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Technical report on the technical analysis of the technical annex to the second biennial update report of Honduras submitted in accordance with paragraph 7 of decision 14/CP.19 on 22 March 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 Honduras on 22 March 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 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, which are the activities included in paragraph 70 of decision 1/CP.16, and covers the same national territorial forest area as the assessed forest reference emission level (FREL) proposed by Honduras in its modified FREL submission of November 2023.

Honduras reported the results of implementing these activities for 2021–2023, which amount to 4,722,810 tonnes of carbon dioxide equivalent (t CO_2 eq) for 2021, 259,211 t CO_2 eq for 2022 and 6,796,176 t CO_2 eq for 2023 and were measured against the assessed FREL of –5,545,227 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 Honduras 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 capacity-building and 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*
2019 Refinement to the 2006 IPCC Guidelines	*2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories*
AD	activity data
BUR	biennial update report
CH_4	methane
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
N_2O	nitrous oxide
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
TTE	team of technical experts
Wetlands Supplement	*2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands*

I. Introduction, overview and summary

A. Introduction

1. This technical report covers the TA of the technical annex provided by Honduras on 22 March 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, Honduras 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. The TA of the technical annex is part of the international consultation and analysis of BURs referred to in paragraph 4 of annex IV to decision 2/CP.17, the objective of which is to increase the transparency of mitigation actions and their effects through analysis by the TTE in consultation with Honduras and through a facilitative sharing of views, resulting in a separate summary report.[1]

3. Honduras made its third FREL submission, in accordance with decision 12/CP.17, on 23 January 2023, 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 latest FREL submission on 22 November 2023. The latest 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 that FREL are included in a separate report.[2]

4. Honduras previously submitted a technical annex to its first BUR on 19 November 2020. The outcome of the TA thereof is contained in document FCCC/SBI/ICA/2021/TATR.1/HND. Previous FREL submissions, BURs with technical annexes and associated technical assessment and analysis reports for the Party are available online.[3]

B. Process overview

5. The TA of the second BUR of Honduras took place from 1 to 5 July 2024 as a desk analysis and was undertaken by the following TTE 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: Menouer Boughedaoui (former member of the Consultative Group of Experts from Algeria), Erda Celer (Türkiye), Thiago de Araújo Mendes (Brazil), Rana Humbatova (Azerbaijan), Yamikani Idriss (Malawi), Priscilla Karijodrono (Suriname), Stanford Mwakasonda (former member of the Consultative Group of Experts from the United Republic of Tanzania), Juana Itzchel Nieto Ruiz (Mexico), Ana Derly Pulido (Colombia), Ivan Relova (Cuba), Carmen Schmid (Austria), Anand Sookun (Mauritius), Maarten van der Eynden (Norway) and Brian Zutta (Peru). Maarten van der Eynden and Brian Zutta 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 Pierre Brender (secretariat).

6. The TA of the technical annex provided by Honduras 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 the TTE in accordance with paragraph 14 of decision 14/CP.19.

[1] FCCC/SBI/ICA/2024/TASR.2/HND.
[2] FCCC/TAR/2023/HND, published on 6 March 2024.
[3] https://redd.unfccc.int/submissions.html?country=HND.

7. During the TA and subsequent exchanges, the LULUCF experts and Honduras engaged in technical discussions, and Honduras provided clarifications in response to questions raised by the LULUCF experts, in order to reach an understanding on the identification of the capacity-building needs of the Party and areas for future technical improvement. As a result of the facilitative interactions with the LULUCF experts during the TA, Honduras provided a modified version of its technical annex on 11 September 2024, which took into consideration the technical input of the LULUCF experts. The modifications improved the clarity and transparency of the submitted technical annex and included updated values of estimated results.

8. Following the TA of the technical annex, the LULUCF experts prepared and shared the draft technical report with Honduras 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 Honduras. 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, Honduras, on a voluntary basis, proposed a national FREL covering the 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 for the purpose of a technical assessment in accordance with decision 13/CP.19 and its annex. The activities are being implemented in Honduras's national territory. The assessed FREL of Honduras is –5,545,227 t CO_2 eq/year.

10. The Party's FREL is based on its annual average historical net CO_2 emissions and removals associated with the 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 for the historical reference period 2016–2020. Honduras reported the results of implementing those activities for 2021–2023, calculated against the FREL, which amount to net carbon removals of 4,722,810 t CO_2 eq for 2021 and 6,952,131 t CO_2 eq for 2022. As a result of the TA, Honduras submitted a modified technical annex with a corrected estimate for 2022 (259,211 t CO_2 eq) and an estimate for 2023 (6,796,176 t CO_2 eq). 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.

11. Honduras submitted its first FREL for technical assessment in 2017.[4] The assessed FREL was 6,552,746.47 t CO_2 eq/year for the reference period 2000–2016. Measured against this value, Honduras also submitted results amounting to 957,480.46 t CO_2 eq/year for 2017–2018, which were assessed in 2021.[5] Honduras submitted its second FREL for technical assessment in 2020.[6] The second assessed FREL was 8,142,121.66 t CO_2 eq/year for the reference period 2000–2018. Honduras did not submit results measured against the second FREL.

[4] See document FCCC/TAR/2017/HND.

[5] See document FCCC/SBI/ICA/2021/TATR.1/HND.

[6] See document FCCC/TAR/2020/HND.

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

12. For the technical annex to the second BUR submitted by Honduras, see annex I.[7]

13. The scope of the TA is outlined in paragraph 11 of decision 14/CP.19, according to which the TTE 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.

14. 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 13 above.

[7] 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 in methodologies, definitions, comprehensiveness and the information provided (para. 3 of the annex to decision 14/CP.19)	The LULUCF experts noted that Honduras maintained consistency between its assessed FREL and estimated results of implementing the 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 in 2021–2023 with regard to the following elements: (a) Using consistent methodologies and data to generate AD on deforestation, forest degradation, conservation of forest carbon stocks, sustainable forest management and enhancement of forest carbon stocks, in particular using the same forest monitoring system to collect data and generate AD annually and the same approaches for stratifying forest types and categorizing land uses. However, the LULUCF experts noted that, in the original technical annex, the AD for 2022 did not cover the whole year because visual interpretation of satellite imagery for the full time series was conducted in 2022. Honduras provided updated estimates of results for 2022 and results for 2023 in its modified technical annex (see finding ID# 2 below); (b) Using consistent methodologies and data to generate EFs, in particular using data from the third cycle of the NFI and other national statistics, as well as default values and methodologies from the 2006 IPCC Guidelines, the Wetlands Supplement and the 2019 Refinement to the 2006 IPCC Guidelines. EFs were generated for the following IPCC land-use categories: forest land remaining forest land, land converted to forest land, and forest land converted to another land use (cropland, grassland, wetlands, settlements and other land); (c) Covering the same five carbon pools: above-ground biomass, below-ground biomass, SOC, deadwood and litter; (d) Covering the same gases (CO_2, CH_4 and N_2O) and applying the same global warming potential values from the IPCC Fifth Assessment Report. Non-CO_2 emissions were estimated for forest fires occurring on disturbed forest land, areas of grassland converted to forest land and areas of forest land converted to cropland and grassland; (e) Covering the same area: entire national territory. During the TA, the Party explained that two islands with areas of 1.1 and 2.5 km^2 located about 180 km off the northern coast of Honduras were not sampled when obtaining data for the FREL or technical annex because none of the points of the systematic sampling grids used under the NFMS fall on the islands because of their small size. Activity was therefore considered at the national level;	

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*
		(f) Assuming that all fires are anthropogenic in origin when estimating AD for forest degradation by fire; (g) Assuming that all forests included under the activity of conservation of forest carbon stocks are secondary forests undergoing rapid growth, and that such forests experience only gains and no losses of carbon stocks; (h) Assuming that all carbon is lost in the conversion of forests to flooded land; (i) Assuming that SOC does not change for forests that remain forests, or for forests in which forest degradation or sustainable forest management are occurring; (j) Using the same forest definition, namely areas in which either naturally occurring or planted tree species (a woody plant with a defined stem and crown) are present, and which have the following characteristics: a minimum area of 1 ha, crown coverage greater than 10 per cent for coniferous and mangrove forests, and greater than or equal to 30 per cent for other types of forest, and tree species with heights greater than 2 m for mangrove forests and 3 m for the other types of forest. The LULUCF experts conclude that Honduras ensured overall consistency between its assessed FREL and estimated results.	
2	11(a) Consistency in methodologies, definitions, comprehensiveness and the information provided (para. 3 of the annex to decision 14/CP.19)	The LULUCF experts noted that some data and information provided by Honduras to estimate the results of implementing the 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 for 2022 in the original technical annex are not consistent with the assessed FREL. Specifically, the AD for 2022 do not cover the whole of that year as the visual interpretation of satellite imagery took place before the end of the year, whereas for all other years the interpreter had access to a full year's worth of satellite imagery. Therefore, for 2022, emissions may have been underestimated and removals underestimated or overestimated. During the TA, Honduras explained that the AD for the FREL and the technical annex were generated at the same time (except for AD for forest degradation by fire, which were collected at a later point in time). Honduras also explained that the information collected was based mostly on data for up to July 2022, with some later complements incorporated at the time of the QA/QC of the estimates in November 2022. The interpreters thus did not have access to a full year's worth of satellite imagery for 2022. In the case of AD for forest degradation by fire, the full year is covered as visual interpretation of the satellite imagery was completed at a later stage in the development of the technical annex (August 2023). After the TA week, Honduras submitted a modified technical annex, which included estimates of results for the full year for 2022, as well as for 2023.	

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 conclude that the results reported in the modified technical annex are consistent with the FREL. The LULUCF experts commend Honduras for providing a modified technical annex to address the inconsistency between the reference level and the reported results.	
3	11(b) Completeness – AD and EFs	The LULUCF experts noted that emissions and removals varied significantly from year to year in the reference period (2016–2020), while they were more stable before 2016 and after 2020. To better understand the reported results, the LULUCF experts sought further information from Honduras on forest carbon dynamics during the reference period. During the TA, Honduras explained that fluctuations in emissions and removals during the reference period were caused by a combination of factors, of which degradation arising from forest fires, pests or agricultural practices was particularly influential, pointing to table 5 of its technical annex for further information on emission and removal dynamics. Following a question from the LULUCF experts regarding the two years (2012 and 2020) of the historical period (2005–2020) in which significant emissions occurred owing to forest land being converted to wetlands, Honduras explained that these cases were related to hurricanes rather than having an anthropogenic source such as hydropower development or agriculture. The LULUCF experts commend Honduras for providing additional information on forest carbon dynamics in response to their questions.	
4	11(b) Completeness – AD	The LULUCF experts noted that in section 3.3 of the technical annex, which contains graphs of emissions and removals of CO_2 associated with various forms of land use (forest degradation) and land-use change, several of the categories under forest degradation are reported as contributing to emissions in some years but to removals in others. To better understand the reported results, the LULUCF experts sought clarification on how a forest degradation category could contribute to removals. During the TA, Honduras explained that each sampling plot of the NFMS of 1 ha is divided into 49 observation points. If only some of those observation points experience forest degradation, the carbon loss at those points could be outweighed by forest growth at the unaffected observation points. Thus, a sampling plot can be classified as experiencing degradation, even though the sampling plot represents a net removal. Honduras reported this methodological approach in section 6.4.7 (p.107) of the modified FREL submission.	The LULUCF experts note the provision of information on the relationship between sampling plots and observation points also in the technical annex as an area for future technical improvement.
5	11(c) Consistency with the guidelines in paragraphs 1–2 of the annex to decision	Honduras provided a summary of the results of implementing the 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 for 2021–2023 in its modified technical annex, including information on the assessed FREL, activities implemented, territorial	

Finding ID#	*Aspect of the scope of the TA (decision 14/CP.19, para. 11)*	*Description of the issue, additional information shared by the Party during the TA, and conclusions of the LULUCF experts*	*Area for future technical improvement*
	14/CP.19 (summary information and results)	forest area, date of the FREL submission, date of the final technical assessment report and periods of the FREL. The summary information was not provided in a single table but in several tables and descriptive paragraphs. The results achieved are listed in table 4 of the modified technical annex and amount to 4,722,810 t CO_2 eq for 2021, 259,211 t CO_2 eq for 2022 and 6,796,176 t CO_2 eq for 2023. The LULUCF experts conclude that summary information in accordance with decision 14/CP.19 was provided in the technical annex and commend Honduras for providing the summary information. The LULUCF experts note, however, that the information was expressed only in terms of emissions and removals, not in terms of area affected, and that providing summary information on the areas affected by the different REDD+ activities in future submissions, in addition to net emissions or removals, could be helpful to readers.	
6	11(c) Consistency with the guidelines in paragraph 4 of the annex to decision 14/CP.19 (NFMS)	The LULUCF experts noted that Honduras provided a description of the NFMS and a summary of the roles and responsibilities of the agencies and institutions involved in the measurement, reporting and verification of the results in the technical annex. The NFMS covers the entire country, equalling 111,498 km^2. As noted in finding ID# 1 above, the reason two islands were not sampled was because of the systematic sampling grid size rather than a gap in its geographical coverage. The NFMS uses a land-based approach (i.e. approach 3 from the 2006 IPCC Guidelines) and the gain–loss method to calculate emissions and removals for each REDD+ activity. According to paragraph 4(b) of decision 11/CP.19 the NFMS should enable the assessment of different types of forest in the country, including natural forest. In the spreadsheet accompanying the submission, the forest strata covered the following substrata: humid broadleaves, coniferous, mixed, deciduous broadleaves, mangroves and agroforests. The LULUCF experts noted that Honduras's use of satellite images captured in different months for different years to estimate land-use change can have a negative impact on the accuracy of annual estimates of emissions and removals of CO_2. During the TA, Honduras acknowledged that land-use change for 2022 in the original submission was not based on imagery captured until the end of the year, but explained that the quantification of forest degradation by fire was developed using imagery available within the calendar year, including information captured towards the end of the year (see finding ID# 2 above).	The LULUCF experts note the implementation of a strategy that allows the AD for deforestation to be generated from the interpretation of satellite images at a consistent point in time each year as an area for future technical improvement that would increase the accuracy of the estimated results.
7	11(c) Consistency with the guidelines in paragraph 5 of the annex to decision 14/CP.19 (reconstruction of the results)	Honduras provided most of the information necessary for reconstructing the results in a spreadsheet that is publicly available online via a link in the original technical annex. The LULUCF experts noted that, while the calculation spreadsheet contributed to the transparency and completeness of the submission, it presented AD at the sample plot level without providing further details on forest-cover changes	The LULUCF experts note the inclusion of updated information consistent with the modified technical annex in all sheets of the calculation spreadsheet, as well as the provision of information on AD at observation point level (in addition to the sample

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		identified at the observation point level (each sample plot consists of 49 observation points, as mentioned in finding ID# 4 above). During the TA, in response to a question from the LULUCF experts, Honduras explained that records at the observation point level are not available. Following the TA week, Honduras submitted an updated spreadsheet with the modified technical annex. The LULUCF experts noted that not all the sheets in the updated calculation spreadsheet include updated numbers consistent with the modified technical annex (for instance the matrices of disturbances were not updated), which makes reconstructing the results difficult.	plot level), as areas for future technical improvement of the technical annex.
8	11(c) Consistency with the guidelines in paragraph 6 of the annex to decision 14/CP.19 (how the elements contained in para. 1(c–d) of decision 4/CP.15 have been taken into account)	The LULUCF experts noted that, in estimating AD, Honduras uses several categories of land use, land-use change and forest degradation, with the determination of categories based on both high- and medium-resolution satellite imagery. Noting that it is technically challenging to identify some of the change categories and degradation categories using medium-resolution imagery, the LULUCF experts asked Honduras for additional information on the steps taken to ensure that the estimations are as accurate as the approach allows. During the TA, Honduras confirmed that, while it is indeed challenging to classify land use under some categories with medium-resolution imagery, most of the images used for both the historical reference period (2016–2020) and the results period (2021–2023) are high resolution, which helps to identify forest disturbances. On the basis of its experience with this land-use interpretation, Honduras considers the interpretation error of 13.3 per cent to be consistent with the quality of the images available. The LULUCF experts sought clarification on whether Honduras had conducted uncertainty assessments for the classification of areas of forest degradation caused by specific disturbances; in response, the Party explained that uncertainty assessments were not undertaken for forest land degraded by specific disturbances (see also finding ID# 11 below).	The LULUCF experts note the development of uncertainty assessments for AD for specific disturbances and the provision of more information on the steps taken to ensure that the results are as accurate as possible, given that many land-use changes are categorized using medium-resolution satellite imagery, as an area for future technical improvement of the technical annex.
9	11(c) Consistency with the guidelines in paragraph 6 of the annex to decision 14/CP.19 (how the elements contained in para. 1(c–d) of decision 4/CP.15 have been taken into account)	Honduras provided a description of how IPCC guidance and guidelines were taken into account in accordance with paragraph 1(c) of decision 4/CP.15. For estimating emission reductions and removals in the national territory, Honduras used the methodologies provided in the 2006 IPCC Guidelines, the Wetlands Supplement and the 2019 Refinement to the 2006 IPCC Guidelines. Accordingly, the emissions for the 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 were estimated for 2021–2023 by combining AD (i.e. areas of annual land-use change and carbon stock changes in stable land-use categories) with the appropriate EF (i.e. emissions associated with	The LULUCF experts note that the provision of information supporting the assumption that forests covered by the activity conservation of forest carbon stocks do not experience carbon losses, identified as an area for future technical improvement in the report on the technical assessment of Honduras's

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 corresponding land-use change category and carbon stock changes in stable land-use categories). The LULUCF experts noted that the assessment team for the FREL highlighted that no losses were reported for the activity conservation of forest carbon stocks, even though forests could have been affected by canopy cover loss of up to 9 per cent (FCCC/TAR/2023/HND, para. 25). The LULUCF experts sought clarification from Honduras as to whether there is information to support the assumption that this activity resulted only in gains. During the TA, Honduras explained that the category forest land remaining forest land has two subcategories: disturbed forest land, where emissions from disturbance are accounted for; and undisturbed forest land, where no disturbance and no emissions from disturbance were assumed to occur. In both cases, forest removals were accounted for. Honduras further explained that this is consistent with the country's NFI data covering more than 20 years, showing net carbon gains across all national forests. The LULUCF experts appreciate the additional information, but note that, to their understanding, it does not constitute evidence that, in forest reported under the category undisturbed forest, there were only gains and no losses of forest carbon stocks, especially considering forest areas affected by canopy cover losses of up to 9 per cent could be included in this category.	FREL, also applies to the technical annex being analysed.
10	11(d) Accuracy of the results proposed in the technical annex	Both the established FREL and the results obtained for 2021–2023 from implementing the 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 are based on the following assumptions: (1) emissions from deforestation that occurred before the beginning of the historical reference period (2016–2020) are not accounted for, (2) all forests are characterized by a growth rate characteristic of young secondary forests and have not been allowed to regrow fully before the reference period, (3) SOC does not change for forests experiencing degradation and forests under sustainable management, (4) the enhancement of forest carbon stocks is uniform across plantation types and (5) all forests undergoing conservation of forest carbon stocks are secondary forests with rapid growth (i.e. a growth rate assumed to be equal to default IPCC values for trees younger than 20 years old) and experience only gains and no losses. While the LULUCF experts considered assumption 3, relating to an absence of change in SOC, to be reasonable, they noted that accuracy could be improved by collecting country-specific data on SOC in permanent plots of the NFI. The LULUCF experts noted that assumption 2, that carbon stocks in the biomass of all secondary forests are growing at a rate that is characteristic of forests with young trees of less than 20 years, may result in an overestimation of removals, but that	The LULUCF experts note that the provision of further information supporting the assumption that all standing forests in Honduras are secondary forests (assumption 2), identified as an area for future technical improvement in the report on the technical assessment of Honduras's FREL, also applies to the technical annex being analysed. See also finding ID# 9 above regarding assumption 5.

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*
		achieving a more accurate estimate of growth would require AD for a historical period of 30–40 years before the start of the reference period to assess forest maturity (or a characterization of the forest age-class structure). Similarly, the LULUCF experts noted that estimating annual deforestation rates over a longer historical period, from 10 to 20 years before the start of the reference period, could improve the overall accuracy of the reported results. They also noted that gaining a better understanding of the factors involved in increasing forest carbon stocks would be beneficial for more accurately assessing the activity enhancement of forest carbon stocks. However, the LULUCF experts conclude that the net effect on the reported results of any bias in emission estimates resulting from the application of assumptions 1–5 will cause no significant over- or underestimation as Honduras has used a consistent methodology for estimating emissions and removals for the reference period (2016–2020) and the results period (2021–2023). See also finding ID# 2 above regarding the estimates of results for 2022 in the original submission.	
11	11(d) Accuracy of the results proposed in the technical annex	Honduras provided some information related to uncertainties in the interpretation of satellite imagery used to assign land to land-use categories. The LULUCF experts noted that Honduras did not provide an overview of the combined uncertainties of the EFs and AD and the uncertainty of the reported results (i.e. the difference between the net removals in 2021–2023 and the established FREL), which made it challenging to assess whether the reported results are as accurate as possible. The LULUCF experts thus sought clarification from Honduras as to whether more information on uncertainties was available, and, if not, whether further uncertainty assessments were planned in relation to potential future submissions of forest reference levels or FRELs and REDD+ results. During the TA, Honduras indicated that it has noted the further development of uncertainty assessment for reported results as an area for future technical improvement. The LULUCF experts commend Honduras for its intention to further develop methods for uncertainty assessment.	The LULUCF experts note the further development of methods for uncertainty assessment as an area for future technical improvement (see also the capacity-building need in para. 22(d) below).

III. Conclusions

15. The LULUCF experts conclude that Honduras reported the results of implementing five 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. Honduras applied a land-based approach (approach 3 from the 2006 IPCC Guidelines) and the gain–loss method to calculate emissions and removals for each REDD+ activity. The results cover emissions and removals associated with changes in the carbon stocks of all five carbon pools, using AD collected through visual interpretation of satellite imagery on a systematic sampling grid to characterize land-use changes and disturbances. Results were reported at the national level for 2021–2023.

16. The LULUCF experts conclude that the results presented of implementing the activities are consistent with the assessed FREL. The LULUCF experts commend Honduras for ensuring consistency of data and methodologies between the FREL submission for 2021–2025 and the technical annex with the results of implementing the activities for 2021–2023.

17. The LULUCF experts conclude that Honduras provided the information necessary for reconstructing the results of implementing the activities. The data and information provided in the technical annex are considered to be transparent, consistent, mostly complete (see finding ID#s 4 and 7 in the table above) and mostly accurate (see finding ID#s 6 and 8–11 in the table above), to the extent possible.

18. 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 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 forest monitoring system and institutional roles and responsibilities in the measurement, reporting and verification of the results; the information necessary for reconstructing the results; and a description of how the elements contained in paragraph 1(c–d) of decision 4/CP.15 have been taken into account. The LULUCF experts conclude that the data and information provided in the technical annex are consistent with the guidelines referred to in paragraph 9 of decision 14/CP.19.

19. The results are mostly accurate based on the assumptions used.

20. 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 also concluded that the following areas for future technical improvement identified in the report on the technical assessment of Honduras's FREL also apply to the provision of information on the results of implementing the REDD+ activities (see paragraph 58(a), (b), (f) and (g) of document FCCC/TAR/2023/HND):

(a) Consistently applying the gain–loss method to account for both gains and losses (i.e. emissions and removals) in forest land remaining forest land;

(b) Providing sufficient information to verify that all undisturbed forest land remaining forest land associated with the activity conservation of forest carbon stocks is not in a steady state and results in significant real net removals;

(c) Implementing a quality assurance/quality control process that includes revising the calculations and assumptions used to construct the FREL;

(d) Ensuring a consistent estimation of uncertainty, and justifying outliers.

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

(a) Strengthen forest data collection and reduce the associated over- or underestimation of emissions and compare these estimates with official national statistics;

(b) Improve the land-use classification by carrying out a field validation of current land use by verifying approximately 14 per cent (2,622 plots) of the sampling points or plots established in the data-collection process;

(c) Develop a verification process for data on areas affected by forest fires in which the heat points of the Moderate Resolution Imaging Spectroradiometer sensor and the plots used in the data-collection process will be used as a reference layer to verify the affected areas and the timing of forest fires;

(d) Intensify sampling in mangrove forest;

(e) Develop a verification process for data on areas under sustainable forest management for the FREL period contained in the existing databases and compare them with the database of the land assessment application developed by the Coalition for Rainforest Nations;

(f) Improve estimates of EFs for legal logging;

(g) Institutionalize data collection and processing in order to improve information flows on the management of forest resources;

(h) Strengthen the NFMS and information management platforms for a more effective preparation and submission of FRELs and for more informed decision-making for the management, conservation and restoration of forest ecosystems.

22. During the consultation process, Honduras identified a number of capacity-building needs. Addressing those needs could enable Honduras to improve its data and methodologies and include additional gases in future FREL submissions. After exchanges with the LULUCF experts, Honduras identified the following capacity-building needs:

(a) Improve the design of the NFMS to include monitoring of the small islands lying off the northern coast of Honduras, in particular areas of those islands with mangrove forests;

(b) Identify sources of data on harvested timber to enable reporting on emissions and removals from harvested wood products;

(c) Develop a homogeneous approach to estimating forest degradation from fires;

(d) Develop the ability to perform uncertainty analyses of emission estimates;

(e) Improve the design of the NFMS to include a single source to characterize land use and disturbances, or, if that is not possible, multiple sources that are as homogeneous as possible, in order to ensure consistency of the emission estimates over several years;

(f) Improve the process for classifying land under land-use and land-use change categories;

(g) Make use of the linkages between the information required for REDD+ reporting and for other processes under the UNFCCC, particularly those for biennial transparency reports and nationally determined contributions.

23. In conclusion, the LULUCF experts commend Honduras 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 and capacity-building needs identified by Honduras 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.[8] The LULUCF experts also acknowledge that the TA process was an opportunity for a facilitative and constructive technical exchange of views and information with Honduras.[9]

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

[9] 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 Honduras

Key element		*Remark(s)*
Results reported	4 722 810 t CO_2 eq for 2021, 259 211 t CO_2 eq for 2022 and 6 796 176 t CO_2 eq for 2023	See paragraph 10 of this document
Results period	2021–2023	See paragraph 10 of this document
Assessed FREL	–5 545 227 t CO_2 eq/year	See document FCCC/TAR/2023/HND and the modified version of Honduras's latest FREL submission (November 2023). See also paragraph 9 of this document
Reference period	2016–2020	See paragraph 10 of this document
National/subnational	National	See paragraph 9 of this document
Activities included	Reducing emissions from deforestation Reducing emissions from forest degradation Conservation of forest carbon stocks Sustainable management of forests Enhancement of forest carbon stocks	See paragraphs 9 and 15 of this document
Pools included	Above-ground biomass Below-ground biomass Deadwood Litter SOC	See paragraph 22(b) of and finding ID# 1 in the table in this document
Gases included	CO_2, CH_4, N_2O	See finding ID# 1 in the table in this document
Consistency with assessed FREL	Methods, definitions and information used for the assessed FREL are consistent with those used for the results	See finding ID# 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 4 and 6–11 in the table in and para. 20 of this document)

Annex III

Reference documents

A. Reports of the Intergovernmental Panel on Climate Change

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

IPCC. 2014. *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands.* T Hiraishi, T Krug, K Tanabe, et al. (eds.). Geneva: IPCC. Available at https://www.ipcc-nggip.iges.or.jp/public/wetlands/.

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 and second modified FREL submissions of Honduras. Available at https://redd.unfccc.int/submissions.html?country=hnd.

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

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

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

Report on the technical assessment of the proposed FREL of Honduras submitted in 2023. FCCC/TAR/2023/HND. Available at https://unfccc.int/documents/637261.

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:

Honduras. 2023. Spreadsheet with detailed calculations. Available at https://drive.icf.gob.hn/d/s/w8MbmjYxL8XqZhinW9oOGlGoJfr1k3uy/l698lNPgdqxmv7awO17ehGObQRdUK4Y--bLegRSro6wo.