GAP Validation Report

Version 1.2

[17-06-2025]

Document Prepared by AENOR CONFIA S.A.U.

Forest Carbon Partnership Facility (FCPF) Carbon Fund GAP Validation Report (G-VAR)	
ER Program Name and Country:	Emission Reduction Programme - Fiji
Crediting Period	11-07-2019 to 31-12-2024
Name of the VVB:	AENOR CONFIA S.A.U.
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Date of the GAP Validation Report:	17-06-2025
Version:	1.2
Report Approved by	José Luis Fuentes

1. GAP VALIDATION STATEMENT

The review and cross-check of explanations and justifications included in the Monitoring Report Version 5.6 dated on 27-01-2025 and supporting documents, have provided AENOR with sufficient evidence to determine with a reasonable level of assurance the compliance of the Emission Reduction Programme - Fiji with the applicable GAP-validation criteria set out in the VVG.

The scope covered by the GAP validation includes the ER Program´s crediting period (11-07-2019 to 31-12-2024) the selected Reference Period (01-01-2006 to 12-31-2016), the accounting area (1,644,649.82 hectares), the REDD Country Participant’s Forest Monitoring System, the national REDD+ Programs and Projects Data Management System and the following GHG sources, sinks, REDD+ activities and carbon pools:

GHG sources and sinks (REDD+ activities)
Emissions from deforestation – Included Emissions from forest degradation – Included Removal from enhancement of forest carbon stocks – Included Emissions and/or removals from conservation of carbon stock – Excluded Emissions and/or removals from sustainable management of forests – Excluded
Carbon pools
Above-Ground biomass (AGB) – Included Below-Ground biomass (BGB) – Included Dead wood – Excluded Litter – Excluded Soil Organic Carbon (SOC) – Excluded Harvested Wood Products – Excluded
GHG
CO_2 – Included CH_4 – Included N_2O – Included

The GAP validation was performed through a combination of document review, and communications with relevant staff. Findings were issued, requesting: MAJOR Corrective Action Request (MCAR); MINOR Corrective Action Request (mCAR); and Observations (OBS) according to the FCPF validation and verification guidelines (VVG) v2.7 section 11, to ensure compliance with all requirements.

A total of 3 MCAR, 2 mCAR and 2 Observations were raised as part of the GAP validation process. All findings were successfully addressed by the ER Program and closed by the VVB, as described in Appendix 1 of this report, with the exception of OBS 01.

Regarding the Reference Level, it is AENOR’s opinion that of the Emission Reduction Programme - Fiji meets the applicable GAP validation criteria set out in the FCPF requirements and that it is free of material misstatements.

Statement issuing date: 17-June-2025

Intended User: World Bank Group, FCPF Carbon Fund Participants

Adrián Vidal de Prados
Team Leader

José Luis Fuentes
Climate Change Manager

2. Agreement

2.1 Level of Assurance

The GAP Validation audit was conducted to provide a reasonable level of assurance concerning material misstatements, errors, or omissions in conformance with the validation criteria and scope stated in the FCPF requirements, in conformance with paragraph 31 of the VVG v2.7. The provisions undertaken to ensure such a reasonable level of assurance included a risk assessment of the sources and the magnitude of potential errors, omissions, and misstatements, as required by section 4.4.1 of ISO 14064-3:2006, previous to the elaboration of a sampling/evidence-gathering plan.

Based on the previous provisions and considering the findings raised during the audit, a positive evaluation statement reasonably ensures that the assumptions made by the FCPF Program to estimate the Reference Level are materially correct and are a fair representation of the GHG data and information provided in the ER Monitoring Report, Annex IV and supporting documents.

2.2 Objectives

The objective of the GAP Validation was to conduct a systematic, independent, and documented process for the evaluation of the GHG assertion made by the Emission Reduction Programme - Fiji, for the crediting period from 11-06-2019 to 31-12-2024, against the FCPF criteria applicable to the GAP validation to determine if the Program is in compliance to the agreed criteria, and its implementation can be expected to result in the proposed GHG reductions and removal enhancements as described in the ER Monitoring Report and its Annex 4.The specific objectives of the GAP Validation, as required by paragraph 33 of the VVG v2.7, were:

- Determine that the ER Program's scope in terms of sources, sinks and carbon pools is in accordance with the applicable Validation criteria;
- Assess whether the ER Program's methods are in accordance with applicable Validation criteria as the latest IPCC Guidelines;
- Assess if the Reference Level is in accordance with applicable Validation criteria.

2.3 Criteria

The audit assessment was carried against the criteria set for the GAP Validation by the following documents:

- FCPF Methodological Framework, v3, April 2020.
- FCPF Validation and Verification Guidelines v2.7 January 2025.
- Buffer Guidelines v4.2 June 2024.
- Guidelines on the application of the Methodological Framework.
  1.Use of Interpolation of Data in Relation to the Reference Period of an ER Program v1 June 2016.
  2. Technical Corrections to GHG Emissions and Removals Reported in the Reference Period v2 November 2020.
  3. The Definition of Reporting Periods of Emission Reduction Programs v1 November 2018.
  4. Uncertainty Analysis of Emission Reductions v1.0 November 2020.
- Process Guidelines v6.3 March 2025.
- Glossary of Terms v2.3 January, 2025.

- Guidelines contained in the ER Monitoring Report Template (v3.1), the GAP Validation Report Template (v1.0, January 2025).
- ISO 14064-3:2006.
- ISO 14065:2013.
- ISO 14066:2011.

The following documents will be considered as documents that provide acceptable methods for satisfying requirements provided in the above criteria, as per VVG paragraph 38:

- 2006 IPCC Guidelines;
- 2013 IPCC Wetlands Supplement;
- 2019 refinement to the 2006 IPCC Guidelines;
- GFOI 2016 Methods and Guidance Document;
- FCPF Guidance Notes.

Specifically, the following criteria and indicators of the MF were applicable to the GAP validation, as per paragraph 37 of the VVG 2.7:

Criteria/indicator	Topic
3	Scope and methods
4	Carbon pools and GHG
5	IPCC guidelines
10-13	Reference level
14.2, 14.3	Robust Forest Monitoring System
15	National Forest Monitoring System
16	Community participation in Monitoring and Reporting

2.4 Scope

The scope of the GAP validation included as per section 8.4 of the VVG v.2.7:

- The Crediting Period of the FCPF program applicable to the ER Program;
- The selected Reference Period (Validation);
- The ER Program Accounting Area as defined in the ER Program's Final ER Program Document (ER-PD);
- The GHG sources and sinks associated with any of the REDD+ Activities accounted for as required by the Methodological Framework;
- The Carbon Pools and greenhouse gases to be accounted for as required by the Methodological Framework;
- The REDD Country Participant's Forest Monitoring System as described in the ER Monitoring Report;
- The National or centralized REDD+ Program and Projects Data Management System.

2.5 Materiality

The materiality threshold of the GAP Validation, as required section 8.5 of the VVG v2.7, was:

- Quantitative: the threshold for materiality with respect to the aggregate of errors, omissions, and misrepresentations relative to the total reported GHG emission and removals was one percent (1%). (Under-estimation of the Reference Level was not considered a material discrepancy).

- Qualitative: any issue related to management system and controls, poorly managed documentation, and non-compliance with the applicable requirements of the MF and other applicable criteria; and any errors in reporting of factual information in the ER Monitoring Report as required by the FCPF MF.

The GAP validation process based on the desk review found that there are not quantitative and/or qualitative material discrepancies affecting the assumptions made to define and estimate the reference level. The process for estimating the threshold of materiality is described below: any material discrepancy identified by the VVB through the application of the above criteria was considered as non-conformities as described in Section 11 of the VVG v2.7.

3. METHODOLOGY AND PLANNING

3.1 Validation Team

The following team carried out the GAP validation, in accordance with sections 7.6, 7.7, and 7.9 of the VVG v2.7:

Name	Role	Activities			
		Desk review	Reporting	Supervision	Technical review
Adrián Vidal	Team Leader	X	X	X	
Pablo Moreno	Validator Auditor	X	X		
Javier Cócera	Validator Auditor	X	X		
Marcos Recio	Reviewer				X
José Luis Fuentes	Reviewer				X

3.2 GAP-Validation schedule

Tasks	Deliverable	Date	Responsible
1. Kick-off meeting	Minutes of KOM	26.09.2024	All parties
2. Initial Desk Review	Preliminary relevant findings, if applicable	-	AENOR
3. Draft Sampling Plan	Preliminary sampling plan	17.10.2024	AENOR
4. Draft Audit Plan	Preliminary audit plan	17.10.2024	AENOR
5. Sampling plan	Sampling plan	29.10.2024	AENOR
6. Audit Plan	Audit plan	29.10.2024	AENOR
7. Issuance of the first round of findings	List of findings	24.02.2025	AENOR
8. Answer to findings	Answer to findings	01.04.2025	Country participant
9. 2nd round of findings	2nd round of findings	01.04.2025	AENOR
10. Response to second round of findings	Answer to findings	15.04.2025	Country participant
11. Closure of findings	Closure of findings	19.05.2025	AENOR
12. Draft GAP validation	Preliminary report	26.05.2025	AENOR

report preparation			
13. Technical review	Draft validation report	28.05.2025	AENOR
14. Draft validation report revised by Country Participant and FMT	Plan with comments	02.06.2025	Country participant / FMT
15. Issuance of validation report after revision	Final validation report	17.06.2025	AENOR

3.3 Methodology description

The GAP validation was performed through a combination of document review and communications with relevant personnel. The conformity was evaluated against the criteria described in section 2.3.

A sampling/evidence-gathering plan was developed for the GAP validation of the ER Program, as required by section 9.4 of the VVG v2.7. A risk assessment of the sources and the magnitude of potential errors, omissions, and misstatements was carried out, as required by section 4.4.1 of ISO 14064-3:2006, previous to the elaboration of the sampling/evidence-gathering plan. The sampling/evidence-gathering plan was developed considering all the criteria set by section 4.4.3 of ISO 14064-3:2006:

a) Agreed level of assurance;

b) validation and verification scope;

c) validation and verification criteria;

d) amount and type of evidence (qualitative and quantitative) necessary to achieve the agreed level of assurance;

e) methodologies for determining representative samples; and

f) risk of potential errors, omissions, or misstatements.

All evidence requested and reviewed was crosschecked in order to evaluate the consistency of information in the ER Monitoring Report. All statements, claims and procedures described within the scope of the GAP validation included in the ER Monitoring Report were part of the assessment of the sampling/evidence-gathering plan and all the reviewed supporting evidence were evaluated against the ER Monitoring Report.

The magnitude of the sampling was based on the previous experience of AENOR as VVB and ensure the achievement of reasonable level of assurance. The sampling/evidence-gathering plan was open to be modified based on any new risks or materiality concerns that could potentially lead to errors, omissions or misstatements identified during the validation process.

The validation team carried out a review of the calculation scripts to verify the correct application of the used methodology (formulae, equations) and checked that data required to calculate the GHG emission was appropriately provided.

All documentation provided by the Country Participant was assessed against the applicable criteria described in section 2.3. Several MCAR, mCAR and OBS were raised and submitted to the Country Participant to ensure compliance with all requirements, which addressed them either by providing to the validation team with the requested information or by making the appropriate corrections. Updated versions of the documentation were submitted by the Country Participant and the validation team reassessed them against the guidance documentation. This process was repeated iteratively until all MCAR were fully closed.

All findings, 3 MCAR, 2 mCAR and 2 OBS, issued by AENOR's audit team during the validation process have been closed, with the exception of OBS 01. The findings issued during the validation process and the inputs for their closure are described in Appendix 1 of this report.

3.4 Review of documentation

A detailed review of all documentation was conducted to ensure consistency with and identify any deviation from FCPF requirements. Initial review focused on the ER Monitoring Report and included an examination of the Annex 4. Specially, in relation to the carbon pools, sources and sinks included within the scope of the ER Program, the methodological approach for the determination of the Reference Level, its alignment with IPCC guidelines, the data and parameters used for calculations, the estimated uncertainty, and the design of the FMS.

In addition to the ER Monitoring Report, all documentation cited in it was downloaded and reviewed in order to verify its public accessibility and to crosschecked with the statements made in the ER Monitoring Report. These documents include, among others, calculation scripts used in the determination of emission factors (EF) and estimation of the Reference Level, GIS data (satellite images and remote sensing analysis) used for determination of activity data (AD), and additional documents related to monitoring procedures, literature sources of parameters, etc.

As result of the desk review of documents and communications, the validation team required additional documentation to the Country Participant to verify certain statements or have further clarification regarding data and parameters used or employed procedures. All the additional documents requested were added to the later versions of the ER Monitoring Report, as required by criterion 6 of the MF.

For a listing of all documents provided by the Country Participant and review for the validation, see Appendix 2.

AENOR confirms that sufficient evidence was presented for all GHG assertions and that there is a clear audit trail that contains the evidence and records that validate the stated figures in this GAP Validation report since:

- Sufficient evidence available: the Country Participant has provided the 100% of data used in the calculations to estimate the Reference level.
- Nature of evidence: the raw data were collected from reliable sources. They are detailed in the program documents and have been provided to the validation team.
- Cross-checked evidence: AENOR cross-checked the collected information through interviews with stakeholders and reproducing calculations.

4. VALIDATION OF ER PROGRAM DESIGN

4.1 Completeness of Report

AENOR has reviewed the ER Monitoring, supporting information, procedures, calculations, and supporting documentation of the Emission Reduction Programme – Fiji, and confirms that sufficient information has been included in Annex 4 of the ER Monitoring Report to assess the specific objectives of the GAP validation, as described in section 8.2 of the VVG.

4.2 Sources and Sinks

The Emission Reduction Programme – Fiji selected the following GHG sources and sinks (REDD+ activities):

Sources/Sinks	Included?

Emissions from deforestation	Yes
Emissions from forest degradation	Yes
Removals from enhancement of forest carbon stocks	Yes
Emissions and/or removals from conservation of carbon stock	No
Emissions and/or removals from sustainable management of forests	No

AENOR confirmed that the ER Program includes Emissions from deforestation, Emissions from forest degradation and Removals from enhancement of forest carbon stocks. Given that the extent and methods used by these sources and sinks are in accordance with Fiji's FRL, their inclusion is justified.

The audit team assessed that estimations of historical emissions from forest degradation over the Reference Period exceeded historical emissions from deforestation, accounting for well above the 10% threshold of total forest-related emissions. Therefore, it is justified the Program's inclusion of emissions from forest degradation in accordance with Indicator 3.3 of the MF.

The ER Program excludes Emissions and/or removals from:

- Conservation of carbon stocks: Excluded since the national REDD+ activities are not clearly defined at this stage for the monitoring and reporting of conservation of carbon stock.
- Sustainable management of forest: Excluded since there is unclear definition of this activity under the national REDD+ scheme and there are no clear boundaries for forest areas under sustainable management. There are no plans for improving data on this excluded source, as forest degradation occurs in Fiji in Natural Forests as a result of unsustainable timber extraction practices, so this excluded activity is assumed to be included in Emissions from forest degradation. Emissions reductions from forest plantations on lands managed by Fiji Pine Limited and Fiji Hardwood Corporation have been reported under Removals from enhancement of forest carbon stocks.

AENOR assessed the justifications and methods presented in Annex 4 - section 7.1 of the ER Monitoring Report and found that the included and excluded sources and sinks are correct in compliance with the requirements set by criterion 3 of the MF.

4.3 Carbon pools and GHG

The following carbon pools and types of GHG have been included from the ER Program:

Carbon pools
Above-Ground biomass (AGB) – Included Below-Ground biomass (BGB) – Included Dead wood – Excluded Litter – Excluded Soil Organic Carbon (SOC) – Excluded Harvested Wood Products – Excluded
GHG
CO_2 – Included CH_4 – Included N_2O – Included

AENOR has assessed the rationale of the ER Program for selecting or excluding carbon pools and greenhouse gases and deems that it is reasonable and in accordance with criterion 4 of the MF. The program accounts all significant carbon pools and GHG, in compliance with Indicator 4.1 of the MF. No overestimations are occurring due to the inclusion of non-significant carbon pools and GHG.

The audit team assessed that the exclusion of Carbon Pools and greenhouse gases complied with Indicator 4.2 of the MF through the review of the Justification for Exclusion of Pools /3/ spreadsheet and the Justification for Exclusion of Harvested Wood Products /4/ document, which were provided in response to MCAR 03 (see Appendix 1).

The audit team reviewed the methods and sources used to quantify emissions from the excluded pools (Deadwood, Litter, Soil Organic Carbon and Harvested Wood Products) during the reference period:

- Deadwood and Litter: The audit team reviewed the Justification for Exclusion of Pools /3/ spreadsheet to assess the assumptions and methods applied. The IPCC guidelines assumes that the deadwood pool and litter pools in Forestland remaining forestland are stable, so changes in carbon stock are zero. In Forestland converted to Other land (deforestation), decreases in carbon stock are expected (32,298 tCO2e). In Land converted to Forest land (afforestation) experience increased carbon stock (-16,649 tCO2e) are experienced due to the Litter pool dynamics.
- Soil Organic Carbon: The audit team reviewed the Justification for Exclusion of Pools /3/ spreadsheet to assess the assumptions and methods applied. In Forestland remaining Forestland, the IPCC 2006 (Ch. 4, Section 4.2.3.1) Tier 1 method states there is no change in forest soil carbon with management or soil carbon change is zero for mineral soils. In Forestland converted to Other land and in Land converted to Forest land, the change in soil organic C stocks was estimated using a SOCREF from the IPCC default tables and relevant management factors from Volume 4-Table 2.3 of the IPCC guidelines, quantifying and increase of emissions (20,471 tCO2e) in areas subjected to deforestation, and an increase in carbon stock (-38,373 tCO2e) in areas subjected to afforestation activities.
- Harvested Wood Products: The audit team reviewed the Justification for Exclusion of Pools /3/ spreadsheet and the "Justification for Exclusion of Harvested Wood Products" /4/ document to substantiate that the IPCC methodology and HWP worksheet was used in combination with FAO reported statistics and Fiji Nationally published annual harvest volumes during the Forest Reference Period (2006 – 2016).

Thus, as total net emissions in the Forest Reference period were estimated to be 1,504,770 tCO2e:

- Emissions from dead organic matter (deadwood and litter) were estimated to be 15,649 tCO2e, which is equivalent to 1.04% of total net emissions.
- Emissions from soil organic carbon pool were estimated to be -17,902 tCO2e, which is equivalent to -1.2% of total net emissions.
- Emissions/removals from Harvested wood products were estimated to be -144,113 tCO2e, which is equivalent to -9.6% of total net emissions.

Therefore, emissions associated with excluded Carbon Pools and greenhouse gases are collectively estimated to amount to -9.73%, less than 10% of total forest-related emissions in the Accounting Area during the Reference Period, in compliance with Indicator 4.2 of the MF.AENOR confirms that the ER Program has proposed a stepwise approach for improving data on excluded pools such as the Deadwood, Litter and Soil Organic Carbon (SOC).

4.4 Reference Period

AENOR confirms that the start and end dates of the Reference Period (01-01-2006 to 12-31-2016) have been defined in accordance with criterion 11 of the MF and that it complies with the definition provided in the FCPF Glossary of Terms. The Reference Period has not changed from the proposed period in the ER-PD.

4.5 Forest Definition

For its national REDD+ Policy (MPI, 2011), Fiji has adopted the forest definition provided in FAO (2006): "Land spanning more than 0.5 hectares with trees higher than five meters and a canopy cover of more than 10 percent, or trees able to reach these thresholds in situ. It does not include land that is predominantly under agriculture or urban use. Forest is determined both by the presence of trees and the absence of other predominant land uses. Areas under reforestation that have not yet reached but are expected to reach a canopy cover of 10 percent and a tree height of five meters are included, as are temporarily unstocked areas, resulting from human intervention or natural causes, which are expected to regenerate. Includes: areas with bamboo and palms, provided that height and canopy cover criteria are met; forest roads, fire breaks and other small open areas; forest in national parks, nature reserves and other protected areas such as those of scientific, historical, cultural or spiritual interest; windbreaks, shelterbelts and corridors of trees with an area of more than 0.5 hectares and width of more than 20 meters; plantations primarily used for forestry or protected purposes. Excludes tree stands in agricultural production systems, for example in fruit plantations and agroforestry systems. The term also excludes trees in urban parks and gardens".

Mangrove is not listed under forest in Fiji's FRA country report, as the areas of mangrove, defined as the habitat and entire plant assemblage in which species of the plant family *Rhizophoraceae* dominate, is located below the high tide water mark (i.e., not considered as land). Moreover, mangrove was not included in the FRL because (i) at least three governmental agencies have regulatory jurisdiction over mangrove and, therefore, the MOF refrained from including mangrove in the FRL to avoid potential conflict between the agencies involved, (ii) mangrove may be considered under "Coastal Wetlands (Blue Carbon)" in the Low Emission Development Strategy (LEDS), and (iii) to ensure consistency with other reporting requirements (i.e., FRA reporting). Additionally, coconut plantations are not considered as forest in Fiji (see FRA-Fiji [2015] and Anonymous [2005]).

For Fiji's FRL, the IPCC land-use category 'Forest Land' was disaggregated into two sub-categories ('Natural Forest' and 'Forest Plantation'). Each sub-category holds two forest strata: the sub-category 'Natural Forest' contains the strata 'Lowland Forest' and 'Upland Forest' and the sub-category 'Forest Plantation' contains the strata 'Softwood plantation' and 'Hardwood plantation'.

In order to generate emissions from Forest Degradation in Natural forests, the Programme generated an emissions factor for 'Closed forest' to 'Open forest'. This classification of 'Closed forest' and 'Open forest' was specific to the Natural Forest Category and did not take into consideration 'Upland' or 'Lowland forest' classes.

AENOR assessed the definition of forest used in the construction of the forest reference level according to criterion 12 MF and the guidance from UNFCCC decision 12/CP.17 and deems that it was appropriately chosen.

4.6 Calculation of average annual historical emissions

After review of all ER Monitoring Report information, procedures, calculations, and supporting documentation, and according to the scope of the GAP validation carried out, AENOR confirms that:

- Emission Reduction Programme – Fiji carried out a systematic and step-by-step assessment of the methods, assumptions, and approaches used for the calculation of historical emissions, i.e., the Reference Level.

- All equations parameters and fixed data, such as AD and EF, are appropriately linked to the equations used for the quantification of the Reference Level.
- The correctness of presented information, publicly available, reported with a transparent and coherent step-by-step process that enables reconstruction of the Reference Level to validate its compliance with the requirements of applicable criteria.
- The start date of the crediting period proposed by the ER Program is in compliance with the definition provided in the FCPF Glossary of terms.
- The GHG emissions, emission reductions of the Reference Level, and its technical corrections, are materially accurate, and free of material misstatements, errors, or omissions.
- The ER Program's equations and methods are in accordance with applicable validation criteria as the latest IPCC Guidelines, using the most recent guidance and guidelines, as adopted or encouraged by the Conference of the Parties as a basis for estimating forest related GHG emissions by sources and removals by sinks.
- The emissions from forest degradation are accounted. These emissions were estimated using the best available data.

4.7 Forest Monitoring System

4.7.1 Activity data

AENOR confirms that the reliability of the source and nature of the reported evidence justified the selection of the monitored data and parameters; and that all parameters related to activity data and described below have been reported in line with guidelines provided in the template and validation criteria.

AENOR confirms the correctness of each step of monitoring from measurement to data transfer and calculation and confirmed the information for each parameter is complete and that the stated parameters are free of error and material misstatements.

AENOR also confirms that methodological steps and data are publicly available in accordance with applicable criteria, and the sources for the different parameters are provided in the ER Monitoring Report. AENOR confirms that the evidence provided by the ER Monitoring Reports is sufficient and appropriate to determine the GHG reductions and removals.

AENOR confirms that activity data were determined periodically, at least twice during the Crediting Period, and allow for ERs to be estimated from the Crediting Period Start Date.

Regarding deforestation, Fiji's MOF, supported by CSIRO's Remote Sensing Image Integration Group, adopted a multi-temporal wall-to-wall semi-automated approach to generate IPCC Approach 3 activity data covering the islands of Viti Levu, Vanua Levu and Taveuni for a period of at least 10 years between 2006 - 2016 (analysis was extended to 1 year prior, i.e. 2015, and 1 year post the reference period).

Regarding degradation, emissions were estimated as the combination of the net emissions/removals from:

- logging in Natural Forests managed by the Ministry of Forest;
- transitions from Closed to Open Forest in Natural Forests; and
- emissions from fire in Softwood Plantations.

Activity data from degradation was determined using indirect methods such as digital logging maps provided to the Ministry of Forestry by logging companies and stored in the Timber Revenue System, when no direct methods are available. Direct methods were applied for the total wood volume of logs extracted annually from Natural Forests subject to logging activities, as data was collected by the Management Services Divisions of the Ministry of Forestry through Division of Forest Offices (DFO) staff, known as Log Scalers, through direct measurements.

Enhancement of forest carbon stocks occurs on lands managed by Fiji Pine Limited and Fiji Hardwood Corporation. Activity data from Fiji Pine and Fiji Hardwood was collected through direct methods: volumes extracted and areas planted annually.

Assessment details are as follows per activity data grouped parameters:

Parameters	$A_{FRLDef,i}$ = Area Deforested in Natural Forest
Free of Material Misstatement	Yes
Reported Appropriately	Yes
Assessment Details	Activity data used for the monitoring period are obtained from spatially explicit activity data (IPCC Approach 3) generated from sample-based area assessment, using a wall-to-wall change map as a stratifyer. Fiji's MOF, supported by CSIRO's Remote Sensing Image Integration Group, adopted a multi-temporal wall-to-wall semi-automated approach to generate IPCC Approach 3 activity data covering the islands of Viti Levu, Vanua Levu and Taveuni for a period of at least 10 years between 2006 - 2016 (analysis was extended to 1 year prior, i.e. 2015, and 1 year post the reference period). The ER-MR presented information about data sources for estimating Activity Data, methods for mapping land-use and land-use change (including sampling design, analysis and Activity Data calculation), QA/QC procedures applied, values applied, and uncertainty associated with these parameters. The validation team conducted an independent analysis to confirm that the data source was reliable and appropriate. Additionally, the validation team was able to ensure that LULC classification was appropriate and followed the defined classification system. Spatial analyses conducted in GIS confirmed the geographical boundary, ensuring that all activity data fell within the Accounting Area and that the Accounting Area was computed correctly. The VVB reviewed Mueller-Dombois & Fosberg (1998) to substantiate the boundary between 'Lowland Forest' and 'Upland Forest' at 600 m above sea level (a.s.l.). The VVB reviewed Caccetta et al (2012) to assess the methods for processing activity data, as well as QA/QC procedures, to ensure their consistency and accuracy for obtaining the activity data, being considered adequate due to the demonstration of successful application in large mountainous areas where cloud cover is frequent. The VVB confirmed that activity data are determined periodically, at least twice during the Crediting Period, and allow for ERs to be estimated from the Crediting Period Start Date.

Parameters	$A_{FRLAR,t}$ = Area Afforested
Free of Material Misstatement	Yes
Reported Appropriately	Yes

Assessment Details	Activity data used for the monitoring period are obtained from spatially explicit activity data (IPCC Approach 3) generated from sample-based area assessment, using a wall-to-wall change map as a stratifyer. The ER-MR presented information about data sources for estimating Activity Data, methods for mapping land-use and land-use change (including sampling design, analysis and Activity Data calculation), QA/QC procedures applied, values applied, and uncertainty associated with these parameters. The validation team conducted an independent analysis to confirm that the data source was reliable and appropriate. Additionally, the validation team was able to ensure that LULC classification was appropriate and followed the defined classification system. Spatial analyses conducted in GIS confirmed the geographical boundary, ensuring that all activity data fell within the Accounting Area and that the Accounting Area was computed correctly. The VVB reviewed Mueller-Dombois & Fosberg (1998) to substantiate the boundary between 'Lowland Forest' and 'Upland Forest' at 600 m above sea level (a.s.l.). The VVB reviewed Caccetta et al (2012) to assess the methods for processing activity data, as well as QA/QC procedures, to ensure their consistency and accuracy for obtaining the activity data, being considered adequate due to the demonstration of successful application in large mountainous areas where cloud cover is frequent. The VVB confirmed that activity data are determined periodically, at least twice during the Crediting Period, and allow for ERs to be estimated from the Crediting Period Start Date.

Parameters	$A_{FRLNFF,t}$= average annual area of natural forest transitioned from closed to open forest during the reference period
Free of Material Misstatement	Yes
Reported Appropriately	Yes
Assessment Details	Activity data used for the monitoring period are obtained from spatially explicit activity data (IPCC Approach 3) generated from the application of the Continuous Degradation Detection (CODED) algorithm to an annual mosaic of LandSAT data. CODED[1] is an algorithm developed to monitor for low-magnitude forest disturbances using Landsat data. The algorithm is based upon previous developments in continuous land cover monitoring (Zhu and Woodcock, 2014) and tropical degradation monitoring using spectral unmixing models (Souza et al., 2013) and is built upon the Google Earth Engine processing and data storage system. The ER-MR presented information about data sources for estimating

[1] https://github.com/bullocke/coded

	Activity Data, methods for mapping land-use and land-use change (including sampling design, analysis and Activity Data calculation), QA/QC procedures applied, values applied, and uncertainty associated with these parameters. The validation team conducted an independent analysis to confirm that the data source was reliable and appropriate. Additionally, the validation team was able to ensure that LULC classification was appropriate and followed the defined classification system. Spatial analyses conducted in GIS confirmed the geographical boundary, ensuring that all activity data fell within the Accounting Area and that the Accounting Area was computed correctly. The VVB confirmed that activity data are determined periodically, at least twice during the Crediting Period, and allow for ERs to be estimated from the Crediting Period Start Date.

Parameters	$V_{FRLFD,t}$= Wood volumes harvested in natural forest in year t; m3
Free of Material Misstatement	Yes
Reported Appropriately	Yes
Assessment Details	Direct methods were applied for the total wood volume of logs extracted annually from Natural Forests subject to logging activities, as data was collected by the Management Services Divisions of the Ministry of Forestry through Division of Forest Offices (DFO) staff, known as Log Scalers, through direct measurements. The VVB reviewed the presented information about data sources for estimating Activity Data, values applied, QA/QC procedures applied, and uncertainty associated with these parameters, to ensure their consistency and accuracy, being considered adequate. The VVB confirmed that activity data are determined periodically, at least twice during the Crediting Period, and allow for ERs to be estimated from the Crediting Period Start Date.

Parameters	$V_{FRLSWHarvest,t}$= Wood volumes harvested in softwood plantations in year t; m3
Free of Material Misstatement	Yes
Reported Appropriately	Yes
Assessment Details	Direct methods (census data) were applied for the total wood volume of logs extracted annually of softwood (Pine), at national spatial level. Fiji Pine Limited, who manages the plantations of softwood, provides volume of softwood (Pine) and green weight of harvested wood annually to the Ministry of Forests, being published annually in the Ministry of Forests annual progress report and all relevant data are inputted into the TRS database system. The VVB reviewed the presented information about data sources for estimating Activity Data, values applied, QA/QC procedures applied,

	and uncertainty associated with these parameters, to ensure their consistency and accuracy, being considered adequate. The VVB confirmed that activity data are determined periodically, at least twice during the Crediting Period, and allow for ERs to be estimated from the Crediting Period Start Date.

Parameters	$V_{FRLHWHarvest,t}$= Wood volumes harvested in hardwood plantations in year t; m3
Free of Material Misstatement	Yes
Reported Appropriately	Yes
Assessment Details	Direct methods (census data) were applied for the total wood volume of logs extracted annually of hardwood, at national level, including also spatially explicit level information (harvested plantation area with area polygons). Fiji Hardwood Corporation Limited, who manages the plantations of hardwood, provides wood volumes harvested annually. The VVB reviewed the presented information about data sources for estimating Activity Data, values applied, QA/QC procedures applied, and uncertainty associated with these parameters, to ensure their consistency and accuracy, being considered adequate. The VVB confirmed that activity data are determined periodically, at least twice during the Crediting Period, and allow for ERs to be estimated from the Crediting Period Start Date.

Parameters	$A_{FRLFD,t}$= Natural forest area harvested
Free of Material Misstatement	Yes
Reported Appropriately	Yes
Assessment Details	Indirect methods (proxy data) were applied, through annual data (national spatial level) on the areas harvested are available from digital logging maps which are provided by logging companies to the Ministry of Forests as part of the process of obtaining a logging license. This data is collected from all sites issued with a logging license throughout Fiji, however only areas of natural forest logged within the Accounting Area (islands of Viti Levu, Vanua Levu and Taveuni) are included for monitoring in the ER program. The VVB reviewed the presented information about data sources for estimating Activity Data, values applied, QA/QC procedures applied, and uncertainty associated with these parameters, to ensure their consistency and accuracy, being considered adequate. The VVB confirmed that activity data are determined periodically, at least twice during the Crediting Period, and allow for ERs to be estimated from the Crediting Period Start Date.

Parameters	$A_{FRLSWPlant}$= Softwood plantation area planted
Free of Material Misstatement	Yes
Reported Appropriately	Yes
Assessment Details	Indirect methods (proxy data) were applied, through annual data (national spatial level) of the areas planted by Fiji Pine Limited, who manages the plantations of softwood, provided to the Ministry of Forests. The VVB reviewed the presented information about data sources for estimating Activity Data, values applied, QA/QC procedures applied, and uncertainty associated with these parameters, to ensure their consistency and accuracy, being considered adequate. The VVB confirmed that activity data are determined periodically, at least twice during the Crediting Period, and allow for ERs to be estimated from the Crediting Period Start Date.

Parameters	$A_{FRLSWburn}$; $\Lambda_{FRLSWBurn,t}$; $Yr_{Burn,t}$; Yr_{Plant} = Area burnt in softwood plantations in year, t; Year of burning; Year of planting of burnt area; age of forest in the area burnt in softwood plantations in year t
Free of Material Misstatement	Yes
Reported Appropriately	Yes
Assessment Details	Direct methods (census data) were applied, through data collected from field visits post fire and collection of GPS boundaries by Fiji Pine Limited, who manages the plantations of softwood, provided to the Ministry of Forests. The VVB reviewed the presented information about data sources for estimating Activity Data, values applied, and uncertainty associated with these parameters, to ensure their consistency and accuracy, being considered adequate. The audit team confirmed the consistency with values collected in the FRL. The VVB confirmed that activity data are determined periodically, at least twice during the Crediting Period, and allow for ERs to be estimated from the Crediting Period Start Date.

Parameters	$A_{FRLHWPlant}$ = Hardwood plantation area planted
Free of Material Misstatement	Yes
Reported Appropriately	Yes
Assessment Details	Indirect methods (proxy data) were applied, through annual data (national spatial level) of the areas planted by Fiji Hardwood Corporation Limited, who manages the plantations of hardwood.

	provided to the Ministry of Forests. The VVB reviewed the presented information about data sources for estimating Activity Data, values applied, QA/QC procedures applied, and uncertainty associated with these parameters, to ensure their consistency and accuracy, being considered adequate. The audit team confirmed the consistency with values collected in the FRL. The VVB confirmed that activity data are determined periodically, at least twice during the Crediting Period, and allow for ERs to be estimated from the Crediting Period Start Date.

Therefore, AENOR confirms that the activity data used by the ER Program is compliant with Indicator 14.2 of the methodological framework and the IPCC Guidelines and Guidance, as required in Section 8.2 of the VVG.

4.7.2 Emission Factors

AENOR confirms the reliability of the source and nature of the reported evidence justified the selection of the emission factors; and that these have been reported in line with guidelines provided in the template and validation criteria.

AENOR confirms the correctness of each step of monitoring from measurement to data transfer and calculation and confirms the information for each parameter is complete and that the stated parameters are free of error and material misstatements.

AENOR confirms the source of emission factors is from data collected during different national inventories, and models or average values of direct measurements reported in literature and following IPCC Guidance and Guidelines.

AENOR confirms that emission factors of the ER-MR and the methods to determine them are the same for Reference Level setting and for Monitoring.

Fiji applies a mix of IPCC Tier 2 (national specific) and IPCC Tier 1 emissions factors in its estimation approach. IPCC Tier 1 emissions factors are only applied in the excluded pools (Deadwood, Litter, Soil Organic Carbon and Harvested Wood Products, in the absence of National data, in order to estimate their relative weight to the total net emissions in the Forest Reference period. IPCC Tier 2 emissions factors are applied in the Reference Level quantification. Consistent with the IPCC Guidelines, the Ministry of Forestry of Fiji has been working towards the completion of the National Forest Inventory and a supporting research program to generate national specific information relating to allometric models and potentially other values like root:shoot ratios, litter and deadwood estimates. The aim is to apply these National specific values as and when they become available.

The uncertainty for each emission factor is documented in Section 5 of the MR and disaggregated in the sensitivity analysis (table 9 of the MR), allowing for the identification of areas of improvement in the MRV system, prioritizing improvements to those which would have the biggest impact to reducing the overall uncertainty.

Assessment details are as follows per emission factors grouped parameters:

Parameters	C_{AFTER} = Carbon stock in biomass due to the conversion of Natural Forest to grassland
Free of Material Misstatement	Yes
Reported Appropriately	Yes

Assessment Details	The audit team cross-checked that the data used are IPCC Tier 2 (country specific data or country level estimates or locally derived estimates), at the spatial level at the main island of Fiji Vanu Levu, sourced from the NFI. The GAP validation team conducted independent analysis of the information provided to confirm that the source data was reliable and appropriate, as well as QA/QC procedures, to ensure their consistency and accuracy for obtaining the parameter. The GAP validation team conducted an independent review of the literature cited in the reference (Rounds, I., 2013) to crosscheck the applied value. The GAP validation team conducted independent data checks for each step necessary in the quantification of this parameter, and substantiated that the methods to estimate this parameter were reasonable and appropriate, and the values used are consistent with those of the program area. The audit team confirmed the consistency with values collected in the FRL. The uncertainty associated with this parameter was documented, and the GAP validation team confirmed that the estimation of uncertainty was correct and without any error.

Parameters	$C_{BEFORE,Lowland}$ = Estimated carbon stocks stored in AGB and BGB in Lowland Natural Forest
Free of Material Misstatement	Yes
Reported Appropriately	Yes
Assessment Details	The audit team cross-checked that the data used are IPCC Tier 2 (country specific data or country level estimates or locally derived estimates), at national spatial level, derived from forestry inventory plots located across the country (National Forest Inventory and the Permanent Sample Plot Inventory). The GAP validation team conducted independent analysis of the information provided to confirm that the source data was reliable and appropriate, as well as QA/QC procedures, to ensure their consistency and accuracy for obtaining the parameter. The GAP validation team conducted an independent review of the literature cited in the reference (Mundhenk et al., 2019) to crosscheck the applied value. The GAP validation team conducted independent data checks for each step necessary in the quantification of this parameter, and substantiated that the methods to estimate this parameter were reasonable and appropriate, and the values used are consistent with those of the program area. The audit team confirmed the consistency with values collected in the FRL. The uncertainty associated with this parameter was documented, and the GAP validation team confirmed that the estimation of uncertainty was correct and without any error.

Parameters	$C_{BEFORE,Upland}$ = Estimated carbon stocks stored in AGB and BGB in Upland Natural Forest
Free of Material Misstatement	Yes
Reported Appropriately	Yes
Assessment Details	The audit team cross-checked that the data used are IPCC Tier 2 (country specific data or country level estimates or locally derived estimates), at national spatial level, derived from forestry inventory plots located across the country (National Forest Inventory and the Permanent Sample Plot Inventory). The GAP validation team conducted independent analysis of the information provided to confirm that the source data was reliable and appropriate, as well as QA/QC procedures, to ensure their consistency and accuracy for obtaining the parameter. The GAP validation team conducted an independent review of the literature cited in the reference (Mundhenk et al., 2019) to crosscheck the applied value. The GAP validation team conducted independent data checks for each step necessary in the quantification of this parameter, and substantiated that the methods to estimate this parameter were reasonable and appropriate, and the values used are consistent with those of the program area. The audit team confirmed the consistency with values collected in the FRL. The uncertainty associated with this parameter was documented, and the GAP validation team confirmed that the estimation of uncertainty was correct and without any error.

Parameters	ΔAGB_{NFF} = Aboveground biomass variation between Closed forest and Open forest
Free of Material Misstatement	Yes
Reported Appropriately	Yes
Assessment Details	The audit team cross-checked that the data used are IPCC Tier 2 (country specific data or country level estimates or locally derived estimates), at national spatial level, as it was derived from the GEDI Level 2A Geolocated Elevation and Height Metrics product (GEDI02_A) and GEDI L4B Gridded Aboveground Biomass Density, Version 2, global datasets restricted to the Fijian national boundary. The GAP validation team conducted independent analysis of the information provided to confirm that the source data was reliable and appropriate, as well as QA/QC procedures, to ensure their consistency and accuracy for obtaining the parameter. The GAP validation team conducted an independent review of the literature cited in the reference (Dubayah et al., 2020; Dubayah et al., 2022) to crosscheck the applied value. The GAP validation team reviewed (Kellner et al., 2022) to assess the method used to estimate aboveground biomass density (AGBD), substantiating that the methods to estimate this parameter were

	reasonable and appropriate, and the values used are consistent with those of the program area. The audit team confirmed the consistency with values collected in the FRL. The uncertainty associated with this parameter was documented, and the GAP validation team confirmed that the estimation of uncertainty was correct and without any error.

Parameters	$MAIV_{AR}$ = Mean annual volume increment for afforestation/reforestation
Free of Material Misstatement	Yes
Reported Appropriately	Yes
Assessment Details	The audit team cross-checked that the data used are IPCC Tier 2 (country specific data or country level estimates or locally derived estimates), at national spatial level, derived from data provided from Fiji Hardwood Corporation Limited. The VVB reviewed the presented information about data sources for estimating the value applied, and uncertainty associated with this parameter (sampled from a Triangular distribution), to ensure their consistency and accuracy, being considered adequate. The uncertainty associated with this parameter was documented, and the GAP validation team confirmed that the estimation of uncertainty was correct and free of errors.

Parameters	λ_{Pine} = Softwood plantation recovery rate following harvest
Free of Material Misstatement	Yes
Reported Appropriately	Yes
Assessment Details	The audit team cross-checked that the data used are IPCC Tier 2 (country specific data or country level estimates or locally derived estimates), at regional spatial level, from published research conducted in the southwest region of Viti Levu. The GAP validation team conducted independent analysis of the information provided to confirm that the source data was reliable and appropriate, as well as QA/QC procedures, to ensure their consistency and accuracy for obtaining the parameter. The GAP validation team conducted an independent review of the literature cited in the reference (Waterloo, 1994) to crosscheck the applied value. The GAP validation team conducted independent data checks for each step necessary in the quantification of this parameter, and substantiated that the methods to estimate this parameter were reasonable and appropriate, and the values used are consistent with those of the program area. The uncertainty associated with this parameter was documented, and the GAP validation team confirmed that the estimation of

	uncertainty was correct and free of errors.

Parameters	ρ_{Pine} = Pine tree wood density (dry weight over fresh volume)
Free of Material Misstatement	Yes
Reported Appropriately	Yes
Assessment Details	The audit team cross-checked that the data used are IPCC Tier 2 (country specific data or country level estimates or locally derived estimates), at national spatial level, derived from a national dataset with data collected from on 38 sites throughout the afforested areas of the two main islands of Fiji. The GAP validation team conducted independent analysis of the information provided to confirm that the source data was reliable and appropriate, as well as QA/QC procedures, to ensure their consistency and accuracy for obtaining the parameter. The GAP validation team conducted an independent review of the literature cited in the reference (Cown, 1981) to crosscheck the applied value. The GAP validation team conducted independent data checks for each step necessary in the quantification of this parameter, and substantiated that the methods to estimate this parameter were reasonable and appropriate, and the values used are consistent with those of the program area. The uncertainty associated with this parameter was documented, and the GAP validation team confirmed that the estimation of uncertainty was correct and free of errors.

Parameters	$MAIC_{FD}$ = mean annual C increment after logging (above ground and belowground)
Free of Material Misstatement	Yes
Reported Appropriately	Yes
Assessment Details	The audit team cross-checked that the data used are IPCC Tier 2 (country specific data or country level estimates or locally derived estimates), at local spatial level, derived from data of unpublished measurements from a long-term study at the REDD+ pilot project in Nakavu within Fiji, from the Ministry of Forestry. The GAP validation team conducted an independent analysis of the information provided to confirm that the value from the sourced data (Mussong, personal communication; September 2018) was reliable and appropriate, as well as QA/QC procedures, to ensure their consistency and accuracy for obtaining the parameter. The audit team substantiated that this value is the only estimate of mean annual carbon increment in natural forest available in Fiji. When compared to default values listed in the IPCC 2006, Table 3A.1.5 suggests that natural regeneration after logging in Asia & Oceania / Insular for Wet to Moist Tropical Forest for >20 years

	ranges from 2.0 - 3.4 t d.m. ha-1 yr-1, which is equivalent to between 1 – 1.7 t C ha-1 yr-1. Therefore, the national figure is comparable and deemed more conservative than applying the default value. The uncertainty associated with this parameter was documented, and the GAP validation team confirmed that the estimation of uncertainty was correct and free of errors.

Parameters	$MAIB_{SW}$ = Mean annual increment of above and belowground biomass in softwood plantations
Free of Material Misstatement	Yes
Reported Appropriately	Yes
Assessment Details	The audit team cross-checked that the data used are IPCC Tier 2 (country specific data or country level estimates or locally derived estimates), at regional spatial level, from published research conducted in the southwest region of Viti Levu. The GAP validation team conducted independent analysis of the information provided to confirm that the source data was reliable and appropriate, as well as QA/QC procedures, to ensure their consistency and accuracy for obtaining the parameter. The GAP validation team conducted an independent review of the literature cited in the reference (Waterloo, 1994) to crosscheck the applied value. The GAP validation team conducted independent data checks for each step necessary in the quantification of this parameter, and substantiated that the methods to estimate this parameter were reasonable and appropriate, and the values used are consistent with those of the program area. The uncertainty associated with this parameter was documented (sampled from a Triangular distribution), and the GAP validation team confirmed that the estimation of uncertainty was correct and free of errors.

Parameters	$\overline{MAIV}_{HW}$ = Average mean annual increment in Fiji hardwood plantations
Free of Material Misstatement	Yes
Reported Appropriately	Yes
Assessment Details	The audit team cross-checked that the data used are IPCC Tier 2 (country specific data or country level estimates or locally derived estimates), at national spatial level, derived from data provided from Fiji Hardwood Corporation Limited. The GAP validation team conducted independent analysis of the information provided to confirm that the source data was reliable and appropriate, as well as QA/QC procedures, to ensure their consistency and accuracy for obtaining the parameter. The GAP

	validation team conducted an independent review of the literature cited in the reference (Mundhenk et al., 2019) to crosscheck the applied value. The GAP validation team conducted independent data checks for each step necessary in the quantification of this parameter, and substantiated that the methods to estimate this parameter were reasonable and appropriate, and the values used are consistent with those of the program area. The audit team confirmed the consistency with values collected in the FRL. The uncertainty associated with this parameter was documented, and the GAP validation team confirmed that the estimation of uncertainty was correct and without any error.

Parameters	$TEF =$ conversion factor for timber volumes extracted to total carbon loss
Free of Material Misstatement	Yes
Reported Appropriately	Yes
Assessment Details	The audit team cross-checked that the data used are IPCC Tier 2 (country specific data or country level estimates or locally derived estimates), at local spatial level, derived from data from a small-scale study within the ER Program area. The GAP validation team conducted independent analysis of the information provided to confirm that the source data was reliable and appropriate, as well as QA/QC procedures, to ensure their consistency and accuracy for obtaining the parameter. The GAP validation team conducted an independent review of the literature cited in the reference (Haas, 2015) to crosscheck the applied value. The GAP validation team conducted independent data checks for each step necessary in the quantification of this parameter, and substantiated that the methods to estimate this parameter were reasonable and appropriate, and the values used are consistent with those of the program area. The audit team confirmed the consistency with values collected in the FRL. The uncertainty associated with this parameter was documented, and the GAP validation team confirmed that the estimation of uncertainty was correct and without any error.

Therefore, AENOR confirms that the emission factors used by the ER Program are compliant with Indicator 14.3 of the methodological framework and the IPCC Guidelines and Guidance, as required in Section 8.2 of the VVG.

4.7.3 National Forest Monitoring System

Section 2.1 of the MR describes that Fiji's National Forest Monitoring System is in the early stages of operationalization.

There are no changes to the structure of the MRV elements or roles and responsibilities from that listed in the Emission Reduction Program Document, with the exception the name of the Management Services Division being changed to the Forest Resource Assessment Division. A number of elements of the NFMS have matured during the period between the ERPD and this first Monitoring Report as a result of the REDD Readiness Grant extension. These include the:

- Development of the Forest Information Management System, creating a user-friendly data integration platform and document control and archiving structure.
- National Forest Inventory data collection field work has been designed and teams have commenced data collection.
- Additional work to monitor and report land use change in mangrove ecosystems.

The Forest Monitoring System developed for the FCPF program has resulted in improved data that can be used in the National Greenhouse Gas Inventory. The Ministry of Forestry is working with the Ministry of Environment and Climate Change to utilize this new data into the National Greenhouse Gas Inventory. As changes in data sets require re-calculation of the inventory to maintain time series consistency, available resources influence adoption of new data sources. Nonetheless, the data and information generated by the Ministry of Forestry is made available to the Ministry of Environment and Climate Change to be used as an auxiliary data set to compare estimates and better understand areas for improvement.

The audit team reviewed the PD, the last version of the MR, and the FCPF website[2] to confirm the alignment of the ER Program with the National Forest Monitoring System. After the assessment, AENOR deems that it is in accordance with criterion 15 of the MF, as the MR articulates how the Forest Monitoring System fits into the emerging National Forest Monitoring System.

Likewise, the VVB confirmed that the ER program has QA/QC procedures in place to identify sources of potential errors, omissions, and misstatements.

4.7.4 Community participation in the Monitoring System

Section 2.1 of the MR describes that the main role of the communities in Fiji's forest monitoring system is through the role of NGOs on the REDD+ Steering Committee. The committee includes a number of community organisations, including faith-based organisations and the iTaukei Land Trust Board. The Steering Committee is heavily involved in the design of the system and in the outreach to the community groups in relation to REDD+ activities of the ER Program.

Community monitoring was considered in early design stages of the NFMS, and it is conducted on areas under lease for afforestation activities. The REDD+ Steering Committee has strong community representation and forms the basis of stakeholder discussions on the establishment of community monitoring protocols and processes. This is evolving through time as the afforestation leases increase and communities become more involved with REDD+ mitigation activities through improved land stewardship activities. Identifying opportunities to build links between community monitoring and the National Forest Monitoring System and the Safeguards Information System is ongoing.

The audit team reviewed the REDD+ Fiji website[3] and the Fiji REDD+ Steering Committee TOR[4] to confirm that the ER Program adequately explored and encouraged opportunities for community participation in monitoring and reporting of ER Program measures, with the initiatives described above, in accordance with Indicator 16 of the MF and the objectives described in Section 8.2 of the VVG.

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[2] Fiji | Forest Carbon Partnership Facility

[3] Fiji REDD+ Governance Structure - REDD+ Fiji

[4] https://www.forestcarbonpartnership.org/system/files/documents/TOR_FijiREDD%2BSC_0411.pdf

4.8 Adjustments to the average annual historical emissions over the reference period

The Reference Level does not exceed the average annual historical emissions over the Reference Period and no upward or downward adjustment to the annual historical emissions over the Reference Period has been proposed, in compliance with Criterion 13 of the Methodological Framework.

4.9 Consistency of the Program's Reference Level with national FREL/FRL and GHG Inventory

AENOR assessed the Reference Level for the ER Program for the Crediting Period and confirms that the Reference Level is materially accurate. AENOR confirms the relation, and its consistency, between the Reference Level, the development of the FREL/FRL submitted to the UNFCCC and the country's existing greenhouse gas inventory, in accordance with criterion 10, indicator 10.2 and 10.3 of the Methodological Framework.

The results of the estimated Reference Level before technical correction are as follows, according to ER Monitoring Report:

Crediting Period year t	Average annual historical emissions from deforestation over the Reference Period (tCO_2-e/yr)	If applicable, average annual historical emissions from forest degradation over the Reference Period (tCO_2-e/yr)	If applicable, average annual historical removals by sinks over the Reference Period (tCO_2-e/yr)	Adjustment, if applicable (tCO_2-e/yr)	Reference level (tCO_2-e/yr)
2019	394,121	511,326	599,323	-	1,504,770
2020	394,121	505,200	560,935	-	1,460,256
2021	394,121	499,074	522,547	-	1,415,742
2022	394,121	492,948	484,160	-	1,371,228
2023	394,121	486,821	445,772	-	1,326,714
2024	394,121	480,695	407,384	-	1,282,200

5. NON-COMPLIANCES AND OBSERVATIONS

To ensure conformance of the ER Program with all requirements set by the FCFC and the audit criteria (section 2.3), the validation team issued findings in accordance with section 11 of the VVG v2.7 in the following cases:

- Major Corrective Action Request (MCAR): i) the evidence provided to demonstrate conformity is insufficient, unclear, or not transparent and may lead to a material error, omission, or misstatement, and/or a breakdown in the systems delivery; ii) underlying assumptions used to develop the reported estimates are not supported by data; iii) material errors, omissions or misstatements have been made in applying assumptions, in data or calculations; or i) non-compliance with validation criteria.

- Minor Corrective Action Requests (mCAR): i) the evidence provided to demonstrate conformity is insufficient, unclear, or not transparent, but does not lead to a material error, omission, or misstatement, and/or a breakdown in the systems delivery; or ii) non-material errors, omissions or misstatements have been made in applying assumptions, in data or calculations;
- Observations (OBS): i) there is no objective evidence to prove that there is a non-conformity, but the VVB observes practices and/or methods that could result in future MCAR and mCAR; or ii) the VVB wishes to identify an area of the Forest Monitoring System that requires attention and/or adjustment in future monitoring and reporting.

The findings were submitted by the validation team in a single document, in which the Country Participant was able to offer answers to each of them and list supporting documents provided.

The Country Participant made the requested corrections and provided the validation team with updated versions of the ER Monitoring Report, which the validation team reassessed against the guidance documentation. The validation team either closed the opened findings when corrections, evidence and answers were satisfactory to comply with the audit criteria or asked for further corrections or clarifications. This process was repeated iteratively until all MCAR were suitably closed, as required by paragraph 62 of the VVG v2.7.

All findings, 3 MCAR, 2 mCAR and 2 OBS, issued by AENOR’s audit team during the GAP validation process have been closed, except OBS 01.

In this regard, in OBS 01, the VVB wishes to identify an area that requires attention and/or adjustment in future monitoring and reporting, as several links referencing different sources in the MR could not be accessed.

All findings are reported in the Appendix 1 of this report.

APPENDIX 1: OVERVIEW OF NON-COMPLIANCES & OBSERVATIONS ISSUED DURING THE GAP VALIDATION BY THE VALIDATION TEAM

Major CAR (MCARs)

<table>
<tr><th>NC ID: Major</th><th>01</th><th>Date: 12/02/2025</th></tr>
<tr><td colspan="3">Description of NC</td></tr>
<tr><td colspan="3">Section 2 of the MR: (MF Criterion 16):
It is stated: “The community does not have an active role in data collection for the monitoring system”.
The ER Program has not demonstrated that it has explored opportunities for community participation in Monitoring and reporting.</td></tr>
<tr><td colspan="2">Project Participant’s response</td><td>Date: 24/03/2025</td></tr>
<tr><td colspan="3">The majority of the activity data utilised in the National Forest Monitoring System in Fiji is gathered through remote sensing and National level statistics form commercial Wood harvesting operations. This data has been prioritised to strengthen consistency with the National Greenhouse Gas Inventory. Community monitoring was considered in early design stages of the NFMS. Community monitoring is however conducted ion areas under lease for afforestation activities. The REDD+ Steering Committee has strong community representation and forms the basis of stakeholder discussions on the establishment of community monitoring protocols and processes. This is evolving through time as the afforestation leases increase and communities become more involved with REDD+ mitigation activities through improved land stewardship activities. Identifying opportunities to build links between community monitoring and the National Forest Monitoring System and the Safeguards Information System is ongoing.</td></tr>
<tr><td colspan="3">Documentation provided by the Project Participant</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td colspan="2">VVB Assessment</td><td>Date: 01/04/2025</td></tr>
<tr><td colspan="3">The response is deemed correct. However, said justification has not been updated in Section 2 of the MR.
Therefore, MCAR 01 is not closed.</td></tr>
<tr><td colspan="2">Project Participant’s response</td><td>Date:06/04/2025</td></tr>
<tr><td colspan="3">The explanation provided above has been added to Section 2.1 of the MR.</td></tr>
<tr><td colspan="3">Documentation provided by the Project Participant</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td colspan="2">VVB Assessment</td><td>Date: 19/05/2025</td></tr>
<tr><td colspan="3">Section 2.1 of the MR has been updated and deemed correct.
Therefore, MCAR 01 is closed.</td></tr>
</table>

NC ID: Major	**02**	**Date: 12/02/2025**
Description of NC		
Section 2.3.2 of the MR (Indicator 14.3): The ER Program did not justify the use of IPCC Tier 1 methods as an exceptional case in parameters such as root-to-shoot ratio, biomass conversion and expansion factor for increment, etc.		
Project Participant's response		**Date:** 24/03/2025
Fiji does not have National specific data for these parameters and so relevant IPCC default value have been applied which have been justified in the ERPD and Monitoring report. Consistent with the IPCC Guidelines the Ministry of Forestry of Fiji has been working towards the completion of the National Forest Inventory and supporting research program to generate national specific information relating to allometric models and potentially other values like root:shoot ratios, litter and deadwood estimates and will apply these National specific values as and when they become available.		
Documentation provided by the Project Participant		
VVB Assessment		**Date: 01/04/2025**
The response is deemed correct. However, said justification has not been updated in Section 2.3.2 of the MR. Therefore, MCAR 02 is not closed.		
Project Participant's response		**Date: 06/04/2025**
The explanation provided above has been added to Section 2.3.2 of the MR.		
Documentation provided by the Project Participant		
VVB Assessment		**Date: 19/05/2025**
Section 2.3.2 of the MR has been updated and deemed correct. Therefore, MCAR 02 is closed.		

NC ID: Major	03	Date: 12/02/2025
Description of NC		

Section 7.2 of the MR: (MF indicator 4.2):

Not sufficient justifications are given for the exclusion of several carbon pools to comply with indicator 4.2 of the Methodological framework:

1. The ER program did not demonstrate that Emissions associated with excluded Carbon Pools and greenhouse gases are collectively estimated to amount to less than 10% of total forest-related emissions in the Accounting Area during the Reference Period.
2. The ER Program did not demonstrate that excluding the Harvested Wood Products Carbon Pool would underestimate total emission reductions.
3. Table 26 states that Tier 1: Carbon stock of DOM is assumed to be 0 for non-forest land use categories. However, the ER program did not justify the possibility of using Tier 1 data for forest land use to estimate the Deadwood and Litter carbon pools.

Project Participant's response	Date: 28/02/2025

Response to Point 1.

Excluded pools from Fiji's Forest Reference Level and Monitoring include: deadwood, litter, soils and HWP (note HWP pool is dealt with further below).

National data for deadwood, litter and SOC pools is not currently available until the National Forest Inventory is completed. The IPCC Guidelines state the following for Tier 1 in the absence of National data:

Deadwood and Litter

Forestland remaining forestland (forest degradation and sustainable management of forest) – assume the deadwood pool and litter pool are stable so changes in carbon stock **are zero.**

Forestland converted to Other land (deforestation) – The Tier 1 default assumes removal of all dead wood and litter during conversion of Forestland to grassland and that there is no dead wood or litter that remains or accumulates in Forest Land Converted to Grassland. It is assumed that grasslands achieve steady-state biomass during the first year following conversion.

Land converted to Forest land (afforestation) - For Land Converted to Forest Land, the Tier 1 assumption is that dead wood and litter pools increase linearly from zero (in the non-forest land-use category) to the default values for the climate region over a period of T years.

Soil Organic Carbon

Forestland remaining Forestland (forest degradation and sustainable management of forest) - Due to incomplete scientific basis and resulting uncertainty, it is assumed in the Tier 1 method that forest soil C stocks do not change with management. Furthermore, if using Approach 2 or 3 activity data (see Chapter 3), it is not necessary to compute C stock changes for mineral soils **(i.e., change in SOC stocks is 0).**

Forestland converted to Other land (deforestation) – the change in soil organic C stocks can be estimated for mineral soils accounting for the impact of land-use conversion to Grassland. This was estimated using a SOCREF from the IPCC default tables of 44 tC/ha and relevant management factors from Volume 4-Table 2.3 of the IPCC guidelines.

Land converted to Forest land (afforestation) - the change in soil organic C stocks can be estimated for mineral soils accounting for the impact of land-use conversion fo grassland to Forest land. This was estimated using a SOCREF from the IPCC default tables of 44 tC/ha and relevant management factors from Volume 4-Table 2.3 of the IPCC guidelines.

The analysis for the excluded pools is demonstrated in the supporting file • JustificationforExclusionofPools.xlsx Whis indicated that the excluded pools of DOM (litter and deadwood), SOC and HWP combined to a total of 9.7% in the Reference Period and so their exclusion is justified against the FCPF Guideline criteria. **Response to Point 2.** Additional work has been conducted to demonstrate the HWP pool is less than 10%. The supporting files are named: • JustificationforExclusionofPools.xlsx • V4_12_Ch12_HWP_Worksheet.xls • JustificationforExclusionofHarvestedWoodProducts.pdf **Response to Point 3.** The IPCC Tier 1 method assumes that the dead wood and litter carbon stocks on Forest lands are in equilibrium so that the changes in carbon stock in the DOM pools are assumed to be zero. Countries experiencing significant changes in forest types, disturbance or management regimes in their forests **are encouraged** to develop domestic data to quantify the impacts from these changes using higher tier methodologies. Consistent with the IPCC Guidelines the Ministry of Forestry of Fiji has been working towards the completion of the National Forest Inventory and supporting research program to generate national specific information relating to allometric models and potentially other values like root:shoot ratios, litter and deadwood estimates and will consider their inclusion in the context of key category analysis.
Documentation provided by the Project Participant

VVB Assessment	**Date:** 01/04/2025
Section 7.2 of the MR has been updated. However, the updates on the MR do not reflect the complete justification included in this finding report, to allow the reader to reproduce said demonstrations. Thus: 1. The response is deemed correct. However, said justification has not been updated in Section 7.2 of the MR. Item not closed. 2. The response is deemed correct. However, said justification has not been updated in Section 7.2 of the MR. Item not closed. 3. The response is deemed correct. However, said justification has not been updated in Section 7.2 of the MR. Item not closed. Therefore, MCAR 03 is not closed.	
Project Participant's response	**Date: 15**/04/2025
Updated justification for the exclusion of carbon pools has been added to Annex 4 – Section 7.2 of the Monitoring Report. This now covers all 3 findings.	
Documentation provided by the Project Participant	

VVB Assessment	**Date: 19/05/2025**
Section 7.2 of the MR has been updated and deemed correct. Therefore, MCAR 03 is closed.	

Minor CAR (mCARs)

NC ID: Minor	**01**	**Date: 12/02/2025**
Description of NC		
Section 6.2 of the MR: (MF Indicator 15.1): 1. The ER Program is requested to clarify if the Forest Monitoring system proposed presents any technical or design alternative to the National Forest monitoring, and to provide a rationale for it, if applicable. 2. The ER Program is also requested to clarify if there is any update available regarding the following statements: “At the completion of the audit process, improvements to the cataloguing and indexing of the activity datasets will be conducted”. “As the NFMS was not fully functional during the compilation of the report for this monitoring period, work on the development (automation) of the Data Registry was also in an infancy phase”.		
Project Participant’s response		**Date:** 28/02/2025
Response to Point 1. The Forest Monitoring System developed for the FCPF program has resulted in improved data that can be used in the National Greenhouse Gas Inventory. The Ministry of Forestry is working with the Ministry of Environment and Climate Change to utilize this new data into the National Greenhouse Gas Inventory. As changes in data sets require re-calculation of the inventory to maintain time series consistency, available resources influence adoption of new data sources. Nonetheless the data and information generated by the Ministry of Forestry is made available to the Ministry of Environment and Climate Change to be used as an auxiliary data set to compare estimates and better understand areas for improvement. **Response to Point 2.** At this stage the team are prioritizing the development of data for the second monitoring period. The improvement recommendations are noted and are being progressed as resources allow. At this stage these improvements are only in early planning stage so no further update is available.		
Documentation provided by the Project Participant		
VVB Assessment		**Date: 01/04/2025**
1. The response is deemed correct. However, said justification has not been updated in Section 6.2 of the MR. Item not closed. 2. The response is deemed correct, and no updates are warranted. Therefore, mCAR 01 is not closed.		
Project Participant’s response		**Date: 06/04/2025**
Responses to item 1 have been added to Section 6.2 of the MR.		
Documentation provided by the Project Participant		

VVB Assessment	**Date: 19/05/2025**
Section 6.2 of the MR has been updated and deemed correct. Therefore, mCAR 01 is closed.	

NC ID: Minor	**02**	**Date: 12/02/2025**
Description of NC		
Section 8 (MF 11, indicator 11.1): The Technical Assessment of Final ER-PD (TAP) of Fiji dated on June 16th, 2019, states that: "The TAP team conducted a desk review of the December 27th early draft version of the Fiji ER-PD, remotely before the WB and TAP mission to Fiji January 20-26, 2019". The ER program is requested to clarify the start date of the TAP assessment and justify compliance of the end-date for the Reference Period (2019) with Indicator 11.1 of the MF.		
Project Participant's response		**Date:** 28/02/2025
The end-date of the Reference Period is December 2016. The Program commenced in 2019 with the establishment of Fiji's Climate Change Policy. The kick-off meeting for the TAP review of the ER Program Document was in December 2018 when the TAP started the review of the documents (https://www.forestcarbonpartnership.org/system/files/documents/FCPF%20TAP%20Review%20Fiji%20Final%20ERPD%20June%2020%202019.pdf) This timeline is in conformance with the MF Indicator 11.1 as the end-date for the Reference Period (i.e. December 2016) is the most recent date prior to two years before the TAP starts the independent assessment of the draft ER Program Document (December 2018).		
Documentation provided by the Project Participant		
VVB Assessment		**Date: 01/04/2025**
The justification is deemed correct and compliance with MF Indicator 11.1 has been demonstrated. Therefore, mCAR 02 is closed.		

Observations (OBS)

OBS ID:	**01**	**Date: 12/02/2025**
Description of the OBS		
Section 3.1 in the MR: In Parameter $MAIV_{AR}$, page 58, please include doi or link to reference the following report: Fiji_Forest_Reference_Level_2006-2016.pdf		
Project Participant response		**Date: 24**/03/2025
The requested document has been uploaded to the public link. https://www.forestry.gov.fj/docs/forms/Fiji_Forest_Reference_Level_2006-2016.pdf		
Documentation provided by the Project participant		
VVB Assessment		**Date: 01/04/2025**
The document could not be accessed in the provided link. Moreover, the reference link has not been updated in Section 3.1 of the MR. Therefore, OBS 01 is not closed.		
Project Participant's response		**Date: 15**/04/2025
The document can be found on the Ministry of Forestry website at this link: https://www.forestry.gov.fj/media.php Scroll to the bottom of the page under the heading 'Statistics' and the relevant links can be found there. This link and description has been added to the Monitoring Report provided.		
Documentation provided by the Project Participant		
VVB Assessment		**Date: 19/05/2025**
The link has been updated in the MR. However, it cannot be accessed. Therefore, OBS 01 is not closed.		

OBS ID:	**02**	**Date: 12/02/2025**
Description of the OBS		
Typo: In section 6.2, page 94, Program Data Management system is missing the first P.		
Project Participant response		**Date: 24/03/2025**
The typographical error has been corrected.		
Documentation provided by the Project participant		
VVB Assessment		**Date: 01/04/2025**
The typographical error has been corrected. Therefore, OBS 02 is closed.		

APPENDIX 2: EVIDENCE PROVIDED BY COUNTRY PARTICIPANT AND REVIEWED BY AENOR

The ERMR contains supporting evidence not included here which have been reviewed by the audit team.

Number	File
1	FijiFCPFERMonitoringReport version 5.6.docx
2	Calculation scripts.docx
3	JustificationforExclusionofPools.xlsx
4	JustificationforExclusionofHarvestedWoodProducts.pdf
5	Philip Mundhenk, Prem Raj Neupane & Michael Köhl 2016 - Fiji's Forest Reference Level. Reference Period 2006 — 2016 World Forestry — University of Hamburg.
6	2006 IPCC Guidelines for National Greenhouse Gas Inventories
7	Land-cover map of Fiji (2006)
8	Mueller-Dombois, Dieter & Fosberg, Frederic. (1998). Vegetation of the Tropical Pacific Islands. 10.1007/978-1-4419-8686-3.
9	Caccetta, P., Furby, S., Wallace, J., Wu, X., Richards, G. & Waterworth, R. (2012) Long-term monitoring of Australian land cover change using Landsat data: development, implementation and operation. In: Global Forest Monitoring from Earth Observation, eds. F. Achard & M. Hansen, pp. 243-258. Boca Raton: CRC Press.
10	https://github.com/bullocke/coded
11	Zhe Zhu, Curtis E. Woodcock (2014). Continuous change detection and classification of land cover using all available Landsat data, Remote Sensing of Environment, Volume 144, 2014, Pages 152-171, ISSN 0034-4257, https://doi.org/10.1016/j.rse.2014.01.011.
12	Souza Jr, Carlos & Siqueira, João & Sales, Marcio & Fonseca, Antonio & Ribeiro, Júlia & Numata, Izaya & Cochrane, Mark & Barber, Christopher & Roberts, Dar & Barlow, Jos. (2013). Ten-Year Landsat Classification of Deforestation and Forest Degradation in the Brazilian Amazon. Remote Sensing. 5. 5493-5513. 10.3390/rs5115493.
13	Rounds, I., 2013. Baseline carbon assessment of talasiga grassland vegetation of REDD+ pilot site, Emalu. Draubuta, Navosa.
14	Dubayah, Ralph, Hofton, Michelle, Blair, James, Armston, John, Tang, Hao, & Luthcke, Scott. (2020). GEDI L2A Elevation and Height Metrics Data Global Footprint Level V001 [dataset]. NASA EOSDIS Land Processes DAAC. https://doi.org/10.5067/GEDI/GEDI02_A.001
15	Dubayah, R.O., J. Armston, S.P. Healey, Z. Yang, P.L. Patterson, S. Saarela, G. Stahl, L. Duncanson, and J.R. Kellner. 2022. GEDI L4B Gridded Aboveground Biomass Density, Version 2. ORNL DAAC, Oak Ridge, Tennessee, USA. https://doi.org/10.3334/ORNLDAAC/2017
16	Kellner, J. R., Armston, J., & Duncanson, L. (2022). Algorithm theoretical basis document for GEDI footprint aboveground biomass density. Earth and Space Science. https://doi.org/10.1029/2022EA002516

17	Waterloo, M., 1994. Water and Nutrient Dynamics of Pinus caribaea plantation forests on former grassland soils in Southwest Viti Levu, Fiji. Ph.D. thesis, Vrije Universiteit Amsterdam.
18	Cown, D., 1981. Wood density of Pinus caribaea var. hondurensis grown in Fiji. New Zealand Journal of Forestry Science, 11(3):244–253.
19	Haas, M., 2015. Carbon emissions from forest degradation caused by selective logging in Fiji. Regional project Climate Protection through Forest Conservation in Pacific Island Countries, GIZ, SPC

Document information

Version	Date	Description
1.0	May 2025	Initial version adopted.
1.1	May 2025	Version after technical review.
1.2	June 2025	Version after FMT and Fiji teams review