United Nations

FCCC/ETF/TERR.1/2024/BRA

Framework Convention on Climate Change

Distr.: General
12 January 2026

English only

Report on the technical expert review of the first biennial transparency report of Brazil*

Summary

This report presents the results of the technical expert review of the first biennial transparency report of Brazil, conducted by a technical expert review team in accordance with the modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement. The review took place from 5 to 9 May 2025 in Bonn.

* In the symbol for this document, 2024 refers to the year in which the biennial transparency report was submitted, not to the year of publication.

Abbreviations and acronyms

A6.4ER	emission reduction under Article 6, paragraph 4, of the Paris Agreement
AD	activity data
BTR	biennial transparency report
CER	certified emission reduction
CH_4	methane
CO_2	carbon dioxide
CO_2 eq	carbon dioxide equivalent
CRT	common reporting table
CTF	common tabular format
GHG	greenhouse gas
HFC	hydrofluorocarbon
IPCC	Intergovernmental Panel on Climate Change
IPPU	industrial processes and product use
ITMO	internationally transferred mitigation outcome
LULUCF	land use, land-use change and forestry
MPGs	modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement
N_2O	nitrous oxide
NA	not applicable
NDC	nationally determined contribution
NE	not estimated
NID	national inventory document
NIR	national inventory report
PaMs	policies and measures
PFC	perfluorocarbon
QA/QC	quality assurance/quality control
SF_6	sulfur hexafluoride
TERT	technical expert review team

I. Introduction and summary

A. Introduction

1. This report covers the technical expert review of the BTR1 of Brazil. The review was organized by the secretariat and conducted by the TERT in accordance with the MPGs,[1] particularly chapter VII thereof.

2. A draft version of this report was transmitted to the Government of Brazil, which provided comments that were taken into account, as appropriate, in this final version of the report.[2]

3. The review was conducted as a centralized review from 5 to 9 May 2025 in Bonn by the following team of nominated experts from the UNFCCC roster of experts: Sandro Federici (San Marino), Dario Ruben Gomez (Argentina), Hiroshi Ito (Japan), Hans Halvorson Kolshus (Norway), Bamikole Jacques Kouazounde (Benin), Guadalupe Alejandra Martinez (Uruguay) and Clemêncio Nhantumbo (Mozambique). Dario Ruben Gomez and Hans Halvorson Kolshus were the lead reviewers. The review was coordinated by Nalin Srivastava and Yali Wang (secretariat).

B. Scope

4. The TERT conducted a technical expert review of the information reported in the BTR1 of Brazil as per the scope of the review defined in paragraph 146 of the MPGs, consisting of:

(a) Review of the consistency of the information submitted by the Party under Article 13, paragraphs 7 and 9, of the Paris Agreement with the MPGs taking into account the flexibility accorded to the Party under Article 13, paragraph 2, of the Paris Agreement (see chap. II.A below);

(b) Consideration of the Party's implementation and achievement of its NDC under Article 4 of the Paris Agreement (see chap. II.B below);

(c) Identification of areas of improvement[3] for the Party related to implementation of Article 13 of the Paris Agreement (see chap. II.D below);

(d) Assistance in identifying capacity-building needs (see chap. II.E below).

C. Summary

5. Brazil submitted its BTR1 on 13 December 2024, before the deadline of 31 December 2024 mandated in decision 18/CMA.1. Brazil submitted its NID as a stand-alone document also on 13 December 2024, before the deadline of 31 December 2024. Brazil also submitted its CRTs and CTF tables on 20 December 2024, before the deadline of 31 December 2024.

6. A list of the areas of improvement identified on the basis of the review of the consistency of the reported information with the MPGs can be found in the assessment tables.[4]

7. The Party applied flexibility as provided for those developing country Parties that need it in the light of their capacities pursuant to Article 13, paragraph 2, of the Paris Agreement in relation to the NIR of anthropogenic GHG emissions by sources and removals

[1] Decision 18/CMA.1, annex.
[2] As per para. 162(e) of the MPGs.
[3] As referred to in paras. 7, 8, 146(d) and 162(d) of the MPGs.
[4] Contained in document FCCC/ETF/TERR.1/2024/BRA/Add.1, available at https://unfccc.int/first-biennial-transparency-reports.

by sinks[5] and the information necessary to track progress in implementing and achieving its NDC.[6] Information on where the flexibility was applied is included in chapters II.A.1–II.A.2 below.

D. Information provided by the Party pursuant to paragraphs 143–145 of the modalities, procedures and guidelines

8. Brazil reported information on support needed and received for implementing Article 13 of the Paris Agreement and transparency-related activities, including for transparency-related capacity-building. The Party reported on support needed and received for preparing reports pursuant to Article 13 of the Paris Agreement. Support is needed primarily for strengthening the institutional arrangements for preparing national GHG inventories, particularly for the IPPU and LULUCF sectors, including for collecting and managing data, applying higher-tier methods and providing relevant training to experts, whereas support has been received under a Global Environment Facility enabling activity project to help Brazil to prepare its fifth national communication and BTRs and for strengthening the national transparency system (DataClima+) to support Brazil in formulating national policies and meeting the requirements of the enhanced transparency framework under the Paris Agreement. Table 1 summarizes the information that Brazil reported in its BTR1 on support received. The TERT noted that the above-mentioned information reported by the Party is not subject to review as per the scope of the review defined in paragraph 146 of the MPGs.

Table 1
Summary of support received by Brazil for implementing Article 13 of the Paris Agreement and transparency-related activities, including for transparency-related capacity-building
(USD million)

Status of support	*Amount*
Support received from 2023 to 2024 for 2023 to 2029	11.3

Source: Brazil's BTR1.

II. Technical expert review[7]

A. Review of the consistency of the submitted information with the modalities, procedures and guidelines[8]

1. National inventory report[9]

9. The TERT assessed the information reported in the BTR1 of Brazil and identified areas of improvement relating to consistency with the MPGs, which are described in tables 2–7 of the assessment tables referred to in paragraph 6 above and summarized in table 2.

[5] The developing country Party applied flexibility in the light of its capacities with respect to the provision in para. 48 of the MPGs.
[6] The developing country Party applied flexibility in the light of its capacities with respect to the provisions in paras. 85, 92, 95 and 102 of the MPGs.
[7] As per para. 187 of the MPGs.
[8] As per para. 146(a) of the MPGs.
[9] As per para. 150(a) of the MPGs.

Table 2
Information reported in Brazil's national inventory report and review of consistency with the modalities, procedures and guidelines

Element	*Elements of information to be reported*	*Response and its summary, as relevant*	*ID#(s) for the area(s) of improvement identified*[a]
Submission type (para. 12 of the MPGs)	Has the NIR been submitted as a stand-alone document?	Yes	No areas of improvement were identified
Time series (paras. 57–58 of the MPGs)	What years have been reported and is the time series in accordance with the MPGs?	1990–2022, in accordance with the MPGs	No areas of improvement were identified
Metrics (para. 37 of the MPGs)	Has the Party used the 100-year global warming potential values from the IPCC Fifth Assessment Report?	Yes	No areas of improvement were identified
	Has the Party used other metrics?	Yes, global warming potential values from the IPCC Second Assessment Report and global temperature potentials	No areas of improvement were identified
Gases (paras. 47–49 and 51 of the MPGs)	Which gases have been reported?[b]	CO_2, CH_4, N_2O, HFCs, PFCs, SF_6	No areas of improvement were identified
Indirect emissions (para. 52 of the MPGs)	Has the Party reported indirect CO_2 emissions and national totals with and without indirect CO_2?	No	No areas of improvement were identified
	Has the Party reported indirect N_2O emissions from sources other than those in the agriculture and LULUCF sectors as a memo item?	No	No areas of improvement were identified
National circumstances and institutional arrangements (paras. 18–19 of the MPGs)	Has the Party reported information on the functions related to inventory planning, preparation and management?	Partly	2.G.1, 6.L.14
Methodologies, parameters and data (paras. 20–24 of the MPGs)	Has the Party used the *2006 IPCC Guidelines for National Greenhouse Gas Inventories*?	Yes	4.I.3, 5.A.7, 6.L.4, 6.L.10, 6.L.15, 6.L.16, 6.L.17, 6.L.18, 6.L.19, 6.L.20, 6.L.21, 6.L.22, 6.L.23, 6.L.24, 7.W.1, 7.W.4, 7.W.6, 7.W.7, 7.W.15
	Has the Party used other IPCC methodological guidance?	No	No areas of improvement were identified
Key category analysis (paras. 25 and 41–42 of the MPGs)	Has the Party reported a key category analysis?	Yes, a key category analysis was performed using approach 1 and a 95 per cent threshold for level and trend	2.G.2, 7.W.17

Element	*Elements of information to be reported*	*Response and its summary, as relevant*	*ID#(s) for the area(s) of improvement identified*[a]
		assessment for the latest reporting year (2022) and with and without LULUCF	
Time-series consistency and recalculations (paras. 26–28 and 43 of the MPGs)	Has the Party reported a consistent time series?	Partly	7.W.9, 7.W.13
	Has the Party provided justification and explanatory information for recalculations?	Partly	4.I.2, 4.I.4
Uncertainty assessment (paras. 29 and 44 of the MPGs)	Has the Party reported the results of the uncertainty analysis and the methods used, underlying assumptions and trends?	Yes, including level and trend uncertainty, reported using approach 1 for the latest reporting year (2022)	2.G.3, 6.L.6
QA/QC plan and procedures (paras. 34–36 and 46 of the MPGs)	Has the Party elaborated information on an inventory QA/QC plan, including information on the inventory agency responsible for implementing QA/QC, and current and future QA/QC procedures?	Yes, including information on the inventory agency responsible for implementing QA/QC, an inventory QA/QC plan and general QC procedures	6.L.20
Assessment of completeness (paras. 30–33, 45, 47 and 50 of the MPGs)	Have any areas of improvement for lack of completeness been identified for the following sectors?		
	Energy	Yes	3.E.15, 3.E.16, 3.E.17
	IPPU	Yes	4.I.2
	Agriculture	Yes	5.A.4, 5.A.5, 5.A.6, 5.A.8
	LULUCF	Yes	6.L.2, 6.L.5, 6.L.11, 6.L.12, 6.L.13, 6.L.22
	Waste	Yes	7.W.11, 7.W.12, 7.W.14
Threshold for reporting significant categories (para. 32 of the MPGs)	For categories reported as “NE” owing to insignificance, has information been reported showing that the likely level of emissions is below the threshold of significance?	No	3.E.12
Methodologies, emission factors, parameters and AD (paras. 38–40 and 53–56 of the MPGs)	Has information been reported on categories, gases, methodologies (including the rationale for selecting them), emission factors and AD at a	–	

Element	*Elements of information to be reported*	*Response and its summary, as relevant*	*ID#(s) for the area(s) of improvement identified*[a]
	disaggregated level for the following sectors?		
	Energy	Partly	3.E.2, 3.E.3, 3.E.5, 3.E.6, 3.E.7, 3.E.8, 3.E.9, 3.E.11, 3.E.13, 3.E.14
	Has information been reported on international aviation and marine bunker fuel emissions as two separate entries and such emissions distinctly reported from national totals?	Yes	NA
	Has information been reported indicating how feedstocks and non-energy use of fuels have been accounted for in the inventory, under the energy or IPPU sector?	No	NA
	IPPU	Partly	4.I.1, 4.I.5
	Agriculture	Partly	5.A.1, 5.A.2
	LULUCF	Partly	6.L.1, 6.L.7, 6.L.8, 6.L.9
	Did the Party provide supplementary information on the approach to reporting emissions and removals from harvested wood products in accordance with IPCC guidance other than the production approach, and provide supplementary information on emissions and removals from harvested wood products estimated using the production approach?	Yes	6.L.3
	Waste	Partly	7.W.2, 7.W.3, 7.W.5, 7.W.8, 7.W.10, 7.W.12, 7.W.16, 7.W.18

[a] See document FCCC/ETF/TERR.1/2024/BRA/Add.1. The areas of improvement referred to in this table comprise only those relating to recommendations in that document.
[b] The developing country Party applied flexibility in the light of its capacities with respect to this provision.

2. Information necessary to track progress in implementing and achieving the nationally determined contribution[10]

10. The TERT assessed the information reported in the BTR1 of Brazil and identified areas of improvement relating to consistency with the MPGs, which are described in tables 8–11 and 13 of the assessment tables referred to in paragraph 6 above and summarized in table 3.

Table 3
Information reported in Brazil's submission

Topic	*ID#(s) for the area(s) of improvement identified*[a]
National circumstances and institutional arrangements (paras. 59–63 of the MPGs)	8.1, 8.2
Description of the NDC under Article 4 of the Paris Agreement, including updates (para. 64 of the MPGs)	9.1
Information necessary to track progress in implementing and achieving the NDC under Article 4 of the Paris Agreement (paras. 65–79 of the MPGs)	10.1, 10.3
Mitigation PaMs, actions and plans related to implementing and achieving the NDC under Article 4 of the Paris Agreement[b] (paras. 80–90 of the MPGs)	11.3
Summary of GHG emissions and removals (para. 91 of the MPGs)	No areas of improvement were identified
Projections of GHG emissions and removals[b] (paras. 92–102 of the MPGs)	13.1

[a] See document FCCC/ETF/TERR.1/2024/BRA/Add.1. The areas of improvement referred to in this table comprise only those relating to recommendations in that document.
[b] The developing country Party applied flexibility in the light of its capacities with respect to this provision.

3. Financial, technology development and transfer, and capacity-building support provided[11]

11. According to paragraph 118 of the MPGs, developed country Parties shall provide information on financial, technology development and transfer, and capacity-building support provided pursuant to Article 13, paragraph 9, of the Paris Agreement in accordance with chapter V of the MPGs, and other Parties that provide support should provide such information and, in doing so, are encouraged to use the same MPGs contained in that chapter. Brazil did not provide information on financial, technology development and transfer, or capacity-building support provided under Articles 9–11 of the Paris Agreement in its BTR1.

B. Consideration of the Party's implementation and achievement of its nationally determined contribution[12]

12. In considering Brazil's progress in implementing and achieving its NDC, the TERT noted that the NDC[13] comprises economy-wide absolute net emission targets to limit total net GHG emissions to 1.32 Gt CO_2 eq in 2025 and 1.20 Gt CO_2 eq in 2030, requiring reductions of 48.4 and 53.1 per cent respectively in comparison with the 2005 level. It is consistent with Brazil's national GHG inventory and all the gases reported therein: CO_2, CH_4, N_2O, PFCs, HFCs and SF_6.

[10] As per para. 150(b) of the MPGs.
[11] As per para. 150(c) of the MPGs.
[12] As per para. 146(b) of the MPGs.
[13] The consideration of the Party's implementation and achievement of its NDC is in the context of the updated first NDC submitted by Brazil on 27 October 2023. The TERT noted that the Party submitted a second NDC on 13 November 2024.

13. The indicators that Brazil selected to track progress in implementing and achieving its NDC are described in table 4.

Table 4
Description of the indicator(s) selected by Brazil to track progress in implementing and achieving its nationally determined contribution

NDC target	*Indicator*	*Description*
Limiting total economy-wide net GHG emissions to 1.32 Gt CO_2 eq in 2025 and 1.2 Gt CO_2 eq in 2030, requiring reductions of 48.4 and 53.1 per cent respectively in comparison with the 2005 level, according to the most recent GHG inventory data (2024 NIR)	Net GHG emission reduction by 2025[a]	Percentage reduction in total net GHG emissions in the most recent year of NDC implementation relative to the total net GHG emissions reported for the base year (2005), demonstrating progress in implementing the NDC through comparison with the target level (the percentage reduction in total net GHG emissions in 2025 relative to the 2005 level required to achieve the NDC target according to the most recent GHG inventory data)
	Net GHG emission reduction by 2030[a]	Percentage reduction in total net GHG emissions in the most recent year of NDC implementation relative to the total net GHG emissions reported for the base year (2005), demonstrating progress in implementing the NDC through comparison with the target level (the percentage reduction in total net GHG emissions in 2030 relative to the 2005 level required to achieve the NDC target according to the most recent GHG inventory data)
	Total net GHG emissions in 2025[b]	Demonstrates progress in achieving the NDC through comparison of total net GHG emissions in 2025 with the target level for 2025
	Total net GHG emissions in 2030[b]	Demonstrates progress in achieving the NDC through comparison of total net GHG emissions in 2030 with the target level for 2030

Sources: Brazil's BTR1 and CTF tables 1–3.
[a] Indicator for tracking progress in implementing the NDC.
[b] Indicator for tracking progress in achieving the NDC.

14. The TERT noted that the contribution of LULUCF to achieving the NDC is included in the Party's base-year level and target-year level and that Brazil did not use units from cooperative approaches referred to in Article 6, paragraph 2, of the Paris Agreement or the mechanism established by Article 6, paragraph 4, of the Paris Agreement towards the achievement of its NDC. While Brazil is striving to achieve its NDC targets by implementing domestic measures, it does not rule out using ITMOs from cooperative approaches referred to in Article 6, paragraph 2, of the Paris Agreement to complement the national efforts to achieve its NDC. In future, Brazil may also consider the possibility of transferring ITMOs generated within its national territory to other Parties under Article 6, paragraph 2, of the Paris Agreement.

15. Table 5 summarizes information on progress in implementing the NDC[14] based on the reduction in total net GHG emissions relative to the base-year level reported by Brazil, taking into account the type of Brazil's NDC targets, including quantitative values for the implementation period, including the most recent year available, and target year.

[14] Brazil has two sets of indicators, one for tracking progress in implementing the NDC and another for tracking progress in achieving it. Accordingly, the summary of information on Brazil's progress in implementing and achieving the NDC is presented in separate tables (tables 5 and 6 respectively).

Table 5
Summary of information on Brazil's progress in implementing its nationally determined contribution
(% reduction in emissions compared with base-year level)

	Net GHG emission reduction	*Contribution of LULUCF, as applicable*[a]	*ITMOs, A6.4ERs and/or CERs used towards NDC, as applicable*	*Indicator adjusted for contribution of LULUCF and ITMOs, A6.4ERs and/or CERs used towards NDC, as applicable*
NDC base year (2005)	NA			
2020	28.8	NA	NA	NA
2021	17.4	NA	NA	NA
2022	20.4	NA	NA	NA
Target level (2025)[b]				48.4
Target level (2030)[b]				53.1

Sources: Brazil's BTR1 and CTF table 4, and information provided by the Party during the review.
[a] The contribution of LULUCF is included in the net GHG emission reduction.
[b] Target level corresponds to an unconditional NDC target.

16. According to the most recent information on net GHG emission reduction provided in CTF table 4, in 2022 the reduction in Brazil's GHG emissions relative to the base-year level was 20.4 per cent. The indicator is below the target levels for 2025 and 2030 of 48.4 and 53.1 per cent, respectively, that are consistent with the target levels for total net GHG emissions of 1.32 Gt CO_2 eq in 2025 and 1.20 Gt CO_2 eq in 2030.

17. Table 6 summarizes information on progress in achieving the NDC based on the total net GHG emissions reported by Brazil, taking into account the type of Brazil's NDC targets, including quantitative values for the base year, implementation period, including the most recent year available, and target year. The TERT noted that, as per paragraph 70 of the MPGs, the Party is not required to provide an assessment of whether it has achieved the targets for its NDC under Article 4 of the Paris Agreement until the first BTR that contains information on the end year of its NDC.

Table 6
Summary of information on Brazil's progress in achieving its nationally determined contribution
(net emissions in kt CO_2 eq)

	Total net GHG emissions	*Contribution of LULUCF, as applicable*[a]	*ITMOs, A6.4ERs and/or CERs used towards NDC, as applicable*	*Indicator adjusted for contribution of LULUCF and ITMOs, A6.4ERs and/or CERs used towards NDC, as applicable*
NDC base year (2005)	2 561 246.00			
2020	1 824 760.00	NA	NA	NA
2021	2 116 314.00	NA	NA	NA
2022	2 039 236.00	NA	NA	NA
Target level (2025)[b]				1 320 000.00
Target level (2030)[b]				1 200 000.00

Sources: Brazil's BTR1 and CTF table 4, and information provided by the Party during the review.
[a] The contribution of LULUCF is included in the total net GHG emissions.
[b] Target level corresponds to an unconditional NDC target.

18. According to the most recent information on total net GHG emissions provided in CTF table 4, in 2022 Brazil's total net GHG emissions were 2,039,236.00 kt CO_2 eq. The indicator is 522,010.00 kt CO_2 eq (20.4 per cent) below the base-year emission level and 719,236.00 kt CO_2 eq (54.5 per cent) and 839,236.00 kt CO_2 eq (69.9 per cent) above the target emission levels for 2025 and 2030 respectively.

19. Brazil reported information on the actions and PaMs in the energy, agriculture and LULUCF sectors that support the implementation and achievement of its NDC. Table 7 provides a summary of the reported information on the key PaMs of Brazil.

Table 7
Summary of information on key policies and measures reported by Brazil

Sector	*Key PaMs*[a]
Policy framework and cross-sectoral measures	National Climate Change Plan for 2024–2035
Energy	Increasing electricity supply from renewable sources
	National Biofuels Policy (RenovaBio)
	PROCEL – National Electricity Conservation Program – Procel Seal
	National Program for the Rationalization of the Use of Oil Derivatives and Natural Gas – Conpet Seal
Agriculture	ABC+ Plan for Adaptation and Low Carbon Emission in Agriculture for 2021–2030
LULUCF	Action Plans for the Prevention and Control of Deforestation in the Brazilian Biomes
	National Plan for the Recovery of Native Vegetation

Sources: Brazil's BTR1 and CTF table 5.
[a] Names of PaMs reproduced as reported in Brazil's BTR1.

20. The TERT noted that, given that Brazil applied the flexibility provided for in paragraph 85 of the MPGs with respect to reporting information on expected and achieved GHG emission reductions for its actions and PaMs, it is challenging to analyse how those actions and PaMs have contributed to GHG emission reductions. The TERT noted that GHG emissions from all sectors, except the LULUCF sector, significantly increased in 2005–2022, which indicates that economic drivers such as growth in gross domestic product and population counteracted the effects of mitigation PaMs in this period. GHG emissions from the LULUCF sector decreased in 2005–2020 owing to a reduction in deforestation resulting from the implementation of the Action Plans for the Prevention and Control of Deforestation in the Brazilian Biomes. The TERT noted that emissions from the LULUCF sector then increased in 2020–2021 and decreased in 2021–2022. As noted by the Party in the BTR1, the decreasing trend in LULUCF emissions since 2021 may extend to 2023 given that the deforested area decreased in 2022–2023. In addition, expanded mandates for biodiesel and anhydrous ethanol blending with mineral diesel and gasoline and an expansion of installed wind and solar generation capacity may influence the trend in GHG emissions from the energy sector going forward.

21. The TERT noted that, because of its extensive land area and forest cover, Brazil's GHG emissions and removals are strongly influenced by land use and land-use change dynamics. As such, the agriculture and LULUCF sectors account for the largest share of Brazil's GHG emissions. GHG emissions from the energy sector are relatively lower than emissions from the agriculture and LULUCF sectors because electricity generation in Brazil is predominantly from renewable energy sources (primarily hydroelectricity), accounting for 89.2 per cent of electricity generation in 2023. In addition, Brazil has a robust biofuels programme with bioethanol and biodiesel being used for electricity generation and transport. The National Climate Change Plan for 2024–2035, to be launched in its full version in 2025, will operationalize the National Policy on Climate Change towards implementing and achieving the NDC targets and thus could play an important role in addressing the emission trends in Brazil.

22. The TERT notes that, compared with the emission level in the most recent reported year (2022), Brazil's GHG emissions need to be reduced by 719,236.00 kt and 839,236.00 kt CO_2 eq to reach the target levels for 2025 and 2030 respectively. The TERT also notes that there are not yet enough data to sufficiently assess the Party's progress in implementing the NDC because data have been reported only for up to 2022 within the implementation periods of 2020–2025 and 2020–2030. The TERT further notes that regular monitoring of net GHG emissions and the results of mitigation actions could allow adjustments of PaMs to be made as needed towards achieving the targeted reduction in GHG emissions.

C. Consideration of the Party's support provided[15]

23. Brazil did not consider itself subject to the reporting obligations applicable to developed country Parties pursuant to Article 13, paragraph 9, of the Paris Agreement and did not report information in its BTR1 on support provided (see para. 11A.1(a)(i)11A.1(a)(i)11 above).

D. Identification of areas of improvement[16]

24. During the technical expert review, the TERT identified areas of improvement in relation to Brazil's implementation of Article 13 of the Paris Agreement, which are summarized in chapter II.A above and included in the assessment tables referred to in paragraph 6 above.

E. Assistance in identifying capacity-building needs[17]

25. The TERT, in consultation with Brazil, identified the following prioritized needs for capacity-building to facilitate the Party's reporting in its BTR relating to the flexibilities applied by it as per the MPGs:[18]

(a) Disaggregating AD for estimating nitrogen trifluoride emissions for subcategory 2.E.3 photovoltaics;

(b) Establishing a sustainable system for estimating expected and achieved GHG emission reductions from PaMs to ensure their timely reporting under the enhanced transparency framework under the Paris Agreement;

(c) Establishing a sustainable system for developing GHG emission projections to ensure their timely reporting under the enhanced transparency framework.

26. Furthermore, in order to facilitate continuous improvement in reporting, the following additional capacity-building needs were identified during the review:

(a) Estimating emissions of fluorinated gases for subcategory 2.F.1 refrigeration and air conditioning;

(b) Systematizing databases on solid waste generation and treatment to enable accurate classification of solid waste disposal sites across the time series;

(c) Developing technical capacity, data collection systems, methodologies and institutional arrangements for gathering, assessing and reporting information on how mitigation actions interact with each other, costs of each action, policy and measure, how PaMs are modifying longer-term trends in GHG emissions and removals, and the assessment of economic and social impacts of response measures.

27. Brazil also identified the capacity-building support needs in its BTR1 (chap. 5).

III. Conclusions and recommendations

28. The TERT conducted a technical expert review of the information reported in the BTR1, NID, CRTs and CTF tables of Brazil in accordance with the MPGs.

29. The areas of improvement identified by the TERT on the basis of the review of the consistency of the information reported by Brazil with the MPGs are summarized in chapter II.A above and included in the assessment tables referred to in paragraph 6 above.

[15] As per para. 146(c) of the MPGs.
[16] As per para. 146(d) of the MPGs.
[17] As per para. 146(e) of the MPGs.
[18] For a complete list of the capacity-building needs identified by the TERT in consultation with the Party, see table 15 in document FCCC/ETF/TERR.1/2024/BRA/Add.1.

30. The TERT considers that, on the basis of a comparison of information on net GHG emission reduction (the indicator for tracking progress in implementing the NDC) and total net GHG emissions for the most recent reported year (i.e. 2022) with the base-year level and target level, and taking into account information on mitigation actions, there are not yet enough data to sufficiently assess the Party's progress in implementing its NDC. Regular monitoring of net GHG emissions and the results of mitigation actions could allow adjustments of PaMs to be made as needed towards achieving the targeted reduction in GHG emissions.

31. The TERT notes that the PaMs, actions and plans presented in the BTR1 do not represent the totality of the Party's efforts to achieve its NDC targets. Emissions from the LULUCF sector decreased in 2005–2020, owing primarily to the reduction in deforestation. Emissions from all sectors increased in 2020–2022 but the National Climate Change Plan for 2024–2035, which will be launched in its full version in 2025, could play an important role in addressing the national emission trends.

32. Brazil did not report information on financial, technology development and transfer, or capacity-building support provided under Articles 9–11 of the Paris Agreement in its BTR1 in accordance with the MPGs.[19]

33. Regarding the implementation of Article 13 of the Paris Agreement and transparency-related activities, Brazil requires support for strengthening the institutional arrangements for preparing national GHG inventories, particularly for the IPPU and LULUCF sectors, including for collecting and managing data, applying higher-tier methods and providing relevant training to experts. Support has been received under a Global Environment Facility enabling activity project to help Brazil to prepare its fifth national communication and BTRs and for strengthening the national transparency system (DataClima+) to support the Party in formulating national policies and meeting the requirements of the enhanced transparency framework under the Paris Agreement. The amount of support received in 2023–2024 towards that required for 2023–2029 was USD 11.3 million.

34. In consultation with Brazil, the TERT identified reporting-related needs for capacity-building support relating to the flexibilities applied by the Party as per the MPGs that could facilitate the Party's preparation of subsequent BTRs. For Brazil, the main reporting-related need for capacity-building support is institutional, technical and financial capacity to ensure the timely and sustainable reporting of projections and the impacts of mitigation actions.

35. The TERT recommends an in-country review of the Party's BTR2 as, following its assessment of the reported information in the NID and CRTs on the LULUCF sector, the TERT identified several areas of improvement for the sector relating to land representation, deriving AD and estimating carbon stock changes. Given that the LULUCF sector is the largest source of emissions in Brazil, the TERT notes that these are very important areas of improvement that need to be addressed as a matter of priority and an in-country review could facilitate information-sharing and understanding between the TERT and national experts.

[19] As per para. 118 of the MPGs.

Annex

Documents and information used during the review

A. Reference documents

BTR1 of Brazil. Available at https://unfccc.int/first-biennial-transparency-reports.

BTR1 CTF tables of Brazil.
Available at https://unfccc.int/first-biennial-transparency-reports.

CRTs of Brazil. Available at https://unfccc.int/first-biennial-transparency-reports.

Fourth national communication of Brazil. Available at https://unfccc.int/documents/267657.

"Guidance for operationalizing the modalities, procedures and guidelines for the enhanced transparency framework referred to in Article 13 of the Paris Agreement". Decision 5/CMA.3. FCCC/PA/CMA/2021/10/Add.2. Available at https://unfccc.int/documents/460951.

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"Modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement". Annex to decision 18/CMA.1. FCCC/PA/CMA/2018/3/Add.2. Available at https://unfccc.int/documents/193408.

B. Additional information provided by the Party

Responses to questions during the review were received from Ricardo Vieira Araujo (Ministry of Science, Technology and Innovation of Brazil), including additional material. The following references were provided by Brazil and may not conform to UNFCCC editorial style as some have been reproduced as received:

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FAO – Food and Agriculture Organization of the United Nations. 2025. *FAOSTAT*. Available at https://www.fao.org/faostat/en/#data/FO/metadata

FAO – Food and Agriculture Organization of the United Nations. 2025. *FAOSTAT*. Available at https://www.fao.org/forestry-fao/statistics/84922/en/

FAO – Food and Agriculture Organization of the United Nations. 2025. *FAOSTAT. Joint Forest Sector Questionnaire (JFSQ)*. Available at https://www.fao.org/forestry/statistics/80572/en/

IBGE – Brazilian Geography and Statistics Institute. 2012. *Manual técnico da vegetação brasileira: sistema fitogeográfico : inventário das formações florestais e campestres:*

técnicas e manejo de coleções botânicas : procedimentos para mapeamentos. Available at https://biblioteca.ibge.gov.br/index.php/biblioteca-catalogo?view=detalhes&id=263011

IBGE – Brazilian Geography and Statistics Institute. 2025. *Tabela 289*. Available at https://sidra.ibge.gov.br/tabela/289

IBGE – Brazilian Geography and Statistics Institute. 2025. *Tabela 291*. Available at https://sidra.ibge.gov.br/tabela/291

Maia, S. M. F. *et al*. 2009. *Effect of grassland management on soil carbon sequestration in Rondonia and Mato Grosso states, Brazil*. Geoderma, v. 149, n. 1–2, p. 84–91. Available at https://www.sciencedirect.com/science/article/abs/pii/S0016706108003406

Ministerio do Meio Ambiente (MMA). 2018. *Biomassa para energia no Nordeste: atualidade e perspectivas*. MMA & UNDP. Available at: https://www.undp.org/sites/g/files/zskgke326/files/migration/br/Livro_APNE_NE_AGO20.pdf

Ministry of Science, Technology and Innovations (MCTI) - Secretariat for Research and Scientific Training. 2022. *Estimativas anuais de emissões de gases de efeito estufa no Brasil – 6ª Edição*. Available at https://www.gov.br/mcti/pt-br/acompanhe-o-mcti/sirene/publicacoes/estimativas-anuais-de-emissoes-gee/arquivos/6a-ed-estimativas-anuais.pdf/@@download/file/6a%20ed%20Estimativas%20Anuais.pdf

Ministry of Science, Technology and Innovations (MCTI) - Secretariat for Research and Scientific Training. 2025. *2025BRAA52 – Revised Table A.VII.14_FInal.docx*

Ministry of Science, Technology and Innovations (MCTI) – Secretariat for Research and Scientific Training. 2025. *2025BRAA50 – 2025BRAQA73 – Selective logging.docx*

Ogle, et al. 2004. Deriving grassland management factors for a carbon accounting approach developed by the Intergovernmental Panel on Climate Change. Environmental Management, v. 33, n. 2, p. 474–484, 2004.