



Verification Report

Version 1.5

21 September 2022

Aster Global Environmental Solutions Inc.





Forest Carbon Partnership Facility (FCPF) Carbon Fund Verification Report (VER)	
ER Program Name and Country	Zambézia Integrated Landscape Management Program (ZILMP) Republic of Mozambique
Reporting Period Covered In this Report	01-01-2019 to 31-12-2020
Number of FCPF ERs	483,758
Number of ERs allocated to the Uncertainty Buffer	131,336
Number of ERs allocated to the Reversal Buffer	223,272
Number of ERs allocated to the Pooled Reversal Buffer	37,212
Name of the VVB	Aster Global Environmental Solutions, Inc.
Contact information of the VVB	Name: Aster Global Environmental Solutions Contact: Janice McMahon Phone: +1 330.294.1242 ext. 102 Email: jmcMahon@asterglobal.com Address: 3800 Clermont St. NW North Lawrence, OH 44666
Report Version	1.5
Date of the Verification Report	21 September 2022
Report Approved by	Mansfield Fisher

1. VERIFICATION STATEMENT

The review and cross-check of explanations and justifications included in the Monitoring Report dated 27-09-2021 and supporting documents have provided Aster Global Environmental Solutions, Inc.’s (herein referred to as Aster Global) with sufficient evidence to determine with a reasonable level of assurance the compliance of the reported information with the FCPF Methodological Framework, the Validation and Verification Guidelines and other applicable normative documents.

The scope covered by the verification includes the ER Program’s crediting period [01-01-2018 to 31-12-2024], the reporting period [01-01-2019 to 31-12-2020], the accounting area [5,310,265 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:

Sources/Sinks/Reservoirs	<p>REDD+ Activities (sources and sinks) Emissions from deforestation – included Emissions from forest degradation – excluded Enhancement of carbon stocks – excluded Sustainable management of forests – excluded Conservation of carbon Stocks – excluded</p> <p>Carbon Pools Aboveground biomass in tress – included Belowground biomass in trees – included Biomass in non-woody vegetation – excluded Dead organic matter – excluded Soil organic carbon – excluded</p> <p>GHG CO₂ - included CH₄ – excluded N₂O - excluded</p>
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During the verification process, the audit team issued findings as specified in the FCPF Validation and Verification Guidelines v2.4 Section 11. The VVB issued Major Corrective Actions (MCARs), Minor Corrective Actions (mCARs), and Observations (OBS).

A total of 22 MCARs, 2 mCARs and 2 Observations were raised as part of the verification process. All of the 22 MCARs were successfully addressed by the ER Program and closed by the VVB, and 2 Observations and 2 mCARs remain open. These findings are described in Appendix 1 of this report.

Aster Global is able to verify with a reasonable level of assurance that the Emissions Reductions generated by Zambézia Integrated Landscape Management Program (ZILMP), quantified in accordance with the verification criteria, amount to 875,578 tonnes CO₂ equivalent (tCO₂e). Aster Global verified that the uncertainty buffer ERs amount to 131,336 tCO₂e and that the non-permanence ERs amount to 260,484. The amount of FCPF Units to be issued is 483,758 tCO₂e. There are no uncertainties associated with the verification conclusion.

Statement Issuing Date: 21 September 2022

Intended User: [World Bank Group, FCPF Carbon Fund Participants]



TEAM LEADER: Mansfield Fisher



LEGAL REPRESENTATIVE: Janice McMahon

2. AGREEMENT

2.1 Level of Assurance

The level of assurance determined the depth of detail that the verification team used to determine if there were any errors, omissions, or misrepresentations. Aster Global assessed the ZILMP's implementation of general principles, data collection and processing, sampling/monitoring descriptions, documentation, calculations, etc., to provide *reasonable assurance* to meet the requirements of the FCPF Carbon Fund and to satisfy the professional judgement of the audit team.

Based on the previous provisions and considering the findings raised during the audit, a positive evaluation statement reasonably ensures that the FCPF Program GHG assertion is materially correct and is a fair representation of the GHG data and information provided in the ER Monitoring Report and supporting documents.

2.2 Objectives

As outlined in the Validation and Verification Guidelines (VVG) - (Section 8.2), the general objectives of verification of the ZILMP include the following:

- Review of the ER Monitoring Report and supporting information to confirm the correctness of presented information;
- Identify if the methodological steps and data are publicly available in accordance with applicable criteria;
- Assess the extent to which reported ERs /Reference Level have been reported with a transparent and coherent step-by-step process that enables reconstruction and have meet the requirements of applicable criteria;
- Assess the extent to which the reported GHG emissions / Emission Reductions / Reference Level (or the revised Reference Level if technical corrections are applied)¹ is materially accurate, i.e., free of material misstatements, errors or omissions;
- Identify source(s) of Uncertainty due to both random and systematic errors related with the Reference Level setting and any sources of bias that can impact the estimate of the Total ERs, and determine whether the ER Program has conducted the Uncertainty analysis in compliance applicable criteria;
- Assess the Forest Monitoring System of the ER Program and validate that there are controls for sources of potential errors, omissions, and misstatements in place;
- Identify components of the Forest Monitoring System that require attention and/or adjustment in future monitoring and reporting or identify areas of risk of future noncompliance.

Similarly, as outlined in the Validation and Verification Guidelines (VVG) - (Section 8.2), the specific objectives of verification of the ZILMP include the following:

- Assess the extent to which the methodologies and methods used to estimate GHG emissions and removals during the Reporting Period are consistent with the Reference Level and with the Monitoring Plan as described in the ER Monitoring Report;
- Assess the extent to which the ER Monitoring Report includes a complete and accurate report, to the extent possible, on the implementation of its strategy to mitigate and/or minimize potential Displacement and on any on changes in major drivers in the ER Accounting Area;
- Assess the extent to which the ER Monitoring Report contains a complete and accurate report on the mitigation, to the extent possible, of significant risks of Reversals identified in the assessment, and addresses the sustainability of ERs;

¹ The reference level was assessed at validation and is not being reassessed during this verification. The VVB ensured that the validated reference level is applied correctly and in conformance with the Methodological Framework.

- Determine whether the ER Program has quantified ERs allocated to the Uncertainty, Reversal, and Pooled Reversal Buffer during the Reporting Period in compliance with the Methodological Framework and other applicable criteria;
- Assess the extent to which systems to avoid that ERs generated under the ER Program have not been counted or compensated for more than once have been adequately implemented and confirm that issuance has not occurred in other known registries;
- Determine whether the national or centralized REDD+ Programs and Projects Data Management System are implemented and operated in compliance with the Methodological Framework and other applicable criteria.

2.3 Criteria

The criteria included the following normative documents provided by the FCPF:

- FCPF Methodology Framework, Version 3, April 2020
- Buffer Guidelines, Version 3.1, May 2022
- Guidelines on the application of the Methodological Framework Number 1, Version 1, June 2016
- Guidelines on the application of the Methodological Framework Number 2, Version 2, November 2020
- Guidelines on the application of the Methodological Framework Number 3, Version 1, November 2018
- Guidelines on the application of the Methodological Framework Number 4, Version 1, November 2020
- FCPF Guidelines on Uncertainty Analysis_2020
- Process Guidelines, Version 5.2, August 2021
- FCPF Validation and Verification Guidelines, Version 2.4, August 2021
- FCPF – Glossary of Terms Version 2.2, May 2022
- FCPF Guidance Notes, as applicable
- ISO 14064-3:2006
- ISO 14065:2013
- ISO 14066:2011
- IAF MD 6:2014
- Forms and templates as published and available by FCPF
- Training Presentations presented by FCPF

Criteria Indicators	Topic	Verification
6	Data availability	X
7, 8, 9.1	Identification and address sources of uncertainty	X
9.2, 9.3	Estimation of residual uncertainty	X
14.1	Consistency of monitoring estimates with Reference Level	X
17.3, 17.4	Monitoring and reporting of displacement mitigation	X
18.2	Addressing reversals	X
19	Account for reversals	X
22	Calculation of Emission Reductions	X
23	Double counting	X
37	REDD project and program DMS	X

2.4 Scope

The general scope of the verification includes:

- The Crediting Period as defined in the ER Program's Validated ERPD
- The applicable ER Program Reporting Period
- The GHG sources and sinks associated with the REDD+ activities accounted for as required by the Methodological Framework and defined with the ER Program's Validated ERPD
- The carbon pools and greenhouse gases to be accounted for as required by the Methodological Framework ER Program's Validated ERPD
- The REDD Country Participant's Forest Monitoring System as described in the ER Monitoring Report
- The national or centralized REDD+ Programs and Projects Data Management System

2.5 Materiality

Materiality is a concept that the individual or aggregation of errors and omissions could affect the GHG assertion and the decisions of the intended users. Materiality was used as part of the Verification and Sampling Plan and Audit Plan designs to determine the type of verification processes used by Aster Global to minimize the risk of not detecting a material misstatement. Both quantitative and qualitative materiality was considered as part of the verification. As specified in the Validation and Verification Guidelines (VVG) - (Section 8.5), the threshold for quantitative materiality is 1%.

The verification process based on the desk review found that there are not quantitative or qualitative material discrepancies affecting the GHG assertion or leading to overestimations of the reported GHG emissions and removals.

3. METHODOLOGY AND PLANNING

3.1 Verification team

Name	Role	Activities				
		Desk review	Site visit	Reporting	Supervision	Technical review
Janice McMahon	<ul style="list-style-type: none"> Project Manager/Planning/Team Coordination/QAQC 			X	X	
Mansfield Fisher	<ul style="list-style-type: none"> Team Leader, Lead Validator/Verifier, AFOLU Specialist/Desktop Review/Site Visit/Client Communications 	X	X	X	X	
Matthew Perkowski	<ul style="list-style-type: none"> Technical Expert, Forest Biometrician / Team Member 	X		X		
Taek Joo Kim	<ul style="list-style-type: none"> Technical Expert, Forest Biometrician/Team Member/Virtual Site Visit 	X		X		
Sandesh Shrestha	<ul style="list-style-type: none"> Remote Sensing and GIS Specialist/Team Member 	X		X		
Shawn McMahon	<ul style="list-style-type: none"> Lead Validator / Verifier, AFOLU Specialist / Technical Expert REDD+/ Desktop Review 	X		X		
Caitlin Sellers	<ul style="list-style-type: none"> Independent Peer Reviewer (Technical Reviewer) 					X
Natalie Hammer	<ul style="list-style-type: none"> Executive Services Administrator/ Resource Manager 				X	

Joao Faustino Da Costa	<ul style="list-style-type: none"> Translator/Virtual Site Visit/In-Person Site Visit 		X			
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3.2 Verification schedule

Verification Activity/Milestone	Content (Explanation)	Delivery Date
Kick Off Call/Opening Meeting	Kick-off call on the verification of Mozambique's ER Program ZILMP was conducted.	26 January 2022
VVB Initial Desk Review	Initial desk review to include preliminary review of documentation provided to inform our risk assessment and inputs into the Sampling Plan. If preliminary findings are discovered or documents are missing, Aster Global will notify FMT and the ER Program.	03 February 2022
Audit Plan submitted to FMT and Mozambique ER Program representatives	Audit Plan submitted for review and approval – note that based on ISO 14064 and 14065, the final audit plan must be signed by the ER Program Entity.	03 March 2022
Sampling Plan submitted to FMT and Mozambique ER Program representatives	Sampling Plan submitted for review and approval – note that based on ISO 14064 and 14065, the final sampling plan must be signed by the ER Program Entity.	07 February 2022
Aster Global starts desktop review – signed sampling plan received	VVB conducts desktop review and generates Findings as they proceed.	24 February 2022
1 st Calculation Walkthrough Call	The VVB met with all members of the MRV Unit to discuss aspects of the remote sensing analysis performed to collected activity data, remote sensing analysis as it relates to monitoring.	25 February 2022
2 nd Calculation Walkthrough Call	The VVB met with all members of the MRV Unit to discuss aspects of uncertainty quantification and ER quantification.	3 March 2022
Meeting to discuss site visit logistics	Multiple meetings were held to discuss site visit logistics to aid the VVB in developing a logistically efficient site visit plan.	Multiple meetings throughout February and March 2022
Aster Global Submits Preliminary Round 1 Findings	As a result of the delay in the site visit, the VVB submitted preliminary Round 1 Findings to the ER Program to ensure that the delay in the site visit did not result in significant delays for the review. This gave the ER Program time to develop	20 April 2022

	preliminary responses to findings from the desktop review.	
Aster Global Conducts in-country site visit (5 Days)	Details related to the site visit can be found in Section 3.5 of this Report.	May 16 - May 20, 2022
Aster Global Issues Round 1 Findings	Aster Global Issues Round 1 Findings.	May 24 2022
Mozambique ER Program representatives provide responses to Round 1 Findings and updated documents	Updated documentation, evidence and Findings responses provided to Aster Global	31 May 2022
Aster Global Completes Review of Round 1 Responses	Review of updated documentation, evidence, and finding responses provided to Aster Global.	17 June 2022
Aster Global Issues Round 2 Findings	Aster Global Issues Round 2 Findings.	17 June 2022
Mozambique ER Program representatives provide responses to Round 2 Findings and updated documents	Updated documentation, evidence and Findings responses provided to Aster Global.	20 June 2022
Aster Global Issues Round 3 Findings	Aster Global Issues Round 3 Findings.	28 June 2022
Mozambique ER Program representatives provide responses to Round 3 Findings and updated documents	Updated documentation, evidence and Findings responses provided to Aster Global.	04 July 2022
Aster Global drafts verification report and submits to peer reviewer	Aster Global prepares draft validation and verification plans using FCPF templates.	25 July 2022
Draft verification reports are updated as needed and provided to the FMT Program representatives for review	Aster Global makes updates to reports as needed after the Technical Reviewer is finished, and then drafts are submitted to FMT and ER Program representatives.	10 August 2022
Aster Global holds verification closing meeting	After all representatives have had a chance to review, Aster Global will hold the closing meeting to review comments/suggestions about the draft reports and discuss feedback about the overall process.	23 August 2022
Aster Global issues final verification report and statement (opinion)	ER Program Verification is complete.	23 August 2022

3.3 Methodology description

Desktop Review:

The desktop verification component included a full review of all relevant ER Program documentation/calculations received from the ER Program against the requirements and criterion of the FCPF Methodological Framework. The review focused on the ER Program Documents relative to the highest risk elements and complimented by interviews with program staff. ER Program details,

implementation status, data and parameters, and quantification of GHG emission reductions and removals were thoroughly examined. Key supporting documents were also reviewed. These included, but were not limited to, monitoring data [i.e., remote sensing/Geographic Information System (GIS) data, geospatial boundaries, maps and aerial images], Standard Operating Procedures (SOPs), biomass and carbon calculations for emission sources/sinks, and overall the results of the MRV (Monitoring, Reporting, and Verification) system.

Review of the program documentation and elements as part of the desktop review included, but was not limited to, assessment of the following aspects of the ER Program:

- Current conditions, for example the presence of deforestation and degradation, emissions factor adjustments, forest characteristics and reported biomass volume (above- and/or below-ground)
- Confirmed operational, data collection procedures and monitoring methods were implemented in accordance with the Standard Operating Procedures (SOPs) as they are written
- Reviewed all program and strata boundaries (where applied), both geospatially and physically demarcated
- Interviewed management team, including a series of interviews with in-country staff that support the mission of the ER Program
- Confirmed organizational structure and operation
- Confirmed data management, compilation, and storage
- Confirmed the information flows for collection, collation and reporting of the monitoring parameters
- Confirmed the quality control and quality assurance procedures are in place

Remote Sensing

The ER Program Entity utilized remote sensing tools, including a satellite and land monitoring system, to produce estimates of the reference level and to generate the activity data. Geospatial data forms the basis for biomass and deforestation accounting estimates across landscapes, and therefore program integrity depends on a robust remote sensing assessment. The scope of the remote sensing review included *inter alia* the following:

- Expert judgement evaluation of remote sensing methods and implementation results
- Data selection suitability review: assessment of the quality of acquired satellite data, including review of minimum standards for remotely sensed analysis
- Review of classification results from Collect Earth, including independent ground reference points as an indicator for accuracy
- Assessment of the monitoring approach, including data and methods
- Review of monitoring assumptions for inferences made using remotely sensed data and completeness checks on the analysis of drivers of emissions and removals
- Review of uncertainty propagation
- Selected independent data checks on analysis, including for example, accuracy assessment generation, classification results

Aster Global follows ISO 14064-3 and our management systems manual to apply a risk-based approach to the remote sensing review, concentrating on the likely sources of material misstatements. Aster Global is performing the assessment of the ZILMP compliance against the FCPF Methodological Framework requirements and associated guidelines (as applicable) with respect to remote sensing.

Based on the information and documentation received from the ER Program Entity, the verification team completed our Strategic Analysis and Risk Assessment (SARA). SARA is a risk assessment that includes strategic analysis to make sure the V/V Team have considered:

- Regulatory requirements
- GHG program requirements
- Industry factors
- And other non-technical risks (i.e., health and security issues)

The verification assessed the program's compliance with FCPF Methodological Framework Version 3, FCPF normative documents applicable to Validation and Verification, and all associated updates. The Verification Team assessed the Greenhouse Gas (GHG) emission reductions for the reporting period/verification period (01 January 2019 – 31 December 2020). The VVB assessed whether the ZILMP adequately addressed ER Program emissions and unplanned reductions in carbon stocks.

The objectives of the verification exercise were to evaluate the MR and assess:

- The extent to which methods and procedures, including monitoring procedures, have been implemented in accordance with the validated project description (Annex IV of the ER Monitoring Report). This includes ensuring conformance with the monitoring plan.
- The extent to which GHG Emission Reductions or Removals reported in the MR are materially accurate.

The criteria followed the verification guidance documents provided by FCPF. Unless otherwise indicated, the assessment was performed against the most recent version of the relevant FCPF guidance documents. In the verification process, there is a risk that potential errors, omissions, and misrepresentations will be found; therefore, a risk-based approach was used to guide the collection of appropriate and sufficient evidence to support a *reasonable* level of assurance. A risk-based approach means the verification team focused on items that might result in a material misstatement of the reported GHG assertion.

ER Program-specific Verification and Sampling Plan and Audit Plans were developed to guide the verification auditing process to ensure efficiency and effectiveness. The purpose of these documents was to present a risk assessment for determining the nature and extent of verification procedures necessary to ensure the risk of auditing error was reduced to a *reasonable* level. The Verification and Sampling Plan and Audit Plan methodologies were derived from all items in our verification process stated above. Specifically, these documents utilized the FCPF guidance documents and ISO 14064-3. Any modifications applied to the Verification and Sampling Plan and Audit Plan were made based upon the conditions observed for monitoring to detect the processes with highest risk of material discrepancy.

The desktop verification component included a full review of all ER Program documentation and calculations received from the ER Program Entity as described throughout 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 program requirements.

Initial review focused on the Monitoring Report (MR) and included an examination of the details, implementation status, data and parameters, and quantification of GHG emission reductions and removals. Along with a review of the MR, selected documentation was requested, provided, and subsequently reviewed for consistency, accuracy, and appropriateness with regard to FCPF Methodological Framework and associated requirements. Documents reviewed included, but were not limited to, property boundaries, financial analyses, application of the buffer guidelines, maps and aerial images, data from monitoring, biomass and carbon calculation spreadsheets, and responses to Major and/or Minor CARs. The process of verification involved three formal rounds of assessment by the verification team and resulted in a MR that was in conformance with FCPF rules.

Please see Appendix 2 for a complete list of documents received and reviewed by Aster Global.

3.5 REDD Country Visit

Aster Global has developed a hybrid approach for the site visit, which included both virtual and on-the-ground activities. The verification team developed a hybrid virtual and on-the-ground site visit that



allowed the verification team to reach a *reasonable* level of assurance regarding the ZILMP’s compliance with FCPF program documents (as described in Section 2.3 of this report).

Our Virtual Site Visit Procedures have been prepared in consideration of IAF Informative Document for Management of Extraordinary Events or Circumstances Affecting ABs, CABs and Certification Organizations (Issue 1, IAF ID 3: 2011, 08 November 2011), IAF Mandatory Document For The Use of Information and Communication Technology (ICT) For Auditing/Assessment Purposes (Issue 2, IAF MD 4:2018, 04 July 2018), and ANAB Accreditation Rule 9 (Issue Date 01 January 2014). This procedure is not implemented in the sole discretion of Aster Global but in coordination with each protocol/registry/program/standard and the guidance (if provided) they have provided during an extraordinary events or circumstances.

Definitions are provided to assist the reader.

Extraordinary Events or Circumstances: As defined by IAF ID 3:2011, a circumstance beyond the control of Aster Global or the clients, commonly referred to as an “act of God”. Examples include, but are not limited to, hurricanes, flooding, tsunamis, earthquakes, volcanoes, threats of terrorism, malicious computer hacking, geopolitical tension, pandemic diseases, and crippling labor strikes, or other man-made / natural disasters.

Examples of the use of ICT during audits/assessments may include but are not limited to:

- Meetings by means of teleconference facilities, including audio, video, and data sharing
- Audit/assessment of documents and records by means of remote access, either synchronously (in real time) or asynchronously (when applicable)
- Recording of information and evidence by means of still video, video, or audio recordings
- Providing visual/audio access to remote or potentially hazardous locations

Information and Communication Technology (ICT): As defined by IAF MD 4:2018, ICT is the use of technology for gathering, storing, retrieving, processing, analyzing, and transmitting information. It includes software and hardware such as smartphones, handheld devices, laptop computers, desktop computers, drones, video cameras, wearable technology, artificial intelligence, and others. The use of ICT may be appropriate for auditing/assessment both locally and remotely.

Virtual Site Visit: Conducting the virtual site visit using ICT without physically going onsite and still being able to reach a *reasonable* level of assurance, as defined by IAF MD 4:2018; virtual location where a client organization performs work or provides a service using an on-line environment, allowing persons irrespective of physical locations to execute processes.

The procedures of the ICT document were followed to determine a normalized verification process. The COVID-19 global pandemic has made it difficult to ensure the (or protect) safety and health of our employees, subcontractors, client’s staff, and ER Program participants. The audit team determined that multiple audit activities can be conducted in a remote manner, as the evidence needed to reach *reasonable* assurance is primarily digital in nature for this specific review. Regular coordination is handled via email and MS Teams, Skype or similar internet-enabled calling with the appropriate parties. An assessment of risk (on an ER Program basis) as to whether a virtual site visit can be conducted or if local subcontractors can be added to the verification team is captured by the SARA table embedded within the Audit Plan. The following subset of topics are assessed for Virtual Site Visit:

What is being assessed	Type of ICT Used	Techniques Required to Reach Reasonable Assurance
Monitored Data and Parameters	Hard copy and screen-share of calculation worksheets, remotely sensed data, live stream video teleconferencing (MS Teams, WebEx, Zoom,	Confirm appropriate default factors, parameters, formulas, and related inputs for calculations through independent data checks and professional judgement.

	related) walkthroughs, conference calls	Aster Global met with the ZILMP ER Program on February 23, 2022 to discuss the monitored parameters – specifically the monitoring system in place, remote sensed based activity data, and sampling designs.
Quantification of Emission Reductions	Hard copy and screen-share calculation worksheets, live stream video teleconferencing (MS Teams, WebEx, Zoom, related) walkthroughs, conference calls	Confirm appropriate default factors, parameters, formulas, and related inputs for calculations through independent data checks, professional judgement. Aster Global met with the ZILMP ER Program on February 23, 2022 to discuss the quantification of emission reductions.
Uncertainty	Calculation worksheets, remotely sensed data, live stream video teleconferencing (MS Teams, WebEx, Zoom, related) walkthroughs, conference calls	Confirm appropriate default factors, parameters, formulas, and related inputs for calculations through independent data checks, professional judgement. Aster Global met with the ZILMP ER Program on March 3, 2022 to discuss the estimation of uncertainty and to see the R-code run.
Remote Sensing	Calculation worksheets, remotely sensed data, live stream video teleconferencing (MS Teams, WebEx, Zoom, related) walkthroughs, conference calls	A walk-through may or may not be necessary, as this review is primarily desktop based and is a combination of qualitative/quantitative data. Aster Global met with the ZILMP ER Program on February 23, 2022 to discuss the remote sensing related to activity data in the reference level and monitoring data.
Process for QA/QC and Standard Operating Procedures (SOPs)	Live stream video teleconferencing (MS Teams, WebEx, Zoom, related) walkthroughs	Aster Global met with the ZILMP ER Program on February 23, 2022 and March 3, 2022 to discuss many different aspects of the ZILMP program. Throughout these meetings the validation team was able to see the process for the QA/QC of data and see if SOPs relating to data collection etc., were followed.

As previously discussed, the site visit also contained on-the-ground activities conducted by the verification team, which occurred from 16 – 20 May 2022. Prior to the site visit, the verification team worked with the ER Program to develop an on-the-ground site visit plan that would allow the verification team to assess the required elements but was also logistically feasible.

Date of Activity	What is being assessed	Techniques Required to Reach Reasonable Assurance
May 16, 2022	Reversal Risk Assessment/Activities Implemented to Mitigate and/or Minimize Potential Displacement/Accuracy of Information Presented in the ER Monitoring Report/Drivers of Deforestation	Interviews with contractor implementing the MOZFIP Program and FNDS located in Mocuba at the local FNDS office. Interviews with beneficiaries of the MOZFIP program, specifically in the EFF and agroforestry parts of the project. Interviews with FNDS staff located in Maputo were conducted throughout the site visit. Interviews with local NIRAS staff (extensionists) who provide

		direct assistance to project beneficiaries. A comprehensive list of Interviewees is contained in Appendix 3.
May 17, 2022	Reversal Risk Assessment/Activities Implemented to Mitigate and/or Minimize Potential Displacement/Accuracy of Information Presented in the ER Monitoring Report/Drivers of Deforestation	Interviews with beneficiaries of the MOZFIP program, specifically in the EFF and agroforestry parts of the project. Interviews with beneficiaries taking part of in the SUSTENTA project. Interviews with local NIRAS staff (extensionists) who provide direct assistance to project beneficiaries. Interviews with FNDS staff located in Maputo were conducted throughout the site visit. A comprehensive list of Interviewees is contained in Appendix 3.
May 18, 2022	Reversal Risk Assessment/Activities Implemented to Mitigate and/or Minimize Potential Displacement/Accuracy of Information Presented in the ER Monitoring Report/Drivers of Deforestation	Interviews with local farmers regarding their agriculture practices, assessment of driver of deforestation, collected on-the-ground data of deforestation that occurred during the reporting period, collected on-the-ground data at Activity Data points
May 19, 2022	Reversal Risk Assessment/Activities Implemented to Mitigate and/or Minimize Potential Displacement/Accuracy of Information Presented in the ER Monitoring Report/Drivers of Deforestation	Interviews with team from AQUA implementing the new strategy to address illegal harvesting.
May 20, 2022	Assessment of Centralized REDD+ Programs Data Management System/ Accuracy of Information Presented in the ER Monitoring Report/ Assessment of QA/QC procedures for classification of Activity Data/Assessment of SOPs related to Activity Data Collection	Interviews with staff from the MRV Unit of FNDS regarding SOPs related to Activity Data collection and assessment and QA/QC procedures Assessment of the implementation of SOPs related to Activity Data collection and QA/QC procedures Interviews with staff responsible for the implementation of the Benefit Sharing Plan and Safeguards management

4. SUMMARY OF FINDINGS

4.1 Implementation status of the ER Program and update on drivers

After review of all ER Program information, procedures, calculations, and supporting documentation, Aster Global is reasonably assured that the Monitoring Report (v4.3) submitted on 09 August 2022 and supporting documents are accurate and consistent with all aforementioned FCPF program documentation. Furthermore, Aster Global has confirmed that the ER Program has appropriately reported on the different strategies employed to mitigate and/or minimize potential displacement.

4.2 System for measurement, monitoring and reporting emissions and removals occurring within the monitoring period

4.2.1 Forest Monitoring System

After review of all information, procedures, calculations, and supporting documentation, Aster Global is reasonably assured that the monitoring conducted by ZILMP is accurate and consistent with all aforementioned FCPF program documentation. Additionally, Aster Global is reasonably assured that the Forest Monitoring System of the ER Program is functioning and will produce high quality data because it has in place the necessary controls to address relevant sources of potential errors, omissions, and misstatements in place.

During the course of the verification, Aster Global identified two Observations (OBS). Both Observations are included in Appendix 1 but are restated here for clarity. Aster Global found that there is one project currently under development titled “AGRI-SMART: SUSTAINING A RESILIENT AND INCLUSIVE DEVELOPMENT IN ZAMBEZIA,” of which the ER Program should be aware and appropriately track how this project is developed to ensure there is no potential for double-counting. The second Observation is related to how landscape context is considered by the different Operators during the Activity Data (AD) classification. Currently, there is no Standard Operating Procedure (SOP) for how Operators should consider landscape context. The verification team believes this opportunity for future technical improvement will mitigate the risk for future non-compliance.

4.2.2 Measurement, monitoring and reporting approach

After review of all information, procedures, calculations, and supporting documentation, Aster Global is reasonably assured that the equations and methods used for measuring, monitoring, and reporting are correct and consistent with the Reference Level. Additionally, Aster Global is reasonably assured that all equation parameters, monitored parameters, and fixed data are appropriately linked to the equations used for quantification and monitoring.

4.3 Fixed Data and Parameters

After review of all information, procedures, calculations, and supporting documentation, Aster Global is reasonably assured that the fixed data and parameters as reported in Annex 4 of the previous MR are applied consistently and in line with the Monitoring Report for this Reporting Period. As specified by FCPF, the ER-PD has not been reviewed during the course of the verification. Aster Global is reasonably assured that fixed data and parameters are made publicly available according to the Criterion 6 of the FCPF Methodological Framework, where the addresses for websites are provided in the Monitoring Report, e.g., <<https://bit.ly/GeoportalMRVOnline>>, FCPF website, and FNDS website.

4.4 Monitored Data and Parameters

Aster Global is reasonably assured that all parameters related to monitoring and described below have been reported in line with guidelines provided in the Monitoring Report template. Aster Global confirms

the information for each parameter is complete, and the stated parameters are free of error and material misstatements. Activity data is the only data and parameter subject to monitoring. The source of activity data is from Collect Earth platform, and activity data was exported as numerical data for analysis. Publicly available sources can be accessed at <https://bit.ly/GeoportalMRVOnline>. Assessment details are as follows:

Monitored Data and Parameters	$A(j,i)_{MP}$
Free of Material Misstatement (Yes/No)	Yes
Reported Appropriately (Yes/No)	Yes
Assessment Details	<p>This parameter represents the area converted from forest j to non-forest type i during the monitoring period. Activity data that form the basis of this monitored parameter are based on annual wall-to-wall deforestation maps. The verification team conducted an independent analysis of similar remote sensed data to confirm that the appropriate source data was consistent and appropriate. Additionally, the audit team was able to ensure that LULC classification was appropriate and followed the pre-defined classification system.</p> <p>The verification team conducted independent data checks for each step necessary for the quantification of this parameter. A sample of activity data was examined within the Collect Earth program using remotely sensed imagery to ensure accurate classification of LULC classification. Spatial analyses conducted in ESRI GIS confirmed the geographical boundary, ensuring that all activity data fell within the Accounting Area, stratum weights were correctly estimated, and the Accounting Area was computed correctly. Independent data checks were used to ensure that the quantification of the parameter was performed correctly. This included an independent review of the literature cited in reference of the applied equations. The uncertainty associated with this parameter was independently calculated after a thorough review of the quantification code. The calculation of uncertainty applied the methodology from Olofsson et al. (2014), and the verification team reviewed and confirmed that the quantification code was correct and ran without any error.</p> <p>The verification team reviewed the Monitoring Report and associated links to ensure that all data related to this parameter are made public.</p>

5. VERIFICATION OF GHG ASSERTION

5.1 ER Program Reference level for the Reporting Period

Year of monitoring/ reporting period <i>t</i>	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	5,253,267.99	-	-	-	5,253,267.99
2020	5,253,267.99	-	-	-	5,253,267.99
Total	10,506,535.98	-	-	-	10,506,535.98

5.2 ER program emissions by sources and removals by sinks

After review of all ER Program information, procedures, calculations, and supporting documentation, Aster Global is reasonably assured that the equations and methods used for measuring, monitoring, and reporting are correct and consistent with the Reference Level. Aster Global reviewed the entire estimation process to confirm that it complies with the FCPF Methodological Framework and FCPF normative documents. Aster Global was able to reconstruct the ER estimate with given Excel spreadsheets, R Program, and associated Activity Data. The formulae applied were correct to reproduce the final estimate of ERs. The reported ERs are materially accurate. Aster Global confirms that the ERs have been reported following a transparent and coherent step-by-step process that enabled the reconstruction of estimates.

Year of reporting period <i>t</i>	Emissions from deforestation (tCO ₂ -e/yr.)	If applicable, emissions from forest degradation (tCO ₂ -e/yr.) *	If applicable, removals by sinks (tCO ₂ -e/yr)	Net emissions and removals (tCO ₂ -e/yr)
2019	2,470,326.85	-	-	2,470,326.85
2020	7,160,631.00	-	-	7,160,631.00
Total	9,630,957.85	-	-	9,630,957.85

5.3 Uncertainty of Emission Reductions

5.3.1 Uncertainty analysis

Uncertainty was assessed as required by the FCPF Validation and Verification Guidelines. The verification team recalculated the random errors independently to confirm the accuracy of the reported precision,

reviewed assumptions and sources associated with parameters used in the quantification, and reviewed uncertainty of the emission reductions. For systematic errors, the accuracy assessment depended on the verification team's professional judgement which was primarily based on interviews during the site visit and online meetings and a review of supporting documentation. The verification team is reasonably assured that activity data were collected with a *reasonable* level of accuracy in line with SOPs, and related systematic errors were appropriately minimized. Details regarding the uncertainty calculation process is provided below in Section 4.3.2 "Uncertainty of the estimate of Emission Reductions."

5.3.2 Uncertainty of the estimate of Emission Reductions

After completion of independent data checks, review of the script for the Monte Carlo simulation, and a systematic review of inputs and assumptions, Aster Global confirms that the aggregate uncertainty of emissions reductions is 15%, and Aster Global confirmed that the correct uncertainty discount was applied correctly. The following steps were reviewed and confirmed, and the verification also confirmed that the quantification code ran without any error and that the results matched the Emission Reductions included in the Monitoring Report.

The uncertainty estimate for the ERs strictly follows the guidelines of Approach 2: Monte Carlo simulation from 2006 IPCC Volume 1 General Guidance and Reporting Chapter 3, except for the activity data, of which the distribution is based on re-sampling, i.e., non-parametric bootstrapping. Non-parametric bootstrapping for the activity data is applied to relax the limitations stemming from Monte Carlo simulation. Only one datum is linked to two of the land use change categories of the activity data generating negative values if Monte Carlo simulation is used to determine the distribution. While non-parametric bootstrapping is applied to generate random samples from the activity data, random samples were generated from Monte Carlo simulation for the emission factors. The distributions of emission factors were assumed to be normal or t distributions. If calculation of degrees of freedom was available, t-distribution was assumed.

To ensure the accuracy of uncertainty estimates for the ERs, non-parametric bootstrapping and Monte Carlo simulation were based on 10,000 random permutations. Additionally, generation of carbon fraction were based on 10,000 random permutations of triangular distribution, where Min = 0.44, Max = 0.49, Mode = 0.47, and sampling uncertainty was increased additionally by 10% for the emission factors. Finally, the distribution of ERs is determined by multiplying activity data, emission factors, and carbon fraction.

5.3.3 Sensitivity analysis and identification of areas of improvement of the MRV system

Sensitivity analysis was conducted by fixing the following parameters: activity data (Reference Level), activity data (monitoring), emission factors, and carbon fraction. These parameters were fixed to generate emission reductions, and the emission reductions were compared against the emission reductions from the Monte Carlo simulation. The widths of confidence intervals for each fixed parameter emission reduction and the emission reduction from Monte Carlo simulation were compared. Fixing activity data (Reference Level) appeared to have the highest reduction of confidential interval, meaning that a large portion of the emission reduction uncertainty is explained by the activity data (Reference Level) uncertainty.

The verification team reviewed and confirmed that above-mentioned elements related to the sensitivity analysis were all addressed in the provided quantification code. The verification also confirmed that the quantification code ran without any error and the results matched the sensitivity analysis included in the MR. Therefore, Aster Global is reasonably assured that the application of the sensitivity analysis was performed correctly.

5.4 Transfer of Title to ERs

5.4.1 Ability to transfer title

As stated in Section 6 of the Monitoring Report, the program has not identified the existence of unclear or contested title to the ERs during this reporting period.

5.4.2 Program and Projects Data Management System

After review of all information, procedures, calculations, and supporting documentation, Aster Global confirms that ZILMP has a well-documented Data Management System in place, which includes mechanisms to avoid double-counting. Additionally, Aster Global confirms Standard Operating Procedures are in place and comply with the FCPF Methodological Framework; however, SOPs are still being fully developed.

Importantly, the verification team issued 1 minor Corrective Action Request related to the Program and Projects Data Management System that will need to be addressed at future verifications. During the course of the verification, the ZILMP provided two documents in draft form titled *Terms of Reference for the REDD+ Programs and Projects Registry and Manual of Procedures for the Licensing of REDD+ Projects*. Because the documents have not been finalized and are only drafts, the audit team reached out to the FCPF Secretariat to determine whether draft documents are sufficient to demonstrate compliance with Criterion 37.4. Guidance from FCPF indicated that these draft documents are sufficient to meet criteria 37.4, and no independent audit is necessary but indicated an mCAR should be raised to highlight this issue for future verifications. Specifically, finalized administrative procedures should be defined for the operations of the national REDD+ Program and Projects Data Management System prior to the next verification.

5.4.3 Double counted ERs

After a thorough review of the documentation and an independent search of numerous registries, Aster Global is reasonably assured that 0 ERs have been double-counted or compensated more than once.

5.5 Reversals

5.5.1 The occurrence of major events or changes in ER Program circumstances that might have led to Reversals during the Reporting Period compared to the previous Reporting Period(s)

This section is not applicable, as there have been no reversals.

5.5.2 Quantification of Reversals during the Reporting Period

This section is not applicable, as there have been no reversals.

5.5.3 Reversal Risk Assessment and Buffer ERs

Risk Factor	Risk indicators – Assessment by VVB	Resulting reversal risk set-aside percentageunc
Default risk	N/A	10%
Lack of broad and sustained stakeholder support	<i>The maximum risk set-aside percentage is taken for this category in line with the principle of conservativeness.</i>	10%

Lack of institutional capacities and/or ineffective vertical/cross sectorial coordination	<i>The verification team assessed the institutional capacities and cross sectorial coordination of the ER Program. The verification team determined that a medium risk rating was appropriate through a review of the ER Program documentation and supporting documentation, interviews with agencies that coordinate with the ER Program, and interviews with the ER Program regarding institutional capacities and vertical/cross sectorial coordination.</i>	5%
Lack of long-term effectiveness in addressing underlying drivers	<i>The maximum risk set-aside percentage is taken for this category in line with the principle of conservativeness.</i>	5%
Exposure and vulnerability to natural disturbances	<i>The maximum risk set-aside percentage is taken for this category in line with the principle of conservativeness.</i>	5%
	Total reversal risk set-aside percentage	35%
	Total reversal risk set-aside percentage from ER-PD or previous monitoring report (whichever is more recent)	35%

5.6 Calculation of emission reductions

		Total
A	Reference Level (tCO₂-e) (Section 5.1)	10,506,535
B	Net emissions and removals under the ER Program (tCO₂-e) (Section 5.2)	9,630,957
C	Emission Reductions during Reporting Period (tCO₂-e) (A-B)	875,578
D	If applicable, number of Emission Reductions from reducing forest degradation that have been estimated using proxy-based estimation approaches (use zero if not applicable)	0
E	Number of Emission Reductions estimated using measurement approaches (C-D)	875,578
F	Percentage of ERs (A) for which the ability to transfer Title to ERs is clear or uncontested (Section 5.4.1)	100%
G	ERs for which the ability to transfer Title to ERs is clear or uncontested that are sold, assigned or otherwise used by any other entity for sale, public relations, compliance or any other purpose (Section 5.4.3)	0

		Total
H	Total ERs (D+E)*F-G	875,578
I	Conservativeness Factor to reflect the level of uncertainty from non-proxy based approaches associated with the estimation of ERs during the Crediting Period (Section 5.3.2)	0.15
J	Emission Reductions allocated to the Uncertainty Buffer (0.15*D/C*H)+(I*E/C*H)	131,336
K	Total reversal risk set-aside percentage applied to the ER program (Section 5.5)	0.35
L	Emission Reductions allocated to the Reversal Buffer (H-J)*(K-5%)	223,272
M	Emission Reductions allocated to the Pooled Reversal Buffer (H-J)*5%	37,212
N	Number of FCPF ERs (H-J-L-M)	483,758

6. NON-COMPLIANCES AND OBSERVATIONS

During the verification process, there was a risk that potential errors, omissions, and misrepresentations would be found. The actions taken when errors, omissions, and misrepresentations were found included notifying the client of the issues identified and expanding our review/sample to the extent that satisfied the Team Leader's professional judgment.

This verification involved four (4) formal rounds of assessment by the verification team and resulted in a Monitoring Report that is in conformance with FCPF rules. Where findings were noted by the verification team, the ER Program Entity implemented corrective actions by amending the MR and supporting documentation/calculations and providing written clarification responses. Types of findings were characterized in the following manner:

Major Correction Action Requests (MCARs) were, in general, issued as a response to material discrepancies when:

- 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;
- underlying assumptions used to develop the reported estimates are not supported by data;
- material errors, omissions or misstatements have been made in applying assumptions, in data or calculations;
- non-compliance with Verification criteria;
- the REDD+ Country Participant has failed to implement or made inadequate progress with the mCARs from the previous verifications;

Minor Correction Action Requests (mCARs) were, in general, issued when:

- 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;

- non-material errors, omissions or misstatements have been made in applying assumptions, in data or calculations;

Observations (OBS) were issued when:

- 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;
- the VVB wishes to identify an area of the Forest Monitoring System that requires attention and/or adjustment in future monitoring and reporting.

During the course of the verification, 22 MCARS, 2 mCARs, and 2 Observations were identified. All MCARs were satisfactorily addressed by the ER Program Entity. These findings provided necessary clarity to ensure the ER Program adhered to the requirements of the FCPF for GHG programs. For a complete list of all findings and their resolutions, please refer to Appendix 1.

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

Item Number	1
Forest Carbon Partnership Facility (FCPF) Carbon Fund	5 UNCERTAINTY OF THE ESTIMATE OF EMISSION REDUCTIONS
ER Monitoring Report (ER-MR)	
Section/Criterion	
Forest Carbon Partnership Facility (FCPF) Carbon Fund	5 UNCERTAINTY OF THE ESTIMATE OF EMISSION REDUCTIONS
ER Monitoring Report (ER-MR)	
Requirement	
Requirement Met (Y, N or Pending)	Y
Evidence Used to Assess (Location in PD, MR or Supporting Documents)	MR
Aster Global Findings Round 1	The audit team reviewed the MR and found that in Section 5 there appear to be subsection numbers missing for a few of the sections.
Round 1 MCAR/mCAR/OBS	MCAR: Please update the MR to conform with the MR Template requirements.
Round 1 Response from Project Proponent (27/05/2022)	The MR has been updated (See version 4 of 2019/20 MR).
Aster Global Findings Round 2	The VVB reviewed the updated MR and confirmed the updates. This finding is closed.

Item Number	2
Carbon Methodological	Indicator 6.1: The following methodological steps are made publicly available:

Framework Version 3, April 2020	
Section/Criterion	
Carbon Methodological Framework Version 3, April 2020	- Choice of emission factors and description of their development;
Requirement	
Requirement Met (Y, N or Pending)	Y
Evidence Used to Assess (Location in PD, MR or Supporting Documents	BIOMASS, ZILMP_Emissions_Calculations_MR_(2019).xlsx/ ZILMP_Emissions_Calculations_MR_(2020).xlsx
Aster Global Findings Round 1	The audit team noted the update of Belowground Biomass Parameters in "BIOMASS, ZILMP_Emissions_Calculations_MR_(2019).xlsx/ ZILMP_Emissions_Calculations_MR_(2020).xlsx". However, it is unclear where Parameters in Rows 26-30 in "BIOMASS, ZILMP_Emissions_Calculations_MR_(2019).xlsx/ ZILMP_Emissions_Calculations_MR_(2020).xlsx" were applied in the overall calculation.
Round 1 MCAR/mCAR/OBS	MCAR: Please clarify where Parameters in Rows 26-30 in "BIOMASS, ZILMP_Emissions_Calculations_MR_(2019).xlsx/ ZILMP_Emissions_Calculations_MR_(2020).xlsx" were applied in the overall calculation.
Round 1 Response from Project Proponent (27/05/2022)	The rows 26 – 30 provide possible default root-to-shoot ratios (all vegetation) applicable for ZILMP area when there isn't more specific information to develop local/country-specific ratios. However, only the value of parameter described in line 29 is applied in the overall calculation i.e., the value in cell "C29" is used to estimate the BGB present on grassland, after conversion from forest land in cells "B37", "B43" and "B49".
Aster Global Findings Round 2	The audit team confirmed that "the value in cell C29 is used to estimate the BGB present on grassland, after conversion from forest land in cells B37, B43 and B49". This item is closed.

Item Number	3
Carbon Methodological	Indicator 6.1: The following methodological steps are made publicly available:

<p>Framework Version 3, April 2020</p> <p>Section/Criterion</p>	
<p>Carbon Methodological Framework Version 3, April 2020</p> <p>Requirement</p>	<p>- Estimation of accuracy, precision, and/or confidence level, as applicable</p>
<p>Requirement Met (Y, N or Pending)</p>	<p>Y</p>
<p>Evidence Used to Assess (Location in PD, MR or Supporting Documents</p>	<p>ZILMP_AD_Calculations_MR_(2019), ZILMP_AD_Calculations_MR_(2020), 2019_Reference Points, 2020_Reference Points</p>
<p>Aster Global Findings Round 1</p>	<p>1. The total number of collect earth reference points in “2019_Reference Points” and “2020_Reference Points” does not match with total plots in “ZILMP_AD_Calculations_MR_(2019)” and “ZILMP_AD_Calculations_MR_(2020)”. It is unclear why collect earth points do not match with the total sampling units in the AD workbook.</p> <p>2. Additionally, it is unclear to the audit team what the Table_confidence_classification workbook is used for.</p> <p>3. The audit team reviewed the ZILMP_2019_2020_Monitoring Period workbook and found that the strata for the 2020 data do not match the strata for each AD data point in the ZILMP_Emissions_Calculations_MR_(2020) workbook. It is unclear to the audit team why this occurs and if this accounted for appropriately in the quantification R script.</p>
<p>Round 1 MCAR/mCAR/OB S</p>	<p>MCAR: Please clarify in-line with the finding and if necessary update all downstream calculations and reporting documents.</p>
<p>Round 1 Response from Project Proponent (27/05/2022)</p>	<p>1. We forgot to update these files into dropbox folder after the request to add additional reference points in the stable strata. Please find the updated files which match with total plots in “2019_Reference Points” and “2020_Reference Points” via this link: https://www.dropbox.com/sh/ovw11g0uds6i05u/AAArdr3iOYIcuRx90HTdnh3va?dl=0.</p> <p>2. The table confidence_classification was used to another purpose, not for this monitoring report. So we removed this file from dropbox folder.</p>

	<p>3. 3. For the case of assessing emissions of a single year’s emission reductions (2019 or 2020), map strata use cofications of 1 = high probability deforestation, 2 = buffer, 3 = low probability deforestation, 4 = stable forest and 5 = stable non-forest. However, when combined into a combined emissions estimate for 2019 & 2020 (as with the MC simulation) it’s important to distinguish between the strata representing each year. To achieve this simply, codifications 6 - 10 are used in place of 1 - 5 (where 1 = 6 = high probability deforestation 2019/2020, 2 = 7 = buffer 2019/2020, etc.). AD estimates were then generated using the resulting 10 strata covering two years. Combining the strata from each map would not be appropriate, as each was used to draw an independent sample with a differing sample intensity.</p>
<p>Aster Global Findings Round 2</p>	<p>1. The audit team confirmed that the updated files match with total plots in “2019_Reference Points” and “2020_Reference Points”. This item is addressed and closed.</p> <p>2. The audit team confirmed that the table of confidence was not used in this MR. This item is addressed and closed.</p> <p>3. The audit team confirmed that the codification is done correctly to generate AD estimates covering two years (2019 and 2020). This item is addressed and closed.</p>

Item Number	4
<p>Carbon Methodological Framework Version 3, April 2020</p> <p>Section/Criterion</p>	<p>Indicator 6.2: For the following spatial information, maps and/or synthesized data are displayed publicly, and reasonable efforts are made to explain how these were derived from the underlying spatial and other data, and to make key data sets or analyses publicly available:</p>
<p>Carbon Methodological Framework Version 3, April 2020</p> <p>Requirement</p>	<p>- Accounting Area</p>
<p>Requirement Met (Y, N or Pending)</p>	<p>Y</p>
<p>Evidence Used to Assess (Location in PD, MR or Supporting Documents</p>	<p>ZILMP_AD_Calculations_MR_(2019), ZILMP_AD_Calculations_MR_(2020), ZILMP_lulucf_2019.tif, ZILMP_lulucf_2020.tif, ZILMP_limits_moz_admin_2_ine_20190607.shp</p>

<p>Aster Global Findings Round 1</p>	<p>1. In “ZILMP_AD_Calculations_MR(2019)” and “ZILMP_AD_Calculations_MR(2020)” tab “ACTIVITY DATA (AD)” Cell B10, the total stratum area reported is 5,310,265.16 ha. In review of the layer provided “ZILMP_lulucf_2019.tif” the area obtained is 5,309,241.38 ha. The total area of ZILMP extracted from “ZILMP_limits_moz_admin_2_ine_20190607.shp” is 5,309,198.52 ha. The total area obtained from our analysis differs by 42.8 ha from the “ZILMP_limits_moz_admin_2_ine_20190607.shp” , however, the difference is >1000 ha between the reported total area in the workbook (Cell B10) and total area obtained from “ZILMP_limits_moz_admin_2_ine_20190607.shp” . It is unclear to the VVB why these discrepancies occur.</p> <p>2. Additionally, the values of area obtained (source:ZILMP_lulucf_2019.tif, ZILMP_lulucf_2020.tif) for stratum [1,2,3,4,5] do not match with the values reported in the workbook. It is unclear to the VVB why these discrepancies occur.</p> <p>3. It is unclear to the audit team what the column AK in the Data tab of the ZILMP_Emissions_Calculations_MR_(2019).xlsx.</p>
<p>Round 1 MCAR/mCAR/OBS</p>	<p>MCAR: Please clarify in-line with the finding and if necessary update all downstream calculations and reporting documents.</p>
<p>Round 1 Response from Project Proponent (27/05/2022)</p>	<p>1. The total area of ZILMP extracted from “ZILMP_limits_moz_admin_2_ine_20190607.shp” is calculated based on Lambert Azimuthal Equal-Area projection, that's why the total area reported is 5,310,265.16 ha.</p> <p>2. The total area of the classified images (“ZILMP_lulucf_2019.tif” and “ZILMP_lulucf_2020.tif”) doesn’t match with the total area extracted from “ZILMP_limits_moz_admin_2_ine_20190607.shp”. For this reason, an area adjustment for strata is made based on percentage or proportion of each stratum in relation to the total area of the classified image, which is multiplied by the total area extracted from “ZILMP_limits_moz_admin_2_ine_20190607.shp” to obtain the final area for stratum.</p> <p>The strata areas used for calculating the proportions was generated in Google Earth Engine, applying Pixel Area method. The full implementation can be accessed via this link: https://code.earthengine.google.com/b916267dfda2ccd2f5ceeaaa674e84e3. However, currently, we noticed that the “ee.Image.pixelArea()” function in the script is generating values of strata areas that differ from the previous estimates (the values weren’t recorded at the time), therefore the audit team will notice that there is a slight difference of proportions with those described in “ZILMP_AD_Calculations_MR(2019)” and “ZILMP_AD_Calculations_MR(2020)” tab “ACTIVITY DATA (AD)” in rows C5 – C9.</p> <p>3. The column “AK” refers to the percentage of the cover non-tree crops i.e., annual crops. However, we noted that there was a mistake in the column header label between the columns “AH” and “AO”, which should be labelled as “elementsnon_tree_shrub_crops_element_cover_label”. On the other hand, the</p>

	columns “AH – AK” refer to non-tree crops and the columns “AL – AO” refer to tree crops i.e., perennial crops.
Aster Global Findings Round 2	<p>1. Thank you for your explanation. The area extracted from “ZILMP_limits_moz_admin_2_ine_20190607.shp” based on Lambert Azimuthal Equal-Area projection by the audit team is different than what is reported in the response.</p> <p>2. Thank you for your explanation. The audit reviewed the code in Google Earth Engine and calculated the strata area. However, as explained in the response, the area obtained for each strata area different than the reported values in the workbook.</p> <p>3. Thank you for the response. The audit team confirmed column AK and confirmed the item is addressed.</p>
Round 2 MCAR/mCAR/OBS	MCAR: Please provide ZILMP boundary shapefile based on Lambert Azimuthal Equal-Area projection used by the team that matches the area with "5,310,265.16 ha.".
Round 2 Response from Project Proponent (20/06/2022)	MCAR: ZILMP boundary shapefile based on Lambert Azimuthal is available through this link: https://www.dropbox.com/sh/7ygggd0s64j9s6b/AABBEcf_19r89Jpm4fs1ACUFa?dl=0
Aster Global Findings Round 3	The audit team reviewed ZILMP boundary shapefile provided through the link: https://www.dropbox.com/sh/7ygggd0s64j9s6b/AABBEcf_19r89Jpm4fs1ACUFa?dl=0 and confirmed the project area (5,310,265.16 ha). This finding is addressed and closed.

Item Number	5
Carbon Methodological Framework Version 3, April 2020	Indicator 6.2: For the following spatial information, maps and/or synthesized data are displayed publicly, and reasonable efforts are made to explain how these were derived from the underlying spatial and other data, and to make key data sets or analyses publicly available:
Section/Criterion	
Carbon Methodological Framework	- Activity data (e.g., forest-cover change or transitions between forest categories) (1)

<p>Version 3, April 2020</p> <p>Requirement</p>	
<p>Requirement Met (Y, N or Pending)</p>	<p>Y</p>
<p>Evidence Used to Assess (Location in PD, MR or Supporting Documents)</p>	<p>ZILMP_AD_Calculations_MR_(2019), ZILMP_AD_Calculations_MR_(2020)</p>
<p>Aster Global Findings Round 1</p>	<p>1. In “ZILMP_AD_Calculations_MR_(2019)”, Plot ID: 1083, “elementstrees_element_cover_label”= 20-29%, however, classified as F>F.</p> <p>1.1. In “ZILMP_AD_Calculations_MR_(2020)”, Plot ID: 473, 149166 , “elementstrees_element_cover_label”= 30-39%, however, classified as P>P.</p> <p>1.2. In “ZILMP_AD_Calculations_MR_(2020)”, Plot ID: 148835, “elementstrees_element_cover_label”= 20-29%, however, classified as F>F.</p> <p>2. It is unclear to the audit team which QA/QC procedures are in place to prevent the errors found in Finding 1.</p> <p>3. In ZILMP_AD_Calculations_MR(2019), ZILMP_AD_Calculations_MR(2020), why Column “image_current_date_year” = 2019, “image_current_date_month” = 11 and 12 and Column “image_current_date_year” = 2020, “image_current_date_month” = 11 and 12 are not within the range of the second composite period from January to May for 2020 and 2021 years, respectively. Similarly, why “image_former_date_month” does not fall within Jan-May window. It is unclear how it is appropriate to compare two different time periods to perform the accuracy of the changes.</p> <p>3.1. In ZILMP_AD_Calculations_MR(2019), It is unclear why “image_former_date_day” of plot 68 i.e., 21 is later than “image_current_date_day” i.e., 6. Also, “image_former_date_month” and “image_current_date_month” both have same month i.e., 12. (Plot IDs: 68, 96, 368, 419, 110, 139). How images from same month are appropriate in differentiating the LULC changes?? Additionally Plot Id 1083 has similar former and current date i.e., 2019/01/10.</p> <p>3.2 In ZILMP_AD_Calculations_MR(2020), Plot Id 440 has similar former and current date i.e., 2020/12/26. It is unclear how this is appropriate.</p>

	<p>4. It is unclear to the audit team how the different forest types are specified in the Activity Data.</p> <p>5. The VVB noted that only 900 AD points are specified for this monitoring period but there were approximately 1500 points used in the previous monitoring period. It is unclear to the audit team why less AD points were used in this monitoring period and how this is appropriate.</p> <p>6. The VVB reviewed the classification of the activity data and is unclear how the current LULC change allocated to Activity Data ID# 1, 32, 83, 381 for 2019 is appropriate. Similarly, it is unclear how the current LULC change allocated to Activity Data ID# 32, 42, 372, 140 for 2020 is appropriate.</p> <p>7. The audit team was unable to locate QA/QC results for the classification of the Activity Data.</p>
<p>Round 1 MCAR/mCA R/OBS</p>	<p>MCAR1: Please clarify in-line with the finding and if necessary update all downstream calculations and reporting documents.</p> <p>MCAR2: Please clarify in line with the finding and additionally please provide supporting documents to support the QA/QC procedures in place.</p> <p>MCAR3: Please provide a detailed explanation about the different image dates in the Activity Data and clarify how they are consistent with what is described in the MR.</p> <p>MCAR4: Please clarify for the audit team how different forest types are determined using the RS data. Additionally, please provide a few examples to the audit team clearly demonstrating how the forest types are allocated the activity data.</p> <p>MCAR5: Please clarify in line with Finding 5.</p> <p>MCAR6: Please clarify in line with Finding 6 and clearly demonstrate how the current classification is appropriate and correct. If needed, update the classification, all downstream calculations, and reporting documents.</p> <p>MCAR7: Please provide all results of the QA/QC analysis in the classification of the Activity Data.</p>
<p>Round 1 Response from Project Proponent (27/05/2022)</p>	<p>1. There was misclassification. This reference point should be classified as cropland remaining cropland (C>C).</p> <p>1.1. ID 473: There was a tree cover quantification error, because there are 28% tree cover. For this reason, it is classified as grassland remaining grassland (P>P).</p> <p>ID 149166: There was misclassification, because there are 40% tree cover. So, this reference point should be classified as forest land remaining forest land (F>F).</p> <p>1.2. ID 148835: There was a tree cover quantification error, because there are 40% tree cover. For this reason, it is classified as forest land remaining forest land (F>F).</p> <p>2. There are there main types of quality checks during the data collection that are used for quality management, namely:</p>

	<p>a) Self-reviewing results consists of operator quickly reviewing their assigned reference points during the data collection. This allows operator to control for the quality of their reference points and correct any obvious errors he find. After assessing all the reference points, operator can also self-review reference points from the beginning of the assessment to make sure he is consistent with how he classified reference points at the end of the assessment, and are in line with the established procedures.</p> <p>b) Logical data checks use the data collected for each reference point to ensure the classification for the plot is logical and possible. Reference points that have illogical combinations are rechecked. This type check is performed using the SAIKU extension of Collect Earth tool and the procedures are described in the technical document “Passo a Passo para o Levantamento e Estimativa de Emissões do Sector de Uso da Terra, Mudanças do Uso da Terra e Florestas”, section 4.10.</p> <p>c) Cold checks use all reference points interpreted as deforestation and 20% of the remaining reference points unidentified as deforestation by the operator. The reference points are reviewed by two independent supervisors that after independent checks they make the comparison between the two independent checks and the consensual compilation of a single comment for each reference points. If there are incorrectly classified reference points by the operator, they are submitted to the operator for the correction. However, if 20% or more reference points interpreted as no deforestation are misclassified, the operator should review and correct all reference points of the database.</p> <p>However, once the cold checks are based on sampling, it is likely that some inconsistency of some reference points escape out of our sight. On the other hand, the cold checks are carried out to ensure that these inconsistencies don’t affect more than 20% of reference points of the database as described in the technical document “Passo a Passo para o Levantamento e Estimativa de Emissões do Sector de Uso da Terra, Mudanças do Uso da Terra e Florestas”, subsection 4.16.1, paragraph (d).</p> <p>3. It’s correct that image dates used for map production (January - May for each year) differ from those considered as part of the Collect Earth survey, where changes are strictly limited to the calendar year (January - December). However, we don’t expect this mis-match to have an impact on activity data estimates due to the characteristic timing of deforestation in ZILMP, and because the maps are used for stratification rather than directly for area estimation purposes.</p> <p>The annual maps of deforestation use data from the wet season (January - May) for two reasons: (i) detection of deforestation is improved because the contrast between forest/non-forest is greatest in the wet season where leaves are out and there are few fires, and (ii) this period coincides with a period of relative stability where deforestation is rare. The downside of using data from the wet season is that cloudy conditions prevail, requiring the use of all available wet season data to ensure a cloud-free composite every year (as opposed to the ideal case of just using data from January).</p> <p>Forest cover is characteristically stable over the period January - May, associated with the agricultural calendar. Deforestation in ZILMP is dominated by clearance of fields for agricultural land, an activity which occurs in the dry season (May – October) as the team audit can see from this image:</p>
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	<p>https://www.dropbox.com/s/crj17moi04urglt/deforestation%20by%20month.png?dl=0</p> <p>Because this time-frame for deforestation is common to both the maps and reference data, the mis-match in dates does not make any difference to whether change events are captured.</p> <p>In the rare case that deforestation occurs in the January - May period, there does exist a potential for over- or under-estimating deforestation. In either case, the sample-based area estimation approach used in ZILMP can be expected to correct for this. Where the map over-estimates deforestation, the proportion of sample points recording deforestation will be lower (due to changes being observed to occur outside the calendar year). Were the map to under-estimate deforestation by missing wet-season changes, this would be expected to manifest in visual assessment of maps and in errors of omission from the deforestation class detected in the stable map classes.</p> <p>3.1. ID 68: There was an error during the registration.</p> <p>ID 96: The change happened in 6 December 2019 (Image_former), and the most recent current image available is of 21 December 2019.</p> <p>ID 368: The change happened in 6 December 2019 (Image_former). And the most recent current image available is of 21 December 2019.</p> <p>ID 419: The change happened in 6 December 2019 (Image_former). And the most recent current image available is of 21 December 2019.</p> <p>ID 110: The change happened in 4 December 2019 (Image_former). And the most recent current image available is of 19 December 2019.</p> <p>ID: 139: The change happened in 4 December 2019 (Image_former). And the most recent current image available is of 06 December 2019.</p> <p>3.2. ID 440: There was an error during the registration of the former date.</p> <p>4. The different forest types are specified in the Activity Data using the SOP (to access LULC: "Passo a Passo para o Levantamento e Estimativa de Emissões do Sector de Uso da Terra, Mudanças do Uso da Terra e Florestas". In case of Zambeze is known that exist two type of forest (Semi decidua forest: most miombo) and evergreen forest (normally occurs along the rivers, mountains and coastal zone). On other hand, using the remote sensing data (Sentinel: TOA reflectance image and NDVI) using the charts is possible to see if is semi decidua forest or evergreen forest. More details regarding to this issue please see the "Passo a Passo". Additionally all operators and supervisors have knowledge and background of forest type in Mozambique.</p> <p>5. For the current monitoring period (2019 – 2020) there are 900 AD points because was fixed 100 points for the deforestation classes and 300 points for each class of stable forest to avoid the omission of deforestation. In the previous monitoring period (2018) was added more points for deforestation classes because of the post stratification. The number of points for each class was discussed by MRV Unit, WB and a international expert (Steve Stehman)(see the discussion notes here:</p>
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	<p>https://www.dropbox.com/s/cdlrqyegz42al02/Stehman_Mozambique_Sampling_Est_MRV_Responses_3_20_2020.docx?dl=0</p> <p>6. ID 1, 32, 83: We accessed these points and we realised that were well classified. if it's misunderstanding from our side, please could you clarify these findings.</p> <p>ID 381: There was misclassification. This reference point should be classified as grassland remaining grassland (P>P).</p> <p>ID 32, 42, 372: We accessed these points and we realised that were well classified. if it's misunderstanding from our side, we would like to ask the audit team to clarify this finding.</p> <p>ID 140: There was misclassification. This reference point should be classified as forest land remaining forest land (F>F).</p> <p>7. Please see the QAQC results in dropbox folder using this link: https://www.dropbox.com/sh/pf8gf4rhewsnxf9/AACqA9g_GfbGiJmEesvO8YNSa?dl=0</p>
<p>Aster Global Findings Round 2</p>	<p>1. Thank you for your response and addressing the errors issued as findings by the audit team. This item is addressed and closed.</p> <p>2. The audit team is reasonably assured that this addresses the findings.</p> <p>3. Thank you for your response and addressing the errors issued as findings by the audit team. Upon reviewing the response, the audit team is reasonably assured that this item is addressed and closed.</p> <p>4. Thank you for your response. The audit team is reasonably assured that the response addresses the findings. This item is addressed and closed.</p> <p>5. Upon reviewing the response, the audit team is reasonably assured that the finding is addressed and closed.</p> <p>6. Thank you for your response and addressing the errors issued as findings by the audit team. Upon reviewing the points again, the audit team is reasonably assured and in agreement with the PP regarding the classification. The audit team also reviewed the Sampling document and confirmed that this item is addressed and closed.</p> <p>7. Thank you for your response. The audit team reviewed the QA/QC workbook for the classification of activity data and confirm this item and addressed and closed.</p>
<p>Round 2 MCAR/mCA R/OBS</p>	<p>MCAR: Please provide the updated quantification workbooks for this monitoring period (2019 and 2020) and ensure that the ER-MR is updated to reflect all changes to the quantification.</p>
<p>Round 1 Response from Project Proponent</p>	<p>MCAR: Done. The workbooks was updated. See into the dropbox folder</p>

(20/06/2022)	
Aster Global Findings Round 3	The audit team reviewed the workbook provided in the dropbox and confirmed that the workbook has been updated correctly. This finding is addressed and closed.

Item Number	6
Carbon Methodological Framework Version 3, April 2020 Section/Criterion	3.2 Uncertainties
Carbon Methodological Framework Version 3, April 2020 Requirement	ER Program data and methods are consistent with IPCC Tier 2, and ER Programs should, by using conservative assumptions and quantitative assessment of uncertainties, be incentivized to reduce uncertainties associated with all aspects of accounting, inter alia, reference levels, monitoring, and reporting (i.e., such that reductions in uncertainty are rewarded by a corresponding upward Adjustment in ER volume)."
Requirement Met (Y, N or Pending)	Y
Evidence Used to Assess (Location in PD, MR or Supporting Documents)	Sensitivity analysis and identification of areas of improvement of MRV system, ZILMP ER Monitoring Report - 2020 v3.2_final.docx
Aster Global Findings Round 1	<p>The VVB confirmed that IPCC Tier 2 methods are primarily used. However, in the quantification of Emission Factors, there are some IPCC Tier 1 values used which were previously validated and are relied upon because there is no Tier 2 Data available. Sensitivity analysis was conducted to quantify the major contributor to uncertainty in estimating emission reductions. The Major contributor was Activity Data for the reference period, followed by the Activity Data for the monitoring period.</p> <p>Considering the high level of uncertainty associated with the AD from the reference period, the VVB is requesting to information to better understand how the ER Program is seeking to reduce uncertainty for future refinements of the Reference Level.</p>

Round 1 MCAR/mCAR/OBS	MCAR: Please clarify if the ER Program is taking steps to decrease uncertainty in the Activity Data for future refinements of the reference period.
Round 1 Response from Project Proponent (27/05/2022)	<p>The Reference Level for Mozambique will be updated in 2024 (2013-2023). Mozambique is willing and able to update the ZILMP Reference Level before that. The expected improvements would come from post-stratification of deforestation and application of improved QAQC protocols.</p> <p>However, according to FCPF guidelines, technical corrections to the Reference Level can only be done before first validation (https://forestcarbonpartnership.org/system/files/documents/FMT+Note+2020-4+-+Revision+of+Guidelines+on+technical+corrections.pdf). Since the ER Program has already been subjected to validation, our understanding is that no further changes or improvements can be made to the reference level.</p>
Aster Global Findings Round 2	Thank you for the clarifications and additional information. This findings is closed.

Item Number	7
Carbon Methodological Framework Version 3, April 2020 Section/Criterion	3.2 Uncertainties
Carbon Methodological Framework Version 3, April 2020 Requirement	2. Minimize uncertainty where feasible and cost effective
Requirement Met (Y, N or Pending)	Y
Evidence Used to Assess (Location in PD, MR or Supporting Documents	Sensitivity analysis and identification of areas of improvement of MRV system, ZILMP ER Monitoring Report - 2020 v3.2_final.docx
Aster Global Findings Round 1	The audit team reviewed the MR and was unable to find information discussing the strategy to minimize uncertainty where feasible and cost effective.

Round 1 MCAR/mCAR/OBS	MCAR: Please clarify in line with the finding.
Round 1 Response from Project Proponent (27/05/2022)	A paragraph has been added to section 5.3, explaining our understanding of the potential improvements as a result of the sensitivity analysis.
Aster Global Findings Round 2	The VVB reviewed the updated MR and confirmed the updates. This finding is closed.

Item Number	8
Carbon Methodological Framework Version 3, April 2020 Section/Criterio n	Guidelines on the application of the Methodological Framework Number 4: On Uncertainty Analysis of Emission Reductions (Version 1.0 November 2020)
Carbon Methodological Framework Version 3, April 2020 Requirement	13. Expert elicitation shall follow the provisions of Section 3.2.1.3 and 3.2.2.3 of Volume 1, Chapter 3 of the 2006 IPCC GL. Experts involved in expert elicitation shall be scientists, researchers or technicians who have relevant experience in the applicable ecosystems and domain within the REDD Country. The REDD Country shall provide in the ER-MR relevant information on the expert judgement as described in Page 3.41 Volume 1, Chapter 3 of the 2006 IPCC GL.
Requirement Met (Y, N or Pending)	Y
Evidence Used to Assess (Location in PD, MR or Supporting Documents	2nd Calculation Walkthrough Call (2022-03-03), MR
Aster Global Findings Round 1	It is unclear to the audit team if expert judgement was used to determine the type of PDF used for each parameter included in the Monte Carlo Simulation.
Round 1 MCAR/mCAR/O BS	MCAR: Please clarify in line with the finding.

	<p>MCAR: If expert elicitation is used please provide additional detail in the MR in line with this requirement.</p>
<p>Round 1 Response from Project Proponent (27/05/2022)</p>	<p>Several types of PDFs are used as part of the Monte Carlo simulation. These are:</p> <ul style="list-style-type: none"> • t-distribution: Emission factors for FSD and FSSV vegetation classes • Normal: Emission factors derived from IPCC defaults (cropland, grassland, other land use) • Uniform: Default root:shoot ratio, for species where local data are not available.. • Non-parametric bootstrapping: Used for activity data. • Triangular: Carbon fraction derived from IPCC defaults. <p>In each of these cases, the distributions were selected for their suitability for the data source.</p> <p>Emission factors</p> <p>FSD/FSSV emission factors use a t-distribution to account for low sample sizes. This approach was chosen following the expert judgement of Jim Alegria (ex-US Forestry Service). IPCC tier 1 emission factors are presented with a nominal estimate of error equivalent to two times the standard deviation, for which a normal distribution is considered a reasonable PDF.</p> <p>Activity data</p> <p>Uncertainties for activity data were captured using non-parametric bootstrapping, where sample units were resampled (with replacement) from the Collect Earth points. This has the advantage of not needing to specify a PDF a priori, and removing the impact of generating impossible negative areas of deforestation where the uncertainty range crosses 0.</p> <p>The impact of this decision over two other reasonable approaches (a normal distribution, and a truncated normal distribution removing any negative deforestation areas) was assessed by comparison. In all cases the uncertainty ranges are almost identical, so any reasonable PDF would not be expected to have any impact on overall uncertainty of emissions (see figure for example from ZILMP 2018: https://www.dropbox.com/s/bodedihz1lg9/pdf.png?dl=0)</p> <p>Root:shoot ratio</p> <p>A uniform distribution is used for estimation of BGB for species where specific local allometric models aren't available (derived from IPCC given the range 0.27 - 0.28). Without further information provided, a uniform distribution was selected for its conservative nature.</p> <p>Carbon fraction</p> <p>The triangular distribution used for the carbon fraction was selected to account for the asymmetric nature of the uncertainty range associated with the IPCC</p>

	default used (0.47 (0.44 - 0.49)), and the understanding that extreme values of this range are unlikely in Zambia. In any case, emissions estimates show very little sensitivity to changes in this parameter (see sensitivity analysis), so it would not be expected that any reasonable alternative PDF would have any impact on overall uncertainties.
Aster Global Findings Round 2	Thank you for the detailed response. However, it is unclear if the ER Program has included the necessary information in the ER-MR to satisfy this requirement.
Round 2 MCAR/mCAR/OBS	MCAR: Please clarify in line with the finding and if necessary add the necessary additional information to the MR>
Round 2 Response from Project Proponent (20/06/2022)	MCAR: Please see section 5.2- version 4.1 of MR (Parameters and assumptions used in the Monte Carlo method), we provided the link with more details regarding the several types of PDFs are used as part of the Monte Carlo simulation.
Aster Global Findings Round 3	Thank you for the additional detail; however, it is still unclear to the VVB if the ER Program has satisfied this criterion. Specifically, please clarify how the ER Program has satisfied the following: "The REDD Country shall provide in the ER-MR relevant information on the expert judgement as described in Page 3.41 Volume 1, Chapter 3 of the 2006 IPCC GL."
Round 3 MCAR/mCAR/OBS	MCAR: Please clarify how the ER Program has satisfied this criterion. Additionally, please ensure that enough information is provided in the MR in line with Page 3.41 Volume 1, Chapter 3 of the 2006 IPCC GL.
Round 3 Response from Project Proponent	MCAR: We have updated Section 5.2, adding an explanation for each parameter. We also updated Table 8, adding an entry for the R:S parameter (see version 4.2 of MR: https://www.dropbox.com/s/ngdxee115ybj1id/ZILMP%20ER%20Monitoring%20Report%20-%202020%20v4.2.docx?dl=0). Regarding expert elicitation, we did not use it for defining any parameter, as all parameters were either obtained from field data, literature or IPCC defaults. For the PDFs, we have also used the most applicable PDF, and in case of doubt, applied a more conservative PDF (as in the case of the uniform PDF for R:S).
Aster Global Findings Round 4	Thank you for the clarification. In a meeting with the MRV Unit the VVB confirmed that the expert elicitation was not used to develop any of the parameters used in the uncertainty analysis. Specifically, the MRV unit incorrectly stated in their Round 1 Findings response that expert elicitation was used to develop the PDFs for the FSSV/FSD forest types. The VVB confirmed that the PDFs were developed by applying a t-distribution. This finding is closed.

Item Number	9
Carbon Methodological Framework	Criterion 8: The ER Program, to the extent feasible, follows a process of managing and reducing uncertainty of activity data and emission factors used in Reference Level setting and Measurement, Monitoring and reporting.

<p>Version 3, April 2020</p> <p>Section/Criterion</p>	
<p>Carbon Methodological Framework Version 3, April 2020</p> <p>Requirement</p>	<p>Indicator 8.1: Systematic errors are minimized through the implementation of a consistent and comprehensive set of standard operating procedures, including a set of quality assessment and quality control processes that work within the local circumstances of the ER Program</p>
<p>Requirement Met (Y, N or Pending)</p>	<p>Y</p>
<p>Evidence Used to Assess (Location in PD, MR or Supporting Documents)</p>	<p>SOPs, Site Visit</p>
<p>Aster Global Findings Round 1</p>	<p>The audit team confirmed the receipt of SOPs and SOPs fully describe procedures to minimize systematic errors.</p> <p>The audit team noted a few areas of improvement related to the SOPs for the activity data collection and QA/QC procedure.</p> <ol style="list-style-type: none"> 1. Based on professional experience the VVB is of the opinion that in general "blind" QA/QC procedures result in higher quality data and currently there are no "blind checks" within the QA/QC procedures. 2. During the site visit, the VVB noted a difference in Operators' willingness to consider landscape context in the classification of Activity Data. These differences have the potential to create discrepancies between operators. Further clarification, additional SOPs, and additional training could be created to ensure a consistent approach to how Operators consider landscape context in the classification of AD. 3. Currently the QA/QC procedure requires that 20% of the of the non-deforestation points be reviewed by a senior team member and 100% of the deforestation points be reviewed by a senior team member. The current structure of this QA/QC procedure fails to consider the principle of conservativeness and the serious issue of "omission bias."
<p>Round 1 MCAR/mCAR/OBS</p>	<p>mCAR: The VVB requests that the ER Program further consider blind checks within the QA/QC procedure or provide clarification as to why they are not needed.</p> <p>OBS: Improvement in the way landscape context is considered within the AD classification should be consistent across Operators. This could be addressed through additional SOP procedures, additional training, etc.</p>

	<p>mCAR: The VVB requests that the ER Program further consider the significance of omission bias within the QA/QC procedures and/or provide clarification as to why restructuring of the QA/QC procedures (specifically in the percentage allocation of AD reviewed by a senior team member) is not necessary.</p>
<p>Round 1 Response from Project Proponent (27/05/2022)</p>	<p>The ZILMP team recognizes the importance and significance of establishing QA/QC for activity data, however, blind checks are only implemented as part of QA procedures as described in the technical document “Passo a Passo para o Levantamento e Estimativa de Emissões do Sector de Uso da Terra, Mudanças do Uso da Terra e Florestas”, section 4.16.2.2, paragraph (b). This check is used to calibrate the interpreters during the continuous training process and to assess the reproducibility and the agreement in the AD classification made by an expert.</p> <p>OBS: Regarding the landscape context considered within the AD classification, the ZILMP team will update the SOP of LULC classification to ensure consistency across Operators, and additional training will be held.</p> <p>mCAR: We decided that 20% of samples interpreted as non-deforestation for each batch are reasonable enough to ensure that the activity data are generated within desired probability limits of accuracy and precision. The 20% are randomly selected from each stratum map. It is worth to emphasize that if 20% or more samples interpreted as no deforestation are misclassified, the operator must review the entire batch of samples.</p>
<p>Aster Global Findings Round 2</p>	<p>The 2 minor CARs and 1 OBS do not need to be addressed during this verification. These will be assessed at the next verification. No further action is needed.</p>

Item Number	10
<p>Carbon Methodological Framework Version 3, April 2020</p> <p>Section/Criterion</p>	<p>Criterion 14: Robust Forest Monitoring Systems provide data and information that are transparent, consistent over time, and are suitable for measuring, reporting and verifying emissions by sources and removals by sinks, as determined by following Criterion 3: within the proposed Accounting Area.</p>
<p>Carbon Methodological Framework Version 3, April 2020</p> <p>Requirement</p>	<p>Indicator 14.1: The ER Program monitors emissions by sources and removals by sinks included in the ER Program’s scope (Indicator 3.1:) using the same methods or demonstrably equivalent methods to those used to set the Reference Level.</p>
<p>Requirement Met (Y, N or Pending)</p>	Y

Evidence Used to Assess (Location in PD, MR or Supporting Documents)	MR, Activity Data
Aster Global Findings Round 1	The MR states "At jurisdictional level, this corresponds to 2,984 points being interpreted. Each sampling point was visually assessed and its information was collected and entered in a complete database on LULC changes at the national level"; however, this appears to conflict with statements made in the previous MR.
Round 1 MCAR/mCAR/OBS	MCAR: Please clarify in line with finding and additionally ensure that all statements made within the MR are accurate.
Round 1 Response from Project Proponent (27/05/2022)	These statements do not conflict with statements made in the previous MR, because they remain the same and refer to the area outside the scope of ZILMP.
Aster Global Findings Round 2	Thank you for the clarification. This finding is closed.

Item Number	11
Carbon Methodological Framework Version 3, April 2020 Section/Criterion	Criterion 14: Robust Forest Monitoring Systems provide data and information that are transparent, consistent over time, and are suitable for measuring, reporting and verifying emissions by sources and removals by sinks, as determined by following Criterion 3: within the proposed Accounting Area.
Carbon Methodological Framework Version 3, April 2020 Requirement	Indicator 14.2: Activity data are determined periodically, at least twice during the Term of the ERPA, and allow for ERs to be estimated from the beginning of the Term of the ERPA. Deforestation is determined using IPCC Approach 3. Other sinks and sources such as degradation may be determined using indirect methods such as survey data, proxies derived from landscape ecology, or statistical data on timber harvesting and regrowth if no direct methods are available.
Requirement Met (Y, N or Pending)	Y
Evidence Used to Assess (Location in PD, MR or	MR, Activity Data

Supporting Documents	
Aster Global Findings Round 1	<p>The VVB reviewed the ERPA posted on the on the website www.forestcarbonpartnership.org for Mozambique and confirmed that the term of the ERPA ends on Dec. 31, 2025. This reporting period is covered by the ERPA. The VVB is reasonably assured that AD have been generated twice during the ERPA as they were generated for 2019 and for 2020.</p> <p>However, deforestation during the reporting period is not determined using the IPCC Approach 3, rather a mixture of Tier 2 and Tier 3 approaches are applied. Therefore, the VVB is unclear how this requirement is satisfied and there is no justification within the MR about why using lower Tier approaches is needed..</p>
Round 1 MCAR/mCAR/OBS	<p>MCAR: Please clarify in line with the finding.</p> <p>MCAR: Clarification is requested within the MR to explain why Tier 3 approaches are not used.</p>
Round 1 Response from Project Proponent (27/05/2022)	<p>1. AD for ZILMP is determined on an annual basis for the duration of the ERPA, so during the term of the ERPA, AD will be determined more 8 times, which satisfies the requirement.</p> <p>2. Deforestation is determined using Approach 3, during the collection of reference data using Collect Earth. We believe that the VVB may be referring to the stratification map, when it talks about Approach 2. However, stratification is only used to improve the precision of the estimates generated using the Collect Earth plots. As a result, we do not believe this violates the requirement to use Approach 3 for estimating deforestation.</p>
Aster Global Findings Round 2	<p>Thank you for the additional clarifications. This finding is closed.</p> <p>Thank you for the additional clarifications. The VVB agrees with the ER Programs response to Finding 2. This finding is closed.</p>

Item Number	12
Carbon Methodological Framework Version 3, April 2020 Section/Criterion	<p>Criterion 17: The ER Program is designed and implemented to prevent and minimize potential Displacement.</p>
Carbon Methodological Framework	<p>Indicator 17.1: Deforestation and degradation drivers that may be impacted by the proposed ER Program Measures are identified, and their associated risk for</p>

Version 3, April 2020 Requirement	Displacement is assessed, as well as possible risk mitigation strategies. This assessment categorizes Displacement risks as high, medium or low.
Requirement Met (Y, N or Pending)	Y
Evidence Used to Assess (Location in PD, MR or Supporting Documents)	MR, Site visit observations, Supporting documentation
Aster Global Findings Round 1	<p>Throughout the course of the in-country site visit the verification team conducted an assessment of the measures implemented to minimize and prevent potential displacement. Although the verification believes the majority of the activities implemented by the ER Program are successful in mitigating/minimizing displacement and the displacement risks are appropriately categorized, the implementation of the increased law enforcement in the forestry sector, specifically in the Zambezia province as a result of funding from the MozFip program, is likely resulting in some displacement. During interviews with the team implementing the new forestry law enforcement program, it was clear that the team from AQUA has been successful in implementing this strategy in Zambezia; however, this has resulted in likely displacement of illegal harvesting to the other provinces within Mozambique. Both interviews with the MRV Unit and the AQUA team believe some of this displacement is mitigated by higher stocking values in the Zambezia province. The MR states the risk of displacement is medium; however, based on evidence collected through interviews it is unclear to the VVB how this risk rating is appropriate.</p>
Round 1 MCAR/mCAR/OBS	MCAR: Please clarify why the displacement risk of medium is appropriate considering the AQUA team provided evidence that the new law enforcement strategy has resulted in of illegal harvest operations.
Round 1 Response from Project Proponent (27/05/2022)	MCAR: We have to be aware that we will hardly reach zero percent of illegal harvest operations in the context of Mozambique. We believe that the medium risk of displacement is appropriate because the efforts of implementation the new strategy by AQUA, the situation of illegal harvest has reduced compared to the historical records. On the other hand, the strict actions over the most harvested tree species in Mozambique taken by GoM contributed to the reduction of illegal harvest.
Aster Global Findings Round 2	<p>Thank you for the clarification. The VVB reviewed the MR and additional information provided by the ER Program. The VVB found that in regards to the AQUA Program the risk for displacement is high as the VVB collected evidence that displacement is occurring. However, in-conjunction with the additional efforts to constrain unsustainable and illegal logging which have a lower risk of displacement the VVB is reasonably assured that a medium risk of displacement is appropriate. This finding is closed.</p>

Item Number	13
Carbon Methodological Framework Version 3, April 2020 Section/Criterion	Criterion 17: The ER Program is designed and implemented to prevent and minimize potential Displacement.
Carbon Methodological Framework Version 3, April 2020 Requirement	Indicator 17.4: ER Programs are also invited to report on changes in major drivers in the ER Accounting Area, any Displacement risks associated with those drivers, and any lessons from the ER Programs' efforts to mitigate potential Displacement.
Requirement Met (Y, N or Pending)	Y
Evidence Used to Assess (Location in PD, MR or Supporting Documents)	MR, Site visit observations, Supporting documentation
Aster Global Findings Round 1	<p>The MR states that the major driver of deforestation within the ER Accounting area has not changed. After a review of supporting evidence, independent literature searches, and site visit observations the VVB is reasonably assured that expanding subsistence agriculture is the primary driver of deforestation. The VVB interviewed numerous small agriculturalists during the site visit and is reasonably assured that expanding subsistence agriculture remains the primary driver of deforestation. Additionally, the VVB saw numerous examples in which charcoal production is clearly a part of the process agriculture expansion. It is clear that the charcoal production process is a result of agriculture expansion and small agriculturalists maximizing value from the land clearing process. The VVB found no examples of charcoal production where agriculture expansion was not the clear end goal.</p> <p>However, the VVB notes that lessons learned from the implementation of the new law enforcement strategy to minimize illegal harvesting have not been properly documented within the MR.</p>
Round 1 MCAR/mCAR/OBS	MCAR: Please ensure that all lessons learned from the ER Programs' efforts to mitigate potential displacement have been clearly stated within the MR>
Round 1 Response from Project Proponent	MCAR: We updated the MR (version 4) in section 1.2. however as mentioned at the end of 2nd paragraph, the study started in 2021 will bring more details of evidence and lessons learned

(27/05/2022)	
Aster Global Findings Round 2	Thank you for the clarification. The VVB reviewed the updated ER-MR and confirmed the additional text regarding updates has been added. This finding is closed.

Item Number	14
Carbon Methodological Framework Version 3, April 2020 Section/Criterion	Criterion 18: The ER Program is designed and implemented to prevent and minimize the risk of Reversals and address the long-term sustainability of ERs.
Carbon Methodological Framework Version 3, April 2020 Requirement	Indicator 18.1: The ER Program has undertaken an assessment of the anthropogenic and natural risk of Reversals that might affect ERs during the Term of the ERPA and has assessed, as feasible, the potential risk of Reversals after the end of the Term of the ERPA.
Requirement Met (Y, N or Pending)	Y
Evidence Used to Assess (Location in PD, MR or Supporting Documents)	MR Section 7
Aster Global Findings Round 1	<p>The audit team reviewed Section 7.1 of the MR which states "Intentionally left blank." It is unclear to the audit team if this is because there are no major events that might have led to reversals during the reporting period or for some other reason.</p> <p>The reversal risk assessment is shown in Section 7.3 of MR. The reversal risk assessment has not changed from the previous reporting period.</p>
Round 1 MCAR/mCAR/OBS	MCAR: Please clarify in-line with the finding and if necessary please update the MR.
Round 1 Response from Project Proponent (27/05/2022)	The Section 7.1 of the MR which states "Intentionally left blank." is because there were no reversals during the reporting period (2019-2020) and the ZILMP team is aware of no major events occurred that might have cause reversals.

Aster Global Findings Round 2	Thank you for the clarification. This finding is closed.
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Item Number	15
Carbon Methodological Framework Version 3, April 2020 Section/Criterion	Criterion 23: To prevent double-counting, ERs generated under the ER Program shall not be counted or compensated for more than once. Any reported and verified ERs generated under the ER Program and sold and/or transferred to the Carbon Fund shall not be sold, offered or otherwise used or reported a second time by the ER Program Entity. Any reported and verified ERs generated under the ER Program that have been sold and/or transferred, offered or otherwise used or reported once by the ER Program Entity shall not be sold and transferred to the Carbon Fund.
Carbon Methodological Framework Version 3, April 2020 Requirement	Criterion 23: To prevent double-counting, ERs generated under the ER Program shall not be counted or compensated for more than once. Any reported and verified ERs generated under the ER Program and sold and/or transferred to the Carbon Fund shall not be sold, offered or otherwise used or reported a second time by the ER Program Entity. Any reported and verified ERs generated under the ER Program that have been sold and/or transferred, offered or otherwise used or reported once by the ER Program Entity shall not be sold and transferred to the Carbon Fund.
Requirement Met (Y, N or Pending)	Y
Evidence Used to Assess (Location in PD, MR or Supporting Documents)	MR, Independent Search
Aster Global Findings Round 1	<p>The audit team reviewed multiple registries to determine if there are additional projects within the ZILMP ER Program area that could potentially result in double counting of ERs.</p> <p>As discussed in the MR there is a REDD project registered with VCS in the Gile National Park but the project has not requested issuance of VCUs after 2016.</p> <p>Additionally, there is a project under development titled AGRI-SMART: SUSTAINING A RESILIENT AND INCLUSIVE DEVELOPMENT IN ZAMBEZIA; however, the project has not requested issuance of VCUS. The VVB is issuing an OFI to the ER Program to engage this project to ensure that double counting will not happen for future verifications.</p> <p>There is an afforestation project occurring within the North Manica Province in Mozambique which is outside the ZILMP ER Program area titled "Revegetation with fruit Trees in North Manica Province, Mozambique."</p> <p>There are two additional projects that have to do with improving cookstove efficiency registered under the VCS Program; however, there is no risk of</p>

	<p>double counting due to the nature of the project activities in these VCS projects.</p> <p>The VVB assumes that the Carbon Fund has internal controls in place to ensure the ER Program does not transfer more credits than have been awarded during a given monitoring period and old ERs are not transferred more than once.</p>
Round 1 MCAR/mCAR/OBS	<p>OBS: The VVB is issuing an OBS that the ER Program engage the AGRI-SMART: SUSTAINING A RESILIENT AND INCLUSIVE DEVELOPMENT IN ZAMBEZIA project to ensure both entities are aware that they are operating carbon projects within the same landscape. Although it is not a REDD+ project and the ER Program is not estimating ERs based on enhancements, there is the potential for double counting in the future if the ER Program decided to include enhancements and the AGRI-SMART: SUSTAINING A RESILIENT AND INCLUSIVE DEVELOPMENT IN ZAMBEZIA project is planting trees as part of their project.</p>
Round 1 Response from Project Proponent (27/05/2022)	<p>The ZILMP team was not aware of this project. However, the ZILMP team will contact Carbonsink to better understand the rationale behind this project and to ensure that there will be no double counting of carbon credits, especially with regards to tree planting.</p>
Aster Global Findings Round 2	<p>The OBS does not need to be addressed during this verification. This finding is closed.</p>

Item Number	16
Carbon Methodologica l Framework Version 3, April 2020 Section/Criteri on	<p>Criterion 37: Based on national needs and circumstances, the ER Program works with the host country to select an appropriate arrangement to avoid having multiple claims to an ER Title.</p>
Carbon Methodologica l Framework Version 3, April 2020 Requirement	<p>Indicator 37.2: A national REDD+ Programs and Projects Data Management System or a third party centralized REDD+ Programs and Projects Data Management System needs to provide the attributes of ER Programs, including:</p> <ul style="list-style-type: none"> i. The entity that has Title to ERs produced; ii. Geographical boundaries of the ER Program or project; iii. Scope of REDD+ activities and Carbon Pools; and iv. The Reference Level used. <p>An ER Program for the Carbon Fund should report its activities and estimated ERs in a manner that conforms to the relevant FCPF Methodological Framework C&Is.</p>

Requirement Met (Y, N or Pending)	Y
Evidence Used to Assess (Location in PD, MR or Supporting Documents)	MR Section 6.2, https://www.arcgis.com/apps/webappviewer/index.html?id=bc625b48f180462885fa527d4f2ea843
Aster Global Findings Round 1	The audit team confirmed that the National REDD+ Programs and Projects Data Management System has all these attributes for the ZILMP ER Program. The audit team was unable to find other REDD+ projects that are located in Mozambique on the National REDD+ Programs and Projects Data Management System.
Round 1 MCAR/mCAR/OBS	MCAR: Please ensure that all ER Programs and REDD+ projects are listed and described in conformance with this requirement.
Round 1 Response from Project Proponent (27/05/2022)	The link for the REDD+ Registry website was for an outdated version. We have updated the link for the up to date version of the REDD+ Registry Web App. This version includes the only other REDD+ Project in Mozambique that we are aware of, which is the Gilé National Reserve REDD Project. With regards to other potential REDD+ projects, we have received copies of Expression of Interest for several projects, which have been delivered to the provinces. However, to date, there has been no communication between the Provincial Services for the Environment and the FNDS. As soon as we receive a formal document from the provincial services requiring our technical feedback, the respective project will be added to the database.
Aster Global Findings Round 2	Thank you for the clarification. This finding is closed, as the VVB is reasonably assured that the all ER Programs within Mozambique are listed.

Item Number	17
Carbon Methodological Framework Version 3, April 2020	Criterion 37: Based on national needs and circumstances, the ER Program works with the host country to select an appropriate arrangement to avoid having multiple claims to an ER Title.
Section/Criterion	
Carbon Methodological	Indicator 37.4: Administrative procedures are defined for the operations of a national or centralized REDD+ Programs and Projects Data Management System;

<p>I Framework Version 3, April 2020</p> <p>Requirement</p>	<p>and an audit of the operations is carried out by an independent third party periodically, as agreed with the Carbon Fund.</p>
<p>Requirement Met (Y, N or Pending)</p>	<p>Y</p>
<p>Evidence Used to Assess (Location in PD, MR or Supporting Documents)</p>	<p>MR Section 6.2, https://www.arcgis.com/apps/webappviewer/index.html?id=bc625b48f180462885fa527d4f2ea843</p>
<p>Aster Global Findings Round 1</p>	<p>The VVB was unable to located documents that define the operations of the National REDD+ Programs and Projects Data Management System.</p> <p>Aster Global has reached out to the FCPF Secretariat and requested guidance on the second part of the indicator related to a third party audit of operations.</p>
<p>Round 1 MCAR/mCAR/OBS</p>	<p>MCAR: Please clarify in line with the findings.</p>
<p>Round 1 Response from Project Proponent (27/05/2022)</p>	<p>The system is still under development. No audit operations have yet been performed</p>
<p>Aster Global Findings Round 2</p>	<p>Thank you for the clarification. Additional guidance has been provided by the FCPF Secretariat, in which they have requested that the VVB issue a Minor Corrective Action Request regarding the first part of Indicator 37.4. Because the system is still under development the administrative procedures have not been defined and therefore the ER Program is no in compliance withe Indicator 37.4</p>
<p>Round 2 MCAR/mCAR/OBS</p>	<p>mCAR: By the time of the next verification please ensure that administrative procedures are defined for the operations of the National REDD+ Programs and Projects Data Management System</p>

APPENDIX 2: LIST OF DOCUMENTS RECEIVED AND REVIEWED BY ASTER GLOBAL

Document Name	Date Received
ZILMP ER Monitoring Report - 2020 v3_final.docx	November 10, 2021
ZILMP ER Monitoring Report - 2020 v3.2_final.docx	January 18, 2022
.gitignore	January 28, 2022
.gitignore	January 28, 2022
.RData	January 28, 2022
.RData	January 28, 2022
.Rhistory	January 28, 2022
.Rhistory	January 28, 2022
_6 edição do Boletim Informativo do EFF e SAFs .pdf	January 28, 2022
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Emission_factor_Script.R	January 28, 2022
emission_factors.csv	January 28, 2022
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emission_factors_sergio.Rproj	January 28, 2022
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Factura ETCTerra Fev.2019.pdf	January 28, 2022
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Factura HORFPEC 11.02.2019.pdf	January 28, 2022
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Facturas Paces Dez.2020.pdf	January 28, 2022
fcdbc870212b704bddcbc83a57e2aac36fa4c5	January 28, 2022
FCPF Emission Reductions Monitoring Report_2020_Ver02.1__0.docx	January 28, 2022
FCPF Emission Reductions Monitoring Report_2020_Ver02.1__0.docx	January 28, 2022
FCPF Emission Reductions Monitoring Report_2020_Ver02.3.docx	January 28, 2022
FCPF ER MR Checklist_Mozambique_2nd RP.docx	January 28, 2022
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fnds_degradation_v0.dcf	January 28, 2022
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fsmonitor-watchman.sample	January 28, 2022
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Manual do Inventario Florestal.pdf	January 28, 2022
Manual_REDD_V1.1.docx	January 28, 2022
Manual_REDD_V1.docx	January 28, 2022
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Monte Carlo v0.2.pdf	January 28, 2022
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monte_carlo_v0.Rmd	January 28, 2022
monte_carlo_v0_1.html	January 28, 2022
monte_carlo_v0_1.Rmd	January 28, 2022
monte_carlo_v0_2.html	January 28, 2022
monte_carlo_v0_2.Rmd	January 28, 2022
monte_carlo_v0_3.html	January 28, 2022
monte_carlo_v0_3.Rmd	January 28, 2022
monte_carlo_v0_4.html	January 28, 2022
monte_carlo_v0_4.Rmd	January 28, 2022
monte_carlo_v0_5.html	January 28, 2022
monte_carlo_v0_5.Rmd	January 28, 2022
Moz Agroforestry Contract signed.pdf	January 28, 2022

moz_frel_report_final.v03_03102018.pdf	January 28, 2022
Mozambique_Revised ERPDP_16April2018_CLEAN.pdf	January 28, 2022
MozBIO.pdf	January 28, 2022
MozDGM.pdf	January 28, 2022
MozFIP.pdf	January 28, 2022
MR Responsibilities.xlsx	January 28, 2022
Mugasha et al. - 2013 - Allometric models for prediction of above- and belowground biomass of trees in the miombo woodlands of Tanzania.pdf	January 28, 2022
muri_edits	January 28, 2022
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NFMS Document_Mozambique_Ver1_(En)_Final.pdf	January 28, 2022
Niras 4500.000,00.pdf	January 28, 2022
Niras 7.945.959,96_2020111807444400.pdf	January 28, 2022
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No_ZILMP_lulucf_2020.tif	January 28, 2022
Nota das atualizações dos factores de emissão.docx	January 28, 2022
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ORIG_HEAD	January 28, 2022
output.R	January 28, 2022
Outside_ZILMP_AD_Calculations_RL_(2005_2015)_28_10_20.xlsx	January 28, 2022
Outside_ZILMP_Emissions_Calculations_RL_(2005_2015)_28_10_20.xlsx	January 28, 2022
Outside_ZILMP_AD_Calculations_MR_(2019).xlsx	January 28, 2022
Outside_ZILMP_AD_Calculations_MR_(2020).xlsx	January 28, 2022
Outside_ZILMP_Emissions_Calculations_MR_(2019).xlsx	January 28, 2022
Outside_ZILMP_Emissions_Calculations_MR_(2020).xlsx	January 28, 2022
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prepare-commit-msg.sample	January 28, 2022
pre-push.sample	January 28, 2022
pre-rebase.sample	January 28, 2022
pre-receive.sample	January 28, 2022
QGIS_style_LULUCF.qml	January 28, 2022
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ReadMe - Folder Structure.docx	January 28, 2022
README.md	January 28, 2022
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Reference Level_Project Forms.cep	January 28, 2022
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Relatório Anual 2020_FINAL.docx	January 28, 2022
Relatório Anual de Actividades 2019vvvv_25.02.2020.doc	January 28, 2022
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Relatório Balanço Anual de 2019_APROVADO.docx	January 28, 2022
Relatório de Actividades_MozBio_2019.pdf	January 28, 2022
Relatório Final do curso de Fiscalização e Legislação Florestal.pdf	January 28, 2022
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Relatório_Inventário_Zambesia_atualização_09_02_2021.pdf	January 28, 2022
Relatório_Inventário_Zambesia_atualização_24_08_2020.pdf	January 28, 2022
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SOP2_response_design_MRV_31.07.20.docx	January 28, 2022
SOP3_data_collection_MRV_31.07.20.docx	January 28, 2022
SOP4_Analysis_MRV_23.06.20 (1).DOCX	January 28, 2022
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ZILMP ER Monitoring Report - 2020 v3.2_final.pdf	January 28, 2022
ZILMP ER Monitoring Report - 2020 v3.docx	January 28, 2022
ZILMP ER Monitoring Report - 2020 v3_final.docx	January 28, 2022
ZILMP ER Monitoring Report - 2020 v3_final.pdf	January 28, 2022
ZILMP ER Monitoring Report - 2020 v3_final_Cap 6_Annex_1_2_3.docx	January 28, 2022
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ZILMP_2018_2020_MonitoringPeriod.csv	January 28, 2022
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zilmp_2018_deforestation_area.png	January 28, 2022

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ZILMP_2018_poststratified.csv	January 28, 2022
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ZILMP_2019_2020.csv	January 28, 2022
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ZILMP_2020_MonitoringPeriod.csv	January 28, 2022
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ZILMP_AD_Calculations_MR_(2020).xlsx	January 28, 2022
ZILMP_AD_Calculations_RL_(2005_2015).xlsx	January 28, 2022
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ZILMP_Emissions_2018_08.05.20 (Updated).xlsx	January 28, 2022
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ZILMP_Emissions_Calculations_MR_(2020).xlsx	January 28, 2022
ZILMP_Emissions_Calculations_RL_(2005_2015).xlsx	January 28, 2022
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Distribuição dos PACEs Todos Indicadores.xlsx	March 7, 2022
List of beneficiaries from different ZILMP projects.xlsx	March 7, 2022
Lista de Beneficiários EFF Pipeline.xlsx	March 7, 2022
Site Visit Preliminary PlanosABDC_ZILMP_Team_Clean.docx	March 14, 2022
Site Visit Plans From ZILMP_Time_spent.xlsx	March 15, 2022
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2019_2020_Project Forms.cep	April 22, 2022
2019_Reference Points.xlsx	April 22, 2022
2020_Reference Points.xlsx	April 22, 2022
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Reference Level_Project Forms.cep	April 22, 2022
Software.txt	April 22, 2022
Stehman_Mozambique_Sampling_Est_MRV_Responses_3_20_2020.docx	April 22, 2022
ZILMP ER Monitoring Report - 2020 v4.docx	April 22, 2022
ZILMP_2019_QAQC_AD.xlsx	April 22, 2022
ZILMP_2020_QAQC_AD.xlsx	April 22, 2022

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20064.01 ZILMP Ver Round 2 Findings_20220617_MRV_20_06_2022.xlsx	June 20, 2022
ZILMP ER Monitoring Report - 2020 v4.1.docx	June 20, 2022
ZILMP_AD_Calculations_MR_(2019).xlsx	June 20, 2022
ZILMP_AD_Calculations_MR_(2020).xlsx	June 20, 2022
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ZILMP_limits_moz_admin_2_ine_20190607.prj	June 20, 2022
ZILMP_limits_moz_admin_2_ine_20190607.shp	June 20, 2022
ZILMP_limits_moz_admin_2_ine_20190607.shx	June 20, 2022
ZILMP_limits_moz_admin_2_ine_20190607_lambert.dbf	June 20, 2022
ZILMP_limits_moz_admin_2_ine_20190607_lambert.prj	June 20, 2022
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ZILMP_limits_moz_admin_2_ine_20190607_lambert.shx	June 20, 2022
20064.01 ZILMP Ver Round 3 Findings_20220628_MRV_04_07_2022.xlsx	July 4, 2022
ZILMP ER Monitoring Report - 2020 v4.2.docx	July 4, 2022
ZILMP_AD_Calculations_MR_(2020).xlsx	July 4, 2022
ZILMP_Emissions_Calculations_MR_(2020).xlsx	July 4, 2022
ZILMP ER Monitoring Report - 2020 v4.3.docx	August 18, 2022

APPENDIX 3: LIST OF INTERVIEWEES DURING THE VERIFICATION

Name	Title
Aristides Muhate	MRV Coordinator
Muri Soares	MRV Technician
Hercilo Odorico	MRV Technician
Orlando Alexandre Macave	MRV Technician
Sérgio Simão João	MRV Technician
Credêncio Raul Maúze	MRV Technician
Faruk Tavares	Forestry Technician
Sakauro Cassimo Hussien	MRV Technician
Tomas Bastique	Coordinator
Auilo José Jaime	Environmental Technician
Maria Alfredo A Sotomane	Beneficiary
Gorchim Manuel	NIRAS Staff
Tiudadles*	Beneficiary
Jaha*	Beneficiary
Almerida Cei	NIRAS Staff
Adolfo Xavier Luonguse	NIRAS Staff
Sérgio Borjorim Dolugues	NIRAS Staff
Ramos Saimoue	NIRAS Staff
Jaciuto*	Beneficiary
Marhim Arihuosi	NIRAS Staff
Moneed*	Beneficiary
Pedro*	Beneficiary
Manuel Cambo	NIRAS Staff
Juma Juma	NIRAS Staff
John Mudekwe	NIRAS Staff
Tiago Valor	NIRAS Staff
Rob Paterson	NIRAS Staff
Claudio*	Beneficiary
Angelina*	Beneficiary
Isoque R.A. Jajjo	AQUA
Caenala Jose	AQUA
Gil Jaiui	AQUA
Regina*	Community Member

*Community Member/Beneficiary Last Names have been redacted from the report