

THE KATINGAN PEATLAND RESTORATION AND CONSERVATION PROJECT

VCS VERIFICATION REPORT



Document Prepared By: Environmental Services, Inc.

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Summary:

Environmental Services, Inc., (ESI) was contracted by PT. Rimba Makmur Utama, on 16 February 2017 to conduct the second monitoring period verification (01 November 2015 to 31 December 2016) of the *Katingan Peatland Restoration and Conservation Project* [Validated Project Description (PD) dated 11 May 2016]. The Katingan Project follows the framework of Reducing Emissions from Deforestation and Degradation (REDD) and is achieving Greenhouse Gas (GHG) emission reductions as well as tropical peatland forest protection and conservation through payments for ecosystem services.

The goal of the project as described in the second Monitoring Report (Section 1.1) include, “protect and restore 149,800 hectares of peatland ecosystems, to offer local people sustainable sources of income, and to tackle global climate change – all based on a solid business model.”

The verification objective included an assessment of compliance with VCS Version 3 and all associated updates, the selected methodology (VM0007, v1.5), and the validated Project Description (PD) *The Katingan Peatland Restoration and Conservation Project* dated 11 May 2016. ESI (herein referred to as the Validation/Verification Body – VVB/Verification Team) assessed the Greenhouse Gas (GHG) emission removals for the second monitoring period/verification period 01 November 2015 to 31 December 2016 through Agriculture, Forestry and Other Land Use (AFOLU) criteria. The project activities are categorized as; Reduced Emissions from Deforestation and Degradation (REDD), a combination of REDD+WRC¹ and ARR²+WRC; specifically, as Avoiding Planned Deforestation (APD) and Reforestation (ARR), in combination with Conservation of Undrained and Partially Drained Peatland (CUPP) and Rewetting of Drained Peatland (RDP) activities.

The scope of the verification following Section 4.3.4 of ISO 14064-3:2006 included the GHG project implementation; physical infrastructure, activities, technologies and processes of the GHG project; GHG sources, sinks and/or reservoirs; types of GHGs; and time periods covered. *The Katingan Peatland Restoration and Conservation Project* follows the framework of project activities listed above.

The criteria followed the verification guidance documents provided by VCS located at <http://v-c-s.org/program-documents>. Unless otherwise indicated, the assessment was performed against the most recent version of the relevant VCS guidance document.

A summary of all findings is included in Appendix B. There are no restrictions of uncertainty.

ESI confirms all verification activities including objectives, scope and criteria, level of assurance,

¹ Wetlands Restoration and Conservation

² Afforestation, Restoration and Revegetation

monitoring and project documentation adherence to VCS Version 3 and all associated updates as documented in this report are complete. ESI concludes without any qualifications or limiting conditions that the *Katingan Peatland Restoration and Conservation Project Monitoring Report* (v3.0 dated 29 June 2017) meets the requirements of VCS Version 3 and all associated updates.

The GHG assertion provided by PT. Rimba Makmur Utama and verified by ESI has resulted in the GHG emissions reduction or removal of 4,821,371 tCO₂ equivalents (baseline minus project minus leakage) by the project during the verification period/reporting period (1 November 2015 to 31 December 2016). This value is gross of the 10% (482,137 tCO₂ equivalents) buffer withholding based on the non-permanence risk assessment tool. This results in 4,339,233 tCO₂ equivalents of credits eligible for issuance as VCUs.

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1 INTRODUCTION

1.1 Objective

The verification objective included an assessment of compliance with VCS Version 3 and all associated updates, the selected methodology (VM0007, v1.5), and the validated Project Description (PD) *The Katingan Peatland Restoration and Conservation Project* dated 11 May 2016. ESI (herein referred to as the Validation/Verification Body – VVB) assessed the Greenhouse Gas (GHG) emission removals for the second monitoring period/verification period 01 November 2015 to 31 December 2016 through Agriculture, Forestry and Other Land Use (AFOLU) criteria. The project activities are categorized as; Reduced Emissions from Deforestation and Degradation (REDD), a combination of REDD+WRC³ and ARR⁴+WRC; specifically, as Avoiding Planned Deforestation (APD) and Reforestation (ARR), in combination with Conservation of Undrained and Partially Drained Peatland (CUPP) and Rewetting of Drained Peatland (RDP) activities. ESI assessed whether the Project Proponent adequately addressed project emissions, unplanned reductions in carbon stocks, and any possible leakage outside of the project boundary.

The non-permanence risk analysis was assessed for this verification. Further, following Section 2.1.2 of the VCS Validation & Verification Manual, V3.1, the objectives of the verification exercise were to evaluate the monitoring report and assess:

- The extent to which methods and procedures, including monitoring procedures, have been implemented in accordance with the validated project description. This includes ensuring conformance with the monitoring plan.
- The extent to which GHG Emission Reductions or Removals reported in the monitoring report are materially accurate.

1.2 Scope and Criteria

The scope of the verification following Section 4.3.4 of ISO 14064-3:2006 included the GHG project implementation; physical infrastructure, activities, technologies and processes of the GHG project; GHG sources, sinks and/or reservoirs; types of GHGs; and time periods covered. The geographic verification scope is defined by the project boundary, the carbon reservoir types, management activities, growth and yield models, inventory program, and contract periods. *The Katingan Peatland Restoration and Conservation Project* follows the framework of project activities listed above in Section 1.1 and below. The scope of the project was outlined by the Project Proponent within the Project Description dated 11 May 2016 and is re-defined as follows for the GHG project:

³ Wetlands Restoration and Conservation

⁴ Afforestation, Restoration and Revegetation

Baseline Scenario	Degradation/deforestation-threats from expansion of industrial pulpwood (acacia).
Activities/Technologies/Processes	Protections of largely intact un-drained peat swamp forest- utilizing VCS VM0007
Sources/Sinks/Reservoirs- REDD	AGB emissions due to deforestation AGB emissions due to degradation AGB emissions due to uncontrolled burning
Sources/Sinks/Reservoirs - ARR	AGB emissions due to uncontrolled burning
Sources/Sinks/Reservoirs - WRC	Emissions from microbial decomposition of peat Emissions from dissolved organic content (DOC) Emissions from uncontrolled peat burning
GHG Type	CO ₂ , CH ₄ , and N ₂ O
Time Period (monitoring/verification period)	2 nd Monitoring Period: 01 November 2015 - 31 December 2016
Project Boundary	Project area consists of largely intact, un-drained peat swamp forest; 149,800 hectares in Central Kalimantan Province, Indonesia
GHG reduction and/or removal	4,821,371 tCO ₂ e This value is gross of the 10% (482,137 tCO ₂ equivalents) buffer withholding based on the non-permanence risk assessment tool

The criteria followed the verification guidance documents provided by VCS located at <http://v-c-s.org/program-documents>. Unless otherwise indicated, the assessment was performed against the most recent version of the relevant VCS guidance document. These documents include the following:

- *VCS Program Guide (v3.6, 19 October 2016)*
- *VCS Standard (v3.6, 19 October 2016)*
- *Agriculture, Forestry and Other Land Use (AFOLU) Requirements (v3.5, 19 October 2016)*
- *Program Definitions (v3.6, 19 October 2016)*
- *AFOLU Non-Permanence Risk Tool (v3.3, 19 October 2016)*
- *VM0007 (v1.5, 09 March 2015)*
- *Validated Project Description (dated 11 May 2016)*

1.3 Level of Assurance

The level of assurance was used to determine the depth of detail that the Verifier placed in the Verification and Sampling Plan to determine if there are any errors, omissions, or misrepresentations (ISO 14064-3:2006). ESI assessed the project's implementation of general principles, data collection and processing, sampling descriptions, documentation, *ex post* calculations, etc., to provide reasonable assurance to meet the Project Level requirements of the VCS Program. Based on the verification findings, a final evaluation statement reasonably assures that the project GHG representations are materially accurate. The evidence used to achieve a reasonable level of assurance is specified in subsequent sections of this report.

1.4 Summary Description of the Project

The project is located in Katingan and Kotawaringin Timur districts, Central Kalimantan, Republic of Indonesia, and is aimed at reducing and avoiding emissions related to Planned Deforestation and Reforestation in combination with Conservation of Undrained and Partially drained Peatland and Rewetting of Drained Peatland activities. The project is developed and managed by the ecosystem restoration concession holder P.T. Rimba Makmur Utama (P.T. RMU). The goal of the project as described in the second Monitoring Report (Section 1.1) include, "protect and restore 149,800 hectares of peatland ecosystems, to offer local people sustainable sources of income, and to tackle global climate change – all based on a solid business model."

2 VERIFICATION PROCESS

2.1 Method and Criteria

The verification assessed the Project's compliance with VCS Version 3 and all associated updates, the selected methodology (VM0007, v1.5), and the validated Project Description (PD) The *Katingan Peatland Restoration and Conservation Project* dated 11 May 2016. ESI assessed the Greenhouse Gas (GHG) emission removals for the second monitoring period/verification period 01 November 2015 to 31 December 2016 through Agriculture, Forestry and Other Land Use (AFOLU) criteria, specifically; Reduced Emissions from Deforestation and Degradation (REDD), a combination of REDD+WRC5 and ARR6+WRC; as Avoiding Planned Deforestation (APD) and Reforestation (ARR), in combination with Conservation of Undrained and Partially Drained Peatland (CUPP) and Rewetting of Drained Peatland (RDP) activities.

The criteria followed the verification guidance documents provided by VCS located at <http://v-c-s.org/program-documents>. Unless otherwise indicated, the assessment was performed against the most recent version of the relevant VCS guidance document. Please see Section 1.2 of this report.

A project specific Verification and Sampling Plan was developed to guide the verification auditing process to ensure efficiency and effectiveness. The purpose of the Verification and Sampling Plan was to present a risk assessment for determining the nature and extent of verification

⁵ Wetlands Restoration and Conservation

⁶ Afforestation, Restoration and Revegetation

procedures necessary to ensure the risk of auditing error was reduced to a reasonable level. The Verification & Sampling Plan methodology was derived from all items in our verification process stated above. Specifically, the sampling plan utilized the VCS guidance documents and ISO 14064-3. Any modifications applied to the Verification and Sampling plan were made based upon the conditions observed for monitoring to detect the processes with highest risk of material discrepancy. A detailed field plan was developed to guide the verification site visit and is embedded within the Verification & Sampling Plan.

For the field sampling effort, direct measurement, observation and review of the monitoring period emission reductions in the key areas were determined to be the greatest risk, followed by ground-truthing and review of project activities. Field sampling and techniques were based on the project parameters/scope and best professional judgment of the VVB to meet a reasonable level of assurance as directed by the professional judgment of the Lead Verifier. Because the biomass inventory (REDD) was validated and has not changed, inventory plots were not selected for detailed review/re-measurement. For the peat component (WRC), stratification and canal extent were minorly adjusted. Fires did not occur during the second reporting period (see Section 2.4 of this report). Extensive review of all remote sensing data was undertaken of the project area to aid the VVB in establishing a reasonable level of assurance regarding confirming the reported areas of *ex post* disturbance (from the remote sensing based analysis) for the quantification of project emissions.

In addition, a risk-based approach was used for the on-the-ground field sampling effort to select key areas for direct observation of peatland hydrologic monitoring, stratification and post-fire conditions, and stated project activities. The most likely access points for anthropogenic degradation (along watercourse access points) within the Project Area and adjacent lands were toured to allow the VVB to establish a reasonable level of assurance regarding the implementation of project activities, and to further confirm the reported areas of *ex post* disturbance. Please see Section 2.4 of this report for more details.

The desktop verification component included a full review of all project documentation and calculations received from the Project Proponent as described throughout this report.

2.2 Document Review

A detailed review of all project documentation was conducted to ensure consistency with, and identify any deviation from, VCS Program requirements, the methodology (VM0007), and the validated PD. Initial review focused on the validated PD and Monitoring Report (MR) relative to the field conditions observed and interviews with project management staff. Project 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 monitoring data (i.e., remote sensing/Geographic Information System (GIS) data), Standard Operating Procedures (SOPs), financial analyses, property boundaries, maps and aerial images, fire-specific monitoring data, biomass and carbon calculation spreadsheets, and responses to Non-conformance Requests (NCRs) and Clarification Requests (CLs).

The VCS AFOLU Non-Permanence Risk Tool was used by the Project Proponent to assess overall project risk. The VVB reviewed the Non-Permanence Risk Report provided with the

verification supporting documentation and confirmed that the Project adheres to the requirements set out in the VCS AFOLU Non-Permanence Risk Tool. Each risk factor was thoroughly assessed for conformance. Any identified NCR and/or CL findings related to the AFOLU Non-Permanence Risk Tool/Report are presented in Appendix B. The final score was calculated to be 10%.

For a listing of all documents received from the client for this verification, please see Appendix A.

2.3 Interviews

Interviews were performed during the verification site inspection and as part of the overall verification process. The ESI verification team met with individuals with various roles in the project. This included a series of interviews with on-site and in-country staff that support the mission of the project and other conservation objectives. Onsite interviews and informal discussions were conducted with project staff, including P.T. RMU personnel, members of Wetlands International, technical consultant Permian Global, members and leaders of the local communities.

The following is a list of the main interviewees:

Individual	Affiliation	Role
Dharsano Hartano	PT. Rimba Makmur Utama (PT. RMU)	Director
Hardian Mulyana	PT. Rimba Makmur Utama (PT. RMU)	Deputy Director of Planning/GIS Specialist
Big Antono	PT. Rimba Makmur Utama (PT. RMU)	Database and IT Manager
Meyner Nusalawo	PT. Rimba Makmur Utama (PT. RMU)	Planning and Area Manager
Syamsul Budiman	PT. Rimba Makmur Utama (PT. RMU)	Forestry Liason Director
Rudi Mulyadi	PT. Rimba Makmur Utama (PT. RMU)	Division Head
Mr. Mywan	PT. Rimba Makmur Utama (PT. RMU)	Drone Pilot
Taryono Dariusman	PT. Rimba Makmur Utama (PT. RMU)	Field Manager
Mr. Arab	PT. Rimba Makmur Utama (PT. RMU)	Field Personnel
Mr. Harwyn	PT. Rimba Makmur Utama (PT. RMU)	Field Personnel
Mr. Sail	PT. Rimba Makmur Utama (PT. RMU)	Field Personnel

Mr. Arbian	PT. Rimba Makmur Utama (PT. RMU)	Field Personnel
Mr. Yieseppe	PT. Rimba Makmur Utama (PT. RMU)	Field Personnel
Mr. Dri	PT. Rimba Makmur Utama (PT. RMU)	Field Personnel
Mr. Hardiano	PT. Rimba Makmur Utama (PT. RMU)	Field Personnel
Mr. Hendra	PT. Rimba Makmur Utama (PT. RMU)	Field Personnel
Mr. Aryo	PT. Rimba Makmur Utama (PT. RMU)	Hydrologist
Mr. Hendri	PT. Rimba Makmur Utama (PT. RMU)	Hydrologic Technician
Mr. Radius	PT. Rimba Makmur Utama (PT. RMU)	Hydrologic Assistant
Mr. Gede	PT. Rimba Makmur Utama (PT. RMU)	Senior Logistics
Mr. Huda	PT. Rimba Makmur Utama (PT. RMU)	Logistics Support
Mr. Abidin	PT. Rimba Makmur Utama (PT. RMU)	Maintenance
Mr. Franciscus	PT. Rimba Makmur Utama (PT. RMU)	Head of Forest Management
Mr. Irmanto	PT. Rimba Makmur Utama (PT. RMU)	Head of Nursery
Adaman Muthadir	Yayasan Puter Indonesia	Planning
Mr. Wyadi	Yayasan Puter Indonesia	Community Planner
Mr. Wyndi	Yayasan Puter Indonesia	Community Planner
Mr. Arwin	Yayasan Puter Indonesia	Community Planner
Mr. Decky	Yayasan Puter Indonesia	Community Planner
Irwansyah Reza Lubis	Wetlands International	Technical Consultant
I. Nyoman Suryadiputra	Wetlands International	Technical Consultant
Dipa Satriadi Rais	Wetlands International	Technical Consultant

Iwan Tricahyo Wibisono (Yoyok)	Wetlands International	Technical Consultant
Christy Magerkurth	Permian Global	Technical Consultant
Nathan Renneboog	Permian Global	Technical Consultant
Dr. Nick Brickle	Permian Global	Technical Consultant
Mr. Sumydiento	Baun Bango village	Leader
Mr. Faurudin	Baun Bango village	Leader
Mr. Yani	Telaga village	Leader
Mr. Shadjidarsa	Telaga village	Community Member
Mr. Yohansa	Telaga village	Community Member
Mr. Juwandi	Tampelas village	Leader
Mr. Kaskop	Tampelas village	Leader
Sunbar	Tampelas village	Community Member
Andi	Tumbang Bulan village	Leader
Mr. Sriwan	Hantipan village	Leader

2.4 Site Inspections

The verification site inspection followed the VVB's prepared Verification and Sampling Plan process and was conducted on 17-24 April 2017 by a Verification Team Member/GIS Analyst. The verification site visit was a required tool to help the VVB reach reasonable assurance for verification of monitoring period reported elements. It also allowed the VVB to; understand application of the methodology on-site, confirm the implementation of project activities, and to identify possible sources of error to focus desktop verification efforts.

A ground inspection was made of the project area and surrounding areas along the Mentaya River, Katingan River, Bakumin River and southern canal area including a series of drone flyovers to visually review inaccessible areas. The following villages were visited and interviews conducted: Baunbango, Telaga, Tampelas, Tumbang Bulan, Mendawai, and Hantipan. The site visit ground inspection was performed to assess monitoring efforts, including but not limited to; unplanned deforestation activities, unplanned degradation, and community member feedback. To further confirm the reported areas of *ex post* deforestation resulting in carbon stock losses, an

extensive review of drone imagery and independently obtained Landsat imagery (<http://landsatlook.usgs.gov/> accessed 15 May 2017) data was also undertaken at the desktop. The Project's PALSAR⁷ disturbance dataset was ocularly confirmed by comparing against monitoring period Landsat imagery where the stratified classes were distinguished in both the project area and leakage belt.

During the project site visit, the following aspects of the project were reviewed:

WRC (GHGWPS-WRC)

- Visitation of the southern canal area, including observations of drainage impact extent
- Check of new ditch detected during monitoring period using drone. confirmed appropriateness/correctness of ditch delineation/stratification
- Confirmed that no re-wetting activities were implemented during monitoring period, discussed re-wetting plans and hydrologic monitoring methods
- Visited planned peatland re-wetting locations, including proposed drainage control structures etc.
- Visited peat damage sites eligible for restoration

REDD (□CWPS-REDD)

- Confirmed aboveground biomass stratification boundaries during forest hikes and drone flyovers
- Discussed ongoing degradation and illegal logging
- Opportunistically spot checked areas for deforestation, conducted drone flights to areas with historical deforestation activities and encroachment
- Evaluation of Participatory Rural Appraisal (last performed in 2015) results through questions to community members
- Community member interviews conducted on land usage, ownership, and conflicts

Burnt Areas

- Visited hot-spot areas of prior period peat burns in project boundary to confirm that data collection methods were being performed as defined for monitoring, discussed measurement protocol
- Observed landcover conditions including clearing, degradation, drainage, etc.
- Interviews and extensive discussions on fire prevention, protection and mitigation activities. Interviewed local fire protection staff

General

- Boundary - Reviewed accessible boundaries using GPS and confirmed boundary demarcation progress

⁷ Advanced Land Observing Satellite Phased Array L-band Synthetic Aperture Radar 2 sensor

- Stratification – Confirmed that vegetative cover classifications and stratification remains constant with the validated strata boundaries by taking waypoints and notes and/ or through direct observation with handheld GPS and maps
- Forest Protection - Viewed incursions and mitigations at the frontier boundaries
- Progress on afforestation efforts (ARR not accounted for this monitoring period), and confirmed community nursery development
- Interviewed residents of communities near the project boundary to confirm the claims of the project proponents with respect to project implementation

In addition to the field components described above, two days were spent conducting the office an office audit. The specific elements of the office audit that were confirmed include:

- Interviewed project staff to gather information regarding the monitoring of the project, evidence of conformance with specific requirements of the methodology
- Reviewed the status of any new permits allotted to the agent of deforestation
- Reviewed and discussed possibility of illegal expansion of other concessions
- Confirmed organizational structure and operation
- Confirmed data management, compilation and storage

While conducting the above sampling efforts, also visited examples of other project activities that have been implemented wherever possible. They were sampled opportunistically with a focus on viewing at least one instance of each implemented project activity. For instance, the Project's nursery for project and community-based tree planting efforts was visited at the southern canal despite ARR activities not implemented this monitoring period.

2.5 Resolution of Findings

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 issue(s) identified, and expanding our review to the extent that satisfied the Lead Verifier's professional judgment.

The process of resolution of findings involved one formal round of assessment by the VVB. Findings were resolved during the verification by the Project Proponent implementing corrective actions such as amending the Monitoring Report and calculations, as well as and providing written responses. This resulted in project documentation that was in conformance with the requirements of the VCS Standard for GHG projects.

Findings were characterized in the following manner:

Non-Conformity Reports (NCRs) were issued as a response to material discrepancies in a part of the project and generally fell into one category:

- Non-conformity to a VCS guiding document listed in Section 2.1 above

- Consistency among project documentation or calculations was lacking
- Mathematical formulae were incorrect
- Additional information was required by the VVB to confirm reasonable assurance for compliance

Clarifications (CL) were issued when language within a project document needed extra clarification to avoid ambiguity.

Opportunities for Improvement (OFI) were issued to the Project Proponents when an opportunity for improvement was identified.

During the verification, nineteen (19) essential findings were identified. Detailed summaries of each finding, including the issue raised, responses, and final conclusions, are provided in Appendix B. All NCRs/CLs were satisfactorily addressed.

2.5.1 Forward Action Requests

No forward action requests were raised during the verification.

2.6 Eligibility for Validation Activities

Validation activities were not undertaken as part of the second monitoring period verification.

3 VALIDATION FINDINGS

Not applicable as the project is not undergoing validation at this time.

3.1 Participation under Other GHG Programs

The verification team is not aware of project involvement in other forms of environmental credits from its activities. The project has not been registered, and is not seeking registration, under any other GHG programs. Katingan Project currently only seeks carbon credits under the VCS program. This was confirmed through a risk-based internet review.

3.2 Methodology Deviations

No methodology deviations were applied to the project during this monitoring period.

3.3 Project Description Deviations

At this verification, the project has applied three (3) PD deviations; a) for use of the Advanced Land Observing Satellite Phased Array L-band Synthetic Aperture Radar 2 sensor (ALOS PALSAR 2) to monitor forest disturbances instead of multispectral Landsat imagery as described in the PD. b) Conservatively apply 2015 Global Watch data for leakage assessment as no newer, reliable data was available. c) PRA assumptions for illegal logging PD deviation applied at the first monitoring period (please see first Monitoring Report for details). Please see points below where the appropriateness of these deviations was evaluated:

a) PALSAR 2 – forest disturbance detection

- The deviation does not impact the applicability of the methodology as the intent is to monitor forest deforestation or disturbance which the new sensor provides
- Project additionality is not impacted
- The baseline scenario of acacia plantation conversion remains unaffected as the deviation affects monitoring efforts
- Project remains in compliance with the methodology as PALSAR data is an improvement in monitoring data for the period
- As satellite-based sensors often have a limited design lifespan the verification team also confirms this change in disturbance monitoring data is appropriate for future verification periods where L band radar satellite data are employed

b) Global Forest Watch data

- The deviation does not impact the applicability of the methodology as the intent is to monitor concession clearing activities
- Project additionality is not impacted
- The baseline scenario of acacia plantation conversion remains unaffected as the deviation affects leakage monitoring efforts
- Project remains in compliance with the methodology as applying the most aggressive annual concession clearing value is the most conservative application of leakage monitoring data for the period
- The accuracy of the Global Forest Watch data was discussed during the site visit and it was confirmed that the newest available data has not yet had QA/QC applied and therefore unreliable for determination of leakage
- The VVB notes that following VM0007 accounting methods, monitored leakage must exceed baseline leakage for inclusion in final emission reduction estimates

c) Degradation PRA

The project did not complete a Participatory Rural Appraisal (PRA) to evaluate degradation during emission years 2012 and 2014 because the project assumed degradation took place. Please see first Verification Report and first Monitoring Report for additional details. The emissions resulting from the limited field survey following M-MON was included in the accounting for first monitoring period, year 2015.

The VVB confirmed that an adequate description and justification has been included in the MR for these PD deviations and they are appropriate.

3.4 Grouped Project

Not applicable as the project is not a grouped project.

4 VERIFICATION FINDINGS**4.1 Project Implementation Status**

The project activities and Monitoring Plan, as described in the validated PD, have been initiated. There are no remaining issues from the validation. At this second monitoring period verification, many activities are still being implemented, but the VVB observed considerable progress during the verification site visit activities as reported in Section 2.1 of the Monitoring Report.

No material discrepancies were noted between the actual monitoring system, the monitoring plan set forth in the project description and the applied methodology. Monitoring activities were demonstrated to follow Section 3 – Monitoring Plan of the Monitoring Report for the second monitoring period. Further, the verification team confirmed that Section 2.1 of the monitoring report provided an accurate description of the implementation of the project. The Verification Team requested to visit examples of all activities during the various site visit activities and subsequently confirmed the initial implementation of all items, as discussed in Section 2.1 of the Project's second Monitoring Report.

The procedures outlined to estimate carbon stocks in specific pools within the project area, and the uncertainty of the estimates, have been implemented correctly. Minor errors in reporting of VCU and calculation of net GHG reduction estimates were discovered in this second verification period. The errors resulted in adjustments to crediting and were confirmed to be below the VCS materiality threshold for a project greater than 300,000 tCO₂e. The reporting errors were fixed in the final version of the second Monitoring Report. Updates because of monitored natural disturbance were applied appropriately and market leakage was calculated correctly. Carbon stocks for pools by project activity were estimated in accordance with the methodology VM0007.

A Participatory Rural Appraisal (PRA) to evaluate REDD project activity degradation from extraction of trees for timber was performed in 2015 by Project Proponents in line with M-MON requirements. The results of the PRA indicated a need for limited degradation surveys which was carried out in 2015 and resulted in emissions estimates. Proponents conservatively included degradation in the prior monitoring period although degradation could have been found to be de minimis through use of the T-SIG tool. A degradation survey plot was visited during the site visit to confirm adherence to methodology requirements and familiarity of field staff with the SOPs. Please see related details in *The Katingan Peatland Restoration and Conservation Project 1st Verification Report (dated 18 May 2017)*, available on the VCS website.

Stratification was reviewed and it was confirmed that stratification remained the same from the validated strata boundaries as seen in the Monitoring Report Map 18.

At this monitoring period the project used unmanned aerial vehicles (UAVs) as part of the LU/LC change monitoring effort, though no burning or AGB losses were detected. In the previous monitoring period UAVs were used to assess burnt areas. The verification team agrees that UAVs are an appropriate tool to collect high resolution imagery and observed their use in a reasonable manner during the site visit. UAVs observed during the site visit were limited in data collection extent and suggesting their more suitable use is smaller scale validation or truthing exercises. However, the project has previously explored UAV tools capable of greater coverage and fine resolution detection including fire-affected areas. As use of drones is expected to be an important component in future monitoring LU/LC change efforts, standard operating procedures (SOPs) were drafted in line with their intended use and remote sensing data requirements contained in M-MON. The UAV SOPs sufficiently capture best practices for using UAVs and provides clear direction for their consistent deployment.

No new methodology deviations relating to monitoring and/or measurement of GHG emission reductions or removals were applied by the project developer/identified by ESI during this second monitoring period verification. The GHG emission reductions generated by the project have not become included in an emissions trading program other than the VCS program and it has not received or sought any other form of environmental credit as confirmed through a risk-based review by the verification team.

Sustainable development contributions are applicable to this project although Indonesia has achieved 108 out of 169 Sustainable Development Goals. The project was confirmed to be actively supporting many UN SDGs as reported in Table 2 of the monitoring report through the site visit interviews and document review as part of the verification.

4.2 Accuracy of GHG Emission Reduction and Removal Calculations

ESI conducted an intensive review of all input data, parameters, formulae, calculations, conversions, statistics and resulting uncertainties and output data to ensure consistency with the VCS Standard, the validated PD, and VM0007. Data with associated conversion factors, formulas, and calculations were provided by the project proponent in spreadsheet format to ensure all formulae were accessible for review. The Verification Team recalculated subsets of the analyses to confirm correctness and assess if data transposition errors occurred to achieve a reasonable level of assurance and to meet the materiality requirements of the project, as required by Section 5.1.3 of the VCS Standard. The project proponent also provided answers to questions on calculations to ensure the verification team understood the approach and could confirm its consistency with VM0007 and the PD.

An overview of the data and parameters monitored, along with verification team findings, are included in the table below:

Data Unit / Parameter	Accuracy of GHG emission reductions and removals	Whether methods and formulae set out in the PD have been followed	Appropriateness of default values
$\Delta C_{WPS-REDD}$	Verification team confirmed the net GHG emissions in the REDD project scenario up to year t* were correct by recalculating and checking input values. The value was traced to the quantification of carbon stock changes for the baseline, project emission/removals and, ultimately net GHG emission reductions during the monitoring period.	This parameter was reviewed and re-calculated using methods set forth in the methodology and the PD and confirmed followed.	Not applicable.
$\Delta C_{LK-AS,planned}$	The net greenhouse gas emissions due to activity shifting leakage for projects preventing planned deforestation was confirmed by the verification team through an independent check on source data from Global Forest Watch.	This parameter was reviewed and re-calculated using methods set forth in the methodology and the PD and confirmed followed.	Not applicable.
ΔC_{LK-ME}	Net greenhouse gas emissions due to market-effects leakage is not applicable as project activities do not include timber	Not applicable.	Not applicable.

	production.		
$\Delta C_{WPS-ARR}$	Net GHG emissions in the ARR project scenario up to year t* was found to be not applicable this period as no ARR activities have begun.	Not applicable.	Not applicable.
ΔC_{LK-ARR}	Net GHG emissions due to leakage from the ARR project activity up to year t* is not applicable as no displacement of pre-project agricultural activities (LK-ARR) is expected. The project will be planting a relatively small area in comparison to adjacent communities agroforestry activities. Further, the project is actively facilitating community forestry activities which are by definition not leakage	Not applicable.	Not applicable.
$GHG_{WPS-WRC}$	Net GHG emissions in the WRC project scenario up to year t* was confirmed through sourcing of values from the validated PD. Independent re-calculation was performed to confirm correctness of values applied.	This parameter was reviewed and re-calculated using methods set forth in the methodology and the PD and confirmed followed.	Default factors were confirmed correctly obtained from the IPCC for Dissolved Organic Carbon (DOC).
GHG_{LK-ECO}	Net GHG emissions due to ecological leakage from the WRC project activity up to year t are not applicable this period. Ecological leakage was not applicable as no peat re-wetting activities occurred during the monitoring period and confirmed during the site visit	Not applicable.	Not applicable.

For this monitoring period the project has fully switched from Landsat 8 to using the Advanced Land Observing Satellite Phased Array L-band Synthetic Aperture Radar 2 sensor (ALOS PALSAR 2) data to monitor and quantify all forest disturbances. The verification team reviewed the stratification results of an imagery overlap comparison between Landsat 8 (acquired 09 June 2016) and ALOS PALSAR 2 (acquired 01 June 2016). During the site visit the verification team was given a tutorial and observed the analysis steps for both data sources and confirmed methods are in line with best practice for remote sensing. The results of the stratification exercises were found to be in good agreement, evidenced visually and from a confusion matrix. The verification team agrees that the PALSAR sensor is well suited to disturbance detection analysis and forest monitoring for a variety of reasons including cloud penetration, availability, and resolution. As satellite-based sensors often have a limited design lifespan the verification team also confirms this change in disturbance monitoring data is appropriate for future verification periods where L band radar satellite data are employed.

No biomass burning occurred this monitoring period as confirmed from an independent check on NASA MODIS hotspot data and opportunistic sampling during the site visit. However, the project has assumed conservatively decomposition of killed but un-combusted trees from year 2015 (prior monitoring period). Post-2015 fire detailed, high-resolution drone imagery was collected to confirm field staff observations that aboveground trees were killed but did not combust. The VVB confirmed this assessment from a series of drone flights conducted during the 2017 site visit. The methods to determine proportion of biomass burnt and the associated accuracy assessment were reviewed during the previous monitoring period. The VVB agrees with the initial verifier that a decay function, adjusted by proportion of live trees detected in burnt areas, is an appropriate method for emissions estimates of deadwood decomposition for burned areas where trees did not combust.

The project has monitored degradation through implementation of a PRA in 2015 which resulted in a degradation survey. Selective logging is N/A. At this monitoring period the project has not included degradation ($\Delta C_{P, Deg, i, t}$) in accounting although it was confirmed to exist at the previous monitoring period. At the previous monitoring period the project elected to conservatively include degradation and forego a T-SIG significance test. As degradation was conservatively accounted for in entirety at the previous monitoring period it is permissible to not be included this monitoring period. To confirm the appropriateness of the field surveys for degradation the VVB visited a degradation stump survey plot and examined steps followed. At the next monitoring period degradation will be re-assessed following the M-MON requirement every two years.

For all monitored project emissions included in accounting for this monitoring period the project elected to forego a T-SIG significance test. It was conservatively assumed that all emissions sources; burnt dead standing trees and new canal in south, be included in carbon accounting.

Activity shifting leakage was confirmed correct through sourcing of the data from Global Forest Watch. As noted in Section 4.3 of the Monitoring Report, tree cover loss was assumed a surrogate for deforestation. The highest parameter Adef value was applied from prior years as no data yet exists from Global Forest Watch for 2016. The verification team confirmed that this is reasonable and conservative. Project case leakage must exceed baseline leakage to be included in carbon accounting for activity shifting leakage.

Ecological leakage was not applicable as no peat re-wetting activities occurred during the monitoring period and confirmed during the site visit. No leakage following the displacement of pre-project agricultural activities (LK-ARR) is expected as the project will be planting a relatively small area in comparison to adjacent communities agroforestry activities. Further, the project is actively facilitating community forestry activities which are by definition not leakage. ARR crediting is not claimed this period, the project reports that ARR crediting is planned to start in 2020.

Uncertainty calculations for all project activities were reviewed at length as prescribed by the methodology and confirmed to result in a correct estimate of uncertainty. No uncertainty deduction was required for this monitoring period.

The methods and formulae set out in the PD for calculating baseline emissions, project emissions, and leakage were confirmed to have been followed. The total end of the 2016 monitoring period carbon stocks in all project activities for all relevant pools resulting from carbon stock changes were correctly quantified. Analysis of project inventory data used appropriate formulas, conversions, and parameters, supported by scientific literature. Where ranges of parameters exist, or other types of formulaic uncertainty, appropriately conservative values were used in data analysis.

In conclusion, the quantification methods for GHG emission reductions and removals have been performed correctly and in accordance with the validated PD and VM0007 v1.5.

4.3 Quality of Evidence to Determine GHG Emission Reductions and Removals

During this verification assessment, the evidence provided by the project proponent was sufficient in both quantity and quality to support the determination of GHG emission removals reported by the project. Throughout the verification, the project proponent demonstrated a commitment toward conservativeness and took all measures appropriate to ensure the reliability of evidence provided.

The threshold for materiality with respect to the aggregate of errors, omissions and misrepresentations relative to the total reported GHG emission reductions and/or removals was met for this project as defined in the Verification Sampling Plan. Materiality is a concept that errors, omissions and misrepresentations could affect the GHG reduction assertion and influence the intended users (ISO 14064-3:2006). As defined by VCS Version 3, the materiality will be 1% for this large project.

The evidence provided to determine emission reductions reported in the Monitoring Report included values, notations, units and sources. This evidence has been cross-checked with supplied emission reduction calculation spreadsheets. The procedure for data recording, transfer and final transposition was also verified and found to be in compliance with the monitoring plan outlined in the PD. The verification team confirmed through cross checks that adequate monitoring mechanisms are in place where the required parameters need to be monitored.

The verification team was provided access to the project's central database where monitoring data is compiled for quantification steps and reporting. The database clearly organizes project methods and data for efficiency. In addition, the verification team was provided access to the

project’s cloud-based file storage facility. These tools ensure accurate information flow for monitoring efforts. Section 3.3.1 of the Monitoring Report provides additional detail on project data management methods and structure.

Interviews conducted (oral evidence) are outlined in Section 2.3 above, and the final documents received from the Project Proponent supporting the determination of GHG removals can be viewed in Appendix A.

4.4 Non-Permanence Risk Analysis

The Katingan Peatland Restoration and Conservation Project Monitoring Report utilized the non-permanence risk analysis tool, AFOLU Non-Permanence Risk Tool, to assess risk according to internal risk, external risk, natural risk, and mitigation measures for minimizing risk. The verification team reviewed the Non-Permanence Risk Report following VCS AFOLU Requirements Section 3.7.3 and confirmed that the project adheres to the requirements set out in the VCS AFOLU Non-Permanence Risk Tool. At all levels, the verification team evaluated the rationale, appropriateness, and justifications of risk ratings chosen by the project proponent. Each risk factor was thoroughly assessed for conformance. Any identified NCR and/or CL findings related to the AFOLU Non-Permanence Risk Tool/Report are presented in Appendix B.

The final score was calculated to be 10%. A brief review of each factor is found in the table below:

Risk Factor	Rationale & Quality	Conclusion
Internal Risks		
Project Management	The management team includes individuals with skills necessary to undertake all project activities. Project proponents have experience in the development of carbon projects with the same project activities thus also lowering overall internal risk. Other project management components were confirmed to have been applied during the site visit.	A risk rating of -4 is appropriate given the rationale provided and all statements made are substantiated.
Financial viability	Project proponents provided the verification team appropriate and verifiable documentation to prove project financial breakeven is less than 4 years from this risk assessment. Items presented to the verification team by project proponents give reasonable assurance that the risk rating for financial viability is appropriately set. Values were sourced from reputable sources and calculations were confirmed correct through data checks.	A risk rating of 0 is appropriate given the rationale provided and all statements made are substantiated.
Opportunity Cost	A comprehensive NPV analysis was provided to substantiate the most profitable alternative (acacia plantation) is like the project scenario.	A risk rating of 0 is appropriate given the rationale

	The financial model was confirmed through materials that substantiate NPV assumptions including but not limited to; capex, opex, and commodity price changes. Literature sources were found to be reputable (The World Bank, The Bank of Indonesia). Verifiers traced key values in the NPV calculations worksheet to confirm their source and correctness.	provided.
Project Longevity	Legal contractual agreements to address enforceability of carbon stock protection for the project exist as the project holds licenses that cover the entire project lifetime. As such, the value applied was appropriate.	A risk rating of 0 is appropriate given the rationale provided.
Total Internal Risks		0
External Risks		
Land Tenure	For this Indonesian project the ownership and resource access/use are held by different entities. The government owns the land and the project retains ownership rights.	A risk rating of 2 is appropriate given the rationale provided.
Community Engagement	Extensive stakeholder consultation and community institution building was confirmed during the site visit. Consultation on community needs was confirmed for those communities visited that are close to the project area. The project, through partnerships (e.g. Puter Foundation), has strong intentions to improve the social and economic well-being of local communities.	A risk rating of -5 is appropriate given the rationale provided.
Political Risk	Verification Team confirmed the political risk to be rated correctly for the average governance score from the World Bank. Central Kalimantan, Indonesia participates in the Governors' Climate and Forest Taskforce and Indonesia is working on REDD+ Readiness activities as confirmed through an internet search.	A risk rating of 2 is appropriate given the rationale provided.
Total External Risks		0

Natural Risks		
Natural Risk	<p>The risk rating given for fire⁸ was justified by scientific research which supports the notion that fires in the project region are primarily anthropogenic and primarily affect drained peatlands. Natural fire incidence is low as the elevated water table in undrained peatlands prevents spreading. Previous fires in drained areas visited during the site visit were confirmed to be anthropogenic. The verification team agrees with this assessment as being appropriate.</p> <p>Verification Team agrees that the forests of the project area have a high species diversity and therefore resistant to catastrophic disturbance caused by insect pests or forests diseases.</p> <p>Project proponents appropriately base risk of extreme weather risk rating from the likelihood of wind disturbance which could influence carbon stocks.</p> <p>Local geology (i.e. volcanos, fault lines) are not active in the project area and the risk rating was appropriately given as zero.</p>	<p>A combined natural risk rating of 2.0 is appropriate given the rationale provided and all statements made are substantiated.</p>
Total Natural Risks		2.0
Overall Risk Rating = 2% Non-Permanence Risk Rating = 10%		

In summary, project proponents have accounted for risk factors in a reasonable manner and have reached an overall risk rating that encompasses all risks of non-permanence. The project has applied the minimum Non-Permanence Risk Rating of 10%. As required, risk will be reassessed and given risk scores at each verification period.

⁸ At the first monitoring period anthropogenic fire risk was not included in the natural fire risk category following VCS guidance at the time. However, at the second monitoring period it was clarified from VCS on 29 June 2017 that all fire risk should be accounted for in the Natural Risk section.

5 SAFEGUARDS

5.1 No Net Harm

No negative environmental impacts are expected because activities related to the project goals seek to preserve the peatland forests intact and prevent drainage. As confirmed through the site visit and previous CCB verification, no negative socio-economic impacts are expected as the project has an extensive community outreach and development program. However, project failure can be expected to have negative impacts on project benefits which are captured by the Non-Permanence Risk assessment.

5.2 Local Stakeholder Consultation

Stakeholder involvement was confirmed through the site visit community interviews and observations of a consistent level of prior and on-going outreach to stakeholders. It is clear the project has ongoing communication with local stakeholders based on the results of on-site interviews where respondents indicated project details and program collaboration. Community institution building was also confirmed during the site visit where it was noted by the verification team that each village has specific needs and the project was helping to address them individually. Table 4 of the monitoring report provides details on formal stakeholder consultations. As community input was solicited from the project outset, and is on-going, it is expected that project activities will be implemented in close coordination with communities.

6 VERIFICATION CONCLUSION

After review of all project information, procedures, calculations, and supporting documentation, ESI confirms that the monitoring conducted by the project proponent, along with the supporting Monitoring Report, are accurate and consistent with all aforementioned VCS criteria, the validated PD, and the selected methodology (VM0007). ESI confirms that *The Katingan Peatland Restoration and Conservation Project Monitoring Report* (v3.0 dated 29 June 2017) has been implemented in accordance with the validated PD.

ESI confirms all verification activities, including objectives, scope and criteria, level of assurance, monitoring and project documentation adherence to VCS Version 3 (and all associated updates), as documented in this report are complete. ESI concludes without any qualifications or limiting conditions that *The Katingan Peatland Restoration and Conservation Project Monitoring Report* (v3.0 dated 29 June 2017) meets the requirements of VCS Version 3 and all associated updates for the second monitoring period.

The GHG assertion provided by PT. Rimba Makmur Utama and verified by ESI has resulted in the GHG emissions reduction or removal of 4,821,371 tCO₂ equivalents (baseline minus project minus leakage) by the project during the verification period/reporting period (1 November 2015 to 31 December 2016). This value is gross of the 10% (482,137 tCO₂ equivalents) buffer withholding based on the non-permanence risk assessment tool. This results in 4,339,233 tCO₂ equivalents of credits eligible for issuance as VCUs.


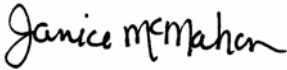
Verification period: From 1 November 2015 to 31 December 2016

Verified GHG emission reductions and removals in the above verification period:

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Deductions for AFOLU pooled buffer account (tCO ₂ e)	GHG credits eligible for issuance as VCUs (tCO ₂ e)**
2016	5,215,695	394,324	0	482,137	4,339,233
Total	5,215,695	394,324	0	482,137	4,339,233

**Note 10% risk deduction accounted for.

Submittal Information

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Report Submitted by:	Environmental Services, Inc. -Corporate Office 7220 Financial Way, Suite 100 Jacksonville, Florida 32257
ESI Lead Verifier Name and Signature	 Shawn McMahon Lead Verifier
ESI Division Regional Technical Manager Name and Signature	 Janice McMahon Vice President and Forestry, Carbon and GHG Division Regional Technical Manager
Date:	07 July 2017

APPENDIX A – DOCUMENTS RECEIVED/REVIEWED

Documents received 17 March 2017

- Uncertainty calculation 2016_FINAL_17-Mar-17.xlsx
- MR Appendix_1_NPRA
 - MR Appendix_1_NPRA_2016_FINAL_17_MARCH_17.docx
 - NPRA Supporting documentation
 - Political Risk_World Bank Indicators_VCS_NPRA_v3.3.xlsx
 - Katingan Financial Model_60-Year Projection_Updated to end-2016_CONFIDENTIAL_17-Mar-17.pdf
 - Katingan Loan Amendment Agreement_CONFIDENTIAL_17-Mar-17.pdf
 - Katingan NPV Analysis_60-Year Projection_Updated to end-2016_CONFIDENTIAL_17-Mar-17.xlsx
- Katingan Emission Calculations 2016_Master Spreadsheet_FINAL_17-Mar-17.xlsx
- Leakage 2016_FINAL_17-Mar-17.xlsx
- MR Appendix_2_Climate MRV Tracker_2016_FINAL_17-Mar-17.xlsx
- SecondMRKatingan_FINAL_17-Mar-17.pdf

Documents received 27 March 2017

- Monitoring_Result_2016_FINAL_17-Mar-17.xlsx

Documents received 04 April 2017

- PALSAR_and_Landsat_2016
 - Landsat_2016
 - le71190622016169edc00.tif.aux.xml
 - landsat_2016_stratification.aux
 - lc81190622016161lgn00.aux
 - le71190622016169edc00.aux
 - landsat_2016_stratification.tif.vat.cpg
 - landsat_2016_stratification.tif.vat.dbf
 - landsat_2016_stratification.tif.ovr
 - lc81190622016161lgn00.tif.ovr
 - le71190622016169edc00.tif.ovr
 - Landsat_stratification_J2016.rar
 - Landsat7_June2016.rar
 - Landsat8_June2016.rar
 - landsat_2016_stratification.tfw
 - lc81190622016161lgn00.tfw
 - le71190622016169edc00.tfw
 - landsat_2016_stratification.tif
 - lc81190622016161lgn00.tif
 - le71190622016169edc00.tif
 - landsat_2016_stratification.tif.aux.xml
 - lc81190622016161lgn00.tif.aux.xml
 - Palsar_2016
 - PalsarJ2016_layer_stack.rar

- layerstack_palsar2016.aux
- layerstack_palsar2016.tfw
- layerstack_palsar2016.tif
- layerstack_palsar2016.tif.aux.xml
- layerstack_palsar2016.tif.ovr
- palsar_2016_stratification.aux
- palsar_2016_stratification.tfw
- palsar_2016_stratification.tif
- palsar_2016_stratification.tif.aux.xml
- palsar_2016_stratification.tif.ovr
- palsar_2016_stratification.tif.vat.cpg
- palsar_2016_stratification.tif.vat.dbf
- Palsar_J2016_stratification.rar
- Orthorectified
 - img-hv-alos2109273670-160601-fbdr1_30m.rrd
 - IMG-HH-ALOS2109273670-160601-FBDR1_30m.img
 - IMG-HV-ALOS2109273670-160601-FBDR1_30m.img
 - Palsar_J16_orthorectified.rar
 - img-hh-alos2109273670-160601-fbdr1_30m.rrd
- Raw
 - \PON_00000931_0000117137
 - 0000117137_001001_ALOS2109273670-160601\VOL-ALOS2109273670-160601-FBDR1.1__D
 - 0000117137_001001_ALOS2109273670-160601\IMG-HH-ALOS2109273670-160601-FBDR1.1__D
 - 0000117137_001001_ALOS2109273670-160601\IMG-HV-ALOS2109273670-160601-FBDR1.1__D
 - 0000117137_001001_ALOS2109273670-160601\LED-ALOS2109273670-160601-FBDR1.1__D
- Palsar_Orthorectified_Data_2017
 - Orthorectified data
 - Orthorectified data\20170125_HV.img.xml
 - Orthorectified data\20170125_HH.img
 - Orthorectified data\20170125_HV.img
 - Orthorectified data\Palsar2017_Orthorectified_HH.rar
 - Orthorectified data\Palsar2017_Orthorectified_HV.rar
 - Orthorectified data\20170125_hh.rrd
 - Orthorectified data\20170125_hv.rrd
 - Orthorectified data\20170125_HH.img.xml
- Palsar_Processing_2017
 - Processing
 - Unedited_stratification.tif.aux.xml
 - palsar2017_layer_stack.aux
 - unedited_stratification.aux
 - Final_stratification.cpg
 - Unedited_stratification.tif.vat.cpg

- Final_stratification.dbf
- Unedited_stratification.tif.vat.dbf
- Final_stratification.shx
- Final_stratification.shp
- Palsar2017_layer_stack.tif.ovr
- Unedited_stratification.tif.ovr
- Final_stratification.prj
- Palsar_2017_final_stratification.rar
- Palsar2017_layer_stack.rar
- Palsar2017_unedited_stratification.rar
- Final_stratification.sbn
- Final_stratification.sbx
- Palsar2017_layer_stack.tfw
- Unedited_stratification.tfw
- Palsar2017_layer_stack.tif
- Unedited_stratification.tif
- Final_stratification.shp.xml
- Palsar2017_layer_stack.tif.aux.xml

Documents received 11 April 2017

- Remote sensing data file naming.docx
- 6.2.2.2 Logging PRA results & summary.xlsx
- Peat stratification 2010-2015 & 2016 summary.xlsx
- Accuracy_Assessment_2016
 - POINTS_NON_FOREST.shp.xml
 - matrix_UNION.tif.vat.cpg
 - POINTS_FOREST.cpg
 - POINTS_NON_FOREST.cpg
 - matrix_UNION.tif.vat.dbf
 - POINTS_FOREST.dbf
 - POINTS_NON_FOREST.dbf
 - POINTS_FOREST.shx
 - POINTS_NON_FOREST.shx
 - POINTS_FOREST.shp
 - POINTS_NON_FOREST.shp
 - accuracy_assessment.xlsx
 - Matrix_results.xlsx
 - matrix_UNION.tif.ovr
 - POINTS_FOREST.prj
 - POINTS_NON_FOREST.prj
 - matrix_union.rar
 - points_forest.rar
 - Points_non_forest.rar
 - Accuracy_Assessment_2016\POINTS_FOREST.sbn
 - POINTS_NON_FOREST.sbn
 - POINTS_FOREST.sbx

- POINTS_NON_FOREST.sbx
- matrix_UNION.tfw
- matrix_UNION.tif
- matrix_UNION.tif.aux.xml
- POINTS_FOREST.shp.xml
- Accuracy_Assessment_2017
 - points_nonforest.shp.xml
 - points_forest.CPG
 - points_nonforest.CPG
 - points_forest.dbf
 - points_nonforest.dbf
 - points_forest.shx
 - points_nonforest.shx
 - points_forest.shp
 - points_nonforest.shp
 - Accuracy_Assessment.xlsx
 - points_forest.prj
 - points_nonforest.prj
 - 2017_Palsar_Accuracy_Assessment_Points_Forest.rar
 - 2017_Palsar_Accuracy_Assessment_Points_Non_Forest.rar
 - points_forest.shp.xml

Documents received 14 April 2017

- Suggested packing list.docx
- April14thproposedauditschedule.xlsx
- Katingan_AGB_Stratification
 - Katingan_Stratification_2016.qpj
 - Katingan_Stratification_2016.cpg
 - Katingan_Stratification_2016.dbf
 - Katingan_Stratification_2016.shx
 - Katingan_Stratification_2016.shp
 - Katingan_Stratification_2016.prj

Documents received 22 April 2017

- Drone data
 - Central Camp
 - 152 Various .jpg files
 - East Camp
 - 7 Various .jpg files
 - South Camp
 - 24 Various .jpg files

Documents received 31 May 2017

- 4 31_May_2017 CONFIDENTIAL Financial Documents\Katingan Financial Model_60-Year Projection_Updated to end-2016_As Excel_CONFIDENTIAL_30-May-17.xlsx
- 4 31_May_2017 CONFIDENTIAL Financial Documents\170517_Katingan VERPA_1.pdf
- 4 31_May_2017 CONFIDENTIAL Financial Documents\KatinganVERPA_2.pdf

- 4 31_May_2017 CONFIDENTIAL Financial Documents\Technical Model (used in NPV analysis)_CONFIDENTIAL_30-May-17.xlsx

Documents received 05 June 2017

- SecondMRKatingan_REVISED_01_June_17.docx
- SOP_UAV.pdf
- Community grievance records_Nov-2015-Dec-2016_30-May-17.xlsx
- Katingan Emission Calculations 2016_Master Spreadsheet_REVISED_30-May-17.xlsx
- VO17010_Katingan_verif_NCRs_Rd1_20170517ProjectResponseJune012017.xlsx
- MR Appendix_1_NPRA_2016_Revised 01June2017.docx

Documents received 13 June 2017

- 6 13_June_2017 CleanMR\SecondMRKatingan_REVISED_01_June_17clean.pdf
- 6 13_June_2017 CleanMR\SecondMRKatingan_REVISED_01_June_17clean.docx

Documents received 29 June 2017

- MR Appendix_1_NPRA_2016_Revised 29June2017 tracked changes.docx
- MR Appendix_1_NPRA_2016_Revised 29June2017clean.docx
- MR Appendix_1_NPRA_2016_Revised 29June2017clean.pdf
- SecondMRKatingan_REVISED_29_June_17clean.docx
- SecondMRKatingan_REVISED_29_June_17clean.pdf
- SecondMRKatingan_REVISED_29_June_17tracked changes.docx

APPENDIX B – NCRS/CL/OFIS

Item Number	1
VCS Standard VCS Version 3 Requirements Document 19 October 2016, v3.6 (Section)	3.6 PROJECT DESCRIPTION DEVIATIONS
VCS Standard VCS Version 3 Requirements Document 19 October 2016, v3.6 (Description)	2) Where the deviation does not impact the applicability of the methodology, additionality or the appropriateness of the baseline scenario, and the project remains in compliance with the applied methodology, the deviation shall be described and justified in the monitoring report. This shall include a description of when the changes occurred and the reasons for the changes. The deviation shall also be described in all subsequent monitoring reports. Examples of such deviations include changes in the procedures for measurement and monitoring, or project design changes that do not have an impact on the applicability of the methodology, additionality or the appropriateness of the baseline scenario.
Applicability to Project (Y or N/A)	Y
Requirement Met (Y, N or Pending)	Y
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR Section 2.2.2

<p>ESI Findings - Round 1 (17 May 2017)</p>	<p>As noted elsewhere in the review, the project has elected to apply a PD deviation for use of the Advanced Land Observing Satellite Phased Array L-band Synthetic Aperture Radar 2 sensor (ALOS PALSAR 2) to monitor forest disturbances instead of multispectral Landsat imagery as described in the PD. Please see points below where the appropriateness of this deviation was evaluated:</p> <ul style="list-style-type: none"> -The deviation does not impact the applicability of the methodology as the intent is to monitor forest deforestation or disturbance which the new sensor provides -Project additionality is not impacted -The baseline scenario of acacia plantation conversion remains unaffected as the deviation affects monitoring efforts -Project remains in compliance with the methodology as PALSAR data is an improvement in monitoring data for the period <p>The project has also elected to apply a PD deviation for use of older Global Forest Watch data. Please see points below where the appropriateness of this deviation was evaluated:</p> <ul style="list-style-type: none"> -The deviation does not impact the applicability of the methodology as the intent is to monitor concession clearing activities -Project additionality is not impacted -The baseline scenario of acacia plantation conversion remains unaffected as the deviation affects leakage monitoring efforts -Project remains in compliance with the methodology as applying the most aggressive annual concession clearing value is the most conservative application of leakage monitoring data for the period -The accuracy of the Global Forest Watch data was discussed during the site visit and it was confirmed that the newest available data has not yet had QA/QC applied and therefore unreliable for determination of leakage -The VVB notes that following VM0007 accounting methods, monitored leakage must exceed baseline leakage for inclusion in final emission reduction estimates <p>The VVB confirmed that an adequate description and justification has been included in the MR for two (2) PD deviations. However, the project has omitted mention of the PRA assumptions for illegal logging PD deviation applied at the first monitoring period. Also, though the PD deviations were confirmed to "not impact the applicability of the methodology, additionality or the appropriateness of the baseline scenario, and the project remains in compliance with the applied methodology," a description of these elements is lacking from the MR. The VVB notes that these elements were mentioned appropriately in the first MR.</p>
<p>Round 1 NCR/CL/OFI</p>	<p>CL: Please address the findings and describe within the MR how the project meets the conditions for the PD deviations. Please also include mention of the PRA illegal logging PD deviation in the MR.</p>
<p>Round 1 Response from Project Proponent (06 June 2017)</p>	<p>Section 2.2.2 of the Monitoring report has been amended to include mention of the PRA illegal logging deviation as well as a description of how the project meets the conditions for the PD deviations.</p>

ESI Findings - Round 2 (29 June 2017)	<p>The verifier reviewed the revised Monitoring Report submitted in response to this finding. The project now describes within the MR how the project meets all conditions for the PD deviations. Also, all PD deviations employed by the project are now described, including the logging PD deviation. The item is addressed.</p>
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Item Number	2
VCS Standard VCS Version 3 Requirements Document 19 October 2016, v3.6 (Section)	3.16 MONITORING
VCS Standard VCS Version 3 Requirements Document 19 October 2016, v3.6 (Description)	3.16.6 The monitoring report describes all the data and information related to the monitoring of GHG emission reductions or removals. The project proponent shall use the VCS Monitoring Report Template and adhere to all instructional text within the template.
Applicability to Project (Y or N/A)	Y
Requirement Met (Y, N or Pending)	Y
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	VCS supplied templates
ESI Findings - Round 1 (17 May 2017)	<p>The project seems to have blended the headings from the combined VCS+CCB monitoring report template "VCS+CCB Monitoring & Implementation Report Template, v3.0.docx" with the sections from the VCS only monitoring report template "VCS Monitoring Report Template, v3.XX.doc. Additional relevant sections were added by the proponent with the section headings, for instance "3.3.3 Climate impact monitoring plan and methodological approach". Since CCB elements are omitted from verification this period, the VVB believes fully following (to include page headings etc.) the VCS monitoring report template is more appropriate. The VVB was unable to locate a requirement the project use the most recent VCS supplied template, the most recent VCS only monitoring report template is "VCS Monitoring Report Template, v3.4-19Oct2016.doc".</p>
Round NCR/CL/OFI	1 CL: Please address the findings and fully use the chosen VCS template following this requirement. Otherwise, please justify the chosen approach.

Round 1 Response from Project Proponent (06 June 2017)	<p>A portion of the MR had the VCS monitoring report header and footer. The rest of the MR has been updated to match and reflect that the document is a VCS MR only.</p> <p>Section headings are consistent with the VCS MR Template and all required section headings and sub-sections are included. While the MR Template instructions explicitly forbid deleting sections, there is no similar prohibition on adding sub-sections. The project interpreted this to mean that additional subsection headings could be added and did so when it improved transparency and facilitated stakeholder review of the information included. In some instances, information required by the VCS standard like the NPRA results and review of public comments, does not have a section designated for its inclusion. In other cases, it was felt that subsections would improve readability and review by communities and stakeholders such as when discussing the extensive number of project activities conducted by the project. The project elected to use CCB/VCS joint template headings when appropriate when adding sub-sections because every third year, the project will be using the CCB/VCS joint template and the project team would like to have consistency across the MRs as much as possible.</p>
ESI Findings - Round 2 (29 June 2017)	<p>The verifier reviewed the revised Monitoring Report submitted in response to this finding. The VCS only Monitoring Report is used and all required sections have been included. The verifier agrees that adding CCB sections and related from the combined VCS+CCB template is reasonable and encourages transparent reporting that is comparable year over year. The item is addressed.</p>

Item Number	3
VCS Standard VCS Version 3 Requirements Document 19 October 2016, v3.6 (Section)	3.17 RECORDS AND INFORMATION
VCS Standard VCS Version 3 Requirements Document 19 October 2016, v3.6 (Description)	3.17.1 The project proponent shall ensure that all documents and records are kept in a secure and retrievable manner for at least two years after the end of the project crediting period.
Applicability to Project (Y or N/A)	Y
Requirement Met (Y, N or Pending)	Y
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR Section 3.3

ESI Findings - Round 1 (17 May 2017)	The project area location was assessed at validation and is clearly presented in the validated PD. At this second monitoring, period the VVB observed physical boundary demarcation activities as described in Section 2.1.5 of the MR. Two types of physical demarcation including wooden posts and concrete pylons or posts were observed at different boundary points depending on the legally permissible land use (permanent forest or convertible land use). It is unclear from reporting documentation which physical demarcation method is appropriate to be used.
GPS data collected by the VVB during the site visit was found to reasonably align with the digital representation of the project boundaries from shapefiles.	
Round 1 NCR/CL/OFI	CL: Please clarify in reporting documentation the physical boundary demarcation methodology depending on legal land use.
Round 1 Response from Project Proponent (06 June 2017)	Section 1.7.1.1 of the Monitoring report has been amended to include a clarification of the boundary demarcation methodology.
ESI Findings - Round 2 (29 June 2017)	The verifier reviewed the revised Monitoring Report submitted in response to this finding. Section 1.7.1.1 now describes the special considerations for the Ecosystem Restoration Concession for boundary demarcation methods depending on neighboring land-use legal status. The item is addressed.

Item Number	5
VCS AFOLU Requirements 19 October 2016, v3.5 (Section)	4.7 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS
VCS Standard VCS Version 3 Requirements Document 19 October 2016, v3.6 (Description)	* Where the net change in carbon stocks is not a whole number, round the calculated VCU and buffer credit volumes down to the nearest whole number. Where the net change in carbon stocks is a whole number, round the calculated buffer volume up, and the VCU volume down, to the nearest whole number.
Applicability to Project (Y or N/A)	Y
Requirement Met (Y, N or Pending)	Y
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Katingan Emission Calculations 2016_Master Spreadsheet_FINAL_17-Mar-17.xlsx; MR Section 4.4.7
ESI Findings - Round 1 (17 May 2017)	The VVB noted in review of the final estimated VCU calculations and reporting that this decimal guidance was not followed. The buffer quantification does not need the Integer function applied.
Round 1 NCR/CL/OFI	CL: Please address the findings and correctly compute and report final estimated VCUs following this requirement.

Round 1 Response from Project Proponent (06 June 2017)	The Master spreadsheet and Monitoring Report Section 4.4.7, Table 34 have been amended to round-down final buffer and VCU calculations in line with this guidance.
ESI Findings - Round 2 (29 June 2017)	The verifier independently re-checked final buffer and VCU calculations and confirmed that rounding rules following this requirement are now followed. No further action is needed. The item is addressed.

Item Number	6
Approved VCS Module VMD0015, Version 2.1 (20 November 2012), REDD Methodological Module: Methods for monitoring of greenhouse gas emissions and removals (M-MON), Sectoral Scope 14 (Section)	5.1 STEP 1: Selection and analyses of sources of land-use and land-cover (LU/LC) change data
VCS Standard VCS Version 3 Requirements Document 19 October 2016, v3.6 (Description)	If remotely sensed data have become available from new and higher resolution sources (e.g. from a different sensor system) during this period, then it is possible to change the source of the remotely sensed data.
Applicability to Project (Y or N/A)	Y
Requirement Met (Y, N or Pending)	Y
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR Section 4.2.2, 4.2.4, 1st Monitoring Report, site visit observations

ESI Findings - Round 1 (17 May 2017)	<p>At this monitoring, period the project used unmanned aerial vehicles (UAVs) as part of the LU/LC change monitoring effort, though no burning or AGB losses were detected. In the previous monitoring period UAVs were used to assess burnt areas. The VVB agrees that UAVs are an appropriate tool to collect high resolution imagery and observed their use in a reasonable manner during the site visit. UAVs observed during the site visit were limited in data collection extent and suggesting their more suitable use is smaller scale validation or truthing exercises. However, the project has previously explored UAV tools capable of greater coverage and fine resolution detection including fire-affected areas. As use of drones is expected to be an important component in future monitoring LU/LC change efforts, standard operating procedures (SOPs) should be drafted in line with their intended use and remote sensing data requirements contained in M-MON.</p> <p>The VVB notes that wall to wall coverage for LU/LC change now uses synthetic aperture radar data from the ALOS PALSAR 2. Please see later finding in this module.</p>
Round 1 NCR/CL/OFI	<p>CL: Please address the findings and develop UAV SOPs in line with their intended use and remote sensing data requirements contained in M-MON. Otherwise, please justify omission of defined methods for UAV LU/LC monitoring.</p>
Round 1 Response from Project Proponent (06 June 2017)	<p>The current MR presents no drone/UAV data. However, drone/UAVs have been used in previous periods, and will continue to be used in the future. A SoP covering the operation of drone/UAVs by the project has been written and distributed. A copy is provided.</p>
ESI Findings - Round 2 (29 June 2017)	<p>Standard Operating Procedures for Unmanned Aerial Vehicles (UAV) were developed in response to this finding and the document "SOP_UAV.pdf" was submitted and reviewed. It sufficiently captures best practices for using UAVs and provides clear direction for their consistent deployment. The item is addressed.</p>

Item Number	7
Approved VCS Module VMD0015, Version 2.1 (20 November 2012), REDD Methodological Module: Methods for monitoring of greenhouse gas emissions and removals (M-MON), Sectoral Scope 14 (Section)	5.2.1 Monitoring deforestation
VCS Standard VCS Version 3 Requirements Document 19 October 2016, v3.6 (Description)	<p>For each post-deforestation land use (u) estimate the long-term carbon stock (Represented by Equation 6 on Page 9)</p>

Applicability to Project (Y or N/A)	Y
Requirement Met (Y, N or Pending)	Y
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MRV Tracker supporting worksheet
ESI Findings - Round 1 (17 May 2017)	As no deforestation was recorded in the project area during the monitoring period, M-MON equation 6 and Cpost parameter were not applied. However, the VVB noted that Cpost parameter (#25) in the MRV Tracker supporting worksheet has incorrect units.
Round 1 NCR/CL/OFI	OFI: VVB suggests converting Cpost values to t CO ₂ -e ha ⁻¹ values following equation 6 of M-MON. No action is needed for OFI.
Round 1 Response from Project Proponent (06 June 2017)	No response required.
ESI Findings - Round 2 (29 June 2017)	No response received and not required. The item is addressed.

Item Number	8
Approved VCS Module VMD0015, Version 2.1 (20 November 2012), REDD Methodological Module: Methods for monitoring of greenhouse gas emissions and removals (M-MON), Sectoral Scope 14 (Section)	5.2.3 Monitoring areas undergoing natural disturbance
VCS Standard VCS Version 3 Requirements Document 19 October 2016, v3.6 (Description)	Net carbon stock change as a result of natural disturbance in the project case is calculated using <u>Equation 20 on Page 19</u> .
Applicability to Project (Y or N/A)	Y
Requirement Met (Y, N or Pending)	Y
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MRV Tracker supporting worksheet

ESI Findings - Round 1 (17 May 2017)	The VVB reviewed monitored parameters within the MRV tracker worksheets (Appendix 2) and noted that parameter $\Delta CP, DistPA, i, t$ as well as accompanying parameters were missing. This item is issued as an OFI as disturbance (natural or anthropogenic) is inherently captured in other monitoring elements of the project and no natural disturbance was recorded during the monitoring period.
Round 1 NCR/CL/OFI	OFI: VVB suggests the project incorporate Equation 20 and accompanying parameters into monitoring.
Round 1 Response from Project Proponent (06 June 2017)	No response required.
ESI Findings - Round 2 (29 June 2017)	No response received and not required. The item is addressed.

Item Number	9
VCS Methodology VM0007 Version 1.5, 9 March 2015 REDD+ Methodology Framework (REDD-MF) Sectoral Scope 14 (Section)	8.4.2 REDD
VCS Standard VCS Version 3 Requirements Document 19 October 2016, v3.6 (Description)	The total net greenhouse gas emissions reductions of the REDD project activity are calculated using <u>Equations on pages 24-25</u>
Applicability to Project (Y or N/A)	Y
Requirement Met (Y, N or Pending)	Y
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MS Section 4.2.4 and 4.4.5
ESI Findings - Round 1 (17 May 2017)	REDD net GHG emissions reductions are correctly computed following Equation 2 of REDD-MF and reported in the MR. However, uncontrolled burning is included in reporting as a "project activity" where perhaps it should be included within the REDD project activity reporting (similar to WRC and ARR). The VVB notes that the previous MR reports uncontrolled burning broken out. A finding within the E-BPB portion of this review contains further details on the biomass burnt decomposition methods and accounting.
Round 1 NCR/CL/OFI	CL: Please clarify the appropriateness of reporting uncontrolled burning emissions separately.

Round 1 Response from Project Proponent (06 June 2017)	Previous Monitoring Report Sections 4.2.2-5 have been combined as new section 4.2.2 "Emissions from REDD activities". Previous sections 4.2.2-5 now treated as sub-sections within 4.2.2.
ESI Findings - Round 2 (29 June 2017)	This item was discussed during a conference call between proponents and verifiers. There is no requirement to either combine or break out reporting of project activities. The verifier agrees with the proponents' revisions within Section 4.2 of the MR to combine REDD project activities; deforestation, forest degradation, and biomass burning. The item is addressed.

Item Number	10
VCS Methodology VMD0017 Version 2.1 9 March 2015 Sectoral Scope 14 Estimation of uncertainty for REDD+ project activities (X-UNC) (Section)	5.3 Part 3: Uncertainty Ex Post in the REDD Project Scenario
VCS Standard VCS Version 3 Requirements Document 19 October 2016, v3.6 (Description)	Uncertainty is first propagated across pools within strata. Note that where the REDD activity is conducted in combination with WRC, the belowground biomass and soil organic carbon pools are omitted here (treated as an emission source from peat in Part 4 below). <u>See Equations 10 - 11 on pages 12-13.</u>
Applicability to Project (Y or N/A)	Y
Requirement Met (Y, N or Pending)	Y
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Uncertainty calculation 2016_FINAL_17-Mar-17.xlsx
ESI Findings - Round 1 (17 May 2017)	The VVB reviewed the uncertainty calculation worksheet provided. It was noted that for determination of UREDD_WPS,SS,I Equation 10 that prior monitoring period hectares for stratification classes were applied. The VVB notes that adjusting stratum acres maintains overall uncertainty <15% following X-UNC and REDD-MF.
Round 1 NCR/CL/OFI	CL: Please clarify if the correct stratum hectares were applied for determination of UREDD_WPS,SS,i. If warranted, please correct.
Round 1 Response from Project Proponent (06 June 2017)	Per the stratification the areas listed for all strata are correct. The figures in the REDD_BSL tab remain unchanged given they're based on the 2010 strata. These haven't been included in the REDD_WPS tab since that would cause us to double count our forest strata uncertainties.
ESI Findings - Round 2 (29 June 2017)	This item was discussed on a conference call between proponents and verifiers. Hectares applied for parameter UREDD_WPS,SS,I are in fact correct where they reflect hectares from the degradation analysis. No action is needed. The item is addressed.

Item Number	11
VCS Methodology VMD0013 Version 1.1 9 March 2015 Estimation of greenhouse gas emissions from biomass and peat burning (E-BPB) Sectoral Scope 14 (Section)	Parameter
VCS Standard VCS Version 3 Requirements Document 19 October 2016, v3.6 (Description)	Ebiomassburn,i,t Greenhouse gas emissions due to biomass burning as part of deforestation activities in stratum i in year t of each GHG (CO ₂ , CH ₄ , N ₂ O) (t CO ₂ e)
Applicability to Project (Y or N/A)	Y
Requirement Met (Y, N or Pending)	Y
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR Section 4.2.4; Emissions calculations master spreadsheet
ESI Findings - Round 1 (17 May 2017)	<p>No biomass burning occurred this monitoring period as confirmed from an independent check on NASA MODIS hotspot data and opportunistic sampling during the site visit. However, the project has assumed conservatively decomposition of killed but uncombusted trees from year 2015 (prior monitoring period). Post-2015 fire detailed, high-resolution drone imagery was collected to confirm field staff observations that aboveground trees were killed but did not combust. The VVB confirmed this assessment from a series of drone flights conducted during the 2017 site visit. The methods to determine proportion of biomass burnt and the associated accuracy assessment were reviewed during the previous monitoring period. The VVB is in agreement with the initial verifier that a decay function, adjusted by proportion of live trees detected in burnt areas, is an appropriate method for emissions estimates of deadwood decomposition for burned areas where trees did not combust.</p> <p>The VVB independently checked the correctness of quantification methods from Section 4.2.4 of the MR for uncontrolled biomass burning deadwood decomposition. However, the VVB was unable to locate the source of parameter Aburn,i,t (8855.68 ha - current MR Table 21) which differed from reporting in the previous monitoring period (Table 53).</p> <p>Other emissions including peat burn were accounted for in the previous monitoring period.</p>

Round NCR/CL/OFI	1	CL: Please clarify the source of the hectares burned value applied for determination of deadwood decomposition estimates.
Round 1 Response from Project Proponent (06 June 2017)		This was a error. The Master spreadsheet has now been amended with the correct value (as reported in previous MR Table 53). The Monitoring Report has been amended to correspond (Sections 4.2.2.3, 4.4.5, 4.4.6, 4.4.7 as revised).
ESI Findings - Round 2 (29 June 2017)		Verifiers independently checked the estimated area burnt in 2015 for calculation of decomposition of burnt tree biomass and the value was found to correctly correlate to Table 53 of the previous Monitoring Report. Resulting tables and reporting were also confirmed correct. The item is addressed.

Item Number	12	
VCS AFOLU Non-Permanence Risk Tool, Version 3.3 19 October 2016 (Section)	Table 7: Community Engagement	
VCS Standard VCS Version 3 Requirements Document 19 October 2016, v3.6 (Description)	Mitigation: The project generates net positive impacts on the social and economic well-being of the local communities who derive livelihoods from the project area	
Applicability to Project (Y or N/A)	Y	
Requirement Met (Y, N or Pending)	Y	
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Risk Report, PD	

ESI Findings - Round 1 (17 May 2017)	<p>The project has in place an adaptive management plan as described in the PD Section 2.2.3 and confirmed during the site visit. Interviews with villagers and Puter Foundation staff suggested that all steps following the community impact monitoring as described in Section 8.1.4.1 of the PD have been implemented. A Puter Foundation community facilitator and village senior leadership individual were present at each village during the site visit and it was made clear that a community institution exists and continues to grow.</p> <p>In Section 2.1.7 of the MR the project describes facilitation with two villages (Mendawai and Telaga) to develop a legal "Village Forest" between 5,000 and 10,000 hectares. The VVB understands that development of village forests on the eastern frontier of the project area is beneficial to prevent continued encroachment of non-forest land uses. The VVB confirmed through a series of interviews during the site visit that these villages and others are in various states of development to secure village forest rights. The existing concession land use, among other elements, Multiple factors, including existing concession land use, suggest that each village has unique challenges and this could be made more clear in the MR.</p>
Round 1 NCR/CL/OFI	OFI: Section 2.1.7 of the MR could further develop a description of the challenges villages encounter in securing a "Village Forest."
Round 1 Response from Project Proponent (06 June 2017)	Additional information has been added to Section 2.1.7 of the Monitoring Report.
ESI Findings - Round 2 (29 June 2017)	Additional detail was confirmed added to Section 2.1.7 of the MR to describe the challenges villages encounter in securing Village Forests. No further action is needed. The item is addressed.

Item Number	13
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VCS Standard VCS Version 3 Requirements Document 19 October 2016, v3.6 (Description)	Species planted (where applicable) associated with more than 25% of the stocks on which GHG credits have previously been issued are not native or proven to be adapted to the same or similar agro-ecological zone(s) in which the project is located.
Applicability to Project (Y or N/A)	Y
Requirement Met (Y, N or Pending)	Y
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Monitoring report, Appendix 1

<p>ESI Findings - Round 1 (17 May 2017)</p>	<p>Risk report states "As described in Section 2.2.1 - B) of the PDD, the project only carries out planting of native species, in particular those adapted to wet conditions of rewetted peatland."</p> <p>The monitoring report also states for fire break plantations "The planting used four local species: Kahui Shorea belangeran, Tumih Combretocarpus rotundatus, Pulai Alstonia spp, Gelam Melaleuca cajuputi." It further states for the community-led agroforestry approach "Through the project's community-based business development program, two economically-valuable local species will primarily be planted; Rubber trees (Havea brasiliensis), as demanded by the project-zone communities, and Jelutong trees (Dyera lowii)." Finally, the monitoring report states "Intensive reforestation will be carried out in all remaining non-forest areas inside the project area. In these areas, three primary native species will be planted; Jelutong (Dyera lowii), Belangiraan (Shorea belangeran), Pulai (Alstonia spp.), as well as other native peat swamp forest species." Section 7.1.4 of the PD titled "Use of non-native species, fertilizers, chemical pesticides and other inputs (B2.6, B2.7, B2.8)" does not address use of native or non-native species. The table in appendix A of the PD lists the species recorded in the project zone which includes some of the species proposed for planting, but the column for "Endemic" is blank and there is no other indication in the table of "native" or "non-native".</p> <p>The risk report or the supporting documents referenced in the risk report (i.e. PD, Monitoring Report) should list all species planted/proposed to be planted and provide verifiable evidence that they are native species. The VCS risk tool further clarifies that "Evidence that species planted are adapted to the same or similar agro-ecological zone(s) in which the project is located may be demonstrated through: publications in scientific journals; technical reports from government agencies, NGOs or research groups; or, successful use over time by other projects registered under the VCS or an approved GHG program."</p>
<p>Round 1 NCR/CL/OFI</p>	<p>1 NCR: Please address the finding by listing all species that have been or are proposed to be planted in a single place in the risk report or supporting documents referenced in the risk report along with their native or non-native status, and include the evidence that supports that they are native species as required in the risk tool.</p>
<p>Round 1 Response from Project Proponent (06 June 2017)</p>	<p>The NPRA has been revised to include the species planted or proposed to be planted in one location with sources cited to demonstrate native status.</p>
<p>ESI Findings - Round 2 (29 June 2017)</p>	<p>The revised Risk Report now contains an exhaustive list of native species planted as well as citations to substantiate they are native to the project area. The verifier notes that although rubber trees will be planted as part of the community agroforestry program but that the rubber tree is poorly suited for wet sites and is easily outcompeted by other species. Further, rubber is not expected to exceed 25% of stocking for ARR crediting. The descriptions for how the project meets this requirement in the Risk Report is adequate. The item is addressed.</p>

<p>Item Number</p>	<p>14</p>
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VCS Standard VCS Version 3 Requirements Document 19 October 2016, v3.6 (Description)	Management team does not include individuals with significant experience in all skills necessary to successfully undertake all project activities (ie, any area of required experience is not covered by at least one individual with at least 5 years' experience in the area).
Applicability to Project (Y or N/A)	Y
Requirement Met (Y, N or Pending)	Y
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Monitoring report, Appendix 1
ESI Findings - Round 1 (17 May 2017)	<p>The risk report states "As described in Sub-section 1.5.2 of the PDD, the project employs staff with several decades in combined experience covering all areas of expertise required. Resumes of involved staff have been made available to the validator separately."</p> <p>The staff described within the PD is sufficient to support a score of 0 for this requirement, however the risk report needs to provide confirmation that no staff changes have occurred which would impact this risk indicator.</p>
Round 1 NCR/CL/OFI	1 NCR: Please provide language within the risk report that either supports that no staff changes have taken place since validation of the PD, or provide an update to the RR to show that current staff are sufficient to support a score of 0 for this indicator.
Round 1 Response from Project Proponent (06 June 2017)	Language has been added to the risk report.
ESI Findings - Round 2 (29 June 2017)	The verifier confirmed that language was added to the Risk Report to satisfy the request and this requirement. It was confirmed through site visit interviews that project personnel involved in the second verification were also very involved in the validation. Staff did not change substantially since validation and the project has been able to continue recruiting experienced and qualified individuals. The item is addressed.

Item Number	15
Intentionally Blank	
VCS Standard VCS Version 3 Requirements Document 19 October 2016, v3.6 (Description)	Management team does not maintain a presence in the country or is located more than a day of travel from the project site, considering all parcels or polygons in the project area.
Applicability to Project (Y or N/A)	Y

Requirement Met (Y, N or Pending)	Y
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Monitoring report, Appendix 1
ESI Findings - Round 1 (17 May 2017)	<p>The risk report states "The management team is headquartered in Indonesia with all offices located within one day of travel from the project area. See PDD Section 1.4."</p> <p>The presence of the management team in country within 1 day of travel from the project area is sufficient to support this score and is supported by the interviews during the site visit, however the score references the PD. Confirmation within the risk report is needed to support that no staff changes have taken place since PD validation which could impact this score.</p>
Round 1 NCR/CL/OFI	1 NCR: Please provide language within the risk report that either supports that no staff/management location changes have taken place since validation of the PD, or provide an update to the RR to show that staff/management location changes continue to support a score of 0 for this indicator.
Round 1 Response from Project Proponent (06 June 2017)	Language has been added to the risk report.
ESI Findings - Round 2 (29 June 2017)	The verifier confirmed that language was added to the Risk Report to satisfy the request and this requirement. It was confirmed through site visit interviews that project personnel involved in the second verification were also very involved in the validation. Offices and their location were also discussed while on site. Staff did not change substantially since validation and the project has been able to continue recruiting experienced and qualified individuals. The item is addressed.

Item Number	16
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VCS Standard VCS Version 3 Requirements Document 19 October 2016, v3.6 (Description)	Mitigation: Management team includes individuals with significant experience in AFOLU project design and implementation, carbon accounting and reporting (eg, individuals who have successfully managed projects through validation, verification and issuance of GHG credits) under the VCS Program or other approved GHG programs.
Applicability to Project (Y or N/A)	Y
Requirement Met (Y, N or Pending)	Y
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Monitoring report, Appendix 1

ESI Findings - Round 1 (17 May 2017)	<p>The risk report states "As described in Sub-section 1.5.2 of the PDD, the project and its partners employ a range of employees who have successfully managed projects, written and managed approval (double validation) of VCS methodologies and successfully overseen the development, validation and verification, and credit issuance of numerous VCS projects as well as carbon projects under other programs. Resumes of involved staff were made available to the validator and are available to verifiers upon request."</p> <p>The qualifications of the team members provided in the PD is sufficient to warrant the mitigation score, however confirmation is needed in the risk report that no staffing changes have taken place since the first verification which would alter this score.</p>
Round 1 NCR/CL/OFI	1 NCR: Please provide a statement supporting that no staffing changes have taken place which would impact this score.
Round 1 Response from Project Proponent (06 June 2017)	Language has been added to the risk report.
ESI Findings - Round 2 (29 June 2017)	The verifier confirmed that language was added to the Risk Report to satisfy the request and this requirement. The Risk Report now states, "No changes to staff affecting experience meeting these requirements has occurred since the validation and first verification." It was confirmed through site visit interviews that project personnel involved in the second verification were also very involved in the validation. The item is addressed.

Item Number	17
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VCS Standard VCS Version 3 Requirements Document 19 October 2016, v3.6 (Description)	NPV from the most profitable alternative land use activity is expected to be between 20% more than and up to 20% less than from project activities; or where baseline activities are subsistence-driven, net positive community impacts are demonstrated
Applicability to Project (Y or N/A)	Y
Requirement Met (Y, N or Pending)	Y
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Monitoring report, Appendix 1

ESI Findings - Round 1 (17 May 2017)	<p>Though the flow of the overall NPV analysis was clear and well annotated, the following questions were identified:</p> <p>In the "NPV Analysis" tab, for palm oil the price per ton in cell C21 utilizes cell I8 in the "commodity Price Change" tab. This is derived from the Worldbank, DataBank ,Global Economic Monitor (GEM) Commodities hyperlink, however the 2015M12 value for palm oil appears to be off by \$10/mt (the value from the website was \$568 but the value used in the spreadsheet was \$558). Note that all other values for 2015M12 and 2016M12 for palm oil and wood pulp match.</p> <p>Additionally, many values in the "NPV Analysis" tab appear to be entered values (i.e. not formulas) and it is not clear how they were derived from the variables above the tables. For example, for palm oil, the total revenue in row 32 are all pasted or entered values, and it is not clear how the values were derived from the price of \$127.47 per ton. The case is similar for total revenue row for acacia pulp.</p> <p>It is clear that a walkthrough of the financials would be helpful to understand how values were derived. Note we are not trying to redo the validation of project financials, however as prices have been updated it is critical we understand how those prices and costs are used to derive NPV.</p>
Round 1 NCR/CL/OFI	1 CL: Please see finding. The verifier is requesting a walkthrough of the financial analysis to clarify how various values were derived.
Round 1 Response from Project Proponent (06 June 2017)	The walkthrough was conducted on May 25, 2017. Supporting documents were provided for review. The project correctly used the Nov 2015 palm oil price, rather than the Dec 2015 price, to reflect the start date of the monitoring period covered by this report.
ESI Findings - Round 2 (29 June 2017)	The verifiers and proponents confirm the financial analysis calculation walkthrough call on 25 May 2017. In addition, materials were provided to substantiate NPV assumptions including but not limited to; capex, opex, and commodity price changes. Literature sources were found to be reputable (The World Bank, The Bank of Indonesia). Verifiers traced key values in the NPV calculations worksheet to confirm their source and correctness. Derivation of actual values was confirmed during the walkthrough call. Verifiers further obtained reasonable assurance for the NPV comparison analysis as it has undergone an audit by investment organizations. The criteria selected by the project's analysis resulted in a 1% difference but the requirement allows for plus or minus 20%, thus the risk score for this element is appropriate. The item is addressed.

Item Number	18
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VCS Standard VCS Version 3 Requirements Document 19 October 2016, v3.6 (Description)	In more than 5% of the project area, there exist disputes over land tenure or ownership

Applicability to Project (Y or N/A)	Y
Requirement Met (Y, N or Pending)	Y
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Monitoring report, Appendix 1
ESI Findings - Round 1 (17 May 2017)	<p>Risk report states "No disputes exist over the project area. The process of ERC issuance takes into account possible disputes before approving the final boundary. In addition, a Memorandum of Understanding has been signed with communities around the project area."</p> <p>On-site interviews yielded no evidence of conflict. As the monitoring report indicates there were 5 issues that were resolved through the grievance process, it would be helpful to review the record of these issues and resolutions to confirm there are no current disputes.</p>
Round 1 NCR/CL/OFI	CL: Please provide evidence of the 5 issues that were resolved through the grievance process.
Round 1 Response from Project Proponent (06 June 2017)	A table summarizing the issues will be provided separately.
ESI Findings - Round 2 (29 June 2017)	A table with English descriptions of the 5 community grievances which occurred during the monitoring period was provided in response to this finding. The grievances were catalogued appropriately and generally represented concerns, but the grievance handling process as reported in the MR was followed for resolutions in all cases. The evidence of community grievance resolution is sufficient to meet this requirement as few of the catalogued grievances are related to disputes over land tenure or ownership. The item is addressed.

Item Number	19
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VCS Standard VCS Version 3 Requirements Document 19 October 2016, v3.6 (Description)	Fire
Applicability to Project (Y or N/A)	Y
Requirement Met (Y, N or Pending)	Y
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Monitoring report, Appendix 1

ESI Findings - Round 1 (17 May 2017)	<p>The Risk Report provides substantial argument that fire from non-anthropogenic sources is low for the project area, given the typical inundated state of the peatlands within the project area. The risk report also states "By contrast, fires resulting from anthropogenic activities are common in the region, however their risk, impact and mitigation is considered separately (as a component of 'external' risk)." It is unclear what is meant by this statement. While external risk section does take into account disputes of land ownership and right of use, it does not specifically account for anthropogenic fire, which is typically done in the natural risks section (see similar projects in Indonesia).</p> <p>Given that a score which would include anthropogenic fire would be considerably higher, clarification is needed to understand how risk of anthropogenic fire is accounted for in external risk.</p> <p>Project is claiming an LS score of 2 with mitigation of 0.5.</p>
Round 1 NCR/CL/OFI	<p>CL: Please clarify how risk of anthropogenic fire is accounted for as a component of external risk as the verifier is familiar with this risk being accounted for within natural risks.</p>
Round 1 Response from Project Proponent (06 June 2017)	<p>Pending VCS' clarification, it was our understanding that the Natural Risk section addressed only fires caused by lightning or other natural causes. Anthropogenic risks to the project area such as anthropogenic fires or illegal logging, are captured in the other sections through a variety of factors. In the Project management section, the project is scored on whether native species which might be more resistant to fire and disease are used, whether project offices are within one day's travel of the project area meaning they can identify and respond quickly to issues, and whether encroachment is a potential issue. In the Opportunity Cost section, there is an analysis of whether alternative livelihoods present a significant difference in community prosperity potentially driving fires or deforestation. In the Land Tenure and Resource Access/Impact Section, the project describes land rights and existing or potential disputes which may affect anthropogenic deforestation in the project area whether from fires or other causes like clearing. The Community Engagement Section captures the degree to which the communities are supporting, informed and engaged in the project which also captures the risk of the local communities having a negative impact on the project area. Finally, the political risk section captures what types of environmental laws and enforcement are present in the country.</p> <p>A high risk of anthropogenic fire (or other man-made causes of deforestation and degradation) would be caused by high risks associated with one or more of the above factors (no or weakly enforced laws, questionable land tenure or persistent disputes, competing economic drivers, no community involvement or support for the project, distant oversight, species poorly suited for the ecosystem, etc.). Including anthropogenic fires in the natural fire section would in essence be double counting that risk.</p>

**ESI Findings - Round 2
(29 June 2017)**

VCS feedback on this item was requested on 03 June 2017 and received 12 June 2017 which clarified that all fire risk (including anthropogenic) is to be accounted for in the natural risk section. At the first monitoring period, anthropogenic fire risk was not included in the natural fire risk category following VCS guidance at the time. However, at the second monitoring period it was clarified from VCS a second time on 29 June 2017 that all fire risk should be accounted for in the Natural Risk section.

Thus, the proponent has elected to incorporate anthropogenic fire risk into the natural fire risk score. The natural risk category total was revised higher but the project's overall risk remains below 10 therefore the default overall risk score of 10% was applied for the buffer computation. The revised risk report was reviewed and a sufficient description was included in the natural risk section regarding anthropogenic fire risk and scores were correctly updated throughout. No further action is needed. The item is addressed.