United Nations

Framework Convention on Climate Change

FCCC/SBI/ICA/2025/TATR.2/MOZ

Distr.: General
27 October 2025

English only

Technical report on the technical analysis of the technical annex to the second biennial update report of Mozambique submitted in accordance with paragraph 7 of decision 14/CP.19 on 11 December 2024

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 Mozambique on 11 December 2024 through its second biennial update report in accordance with paragraph 7 of decision 14/CP.19. The technical annex provides data and information on the activity reducing emissions from deforestation, which is an activity 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) proposed by Mozambique in its modified FREL submission of May 2018.

Mozambique reported the results of implementing this activity for 2017–2020, which amount to 19,608,137 tonnes of carbon dioxide equivalent (t CO_2 eq) for 2017, 9,865,772 t CO_2 eq for 2018, 350,491 t CO_2 eq for 2019 and 0 t CO_2 eq for 2020 and were measured against the assessed FREL of 38,956,426 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 Mozambique in the technical annex are transparent and consistent with the data and information used for establishing the assessed FREL 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 future technical improvement in accordance with paragraph 14 of decision 14/CP.19.

Abbreviations and acronyms

2006 IPCC Guidelines	*2006 IPCC Guidelines for National Greenhouse Gas Inventories*
AD	activity data
BUR	biennial update report
CO_2	carbon dioxide
CO_2 eq	carbon dioxide equivalent
EF	emission factor
FREL	forest reference emission level
IPCC	Intergovernmental Panel on Climate Change
LULUCF	land use, land-use change and forestry
NFI	national forest inventory
NFMS	national forest monitoring system
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 Mozambique on 11 December 2024 in accordance with paragraph 7 of decision 14/CP.19 included in its second BUR, which was submitted in accordance with paragraph 41(a) of decision 2/CP.17 and paragraph 19 of annex III to the same decision. In the technical annex, Mozambique 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 this context, Mozambique underlined that the submission of the technical annex through its second BUR does not modify, revise or adjust in any way the nationally appropriate mitigation actions voluntarily submitted by the Party under the Bali Action Plan, nor does it interfere with its nationally determined contribution.

3. Mozambique made its first FREL submission, in accordance with decision 12/CP.17, on 10 January 2018, which was 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 TA, the Party provided a modified version of its first FREL submission on 28 May 2018. The assessed FREL was included as one of the elements of the technical annex to its second BUR in accordance with the guidelines contained in the annex to decision 14/CP.19. The findings from the technical assessment of the FREL are included in a separate report.[1]

4. Mozambique previously submitted a technical annex to its first BUR on 20 December 2022. The outcome of the TA thereof is contained in document FCCC/SBI/ICA/2023/TATR.1/MOZ. Previous FREL submissions, BURs with technical annexes and associated technical assessment and analysis reports for the Party are available online.[2]

B. Process overview

5. The TA of the technical annex submitted by Mozambique took place from 24 to 28 March 2025 in Bonn and was undertaken by two LULUCF experts drawn from the UNFCCC roster of experts on the basis of the criteria defined in paragraphs 2–6 of the annex to decision 20/CP.19. Antonio Carlos Martinez Sanches (Brazil) and Aglaia (Glasha) Obrekht (Canada) 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).

6. The TA of the technical annex provided by Mozambique 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.

7. During the TA and subsequent exchanges, the LULUCF experts and Mozambique engaged in technical discussions, and Mozambique provided clarifications in response to questions raised by the LULUCF experts, in order to reach an understanding on the identification of areas for future technical improvement. As a result of the facilitative interactions with the LULUCF experts during the TA, Mozambique provided a modified version of its technical annex, including updated values of estimated results, on 9 May 2025, which took into consideration the technical input of the LULUCF experts. The modifications improved the accuracy, clarity and transparency of the submitted technical annex.

[1] FCCC/TAR/2018/MOZ, published on 20 November 2018.

[2] https://redd.unfccc.int/submissions.html?country=moz.

8. Following the TA of the technical annex, the LULUCF experts prepared and shared the draft technical report with Mozambique 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 Mozambique. 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

9. 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, Mozambique, on a voluntary basis, proposed a national FREL covering the activity reducing emissions from deforestation for the purpose of a technical assessment in accordance with decision 13/CP.19 and its annex. The activity is being implemented in Mozambique's national territory. The assessed FREL of Mozambique is 38,956,426 t CO_2 eq/year.

10. The Party's FREL is based on its annual average historical CO_2 emissions associated with the activity reducing emissions from deforestation for the historical reference period 2003–2013. Mozambique reported the results of implementing the activity for 2017–2020, calculated against the FREL, which amount to emission reductions of 19,608,137 t CO_2 eq for 2017, 9,865,772 t CO_2 eq for 2018, 350,491 t CO_2 eq for 2019 and 0 t CO_2 eq for 2020.

11. Since emissions from deforestation in 2020 amounted to 43,540,597 t CO_2 eq, exceeding the assessed FREL by 4,584,171 t CO_2 eq, the Party adopted the accounting approach of reporting 0 t CO_2 eq as the results for that year.

12. 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, and the pools and gases included.

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

13. For the technical annex to the second BUR submitted by Mozambique, see annex I.[3]

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

(a) The methodologies, definitions, comprehensiveness and information provided are consistent between the assessed FREL 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.

15. 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 14 above.14 above

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

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)	The LULUCF experts noted that Mozambique maintained consistency between its assessed FREL and estimated results of implementing the activity reducing emissions from deforestation in 2017–2020 with regard to the following elements: (a) Using consistent methodologies and data to generate EFs, in particular using the NFI conducted between 2015 and 2017 to generate EFs for all types of forest, with the exception of mangrove forest, for which default values from the 2006 IPCC Guidelines were used. National and regional allometric equations were used for estimating tree above-ground biomass for all forest types, with the exception of semi-evergreen forest, for which the allometric equations from the *Good Practice Guidance for Land Use, Land-Use Change and Forestry* were used. The root-to-shoot ratio calculated by Mokany, Raison and Prokushkin (2006) was used to estimate below-ground biomass, and default values from the 2006 IPCC Guidelines were used to estimate post-disturbance carbon stocks for above- and below-ground biomass for conversions from forest land to cropland and grassland; (b) Covering the same two carbon pools: above- and below-ground biomass; (c) Covering the same gas: CO_2; (d) Covering the same area: entire national territory; (e) Using the same forest definition: minimum area 1 ha, with minimum 30 per cent canopy cover and minimum 3 m height.	
2	11(a) Consistency with the guidelines in paragraph 3 of the annex to decision 14/CP.19 (consistency with the assessed FREL)	The LULUCF experts noted that some data and information used by Mozambique to estimate the results of implementing the activity reducing emissions from deforestation were not consistent with those used for the assessed FREL. The AD used to estimate the results were generated on the basis of a methodology that does not fully replicate the methodology adopted to generate the AD for the FREL. For the FREL, the estimates of deforested area were based on the visual interpretation of satellite imagery of all the sample plots that make up the national systematic sampling grid covering the entire national territory for 2003–2013, whereas the estimates of deforested area used for the results were based on an assessment that relied on two stages of classification. During the TA, Mozambique explained that the first stage consisted of classification, based on a deforestation map for the entire national territory produced with the machine learning algorithm Random Forest, where the systematic sampling grid was overlaid with the deforestation map and the sample plots that intersected with areas classified as stable forest or stable non-forest on the map were classified as such. In the second stage, the plots that intersected with the areas classified as deforestation or the buffer areas in their vicinity were subject to the same process of visual interpretation used for the FREL. Mozambique clarified that this approach was adopted because	

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*
		reviewing the entire systematic sampling grid was considered unfeasible owing to time and resource constraints. The LULUCF experts conclude that the methodology used for generating AD for the results was not consistent with the methodology adopted for generating AD for the FREL, noting that, while all the sample plots in the systematic sampling grid were classified to produce the data for estimating the results, only 2.2 per cent of the original 48,894 plots, that is 1,076 plots, were assessed using the methodology established in relation to Mozambique's FREL. For the modified submission, Mozambique, in response to the LULUCF experts' findings, revised its methodology for generating AD so that it was consistent with the methodology used for generating AD for the FREL, that is based on a full review of the systematic sampling grid of the 48,894 plots, covering the entire national territory through visual interpretation of satellite imagery. As a result of these changes, the emission reductions resulting from implementing the activity reducing emissions from deforestation were revised from 27,896,145 t CO_2 eq in 2017, 25,107,678 t CO_2 eq in 2018, 16,986,151 t CO_2 eq in 2019 and 14,243,434 t CO_2 eq in 2020 to 19,608,137, 9,865,772, 350,491 and 0 t CO_2 eq respectively. The total reported emission reductions across all years decreased from 84,233,409 to 29,824,401 t CO_2 eq. The LULUCF experts commend Mozambique for addressing this issue and ensuring consistency with the methodology used for constructing the FREL.	
3	11(b) Approaches – Accuracy	In estimating the results of implementing the activity reducing emissions from deforestation, Mozambique maintained consistency between the results and the FREL by including the most significant pools and estimating CO_2 emissions only. The exclusion of the litter, deadwood and SOC pools and non-CO_2 gases was justified by the efforts to ensure consistency with the FREL. As concluded by the team that assessed Mozambique's FREL, the LULUCF experts consider that including non-CO_2 emissions from biomass burning and the SOC pool, if deemed to be significant, in future FRELs and results would contribute to enhancing the accuracy of the results.	The LULUCF experts note that the inclusion of non-CO_2 gases and the SOC pool, identified in the report on the technical assessment of Mozambique's FREL and in the report on the technical assessment of Mozambique's results for 2014–2016, also applies to the technical annex as an area for future technical improvement.
4	11(b) AD – Accuracy	The LULUCF experts noted that the two-stage classification of sample plots adopted by Mozambique to estimate the results for 2017–2020 (see finding ID# 2 above) introduced bias into the estimates of annual deforested area, which likely led to the underestimation of deforested area and, consequently, the overestimation of results, affecting the overall accuracy of the associated estimated emission reductions. During the TA, Mozambique shared information concerning an accuracy assessment of the deforestation maps used to classify the sample plots that were not associated with deforestation and identify the sample plots where deforestation may have taken place. According to the	

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, no errors of omission of deforestation in the areas classified as stable forest and stable non-forest in the map were found. The LULUCF experts commend Mozambique for conducting quality control procedures to assess the quality of the maps that were used in the first stage of classifying sample plots in its systematic sampling grid and screening potentially deforested plots. The LULUCF experts note, however, that there is some intrinsic level of error associated with undertaking classification and area estimates using deforestation maps and that the assumption that no errors of omission occur in the areas classified as stable forest or stable non-forest likely led to the underestimation of deforested area. For the modified submission, Mozambique's methodology no longer required using deforestation maps, since AD were generated through a full review of the systematic sampling grid of the 48,894 plots, covering the entire national territory through visual interpretation of satellite imagery. The LULUCF experts commend Mozambique for addressing the accuracy issues by conducting a full review of the systematic sampling grid instead of using deforestation maps.	
5	11(b) AD – Transparency and completeness	The LULUCF experts noted that in the original submission Mozambique did not provide weblinks or references for data and information that would have enabled the assessment team to reconstruct the results of implementing the activity reducing emissions from deforestation presented in the technical annex. As part of the TA process, Mozambique provided additional information, in particular the worksheets used for calculating the annual results of implementing the activity reducing emissions from deforestation. The LULUCF experts noted that the worksheets include information on the classification of the whole set of sample plots from the systematic sampling grid, including the names of the interpreters who carried out the visual interpretation of the plots. That representation of the data from the worksheets, which seems to indicate that all plots were visually assessed, might be misleading as it does not fully correspond to the methodology that was adopted by Mozambique for estimating the results, considering that the first stage of the classification was undertaken using the annual maps of deforested area and the second stage was done through visual interpretation. During the TA, Mozambique provided all the necessary information to enable the LULUCF experts to reconstruct its results, including the calculation worksheets, and demonstrated the steps taken to achieve such results. Mozambique also included weblinks to enable public access to such material in the modified technical annex. The LULUCF experts also noted that Mozambique transparently reported emissions from deforestation in 2020 in its modified submission, notwithstanding the absence of REDD+ results as the emissions from deforestation in 2020 exceeded the FREL by 4,584,171 t CO_2 eq.	

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 Mozambique for providing all the documentation necessary for reconstructing the REDD+ results and for transparently reporting on emissions from deforestation in 2020, for which there were no REDD+ results for implementing the activity reducing emissions from deforestation.	
6	11(c) Consistency with the guidelines in paragraph 4 of the annex to decision 14/CP.19 (NFMS)	The LULUCF experts noted that Mozambique provided a description of the NFMS and a transparent summary of the roles and responsibilities of the agencies and institutions involved in measuring, reporting and verifying the results in the technical annex, together with weblinks for accessing further information. However, Mozambique's NFMS has not yet been formalized. The NFMS is being operationalized through a working group, which includes representatives of a number of stakeholder organizations. The NFMS covers the entire country, equalling 82,358,875 ha. It includes three subsystems: a satellite and land monitoring system that produces AD on deforestation; an NFI that generates the EFs for carbon stored per unit area of forest; and a national greenhouse gas inventory, whereby the AD are combined with the EFs to estimate total annual emissions and the FREL.	
7	11(d) Accuracy of the results proposed in the technical annex	Mozambique included information on the uncertainty assessment for the results in the technical annex. The uncertainties of AD and EFs were established through sampling distribution. The overall uncertainty was propagated using the error propagation equation provided in the *2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories*, which was used to combine uncorrelated uncertainties. However, while there was a change in the sample size for the assessment of the results for 2017–2020 compared with the sample size used for the FREL (approximately 1,000 and 48,894 plots respectively), the uncertainty levels estimated by Mozambique imply that all 48,894 plots were visually interpreted, resulting in an underestimation of the uncertainty as the samples that were classified as stable forest and stable non-forest in the first stage were not visually interpreted. In the modified submission, Mozambique replicated the methodology used for the FREL by conducting a full review of the 48,894 plots, which resulted in revised estimates for the uncertainty levels. The LULUCF experts commend Mozambique for addressing the issue of accuracy regarding the uncertainty analysis by conducting a full review of the systematic sampling grid instead of using only a small sample of plots.	

III. Conclusions

16. The LULUCF experts conclude that Mozambique reported the results of implementing the activity reducing emissions from deforestation, which is defined as the clearing of canopy cover to a level below the 30 per cent threshold adopted for the forest definition in the technical annex and the FREL, and followed a national approach with a systematic sampling grid covering Mozambique's entire territory. The results include estimates of CO_2 emissions from the above- and below-ground biomass carbon pools for estimated areas of deforestation derived from the visual interpretation of the 48,894 sample plots that comprise the systematic sampling grid for 2017–2020. The results of the activity were estimated and reported using methodologies, definitions, assumptions and information that are consistent with those used for constructing the assessed FREL.

17. The LULUCF experts also conclude that the results presented of implementing the activity reducing emissions from deforestation are consistent with the assessed FREL. The LULUCF experts commend Mozambique for ensuring consistency of data and methodologies between the FREL submission for 2003–2013 and the technical annex with the results for 2017–2020.

18. The LULUCF experts further conclude that Mozambique provided the information necessary for reconstructing the results of implementing the activity reducing emissions from deforestation. The data and information provided in the technical annex are considered to be transparent (see finding ID# 5 in the table above), consistent (see finding ID#s 1, 2 and 7 in the table above), complete (see finding ID# 5 in the table above) and accurate (see finding ID#s 3, 4, 6 and 7 in the table above), to the extent possible.

19. The LULUCF experts acknowledge that the technical annex includes summary information from the final report containing the assessed FREL; results in t CO_2 eq/year that are 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 the NFMS and institutional roles and responsibilities in measuring, reporting and verifying 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.

20. The results are accurate to the extent possible based on the assumptions used (see finding ID#s 3, 4, 6 and 7 in the table above).

21. 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 Mozambique's FREL also apply to the provision of information on the results:

(a) Estimating and applying country-specific carbon stocks for post-deforestation land uses;

(b) Including in the estimation subsequent removals from post-deforestation land;

(c) Monitoring and excluding temporarily cleared forest from the assessment of deforestation for future FRELs, and possibly including in the FREL emissions and removals from areas of forest degradation;

(d) Improving consistency between the greenhouse gas inventory and the FREL submission;

(e) Improving the calculation of uncertainties by using higher-tier approaches;

(f) Monitoring non-CO_2 emissions from biomass burning and, if found to be significant, including them in future FRELs;

(g) Collecting and analysing data on SOC and, if deemed significant, potentially including that pool in the FREL.

22. The LULUCF experts also conclude that the following areas for future technical improvement identified in the report on the technical analysis of Mozambique's previous technical annex also apply to the provision of information in this technical annex:

(a) Monitoring and reporting the conversion of natural forest to plantation forest and associated uncertainties for future FREL and results submissions;

(b) Improving the uncertainty analysis (when applying the error propagation approach) by removing the effect of correlation of variables.

23. The LULUCF experts acknowledge and welcome the Party's intention to:

(a) Include SOC and dead organic matter in future FREL submissions on the basis of data obtained from the most recent NFI;

(b) Develop and adopt allometric equations that are specific to Mozambique's forest types and/or species, particularly for replacing equations where previous estimates relied on generic regional formulas;

(c) Develop and adopt country-specific carbon stock estimates for post-deforestation land with a view to enhancing the accuracy of the estimates of net emissions from deforestation;

(d) Carry out an assessment of forest fire related emissions to verify whether the data sets available would be suitable for reporting the emissions in future FREL submissions;

(e) Continue using high-resolution time-series images to ensure accurate and consistent assessment of land-use change over time, conditional upon the provision of support from new sources;

(f) Further investigate an approach to integrating wall-to-wall land-use and/or land-cover maps into sample-based area estimates to optimize and enhance the accuracy of AD;

(g) Improve uncertainty estimation by using higher-tier approaches.

24. In conclusion, the LULUCF experts commend Mozambique 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. Some areas for future technical improvement 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.[4] The LULUCF experts also acknowledge that the TA process was an opportunity for a facilitative and constructive technical exchange of views and information with Mozambique.[5]

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

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

Annex I

Technical annex to the biennial update report

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

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 Mozambique

Key element		*Remark(s)*
Results reported	19 608 137 t CO_2 eq for 2017, 9 865 772 t CO_2 eq for 2018, 350 491 t CO_2 eq for 2019 and 0 t CO_2 eq for 2020	Emissions from deforestation in 2020 were higher than the FREL. As a result, the Party adopted an accounting approach of reporting 0 t CO_2 eq for that year. See paragraphs 10–11 of this document and finding ID#s 2 and 5 in the table in this document
Results period	2017–2020	See paragraph 10 of this document
Assessed FREL	38 956 426 t CO_2 eq/year	See document FCCC/TAR/2018/MOZ and the modified version of the Party's first FREL submission of 28 May 2018. See also paragraphs 3 and 10 of this document
Reference period	2003–2013	See paragraph 10 of this document
National/subnational	National	See paragraph 9 of this document
Activity included	Reducing emissions from deforestation	See paragraph 9 of this document
Pools included	Above-ground biomass Below-ground biomass	See finding ID# 1 in the table in this document
Gas included	CO_2	See finding ID# 1 in the table in this document
Consistency with assessed FREL	Methodologies, definitions and information used for the assessed FREL are consistent with those used for the results	See finding ID#s 1–2 in the table in this document
Description of NFMS and institutional roles	Included	See finding ID# 6 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 3 and 5 in the table in and paras. 21–22 of this document)

Annex III

Reference documents

A. Reports of the Intergovernmental Panel on Climate Change

IPCC. 2003. *Good Practice Guidance for Land Use, Land-Use Change and Forestry*. J Penman, M Gytarsky, T Hiraishi, et al. (eds.). Hayama, Japan: Institute for Global Environmental Strategies. Available at http://www.ipcc-nggip.iges.or.jp/public/gpglulucf/gpglulucf.html.

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.

IPCC. 2019. *2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.* E Calvo Buendia, K Tanabe, A Kranjc, et al. (eds.). Geneva: IPCC. Available at https://www.ipcc-nggip.iges.or.jp/public/2019rf/index.html.

B. UNFCCC documents

First modified FREL submission of Mozambique. Available at https://redd.unfccc.int/files/moz_frel_report_final.v03_03102018.pdf.

"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 of the technical assessment of the proposed forest reference emission level of Mozambique submitted in 2018. FCCC/TAR/2018/MOZ. Available at https://unfccc.int/documents/184280.

Technical report on the technical analysis of the technical annex to the first biennial update report of Mozambique submitted in accordance with decision 14/CP.19, paragraph 7, on 20 December 2022. FCCC/SBI/ICA/2023/TATR.1/MOZ. Available at https://unfccc.int/documents/633029.

C. Other documents

The following references may not conform to UNFCCC editorial style as some have been reproduced as received or as cited in the technical annex:

FCPF. 2021. First ER Monitoring Report (covering the year 2018). Zambézia Integrated Landscape Management Program. Forest Carbon Partnership Facility Carbon Fund.

FCPF. 2022. Second ER Monitoring Report (covering the period 2019–2020). Zambézia Integrated Landscape Management Program. Forest Carbon Partnership Facility Carbon Fund.

FCPF. 2023. Third ER Monitoring Report (covering the periods 2021–2022). Zambézia Integrated Landscape Management Program. Forest Carbon Partnership Facility Carbon Fund.

Mokany K, Raison RJ and Prokushkin AS. 2006. Critical analysis of root : shoot ratios in terrestrial biomes. Global Change Biology. 12(1): pp.84–96.

Deforestation map accuracy metrics.

Deforestation maps 2017–2020.

Excel spreadsheets used to calculate FREL for the years 2003–2013.

Excel spreadsheets used to calculate results of implementing the activity "reduced emissions from deforestation" for 2017–2020.

Land use transition matrix for the results period 2017–2020.