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Technical report on the technical analysis of the technical annex to the first biennial transparency report of Costa Rica submitted in accordance with paragraph 14 of decision 18/CMA.1 on 6 September 2025

Summary

This technical report covers the technical analysis of the technical annex submitted on a voluntary basis, in the context of results-based payments, by Costa Rica on 6 September 2025 through its first biennial transparency report in accordance with paragraph 45 of decision 1/CP.24 and paragraph 14 of decision 18/CMA.1. The technical annex provides data and information on the activities reducing emissions from deforestation, reducing emissions from forest degradation and enhancement of forest carbon stocks, which are activities included in paragraph 70 of decision 1/CP.16, and covers the same national territorial forest area as the assessed forest reference emission level (FREL) and forest reference level (FRL) proposed by Costa Rica in its modified FREL/FRL submission of April 2025.

Costa Rica reported the results of implementing these activities for 2020–2023, which amount to net removals of 2,892,834 tonnes of carbon dioxide equivalent (t CO_2 eq) for 2020, 2,700,253 t CO_2 eq for 2021, 2,417,498 t CO_2 eq for 2022 and 2,267,271 t CO_2 eq for 2023 and were measured against the assessed FREL/FRL of 76,938 t CO_2 eq/year.

The data and information provided in the technical annex are in overall accordance with the guidelines contained in the annex to decision 14/CP.19. The technical analysis concluded that the data and information provided by Costa Rica in the technical annex are mostly transparent and fully consistent with the data and information used for establishing the assessed FREL/FRL in accordance with paragraph 71(b) of decision 1/CP.16 and section II of decision 12/CP.17. This report contains the findings from the technical analysis and a few areas identified for capacity-building and future technical improvement in accordance with paragraph 14 of decision 14/CP.19.

Abbreviations and acronyms

AD	activity data
BTR	biennial transparency report
CH_4	methane
CO_2	carbon dioxide
CO_2 eq	carbon dioxide equivalent
EF	emission factor
FREL	forest reference emission level
FRL	forest reference level
GHG	greenhouse gas
HWP	harvested wood products
IPCC	Intergovernmental Panel on Climate Change
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
NFMS	national forest monitoring system
QA/QC	quality assurance/quality control
REDD+	reducing emissions from deforestation; reducing emissions from forest degradation; conservation of forest carbon stocks; sustainable management of forests; and enhancement of forest carbon stocks (decision 1/CP.16, para. 70)
SOC	soil organic carbon
TA	technical analysis

I. Introduction, overview and summary

A. Introduction

1. This technical report covers the TA of the technical annex provided by Costa Rica on 6 September 2025 in accordance with paragraph 45 of decision 1/CP.24 and paragraph 14 of decision 18/CMA.1 as part of its BTR1, which was submitted in accordance with paragraph 3 of decision 18/CMA.1. In the technical annex, Costa Rica provided the data and information used for estimating its anthropogenic forest-related emissions by sources and removals by sinks, forest carbon stocks, and changes in forest carbon stock and forest area resulting from implementing REDD+ activities. The submission of the technical annex is voluntary and in the context of results-based payments in accordance with paragraph 8 of decision 14/CP.19.

2. In accordance with paragraph 14 of decision 18/CMA.1, the TA of the technical annex to the BTR is carried out concurrently with the technical expert review of the BTR referred to in Article 13, paragraph 11, of the Paris Agreement. The technical expert review team conducted the technical expert review of the information reported in the BTR1 of Costa Rica as per the scope of the review defined in paragraph 146 of the MPGs,[1] resulting in a separate technical expert review report.[2]

3. Costa Rica made its first and second FREL/FRL submissions, in accordance with decision 12/CP.17, on 4 January 2016 and 7 January 2025 respectively, which were subject to technical assessment following the guidance provided in decision 13/CP.19 and its annex. As a result of the facilitative interactions with the LULUCF experts during the technical assessment, the Party provided a modified version of its latest FREL/FRL submission on 28 April 2025. The latest assessed FREL/FRL was included as one of the elements of the technical annex to its BTR1 in accordance with the guidelines contained in the annex to decision 14/CP.19. The findings from the technical assessment of that FREL/FRL are included in a separate report.[3]

B. Process overview

4. The technical expert review of the BTR1 of Costa Rica took place from 20 to 24 October 2025 as an in-country review and was undertaken by a technical expert review team drawn from the UNFCCC roster of experts on the basis of the criteria defined in paragraphs 172–182 of the MPGs. Giacomo Grassi (European Union) and Flora da Silva Ramos Vieira Martins (Brazil) were the LULUCF experts who undertook the TA of the technical annex in accordance with paragraphs 10–13 of decision 14/CP.19. The TA was coordinated by Luca Birigazzi (secretariat).

5. The TA of the technical annex provided by Costa Rica was undertaken in accordance with the procedures contained in decisions 2/CP.17, 14/CP.19 and 20/CP.19. This technical report on the TA was prepared by the LULUCF experts in accordance with paragraph 14 of decision 14/CP.19.

6. During the TA and subsequent exchanges, the LULUCF experts and Costa Rica engaged in technical discussions, and Costa Rica provided clarifications in response to questions raised by the LULUCF experts, in order to reach an understanding on the identification of the capacity-building needs of the Party and areas for future technical improvement. As a result of the facilitative interactions with the LULUCF experts during the TA, Costa Rica provided a modified version of its technical annex, including updated values of estimated results, on 7 November 2025, which took into consideration the technical input of the LULUCF experts. The modifications improved the clarity and transparency of the submitted technical annex.

[1] Decision 18/CMA.1, annex.
[2] FCCC/ETF/TERR.1/2024/CRI and Add.1.
[3] FCCC/TAR/2025/CRI, published on 6 August 2025.

7. Following the TA of the technical annex, the LULUCF experts prepared and shared the draft technical report with Costa Rica for its review and comments. The LULUCF experts responded to the Party's comments and incorporated them into and finalized this technical report in consultation with Costa Rica. This technical report on the TA of the technical annex was prepared in the context of the modified technical annex submitted by the Party.

C. Summary of results

8. In paragraph 70 of decision 1/CP.16 the Conference of the Parties encouraged developing country Parties to contribute to mitigation actions in the forest sector by undertaking a number of activities, as deemed appropriate by each Party in accordance with its respective capabilities and national circumstances. In the context of results-based payments and in line with decision 12/CP.17, Costa Rica, on a voluntary basis, proposed a national FREL/FRL covering the activities reducing emissions from deforestation, reducing emissions from forest degradation and enhancement of forest carbon stocks for the purpose of a technical assessment in accordance with decision 13/CP.19 and its annex. The activities are being implemented in Costa Rica's national territory excluding Cocos Island, which is 532 km from the country's continental territory and not subject to anthropogenic intervention. The assessed FREL/FRL of Costa Rica is 76,938 t CO_2 eq/year and was submitted with the aim of accessing results-based payments for 2020–2029.

9. The Party's FREL/FRL is based on its annual average historical CO_2 emissions associated with the activities reducing emissions from deforestation, reducing emissions from forest degradation and enhancement of forest carbon stocks for the historical reference period 2010–2019. Costa Rica reported the results of implementing those activities for 2020–2023, calculated against the assessed FREL/FRL, which amount to carbon removals of 2,892,834 t CO_2 eq for 2020, 2,700,253 t CO_2 eq for 2021, 2,417,498 t CO_2 eq for 2022 and 2,267,271 t CO_2 eq for 2023. The table contained in annex II summarizes the main features of the results in the technical annex, with the aim of accessing results-based payments for REDD+ activities, including the results period, the assessed FREL/FRL, and the pools and gases included.

10. Costa Rica submitted its first FREL/FRL for technical assessment in 2016.[4] The assessed FREL/FRL was 4,365,160 t CO_2 eq/year for the reference period 1997–2009. Measured against this value, Costa Rica also submitted results amounting to 7,489,243 t CO_2 eq for 2014 and 7,305,504 t CO_2 eq for 2015, which were assessed in 2020.[5]

II. Technical analysis of the information reported in the technical annex

11. For the technical annex to the BTR1 submitted by Costa Rica, see annex I.[6]

12. The scope of the TA is outlined in paragraph 11 of decision 14/CP.19, according to which the LULUCF experts shall analyse the extent to which:

(a) The methodologies, definitions, comprehensiveness and information provided are consistent between the assessed FREL/FRL and the results of implementing REDD+ activities;

(b) The data and information provided in the technical annex are transparent, consistent, complete and accurate;

(c) The data and information provided in the technical annex are consistent with the guidelines referred to in paragraph 9 of decision 14/CP.19;

(d) The results are accurate, to the extent possible.

[4] See document FCCC/TAR/2016/CRI.

[5] See document FCCC/SBI/ICA/2020/TATR.1/CRI.

[6] As per decision 14/CP.19, para. 14(a).

13. The table below describes the findings from the TA of the data, methodologies and procedures used by the developing country Party for estimating its anthropogenic forest-related emissions by sources and removals by sinks, forest carbon stocks, and changes in forest carbon stock and forest area resulting from implementing REDD+ activities within the scope of the TA outlined in paragraph 12 above.

Findings from the technical analysis of the data and information used by the developing country Party for estimating its anthropogenic forest-related emissions by sources and removals by sinks, forest carbon stocks, and changes in forest carbon stock and forest area resulting from implementing REDD+ activities

Finding ID#	*Aspect of the scope of the TA (decision 14/CP.19, para. 11)*	*Description of the issue, additional information shared by the Party during the TA and conclusions of the LULUCF experts*	*Area for future technical improvement*
1	11(a) Consistency with the guidelines in paragraph 3 of the annex to decision 14/CP.19 (consistency with the assessed FREL/FRL)	The LULUCF experts noted that Costa Rica maintained consistency between its assessed FREL/FRL and estimated results of implementing the activities reducing emissions from deforestation, reducing emissions from forest degradation and enhancement of forest carbon stocks in 2020–2023 with regard to the following elements: (a) Using consistent methodologies and data to generate AD on land-use changes, in particular using the same wall-to-wall mapping approach with the same minimum mapping unit and land-use-change subcategories to generate AD on changes resulting from gross deforestation or enhancement of carbon stocks in secondary forests, and the same sample-based approach to generate AD on changes in forest land remaining forest land resulting from degradation or enhancement of carbon stocks in primary forests; (b) Using consistent methodologies and data to generate EFs, in particular the same data sources, namely the national forest inventory and academic literature, and the same forest stratification based on an ancillary vegetation map; (c) Covering the same carbon pools: all four pools (above-ground biomass, below-ground biomass, deadwood and litter) were considered under the activities reducing emissions from deforestation and enhancement of forest carbon stocks, as well as for estimating removals from forest degradation; while above-ground biomass only was considered for estimating emissions from forest degradation; (d) Covering the same gas: CO_2; (e) Covering the same area: entire national territory excluding Cocos Island; (f) Using the same forest definition: 30 per cent canopy cover, minimum tree height of 5 m and minimum area of 1 ha. The LULUCF experts conclude that Costa Rica ensured overall consistency between its assessed FREL/FRL and estimated results.	
2	11(b) Approaches – Transparency	The LULUCF experts noted that the Party did not include in its technical annex clear definitions of managed and unmanaged forest land. During the TA, Costa Rica explained that managed forest land includes all secondary forests and primary forests subject to sustainable forest management practices or legal logging, as well as forests affected by illegal logging and thus subject to canopy cover loss due to degradation and subsequently undergoing recovery. The Party included this definition in the modified version of the technical annex.	The LULUCF experts note that the Party enhancing its QA/QC procedures applied in developing the technical annex, particularly those aimed at ensuring the accuracy and consistency of definitions and terms, is an area for future technical improvement.

Finding ID#	*Aspect of the scope of the TA (decision 14/CP.19, para. 11)*	*Description of the issue, additional information shared by the Party during the TA and conclusions of the LULUCF experts*	*Area for future technical improvement*
		The LULUCF experts commend Costa Rica for its efforts to increase the transparency and ensure the completeness[a] of the data and information provided, thus allowing for reconstruction of the results. They note that it would be useful for the Party to include information in the technical annex on the relative shares of managed and unmanaged forest land, consistently with the information reported in common reporting table 4.1.	
3	11(b) Approaches – Transparency and completeness	The LULUCF experts noted, in analysing the calculation spreadsheets accompanying the submission of the original technical annex, that the Party estimated emissions from forest degradation by multiplying the percentage decrease in crown cover by the ratio of above-ground biomass to canopy cover, while removals from forest degradation were estimated by multiplying the percentage increase in crown cover by the amount of forest carbon stock per hectare and considering all carbon pools. As a result, while removals from forest degradation were estimated considering all carbon pools, the estimates of emissions from forest degradation considered above-ground biomass only. The LULUCF experts noted that this approach is consistent with that applied in constructing the FREL/FRL but does not align with the description of the carbon pools considered provided in table 3 in the original version of the technical annex. During the TA, Costa Rica confirmed that above-ground biomass was the only carbon pool included in estimating emissions from forest degradation, consistently with the approach applied in constructing the FREL/FRL. It clarified that this is a conservative approach that does not compromise the accuracy of the final estimates. The LULUCF experts commend Costa Rica for including this additional information in the modified technical annex. However, they note that clarifying the reasons for the different coverage of different carbon pools in estimating removals and emissions from forest degradation and including a detailed description of the carbon pools included for each activity in table 3 in the modified technical annex would enhance transparency.	The LULUCF experts note that the Party enhancing its QA/QC procedures applied in developing the technical annex, particularly those aimed at ensuring the accuracy and consistency of information provided on the carbon pools considered for each activity, is an area for future technical improvement. The LULUCF experts consider that including other carbon pools in estimating emissions from forest degradation is an area for future technical improvement.
4	11(b) Approaches – Accuracy and completeness	The LULUCF experts noted that, consistently with the approach applied in constructing the FREL/FRL, Costa Rica used distance of forests from roads and forest protection status to distinguish between anthropogenic and naturally occurring carbon fluxes in primary forest land remaining primary forest land, with only anthropogenic fluxes included in the calculation of the results. During the TA, Costa Rica clarified that the AD on forest degradation used included areas of illegal logging as well as areas subject to legally authorized sustainable forest management practices owing to those AD being obtained from canopy cover change assessments based on remote-sensing imagery, which does not allow for a distinction between legal and illegal logging. The LULUCF experts	The LULUCF experts note that disaggregating emissions occurring in forest land remaining forest land into emissions by activity, and considering whether they derive from legally authorized sustainable forest management practices or illegal logging, are areas for future technical improvement.

Finding ID#	*Aspect of the scope of the TA (decision 14/CP.19, para. 11)*	*Description of the issue, additional information shared by the Party during the TA and conclusions of the LULUCF experts*	*Area for future technical improvement*
		noted that disaggregating carbon fluxes occurring in forest land remaining forest land into fluxes from forest degradation and fluxes due to sustainable forest management practices would improve the accuracy and completeness of REDD+ carbon accounting in future FREL/FRL submissions. The Party explained that it currently lacks the spatially explicit data on areas subject to legally authorized sustainable forest management practices required to assign observed canopy cover changes to the different REDD+ activities, but that it will explore ways of addressing this issue. The LULUCF experts commend Costa Rica for providing the above-mentioned information during the TA, as it enhances the transparency of the reporting, and for its intention to enhance the accuracy and completeness of the information provided on carbon fluxes in forest land remaining forest land in future FREL/FRL submissions.	
5	11(b) Approaches – Transparency and completeness	The LULUCF experts noted that, consistently with the approach applied in constructing the FREL/FRL, the SOC and HWP pools were not included in the estimation of the results. The Party explained in the technical annex that this was due to limited data availability. The LULUCF experts noted that the HWP pool was included in Costa Rica's GHG inventory included with its BTR1, however. During the TA, the Party clarified that HWP data were unavailable for developing the FREL/FRL used for the first (1997–2009) and second (2010–2019) results periods. Although HWP data were available for constructing the FREL/FRL applicable to the third results period (2020–2029), this carbon pool was not included owing to time constraints. Costa Rica reported that it plans to have laid the groundwork for activities to increase the carbon removal potential of HWP in green construction through sustainable and legal wood sourcing by the end of the third results period with a view to including the HWP pool in constructing the FREL/FRL applicable to the fourth results period. The LULUCF experts commend Costa Rica for including this information in the modified technical annex, which enhanced the transparency of the reporting, and for its intention to include the HWP pool in constructing future FRELs/FRLs. As also concluded in the report on the technical assessment of Costa Rica's second FREL/FRL, the LULUCF experts consider that the inclusion of HWP and SOC pools would contribute to ensuring consistency with the approach used in developing the GHG inventory included with the BTR1.	The LULUCF experts note that the inclusion of the SOC and HWP pools, identified in the report on the technical assessment of Costa Rica's second FREL/FRL, also applies to the technical annex as an area for future technical improvement.
6	11(b) Approaches – Transparency and completeness	Costa Rica indicated in its technical annex that, for 1997 onward, non-CO_2 emissions from biomass burning were excluded from its REDD+ reporting owing to a decrease in slash-and-burn practices following the adoption of the Forest Law in 1997. The LULUCF experts sought clarification on whether supporting data and	The LULUCF experts reiterate the finding that including CH_4 and N_2O emissions from biomass burning or providing justification for their omission for each year covered, identified in the report on the technical

Finding ID#	*Aspect of the scope of the TA (decision 14/CP.19, para. 11)*	*Description of the issue, additional information shared by the Party during the TA and conclusions of the LULUCF experts*	*Area for future technical improvement*
		information are available to substantiate the assumption that non-CO_2 emissions from biomass burning have not been significant for 1997 onward. During the TA, Costa Rica explained that, as per its GHG inventory for 2021, non-CO_2 emissions from biomass burning totalled 11,544 t CO_2 eq in 2021, thus corresponding to only 1.9 per cent of all deforestation-related emissions in that year. In response to a question from the LULUCF experts, the Party clarified that, although its BTR1 includes non-CO_2 emissions, these are not reflected in the FREL/FRL or results in order to comply with the methodological requirements of the other results-based payment initiatives in which the country participates. Costa Rica explained that it currently lacks the spatially explicit data on burned areas and biomass available for combustion by forest type required to properly account for forest fires in reporting under other results-based payment initiatives. It also explained that it intends to identify reliable sources and develop reliable data on forest fires to improve its carbon accounting as relates to forests. The LULUCF experts commend Costa Rica for including information on the significance of non-CO_2 emissions in 2021 in the modified technical annex. As also concluded in the report on the technical assessment of the Party's second FREL/FRL, the LULUCF experts consider that the inclusion of CH_4 and N_2O emissions from biomass burning would contribute to ensuring consistency with the approach used in developing the GHG inventory included with the BTR1.	assessment of the Party's second FREL/FRL, is an area for future technical improvement.
7	11(b) EFs – Accuracy	As noted in the report on the technical assessment of the Party's second FREL/FRL, the EFs used by the Party to estimate carbon fluxes due to changes in forest land remaining forest land (degradation or enhancement of carbon stocks in primary forests) were calculated on the basis of non-significant or weak correlations between canopy cover and carbon stocks. During the TA, Costa Rica acknowledged that this is an important area for improvement and provided information on plans to improve the accuracy of these EFs, including by increasing the number of field plots used to derive ratios of above-ground biomass to canopy cover. The LULUCF experts commend Costa Rica for its efforts to improve the accuracy of its EFs.	The LULUCF experts note that improving the accuracy of the EFs used for calculating carbon fluxes in forest land remaining forest land, identified in the report on the technical assessment of Costa Rica's second FREL/FRL, also applies to the technical annex as an area for future technical improvement.
8	11(b) AD – Transparency and completeness	The LULUCF experts noted that, for estimating the uncertainty of AD on land-use changes, Costa Rica conducted assessments of its wall-to-wall maps. The original submission of the technical annex, however, included only partial results of those accuracy assessments, with information on the bias-corrected area values, obtained through the accuracy assessments, and confidence intervals for the results period (2020–2023) missing from table 13. Further, the LULUCF experts noted that the uncertainty of the AD used on changes occurring in forest land remaining forest land was assessed on the basis of sampling error. The Party did not include the	The LULUCF experts note that reporting information on the results of the uncertainty assessments conducted for all AD is an area for future technical improvement that would increase the transparency and completeness of the technical annex.

Finding ID#	*Aspect of the scope of the TA (decision 14/CP.19, para. 11)*	*Description of the issue, additional information shared by the Party during the TA and conclusions of the LULUCF experts*	*Area for future technical improvement*
		sample-based areas of canopy cover losses and gains in the technical annex, instead providing them in an external calculation file, and these were presented without confidence intervals. During the TA, Costa Rica clarified that the accuracy assessment of the land-cover map for 2022–2023 was not concluded by the time the technical annex was originally submitted. Costa Rica also acknowledged that the results of the uncertainty assessment of the AD on degradation of and enhancement of carbon stocks in primary forests were not included in the original submission of the technical annex. Costa Rica concluded the accuracy assessment of the land-cover map for 2022–2023 shortly after the TA and included the results in the modified technical annex. The LULUCF experts commend Costa Rica for concluding this assessment and for including a more detailed description of the uncertainty of AD on land-use changes in table 16 of the modified technical annex. The LULUCF experts note, however, that the results of the uncertainty assessment of the AD on degradation of, and enhancement of carbon stocks in, primary forests were not included in the modified technical annex.	
9	11(b) AD – Accuracy	As noted by Costa Rica during the TA, the results provided in the original technical annex were derived on the basis of preliminary estimates of areas of deforestation and forest gains. Using the results of the accuracy assessment referred to in finding ID# 8 above (see also tables 14 and 16 in the modified technical annex), Costa Rica updated the land-cover map for 2023–2024, including by rerunning the land classification process, and recalculated the AD derived from pixel counts on deforestation and forest gains for its modified submission. This resulted in the areas of deforestation decreasing and the areas of forest gains increasing compared with the original submission. For both of the activities to which these AD apply, the recalculated AD fall within the 90 per cent confidence interval reported for the sample-based area estimates. Additionally, the AD on forest degradation and canopy cover recovery for 2020–2024 were recalculated by interpolating the primary forest area for 2024 from data in land-cover maps for 2011, 2016, 2018, 2019 and 2021. As a result, total emission reductions reported in the modified technical annex increased from 8,500,874 to 10,277,857 t CO_2 eq for the entire results period. The LULUCF experts commend Costa Rica for its efforts to ensure that the AD derived from pixel counts on deforestation and forest gains fall within the confidence interval reported for the sample-based area estimates and for taking proactive steps towards increasing the accuracy of the technical annex.	

Finding ID#	*Aspect of the scope of the TA (decision 14/CP.19, para. 11)*	*Description of the issue, additional information shared by the Party during the TA and conclusions of the LULUCF experts*	*Area for future technical improvement*
10	11(b) AD – Accuracy	The LULUCF experts noted that the areas of deforestation and enhancement of carbon stocks in secondary forests used to estimate the results were derived from pixel counts, consistently with the approach used in constructing the FREL/FRL. During the TA, the LULUCF experts sought clarification on the challenges preventing Costa Rica from using bias-adjusted areas instead of pixel-counted areas. Costa Rica indicated that the challenges stem from the numerous land-use classes, and corresponding transitions among these classes, adopted to enable the use of more accurate EFs and to maintain consistency with the approach used in developing the GHG inventory included with the BTR1. During the TA, Costa Rica clarified that it considered increasing the sampling intensity of the country-wide network of sampling plots developed under the National System of Monitoring, Coverage, Land Use, and Ecosystems (see https://simocute.go.cr/) in areas experiencing land-use change, with a view to enhancing the precision of the estimates. However, pilot results showed that this approach significantly increased both the costs of and the time required for estimating the AD. The LULUCF experts commend Costa Rica for taking proactive steps towards increasing the precision and accuracy of future technical annexes. The LULUCF experts note, however, that the results of the uncertainty assessment for AD on areas of forest land remaining forest land were not included in the technical annex, preventing them from fully assessing the accuracy of the AD used on degradation and gains in stable forests.	
11	11(b) AD – Transparency	The LULUCF experts noted that the AD used on deforestation and enhancement of carbon stocks in secondary forests were obtained by comparing biannual land-use maps. The approach to annualizing such AD was not fully explained in the technical annex, and it was not clear to the LULUCF experts why the dates of the land-cover matrices in the calculation spreadsheets accompanying the submission of the original technical annex do not match those of the land-use maps. During the TA, Costa Rica provided detailed information on how the AD were annualized, including on the time frame used for selecting the remotely sensed imagery for developing the maps (annually from June to June) and the use of a midpoint reference date (January) within this annual period to assign observations to a specific calendar year for the biannual maps. The LULUCF experts commend Costa Rica for providing the aforementioned additional information during the TA.	
12	11(c) Consistency with the guidelines in paragraphs 1–2 of the annex to decision	Costa Rica provided information on the assessed FREL/FRL, the activities implemented, the territorial forest area, the date of the FREL/FRL submission, the date of the final technical assessment report and the periods of the FREL/FRL.	The LULUCF experts note that the Party enhancing its QA/QC procedures applied in developing the technical annex, particularly

Finding ID#	*Aspect of the scope of the TA (decision 14/CP.19, para. 11)*	*Description of the issue, additional information shared by the Party during the TA and conclusions of the LULUCF experts*	*Area for future technical improvement*
	14/CP.19 (summary information and results)	However, the LULUCF experts noted some inconsistencies in the presentation of the information on the assessed FREL/FRL and the results. For example, figure 1 in the original technical annex, showing data pertaining to the assessed FREL/FRL, showed incorrect data on total deforestation, and table 7 did not include reducing emissions from forest degradation among the activities considered in the assessed FREL/FRL. Regarding results, the results in t CO_2 eq/year for 2020–2023 specified on page 22 of the technical annex corresponded to the outcomes of the Monte Carlo simulation performed as part of the uncertainty analysis and not to the results of the estimation of emission reductions presented in table 6. Furthermore, the titles of sections 2 and 3 on the results and consistency with the FREL/FRL respectively refer to 2014–2015 as the time frame instead of 2020–2023. The LULUCF experts also noted that, for the purpose of ensuring transparency, it would be useful to disaggregate the results shown in table 6 by activity without merging the results of implementing the activities reducing emissions from deforestation and reducing emissions from forest degradation. In the modified technical annex, Costa Rica corrected table 7 and figure 1 and provided the correct results in table 6, disaggregated by activity. The LULUCF experts commend Costa Rica for correcting the inconsistencies and erroneous values identified in the original technical annex, which enhanced the transparency of its submission.	those aimed at ensuring the accuracy and consistency of the information provided, is an area for future technical improvement.
13	11(c) Consistency with the guidelines in paragraph 4 of the annex to decision 14/CP.19 (NFMS)	The LULUCF experts noted that Costa Rica provided a description of the NFMS and a transparent summary of the roles and responsibilities of the agencies and institutions involved in the measurement, reporting and verification of the results in the technical annex, together with weblinks for accessing further information. The NFMS covers the entire country, with different NFMS components centralized under the overall governance of the national system for monitoring land use, land cover and ecosystems. The system assesses biannual land-use and land-cover changes on the basis of Landsat imagery, using a minimum mapping unit of 1 ha. According to paragraph 4(b) of decision 11/CP.19 the NFMS should enable the assessment of different types of forest in the country, including natural forest. During the consultation process, Costa Rica explained that a map of potential forest types is used to stratify AD for all REDD+ activities included in the results.	
14	11(c) Consistency with the guidelines in paragraph 6 of the annex to decision 14/CP.19 (how the elements contained in para. 1(c–d) of decision 4/CP.15 have been taken into account)	Costa Rica provided a description of how IPCC guidance and guidelines were taken into account in accordance with paragraph 1(c) of decision 4/CP.15. For estimating emission reductions from deforestation and forest degradation and removals from enhancement of forest carbon stocks, Costa Rica used the methodology provided in the *2006 IPCC Guidelines for National Greenhouse Gas Inventories*.	

Finding ID#	*Aspect of the scope of the TA (decision 14/CP.19, para. 11)*	*Description of the issue, additional information shared by the Party during the TA and conclusions of the LULUCF experts*	*Area for future technical improvement*
15	11(d) Accuracy of the results proposed in the technical annex	Both the established FREL/FRL and the results obtained for 2020–2023 from implementing the activities are based on the assumption that any canopy cover change occurring in areas of primary forest within 500 m of roads and outside protected areas (such as national parks and other forms of conservation area) is anthropogenic. During the TA, Costa Rica explained that this assumption is based on the average skidding distance in reduced-impact logging operations in tropical forests, with the application of the assumption designed to prevent human-induced emissions from being underestimated. The LULUCF experts noted that, as also indicated in the report on the technical assessment of Costa Rica's second FREL/FRL, changes in canopy cover occurring in areas of primary forest within 500 m of roads may also result from natural disturbances or forest growth, and comparing carbon fluxes occurring within and outside this buffer can help to distinguish between anthropogenic and naturally occurring causes.	The LULUCF experts reiterate that the finding that identifying more robust methods for distinguishing between anthropogenic and naturally occurring emissions and removals in areas of primary forest within 500 m of roads, identified in the report on the technical assessment of Costa Rica's second FREL/FRL, is an area for future technical improvement that would enhance the transparency and accuracy of the technical annex.
16	11(d) Accuracy of the results proposed in the technical annex	Costa Rica provided information on the uncertainty of the results, which was estimated at 62 per cent. The Party estimated the uncertainty of the estimated annual emissions by combining the uncertainties associated with the AD and EFs used, applying approach 2 from the *2006 IPCC Guidelines for National Greenhouse Gas Inventories* (vol. 1, chap. 3) and using the Monte Carlo simulation. All uncertainties were reported with a 90 per cent confidence interval. Although bias and uncertainty are different concepts, for the purpose of the Monte Carlo simulation, the Party assumed the uncertainty of AD on forest-related land-use changes to be equal to the bias between the pixel-counted areas derived from the wall-to-wall maps and the bias-adjusted areas derived from the sample-based area estimates. The LULUCF experts commend Costa Rica for assessing the uncertainty of its results and taking proactive steps towards increasing the accuracy of those results in its future technical annexes. With the information provided by the Party, the LULUCF experts assessed the accuracy of the estimation of carbon stocks and the AD and concluded that the results are accurate to the extent possible.	

[a] "Complete" here means including the information necessary for reconstructing the results.

III. Conclusions

14. The LULUCF experts conclude that Costa Rica reported the results of implementing the activities reducing emissions from deforestation, reducing emissions from forest degradation and enhancement of forest carbon stocks, and followed a national approach covering Costa Rica's entire national territory excluding Cocos Island. The results include estimates of CO_2 emissions from four carbon pools: above-ground biomass, below-ground biomass, deadwood and litter, with all four pools considered under the activities reducing emissions from deforestation and enhancement of forest carbon stocks, as well as for estimating removals from forest degradation, and only above-ground biomass considered for estimating emissions from forest degradation.

15. The LULUCF experts also conclude that the results presented of implementing the activities are consistent with the assessed FREL/FRL. The LULUCF experts commend Costa Rica for ensuring consistency of data and methodologies between the FREL/FRL submission for 2010–2019 and the technical annex with the results for 2020–2023.

16. The LULUCF experts further conclude that Costa Rica provided the information necessary for reconstructing the results of implementing the activities reducing emissions from deforestation, reducing emissions from forest degradation and enhancement of forest carbon stocks. The data and information provided in the modified technical annex are considered to be consistent, complete and accurate, to the extent that they may be judged, and mostly transparent (see finding ID#s 3, 7 and 8 in the table above).

17. The LULUCF experts acknowledge that the technical annex includes summary information from the final report containing the assessed FREL/FRL; results in t CO_2 eq/year that are consistent with the assessed FREL/FRL; a demonstration that the methodologies used to produce the results are consistent with those used to establish the assessed FREL/FRL; a description of the NFMS and institutional roles and responsibilities in the measurement, reporting and verification of the results; the information necessary for reconstructing the results; and a description of how the elements contained in paragraph 1(c–d) of decision 4/CP.15 have been taken into account. The LULUCF experts conclude that the data and information provided in the technical annex are consistent with the guidelines referred to in paragraph 9 of decision 14/CP.19.

18. The results are accurate, to the extent that they may be judged, based on the assumptions used.

19. Pursuant to paragraph 14 of decision 14/CP.19, the LULUCF experts identified areas for future technical improvement (see the table above). The LULUCF experts conclude that the following areas for future technical improvement identified in the report on the technical assessment of Costa Rica's second FREL/FRL also apply to the provision of information on the results:

(a) Maintaining consistency between the FREL/FRL and the corresponding estimates in the national GHG inventory;

(b) Improving the accuracy of the models used to estimate emissions from forest degradation and removals from the enhancement of carbon stocks in primary forests, especially for wet and rain forests;

(c) Including more detailed information on the definition of primary forests and the method for distinguishing between primary and secondary forests at the beginning of the land-use change time series, including information on the use of Landsat images for 1975–1979 to create an ancillary map for 1978–1980;

(d) Reporting information on baseline emissions and removals from undisturbed forests and identifying more robust methods for distinguishing between anthropogenic and naturally occurring emissions and removals occurring in areas of primary forest within 500 m of roads.

20. The LULUCF experts acknowledge and welcome the Party's intention to include the HWP and SOC pools in future FREL/FRL submissions.

21. During the consultation process, Costa Rica identified a number of capacity-building needs. Addressing those needs could enable Costa Rica to improve its data and methodologies for future FREL/FRL submissions. After exchanges with the LULUCF experts, the Party identified the following capacity-building needs:

(a) Strengthening methodologies for estimating emissions and removals from forest degradation with a view to increasing accuracy;

(b) Enhancing the use of multi-satellite sensors and remote-sensing technologies for classifying land use and land-use change, including for monitoring forest degradation;

(c) Strengthening national registry systems to ensure that the same emission reductions are not counted more than once within and across REDD+ reporting, nationally determined contribution tracking and the mechanism established by Article 6, paragraph 4, of the Paris Agreement.

22. In conclusion, the LULUCF experts commend Costa Rica for showing strong commitment to continuously improving the data and information used for calculating the results, in line with the stepwise approach, which are consistent with those used for constructing its assessed FREL/FRL, and also commend the Party for its timely and useful responses provided during the TA. Some areas for future technical improvement and capacity-building needs identified by Costa Rica have been identified in this report. At the same time, the LULUCF experts acknowledge that such improvements are subject to national capabilities and circumstances, and note the importance of adequate and predictable support.[7] The LULUCF experts also acknowledge that the TA process was an opportunity for a facilitative and constructive technical exchange of views and information with Costa Rica.[8]

[7] As per decision 2/CP.17, para. 57.

[8] As per decision 14/CP.19, paras. 12–13.

Annex I

Technical annex to the biennial transparency report

Owing to the complexity and length of the submitted technical annex to the BTR, and in order to maintain the original formatting, the technical annex has not been reproduced here; it is available at https://unfccc.int/first-biennial-transparency-reports.

Annex II

Summary of main features of reported results of implementing activities referred to in paragraph 70 of decision 1/CP.16 based on information provided by Costa Rica

Key element		*Remark(s)*
Results reported	2 892 834 t CO_2 for 2020, 2 700 253 t CO_2 for 2021, 2 417 498 t CO_2 for 2022 and 2 267 271 t CO_2 for 2023	See paragraph 9 of this document. See also finding ID# 9 in the table in this document
Results period	2020–2023	See paragraph 9 of this document
Assessed FREL/FRL	76 938 t CO_2/year	See document FCCC/TAR/2025/CRI and the modified version of the Party's latest FREL/FRL submission of April 2025. See paragraph 8 of this document
Reference period	2010–2019	See paragraph 9 of this document
National/subnational	National	The activities are being implemented in the entire national territory of Costa Rica excluding Cocos Island. See paragraph 8 of this document
Activities included	Reducing emissions from deforestation Reducing emissions from forest degradation Enhancement of forest carbon stocks	See paragraph 9 of this document. See also finding ID# 2 in the table in this document
Pools included	Above-ground biomass Below-ground biomass Deadwood Litter	See finding ID#s 1, 3 and 5 in the table in this document. All four pools were considered under the activities reducing emissions from deforestation and enhancement of forest carbon stocks, as well as for estimating removals from forest degradation, while only above-ground biomass was considered for estimating emissions from forest degradation
Gas included	CO_2	See finding ID#s 1 and 6 in the table in this document
Consistency with assessed FREL/FRL	Methods, definitions and information used for the assessed FREL/FRL are consistent with those used for the results	See finding ID# 1 in the table in this document
Description of NFMS and institutional roles	Included	See finding ID# 13 in the table in this document
Identification of future technical improvements	Included	Several areas for future technical improvement have been identified (see finding ID#s 2–8, 12 and 15 in the table in and para. 19 of this document)

Annex III

Reference documents

A. Reports of the Intergovernmental Panel on Climate Change

IPCC. 2006. *2006 IPCC Guidelines for National Greenhouse Gas Inventories*. S Eggleston, L Buendia, K Miwa, et al. (eds.). Hayama, Japan: Institute for Global Environmental Strategies. Available at http://www.ipcc-nggip.iges.or.jp/public/2006gl.

B. UNFCCC documents

First and second modified FREL/FRL submissions of Costa Rica. Available at https://redd.unfccc.int/submissions/by-country/country_detail/cri.html.

"Guidelines and procedures for the technical assessment of submissions from Parties on proposed forest reference emission levels and/or forest reference levels". Annex to decision 13/CP.19. Available at https://unfccc.int/sites/default/files/resource/docs/2013/cop19/eng/10a01.pdf#page=36.

"Guidelines for elements to be included in the technical annex referred to in decision 14/CP.19, paragraph 7". Annex to decision 14/CP.19. Available at https://unfccc.int/sites/default/files/resource/docs/2013/cop19/eng/10a01.pdf#page=42.

"Guidelines for submissions of information on reference levels". Annex to decision 12/CP.17. Available at https://unfccc.int/sites/default/files/resource/docs/2011/cop17/eng/09a02.pdf#page=19.

Report on the technical assessment of the proposed FREL/FRL of Costa Rica submitted in 2016. FCCC/TAR/2016/CRI. Available at https://unfccc.int/documents/9729.

Report on the technical assessment of the proposed FREL/FRL of Costa Rica submitted in 2025. FCCC/TAR/2025/CRI. Available at https://unfccc.int/documents/649064.