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

Summary

This report covers the technical assessment of the submission of Nigeria, 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 Nigeria covers the activity "reducing emissions from deforestation", which is among the activities included in decision 1/CP.16, paragraph 70. In its submission, Nigeria developed a subnational FREL for Cross River State, with the aim of transitioning to a national FREL or forest reference level in the future. The FREL presented in the original submission, for the reference period 2000–2014, corresponds to 15,677,791.2 tonnes of carbon dioxide equivalent per year (t CO_2 eq/year). As a result of the facilitative process during the technical assessment, Nigeria submitted a modified estimate of the FREL of 8,922,467.1 t CO_2 eq/year. The assessment team notes that the data and information used by Nigeria in constructing its FREL are 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 further technical improvement, in accordance with the provisions on the scope of the technical assessment contained in the annex to decision 13/CP.19.

Contents

I. Introduction and summary

A. Overview

1.   This report covers the technical assessment (TA) of the submission of Nigeria on its proposed forest reference emission level (FREL),[1] submitted on 8 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 experts[3] (hereinafter referred to as the assessment team (AT)): Mr. Thomas Baldauf (Germany) and Mr. Javier Cano Martin (Chile). In addition, Mr. Thiago de Araújo 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 observer[4] during the centralized activity in Bonn. The TA was coordinated by Mr. Dirk Nemitz (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, Nigeria submitted its proposed FREL on a voluntary basis. This proposed FREL is one of the elements[5] 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, 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.   The objective of the TA is to assess the degree to which the information provided by Nigeria is in accordance with the guidelines for submissions of information on FRELs/forest reference levels (FRLs)[6] 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 Nigeria for the construction and future improvement of its FRELs/FRLs, as appropriate.[7]

4.   The TA of the FREL submitted by Nigeria 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.10. This report on the TA was prepared by the AT following the same guidelines and procedures.

5.   Following the process set out in those guidelines and procedures, a draft version of this report was communicated to the Government of Nigeria. The facilitative exchange during the TA allowed Nigeria 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, Nigeria provided a modified version of its submission on 28 May 2018, which partially took into consideration the technical inputs of the AT. The modifications improved the clarity and transparency of the submitted FREL, without needing to alter the approach used to construct the proposed 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]

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[1] The submission of Nigeria can be found 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

6.   In decision 1/CP.16, paragraph 70, the COP 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 and in accordance with their respective capabilities and national circumstances, in the context of the provision of adequate and predictable support. The subnational FREL proposed by Nigeria for the historical reference period 2000–2014 is the annual average of the carbon dioxide (CO_2) emissions associated with "gross deforestation", defined as the conversion of forest to other land-use categories while excluding any potential biomass regrowth and associated removals after the deforestation event. The FREL includes only the gross CO_2 emissions from deforestation and excludes any subsequent emissions and removals from the deforested areas. The information on activity data used in constructing the FREL was estimated using statistics on the basis of a reference data method developed by Olofsson.[10] Nigeria used, as the base map to stratify the reference data, the Global Forest Change map, developed by Hansen.[11] The information on emission factors was obtained from the Cross River State forest carbon inventory.

7.   Pursuant to paragraph 71(b) of decision 1/CP.16, Nigeria developed a subnational FREL for the Cross River State area with the aim of transitioning in the future to a national FREL/FRL incorporating all forest types in the country. The Cross River State is approximately 20,156 km^2 and is situated between latitude 5º32' N and 4º27' N and longitudes 7º50' E and 9º28' E. In response to a request from the AT Nigeria explained that Cross River State was chosen for the initial implementation of REDD-plus[12] activities because it contains about half of the remaining tropical high forest in Nigeria. For its submission, Nigeria applied a stepwise approach to its development of the FREL, in accordance with decision 12/CP.17, paragraph 10. The stepwise approach enables Parties to improve the FREL by incorporating better data, improved methodologies and, where appropriate, additional pools. The FREL presented by Nigeria in the modified submission, with the aim of accessing results-based payments for REDD-plus activities, corresponds to 8,922,467.1 t CO_2 eq/year.

8.   The proposed FREL includes the pools above-ground biomass and below-ground biomass and excludes the pools soil organic carbon, litter and deadwood. Regarding greenhouse gases (GHGs), the submission includes CO_2 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

9.   In the original submission of the FREL, Nigeria did not indicate which of the guidelines published by the Intergovernmental Panel on Climate Change (IPCC) on land-use categories were used in the construction of the FREL; however, in the modified submission, the Party specifies that it used the *2006 IPCC Guidelines for National Greenhouse Gas Inventories* (hereinafter referred to as the 2006 IPCC Guidelines). In the original submission of the FREL, the activity data were derived using the method from Olofsson et al. (see para.

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[10] Olofsson P, Foody GM, Herold M, et al. 2014. Good practices for estimating area and assessing accuracy of land change. *Remote Sensing of Environment*. 148: pp.42–57.

[11] Hansen MC, Potapov PV, Moore R, et al. 2013. High-resolution global maps of 21st-century forest cover change. *Science*. 342(6160): pp.850–853.

[12] In decision 1/CP.16, paragraph 70, the COP encouraged 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.

6 above) based on 428 samples as reference data, which resulted in a deforestation rate of 15,440 ha per year, with a confidence value of ± 34 per cent. The emission factor of 1,021.23 ± 175.28 t CO_2 eq/ha was derived from the Cross River State forest carbon inventory, and calculated as a weighted average of the means from the different forest types, and includes the pools above-ground and below-ground biomass. Total emissions of 15,677,791.2 t CO_2 eq/year were estimated by multiplying the activity data and emission factor, reporting also the ±95 per cent confidence interval between 10,347,342.2 and 21,008,240.2 t CO_2 eq/year. In the modified submission, estimations of the activity data were considerably improved by Nigeria, in particular by increasing the reference data sample size to 1,021 samples. The improvement implemented by Nigeria resulted in a lower estimate of deforested area, from 15,440 ha/year to 9,176 ha/year. The confidence interval was also reduced to ± 24 per cent. Consequently, the emission factor used in the modified submission was reduced to 972.37 t CO_2/ha owing to the modification of the estimation for biomass for the Montane forest type. The modified FREL of Nigeria was therefore set at 8,922,467.1 t CO_2 eq/year; reporting also the 95 per cent confidence interval between 13,042,489.3 and 5,568,338.15 t CO_2 eq/year. The reference period proposed by Nigeria in the original submission included data from 2004 to 2014; however, in the modified submission, Nigeria included data covering the years from 2000 to 2014. In the final version of the modified submission, Nigeria used data from 2000 to 2014 to calculate the loss per year and set the reference period as 2000–2014.

10.   In the original submission, activity data were estimated using the method proposed by Olofsson. Nigeria used the Hansen land-use change maps (see para. 6 above) to stratify the reference data, composed of 428 reference points distributed in four forest-related categories, namely, forest loss, forest gains, forest remaining forest and other land remaining other land. The analysis of the reference data was undertaken using the Collect Earth tool.[13] Over the 10-year reference period, using the Hansen maps Nigeria estimated 42,382 ha of forest loss, but adjusted the deforestation area estimate by 112,017 ha to 154,399 ha based on the Olofsson method. Averaging the resulting number over 10 years Nigeria estimated that the deforestation area in the Cross River State amounts to 15,440 ha/year. However, in the modified submission, Nigeria increased the number of samples used as reference points to 1,021 plots, although the methodology used and the land-use change map used for stratification were not modified. As a result, the area estimated as deforestation decreased in the modified submission to 9,176 ha/year, and the confidence interval was reduced to ± 24 per cent.

11.   Nigeria used information from the forest inventory to create the emission factors. Nigeria performed a forest carbon inventory with a total of 80 sample plots that were used for field data collection. The sample plots were distributed using a stratified random sampling design in 13 categories including the 5 forest strata affected by deforestation. For each forest stratum the biomass was estimated on the basis of estimations of above-ground biomass using Chave 2014,[14] Feldpausch 2012[15] and Zanne 2009;[16] of mangroves using Komiyama 2005;[17] and of below-ground biomass using Mokany 2006.[18] The emission factor in the original submission (1,021.23 t CO_2 eq/ha) was calculated as a weighted average of the means from the different estimates per forest type. In the modified submission, information about biomass in the Montane forest type was modified, and the total biomass was reduced from 1,790.73 t CO_2 eq /ha to 1,321.74 t CO_2 eq/ha. The total biomass contents for the remaining forest strata are reported as follows: 248.00 t CO_2 eq/ha for derived savannah; 199.40 t CO_2 eq/ha for farmland; 405.72 t CO_2 eq/ha for Gmelina plantations (a fast-growing deciduous tree); 784.43 t CO_2 eq/ha for open forest; 189.15 t CO_2 eq/ha for swamp; 1,341.0 t CO_2 eq/ha for tropical

[13]   Available at www.openforis.org/tools/collect-earth.html.

[14]   Chave J, Réjou-Méchain M, Búrquez A, et al. 2014. Improved allometric models to estimate the aboveground biomass of tropical trees. *Glob. Change Biol.* 20: pp.3177–3190.

[15]   Feldpausch TR, Lloyd J, Lewis SL, et al. 2012. Tree height integrated into pantropical forest biomass estimates. *Biogeosciences*. 9: pp.3381–3403.

[16]   Zanne AE, Lopez-Gonzalez G, Coomes DA, et al. 2009. Data from: Towards a worldwide wood economics spectrum. Dryad Digital Repository. Available at https://doi.org/10.5061/dryad.234.

[17]   Komiyama A, Poungparn S and Kato S. 2005 Common allometric equations for estimating the tree weight of mangroves. *Journal of Tropical Ecology*. 21: pp.471–477.

[18]   Mokany K, Raison RJ and Prokushkin AS. 2006. Critical analysis of root: shoot ratios in terrestrial biomes. *Global Change Biol*. 12: pp.84–96.

high forest; and 1,254.08 t CO_2 eq/ha for mangroves. During the exchange of information, Nigeria clarified that derived savannah, farmland and swamp were not considered when estimating the weighted emission factor because areas corresponding to those forest strata were not affected by deforestation. The final emission factor used, calculated as a weighted average of the means from the estimates for different forest types was 972.37 t CO_2/ha owing to the modification of the biomass estimate for the Montane forest type.

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

12.   The AT notes the effort made by Nigeria to improve the information on activity data. As explained in the modified submission, Nigeria analysed several sources of data, including a vegetation and land-use assessment by the Federal Department of Forestry from 1976/78 and 1993/95, which is further used for reporting to the global forest assessment and, to a limited extent, for the construction of the FREL. Furthermore, land use and land-use change data for the 2000–2007–2014 time periods or epochs, based on a study of the National Space Research and Development Agency (NASRDA) for the Cross River State, were analysed. Finally, Nigeria analysed the Global Forest Change product from Hansen (see para. 6 above) for the period 2000–2014. Owing to the large discrepancy between these two data sources both were used for a further accuracy assessment of the land-use change. Nigeria made efforts while applying the methodologies so that the land-use change maps had acceptable levels of precision; however, the results obtained were not sufficiently satisfactory for the country. Therefore, because the accuracy of the Global Forest Change product was higher, this map was used for stratifying the reference data.

13.   The AT commends Nigeria for continuing to work on updating and improving land-use change maps, noting this as an area for future technical improvement. Nigeria found the accuracy of the change classes in both the NASRDA and Hansen maps to be poor and started to create a new and improved direct change detection for a more accurate map. This work was not finalized in time for the modified FREL submission, but the AT identifies this as an area for improvement and Nigeria intends to continue to work on this.

14.   The AT notes the effort made by Nigeria to describe and justify the methods and information used. During the TA, the AT requested Nigeria to provide further definitions and clarifications of the application of methods. In response, Nigeria included improvements in the modified submission, inter alia on the forest definition, on the activity "enhancement of forest carbon stocks", the estimation of the activity data and its related accuracy assessment. The AT found that the original submission was not clear enough regarding which of the different forest inventories mentioned by Nigeria had been used for the construction of the emission factors. Nigeria improved the respective text in the modified submission, which enabled the AT to reconstruct the FREL. However, the AT notes that the transparency of the submission could be further increased if the description of methods and information used in the estimation of the FREL were more clearly described while reducing the justifications on the discarded information sources and methods, both for the estimation of activity data and for the construction of emission factors.

15.   The AT commends Nigeria for the transparent description of research and testing of methodologies, including the description of respective failures, and the transparent description of the final methodology used throughout the development process of the FREL, including by providing a separate appendix (appendix 3) on the process. Nigeria, in its modified submission, shows that the processes carried out are in accordance with the methodologies and good practices proposed by the IPCC as well as by other organizations. The AT notes that this point is of particular relevance to the statistical analyses, both in the presentation and the estimation of results. For example, while the original submission used a single weighted emission factor, in its modified submission Nigeria used stratification to reduce uncertainties in emission factors based on the IPCC methodology. During the TA, the AT requested Nigeria to provide further documentation of the work based on the Olofsson method. In the modified submission, Nigeria included improvements on the application of the Olofsson method, which increases the transparency of the modified submission and delivers information for improvement in future submissions. Both the improvement of the

land-use change maps (based on the principle of direct change detection) and the development of a new national forest carbon inventory (with an increase of sample plots, including height measurements and including the deadwood carbon pool), have been identified as areas for improvement and Nigeria intends to continue to work on this.

16.   The AT considers that the additional information provided by Nigeria in the modified submission, relating to the estimation of emission factors derived from the dasometric information recorded in the forest inventory, considerably increases the transparency of the proposed FREL and clarifies the calculation of the weighted average of above-ground biomass. As a result of the exchange of information during the assessment process, Nigeria provided spreadsheets that allowed the AT to replicate the estimations by including the equations and assumptions used to establish the weights applied by the country.

17.   Regarding the original submission, the AT noted the lack of information provided by Nigeria in the FREL and the additional information, which meant that the AT was unable to reconstruct the biomass estimation from dasometric data compiled in the forest inventory for the different forest strata. With the modified submission the AT considers that the submission and the annexes provided by Nigeria, together with the clarifications given during the TA, constitute, for practical purposes, a complete, transparent and accurate description of the construction of the FREL, including the data sets, approaches and methods used.

18.   Nigeria did not include any description of relevant policies and plans in the modified FREL submission.

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

19.   According to decision 12/CP.17, annex, subparagraph (c), the 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.

20.   The pools included in the FREL are above-ground and below-ground biomass. Deadwood, litter and soil organic carbon were not included.

21.   In the modified submission, Nigeria explained that, for tropical forests, litter pools are usually small except for peatlands. Nigeria used the default value of 2.1 t C/ha from the 2006 IPCC Guidelines for tropical broadleaf deciduous forests to estimate the relative insignificance of the litter pool, which results in litter making up 1.2 per cent of the above-ground biomass or 0.8 per cent of total above- and below-ground biomass. The AT considers that the exclusion of litter is adequately justified by Nigeria in the modified submission and commends Nigeria for its intention to obtain better information on this pool in the future, with the aim of including it as part of the stepwise approach. The AT concludes that emissions from litter are likely to be insignificant and their non-inclusion is justified.

22.   Regarding emissions from the soil organic carbon and deadwood pools, the AT requested clarification during the TA on the reasons for the omission of the pools. In response, Nigeria explained that the forest carbon inventory undertaken measured standing deadwood but the categories were not noted so it was difficult to analyse the data. Additionally, the data for standing deadwood were incomplete, justifying the exclusion of the pool because of the lack of data. The AT considers that Nigeria could use the existing information from the forest inventory and interpolate the incomplete data using proxies to estimate the emissions or exclude the pool as insignificant. In the case of the soil organic carbon pool, the AT considers that Nigeria could have considered some methods to estimate emissions from soil organic carbon through proxies derived from local or regional studies or expert judgment, which would enable it to estimate the significance of the estimates of this pool. The AT considers that the treatment of emissions from soil organic carbon (i.e. the inclusion of this pool or the provision of more information justifying its omission) as an area for future technical improvement of the FREL.

23.   Nigeria considered only CO_2 emissions in the FREL submission, and the Party explained in the modified submission that it does not provide information on non-CO_2 gases owing to the lack of data on forest fires. Based on expert judgment, Nigeria considers that fires are relatively controlled and not very frequent and, as such, emissions from fires are not

expected to be significant. The AT considers the treatment of non-CO_2 gases as an area for future technical improvement.

24. The AT acknowledges that Nigeria included the most significant activity ("reducing emissions from deforestation") of the five activities identified in decision 1/CP.16, paragraph 70, in accordance with its national capabilities and circumstances. Nigeria justifies the omission of the activities "reducing emissions from forest degradation", "enhancement of forest carbon stocks", "sustainable management of forests" and "conservation of forest carbon stocks" by referring to a lack of reliable, accurate and consistent data at state and federal levels on those activities. The AT notes that there is no indication of the significance of emissions/removals from these activities, and that they could also be significant, in particular emissions from forest degradation.

25. Therefore, the AT notes that the current exclusion of emissions from forest degradation from the FREL appears to be conservative. The AT acknowledges the intention expressed by Nigeria to include information on emissions from forest degradation and enhancement of forest carbon stocks in future submissions in a stepwise manner, as data become available, and notes this as an area for future technical improvement.

4. Definition of forest

26. Nigeria provided in its modified submission the definition of forest used in the construction of its FREL. The definition considers a minimum area of 0.5 ha, a minimum tree height of 3 m and a minimum tree canopy cover of 15 per cent, or stands with potentials to reach the above thresholds in situ. The definition used in the FREL is different from the one that the Party uses for its reporting to the Forest Resources Assessment of the United Nations Food and Agriculture Organization (i.e. minimum area of 0.5 ha, height of 5 m or more and at least 10 per cent canopy cover). Nigeria does not provide a forest definition in its latest GHG inventory, and the Party explained in the modified submission that the definition used in the FREL would be used in future inventory reporting and in national communications and biennial update reports.

III. Conclusions

27. The information used by Nigeria in constructing its FREL for the activity "reducing emissions from deforestation" is transparent and in overall accordance with the guidelines for submission of information on FRELs/FRLs (as contained in the annex to decision 12/CP.17).

28. The FREL presented in the modified submission, for the reference period 2000–2014, corresponds to 8,922,467.1 t CO_2 eq/year.

29. The AT acknowledges that Nigeria included in the FREL the most significant activity, the most important state and the most significant pools in terms of emissions from forests. In doing so, the AT considers that Nigeria followed decision 1/CP.16, paragraph 70, on activities undertaken, paragraph 71(b), on elaboration of a subnational FREL as an interim measure, and decision 12/CP.17, paragraph 10, on implementing a stepwise approach. The AT commends Nigeria for the information provided on the ongoing work on the development of FRELs for other activities, as well as for other biomes, as steps towards a national-level FREL/FRL.

30. As a result of the facilitative interactions with the AT during the TA session, Nigeria provided a modified submission, which took into consideration the technical inputs of the AT. The AT notes that the transparency and completeness of information was improved significantly in the modified FREL submission, without the need to alter the approach, and commends Nigeria for the efforts made to improve the estimates. The new information provided in the modified submission, including the examples of how estimates of CO_2 emissions from deforestation were calculated, increased the reproducibility of the FREL calculations.

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

(a)   Development of land-use change maps that allow for a more efficient stratification and, as a consequence, more accurate estimates (see paras. 13 and 15 above);

(b)   Development of a national forest carbon inventory, including an increase in the number of plots in the forest inventory to improve the representativeness of different forest types, height measurements and the deadwood carbon pool (see para. 15 above).

32.   In assessing the pools and gases included in the FREL, pursuant to decision 13/CP.19, annex, paragraph 2(f), the AT notes that the current omissions of pools and gases are likely to be conservative in the context of the FREL. Nevertheless, the AT identified the following additional areas for future technical improvement:

(a)   Treatment of emissions from deadwood and soil organic carbon, either by the inclusion of those pool or by the provision of more information on the justification of their omission (see para. 22 above);

(b)   Treatment of information on forest fires and emissions of non-CO_2 gases (see para. 23 above).

33.   The AT acknowledges and welcomes the intention expressed by Nigeria to:

(a)   Develop more accurate land-use change maps, that allow Nigeria to include the enhanced forest carbon stock activity in future FREL/FRL submissions (see para. 15 above);

(b)   Extend the subnational FREL towards a national FREL and thus develop a new national forest carbon inventory including an adapted number of sample plots, height measurements and the deadwood carbon pool (see para. 15 above);

(c)   Include emissions from forest degradation in future FREL submissions when new, adequate data and better information become available (see para. 25 above);

(d)   Consider the results of the activities developed to estimate the subnational FREL in the national GHG inventory, including the national forest definition, which will increase the consistency between the FREL and the national GHG inventory (see para. 26 above).

34.   In conclusion, the AT commends Nigeria 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 Nigeria's FREL have been identified in this report. The AT acknowledges that such improvements are subject to national capabilities and policies, and notes the importance of adequate and predictable support.[19] The AT also acknowledges that the assessment process was an opportunity for a rich, open, facilitative and constructive technical exchange of information with Nigeria.

35.   The table contained in the annex summarizes the main characteristics of Nigeria's proposed FREL.

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[19] 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 Nigeria

Main features of the FREL		Remarks
Proposed FREL (in t CO_2 eq/year)	8 922 467.1	The 95% confidence interval is 13 042 489.30 / 5 568 338.15 (para. 7)
Type and duration of FREL	FREL = historical emissions 2000–2014	The FREL was set by Nigeria as the average of historical emissions for the reference period. The Party did not provide information about the duration of the FREL (paras. 6 and 7)
Adjustment for national circumstances	No	–
National/subnational	Subnational	The subnational area corresponds to the Cross River State, which occupies 20 156 km^2 and contains almost 50% of the remaining tropical high forest in Nigeria (para. 7)
Activities included	Reducing emissions from deforestation	Nigeria describes the activity of reducing emissions from deforestation as being forest land converted to other land use (paras. 24 and 25)
Pools included	AB, BB	Owing to a lack of data, the pools deadwood, soil organic carbon and litter were excluded from the FREL estimation. Nigeria provides a justification about the non-significance of the litter pool (paras. 20–22)
Gases included	CO_2	Nigeria provides an explanation based in its knowledge of the region to justify the exclusion of the non-CO_2 gases from forest fires as insignificant (para. 23)
Forest definition	Included	The definition considers a minimum area of 0.5 ha, a minimum tree height of 3 m and a minimum tree canopy cover of 15%, or stands with potentials to reach the above thresholds in situ (para. 26)
Relationship with latest GHG inventory	Methods used for the FREL are not consistent with the latest GHG inventory	Nigeria states that the forest definition used in the FREL will be used in future GHG inventory reporting such as national communications and biennial update reports; however, there are no further explanations about the adoption of methods in the future GHG inventory estimations (para. 26)
Description of relevant policies and plans	Not included	–
Description of assumptions on future changes in policies	Not applicable	–
Descriptions of changes to previous FREL	Not applicable	–
Future improvements identified	Yes	Several areas for future technical improvements were identified (paras. 31–33)

Abbreviations: AB = above-ground biomass, BB = below-ground biomass, FREL = forest reference emission level, GHG = greenhouse gas.