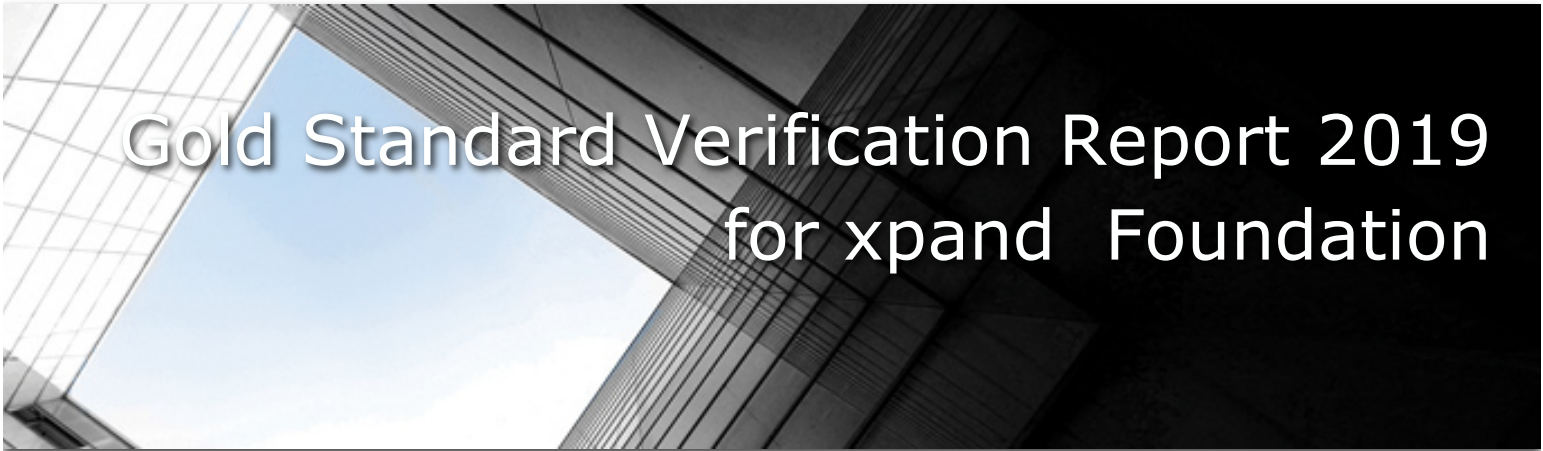




Sustainability, Energy & Carbon Management

The background of the lower half of the cover is a photograph of a modern building's facade, featuring a grid of windows and structural elements, viewed from a low angle looking up. The right side of the image is darkened to provide a background for the title text.

Gold Standard Verification Report 2019 for xpanD Foundation



Verification of
WithOneSeed Timor Leste Community
Forestry Project,

For
xpanD Foundation
32 Tamar Grove, Oakleigh
Victoria 3166, Australia

Pangolin Associates
Level 1, 46 Magill Road
NORWOOD SA 5067
t: +61 8 7200 1030

June 2019



Report Category:	Afforestation and Reforestation Project
Project ID	GS 4210
Project Name	WithOneSeed Timor Leste Community Forestry Project
Project Location	Latitude: 126° 35' to 126° 40' Longitude: – 8° 20' to -8° 40'
Project Owner and address	Xpand Foundation, 32 Tamar Grove, Oakleigh Victoria 3166, Australia
Project Contact	Mr Andrew Mahar, CEO
Audit Team Leader	Sunil Kumar Sharma
Audit Team Member	Helen Chandler, Sam Phua
Internal Reviewer	Adina Cirtog
Audit Standard:	GS4GG A/R requirements
Reporting Period	1 March 2017 to 28 February 2019
Draft Audit Report Issued Date	24 June 2019
Final Audit Report Issued Date	28 June 2019

Table of Contents

1. INTRODUCTION.....	1
1.1 SCOPE OF THE AUDIT	1
1.2 PROJECT BACKGROUND	1
1.3 LEVEL OF ASSURANCE	2
2. AUDIT TEAM DETAILS AND CREDENTIALS	2
2.1 AUDIT TEAM COMPOSITION.....	2
2.2 AUDITORS' QUALIFICATIONS AND EXPERIENCES	3
2.3 AUDITOR CODE OF CONDUCT DECLARATION	6
3. MEANS OF VERIFICATION	6
3.1 DESK REVIEW OF DOCUMENTS	6
3.2 ONSITE VISIT	7
4. LIST OF INTERVIEWEES	7
4.1 MEETINGS/INTERVIEWS.....	7
5. NUMBER AND LIST OF CLARIFICATIONS (CL), CORRECTIVE ACTIONS (CAR) AND FORWARD ACTION REQUESTS (FAR) RAISED	8
6. LIST OF FINDINGS.....	24
6.1 NON-CONFORMANCE ASSESSMENT	24
7. ASSESSMENT OF FARs FROM PREVIOUS VERIFICATION OR FROM VALIDATION STAGE.....	34
7.1 FORWARD ACTION REQUESTS (FAR) FROM THE LAST VERIFICATION (24 MARCH 2017)	34
8. ASSESSMENT OF COMPLIANCE OF PROJECT IMPLEMENTATION AND OPERATION WITH THE REGISTERED DESIGN	37
9. COMPLIANCE OF THE REGISTERED MONITORING PLAN WITH THE METHODOLOGY INCLUDING APPLICABLE TOOLS AND STANDARDIZED BASELINES	38
10. COMPLIANCE OF MONITORING ACTIVITIES WITH THE REGISTERED MONITORING PLAN	38
11. COMPLIANCE WITH THE CALIBRATION FREQUENCY REQUIREMENTS FOR MEASURING INSTRUMENTS	38
12. ASSESSMENT OF DATA AND CALCULATION OF EMISSION REDUCTIONS OR NET REMOVALS OR RELEVANT SDG IMPACT	38
13. ASSESSMENT OF REPORTED SUSTAINABLE DEVELOPMENT CO-BENEFITS AND SAFEGUARDS	39
14. INTERNAL QUALITY CONTROL	39
15. VERIFICATION OPINION	39
ANNEX 1:	40
LIST OF PROJECT DOCUMENTS SUBMITTED BY THE PROJECT FOR DESKTOP REVIEW	40
ANNEX 2:	43
VERIFICATION SITE VISIT PLAN - FROM 17TH TO 26TH OF MARCH 2019.....	43

1. Introduction

1.1 Scope of the Audit

xPand Foundation (xF), the project owner of WithOneSeed Timor Leste Community Forestry Program (the Project), commissioned Pangolin Associates to undertake verification for assessing the compliance of the project information with the requirements of the Gold Standard for Global Goals for Afforestation and Reforestation Projects. The scope of this verification includes assessing the project activities, SDGs monitoring and CO₂ Fixation over the period 1 March 2017 to 28 February 2019. Since the start of the Project in 2010, 885 farmers have been involved in this Project by planting and managing over 155,000 seedlings on their farmland between 2010 to 2018.

The objective of this verification is to assess the Project's actual carbon stocking at the end of the reporting period of 1 March 2017 to 28 February 2019 and provide a verification opinion drawn from the findings on the issues assessed. To accomplish this objective, this verification assesses the following issues as per the guidance provided by the GS Secretariat:

- a) Assess the ex-post measurement and calculation of carbon performance of the Project between 1 March 2017 and 28 February 2019.
- b) Check if there is a performance shortfall scenario where the ex-post is lower than ex-ante estimation of carbon credits.
- c) Assess if all grievances (if any) have been properly addressed.
- d) Assess if there have been any changes in the size of the project area or any of its boundaries.
- e) Assess if the shapefiles of the project boundaries match the reported areas size

1.2 Project Background

Pangolin Associates understands that xPand Foundation (xF) is the Project Owner for the WithOneSeed Timor Leste Community Forestry Program ("the Project"). The Gold Standard conducted the Pre-Feasibility Assessment and the project was deemed to be successful on 11

December 2016. The first verification was completed for the period between 18 Jan 2010 to 28 Feb 2017 on 24 March 2017. We note that the Project comprises ten village communities Baguia, Afaloicai, Alaua Craic, Alau Leten, Haeconi, Ossu Huna, LariSula, Samalari, Defa Uassi, and Lavateri with a total project area of 4,996 ha. The Project applies Afforestation and Reforestation Requirements v0.9 of the Gold Standard and is now transitioning to the Gold Standard for Global Goals (GS4GG).

The Principle 4 of the Gold Standard - Principles and Requirements (on page 3) warrants a verification of the Project as a part of the Performance Certification to issue Gold Standard Certified Products i.e. Verified Emission Reductions (VERs). To this end, Pangolin Associates has been commissioned (by xF) to undertake a verification engagement as per the GS4GG for the period between 1 March 2017 to 28 Feb 2019.

1.3 Level of assurance

The verification opinion is drawn from the findings on the issues assessed, which provides a reasonable assurance as to the risk that the calculation of CO₂-e certificates is materially ($\pm 5\%$) significantly different from the project assertion, as well as an assessment of the project documents' compliance with the GS4GG A/R requirements. The testing of significance was conducted based on the 'Tool for testing significance of GHG emissions in A/R CDM project activities' (Version 01). Emissions were considered materially insignificant if they were lower than 5% of net anthropogenic removals by sinks.

2. Audit team details and credentials

2.1 Audit Team Composition

Our audit team comprises Dr Sunil Sharma (Audit Team Leader), Dr Helen Chandler (Audit Team Member), Dr Sam Phua (Audit Team Member) and Dr Adina Cirtog (Internal Reviewer). The roles and responsibilities of each Auditor are summarized below:

Auditor (Role)	Responsibilities
Sunil K Sharma (Audit Team Leader)	- Overseeing the audit process - Desk review of the project documents (technical and non-technical)

	• Field visit • Issuance of list of uncorrected errors and review of the responses • Prepare audit report
Helen Chandler (Audit Team Member)	• Desk review of the project documents (non-technical) • Issuance of list of uncorrected errors and review of the responses • Prepare audit report
Sam Phua (Audit Team Member)	• Desk review of the project documents (non-technical) • Issuance of list of uncorrected errors and review of the responses • Prepare audit report
Adina Cirtog (Internal Reviewer)	• Review of the audit report draft for ensuring Quality Assurance and Quality Control and adherence to company policy

2.2 Auditors' Qualifications and Experiences

Sunil Kumar Sharma, Audit Team Leader

Sunil is an expert in climate change mitigation. He is instrumental in working with Pangolin's team on forestry project verification under the Gold Standard and the Australian Government's Emissions Reduction Fund (formerly the Carbon Farming Initiative, or CFI). Sunil specializes in the Reducing Emissions from Deforestation and Forest Degradation (REDD+) mechanism. He is a REDD, Improved Forest Management (IFM) Methodology, and Jurisdictional Nested REDD Program expert under the Voluntary Carbon Standard Association (VCSA). He is also listed in Roster of Expert for Afforestation and Reforestation Methodology of the Clean Development Mechanism (CDM-UNFCCC). He was also a member of the Technical Advisory Board of Plan Vivo Standard. Sunil co-authored the Improved Forest Management-Logged to Protected Forests (IFM-LtPF) Methodology (VM00011) under the Verified Carbon Standard (VCS). He also led a team of scientists for developing a Woodland Rehabilitation Methodology under the CFI scheme of the Australian Government.

Sunil has a PhD in Resource Management and Environmental Science from the Australian National University, Australia and a Master's degree in Tropical Forestry from Germany and a Master's degree in Sociology from Nepal. He has committed over 25 years of his life in natural resource management with an extended experience on the impacts of human factors on natural resources and vice versa. He was engaged in REDD+ project eligibility and feasibility study, project design and development, advisory and capacity building of in-country partners in Brazil, Paraguay, Mozambique, Zimbabwe, Cambodia, Vietnam and Nepal. He held an adjunct academic position as Senior Lecturer at the School of Environment at Flinders University, South Australia (2013-2016).

Helen Chandler, Audit Team Member

Helen has worked in the carbon management sector since 2007. Following a role as a senior emissions auditor for greenhouse gas emissions audits, she moved into the area of carbon risk and opportunity, building a tool for assessing carbon exposure risk for Australian businesses.

Research in carbon credit origination projects led to co-authorship of a Verified Carbon Standard (VCS)-approved methodology for Improved Forest Management-Logged to Protected Forests (IFM-LtPF). She has used this expertise to provide support for Pangolin Associates in assurance engagements for the former Carbon Farming Initiative and current Australian government NGER and ERF schemes.

Helen now brings her carbon industry experience to energy audits for light commercial and small businesses.

Helen holds a BSc from the University of Adelaide and a DPhil from the University of Oxford.

Sam Phua, Audit Team Member

Sam is an environment, energy and carbon services consultant with extensive greenhouse gas emissions and energy assurance and advisory experience across a wide range of industries. As a Registered Greenhouse and Energy Auditor (Category 1 Technical, Category 1 Non-Technical and Category 2) with the Australian Clean Energy Regulator, his areas of expertise include greenhouse and energy audit and assurance engagements under the Australian NGERS, CFI, EEO, and NCOS, and the international Carbon Disclosure Project (CDP), conducting energy audits, undertaking environmental risk reviews under EPA Regulations and environmental license-to-operate. Sam is also a Registered Chartered Chemical Engineer (CEng, MIChemE) and Registered Chartered Professional Engineer (CPEng, MIEAust, NER).

Sam is also Australia's first and only Approved Verifier for the international Airport Carbon Accreditation. Sam also sits on the Clean Energy Regulator's Carbon Farming Initiative (CFI) technical expert panel.

Sam is the lead author on one of the world's first Improved Forest Management-Logged to Protected Forests (IFM-LtPF) Methodology under the Verified Carbon Standard (VCS). This Methodology has been approved for use and has been assigned a VCS Methodology reference of VM0011. Sam has also authored several reviews for methodologies and Project Design Descriptions (PDDs) seeking approval under the VCS, Clean Development Mechanism (CDM) and the Climate, Community and Biodiversity Standard (CCBS). Sam is also proficient in Australia's National Carbon Accounting Toolbox (NCAT) having previously undertaken formal training in the use and application of the fullCAM model. He provides advice to stakeholders on (1) forestry carbon sequestration projects

under the CDM, VCS and CFI, including methodology/project compliance under these programs, (2) energy efficiency measures and audits to Australian Standard/New Zealand Standard AS/NZS 3598:2000, (3) carbon and energy footprinting and management programs and (4) environmental compliance under the EPA legislation.

Sam holds a PhD in Biochemical Engineering, a Graduate Certificate in Science and Technology Commercialisation and an Honours Degree in Chemical Engineering, from the University of Adelaide. Sam was previously awarded two symposium fellowships by the Australian Academy of Technological Sciences and Engineering. His other key experience includes establishment of the carbon and energy audit operations, and managing audit and origination technical operations for a global carbon management company, having experience in the carbon (credit) origination discipline; lead carbon and energy auditor for a portfolio of corporations including Adelaide and Parafield Airports, Clipsal 500 Adelaide, Internode Systems, Powerlink Queensland, Strategic Aviation Group – just to name a few; development of greenhouse gas and energy audit report templates and using eco-efficiency indicators as an environmental performance evaluation tool and co-author on a widely used greenhouse gas inventory methodology.

Adina Cirtog, Internal Reviewer

Adina has conducted numerous energy efficiency audits and assessments in accordance with AS/NZS 3598:2014 (Level 1, 2 & 3), and GHG Assessments across various industries and government sectors as well as assurance audits under the NGER. She is also a Certified Measurement and Verification Professional (CMVP) awarded by the Association of Energy Engineers (AEE) in conjunction with the Efficiency Valuation Organisation (EVO).

Adina brings her knowledge in consulting and planning service provisioning for technical equipment in building and processes as previously she was a design engineer in the Romanian branch for Fact GmbH (Germany). She developed digital plant construction designs for German companies covering electrical, ventilation, water and gas piping specifications. With over 8 years of experience in the field of energy and emissions auditing, Adina provides Pangolin Associates' clients with practical energy efficiency solutions.

Adina holds a PhD in Mechanical Engineering from Tokyo University of Agriculture and Technology, Japan. She holds Master's and Bachelor's Degrees of Power Systems Engineering (Electrical) from Politehnica University of Timisoara, Romania. This includes a year of study in the University of Stuttgart, Germany.

Adina's PhD further demonstrates her research expertise that complements her role as an Energy Auditor. She is a published author of several scientific articles in peer reviewed international journals.

As a student leader, Adina was actively involved in youth policies development

through various NGO's.

2.3 Auditor Code of Conduct Declaration

The Auditors are independent and have no conflict of interest or affiliations with the Project Owner, xpanse Foundation, in financial and non-financial matters. Each Auditor has signed a separate form for Independence and Code of Conduct Declaration. Pangolin Associates has kept the signed declaration forms in the audit recordkeeping system.

3. Means of verification

3.1 Desk Review of Documents

The Auditors conducted a desk review of the submitted project information to assess the project's compliance with the requirements.

First, the project documents were checked for the completeness of the template documents and supporting documents for the Project's verification as per Gold Standard for Global Goals for Afforestation and Reforestation Projects. As the Project is transiting to GS4GG from the previous Gold Standard, the Auditor sought clarification regarding the documentation required from the Gold Standard Secretariat. The GS Secretariat (email dated on 05/04/2019) confirmed that since the Project is transiting to GS4SS, it is not required to submit a monitoring report on the indicators/parameters of two Sustainable Development Goals besides climate change mitigation. Second, the Auditors conducted a thorough review of information and data in the Project documents for consistency and accuracy against the requirements as set out by the Gold Standard. A list of the Project documents and supporting documents submitted by the Project Owner for review is included in Annex 1. Third, any non-compliance and inconsistencies were compiled in a list of uncorrected errors and sent out to the Project Owner to address and to take appropriate actions to resolve the errors. The uncorrected errors can include the following three categories:

- (i) Corrective Action Request (CAR),
- (ii) Forward Action Request (FAR) and,
- (iii) Observation (OBS),

Lastly, the Auditors reviewed the Project's responses and drew the

assertion on the compliance of the project with the GS requirements.

3.2 Onsite visit

The objective of the field visit was to observe the implementation of the Project on the ground and interview the project participants and stakeholders. The Audit Team Leader conducted a week-long site visit between the 17th and 24th of March 2019. An itinerary of the field visit is included in Annex 2. Mr Andrew Mahar, CEO of xPand Foundation organised the field visit. Mr Mahar, John Clark (Director of the Foundation) and Dr Marnie Telfer (Carbon Engineer) also accompanied the Auditor during the field visit. Over 15 plantation sites were visited and observed for the species diversity, growth status and site conditions.

The Auditor also assessed the forest inventory technique during the field visit. The WOS staff demonstrated the forest inventory technique by measuring trees using the same measuring tapes and GPS and recording of the data in a GPS. The Auditor organised a random measurement of 855 trees of all plantation age cohorts between 2010 to 2017 (except the plantation 2013) at low, medium and high altitude in cropland and grassland baseline and recorded their circumference at the breast height and GPS location.

4. List of interviewees

4.1 Meetings/Interviews

The field visit program also included several meetings with the local authority and farmers as well as an interview with the Project staff. A list of the personnel met or interviewed is listed below.

Date and Day	Personnel	Organization
17 th – 25 th March	Mr Andrew Mahar (CEO) Mr John Clark (Director) Dr Marnie Telfer (Carbon Engineer)	xPand Foundation xPand Foundation xPand Foundation
18 th – 23 rd March	Mrs Leopoldina Joana Guterres: Country Program Manager	WithOneSeed Program
19 th – 23 rd March	Julio Luis (Team Leader Forestry) Emilio de Oliveira (Community Forester) Orlando de Rosa (Community Forester) Joana Guterres Gusmao (Office Secretary) Januario da Costa (Community Forester) Marcelino Barros (Community Forester)	WithOneSeed Program WithOneSeed Program WithOneSeed Program WithOneSeed Program WithOneSeed Program WithOneSeed Program

	Juliao Barbosa (Community Forester) Abel Aparicio Ximenes (Finance Cooperative Officer)	WithOneSeed Program WithOneSeed Program WithOneSeed Program
20 th March	Belmiro Guterres	Farmer
21 st March	Subdistrict Chief Justino Ximenes Guterres Francisco de Carvalho	Subdistrict Chief Farmer Farmer
22 nd March	Mariano Gusmao Suco Chiefs from six Suco	Farmer Suco Chiefs

The meetings with the Chief Administrator of sub-district of Baguia, the participating farmers and the Village Chiefs primarily focused on the social, economic and environmental impacts of the project. The Auditor asked specific questions regarding any concerns raised by the local communities about the project, to better understand any input of grievances to be addressed by the project. The interview with the employees was mainly directed to assess the working condition for the employees and identify any safety issues. Associate Prof. Lisa Palmer (Melbourne University), Joana Guterres Gusmao (WOS Secretary) and Mrs Leopoldina Joana Guterres (Country Program Manager of WOS) helped translating Tetun and English while communicating with the local people and WOS staff.

5. Number and list of Clarifications (CL), Corrective Actions (CAR) and Forward Action Requests (FAR) raised

Corrective Action Requests (CAR)

CAR #:	CAR 01/19
Occurrence (Document name, Requirement and Page):	<i>Land_Use_Cropland.shp; Land_Use_Forest.shp; Land_Use_Grasslands.shp; Cumulative EPA 2017.shp; Cumulative EPA 2016.shp</i>
Reference:	200-GS4GG-Land-Use-Forests-Activity-Requirements-v1.1, page 4
Description of an issue to be addressed:	
The plantation activity must be confined to the Eligible Planting Area in the Cropland and/or Grassland and must not occur on the baseline Forestland. However, the Intersection Tool in the GIS located overlap between Cumulative EPA 2017 (<i>Cumulative EPA 2017.shp</i>) and Forest land (<i>Land_Use_Forest.shp</i>) maps at 102 locations (Refer to Image 1).	

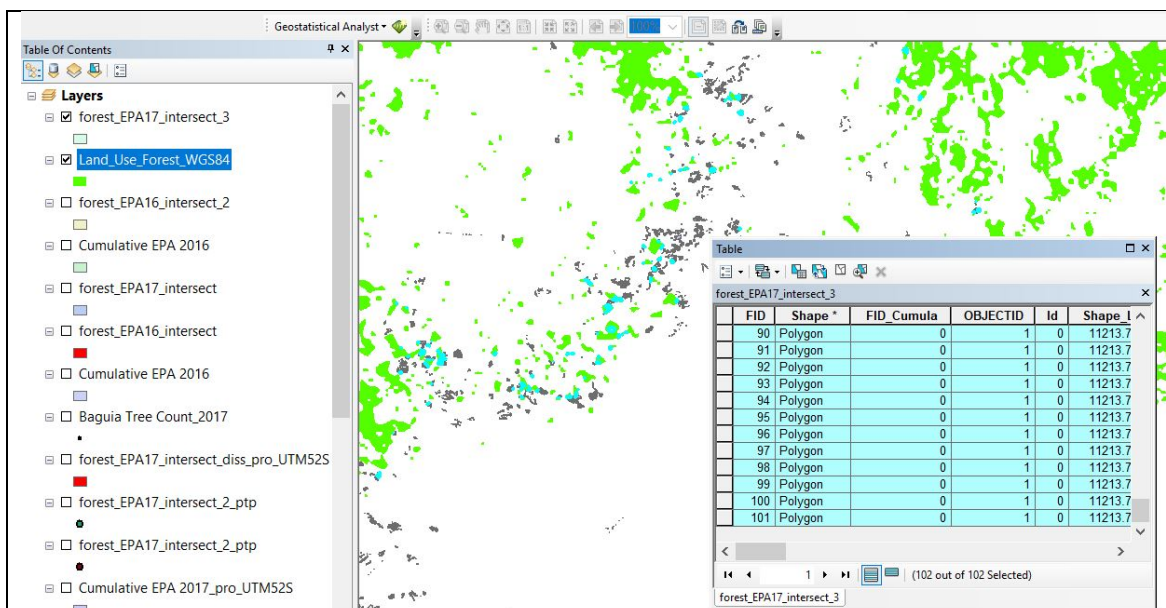


Image 1 Intersection of the Cumulative EPA 2017 and Forest land maps identifies the plantation on the forestland at 102 locations.

We also noticed that the cumulative EPA 2016 (*Cumulative EPA 2016.shp*) also overlaps with the forest land (*Land_Use_Forest.shp*) at 66 places which identifies the plantations that have occurred on the forest land outside the Eligible Planting Area (EPA) (Refer to Image 2).

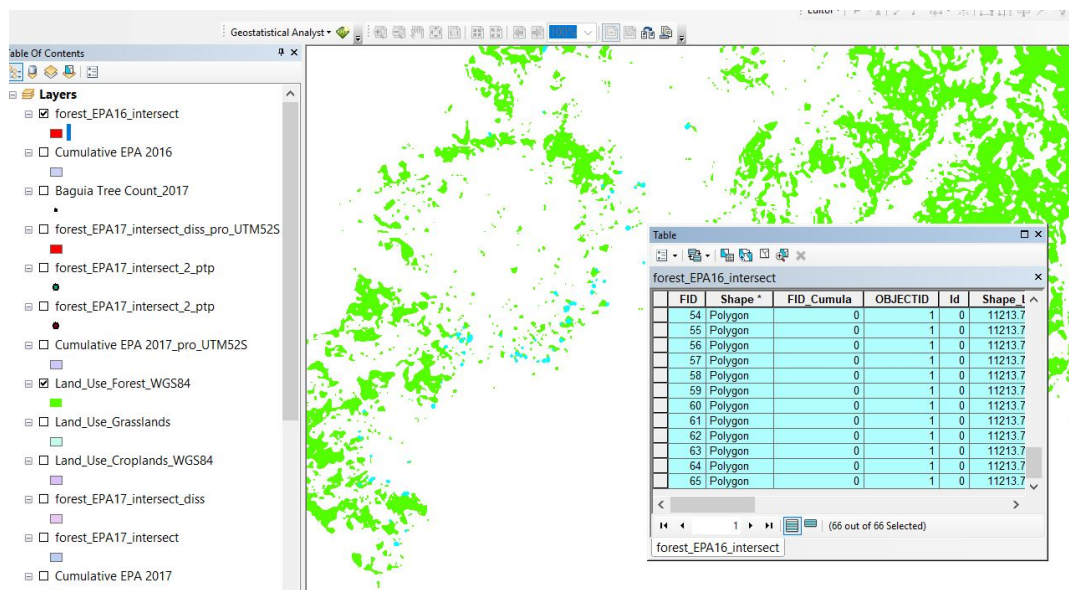


Image 2: Intersection of the Cumulative EPA 2016 and Forest maps identifies the plantation on the forestland at 66 places.

In a discussion during the field visit, the Project Owner acknowledged that some farmers could have planted on the forestland and advised that these trees would not be included in the EPA.

Suggested action required:

The Project Owner shall check the cumulative EPA maps for the past years for the seedlings planted on the forestland and update the cumulative EPA maps by excluding plantations on the forest land.

Project Owner's response:

The requirement to not plant on baseline forestland derives from the Gold Standard's Additionality requirement for A/R projects, which states under the No deforestation section:

"The project area shall not have been forest for at least 10 years prior to the planting start, OR

In case the project area has been deforested during the last 10 years, evidence shall be given that the deforestation activity has not taken place with the intention to reforest the area and generate CO2-certificates."

Much of the forest that remains in Baguia is degraded natural forest that covers the landscape in a sparse mosaic pattern, as demonstrated during the site visit. All of the land on which this forest mosaic remains is small land holder owned. WithOneSeed sees the reforestation of this land as integral to the community forestry model.

The baseline forest cover map for the project area (e.g. subdistrict of Baguia) is: *Land_use_Forest.shp* and this map was prepared on the basis of 2010 plantings and hence Landsat imagery from 1999 to 2009, e.g. 10 years to the commencement of the initial planting. For 2016 – the baseline period would be 2006 - 2015 and for 2017, it would be 2007 – 2016. As new plantings have been made and will be made for each year and new trees will continue to be planted, it is not practical to revise the baseline forest cover map accordingly and as such the EPAs from the subsequent years (e.g. 2016 and 2017) may overlap.

However, in addition, the resolution of Landsat is approximately 25 to 30m pixel size, whilst the EPA areas have a resolution of 5m. Farmers are planting on their plot of land which area dispersed in between forested areas. Therefore, forest land is likely to not be as accurate as the EPAs and as the planting is inter dispersed between the forestland, this may also lead to overlap. The accuracy of the GPS readings cannot always be guaranteed. Needless to say, farmers cant plant trees on trees.

The figure below presents changes in carbon stocks across the subdistrict of Baguia using FlintPro Software¹. FlintPro Software is based on Landsat imagery provided USGS and presented in the WGS84/NUTM projection. Further information in regard to Flint Pro can be provided upon request. The results show that since near the project commencement, 2011, above and below ground carbon stocks have been increase and atmosphere carbon has been decreasing. As carbon in newly planted trees cannot compensate for the loss of mature forest, this clearly suggests that there has been little to negligible deforestation across the subdistrict of Baguia since 2011. Before this period, according to a recent Asian Development Bank (ADB) report²: "Timor-Leste has experienced massive deforestation; estimates of clearing of original forest cover are as high as 90%. Most land shows evidence of clearing, especially slash-and-burn cultivation, harvesting of firewood, coffee growing, and grazing, even on steep slopes. Forest cover has steadily declined since the 1970s and the current deforestation rate is thought to be about 1.3% per annum. A major driver is conversion of forest to agricultural land." There is no evidence that any of the deforestation in Timor-Leste is the result of clearing land for the purpose of replanting trees for C02 sequestration purposes. As suggested by the ADB report agriculture, firewood harvesting and other timber needs are the main driver for land

¹ <http://www.mulliongroup.com.au/meet-flintpro/>

² <https://www.adb.org/sites/default/files/linked-documents/cps-tim-2016-2020-ena.pdf> accessed on April 18, 2018.

conversion and this has decreased considerably following 2011.

Therefore, in accordance with Gold Standard's Additionality requirement for A/R projects second paragraph, we believe that any planting on forested land, is not a result of deforestation with the intention to reforest the area to gain CO2 certificates.

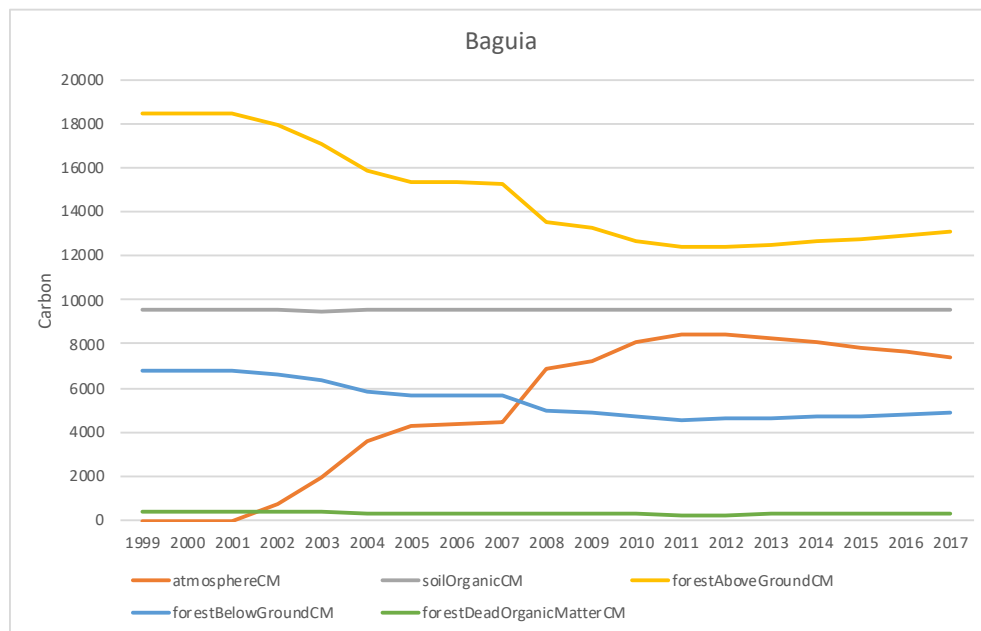


Figure 1. Results of FlintPro Forest-Non-forest cover changes from 1999 to 2017, sourced from flintpro-export-2019041.xls

We also wish to note that never during the audit did the project owner, WithOneSeed, acknowledge planting on forestland as stated in the CAR above.

[Additional documents provided by the Project Owner:](#)

[Auditor's review of the PO's response:](#)

The Auditors acknowledge the response to CAR 01/19. The Eligible Planting Area (EPA) and the adjacent areas of Forestland were defined in the Project Design. These areas were validated, and the project commenced in 2010. The areas defined have not been changed since the project validation. According to condition 2 of Scope and Applicability in the GS4GG A/R Methodology, "Projects that include the planting of trees on land that does not meet the definition of a forest at planting start are eligible to apply this methodology." These seedlings were planted on land that was defined as forest at planting start, and was not part of the Eligible Planting Area at project start.

We sought a clarification from the Gold Standard Secretariat on this issue (email sent on 27 April 2019 to Giancarlo Raschio). On 8 May 2019, an email from the GS confirmed that 'a project cannot claim carbon credits from new plantations beyond the planting area at validation unless there is a new area certification process'. Therefore, the Project Owner must exclude the planting area on the forestland from the Project Area and update the EPA map provided for verification.

Conclusion

The Auditors did not accept the Project Owner's justification and evidence for planting on the forestland based on the requirements on the GS4GG A/R Methodology. Hence, CAR 08/19 is created requesting the Project to exclude the planting area on the forestland

	and update the EPA map.
--	-------------------------

CAR #:	CAR 02/19
Occurrence (Document name, Requirement and Page):	Project documents including <i>GS4210 WOS Baguia CO2 Certificate Calculations_March 2019 v1.0.xlsx</i> ; GIS maps and files <i>Land_Use_Cropland.shp</i> ; <i>Land_Use_Grasslands.shp</i> ;
Reference:	200-GS4GG-Land-Use-Forests-Activity-Requirements-v1.1, page 3, 28-29; 401.13-AR-Methodology-V1-1
Description of an issue to be addressed:	
The project has two modelling units based on the baseline condition prior to the tree planting and has applied the same growth rate to both modelling units derived by combining all the tree measurement data. Despite identifying two modelling units with variability in terms of planting year, elevation and site conditions, the project did not differentiate between the two modelling units for estimating the carbon stock. The Project has established plantations with age cohorts from 2010 to 2018 at various elevations, aspects and soil conditions. A statistical test of the diameter data collected during the Auditor's field visit inferred that the tree growth of Mahogany trees with the same planting year (e.g. 2010) significantly differed at three different elevations. The farmers and WOS staff have also acknowledged the slower growth of Mahogany trees in the high elevation when compared with the low elevation.	
Suggested action required:	
The Project Owner shall explain and justify how the Project meets the requirement for identifying the modelling units with homogenous characteristics as per the requirement in <i>200-GS4GG-Land-Use-Forests-Activity-Requirements-v1.1</i> on page 3 and pages 28-29.	
Project Owner's response:	
In order to accurately calculate soil and baseline carbon stocks, the project area was firstly stratified into two modeling units (MUs) according to land use type, i.e. grassland and croplands. The GS recommended a soil dataset to assess the need to stratify based on soil type, which was employed (refer to <i>401.13-AR-T-Baseline March 2019.pdf</i>). The assessment showed no variation in major soil type across the project area and as such, further stratification based on soil type was not conducted. Currently, CO2 Fixation estimates are based on one linear growth rate per species, derived from the average diameter estimate for each tree age for trees planted across the two MUs and a range of elevations between 2010 to 2018. The measurements account for 14% of the total trees planted to date (refer to <i>GS4210 Growth Model to 2018 v1.0.xlsx</i>). This has been conducted for Mahogany only at present. For each monitoring event, the standard deviation was calculated and was observed to be up to 4 cm variation for a given tree age (note as the auditor observed, likely to be due to elevation). The standard error derived (using 90% confidence interval) did not exceed 3%, except for measurements for the 2010 trees where the sample size was low. In addition, the relationship of average diameter with tree age (which accommodates the variation) showed an R^2 value of 0.99, which is exceptionally high. The average growth rates were also compared between trees measured in croplands and those measured in grasslands and there was minimal observed variation in the growth rates between grassland and croplands (refer to <i>6.1 - Template - Carbon Performance_April 2019.pdf</i>). Therefore, it was	

concluded that the data met the required precision levels and displayed a sufficient level of homogeneity. For all these reasons, it was decided that further stratification at this stage was not required.

To add to this, the current application of one average growth rate per tree species across the project area as an accounting approach, aligns well with the project's benefit distribution model, that is to compensate a farmer the same amount of money for each tree planted, regardless of tree size or location. This mechanism is aimed to avoid competition, disputes and perverse incentives.

However, the proposed new monitoring approach (see FAR 2/17) will enable each tree's diameter to be measured (e.g. not just a sample) and this will eliminate the requirement to apply an average growth rate. In the meantime, before the new approach is rolled out, if the standard error in growth rate model exceeds 5%, then the requirement to stratify based on elevation will be assessed and applied if necessary.

The main challenge with the project is the recording, collection, collation and manipulation of data. A simplified, conservative one growth model approach has been adopted also to minimise further manipulated of the tree number data and hence to minimise any random and systematic errors.

Additional documents provided by the Project Owner:

Auditor's review of the PO's response:

The Auditors agree that stratification is not required if each tree in the Project Area is measured after rolling out the RFID technology. However, the Auditors are concerned that the measurement of all trees may not be feasible or practicable despite the RFID technology due to the increasing number of trees every year and the resources required for data collection, storage and analysis for estimating carbon fixation by the Project. If the RFID technology is not rolled out to each tree, the Project need to apply the existing method of tree measurement for determining the growth rate for estimating the carbon fixation by the Project.

Conclusion	A FAR 01/19 is created to ensure that the Project has identified Modelling Units to comply with the requirement as set out in the GS4GG A/R methodology. If the Project does not rollout RFID technology to all trees in the Project Area, the Project must perform the test for significance difference in the tree growth rates at different elevations and site conditions (cropland vs grassland) and appropriately stratify the Project Area into Modelling Units to demonstrate compliance with GS4GG requirements.
-------------------	---

CAR #:	CAR 03/19
Occurrence (Document name, Requirement and Page):	<i>GS4210 WOS Baguia CO2 Certificate Calculations_March 2019 v1.0.xlsx</i>
Reference:	401.13-AR-Methodology-V1-1
Description of an issue to be addressed:	
Further to CAR 01/19, an analysis of the GIS maps (<i>Land_Use_Cropland.shp</i> ; <i>Land_Use_Forest.shp</i> ; <i>Land_Use_Grasslands.shp</i> ; <i>Cumulative EPA 2017.shp</i> ; <i>Baguia Tree Count_2017.shp</i>) showed that 4,860 out of 86,315 Seedlings were planted on the forestland outside the EPA as of 2017 (Refer to Image 3).	

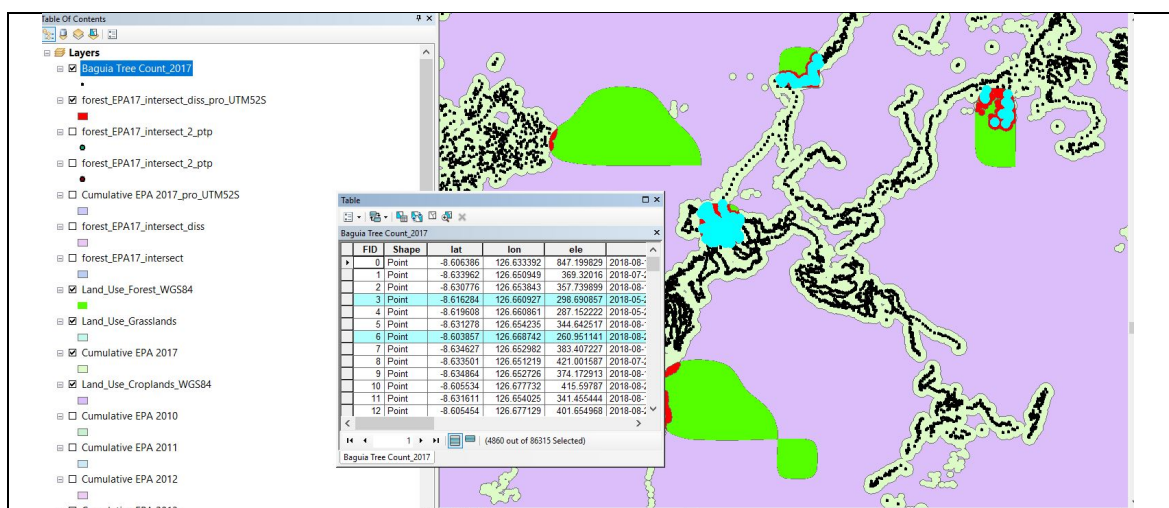


Image 3: Seedlings on the forestland demonstrated by overlay of Cumulative EPA 2017, Baguia Tree Count_2017, Land_Use_Forest, Land_Use_Grasslands and Land_Use_Cropland

The Project has wrongly accounted 4,860 seedlings (based on the GIS analysis of *Cumulative EPA 2017.shp* and *Baguia Tree Count_2017.shp*) for accounting carbon fixation by the plantations.

Based on the total tree count data presented in *Baguia Tree Count_2017.shp* with GPS location of all trees as of 2017, the number of total trees must not exceed the total tree count of 86,315 minus 4,860 trees on the forest land as of 2017.

Suggested action required:

The Project shall confirm the actual seedlings established or survived on the Eligible Planting Area (EPA) up to 2017 and account for the Carbon Fixation in *GS4210 WOS Baguia CO2 Certificate Calculations_March 2019 v1.0.xlsx* (Please also refer to CAR 01/19). Please note that the total tree count up to 2017 (i.e. including the plantations between 2010 to 2017) must not exceed 81,455 based on the annual tree count data provided to the Auditors.

Project Owner's response:

Please refer to the address of CAR 01/19, CAR 04/19 and CAR 06/19.

Additional documents provided by the Project Owner:

GS4210 WOS Baguia CO2 Certificate Calculations_March 2019 v2.0.xlsx

Auditor's review of the PO's response:

The Project is required to exclude the planting area on the validated forestland and must not account for the trees on these areas for carbon fixation. Since the issue is not resolved and CAR 08/19 is created for excluding the planting area on the forestland, the Project shall update the tree count on the Project Area (i.e. by excluding the seedlings planted on the forestland) and also shall update '*GS4210 WOS Baguia CO2 Certificate Calculations_March 2019 v2.0.xlsx*' by accounting the correct number of trees planted on the Project Area.

Conclusion

A new CAR 09/19 is created to address this issue.

CAR #:	CAR 04/19
Occurrence (Document name, Requirement and Page):	<i>GS4210 WOS Baguia CO2 Certificate Calculations_March 2019 v1.0.xlsx</i> ; <i>Payment (folder)</i> ; <i>Participating farmers by Suco & Aldeia</i>

	2019.xlsx
Reference:	200-GS4GG-Land-Use-Forests-Activity-Requirements-v1.1
Description of an issue to be addressed:	
Regarding the project activity in the reporting period 1 March 2017 to 28 Feb 2019, the CO2 Certificate Calculation document provides a total of 65,467 seedlings planted (survived) in this period. The project document included a list of farmers with total number of plants and the amount of payment received in 2017 and a list of all farmers that participated in the Project. However, the project document does not include the number of the farmers and the number of seedlings planted and survived in 2017 and 2018 during this reporting period between 1 March 2017 and 28 Feb 2019.	
Suggested action required:	
The Project Owner shall provide a list of farmers and their Suco who participated in plantations in 2017 and 2018, and the number of seedlings survived. Please note that the number of seedlings survived must exclude the non-project trees i.e. seedlings planted on the forestland (Please refer to CAR 01/19 and CAR 03/19).	
Project Owner's response:	
The Project Owner provided the following clarification on an email dated 10 April 2019 in response to CAR 04/19: In relation to the list of farmers and their Sucos who participated in planting, for 2018 the list is provided in: \\Verification Audit 2019\CO2 Fixation Calculations\2018 Tree Count Data\GS4210 Planned Tree Counts 2018.xlsx.	
Additional documents provided by the Project Owner:	
Auditor's review of the PO's response:	
The Project documentation included the list of farmers who participated in the project activities and the number of seedlings planted.	
Conclusion	CAR 04/19 is closed.

CAR #:	CAR 05/19
Occurrence (Document name, Requirement and Page):	Grievance Book 2018_update.xls
Reference:	200-GS4GG-Land-Use-Forests-Activity-Requirements-v1.1.pdf page 36, Table c-1
Description of an issue to be addressed:	
In reviewing the Input and Grievance (template) (Grievance Book 2018_update.xls), the Auditors noticed the following issues: 1. The 'column G' shall contain the detail of the activities undertaken to resolve the issues or comments. We noticed several sentences with question marks in 'column G', which are confusing. Please remove these sentences and update the column with an appropriate response to each issue. 2. Regarding the comment # 2 on the training on tree pruning, the action required was to organise training on tree pruning by the Project. The response in 'column E' implies that the PD is working with Master Tree Growers from Australia to organise	

training. However, the training has not been organised yet and the issue has not been resolved yet. Please update the response in 'column G'. 3. Comment # 6, Is the last word in 'column G' 'No' a typological error? Please fix it. 4. Comment # 7, please specify how the WOS's approach to supplying other species seedlings was communicated with the farmers, in what forum and when, in 'column G'. Please keep the records of the communication for evidence. 5. Comment # 8, please check and update the 'action requested' in 'column D' to match the comment in 'column C'. Please update the 'column G' with a reasonable action. 6. Comment # 9, please provide the specific response to the farmer who has raised this issue. Please specify the action taken in 'column G' and the status of this issue.	
Suggested action required:	
The Project Owner shall address the above issues by using the same table template prescribed by the GS with the same headers. For example, the header does not exactly match the template and the header for the 'column E' is missing. Please refer to 200-GS4GG-Land-Use-Forests-Activity-Requirements-v1.1.pdf page 36, Table c-1)	
Project Owner's response:	
Grievance spreadsheet updated as required.	
Additional documents provided by the Project owner:	
https://www.dropbox.com/s/swzd1q4dsdsf3gn/Grievance%20Book%202018_3.xls?dl=0	
Auditor's review of the PO's response:	
In response to CAR 05/19, the Project Owner updated the Grievance and Input (G & I) document using the GS4GG template. Grievance and Input received in this verification period were not significant in nature and were primarily about communication between the Project staff and the farmers and request for training on tree pruning. The Project appropriately responded and also assigned a person responsible to resolve these issues. The Project meets the GS4GG requirement for Grievance and Input Mechanism.	
Conclusion	CAR 05/19 is closed.

CAR #:	CAR 06/19
Occurrence (Document name, Requirement and Page):	GS4210 WOS Baguia CO2 Certificate Calculation_March 2019 v.1.xlsx
Reference:	401.13-AR-Methodology-V1-1
Description of an issue to be addressed:	
Following a review of the document for CO2 estimation for the Project (GS4210 WOS Baguia CO2 Certificate Calculation_March 2019 v.1.xlsx), the Audit team has identified the issues as below: 1. Cell 'K47': The value is not correct, as it does not reflect the number of seedlings survived in 2018. 2. Cell 'I56': The estimation of CO2 in Mu 01 in 2016 is not consistent with calculation presented in cells 'J56' and 'K56' for MU 01 in 2017 and 2018, respectively. 3. Cells 'D74' and 'E74': The values are not correct. 4. Cell 'I61': The CO2 for <i>C. equistefolia</i> is missing. 5. Cell 'I63': The CO2 for <i>T. grandis</i> is missing.	

6. Cell 'K64': The old growth rate (from Monitoring Event 1) for Mahogany was applied to year 2018. 7. Cell 'I64': This calculation does not take into account the 9,498 Mahogany seedlings in MU 02 planted in 2016 and incorrectly refers to Mahogany in MU1.	
Suggested action required:	
After addressing CARs 01/19, 03/19 and 04/19, the Project shall address the above issues and update the relevant project documents including <i>GS4210 WOS Baguia CO2 Certificate Calculations_March 2019 v1.0.xlsx</i>. Please note that the trees/seedlings accounted for CO2 Fixation must not include the non-project trees i.e. seedlings planted on the forestland (Please refer to CAR 01/19 and CAR 03/19).	
Project Owner's response:	
The following corrections have been made in <i>GS4210 WOS Baguia CO2 Certificate Calculation_March 2019 v.2.0.xlsx</i> (updated version): 1. No correction made. Cell 'K47' = SUM(K31:K46)/K26 = B47 = Annual Total of Trees Planted, that is, it was never meant to reflect the number of seedlings that survived in 2018. Note, this cell is also not used in the calculations to estimate abatement, its just to check number counts etc. 2. The estimation of CO2 in Mu 01 in 2016 (Cell 'I56') is different to the calculations cells 'J56' and 'K56' for MU 01 in 2017 and 2018, respectively, because for the previous years (2010 to 2015) – the overall tree numbers were split into cropland and grasslands via an area ratio, e.g. =(H81/H83). This was conducted as opposed to cropping the shapefiles files in GIS into croplands and grasslands areas and re-calculating the tree counts per MU that way (as was done for 2017 and 2018). It is just an alternative approach to estimating the number of trees in croplands and grasslands. To make this more obvious instead of doing this split in the CO2 fixation calculations, it was done in the tree counts per MU rows, row 34 and 42 for Mahogany. Also see point 7. for further changes in regard to this. 3. Cells 'D74' and 'E74' have been corrected to add up CO2 for all species. No change to abatement. 4. Cell 'I61': The CO2 for <i>C. equistefolia</i> in 2016 has been added (3.68 tCO2) 5. Cell 'I63': The CO2 for <i>T. grandis</i> has been added (25.71 tCO2) 6. Cell 'K64': Correction made - The revised growth rate (from Monitoring Event 1) for Mahogany has been applied for MU02 (2018). See also explanation in point 2. The area split per MU step was removed in the CO2 fixation calculations (moved to tree numbers). Now, the CO2 fixation calculation cells are a straight summation of all the trees planted to date multiplied by the latest CO2 fixation rate.	
Additional documents provided by the Project Owner:	
Updated document: <i>/Verification Audit 2019/CO2 Fixation Calculations/GS4210 WOS Baguia CO2 Certificate Calculation_March 2019 v.2.0.xlsx</i>	
Auditor's review of the PO's response:	
The Project Owner made appropriate correction addressing the above issues and submitted the updated CO₂ Fixation calculation.	
Conclusion	CAR 06/19 is closed.

CAR #:	CAR 07/19
Occurrence (Document name, Requirement and Page):	6.1 - Template - Carbon Performance_230317.pdf; 401.13-AR-T-Carbon-Performance - GS4210 March 2019.pdf

Reference:	401.13-AR-Methodology-V1-1						
Description of non-conformance or an issue to be addressed:							
The Auditors noticed that the Project presented a comparison of tree growth in between Cropland and Grassland using the 2016 tree monitored data in the project document (401.13-AR-T-Carbon-Performance - GS4210 March 2019.pdf on Table 6.5). This calculation was already presented during the previous verification in the project document (6.1 - Template - Carbon Performance_230317.pdf). It is noted that Figure 6.4 (referred to as 6.5 in the text) compares 2019 monitored data, without an accompanying table comparing the growth rates between Cropland and Grassland for 2018/19 data (Refer to Image 4).							
Table 6.5 Comparison of growth rates of swietenia macrophylla located in grassland versus croplands							
		Circumference (cm)		Diameter (cm)			
Land use	N	Average	Stdev	Average	Stdev	min (cm)	max(cm)
Grasslands	134	39.36	8.1	12.5	2.6	9.9	15.1
Croplands	1336	36.43	11.0	11.6	3.5	8.1	15.1
Image 4: The carbon performance document (401.13-AR-T-Carbon-Performance - GS4210 March 2019.pdf) included the same tree data comparison for <i>Swietenia macrophylla</i> presented in the last verification using 2016 tree monitoring data in 6.1 - Template - Carbon Performance_230317.pdf							
Suggested action required:							
The Project Owner shall use the 2018/19 tree monitoring data to compare the growth rates in the Cropland and Grassland and update the document.							
Project owner's response:							
The data for 2019 (which is only approx. 4 months apart of 2018 data) was provided in spreadsheet: <i>GS4210 Growth Model to 2018 v1.0.xls</i>, worksheet: 'Croplands Comp' and was presented as Figure 6.4 (revised to be 6.5) in 6.1 - Template - Carbon Performance_230317.pdf. Negligible difference was observed between croplands growth rates and the growth rates for croplands and grasslands combined, indicating that there was negligible difference between growth rates of trees planted on either croplands or grasslands. The table of data that Figure 6.5 is derived from has now been added, refer to 6.1 - Template - Carbon Performance_April 2019.pdf.							
Additional documents provided by the Project owner:							
Updated document: /Verification Audit 2019/GS4GG Template Docs/6.1 - Template - Carbon Performance_April 2019.pdf							
Auditor's review of the PO's response:							
The Project Owner provided data and presented the finding with no significant difference in the growth rates between cropland and grassland and submitted an updated document.							
Conclusion	CAR 07/19 is closed.						
CAR #:		CAR 08/19					
Occurrence (Document name, Requirement and Page):		Cumulative EPA 2017.shp; Cumulative EPA 2016.shp					

Reference:	200-GS4GG-Land-Use-Forests-Activity-Requirements-v1.1, page 4 GS4GG A/R Methodology, condition 2 of Scope and Applicability
Description of an issue to be addressed:	
This CAR 08/19 is created because CAR 01/19 was not resolved in the first round of 'List of uncorrected errors' issued on 9 April 2019. Please refer to CAR 01/19 for the detail to this CAR. The Auditors acknowledge the PD's response to CAR 01/19. The Eligible Planting Area (EPA) and the adjacent areas of Forestland were defined in the Project Design. These areas were validated and the areas defined have not been changed since the project validation since the project start in 2010. According to condition 2 of Scope and Applicability in the GS4GG A/R Methodology, "Projects that include the planting of trees on land that does not meet the definition of a forest at planting start are eligible to apply this methodology." These seedlings were planted on land that was defined as forestland and was not part of the Eligible Planting Area at the project start. We requested a clarification from the Gold Standard Secretariat on this issue (email sent on 28 April 2019 to Giancarlo Raschio). On 8 May 2019, the email from the GS advised that 'a project cannot claim carbon credits from new plantations beyond the planting area at validation unless there is a new area certification process'. (The email from GS was shared with the PD). Therefore, the Project must exclude the planting area on the forestland from the Project Area and update the planted area map (<i>Cumulative EPA 2017.shp</i>; <i>Cumulative EPA 2016.shp</i>) provided for verification.	
Suggested action required:	
The Project shall check the planted area maps for the past years (e.g. <i>Cumulative EPA 2017.shp</i> ; <i>Cumulative EPA 2016.shp</i>) for the seedlings planted on the forestland and update these maps by excluding the planting area on the forestland.	
Project Owner's response:	
The EPAs for 2016 and 2017 have been clipped to the non-forest maps (both cropland and grassland) and revised shapefiles have been provided.	
Additional documents provided by the Project Owner:	
See folder for revised shapefiles: \GIS files\Annual Cumulative EPA\Revised EPA 2016 & 2017\Cumulative EPA 2016 Revised.shp, Cumulative EPA 2017 Revised.shp	
Auditor's review of the PO's response:	
The Auditor checked the revised shape files ('<i>Cumulative EPA 2016.shp</i>' and '<i>Cumulative EPA 2017.shp</i>') provided by the Project Owner and confirmed that the maps only included the non-forest areas i.e. crop lands and grasslands. The cumulative areas for 2016 and 2017 in these maps corroborate with the areas estimated by the Auditor by using area estimation tools in ArcGIS 10.2. The Project Owner had used the same cumulative areas for 2016 and 2017 in CO2 Certification Calculation in file '<i>GS4210 WOS Baguia CO2 Certificate Calculation_March 2019 v3.0.xlsx</i>'.	

Conclusion	The Project Owner revised the EPA maps for 2016 and 2017 ('Cumulative EPA 2016.shp' and 'Cumulative EPA 2017.shp') by excluding the forestland and applied the updated cumulative areas in CO2 Certification Calculation in file 'GS4210 WOS Baguia CO2 Certificate Calculation_March 2019 v3.0.xlsx'. Hence, CAR 08/19 is closed.
------------	--

CAR #:	CAR 09/19
Occurrence (Document name, Requirement and Page):	GS4210 WOS Baguia CO2 Certificate Calculations_March 2019 v2.0.xlsx
Reference:	401.13-AR-Methodology-V1-1
Description of an issue to be addressed:	
This CAR 09/19 is created because CAR 01/19 was not resolved in the first round of 'List of uncorrected errors' issued on 9 April 2019. Please refer to CAR 03/19 for the detail to this CAR. The Project is required to exclude the planting area on the validated forestland and must not account for the trees on these areas for carbon fixation. Since the issue (CAR 01/19) is not resolved and CAR 08/19 is created for excluding the planting area on the forestland, the Project shall update the tree count on the Project Area (i.e. by excluding the seedlings planted on the forestland) and also shall update 'GS4210 WOS Baguia CO2 Certificate Calculations_March 2019 v2.0.xlsx' by accounting for the correct number of trees planted on the Project Area.	
Suggested action required:	
The Project shall undertake the following: a) confirm the actual trees planted on the Project Area validated up to 2017 (refer to the map <i>Cumulative EPA 2017.shp</i>). Please note that the total tree count up to 2017 (i.e. including the plantations between 2010 to 2017) must not exceed 81,455 based on the annual tree count data provided to the Auditors. b) account only the trees in the Project Area for the Carbon Fixation in <i>GS4210 WOS Baguia CO2 Certificate Calculations_March 2019 v2.0.xlsx</i>.	
Project owner's response:	
The following action was made by the project owner: It is not clear to Xpand how 81,455 tree count number was derived and after clipping the EPA's to the non forest maps there are 85,806 trees in the EPA. In order to accurately calculate CO2 Fixation, based on the specific tree rates and MUs, we needed to derive tree counts per species and per MU (e.g. trees per species in the croplands and trees per species in the grassland). See part b) as to how this was achieved. Revised Tree Counts Clipped the shapefile of the tree counts: Baguia Tree Count_2017.shp to both the cropland and grasslands land use shapefiles, giving rise to two shapefiles: Croplands Tree Count_2017.shp, Grasslands Tree Count_2017.shp. These files contained trees residing on non-forest land; Copied the data from the attributes tables of Croplands Tree Count_2017.shp, Grasslands Tree Count_2017.shp into excel spreadsheet: GS4210 Tree Count	

MUs_2017_June 2019.xlsx, refer to worksheets: 'Cropland Trees' and 'Grassland Trees'.

Conducted pivot tables for each MU to derive the tree counts per species per year, refer to worksheets: 'Cropland Summary' and 'Grassland Summary'.

Entered the tree count from the 'Cropland Summary' and 'Grassland Summary' worksheets (highlighted in yellow) into Columns I and J of excel sheet: GS4210 WOS Baguia CO2 Certificate Calculations_March 2019 v3.0.xlsx to derive the CO2 fixation.

The main change in tree counts is that, previously, the grassland tree counts were derived from difference between the total tree counts (including trees that overlapped forest land) and the cropland tree counts. The cropland tree counts have always been derived from clipping the shapefile and therefore did not include any trees on forest lands in the previous count. We repeated this procedure for grasslands trees.

We have decided to deal with the missing tree data when we re-do the tree inventory and introduce the tree chips.

Revised Area Estimates

Revised cumulative eligible planting areas were updated in the CO2 fixation excel spreadsheets in: 'GIS Area Results' and 'CO2 Certificates'.

This was done by:

Merging cropland use and grassland use shapefiles: Baguia Crop_Grasslands WGS84.shp;

Clipping the Cumulative EPA 2016.shp and Cumulative EPA 2017.shp files with the merged file above to derive EPA in non-forest land only;

Dissolved the file and converted projection to UTM51S in order to derive area (in ha): Cum EPA 2016 NF Clip Diss UTM51S.shp, Cum EPA 2016 NF Clip Diss UTM51S.shp;

Cleaned attributes table and renamed files: Cumulative EPA 2016 Revised.shp, Cumulative EPA 2017 Revised.shp;

Entered data into worksheets: 'GIS Area Results' and 'CO2 Certificates' of GS4210 WOS Baguia CO2 Certificate Calculations_March 2019 v3.0.xlsx.

Additional response following a clarification request on the inconsistency between the total tree count in the revised maps and CO2 Certification Calculation file (email from Andrew Maher on 18 June 2019):

Every year the project conducts a tree count across the EPA. This tree count is conducted outside of the audit cycle for the prime purpose of understanding how many trees each farmer is managing so that together, i.e. with the farmer, we can determine and confirm the number of trees, which then enables the project to calculate the annual payment to the farmer. Sometimes farmers for their own reasons don't opt to have their trees included in the annual count or there maybe a dispute between farmers. Under HMI rules the dispute needs to be resolved before trees will be counted. Therefore each yearly tree count is a discrete event and they should not be added together to provide a total tree count in a subsequent year. Each years count is a definitive count.

The trees entered into excel sheet GS4210 WOS Baguia CO2 Certificate Calculations_March 2019 v3.0.xlsx for 2010 to 2015 were derived from the tree counts taken in those years. These spreadsheets can be found in respective audit

folders in the Pangolin Audit dropbox. These values have been audited and we are not changing them due to subsequent tree counts for those years (excepting 2016 as there was an actual error).

The tree counts per species from the grasslands summary for 2016 and 2017 (See grassland summary worksheet cells b11 to f12) were also derived from tree counts taken in those years and have been entered into the GS4210 WOS Baguia CO2 Certificate Calculations_March 2019 v3.0.xlsx excel sheet.

The pivot table in the Croplands and Grasslands Summary worksheets of GS4210 Tree Count MUs_2017_June 2019.xlsx were done to work out for each MU and year, the tree numbers based on species. It's not a total tally due to the reasons stated above. What needs to be checked is the values for 2016 & 2017 per species to ensure they align for those years.

The discrepancies in counting tree numbers repeatably will be resolved in future. The new RFID chip system being implemented in the next tree count to resolve this confusion in future tree counts as the RFID chip will ensure every tree has its own unique ID. This will allow the program to identify each tree rather than the current method of using the GPS location, which can change from count to count due to the known issues with the accuracy of GPS recording.

Additional documents provided by the Project owner:

Auditor's review of the PO's response:

In CAR 03/19, the Auditor presented a result from GIS analysis that the Project had 81,455 trees on the Eligible Planting Area (EPA) which was obtained by subtracting 4,860 trees from the total tree count of 86,315, 4,860 trees as of 2017 in *Baguia Tree Count_2017.shp* submitted by the Project Owner.

The revised shapefiles for tree count in Cropland (*Cropland Tree Count_2017.shp*) and Grassland (*Grassland Tree Count_2017.shp*) presented 57,096 and 24,218 trees as of 2017, respectively. Therefore, the Project had a total tree count of 81,314 on the Eligible Planting Area. The total count of trees in the revised maps were found to be very close to 81,455 trees obtained by the Auditor from the GIS analysis of the maps provided. The attribute table of these shapefiles included the geographic location of each tree planted in the Eligible Planting Area, species and planting year. The Project Owner summarised the number of trees per year in Cropland and Grassland in *GS4210 Tree Count MUs_2017_June 2019.xlsx*. The total tree count in 2016 and 2017 were applied to the CO2 Certificate Calculation file, *GS4210 WOS Baguia CO2 Certificate Calculations_March 2019 v3.0.xlsx*.

However, we observed a discrepancy in the tree count for the planting years 2010 to 2015 between the revised maps and the CO2 Certificate Calculation file. As a result, the CO2 Certificate Calculation file (*GS4210 WOS Baguia CO2 Certificate Calculations_March 2019 v3.0.xlsx*) had a cumulative tree count of 85,806 as of 2017 with 4,492 trees more than the total trees in the revised maps for Cropland and Grassland (*Cropland Tree Count_2017.shp* and *Grassland Tree Count_2017.shp*) with a combined tree count of 81,314 in the cumulative tree count as of 2017. In a response to the Auditor's clarification request on this issue, the Project Owner explained that the annual tree count is a discrete event and might differ each year because farmers might not count trees or trees are not included because of a dispute between farmers. The Project Owner accepted this issue and claimed to address this by using RFID technology for accounting each tree with a unique ID in the next tree count.

Conclusion

In response to CAR 03/19 and CAR 09/19, the Project Owner revised

	the shapefiles for cropland and grassland to account for the trees only on the Eligible Planting Areas. Hence, the number of trees in 2016 and 2017 were updated to 18,490 and 23,447 in the current version (v3) of the CO2 Certificate Calculation file (<i>GS4210 WOS Baguia CO2 Certificate Calculations_March 2019 v3.0.xlsx</i>). As a result, the total tree count in 2016 was significantly reduced to 18,490 from 27,580 in the previous version (v2) of the CO2 Certificate Calculation file (<i>GS4210 WOS Baguia CO2 Certificate Calculations_March 2019 v2.0.xlsx</i>) while the tree count slightly reduced to 23,447 from 23,511 in 2017. Despite the Project having mapped each tree planted on the Eligible Planting Areas with the geographic location, species and the planting year, the tree count presented in the CO2 Certificate Calculation file (<i>GS4210 WOS Baguia CO2 Certificate Calculations_March 2019 v3.0.xlsx</i>) did not match with the tree count in the maps in years 2010 -2015. The cumulative number of trees reduced from 60,559 to 43,869 in the years 2010 to 2015 in the CO2 Certificate Calculation file of the previous verification (<i>GS4210 Baseline CS and CO2 Fixation models PFA Review_Update 2017.xlsx</i>) to this verification (<i>GS4210 WOS Baguia CO2 Certificate Calculations_March 2019 v3.0.xlsx</i>). The Auditors accepted the Project Owner's explanation regarding the discrepancy in the annual tree count. However, the tree count in the maps must reconcile with the number of trees accounted for the carbon certificate calculation. Hence, CAR 03/19 and CAR 09/19 are closed and FAR 03/19 is created to ensure that the Project Owner applies the tree count found in the maps with GPS coordinates to the CO2 Certificate Calculation file.
--	---

Forward Action Requests (FAR)

FAR #:	FAR 01/19
Occurrence (Document name, Requirement and Page):	
Reference:	CAR02/19
Description of an issue to be addressed:	
The Auditors agree that stratification is not required if each tree in the Project Area is measured after rolling out the RFID technology. However, the Auditors are concerned that the measurement of all trees may not be feasible or practicable despite the RFID technology due to the increasing number of trees every year and the resources require for data collection, storage and analysis for estimating carbon fixation by the Project. If the RFID technology is not rolled out to each tree, the Project needs to apply the existing method of tree measurement for determining the growth rate for estimating the carbon fixation by the Project. FAR 01/19 is created to ensure that the Project has identified Modelling Units to comply with the requirement as set out in the GS4GG A/R methodology. If the Project has not rolled out RFID technology to all trees in the Project Area, the Project Owner must analyse for the significance difference in the tree growth rates at different elevations and site conditions (cropland vs grassland) and appropriately stratify the Project Area into Modelling Units.	
Timeline for Conformance:	Prior to the approval to the next verification and performance review

FAR Status:	Open
-------------	------

FAR #:	FAR 02/19
Occurrence (Document name, Requirement and Page):	
Reference:	FAR02/17
Description of an issue to be addressed:	
The Auditors believe that RFID technology can resolve the issue of tracking trees in each farmland with key information including tree id, species, year of plantation, diameter or circumference in the Project Area. The Project Owner has provided the schedule for a complete installation of RFID Nails on each tree between June 2019 to October 2019. The implementation of RFID technology can address the issue raised in FAR 02/17, hence, this FAR is closed. However, the installation of the technology is planned after this verification. A FAR 02/19 is created to ensure that the Project adapts the technology by installing RFID nails to each tree in the Project Area and the system will allow entering, storing and retrieving the key tree data and information.	
Timeline for Conformance:	Prior to the approval to the next verification and performance review
FAR Status:	Open

FAR #:	FAR 03/19
Occurrence (Document name, Requirement and Page):	
Reference:	CAR 03/19 and CAR 09/19
Description of an issue to be addressed:	
The Project Owner has acknowledged the inconsistency between the tree count in the GIS maps and the annual tree count presented in the CO2 Certificate Calculation. The Project counts each tree annually for the payment to the participating farmers and takes the geographic coordinates of each tree. The Auditor understands that the Project Owner has planned to use RFID technology with a unique identification number for each tree in the Eligible Planting Area and the Project Owner believes that this would resolve the issue. For ensuring consistency of the data across different files and maps for an accurate calculation of carbon certificates, the Project Owner must apply a consistent tree count for each year between the maps and the CO2 Certificate Calculation file so that the tree count in each year can be verified.	
Timeline for Conformance:	Prior to the approval to the next verification and performance review
FAR Status:	Open

6. List of findings

6.1 Non-conformance assessment

Project Area, Eligible Planting Area and Modelling Unit

Risk Area 1	The Project has changed the Project Area in the reporting period between 1 March 2017 to 28 Feb 2019.	
Audit Findings	The review of the Project documents, maps and interview with the Project Developer, WithOneSeed (WOS) staff and the participating farmers confirmed that the Project Area has not experienced any damage due to natural disturbance such as fire or wind in the reporting period. The Auditor did not observe any damage or loss of tree plantation in the Project Area during the site visit to the farmer's land. In addition, the GIS files (<i>Land_Use_Cropland.shp</i>; <i>Land_Use_Forest.shp</i>; <i>Land_Use_Grasslands.shp</i>) showed no change in the Project Area. The review of the documentation, GIS files and the interview with the PD, the participating farmers, and WOS staff concur that the project area has not changed since the last verification.	
Relevant CAR/FAR/OBS	NA	
Status of CAR/FAR/OBS	NA	
Conformance	Yes ☒	No ☐

Risk Area 2	A risk that the Project has not accurately mapped and estimated the Planting Area.	
Audit Findings	The Planting Area (PA) represents the land area where the participating farmers have customary and undisputed land rights and have undertaken tree plantation activities since 2010. The PA is derived by applying a buffer area of 5 m diameter around each planted tree, representing an average width of tree crown at maturity. The cumulative Planting Area was obtained by merging the tree buffer area around each tree. The interview with the stakeholders did not raise any issues on the exclusion of areas of special interest such as spiritual, cultural and social significance. However, the farmers raised an issue on planting on the disputed land due to lack of a clear recognition of customary right to a farmer. The WOS staff clarified to the farmers that the Project does not accept plantation on disputed land and further highlighted that the plantation must occur only on land with a clear customary land right. The plantation activity must be confined to the Project Area in the Cropland and/or Grassland but must not occur on the baseline Forestland. However, the Intersection Tool in the GIS located overlap between Cumulative EPA 2017 (<i>Cumulative EPA 2017.shp</i>) and Forest land (<i>Land_Use_Forest.shp</i>) maps at 102 locations (Refer to Image 1). We also noticed that the	

	cumulative EPA 2016 (Cumulative EPA 2016.shp) also overlaps with the forest land (<i>Land_Use_Forest.shp</i>) at 66 places which identifies the plantations that have occurred on the forest land outside the Eligible Planting Area (EPA). In response to CAR 08/19, the Project Owner revised the shapefiles of the planting areas on the Cropland (Cumulative EPA 2016.shp) and Grassland (Cumulative EPA 2017.shp) by clipping only non-forestland encompassing the Eligible Planting Areas. These maps excluded the forestland, and hence, no overlap occurred between the Planting Areas and forestland. The cumulative areas for 2016 and 2017 in these maps corroborate with the area estimated by the Auditor by using area estimation tools in ArcGIS 10.2. The Project Owner had used the same cumulative areas for 2016 and 2017 in the CO₂ Certification Calculation in file '<i>GS4210 WOS Baguia CO2 Certificate Calculation_March 2019 v3.0.xlsx</i>'. The Project Owner addressed this issue by removing the overlap area from the EPA in the respective GIS files (<i>Cumulative EPA 2016.shp</i> and <i>Cumulative EPA 2017.shp</i>). Hence, the trees planted on the forestland were also excluded from the Project Area and not accounted for in the carbon certificates. Thus, the Project Owner had accurately mapped and estimated eligible planting area.	
Relevant CAR/FAR/OBS	CAR 01/19 and CAR 08/19	
Status of CAR/FAR/OBS	CAR 01/19 and CAR 08/19 are closed.	
Conformance	Yes ☒	No ☐

Risk Area 3	The Project has not accurately identified the Modelling Unit (MU) in the Project Area based on the GS4GG requirements.
Audit Findings	The Project has identified two Modelling Units in the Project Area based on the baseline land use, such as grassland and cropland. The Project has not changed stratification since the last Verification and Performance Review. According to the GS4GG Requirement (200-GS4GG-Land-Use-Forests-Activity-Requirements-v1.1 on page 4-5), a modelling unit should comprise an area with homogenous characteristics in terms of growth, species, management regime and planting year. Although the Project has two MUs based on the baseline condition prior to the tree planting, the same growth rate was applied to both MUs derived by combining all the tree measurement data. Despite identifying two modelling units with variability in terms of planting year, elevation and site conditions, the Project did not differentiate between the two MUs

	for estimating the carbon stock. The Project has tree plantations with age cohorts from 2010 to 2018 at various elevations, aspects and soil conditions. A test of significance in the diameter data collected during the Auditor's field visit inferred that the tree growth of Mahogany trees with the same planting year (e.g. 2010) significantly different at three different elevations at 5% significance level. The farmers and WOS staff have also acknowledged the slower growth of Mahogany trees in the high elevation than in the low elevation. For this reason, the farmers are demanding a fast growing tree species on the high elevation. A CAR 02/19 was raised on this issue seeking an explanation and justification on how the Project meets the requirement for identifying the MUs with homogenous characteristics as per the requirement in 200-GS4GG-Land-Use-Forests-Activity-Requirements-v1.1 on page 3 and pages 28-29. In response to the CAR 02/19, the Project explained and justified the current stratification strategy and approach and also advised that the Project will adapt the RFID technology and install the system in all trees in between June – October 2019 for accounting CO₂ Fixation in each tree in the Project Area. The Auditors agree that the Project does not need stratification if all trees are measured and accounted for carbon sequestration. However, we have a concern that the technology may not be implemented to the entire Project Area within the next verification. FAR 01/19 is created to ensure that the Project has identified Modelling Units to comply with the requirement as set out in the GS4GG A/R methodology. If the Project has not rolled out RFID technology to all trees in the Project Area, the Project must analyse for the significance difference in the tree growth rates at different elevations and site conditions (cropland vs grassland) and appropriately stratify the Project Area into Modelling Units.	
Relevant CAR/FAR/OBS	CAR 02/19 and FAR 01/19	
Status of CAR/FAR/OBS	CAR 02/19 is closed and FAR 01/19 is created.	
Conformance	Yes ☒	No ☐

CO₂ Fixation

Risk Area 4	The Project has incorrectly counted and accounted the tree species which were planted after the project start date
Audit Findings	The annual tree count of one farmer (Francisco) was checked for each year since 2010. The hardcopy record of tree count provides the total number of tree count for each year and in some cases also notes the tree mortality (i.e. number of trees

	that died out of the planted trees) For annual tree count, the Project assigned the WOS Coordinators in their respective area. The farmer and the WOS Coordinator together counted the trees with GPS locations in the farmland. The number of trees counted in a farmland is used for the annual payment. The GPS locations taken by the Auditor confirmed the plantation areas within the Project Area. The GPS location of individual trees provided evidence for the presence of trees on the farmlands which were counted and accounted for calculating carbon abatement. When the participating farmers were asked the total number of seedlings/trees counted in the last year's annual count and the payment they received, they were able to tell the number of trees/seedlings survived and the payment received. These numbers matched to the Project's record in 2018. In response to CAR 03/19 and CAR 09/19, the Project Owner revised the shapefiles for cropland and grassland to account for the trees only on the Eligible Planting Areas. Hence, the number of trees in 2016 and 2017 were updated to 18,490 and 23,447 in the current version (v3) of the CO2 Certificate Calculation file (<i>GS4210 WOS Baguia CO2 Certificate Calculations_March 2019 v3.0.xlsx</i>). As a result, the total tree count in 2016 was significantly reduced to 18,490 from 27,580 in the previous version (v2) of the CO2 Certificate Calculation file (<i>GS4210 WOS Baguia CO2 Certificate Calculations_March 2019 v2.0.xlsx</i>) while the tree count slightly reduced to 23,447 from 23,511 in 2017. The tree count presented in the CO2 Certificate Calculation file (<i>GS4210 WOS Baguia CO2 Certificate Calculations_March 2019 v3.0.xlsx</i>) did not match with the tree count in the maps in years 2010 -2015. The cumulative number of trees reduced from 60,559 to 43,869 in the years 2010 to 2015 in the CO2 Certificate Calculation file of the previous verification (<i>GS4210 Baseline CS and CO2 Fixation models PFA Review_Update 2017.xlsx</i>) to this verification (<i>GS4210 WOS Baguia CO2 Certificate Calculations_March 2019 v3.0.xlsx</i>). The Auditors accepted the Project Owner's explanation regarding the discrepancy in the annual tree count. However, the tree count in the maps must reconcile with the number of trees accounted for carbon certificate calculation. Hence, CAR 03/19 and CAR 09/19 are closed and FAR 03/19 is created that the Project Owner applies the tree count number in the maps with GPS coordinates to the CO2 Certificate Calculation file.	
Relevant CAR/FAR/OBS	CAR 03/19, CAR 09/19 and FAR 03/19	
Status of CAR/FAR/OBS	CAR 03/19 and CAR 09/19 are closed. FAR 03/19 is created.	
Conformance	Yes ☒	No ☐

Risk Area 5	The Project did not accurately measure the trees and did not correctly identify tree species for accounting carbon credits.	
Audit Findings	Over a four day period, with the assistance of WOS staff and others, the Auditor measured tree circumference and GPS locations of 855 trees at 15 farmlands, including all planting years between 2010 and 2017 except for the year 2013, on both grassland and cropland and at low, medium and high elevations. The Auditor observed a planting spacing of 3 to 5 m between the planted trees. Mahogany (<i>Swietenia macrophylla</i>) is the dominant species for the Project Area. Besides, the Auditor also observed some plantation areas comprising Casurina (<i>C. Equisetofolia</i>), Indian Sandalwood (<i>Santalum album</i>), Teak (<i>Tectona grandis</i>) and Wild Almond (<i>Sterculia foetida</i>). For the measurement of the sample trees in 2018-19, only trees of Mahogany were measured and the staff and farmer had correctly identified the species. The significance test between the Auditor's tree measurement data and the PD's tree measurement data did not provide any evidence to suggest that the sample means from these two datasets were significantly different, with the exception of the year 2015. For trees planted in 2015, the Auditor's data calculated a higher mean diameter than the PD's data. Since the PD had used a low value for mean diameter for the trees in 2015, it is reasonable to say that the value is conservative and does not overestimate the carbon stock. Based on the data and test of significance, the Auditors conclude that the PD's tree measurement data were accurately measured.	
Relevant CAR/FAR/OBS	CAR 02/19	
Status of CAR/FAR/OBS	CAR 02/19 is closed.	
Conformance	Yes ☒	No ☐

Risk Area 6	The Project has not implemented the activities related to plantation and their management.	
Audit Findings	The Project had established a tree plantation comprising a total of 152,687 seedlings between 2010 and 2018. In this reporting period (March 2017 to Feb 2019), the records showed tree plantation of 24,759 and 40,708 seedlings, respectively (<i>GS4210 WOS Baguia CO2 Certificate Calculations_March 2019 v2.0.xlsx</i>). One of the principal nurseries was visited where the Auditor observed about 10,000 seedlings of Mahogany and 300 newly germinated Sandalwood seeds. The seedlings looked healthy and vigorous.	

	The Auditor observed that Mahogany (<i>Swietenia macrophylla</i>) was the dominant species for the Project Area. The Auditor also observed some plantations comprising Casurina (<i>C. equisetifolia</i>), Indian Sandalwood (<i>Santalum album</i>), Teak, (<i>Tectona grandis</i>) and Wild Almond (<i>Sterculia foetida</i>). The PD advised that the Project generally provides a seedling transport service to the roadside from the nursery and the farmers transport the seedlings to the plantation sites and are required to plant the seedlings immediately on farmland. The Auditor did not see any polybags on the plantation sites. The WOS staff stated that the farmers returned the undamaged polybags to the nursery for reuse. The Project provided a list of farmers who received payment in 2018. A total of 65,467 seedlings planted by 555 farmers participated in the project activity in the reporting period 1 March 2017 to 28 Feb 2019.	
Relevant CAR/FAR/OBS	NA	
Status of CAR/FAR/OBS	NA	
Conformance	Yes ☒	No ☐

Risk Area 7	The Project Developer has not undertaken the monitoring of the data/parameters for SDGs impacts as set out in the Monitoring and Reporting Plan in the reporting period.	
Audit Findings	In response to FAR 01/17, the Project provided a summary of the payments made to the local staff and the farmers since 2010 to support its positive impacts in the local economy and employment generation. The WOS staff, farmers and the local representative of the Government strongly claimed that the project has a significant positive impact in the local communities and the environment through providing financial incentives to the local participating families, employment to local people and enhancement of the forest biomass due to new plantations on the cropland and grassland. Since this Project is transiting to the GS4GG standard from the previous standard, the Project requires identifying and demonstrating three indicators for Sustainability Development Goals. The Project has just submitted the transition document with monitoring and reporting plan for three indicators of Sustainable Development Goals. Hence, the Project will implement the monitoring plan as described in the transition document and submits a monitoring report in the next verification.	
Relevant CAR/FAR/OBS	NA	

Status of CAR/FAR/OBS	NA	
Conformance	Yes ☒	No ☐

Risk Area 8	The Project Developer has not had a Grievance and Input (G & I) Mechanism in place and has not addressed issues or concerns raised by the stakeholders.	
Audit Findings	The Project had kept a book for recording of Grievance and Input (G & I) regarding the project at the Project's Office. Although the I&G book was located in the office, the WOS Staff had entered the grievance issues into the book raised by the farmers or other stakeholders during the farmer visits or at the meetings. The G & I book listed nine grievance issues in the reporting period and were written in Tetun language, as the Project uses the local language for communication and record-keeping. The Auditor viewed the G & I book at the Project's office whereas the detail of the issues was submitted in English using a table format (Grievance Book 2018_update.xls). A CAR 05/19 was raised to the Project regarding the compliance for G & I requirements in GS. At a meeting, the Subdistrict Chief did request to the PD for a study visit for the community leaders and farmers to Australia to learn about carbon projects. The PD responded by highlighting the financial cost of such activities and it is currently beyond the Project's capacity to organise any study tours. The Auditor interviewed the farmers, the WOS staff and Local Government Authority and confirmed that no other comments or grievance issues were raised. In response to CAR 05/19, the Project updated the G & I document using the GS4GG template. G & I Issues received in this verification period were minor communication issues between the Project staff and the farmers and training needs. The Project appropriately responded to each of these issues and also assigned a responsible person to each issue to take action resolving the issue. The Project meets the GS4GG requirement for Grievance and Input Mechanism.	
Relevant CAR/FAR/OBS	CAR 05/19	
Status of CAR/FAR/OBS	CAR 05/19 is closed.	
Conformance	Yes ☒	No ☐

Risk Area 9	The Project did not appropriately select the carbon pools, tree parameters, default or derived factors and did not apply them	
-------------	---	--

	accurately for estimating carbon fixation for the project.
Audit Findings	The Project had appropriately selected aboveground biomass, belowground biomass pool and soil carbon for accounting carbon sequestration by an afforestation and reforestation program. The Project had measured the circumference of tree at the breast height (1.3 m) and also recorded the GPS of each measured tree. The PD has not changed the method for estimating aboveground biomass in the Project Area since the last verification (24 March 2017) and performance review. Therefore, the Auditor accepts the method applied to the Project and did not review the method in this verification. For belowground biomass, the project used the same value of root:shoot ratio of 0.2 (Gold Standard Default) as applied for Performance Certification in 2017. The Project calculated the standard error for the plantation years 2010-2017 based on the tree measurement data and found a maximum error below 7% i.e. well below the threshold of 20%. In response to CAR 06/19, the Project updated the CO₂ Fixation Calculations, which estimated 24,320 tCO₂ in this verification period (2017 & 2018) after subtracting the overestimated 3,166 tCO₂ carbon fixation in year 2016 at the previous verification and performance review.
Relevant CAR/FAR/OBS	CAR 06/19
Status of CAR/FAR/OBS	CAR 06/19 is closed.
Conformance	Yes ☒ No ☐

Risk Area 10	The Project has not accurately accounted soil carbon by the Project as per the GS4GG requirement.
Audit Findings	The Project has used the GS A/R Soil Carbon Guideline and has not changed the method for estimating soil carbon in the Project Area since the last verification (24 March 2017) and performance review. Therefore, the Auditor accepts the method applied to the Project and did not review the method in this verification.
Relevant CAR/FAR/OBS	NA
Status of CAR/FAR/OBS	NA
Conformance	Yes ☒ No ☐

Risk Area 11	The Project has not provided a pathway to meet the performance shortfall in the case where ex-post carbon credits is lower than ex-ante estimation of carbon dioxide.	
Audit Findings	The Project has used the same approach to assess the performance shortfall and has not changed the method since the last verification (24 March 2017) and performance review. Therefore, the Auditor accepts the method applied to assess the performance shortfall and did not review the method in this verification. The Project demonstrates that there is no performance shortfall in this verification period.	
Relevant CAR/FAR/OBS	NA	
Status of CAR/FAR/OBS	NA	
Conformance	Yes ☒	No ☐

Risk Area 12	The Project does not comply with the formatting as per the GS Principles and Requirement.	
Audit Findings	The PD has used the formatting and template complying with the GS Principles and Requirement.	
Relevant CAR/FAR/OBS	NA	
Status of CAR/FAR/OBS	NA	
Conformance	Yes ☒	No ☐

Risk Area 13	The Project has not reported any potential or actual Non-Conformity against the Requirements immediately, in no circumstances later than 30 days after the Non-Conformity event.	
Audit Findings	The Auditor did not find any non-conformity issues to be reported during the reporting period and is not aware of any non-conformity issue that the PD had not reported within the 30 day timeframe in accordance with the GS Principles and Requirements.	
Relevant CAR/FAR/OBS	NA	
Status of CAR/FAR/OBS	NA	

Conformance	Yes ☒	No ☐
-------------	---	-----------------------------

7. Assessment of FARs from previous verification or from validation stage

7.1 Forward Action Requests (FAR) from the last verification (24 March 2017):

FAR #:	FAR 01/17
Occurrence (Document name, Requirement and Page):	Forward Action Requests 17
Reference:	
Description of an issue to be addressed:	
FAR 01/17 was raised in regards to the Sustainability Development Assessment matrix and the Project was requested to update the document to show positive inputs to the Economic and Technical Development category (fulfilling the need for 2 out of the three categories to show a positive impact), and/or discuss additional positive impacts to various elements of the Sustainable Development Assessment in the annual report as appropriate. In a response to this FAR 01/17, the Project has highlighted the positive impacts of the WOS Project in the local economy, enterprise development and employment generation including 20 full time and 15 casual employees. The participating farmers, in particular, were the primary beneficiaries of the Project and have received a total cash payment of US \$150,000 since the start of the plantation in 2010.	
Suggested action required:	
The Project is requested to support the impact statement by providing a summary of the amount of payment each year since the start of plantation (2010) and a list of full time and casual employees with their start of employment.	
Project owner's response:	
<u>WithOneSeed staff</u> The WithOneSeed community forestry program has provided fulltime employment to over 25 people living in Baguia since the start of the program in 2010. The retention rate within the organisation is high which is due to the good working environment and reward. WithOneSeed is the largest employer outside of government in the Baguia sub district. The following is a list of current employees. 1. Leopoldina Joana Guterres: Country Program Manager (2010) 2. Julio Luis: Team Leader Forestry (2013) 3. Emilio de Oliveira: Community Forester. (2010) 4. Orlando de Rosa: Community Forester (2013) 5. Joana Guterres Gusmao: Program coordinator (2015) 6. Januario da Costa: Community Forester (2013) 7. Gregorio Rodolfo Ramos: Security (2012) 8. Martinha das Neves Simoes: Administration (2012)	

9. Teresa Perreira: Nursery Assistant (2013)
10. Marcelino Barros: Community Forester (2015)
11. Juliao Barbosa: Community Forester (2016)
12. Eusebia Ximenes: Nursery Assistant (2014)
13. Gaspar Alves: Nursery Assistant (2014)
14. Miguel Magno Ximenes: Nursery Assistant (2014)
15. Fatima Barros: Fort Assistant (2017)
16. Teresa B. Menezes: Fort Assistant (2017)
17. Maria Quintao: Fort Assistant (2018)
18. Luis Tadeu Gusmao: Solar Light Coordinator (2018)
19. Leao Mariz: Solar Light Assistant (2019)
20. Abel Aparicio Ximenes: Finance Cooperative Officer (2018)

WithOneSeed employs casual staff to run the accommodation and hospitality services and during particular activities like the annual forest trek or other community events.

The following is a list of casual staff.

Casual staff

1. Gregorio Mariz (2016)
2. Leao Mariz (2016)
3. Ricardo Mariz (2016)
4. Americo Mariz (2016)
5. Agostinho da Cruz (2016)
6. Acacio Mariz (2016)
7. Mariano Mariz (2016)
8. Joao Barros (2016)
9. Mateus Oliveira (2016)
10. Julio Ximenes (2016)
11. Joao Mariz (2016)
12. Carlos Barros (2016)
13. Celestinho Dias (2016)
14. Regina de Oliveira (2016)
15. Mateus Ximenes (2016)
16. Pedro Mariz (2016)
17. Agostinha Guterres (2016)
18. Rosa Guterres (2016)

Staff payments since 2012: USD\$142,574

Annual farmer payments.

WithOneSeed assists in building the local village economy by putting an earned dollar in a farmer's pocket which gives the farmer the ability to make decisions for him or herself. The program is aiming to move these subsistence communities beyond charity and aid.

The following is the annual farmer tree payments paid to Baguia tree farmers since the start of the WithOneSeed program in 2010.

Farmer Payment 2011 for 2010: USD\$ 1.598
Farmer Payment 2012 for 2011: USD\$6.757.50
Farmer Payment 2013 for 2012: USD\$7.747
Farmer Payment 2014 for 2013: USD\$13.125

Farmer Payment 2015 for 2014: USD\$14,701.50 Farmer Payment 2016 for 2015: USD\$ 26,965.50 Farmer Payment 2017 for 2016: USD\$ 32,420 Farmer Payment 2018 for 2017: USD\$ 47,548.50	
Farmer payment 2010 through 2018: USD\$150,863	
Since the WithOneSeed program began in Baguia it has contributed over USD\$293,437 into the local community.	
Additional documents provided by the Project Owner:	
Auditor's review of the PO's response:	
In response to FAR 01/17, the Project Owner provided a summary of the payments made to the local staff and the farmers since 2010 to support its positive impacts in the local economy and employment generation. The farmers confirmed the payments based on the survived trees/seedlings on their land during the site visits. The WOS staff, farmers and the local representative of the Government strongly claimed that the project has a significant positive impact in the local communities and the environment through providing financial incentives to the local participating families, employment to local people and enhancement of the forest biomass due to new plantations on the cropland and grassland. Due to transition of the Project to GS4GG standard, the Project requires identifying and demonstrating three indicators for Sustainability Development Goals. Hence, this issue is no longer valid and does not require any action by the Project Owner.	
Conclusion	The FAR 01/17 is closed.

FAR #:	FAR 02/17
Occurrence (Document name, Requirement and Page):	Forward Action Requests 17
Reference:	
Description of an issue to be addressed:	
From the previous verification: "... As the number of project trees increases there could be an increased change (sic) for confusion over the correct planting year for participating farmer and HMI staff. If the project intends to conduct annual trees counts for both farmer payment and determination of survival for carbon quantifications, an improved system for tracking individual trees by planting year should be considered." In a response to this FAR 02/17, the Project indicated a plan to use Radio Frequency Identification (RFID) technology for the key data collection and storage for each tree in the Project Area starting from May 2019. The response does not provide a detail how this technology will be rolled out to all trees in the Project.	
Suggested action required:	
The Project shall provide an implementation schedule to roll out the technology so that the progress can be assessed in the next verification.	
Project Owner's response:	
<i>Tree Tracker Implementation plan.</i> The implementation of the new technology to assist in the management of the	

community forestry program will fit in with the existing forest management plan which is an orderly and well managed process. The RFID nails will be added to the trees during the next annual tree count which will begin in June 2019 and will be completed by the end of October 2019. Each tree, when counted, will have a RFID nail placed at breast height. Trees that are not big enough to have a nail will have an RFID tag securely attached. Each tree will be recorded using the new technology at the time of having the RFID nail attached. As a matter of good management, the existing practice of manually recording the tree data will continue to be used during the implantation of the new tree management system and will be signed off by the farmer on whose land the trees are growing. While this will slow down the tree count for this year it will provide a safe guard against while farmers come to understand how the new technology works.	
Additional documents provided by the Project Owner:	
Auditor's review of the PO's response:	
The Auditors believe that RFID technology can resolve the issue of tracking trees in each farmland with key information including tree id, species, year of plantation, diameter or circumference in the Project Area. The Project has provided the schedule for a complete installation of RFID Nails on each tree between June 2019 and October 2019.	
Conclusion	The implementation of RFID technology can address the issue raised in FAR 02/17, hence, this FAR is closed. However, the installation of the technology is planned after this verification. A FAR 02/19 is created to ensure that the Project adapts the technology by installing RFID nails to each tree in the Project Area and the system will allow entering, storing and retrieving the key tree data and information.

8. Assessment of compliance of project implementation and operation with the registered design

This verification assessed the WOS Project focusing on five issues outlined in section 1.1 by identifying 13 risk areas for assessing compliance of project implementation and operation with the registered design and GS4GG requirements for A/R Projects. Following a weeklong site visit and review of the Project documents, nine Corrective Action Requests (CARs) were raised to the Project. The Project Owner successfully addressed these CARs and they were subsequently closed. However, three Forward Action Requests (FARs) were issued to the Project to be addressed at the next verification. The Auditors did not find any non-compliance issue against the GS4GG requirements. Hence, this Project is found to be in compliance of the Project implementation and operation with the registered design.

9. Compliance of the registered monitoring plan with the methodology including applicable tools and standardized baselines

The Project is in compliance with the GS4GG A/R Methodology for accounting CO₂ Fixation due to A/R activities on cropland and grassland.

10. Compliance of monitoring activities with the registered monitoring plan

This criterion is not applicable to this Project in this verification as this Project is transiting to GS4GG standard for A/R Project.

11. Compliance with the calibration frequency requirements for measuring instruments

The field crews check equipment before using in the field for any damage or malfunctioning. During the site visit, the Auditor used the same measuring instruments such as measuring tape and GPS for collecting data on the tree diameter and location. The equipment was in a good condition and found to be accurate. Although the equipment was not calibrated, they were checked by the field crew before use in the field.

12. Assessment of data and calculation of emission reductions or net removals or Relevant SDG impact

During the review of documentation, the Auditors checked the Project's tree count data and tree measurement data for their consistency and accuracy by triangulating the data between the data entry file and the CO₂ Fixation file. The Auditors also verified the tree measurement data by collecting tree measurement data during the site visit. The calculation of CO₂ Fixation was also thoroughly checked and the discrepancies found in the calculation were rectified and updated in the final document. Since the Project is transiting to the GS4GG standard for A/R Projects and has submitted the relevant Sustainable Development Goal (SDGs) and the monitoring plan in the transition template, the impacts of SDGs are not applicable at this verification. Hence, the Project will monitor three identified SDGs as per the monitoring plan in the subsequent verification.

13. Assessment of reported sustainable development co-benefits and Safeguards

This verification assessed the reported sustainable development co-benefits and safeguards due to the project implementation and operation under the GS4GG standard. The Project has planted over 150,000 trees in the sub-district of Baguia since 2010 and directly contributed USD \$ 293,437 to the local communities in the form of payments to the participating farmers and employment to the locals.

14. Internal quality control

One member of the audit team conducted an internal review of the verification report for Quality Assurance and Quality Control (QAQC) purposes. The peer reviewer examines the verification report (draft) and ensures that the methodological requirements of the GS4GG for A/R project have been assessed for compliance and the document meets the reporting requirement of the Gold Standard. The Auditors finalize the verification report after resolving any issues identified by the internal reviewer.

15. Verification opinion

The verification process (refer to section 3) applied to WithOneSeed Timor Leste Community Forestry Program in sub-district of Baguia in Timor Leste demonstrated overall compliance with the requirements for the GS4GG for A/R Project, based on the evidence from the submitted template and supporting documents. The Project Owner successfully resolved all nine corrective action requests (CARs) issued in the audit process and two Forward Action Requests (FARs) from the previous verification. As a result, this audit concludes a reasonable assurance in regards to the implementation of the A/R project activities as per the Gold Standard and confirms verification of 17,815 tCO_{2-e} CO₂-Fixation in the reporting period from 1 March 2017 to 28 Feb 2019.

Annex 1:

List of project documents submitted by the Project for desktop review

Validation Audit 2016 (Folder)
Verification Audit 2017 (Folder)
Annual Repot 2017 & 2018 (Folder)
CO2 Fixation Calculations (Folder)
2016 Missing Tree Data (Folder)
2017 Tree Count Data (Folder)
Clean GPS Planted trees to 2017 count final_Feb 2019.xlsx
GS4210 Cumulative Tree Counts to 2017.xlsx
GS4210 Cumulative Tree GPS to 2017.csv
GS4210 Tree Count MUs_2017.xlsx
Raw 2018 GPX files (Folder)
2018 Tree Count Data (Folder)
GS4210 Planned Tree Counts 2018.xlsx
Tree Survival Rates 2010-2015.xls
Additional Guidance for Tree Counts_March 2019.PDF
Archived Drafts (Folder)
GS4210 Baseline CS and CO2 Fixation Carbon Performance_March2019 v1.0.xlsx
GS4210 Baseline CS and CO2 Fixation Carbon Performance_March2019.xlsx
GS420 AR_Guideline-AR_soil_carbon-update March 2019.xlsm
GS4210 WOS Bagaia CO2 Certificate Calculations_March 2019 v1.0.xlsx
GS4210 WOS Bagaia CO2 Certificate Calculations_March 2019 v2.0.xlsx
GIS Files (Folder)
Bagaia Tree Count_2017.shp
Cumulative EPA 2010.shp
Cumulative EPA 2011.shp
Cumulative EPA 2012.shp
Cumulative EPA 2013.shp
Cumulative EPA 2014.shp
Cumulative EPA 2015.shp
Cumulative EPA 2016.shp
Cumulative EPA 2017.shp
Cumulative EPA 2016 Merged.shp
Cumulative EPA 2016 Unclipped WGS84.shp
Cumulative EPA 2016 Unclipped.shp
Land_Use_Cropland.shp
Land_Use_Croplands_WGS84_Single.shp
Land_Use_Croplands_WGS84.shp

Land_Use_Forest_WGS84.shp
Land_Use_Forest.shp
Land_Use_Grasslands_WGS84.shp
Land_Use_Grasslands.shp
Land_Use_River.shp
Timor Leste_SUBDISTRICT__BAGUIA.shp
Timor Leste WGS 84 EPSG 4326.shp
Timor Leste.shp
GS Advice (Folder)
Giancarlo email re Transition doc.pdf
GS4GG Template Docs (Folder)
201-LUF-T-AR-Additionality March 2019.pdf
401.13-AR-T-Applicability March 2019.pdf
401.13-AR-T-Baseline March 2019.pdf
401.13-AR-T-Carbon-Performance - GS4210 April 2019.pdf
401.13-AR-T-CO2-Fixation March 2019.pdf
401.13-AR-T-Leakage March 2019.pdf
401.13-AR-T-Other-Emissions March 2019.pdf
501-ER-T-ODA-Declaration-Template_Final.am.pdf
401.13-AR-T-Carbon-Performance - GS4210 March 2019.pdf
Ho Musan Ida documents (Folder)
Farmer meeting participant list.jpeg
Meeting participant list.jpeg
Meeting Participants list.jpeg
Participant list 1.jpeg
WithOneSeed_-_Tree_Farmer_Declaration_.doc
Payment (folder containing evidence of payments to farmers in 2018)
Photo evidence of the project documentation
Forward Action Requests 17.doc (Response from the Project Owner)
Grievance Book 2018_3.xlsx
Management Documents (Folder)
Forest inventory 2019.pdf
Ho Musan Ida Foundation 2019.pdf
Input and grievance 2019.pdf
Management plan 2019.pdf
MOU DRTL_xPF.pdf
Organisational chart 2019.pdf
Participating farmers by Suco & Aldeia 2019.pdf
Profisionál Saúde no Seguransa 2019.pdf
Sustainability monitoring plan 2019.pdf
New farmer engagement (Folder)
Ho Musan Ida English.doc
Ho Musan Ida Tetum.doc
Training Guides (Folder)

Monitoring & Carbon Performance (Folder)
GS4210 GHG Accounting and Monitoring Guide_March 2019.doc
Scientific & Academic Literature
Tree Measurement Data (Folder)
Clean Tree Diameter Data (Folder)
GS4210 Growth Model to 2018 v1.0.xlsx
GS4210 Monitored Tree Data 2016_2019.png
Raw Tree Diameter 2018 -2019 (Folder)
Round 1 CAR 1 to 7
Flintpro-export-20190412.xlsx
List_of_uncorrected_errors_WOS_R1.0_20190409 v3_3.doc
Round 2 CAR 08 & 09
GS4210 Tree Count MUs_2017_June 2019.xlsx
GS4210 WOS Baguia CO2 Certificate Calculations_March 2019 v3.0.xlsx
Pangolin doc (Folder)
List_of_uncorrected_errors_WOS_R2.0_20190508 v1.0.doc
Revised EPA 2016 & 2017 (Folder)
Revised EPA Files and Working Files (Folder)
Cumulative EPA 2016 Revised.shp
Cumulative EPA 2017 Revised.shp
Working Files (Folder)
Baguia Crop_Grasslands WGS84.shp
Baguia Tree Count_2017.shp
Croplands Tree Count_2017.shp
Cum EPA 2016 NF Clip Diss UTM51S.shp
Cum EPA 2017 NF Clip Diss UTM51S.shp
Grassland Tree Count_2017.shp

Annex 2:

VERIFICATION SITE VISIT PLAN - from 17th to 26th of March 2019

Date	Activity	Who
Sunday 17 th March 2019	Arrive Dili International Airport	Andrew, John, Marnie, Sunil
Monday 18 th March 2019	Drive from Dili to Baguia. Left Dili 11:00 am arrive Baguia Fort at 7:00 PM. Lunch on the road 7.30pm Evening meal with Guterres/Gusmao family	Andrew, John, Marnie, Sunil
Tuesday 19th March 2019	7.00 Breakfast 8.30-9.00 Introduction of each participant 9.00-10.00 Introduction to the Ho Musan Ida (WithOneSeed) program 10.00-10.30 Performance audit introduction. Sunil Sharma (Auditor) to provide overview of his requirements for successful audit Review audit schedule 10.30 – 11.00 Morning tea 11.00-12.30 Review of HMI program management documents 12.30- 1.30 Lunch at Fort 1.30-3.30. Interview with key HMI staff. \ Leopoldina Guterres, Enny Gusmao, Julio Luis, Emilio De Oliveira 3.30-4.00 Afternoon tea 4.00-4.30 Review of day and outline of activities for Tuesday. 4.30 – 7.00 Free time 7.00 Welcome dinner with Chefe Suco at the Fort	All HMI Sunil All All HMI/Sunil All HMI/Sunil All All All
Wednesday 20th March 2019	7.00 Breakfast 8.30 Visit tree farms at Watume, Aelale, Sorugata, Kaidawalita Measure trees planted in croplands (Belmiro Guterres farm.) Morning tea in the garden 12.30 Drive to Iarbau 1.00 Lunch at Iarbau 2.00 Visit tree farms at Ulucaiuru, Kaisulari, Iarbau, Basarwai 4.30 Drive to Baguia Fort 5.00 Review days activities. 7.00 Dinner at Fort	All All All All All All All
Thursday 21st March 2019	7.00 Breakfast 9.00 Visit tree farms at Bubuha, Lacamutu Measure trees planted Grasslands (Justino Ximenes Guterres	All All

	12.30. 1.00 2.00	Drive to Sorocama Lunch at Francisco Carvalho Visit tree farms at Sorocama Measure trees planted croplands(Francisco de Carvalho)	All All All
	4.30 7.00	Travel back to Fort Dinner at Fort	
Friday 22nd March 2019	6.00 - 4.30	Visit Laragua. This is a strenuous walk up Rufagia Mountain.	All
	9.30 12.00 4.00 7.00	Visit tree farmers in Laragua Lunch at Mariano Gusmao Return to Fort Dinner at Fort	
Saturday 23 rd March 2019	7.00	Breakfast Return to Dili	Andrew, John, Marnie, Sunil
Sun 24 March 2019		Fight to Australia	Marnie, Sunil

Contact us

Sydney

Level 14
70 Pitt Street
Sydney NSW 2000

t. +61 2 8005 6300

Adelaide

Level 1
46 Magill Road
Norwood SA 5067

t. +61 8 7200 1030

Perth

Suite 28
50 St Georges Terrace
Perth WA 6000

t. +61 8 9468 8943

Brisbane

Level 1, Suite 374
241 Adelaide Street
Brisbane QLD 4000

t. +61 7 3103 2000

Melbourne

Level 1
161 Victoria Parade
Collingwood VIC 3066

t. +61 3 9016 0023



www.pangolinassociates.com
info@pangolinassociates.com