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Report of the technical assessment of the proposed forest reference emission level of Mozambique submitted in 2018

Summary

This report covers the technical assessment of the submission of Mozambique, on a voluntary basis, on its proposed forest reference emission level (FREL), in accordance with decision 13/CP.19 and in the context of results-based payments. The FREL proposed by Mozambique covers the activity “reducing emissions from deforestation”, which is among the activities included in decision 1/CP.16, paragraph 70. In its submission, Mozambique has developed a national FREL. The FREL presented in the original submission, for the reference period 2003–2013, corresponded to 46,213,014 tonnes of carbon dioxide equivalent per year (t CO₂ eq/year). As a result of the facilitative process during the technical assessment, the FREL was modified to 38,956,426 t CO₂ eq/year. The assessment team notes that the data and information used by Mozambique in constructing its FREL are largely transparent, complete and in overall accordance with the guidelines contained in the annex to decision 12/CP.17. This report contains the assessed FREL and a few areas identified by the assessment team for future technical improvement, according to the scope of the technical assessment contained in the annex to decision 13/CP.19.

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I. Introduction and summary

A. Overview

1. This report covers the technical assessment (TA) of the submission of Mozambique on its proposed forest reference emission level (FREL),¹ submitted on 10 January 2018 in accordance with decisions 12/CP.17 and 13/CP.19. The TA took place (as a centralized activity) from 19 to 23 March 2018 in Bonn, Germany, and was coordinated by the UNFCCC secretariat.² The TA was conducted by two land use, land-use change and forestry experts from the UNFCCC roster of experts³ (hereinafter referred to as the assessment team (AT)): Mr. Kwame Agyei (Ghana) and Mr. Mattias Lundblad (Sweden). In addition, Mr. Thiago Mendes, an expert from the Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention, participated as an observer⁴ during the centralized activity in Bonn. The TA was coordinated by Mr. Peter Iversen (UNFCCC secretariat).
2. In response to the invitation of the Conference of the Parties (COP) and in accordance with the provisions of decision 12/CP.17, paragraphs 7–15, and its annex, Mozambique submitted its proposed FREL on a voluntary basis. The proposed FREL is one of the elements⁵ to be developed in the implementation of the activities referred to in decision 1/CP.16, paragraph 70. The COP decided that each submission of a proposed FREL and/or forest reference level (FRL), as referred to in decision 12/CP.17, paragraph 13, shall be subject to a TA in the context of results-based payments, pursuant to decision 13/CP.19, paragraphs 1 and 2, and decision 14/CP.19, paragraphs 7 and 8.
3. Mozambique provided its submission in English. However, some of the supporting documents (including the description of the national forest inventory (NFI)) were provided in Portuguese.
4. The objective of the TA was to assess the degree to which the information provided by Mozambique was in accordance with the guidelines for submissions of information on FRELs/FRLs⁶ and to offer a facilitative, non-intrusive, technical exchange of information on the construction of the FREL with a view to supporting the capacity of Mozambique for the construction and future improvement of its FRELs/FRLs, as appropriate.⁷
5. The TA of the FREL submitted by Mozambique was undertaken in accordance with the guidelines and procedures for the TA of submissions from Parties on proposed FRELs and/or FRLs as contained in the annex to decision 13/CP.19. This report on the TA was prepared by the AT following the guidelines and procedures in the same decision.
6. Following the process set out in those guidelines and procedures, a draft version of this report was communicated to the Government of Mozambique. The facilitative exchange during the TA allowed Mozambique to provide clarifications and additional information, which were considered by the AT in the preparation of this report.⁸ As a result of the facilitative interactions with the AT during the TA, Mozambique provided a modified version of its submission on 28 May 2018, which took into consideration the technical inputs of the AT. The modifications improved the clarity and transparency of the submitted FREL. This TA report was prepared in the context of the modified FREL submission. The modified submission, containing the assessed FREL, and the original submission are available on the UNFCCC website.⁹

¹ The submission of Mozambique is available at <http://unfccc.int/8414>.

² Decision 13/CP.19, annex, paragraph 7.

³ Decision 13/CP.19, annex, paragraphs 7 and 9.

⁴ Decision 13/CP.19, annex, paragraph 9.

⁵ Decision 1/CP.16, paragraph 71(b).

⁶ Decision 12/CP.17, annex.

⁷ Decision 13/CP.19, annex, paragraph 1(a) and (b).

⁸ Decision 13/CP.19, annex, paragraphs 1(b), 13 and 14.

⁹ <http://unfccc.int/8414>.

B. Proposed forest reference emission level

7. The national FREL proposed by Mozambique for the historical reference period 2003–2013 is the annual average historical emissions of carbon dioxide (CO₂) associated with deforestation, defined as the anthropogenic conversion of natural forest to non-forest land. The proposed FREL includes deforestation only and excludes the conversion of forest plantations to other land uses. The activity data used for the construction of Mozambique’s FREL were obtained from an annual historical time series analysis of land use, land-use change and forestry carried out by its measurement, reporting and verification unit for the period 2001–2016 using the Collect Earth tool.

8. Mozambique used activity data for the period 2003–2013 in the construction of its FREL in order to align the time period of the FREL with the Party’s previous analyses of land-use and land-cover change (for 1980–1990 and 1990–2002). Hence, the starting point was 2003, and the end point was 2013 since the Party’s REDD-plus¹⁰ decree was approved in 2014.

9. Information on carbon stock prior to deforestation was obtained from Mozambique’s NFI, which was undertaken from 2015 to 2017. The FREL presented in Mozambique’s modified submission, with the aim of accessing results-based payments for REDD-plus activities from 2014 to 2023, corresponds to 38,956,426 t CO₂ eq/year.

10. The values for carbon stock in above- and below-ground biomass after conversion are based on default values from the Intergovernmental Panel on Climate Change (IPCC) 2006 IPCC Guidelines for National Greenhouse Gas Inventories (hereinafter referred to as the 2006 IPCC Guidelines).

11. In decision 1/CP.16, paragraph 70, the COP encourages developing country Parties to contribute to mitigation actions in the forest sector by undertaking a number of activities, as deemed appropriate by each Party and in accordance with their respective capabilities and national circumstances, in the context of the provision of adequate and predictable support. The FREL proposed by Mozambique, on a voluntary basis, for a TA in the context of results-based payments, covers the activity “reducing emissions from deforestation”, which is one of the five activities included in decision 1/CP.16, paragraph 70. Pursuant to paragraph 71(b) of the same decision, Mozambique has developed a national FREL that covers its entire territory. The total area of Mozambique is 823,588.75 km², of which 41 per cent is covered by forest. For its submission, Mozambique applied a stepwise approach to developing its FREL, in accordance with decision 12/CP.17, paragraph 10. The stepwise approach enables Parties to improve their FRELs/FRLs by incorporating better data, improved methodologies and, where appropriate, additional pools.

12. The proposed FREL includes the carbon pools above-ground and below-ground biomass. Regarding greenhouse gases (GHGs), the submission includes CO₂ only.

II. Data, methodologies and procedures used in the construction of the proposed forest reference emission level

How each element in the annex to decision 12/CP.17 was taken into account in the construction of the forest reference emission level

1. Information that was used by the Party in the construction of the forest reference emission level

13. For the construction of its FREL, Mozambique used the 2006 IPCC Guidelines. Gross CO₂ emissions from deforestation were calculated for the period 2003–2013 using

¹⁰ In decision 1/CP.16, paragraph 70, the COP encourages developing country Parties to contribute to mitigation actions in the forest sector by undertaking the following activities: reducing emissions from deforestation; reducing emissions from forest degradation; conservation of forest carbon stocks; sustainable management of forests; and enhancement of forest carbon stocks.

annual activity data (i.e. area of deforestation for different forest types) in combination with emission factors (i.e. the carbon stock associated with the corresponding forest types and final land uses). No subsequent removals for the final land-use categories were taken into account. Non-CO₂ emissions were not included in the FREL owing to lack of information (i.e. on biomass burning following deforestation).

14. The national FREL includes Mozambique's entire area of natural forests of 34,105,698 ha, covering about 41 per cent of its total area. Deforestation was the only activity considered in calculating the FREL.

15. Activity data used for the construction of Mozambique's FREL were obtained from the visual interpretation of an annual historical time series of high- and medium-resolution imagery based on MOD13Q1 graphics from the most recent Sentinel-2 observations and other sources. The data were analysed using the Collect Earth open source software, which facilitated the interpretation of vegetation types and the determination of land-use changes according to changes in vegetation cover using a grid of 4 x 4 km and sample units with a spatial resolution of 1 ha. To distinguish between evergreen and deciduous forest types, the main tool used was the seven-day normalized difference vegetation index time series generated by a moderate resolution imaging spectroradiometer (MODIS). This approach indicates whether there is an annual cycle of low or high index or whether it is relatively constant throughout the year. Forest types were identified from high-resolution images, while gaps were verified in the identification of forest type changes. Medium- and low-resolution images were used to fill such gaps.

16. Carbon stocks prior to conversion were derived from the NFI conducted from 2015 to 2017, including two provincial inventories, as well as a national-scale inventory on the remaining eight provinces of the country (for 2016–2017). Since the provincial-level inventories (for Gaza and Cabo Delgado) only considered four strata (vegetation types), the biomass data for the other eight provinces were also aggregated into four strata (mopane, mecrusse, semi-deciduous forest including miombo, and semi-evergreen forest including gallery forest) to ensure compatibility with the provincial inventories. In addition to the forest strata mentioned above, the FREL includes a mangrove stratum, for which default values from the 2006 IPCC Guidelines were applied. The total tree carbon stock ranged from 27.4 t carbon/ha (mopane) to 60.7 t carbon/ha (semi-evergreen forest including gallery forest). Forest biomass levels are strongly associated with precipitation, altitude gradient and soil type. As the southern region of Mozambique is drier, forests in this part of the country have quite low biomass values. However, the values used were considered to be within the range provided for the region in the 2006 IPCC Guidelines.

17. Emissions were calculated on the basis of carbon stock change using the annual average deforested area (i.e. the total area for the period 2003–2013 divided by 11 years) for each of the five strata, multiplied by the corresponding loss of carbon stock for each forest strata, assuming instant oxidation of all above- and below-ground biomass (i.e. no post-deforestation emissions or removals were considered). Tier 1 default values from the 2006 IPCC Guidelines were used for the post-deforestation carbon stocks for conversion to cropland and grassland, while a complete loss of carbon stock was assumed for other land-use conversions. Carbon was converted to CO₂ by multiplying by 44/12.

2. Transparency, completeness, consistency and accuracy of the information used in the construction of the forest reference emission level

Methodological information, including description of data sets, approaches and methods

18. Activity data used in the construction of the FREL were obtained from a range of sources, including the most recent Sentinel-2, Landsat-8 and Landsat-7 images, whereas carbon stock values were derived from the most recent NFI and the 2006 IPCC Guidelines. The AT commends Mozambique for providing detailed information on deforested areas and emission factors in Excel spreadsheets during the TA.

19. The estimation of the areas corresponding to land-use and land-use change categories was based on assessments of area proportions. If more than one forest type was observed in a sample unit, the dominant type was set for the entire unit. Forests were divided into 14 strata, but, as a result of inconsistencies in the NFI, the 14 strata had to be

aggregated into 4 broader strata for the calculation of emissions from deforestation. The AT notes that dividing the sample units into two or more forest types instead of using only the dominant type would improve accuracy, and thus considers this an area for future technical improvement.

20. Mozambique defines deforestation as the anthropogenic conversion of forest land to non-forest land. Consequently, applying the hierarchical rules for determining activity data for the FREL, deforestation constitutes the loss of canopy cover below the 30 per cent threshold and/or changes in the other parameters. Such transition might, however, be temporary (as may be the case with temporarily cleared forest) and therefore not result in change in land use. During the TA, Mozambique explained that temporarily cleared forests are areas that are part of the forest area and that were cleared as a result of human intervention or natural causes, but where regeneration is expected that will allow the area to meet the thresholds of the forest definition. Mozambique also explained that abandoned farm land can regrow to forest in 10–15 years if left to fallow. The AT notes that agriculture, primarily through shifting cultivation, is the biggest driver of deforestation in Mozambique, accounting for approximately 65 per cent. Land under shifting cultivation might display the characteristics of temporarily cleared forest and therefore its inclusion in the FREL could lead to an overestimation of deforestation. As part of the stepwise approach to improving its FREL, Mozambique could use a combination of ground-truth data and land-cover data to exclude temporarily cleared forest from the assessment of deforestation in the future revision of its FREL. Emissions and removals from temporary loss of tree cover could instead be included under the activity “reducing emissions from forest degradation”, if that activity were included in a future FREL submission.

21. Land cover was used as a proxy for land use and determined on the basis of the relative cover for each of the plots analysed. To distinguish temporary loss of forest cover from deforestation, all plots are continuously reassessed, which in some cases will lead to a deforestation event being changed post facto. The AT notes that this approach is likely to complicate accounting, especially if the time period of the FREL is different from the time period in which results are assessed. The AT also notes that the relatively short monitoring period (2013–2018) might not be sufficient to detect forest that is deforested and grows back, which may lead to an overestimation of deforestation during the monitoring period as well as introduce inconsistency in the estimation of emissions.

22. The AT noted that Mozambique used 2003–2013 as the reference period for its FREL although activity data are available for 2001–2016. During the TA, Mozambique informed the AT that the reference period was chosen by the National Directorate of Forests to be aligned with previous analyses of land-use and land-cover change. Additionally, as the REDD-plus process started in Mozambique in 2013–2014, with the REDD-plus decree being approved in 2014, it was decided to use the reference period 2003–2013 for the FREL.

23. Carbon stocks prior to land conversion were derived from the most recent NFI. However, Mozambique could only disaggregate the biomass data for the different forest strata used for the vegetation classification for 8 (of 10) provinces. Therefore, the data had to be aggregated into four strata to ensure consistency with the provincial inventories. Using aggregated data may lead to either over- or underestimations of emissions, and the AT notes that Mozambique could improve the estimates of carbon stock in the future if new NFI data become available.

24. Mozambique used 2006 IPCC Guidelines tier 1 default values for post-deforestation carbon stocks for conversion to cropland and grassland but assumed a complete loss of carbon stock for other land-use conversions. The AT also noted that the post-deforestation carbon stock for all conversions to cropland is based on the IPCC default value for perennial crops only. The AT notes that, as part of the stepwise approach to improving its FREL, Mozambique could estimate and apply country-specific carbon stocks for the post-deforestation land uses and include subsequent removals from the post-deforestation areas. In addition, the AT encourages Mozambique to disaggregate deforestation attributed to agricultural expansion between conversion to perennial and annual crops and to estimate emissions separately for each conversion during future revisions of the FREL.

25. Mozambique reported that its FREL estimates are inconsistent with the national GHG inventory included in its national communication submitted in 2003. The Government of Mozambique has produced a number of documents (guidelines) that will be used to ensure consistency between the FREL submission and the national GHG inventory in the future. Steps will also be taken to (1) produce a report on the NFI and make it available to the public, (2) improve communication between the institutions working in coordination with the REDD-plus unit to ensure that consistent GHG data are produced and (3) formalize the institutional arrangements for institutions involved in the measurement, reporting and verification of REDD-plus. The AT acknowledges these efforts, which could facilitate the provision of an updated FREL in the near future and ensure consistency with the national GHG inventory.

26. Mozambique used approach 1: propagation of error, equation 3.2, of the 2006 IPCC Guidelines to calculate uncertainty. The AT agrees with this approach; however, Mozambique could consider the application of a higher-tier uncertainty assessment (e.g. Monte Carlo) for subsequent FREL submissions.

Description of relevant policies and plans, as appropriate

27. According to the FREL submission, two subnational policy programmes are currently being implemented: the Zambézia Integrated Landscapes Management Program, with the aim of promoting sustainable development through the conservation and management of forests; and the Integrated Landscapes Management Program in Cabo Delgado province, aimed at reducing the pressure on forests, especially in the Quirimbas National Park. During the TA, Mozambique informed the AT that it did not take into account the potential impact of current or envisaged policies on forest-based emissions or removals in the future in estimating the FREL owing to lack of supporting information on the relationship between policies and the FREL.

3. Pools, gases and activities included in the construction of the forest reference emission level

28. According to decision 12/CP.17, annex, subparagraph (c), reasons for omitting a pool and/or activity from the construction of the FREL should be provided, noting that significant pools and/or activities should not be excluded.

29. The pools included in the FREL are above-ground and below-ground biomass. Dead organic matter and soil organic carbon were not included. Mozambique indicated that dead organic matter, including litter and deadwood, will be included in future modified FREL submissions.

30. Mozambique did not include soil organic carbon in the FREL as the analysis of soil samples collected during the NFI is ongoing. The AT considers the inclusion of the soil carbon pool as an important area for future technical improvement and notes that the 2006 IPCC Guidelines provide methods, including default values, that can be used for estimating changes in the soil organic carbon pool. The AT also notes that the IPCC default values were used to estimate soil carbon stocks for Mozambique's reporting to the Food and Agriculture Organization of the United Nations for the 2015 Global Forest Resources Assessment (FRA). The AT commends Mozambique for the efforts made to collect and analyse country-specific data on soils to ensure that soil carbon is included in future FREL submissions.

31. The proposed FREL includes CO₂ emissions but excludes methane and nitrous oxide emissions from forest fires and biomass burning. However, Mozambique stated that a significant proportion of land is burned annually due to clearing for agriculture, which is common practice in the country. Data from the 2015 FRA indicate that from 2003 to 2012 a minimum area of 8.8 million ha of Mozambique was burned annually, of which about 16–44 per cent constitutes burning of forest area. This implies that emissions of methane and nitrous oxide from fires could be significant. As part of the stepwise approach Mozambique may wish to monitor and, if found to be significant, include non-CO₂ emissions from biomass burning in future FREL submissions.

32. During the TA, Mozambique explained that the main reasons for excluding activities were the absence of data or methodologies and the potential risk of double counting, as mentioned in the case of conservation of forest carbon stocks and sustainable management of forests. The AT notes that, on the basis of a first order estimation of emissions, forest degradation accounts for almost 30 per cent of the Party's total emissions, which makes the activity significant. The AT commends Mozambique for initiating a process to develop a methodology for estimating emissions from forest degradation to allow for the inclusion of the activity in future FREL submissions. Furthermore, Mozambique indicated the availability of activity data for enhancement of forest carbon stocks, but mentioned the lack of removal factors for the estimation of GHG removals. The AT notes that the 2006 IPCC Guidelines provide a methodology, including default factors, to enable the estimation of removals from enhancement of forest carbon stocks with country-specific activity data. As part of the stepwise approach Mozambique could consider the inclusion in the FREL of the activity "enhancement of forest carbon stocks", if it is found to be significant. Mozambique could also consider assessing the significance of the other activities (sustainable management of forests and conservation of forest carbon stocks) to determine their possible inclusion in future FREL submissions.

4. Definition of forest

33. Mozambique provided in its submission the definition of forest used in the construction of its FREL (minimum area of 1 ha, height of 3 m or more and at least 30 per cent canopy cover). The definition is not the same as the one that the Party used for its latest reporting for the 2015 FRA. The change was based on consultations and took into account the technique used to map areas and capture forested areas with significant carbon stocks. The AT notes that the definition of forest used for the FREL is also different from the definition submitted to the UNFCCC for the clean development mechanism (CDM) that is currently published on the UNFCCC CDM website. The AT also notes that Mozambique may wish to consider updating its national definition of forest on the UNFCCC CDM website.

34. To obtain activity data for deforestation, Mozambique applied the process of visual interpretation of imagery using the Collect Earth software. The AT notes that visual interpretation of forest areas using remote sensing or geographic information systems might not detect areas that have trees capable of reaching the forest definition thresholds and should therefore also be considered forest. The AT also notes that the inability to estimate such 'forest' areas could lead to underestimating the forest area of Mozambique and therefore deforestation, but could also lead to overestimations since the loss of vegetation cover might not lead to a land-use change but rather to regeneration of the forest. The AT further notes that Mozambique may wish to consider developing a more robust approach to identifying all forest areas, including areas with the potential to become forest, in order to enhance confidence in its future FREL submissions.

III. Conclusions

35. The information used by Mozambique in constructing its FREL for the activity "reducing emissions from deforestation" is largely transparent, complete and in overall accordance with the guidelines for submissions of information on FRELS/FRLs (as contained in the annex to decision 12/CP.17).

36. The FREL presented in the modified submission, for the reference period 2003–2013, corresponds to 38,956,426 t CO₂ eq/year.

37. The AT acknowledges that Mozambique included in the FREL the most significant activity (deforestation) and the most significant pools in terms of emissions from forests. In doing so, the AT considers that Mozambique followed decision 1/CP.16, paragraph 70, on activities undertaken and decision 12/CP.17, paragraph 10, on implementing a stepwise approach. The AT commends Mozambique for the information provided on the ongoing work to include other activities in an updated FREL.

38. As a result of the facilitative interactions with the AT during the TA, Mozambique provided a modified submission, which took into consideration the technical inputs of the AT. The new information provided in the modified submission and the data provided in Excel spreadsheets during the TA increased the reproducibility of the FREL calculations.

39. The AT notes that the FREL does not maintain consistency, in terms of sources of activity data and emission factors, with the GHG inventory included in Mozambique's latest national communication.¹¹ However, the latest national communication was submitted in 2006 with the most recent inventory year being 1994, and Mozambique stated in the FREL submission that it will work to ensure consistency between the FREL and future GHG inventories by using the same methods and assumptions for both.

40. Pursuant to decision 13/CP.19, annex, paragraph 3, the AT identified the following areas for future technical improvement:

(a) Estimating and applying country-specific carbon stocks for post-deforestation land uses (see para. 24 above);

(b) Including subsequent removals from post-deforestation land (see para. 24 above);

(c) Allowing the division of sample units into two or more forest types instead of applying only the dominant type (see para. 19 above);

(d) Expanding the number of emission factors (using the NFI and other sources) to better match the forest types detected during the assessment of deforestation (see para. 23 above);

(e) Using the combined ground-truth data (NFI data) and land-cover data set to improve accuracy (see para. 20 above);

(f) Monitoring and excluding temporarily cleared forest from the assessment of deforestation in future revisions of the FREL, and possibly including emissions and removals from those areas under forest degradation (see para. 20 above);

(g) Improving consistency between the GHG inventory and the FREL submission (see para. 25 above);

(h) Improving the calculation of uncertainties by using higher-tier approaches (see para. 26 above).

41. In assessing the pools and gases included in the FREL, pursuant to decision 13/CP.19, annex, paragraph 2(f), the AT identified the following additional areas for future technical improvement:

(a) Monitoring non-CO₂ emissions from biomass burning and, if found to be significant, including them in future FRELS (see para. 31 above);

(b) Collecting and analysing data on soil organic carbon and, if deemed significant, potentially including the pool in the FREL (see para. 30 above);

(c) Assessing the significance and consequent inclusion in the FREL of other potentially significant activities that were previously excluded as a result of lack of data (see para. 32 above).

42. The AT acknowledges and welcomes the intention expressed by Mozambique:

(a) To include "reducing emissions from forest degradation" as an activity in its FREL;

(b) To include the dead organic matter and soil organic carbon pools in its FREL;

(c) To update the allometric equations used to estimate carbon stocks for different forest strata and species;

¹¹ In reference to the scope of the TA, decision 13/CP.19, annex, paragraph 2(a).

(d) To update the emission factors for different strata using data from the national permanent sampling plot network;

(e) To include non-CO₂ emissions from fires in its FREL.

43. In conclusion, the AT commends Mozambique for showing a strong commitment to the continuous improvement of its FREL estimates in line with the stepwise approach. A number of areas for future technical improvement of Mozambique's FREL have been identified in this report. At the same time, the AT acknowledges that such improvements are subject to national capabilities and policies, and notes the importance of adequate and predictable support.¹² The AT also acknowledges that the assessment process was an opportunity for a rich, open, facilitative and constructive technical exchange of information with Mozambique.

44. The table contained in the annex summarizes the main characteristics of Mozambique's proposed FREL.

¹² Decision 13/CP.19, annex, paragraph 1(b), and decision 12/CP.17, paragraph 10.

Annex

Summary of main features of the proposed forest reference emission level based on information provided by the Party

<i>Main features of the FREL</i>		<i>Remarks</i>
Proposed FREL (in t CO ₂ eq/year)	38 956 426	See paragraph 9 of this document
Type and duration of FREL	FREL = historical emissions 2003–2013	The FREL represents the annual average emissions from deforestation for the period 2003–2013 (see para. 8 of this document)
Adjustment for national circumstances	No	
National/subnational	National	The FREL represents the entire national territory (see para. 11 of this document)
Activities included	Deforestation	The FREL includes emissions from deforestation of natural forests (see para. 7 of this document)
Pools included	Above-ground and below-ground biomass	Mozambique indicated that dead organic matter, including litter and deadwood, will be included in a future FREL submission (see para. 29 of this document)
Gases included	CO ₂	The FREL includes CO ₂ (see para. 31 of this document)
Forest definition	Included	Tree height 3 m, minimum area 1 ha, minimum crown cover 30% (see para. 33 of this document)
Relationship with latest GHG inventory	Methods used for the FREL are not consistent with the latest GHG inventory (2003)	The Party mentioned planned improvements to the GHG inventory to enhance consistency (see para. 25 of this document)
Description of relevant policies and plans	Included	See paragraph 27 of this document
Description of assumptions on future changes in policies	Yes	See paragraph 27 of this document
Descriptions of changes to previous FREL	Not applicable	
Future improvements identified	Yes	Several areas for future technical improvement were identified (see paras. 40–42 of this document)

Abbreviations: FREL = forest reference emission level, GHG = greenhouse gas.