemination of project's strategy and strengthen the participation of local community-based organizations in the project. As for federal level involvement, MMA team is mostly composed by technical civil servants, who are usually not affected by changes at political level. |

### E.3. Gender considerations

#### E.3.1. For the period of the achieved results

*Provide adequate and sufficient information in the assessment describing the extent to which the measures undertaken complied with the GCF gender policy.*

Brazil is signatory to various international conventions focused on gender equality and women's empowerment, including the CEDAW, a convention by the United Nations that aims to eliminate all forms of discrimination against women. In addition, there are various national laws and legislation governing its work in promoting gender equality and women's empowerment. These include of Brazil's 1988 Constitution by which women enjoy the same legal rights and duties as men, which is clearly expressed in Article 5. In 2003, the Federal Government created the National Secretary for Women's Policies (SPM), which is now hosted at the Ministry of Human Rights. An overview of relevant Gender legislation and institutions is provided in the preliminary Gender Assessment provided as an Annex to this FP.

Gender equality is has also been recognized as relevant to environmental governance and forest governance. Since 2012, the Ministry of Environment has a Gender Committee, which oversees discussing and proposing actions to ensure gender equality in programs and policies, specifically those as they relate to Sustainable Development Goal 5 (SDG 5). Promoting gender equality in rural and forest areas is a priority action for Brazil, considering more than 14 million Brazilian women live in rural or forest areas. In recent decades, several fundamental programs focused on mainstreaming gender were executed, among them the social welfare program known as Bolsa Família, which targeted women as preferred beneficiaries. Bolsa Familia has contributed to keeping millions of Brazilian women (who account for almost 90% of all the beneficiaries) and their families out of poverty. The Program has 2.9 million beneficiary families in Amazonian States, of which 630,000 are in rural or forest areas. Lessons learned from this extensive program will thus be incorporated into the design of the Floresta+ pilot program and other components of the project. Another important programme from the Federal Government in forested areas is the Bolsa Verde, which provides conditional

cash transfers in return for the maintenance of forest cover. Bolsa Verde shares targeting and cash transfer channels with Bolsa Família. Launched in 2011, the programme aims to promote conservation of the ecosystems while also improving the livelihoods of people living in extreme poverty – the condition of nearly 17% of the population in the Amazon region. As part of this program, traditional communities such as “babaçu” coconut breakers (which are largely constituted by women), are important groups that have benefited from this important initiative. Lessons from Bolsa Verde in regards to gender responsiveness will also be incorporated into the design of Floresta+. Another important national initiative is the federal land distribution program of (Programa de Reforma Agrária in Portuguese) which has also highly improved the women’s access to land titles by means of prioritizing the access for women who are householders.

The level of organization of among women groups, who live in rural and forest areas, has also increased since 2006. As an important example, in 2010, the Brazilian indigenous movement founded the Union of the Indigenous Women from the Legal Amazon (UMIAB). Another important group has been the Women’s Secretariat of Extractivist Communities (CNS), which has built on strengths of forest-reliant women by strategically mobilizing support across sectors and scales, helping to shift the paradigm in development, environment and health in Brazil.

It is the above international and national legal frameworks, as well as national efforts and movements related to gender, that have informed the integration of gender considerations into the PPCDAm. In the establishment of the governance for REDD+ in Brazil gender balance was a key consideration. Most representatives from the Ministries, states and civil society in CONAREDD+ are female and in the CCTs, as indicated in Figure 13, more than 50% of the representatives are female. Some CCTs, including the one dealing with safeguards, also have equal representation of female participants.

### E.3.2. For the use of proceeds

*Provide adequate and sufficient information on how the AE will undertake activity-level gender assessments and action plans once the details of the activities become known.*

UNDP is committed to avoiding climate change-exacerbated gender inequality, promoting gender equality and the empowerment of women, reducing gender disparities and inequalities in climate funding and overall access to and control over resources and development benefits, encouraging and facilitating gender-responsiveness in its design and implementation, and more generally, mainstreaming the gender focus into the REDD+ activities described in this funding proposal. Thus, it will ensure the FP proposed activities will not discriminate against women or girls or reinforce gender-based discrimination and/or inequalities as well as take affirmative steps, consistent with applicable law and the Gender Action Plan, to ensure both women and men are able to participate meaningfully and equitably, have equitable access to training, capacity building, technical assistance and resources, and receive comparable social and economic benefits and opportunities.

Regardless of the positive experiences in regards to gender balance in REDD+ processes described above, as well as the significant experience gained with gender-responsive programs such as Bolsa Família, it is recognized that significant gender inequalities remain in regards to political participation, access to land and resources, the collection of gender disaggregated data to better inform decision making and interventions, and additional issues in regards to livelihoods, health, and gender-based violence. There is also growing recognition that more affirmative and special measures could be taken to mainstream the gender focus in ENREDD+ programming. In order to capture the gender context in which ENREDD+ implementation occurs as well as in the rollout of the Floresta+ pilot program, UNDP will identify and assess the different needs, constraints, contributions and priorities of women, men, girls and boys within the activity sites, as part of the completion of a comprehensive Gender Analysis and Action Plan (GAAP). It will then incorporate corresponding measures within the action plans to ensure 1) any possible adverse gender impacts are avoided; 2) and that women, men and youth can equitably participate in, inform and benefit from the activities being proposed. Gender budget and indicators will be also assigned within the action plans to ensure the gender activities identified have accountability mechanisms in place to ensure their implementation. This analysis and planning will be undertaken and then validated equitably with affected women, men and youth stakeholders before implementation of the activities.

As a first step in completing this GAAP, a forward-looking desk-based Gender Assessment was completed in anticipation of this FP (see Annex). The Assessment examined the proposed activities in the context of the GCF's policy on Gender, Principle 2 of UNDP's SES (Gender Equality and Women's Empowerment) and Brazil's national gender strategy. The Assessment also considered the findings and recommendations of several studies commissioned by the REDD+ programme earlier (including three studies in 2015, and a gender report in 2017 financed by GIZ titled "Mainstreaming the gender approach in measures and actions in the face of Climate Change with emphasis on REDD + - Situational analysis and Recommendations"). Based on the Gender Assessment findings, a preliminary Gender Action Plan was developed, which is included as an Annex to the FP. Upon completion of the participatory ESIA referred to above, further consultation with affected stakeholders will take place and the Gender Action Plan will be modified and supplemented as necessary.

#### E.4. Interim policy on prohibited practices

##### E.4.1. For the period of the achieved results

*Provide appropriate and sufficient information to demonstrate that no Prohibited Practices occurred during the implementation of the activities that lead to the REDD-plus results, such as: undisclosed Prohibited Practices, including money laundering and the financing of terrorism, which occurred during the implementation of results-based actions; and double payment or financing for the same results achieved.*

Brazil has a comprehensive Anti-Money Laundering (AML) regulatory regime in place. In 1998, the GOB enacted Federal Law n. 9.613 criminalizing money laundering related to drug trafficking, terrorism, arms trafficking, extortion, and organized crime. Federal Law n. 9.613/ 1998 also created a Financial Intelligence Unit (FIU), the Conselho de Controle de Atividades Financeiras (COAF), which is housed within the Ministry of Finance.

The COAF consists of representatives from regulatory and law enforcement agencies, including the Central Bank and Federal Police. The COAF regulates those financial sectors that are not under the jurisdiction of another supervising entity. This law was updated in 2002. Then, Federal Law 12.683 was amended in July of 2012, providing a more wide-ranging definition of the types of illicit activity that fall under the category of "harmful acts."

Federal Law n. 10,701/ 2003 criminalizes terrorist financing as a predicate offense for money laundering. This law also establishes crimes against foreign governments as predicate offenses, requires the Central Bank to create and maintain a registry of information on all bank account holders, and enables the Brazilian FIU to request from all government entities financial information on any subject suspected of involvement in criminal activity. On October 16, 2015, Federal Law 13.170 which provides procedures for freezing assets relating to UNSCRs and for information provided bilaterally, was signed, closing a longstanding gap in Brazil's ability to confront terrorist financing.

The Brazilian Central Bank's (BACEN) AML unit (DECIF) supervises compliance for AML regulations. AML Training in Brazil

Brazil's Law 9.613 provides information for crimes related to money laundering or the concealment of assets, rights, and valuables. This and other laws require financial institutions to train their employees on how to recognize suspicious activity that may be tied to money laundering or terrorist financing activities. In 2012, following the publication of the Financial Action Task Force's (FATF's) executive summary of the mutual evaluation report summarizing AML/CFT measures in place in Brazil, the Central Bank amended the rules applicable to procedures that must be adopted by financial institutions to prevent and combat money laundering and terrorist financing.

All the information about REDD+ results-based payments received are available at <http://redd.mma.gov.br/en/infohub> as described in previous sessions of this proposal and they assure that Brazil has not received any payment for the results stated in this proposal.

The federal government of Brazil has also created a website (Transparency Portal) in which all information on public expenditure from can be found: <http://www.portaltransparencia.gov.br/>

#### E.4.2. For the use of proceeds

*Provide appropriate and sufficient information including on control measures that assures that the proceeds will be used in a manner compliant with the Interim Policy on Prohibited Practices, such as: undisclosed Prohibited Practices, including money laundering and the financing of terrorism; improper subsequent use of GCF proceeds in the Prohibited Practices; and double payment or financing for the same results achieved, etc.*

As per article 9.03 par. (a), of the Accreditation Master Agreement between UNDP and GCF, UNDP will apply its own fiduciary principles and standards relating to any 'know your customer' checks, anti-corruption, AML/CFT, fraud, financial sanctions and embargoes to comply with the Policy on Prohibited Practices.

#### E.5. Indigenous peoples

*Provide adequate and sufficient information on how the activities to be implemented with the use of proceeds, will meet the requirements of the GCF environmental and social safeguards standards and policies relevant to indigenous peoples and guided by the prevailing relevant national laws and/or obligations of the countries directly applicable to the activities under relevant international treaties and agreements.*

The application of UNDP's Social and Environmental Standards ensure that the program will protect and foster full respect for human rights of Indigenous Peoples under international and national law. These standards are also fully aligned with the GCF environmental and social safeguards standards and policies relevant to indigenous peoples and the constitutional protections affirmed for these populations. Brazil's national legislation in regards to the rights and protections of Indigenous Peoples will also be respected. Brazil is signatory of the Convention 169 - Indigenous and Tribal People Convention (OIT) and signatory of the Declaration on the Rights of Indigenous Peoples (UNDRIP). Furthermore, the Brazilian Constitution ensures the Indigenous rights to their traditional land, culture and their rights for political organization (Art 231).

In the Amazon biome, more than 108 million hectares are legally protected as indigenous lands, with further lands being delineated in an ongoing land titling process. In 2007, the Brazil published the National Policy for the Sustainable Development of Traditional Peoples and Communities and in 2016, the government also created the National Commission for Traditional Peoples and Communities, where government and communities are equally represented. In 2012, the National Policy for Territorial and Environmental Management of Indigenous Land (PNGATI) was launched, which was constructed in a participatory and consultation process with representatives of 186 Brazilian Indigenous Peoples (more information can be found in the Second SOI). In the Management Committee of the PNGATI indigenous and government are equally represented and the Presidency of the Committee is regularly alternated between government and indigenous representatives. Key objectives of the PNGATI include: 1) governance and participation; 2) territorial protection; 3) prevention and recovering of environmental damage; 4) sustainable use of natural resources. The PNGATI, as well as the policies mentioned above in regards to traditional communities will therefore provide the basis for the support of indigenous peoples and traditional communities in this proposal. The National REDD+ Strategy, in its Annex I also contains further guidance on REDD+ implementation in indigenous lands, which will shape the design of the Floresta+ pilot program.

Consultations with Indigenous Peoples and traditional communities will take place in the context of the proposal, in respect of GCF policy on IPs, UNDP SES standards and relevant national and international guidelines, including those of Free, Prior and Informed Consent. As a preliminary step, MMA has held dialogues with indigenous leaderships through a meeting of the Technical Chamber of Climate Change of the Management Committee of the National Policy of Environmental and Territorial Management in Indigenous Territories (CT-MC/CG-PNGATI). In this forum, the concept of this proposal was considered as an opportunity for indigenous people to effectively access resources through their own organizations, to meeting their climate change adaptation and mitigation needs, as well as for improving the management of their territories, according to the guidelines of PNGATI. Indigenous stakeholders have emphasized and reinforced the need of effective participation in developing and implementing the project. Further discussions in regards to access to REDD+ GCF funds were also held on August 16th, 2018 with the Management Committee of PNGATI. All future consultations and management plans, will also account for ongoing processes of indigenous

consultations and autonomous development, including incorporation of the use of Indigenous Environmental and Territorial Management plans (PGTAs for the acronym in Portuguese), and support of this process. An Indigenous Peoples Plan will be completed in order to ensure that indigenous perspectives, traditional knowledge and autonomy are respected throughout planning and implementation. This Indigenous Peoples Plan and the Cultural Heritage Plan recommended by the ESMF will serve as the cornerstones in guiding the above efforts and ensure that sufficient indicators of progress related to indigenous peoples are incorporated into the monitoring systems and SISREDD+.

### **E.6. Monitoring and evaluation**

*Provide information on the monitoring arrangements that will take place for providing annual monitoring reports based on the information provided for the use of proceeds in sections C.2.3 and C.2.4.*

Project-level monitoring and evaluation will be undertaken in compliance with the [UNDP POPP](#) and the [UNDP Evaluation Policy](#). The M&E Plan will be conducted in accordance with UNDP and GCF procedures by the project team and the UNDP Country Office (UNDP CO). Section C.2 provides outcome indicators for project implementation. The UNDP project document will also include additional information such as corresponding means of verification. The M&E plan includes: an inception report, annual APR reports to GCF, project implementation reviews, a mid-term review and final evaluation. This information will be made available online via Info Hub Brasil (<http://redd.mma.gov.br/en/infocenter>).

The following sections outline the principal components of this plan. The project's M&E plan will be presented and finalized at the project's Inception Meeting following a collective fine-tuning of indicators, means of verification, and the full definition of project staff M&E responsibilities.

#### **Project start**

1. A Project Inception Workshop will be held within the first 2 months of project start, involving those with assigned roles in the project organization structure, the UNDP Country Office and, where appropriate/feasible, UNDP regional technical policy and technical advisors as well as other stakeholders. The Inception Workshop is crucial to building ownership of the project results and to plan the first-year annual work plan. The Inception Workshop will address several key issues including:

- To assist all partners to fully understand and take ownership of the project.
- To detail the roles, support services and complementary responsibilities of UNDP Country Office (CO) and Regional staff vis à vis the project team.
- Discussion on the roles, functions and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms.
- Based on the project results framework, finalization of the first annual work plan. Review and agree on the indicators, targets and their means of verification, and recheck assumptions and risks.
- Provision of a detailed overview of reporting, monitoring and evaluation (M&E) requirements. The M&E work plan and budget will be agreed and scheduled.
- Discussion of financial reporting procedures and obligations, and arrangements for annual audit.
- Planning and scheduling of project Board meetings. Roles and responsibilities of all project organization structures will be clarified, and meetings planned. The first project Board meeting will be held within the first 12 months following the inception workshop.
- An Inception Workshop Report will be a key reference document and will be prepared and shared with participants to formalize various agreements and plans decided during the meeting.

#### **Annual Project Report**

This key report is prepared by the Project Technical Advisors, consolidated by the Project Manager, validated by the Project Coordination Unit (PCU) and final approved by the Project Board to monitor progress made since project start and for the previous reporting period.

The format and content of the annual report will be adjusted based on the simplified reporting regime which will be established for RBP by the GCF.

**Near real time Monitoring using a geographically explicit cloud-based M&E system associated with and site visits as needed.**

Using traditional post-facto, paper-based, descriptive M&E and reporting methods it is very challenging to consolidate the large quantity of geographically explicit information, verify it, analyze progress towards policy milestones or compliance with land-use commitments and report on it in an accurate, transparent and interactive manner.

New tools and technologies exist that respond to this problem and drastically change the paradigm in land use monitoring, allowing for user-friendly, effective and efficient monitoring and adaptive management, even in a context as challenging as the Amazon. Once operational, the marginal cost of using these tools is close to zero. This allow for a quick uptake by many projects, financial institutions and even governments at very low cost. As such, the use of these tools greatly benefits impact investments and related monitoring and reporting. Lastly, by increasing transparency, these tools have the potential to significantly enhance the effectiveness of implementation of projects, especially if the various actors involved (beneficiaries, government, banks) know that their actions will be monitored this way in real time (as opposed to post-facto, paper-based, descriptive monitoring).

UNDP will use an open source turn key M&E solution to do the following:

- Collect, transfer, consolidate, backup and analyze spatial and non-spatial data to facilitate the tracking of progress and impacts of projects;
- Transparently track and demonstrate progress against beneficiary performance milestones;
- Enable data sharing between stakeholders (e.g. for data collection and verification)
- Monitor compliance towards land-use commitments made by stakeholders, collectively or individually (private sector, political & administrative authorities, local communities).

In addition, and as needed, the UNDP will conduct visits to project sites based on the agreed schedule in the project's Inception Report/Annual Work Plan to assess first hand project progress. Other members of the Project Board may also join these visits. A Field Visit Report will be prepared by the CO and UNDP Regional Office and will be circulated no less than one month after the visit to the project team and Project Board members. In addition, the MMA will conduct visits to project sites periodically and field visit reports will be prepared.

**Mid-term of project cycle**

The project will undergo an independent mid-term review at the mid-point of project implementation. The mid-term review will determine progress being made towards the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The final MTR report will be available in English and Portuguese.

**End of Project**

An independent Final Evaluation will take place three months prior to the closure of the project, undertaken in accordance with UNDP and GCF guidance. The final evaluation will focus on the delivery of the project's results as initially planned (and as corrected after the mid-term review, if any such correction took place). The final evaluation will look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental benefits.

The Final Evaluation will also provide recommendations for follow-up activities and requires a management response. The final report will be cleared by the UNDP CO, the UNDP Regional Technical Advisor and the Project Coordination Unit (PCU) and will be approved by the Project Board. The UNDP CO will include the planned project terminal evaluation in the UNDP CO evaluation plan and will upload the final terminal evaluation report in English and Portuguese and the management response to the public UNDP Evaluation Resource Centre and the MMA.



During the final three months, the project team will prepare the Project Terminal Report. This comprehensive report will be made available to the public through the Info Hub Brasil (<http://redd.mma.gov.br/en/infohub>). It will summarize the results achieved (objectives, outcomes, outputs), lessons learned, problems met and areas where results may not have been achieved. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the project's results.

The UNDP CO will support the Project Manager as needed, including through annual supervision missions. The UNDP CO is responsible for complying with UNDP project-level M&E requirements as outlined in the UNDP POPP. Additional M&E and implementation quality assurance and troubleshooting support will be provided by the UNDP Regional Technical Advisor as needed. The project target groups and stakeholders, including the National Designed Authority, will be involved as much as possible in project-level M&E. The UNDP CO will retain all M&E records for this project for up to seven years after project financial closure to support ex-post evaluations.

## F. Legal arrangements

### E.6.1. Legal title to REDD-plus results

- *Provide an analysis with respect to legal title to REDD-plus results in the country. This should include an analysis of entitlement to claim for the results to be paid for by the GCF.*
- *Covenant that no other party has a competing claim to the results proposed to the GCF in accordance with national policy, legal or regulatory frameworks.*

As presented in section B.2.2 (viii) of this proposal, REDD-plus results achieved in the Brazilian territory will be used by the country to fulfill its NDC to the UNFCCC and its Paris Agreement. Below is the relevant regulation regarding REDD+ results.

The Federal Decree 85776/ 2015 created the CONAREDD+ for coordinating and monitoring the implementation of the ENREDD+ in Brazil. Article 4 of this Federal Decree established that the MMA, as the Executive Secretariat of the CONAREDD+, will (V) *issue diplomas recognizing REDD+ results-based payments achieved by Brazil. Article 6 of this Federal Decree establishes that **REDD+ results-based payments and their respective diplomas may not be used, directly or indirectly, to fulfil mitigation commitments of other countries to UNFCCC.** Article 7 also states that the diploma referred to in item V of the caput of art. 4º **will be nominal and non-transferable, will not generate rights or credits of any nature, will contain the amount equivalent to the payment by result and can be consulted on the website of the MMA.***

Furthermore, Brazil emphasized in its [NDC](#) to the UNFCCC and its Paris Agreement that “*any transfer of units resulting from mitigation outcomes achieved in the Brazilian territory will be subject to prior and formal consent by the Federal Government. **Brazil will not recognize the use by other Parties of any units resulting from mitigation outcomes achieved in the Brazilian territory that have been acquired through any mechanism, instrument or arrangement established outside the Convention, its Kyoto Protocol or its Paris agreement.***”

The CONAREDD+ has approved a few [Resolutions](#) that reinforce the understanding that there is no formal legal title to REDD+ results in Brazil and that these results cannot be transferred. Below are key elements from each of these decisions.

#### [Resolution n. 5, of December 16<sup>th</sup>, 2017: General principles for the implementation of the National REDD+ Strategy through the CONAREDD+ and its Thematic Advisory Boards](#)

Article 1, VI. *Results-based payments **do not constitute an international transfer** for the fulfillment of mitigation commitments of other countries.*

Article 1, VII. *The mitigation benefits achieved through REDD+ activities implemented in Brazil will be reflected in the national accounting of emissions by sources and removals by sinks for demonstrating the fulfillment of Brazil's Nationally Determined Contribution to the Paris Agreement.*

#### [Resolution n.6, of July 6<sup>th</sup>, 2017: Defines the distribution of fundraising limits for REDD+ results achieved in the Amazon biome](#)

Article 3. The distribution of fundraising limits for results achieved reducing emissions from deforestation in the Amazon biome **do not generate ownership** or guarantee of income.

Article 5, paragraph 2. The Parties mentioned in Article 2 that have interest to raise resources using voluntary or regulated carbon offset schemes shall declare, when filling out the application Annex to this Resolution to apply for eligibility, that they are aware that this **fundraising is limited to a modality of finance**.

Article 5, paragraph 3. The payments for REDD+ results made based on the limits established in this Resolution **do not generate, to the Parties mentioned in Article 2, the right to internationally transfer these results, for the fulfillment of international mitigation commitments, and will not affect the national accounting for demonstrating the fulfillment of Brazil's Nationally Determined Contribution to the Paris Agreement**.

Article 5, paragraph 4. The Parties mentioned in Article 2 shall inform all the Parties involved in REDD+ results-based payments agreements of the term of this Resolution, and other norms established by the CONAREDD+.

Article 5, paragraph 5. In case of no compliance with the obligation established in the previous paragraph, the interested Party will be considered ineligible by the CONAREDD+ to access REDD+ results-based payments.

[Resolution n. 7, of July 6<sup>th</sup>, 2017: Defines the eligibility rules for access to direct fundraising for results-based payments](#)

Article 4. The Amazon States or federal entities eligible assume **full legal responsibility for managing and investing the resources raised through results-based payments, respecting the REDD+ safeguards and providing accounting information**.

According to the Annex of this Resolution, entities applying to receive the approval of the CONAREDD+ and be eligible to access results-based payments need to sign the following: "I declare to be aware that the fundraising for REDD+ results-based payments achieved by Brazil represent **exclusively a modality of finance and that I will inform all the Parties involved in the REDD+ results-based agreements about the terms of the Resolution n.6 and other norms established by the CONAREDD+.**"

### G. Accredited entity fee and project management costs

Provide a list of the activities that are expected to be conducted using the AE fees and project management cost with corresponding costs as follows:

Accredited entity fee:

| Accredited Entity Fee Request Budget  |                             |             |   |   |             |   |
|---|-----------------------------|-------------|---|---|-------------|---|
| <b>Accredited entity:</b><br>UNDP<br><b>Project: Results Based Payments (REDD+ Phase 3)</b><br><b>Country: Brazil</b><br><b>Duration (years): 6 years</b> | <b>GCF Total Financing:</b> | 150,000,000 | <b>Total Proj. Financing (incl. GCF):</b> |   | 150,000,000 |   |
|   | GCF grant:                  | 150,000,000 | Total grant:                              |   | 150,000,000 |   |
|   | GCF loan:                   |             | Total loan:                               |   |             |   |
|   | GCF guarantee:              |             | Total guarantee:                          |   |             |   |
| Year:   | 1                           | 2           | 3   | 4 | 5           | 6 |
| Currency:   | USD                         |             |   |   |             |   |
| Project/Program Implementation and Supervision  |                             |             |   |   |             |   |
| <b>Implementation Start-Up</b>  | <b>159,955</b>              | -           | -   | - | -           | - |
| Appraising and finalizing project implementation arrangements, including mission travel   | 79,978                      | -           | -   | - | -           | - |

|  |                |                |                |                |                |                |
|--|----------------|----------------|----------------|----------------|----------------|----------------|
| Assisting and advising the project proponent on the establishment of project management structure in the recipient country   | 39,989         | -              | -              | -              | -              | -              |
| Assisting project management to draft TORs and advising on the selection of experts for implementation   | 23,993         | -              | -              | -              | -              | -              |
| Advising on and participating in project start-up workshop.  | 15,996         | -              | -              | -              | -              | -              |
| <b>Technical Supervision</b>   | <b>391,772</b> | <b>686,814</b> | <b>931,129</b> | <b>919,605</b> | <b>919,605</b> | <b>651,660</b> |
| Conducting supervision missions, including briefing operational focal points on project progress   | 78,354         | 68,681         | 136,839        | 91,961         | 91,961         | 65,166         |
| Providing technical guidance, as necessary, for project implementation   | 156,709        | 274,726        | 319,292        | 321,862        | 321,862        | 260,664        |
| As necessary, technical consultants during supervision missions to advise government officials on technical matters and provide technical assistance for the project | 39,177         | 206,044        | 273,679        | 367,842        | 321,862        | 195,498        |
| Overseeing procurement and financial management to ensure implementation is in line with AE's policies and timeline  | 117,531        | 137,363        | 182,453        | 137,941        | 183,921        | 130,332        |
| Undertaking the mid-term review, including possible project restructuring  | -              | -              | 18,866         | -              | -              | -              |
| <b>Administrative Oversight</b>  | <b>93,615</b>  | <b>164,115</b> | <b>217,987</b> | <b>219,741</b> | <b>219,741</b> | <b>155,715</b> |
| Disbursing funds to the Executing entities/vendors and reviewing financial reports   | 37,446         | 65,646         | 87,195         | 87,897         | 87,897         | 62,286         |
| Assisting and overseeing the audit process throughout the project life cycle   | 9,361          | 16,412         | 21,799         | 21,974         | 21,974         | 15,572         |
| Overseeing the preparation of the required reports for   | 18,723         | 32,823         | 43,597         | 43,948         | 43,948         | 31,143         |

|   |                |                |                  |                  |                  |                  |
|---|----------------|----------------|------------------|------------------|------------------|------------------|
| submission to the GCF Secretariat<br>Monitoring and reviewing project expenditure reports   | 18,723         | 32,823         | 43,597           | 43,948           | 43,948           | 31,143           |
| Preparing periodic revisions to reflect changes in annual expense category budgets  | 9,361          | 16,412         | 21,799           | 21,974           | 21,974           | 15,572           |
| <b>Other (please specify):</b>  |                |                |                  |                  |                  |                  |
| <b>Project/Program Completion and Evaluation</b>  |                |                |                  |                  |                  |                  |
| <b>Program closure</b>  | -              | -              | -                | -                | -                | <b>45,131</b>    |
| Preparing project closing documents for submission to GCF Secretariat   | -              | -              | -                | -                | -                | 22,565           |
| Preparing the financial closure of the project for submission to GCF Secretariat  | -              | -              | -                | -                | -                | 22,565           |
| <b>Reporting and Evaluation</b>   | -              | -              | -                | -                | -                | <b>45,197</b>    |
| Overseeing the preparation of the Project Completion Report/Independent Terminal Evaluation, submitting the report to the GCF Secretariat | -              | -              | -                | -                | -                | 45,197           |
| <b>Other (please specify):</b>  |                |                |                  |                  |                  |                  |
| <b>Reporting, as required under AMA &amp; FAA</b>   |                |                |                  |                  |                  |                  |
| Reporting requirements as agreed in the AMA and FAAs  | 29,703         | 29,703         | 29,703           | 29,703           | 29,703           | 29,703           |
| <b>Other (please specify):</b>  |                |                |                  |                  |                  |                  |
| <b>Total</b>  | <b>675,044</b> | <b>880,632</b> | <b>1,178,819</b> | <b>1,169,049</b> | <b>1,169,049</b> | <b>927,406</b>   |
| <b>GRAND TOTAL</b>  |                |                |                  |                  |                  | <b>6,000,000</b> |

Project management costs for the full implementation period:

| List of Activities  | Costs            | Explanation  |
|---|------------------|--|
| Preparation of the annual project work plans/programmes and budgets, including analysis and reporting | 923,948          | 10% of Project Manager, 25% Project Assistant, 50% Administrative Assistant and 50% Financial Assistant  |
| Preparation of procurement plans  | 186,139          | 50% Procurement Associate  |
| Preparation of TOR and preparation of procurement packages  | 221,426          | 50% Procurement Associate, 25% Project Manager   |
| Tracking and monitoring of project costs and deliverables to plan                                     | 1,088,921        | 50% Project Assistant, 50% Administrative Assistant and 50% Financial Assistant  |
| Preparation of progress reports and financial management reports                                      | 200,259          | 15% of Project Manager, 25% Project Assistant  |
| Support to programmatic visits, workshops, and field missions   | 237,740          | 100% Logistics Assistant   |
| Support to the project board and project advisory committee   | 70,573           | 50% Project Manager  |
| Project Audits  | 90,000           | Annual audits  |
| Support to contracts management   | 300,536          | 100% Human Resources Assistant   |
| Mid-Term and Final Evaluations  | 60,000           | 1 Mid Term and 1 Final Evaluation of the Project   |
| PMU travel and mobilization   | 432,000          | Travel costs to the field, transportation and related costs (cab fare, car rental, etc.).  |
| Operational expenses  | 826,100          | Office rent, utilities, communications and supplies  |
| Direct Project Costs  | 4,500,000        | UNDP direct project costs relates to cost recovery for processes and transactions to implement the project. This referential cost has been calculated based on the Universal Price List that provides specific costs for every specific transaction. |
| <b>TOTAL</b>  | <b>9,137,646</b> |  |

The final amount of accredited entity fees and project management costs will be negotiated between the GCF and the accredited entity.

#### H. Annexes

- Non-objection Letter
- Environmental and social assessment (ESA)
- ....