



**Verified Carbon
Standard**

VALIDATION REPORT TO GUANGXI HUANJIANG IFM (CONVERSION OF LOGGED TO PROTECTED FOREST) PROJECT



Document Prepared by TÜV NORD CERT GmbH

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Prepared By	TÜV NORD CERT GmbH
Contact	TÜV NORD CERT GmbH

	JI/CDM Certification Program Am TÜV 1 45307 Essen, Germany Phone: +49-201-825-3335 Fax: +49-201-825-3290 www.tuev-nord.de Contact person: Stefan Winter, Fancy Zhao Email: swinter@tuev-nord.de / fzhao@climate-sustainability.com
Approved by	Alexandra Nuske
Work carried out by	Zhao Xuejiao (TL) Li Guifang (TE) Alexandra Nuske (TR)

Summary:

Provide a brief summary of the following:

- *A brief description of the validation and the project*

The proposed VCS project activity Guangxi Huanjiang IFM (conversion of logged to protected forest) Project is implemented in Huanjiang Maonan Autonomous County, Hechi City, Guangxi Zhuang Autonomous Region of China by Huanjiang Maonan Autonomous County Huashan Forestry Investment Co., Ltd, the area of the project activity is 9,346.72ha, the species involved in the project are Broad-leaved tree, Chinese fir and Pinus massoniana. The approved VCS methodology VM0010/Version 1.3 "Methodology for Improved Forest Management: Conversion of Logged to Protected Forest" is applied to quantify the GHG removals achieved in this project. The calculation of the project emission removals is carried out in a transparent and conservative manner.

- *The purpose and scope of validation*

The validation objective is an independent assessment by a Third Party of a proposed project activity against all defined criteria set for the registration under the VCS. In order to confirm that the project activity, as documented, is sound reasonable and meets the identified criteria, the validation involves the assessment of: project conformance to VCS rules, project conformance to the applied methodology, including the procedure for the demonstration of additionality specified in the methodology; and likelihood that methods a procedure set out in the project description will generate verifiable GHG data and information when implemented. Validation is a requirement and is seen as necessary to provide assurance to stakeholders of the quality of project and its intended generation of VCU's. Validation is part of the VCS project cycle and will finally result in a conclusion by the executing VVB whether a project activity is valid to be submitted for registration to VCS registry. The ultimate decision on the registration of a proposed project activity rests with the VERRA.

- *The method and criteria used for validation*

Validation is conducted using TÜV NORD CERT GmbH procedures in line with the requirements specified in the latest version of the VCS Validation and Verification Manual and applying auditing techniques. The validation team assessed the proposed project activity's compliance under the VCS Version 4.1, the selected VCS methodology and the project description. The project activity is found to be appropriately eligible under Project Scope 14 "Agriculture, Forestry, and other Land Use (AFOLU)". The validation criteria followed the guidance documents provided by VCS included the following: VCS Standard Version 4.1, VCS Program Guide Version 4.0, AFOLU Non-Permanence Risk Tool Version 4.0 and the VCS methodology VM0010/Version 1.3 "Methodology for Improved Forest Management: Conversion of Logged to Protected Forest".

- *The number of findings raised during validation*

In the course of the validation 29 Corrective Action Requests (CARs), 9 Clarification Requests (CLs) were raised and successfully closed. No FAR was raised. The assessment is included in the report.

- *Any uncertainties associated with the validation*

There are no restrictions of uncertainty.

- *Summary of the validation conclusion*

Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd. has commissioned the TÜV NORD JI/CDM Certification Program to carry out the Verified Carbon Standard (VCS) validation of the project, Guangxi Huanjiang IFM (conversion of logged to protected forest) Project (PL2327) with regard to the relevant requirements of VCS Standard Version 4.1. TÜV NORD confirms all validation activities including objectives, scope and criteria, level of assurance, monitoring and project documentation adhere to VCS Version 4.1 and all associated updated as documented in this report, are complete. TÜV NORD concludes that the "Guangxi Huanjiang IFM (conversion of logged to protected forest) Project" final project description (PD) version meets the requirements of VCS and all associated updated. The GHG assertion provided by PP and validated by TÜV NORD will result in the expected GHG emission reductions or removal of 1,669,732 tCO₂e (without considering the buffer) over the 20 years crediting period.

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1 INTRODUCTION

1.1 Objective

Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd. has commissioned the TÜV NORD JI/CDM Certification Program to carry out the Verified Carbon Standard (VCS) validation of the project, Guangxi Huanjiang IFM (conversion of logged to protected forest) Project with regard to the relevant requirements of VCS Standard Version 4.1/^{VCSS/} and the VCS Methodology VM0010- Version 1.3 “Methodology for Improved Forest Management: Conversion of Logged to Protected Forest”/^{VM0010/}.

The validation objective is an independent assessment by a Third Party of a proposed project activity against all defined criteria set for the registration under the VCS. In order to confirm that the project activity, as documented, is sound reasonable and meets the identified criteria, the validation involves the assessment of: project conformance to VCS rules, project conformance to the applied methodology, including the procedure for the demonstration of additionality specified in the methodology; and likelihood that methods procedures set out in the project description will generate verifiable GHG data and information when implemented. Validation is a requirement and is seen as necessary to provide assurance to stakeholders of the quality of project and its intended generation of VCUs. Validation is part of the VCS project cycle and will finally result in a conclusion by the executing VVB whether a project activity is valid to be submitted for registration to VCS registry. The ultimate decision on the registration of a proposed project activity rests with the VERRA.

1.2 Scope and Criteria

The validation scope is to review the criteria against the VCS Version 4.1 requirements, to given as a thorough independent and objective assessment of the project design including especially: the correct application of the methodology, project’s physical boundaries, the project’s baseline study, additionality justification, management activities and the temporal boundaries as the years when the GHG emission reductions and removals are quantified, stakeholder involvement, environmental and social impacts and monitoring plan, which are included in the VCS PD / other relevant supporting documents, to ensure that the proposed VCS project activity meets all relevant and applicable criteria as follow,

- VCS Program Guide, v4.0/^{VCSPG/}
- VCS Standard, v4.1/^{VCSS/}
- Program Definitions, v4.1/^{VCSPD/}
- AFOLU Non-Permanence Risk Tool, v4.0/^{NPRT/}
- VCS Validation Verification Manual v3.2/^{VVM/}

The methodology VM0010 version 1.3: Methodology for Improved Forest Management: Conversion of Logged to Protected Forest/^{VM0010/} uses the latest versions of the following methodologies, modules and tools:

- CDM Tool for Calculation of the Number of Sample Plots for Measurements within A/R CDM Project Activities (Version 02.1.0)/^{TCNSP/}
- VCS tool VT0001 Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities (Version 3.0)/^{TDAA/}
- VCS Tool for “AFOLU Non-Permanence Risk Analysis” (Version 4.0)/^{NPRT/}

Further criteria and scope for the VCS validation also include:

- Standard auditing methods for management systems;
- good practice in the respective technology and sectoral scope, including environmental and social impacts.

The information included in the PD and the supporting documents were reviewed and assessed against the requirements as set out by the VCS Version 4.1/^{VCSS/}.

The validation is based on the information made available to TÜV NORD JI/CDM CP and on the contract conditions. TÜV NORD JI/CDM CP cannot be held liable by any entities for making its validation opinion based on any false or misleading information supplied to it during the courses of validation.

The validation is not meant to provide any consulting to the project participants. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

1.3 Level of Assurance

As the VCS Version 4.1 only recognizes verified emission reductions, validation has focused on providing a reasonable level of assurance that the emission reduction calculation methodology used is appropriate and correctly applied, and that emission reductions will be accurately monitored.

The validation report is based on VCS PD/^{PD/}, supporting evidence made available to VVB and information collected through performing interviews and during the on-site visit.

1.4 Summary Description of the Project

The proposed VCS project activity Guangxi Huanjiang IFM (conversion of logged to protected forest) Project is implemented in Huanjiang Maonan Autonomous County, Hechi City, Guangxi Zhuang Autonomous Region of China by Huanjiang Maonan Autonomous County Huashan Forestry Investment Co., Ltd, the area of the project activity is 9,346.72ha, the species involved in the project are Broad-leaved tree (e.g. Castanopsis hystrix, Oak, Schima Wallichii, **Acacia**, **Other soft Broad-leaved tree**, etc), Chinese fir and Pinus massoniana. The forest of the project was older plantations or

natural forest under management. The forest age was around 13-87. Before the implantation of the project, the usual type of management was clearcutting.

Before the implementation of the project activity, the trees are logged based on a valid and verifiable government-approved timber management plan for harvesting the project area. The implementation of the project activity converses the trees to protected forest to reduce the GHG emissions for about 1,669,732 tCO₂e in 20 years, the average annual emission reduction is 83,486 tCO₂e and Verified Carbon Units with buffer deduction is about 1,285,683 tCO₂e in 20 years, and average annual VCUs with buffer deduction is 64,284 tCO₂e.

The project activity will contribute to the environment, thus contribute to sustainable development.

The project is being developed and registered under the Verified Carbon Standard (VCS).

2 VALIDATION PROCESS

2.1 Method and Criteria

The validation method of the project consisted of the following steps:

- Contract review
- Appointment of team members and technical reviewers
- Publication of the VCS project description (VCS PD)^{/PD/}
- A desk review of the VCS PD^{/PD/} submitted by the client and additional supporting documents with the use of customised validation protocol
- Validation planning
- On-Site assessment
- Background investigation and follow-up interviews with personnel of the project developer and its contractors
- Draft validation reporting
- Resolution of corrective actions
- Final validation reporting
- Technical review
- Final approval of the validation.

The validation criteria consisted of the following:

- VCS Program Guide, v4.0
- VCS Standard, v4.1
- Program Definitions, v4.1
- AFOLU Non-Permanence Risk Tool, v4.0
- VM0010 version 1.3: Methodology for Improved Forest Management: Conversion of Logged to Protected Forest
- CDM Tool for Calculation of the Number of Sample Plots for Measurements within A/R CDM Project Activities
- VCS tool VT0001 Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities

- VCS Tool for “AFOLU Non-Permanence Risk Analysis” (Version 4.0)
- VCS Validation Verification Manual v3.2

The validation process derived from all items in the validation criteria stated above. Field sampling and techniques based on the project parameters, scope and best professional judgement of the validation team in order to meet a reasonable level of assurance.

The sampling plan during on-site validation is determined taking into account the accessibility and similitude of the areas and the tool for sampling was referred by validation team for the site validation. The sampling design (number of plot, location) is considered to be in line with the requirements for validation (IAF Guidance on the Application of ISO/IEC Guide 66 - G.5.3.12.: $x=\sqrt{y}$), and it has ensured a representative cross-section of the properties in the areas.

Target area is calculated as below,

- Stratum 1, number of plots y is 32. $X=\sqrt{32}=6$
- Stratum 2, number of plots y is 17. $X=\sqrt{17}=5$
- Stratum 3, number of plots y is 12. $X=\sqrt{12}=4$

A ground inspection of the project area was conducted during the site visit and members of the validation team visited several targeted areas within the project area. Due to this is the validation, the main purpose is to check if the project design is actual. Thus the validation team visited targeted area for each project stratification, total 15 targeted areas. Targeted area can represent the characteristics of each stratification, thus used as sampling area for checking the project design and planting approach.

2.2 Document Review

The VCS PD/^{PD}/ and supporting background documents related to the project design and baseline were reviewed. Documents reviewed included data used to set baseline, carbon rights contract, additionality analysis, maps and aerial images, biomass and carbon calculation spreadsheets.

Furthermore, the validation team used additional documentation by third parties like host party legislation, technical reports referring to the project design or to the basic conditions and technical data.

The references used in the course of this validation are summarized in Appendix 2.

The validation was performed basing on the documents check and site inspection, refer to the section 3 of this report for the validation process detail and corresponding documents review.

2.3 Interviews

The objective of the interview process was to solicit important information from personnel related to project and relevant to the validation process. Onsite interviews and information discussions were conducted with project developer/¹¹/, local government officer/¹²/, local residents/¹³/ and Project VCS

development consultant^{/14/}. The interviews were performed by the validation team on-site (within the project area, in Huanjiang Maonan Autonomous County, Hechi City, Guangxi Zhuang Autonomous Region of China) and the following is a list of the main interviewees and subject.

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Tan ^{/11/}	Hongtao	Huanjiang Maonan Autonomous County Huashan Forestry Investment Co., Ltd / Vice General Manager	23/10/2020 ~ 27/10/2020	-Chronological description of the project activity with documents of key steps of the implementation. -Technical details of the project realization, project feasibility, designing, operational life time -Baseline and Additionality -Project Boundary -Eligibility criteria -ER calculation - Monitoring plan and arrangements -Crediting period -Project activity starting date -Ownership -local stakeholder consultation	Zhao Xuejiao, Li Guifang
2.	Huang ^{/12/}	Chaogan	Forest Bureau of Huanjiang Maonan Autonomous County / Bureau Chief	23/10/2020	-National legislation to forest - Provincial legislation to afforestation -Local forestry development - Roles & responsibilities of the government -local communities situation -local biodiversity situation -local climate -local environment	Zhao Xuejiao, Li Guifang
3.	Liao ^{/13/}	Yonglei	Local Resident/ work as forest ranger	23/10/2020	-living condition -training -local stakeholder consultation -impact to local residents	Zhao Xuejiao, Li Guifang

					-impact to local environment	
4.	Xu/ ¹⁴ /	Rong	Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd /Vice General Manager	23/10/2020 ~ 27/10/2020	-Financial aspects -Deviations -Crediting period -Project activity starting date -Baseline study assumptions -Additionality -Monitoring - Editorial issues of the VCS PD	Zhao Xuejiao, Li Guifang
5.	Fu/ ¹⁴ /	Zhihao	Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd /Engineer	23/10/2020 ~ 27/10/2020		
6.	Guo/ ¹⁴ /	Ziyi	Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd /Assistant	23/10/2020 ~ 27/10/2020		
7.	Huang/ ¹⁴ /	Xiao	Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd /Assistant	23/10/2020 ~ 27/10/2020		
8.	He/ ¹⁴ /	Yi	Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd /CEO	23/10/2020 ~ 27/10/2020		
9.	Gao/ ¹⁴ /	Deming	Guangzhou Guangtan Carbon Emission Development	23/10/2020 ~ 27/10/2020		

			t & Investment Co., Ltd /Technical Director			
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2.4 Site Inspections

The validation site inspection was conducted on 23-October-2020~27-October-2020. A ground inspection of the project area was conducted during the site visit and members of the validation team visited several targeted areas within the project area. During the site inspection the validation team was accompanied by the forest developer, local government officers, consultant and forest ranger.

Due to this is the validation, the main purpose is to check if the project design is actual. Thus the validation team visited targeted area for each project stratification, total 15 targeted areas. Targeted area can represent the characteristics of each stratification, thus used as sampling area for checking the project design and current management of the forest.

Hence during the site inspection, the 15 targeted areas are determined by the validation team by checking the map of the project location, details as following table,

Table 2-1 Locations for site inspection

Site Visit time	Area	Coordinates		Inspection Results
23-October-2020	Strata 2, ID 17	25°13'2778"N	108°34'5430"E	Each area is verified as located in the project boundary by checking the geographical coordinates. Tree species are consistent as per the project design for the stratifications.
	Strata 2, ID 18	25°12'8651"N	108°34'5351"E	
	Strata 2, ID 19	25°12'0614"N	108°34'2388"E	
24-October-2020	Strata 1, ID 20	25°12'4557"N	108°35'4530"E	
	Strata 1, ID 36	25°10'57.613"N	108°34'55.547"E	
	Strata 1, ID 41	25°12'30.790"N	108°36'17.920"E	
25-October-2020	Strata 1, ID 44	25°11'44.715"N	108°36'30.712"E	
	Strata 1, ID 46	25°12'5023"N	108°33'45.182"E	
	Strata 1, ID 48	25°11'36.598"N	108°37'33.589"E	
26-October-2020	Strata 3, ID 1	24°58'3000"N	108°08'7780"E	
	Strata 3, ID 4	24°58'4231"N	108°10'8483"E	
	Strata 3, ID 58	25°0'47.263"N	108°9'16.429"E	
	Strata 3, ID 59	25°4'41.871"N	108°13'51.082"E	
27-October-2020	Strata 2, ID 10	25°25'8846"N	108°16'2752"E	
	Strata 2, ID 57	25°27'14.253"N	108°16'42.754"E	

There are total 3 project stratifications for carbon calculation in the project area, the validation team visited targeted area for each project stratification, total 15 targeted areas. The detail of the area and tree species are in the below table

Table 2-2 Targeted area in 3 project stratifications

Targeted Area	Dimension for each stratification (ha)	Tree species
Strata1	4,440.05	<i>Broad-leaved tree</i>
Strata2	2,736.96	<i>Chinese fir</i>
Strata3	2,169.71	<i>Pinus massoniana</i>

Sampling was designed taking into account the accessibility and similitude of the areas, and it has ensured a representative cross-section of the properties in the areas.

2.5 Resolution of Findings

Material discrepancies identified in the course of the validation are addressed either as CARs, CLs or FARs.

A Corrective Action Request (CAR) is established where:

mistakes have been made in assumptions, application of the methodology or the project documentation which will have a direct influence the project results,

the requirements deemed relevant for validation of the project with certain characteristics have not been met or

there is a risk that the project would not be registered or that emission reductions would not be able to be verified and certified.

A Clarification Request (CL) will be issued where information is insufficient, unclear or not transparent enough to establish whether a requirement is met.

A Forward Action Request (FAR) will be issued when certain issues related to project implementation should be reviewed during the first verification.

A detailed list of the CARs CLs and FAR raised and discussed in the course of this validation is included in Appendix 3 of this report.

In the course of the validation 29 Corrective Action Requests (CARs), 9 Clarification Requests (CL) were raised and successfully closed. The assessment is included in the report.

2.5.1 Forward Action Requests

No FAR was raised during the validation process.

3 VALIDATION FINDINGS

3.1 Project Details

Project type, technologies and measures implemented, and eligibility of the project

Type: Through the onsite visit, interviewing the project developer and reviewing the project design/^{PD/}, it was confirmed that the project was implemented to convert logged forests to protected forests. It eliminates harvesting for timber, biomass carbon stocks are protected and can increase as the forest continues to grow and thus reduce GHG emissions on forest lands. The area of the existing forest lands is 9,346.72ha, the species involved in the project are Broad-leaved tree, Chinese fir and *Pinus massoniana*.

As per the Appendix 1 Eligible AFOLU project categories in VCS Standard Version 4.1/^{VCSS/}, it is confirmed that the project belongs to one type of AFOLU categories, i.e. Improved Forest Management (IFM). While eligible IFM activities are those that “increase carbon sequestration and/or reduce GHG emissions on forest lands managed for wood products such as sawtimber, pulpwood and fuelwood by increasing biomass carbon stocks through improving forest management practices. The baseline and project scenarios for the project area shall qualify as forests remaining as forests, such as set out in the *IPCC 2006 Guidelines on National GHG Inventories*, and the project area shall be designated, sanctioned or approved for wood product management by a national or local regulatory body (e.g., as logging concessions or plantations)”.

By checking the Certificate of Forest Right/^{CFR/}, it is confirmed that the forests in project have been managed under Forest Land for over 20 years which in line with the *IPCC 2006 Guidelines on National GHG Inventories* default value, thus qualified as forests remaining as forests in both baseline and project scenarios. Furthermore, via checking the legal right to harvest/^{LRH/} issued by Forest bureau of Huanjiang Maonan Autonomous County, it is confirmed that the project areas have been approved for wood product management by a local regulatory body as logging concessions. Thus it is verified that the project belongs to one type of AFOLU categories, i.e. Improved Forest Management (IFM).

By checking the project design, it is confirmed that the project is applicable to one of eligible IFM activities, i.e. Logged to Protected Forest (LtPF). For LtPF, as per the standard, “This category includes practices that reduce net GHG emissions by converting logged forests to protected forests. By eliminating harvesting for timber, biomass carbon stocks are protected and can increase as the forest re-grows and/or continues to grow. Harvesting of trees to advance conservation purposes (e.g., the removal of diseased trees) may continue in the project scenario”, and through the onsite visit, interviewing the project developer and reviewing the timber harvest plan/^{THP/} and legal right to harvest/^{LRH/} issued by Forest bureau of Huanjiang Maonan Autonomous County, it is confirmed that the project reduces net GHG emissions by converting logged forests to protected forests and by eliminating harvesting for timber, biomass carbon stocks are protected and can increase as the forest continues to grow, thus it is verified that the sectoral scope 14: “Agriculture, Forestry, and other Land Use (AFOLU) is applicable to the project.

Technologies and measures implemented: The proposed VCS project activity Guangxi Huanjiang IFM (conversion of logged to protected forest) Project is implemented in Huanjiang Maonan Autonomous County, Hechi City, Guangxi Zhuang Autonomous Region of China by Huanjiang Maonan Autonomous County Huashan Forestry Investment Co., Ltd. Before the implementation of the project activity, the trees

would be logged based on a valid and verifiable government-approved timber harvest plan/^{THP}/ for harvesting the project area/^{LRH}/.

The area of the project activity is 9,346.72ha, including 1,306 subcompartments spreading over Huashan forest farm, Chuanshan Town, Dongxing Town, Luoyang Town, Minglun Town, ShuiRMB Town, Si'en Town, Da'an Township, Lonyan Township, Tiancai Township, Xianan Township, Xunle Township, Changmei Township of Huanjiang Maonan Autonomous County. All these forests are state-owned forests or privately-owned or collective-owned, and all the owners have the legal right to forest ownership. The species involved in the project are Broad-leaved tree, Chinese fir and Pinus massoniana.

The implementation of the project activity converses the trees to protected forest to reduce the GHG emissions for about 1,669,732 tCO₂e in 20 years.

The project will not only generate GHG emission reductions but also conserve biodiversity, prevent rocky desertification and control soil erosion thus produce social and environmental benefits and contribute to sustainable development.

In conclusion, it is verified that the summary description of the project in section 1.1 is in line with the PD template requirements and all the information has been provided and verified as correct.

Eligibility of the project:

The PP has described and justified how the project is eligible under the scope of the VCS Program in PD as per the section 2.1.1 of VCS Standard Version 4.1. The assessment is provided as below,

- The project activity generates GHG emission reductions including CO₂ which belong to the six Kyoto Protocol greenhouse gases which belongs to scope 1) of section 2.1.1 of VCS Standard Version 4.1.
- Via checking the PD of the project, it is verified that the project is implemented to convert logged forests to protected forests. It eliminates harvesting for timber, biomass carbon stocks are protected and can increase as the forest continues to grow so that to result in reduction of net GHG emissions, and the additionality is verified as actual, thus there is no assumption of having generated GHG emissions primarily for the purpose of their subsequent reduction, removal or destruction for this project.
- Via checking all the excluded project activities in the table, it is verified that this project type is not excluded by the scope of VCS program.

In conclusion, the project is eligible to the scope of the VCS Program.

CAR 01, CAR 02 and CL 01 were raised and successfully closed. Refer to Appendix 4 for detail assessment.

Project design, including eligibility criteria for grouped projects

The project has not been designed to include a single installation of an activity, multiple project activity instances, or as a grouped project.

Project proponent and other entities involved in the project

As per the information available in the PD and confirmed by the PP during the on-site visit^{/11/}, the primary project proponent responsible for project develop, project design, project implementation and project management is Huanjiang Maonan Autonomous County Huashan Forestry Investment Co., Ltd.

The contact details are:

Tan Hongtao (General Manager) - No.45 Qiaoxi Road, Si'en Township, Huanjiang Maonan Autonomous County, Nanming District, Guiyang City, Guizhou Province, China

Based upon professional judgement, it is reasonable to assume that the project proponent is capable effectively to conduct the project activities and oversee the project activity implementation due to relevant experience and skills in forest development and management. The project area is under the control of PP at the beginning of the project validation identifying the responsibilities with respect to the project implementation, management and monitoring^{/BL/}.

As per the information available in the PD and confirmed by the PP^{/11/} and consultant^{/14/} during the on-site visit, the other entities involved is the VCS development consultant Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd. who has signed the Consultant Agreement^{/CA/} with the project developer.

Via checking the Consultant Agreement^{/CA/} signed by Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd and Huanjiang Maonan Autonomous County Huashan Forestry Investment Co., Ltd, it is confirmed that Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd is the authorized Representative who is authorized to communicate and transact with Verra on behalf of PP Huanjiang Maonan Autonomous County Huashan Forestry Investment Co., Ltd. The roles and responsibilities have been verified by site interview with PP and Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd. Based on local expertise of VVB, it is confirmed that Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd. is a company that engages in the carbon projects development and consultant etc., who has successful cases experiences thus was commissioned by PP to develop the VCS represent PP^{/CA/}.

The contact details are:

Qian Jian (Vice General Manager) - Room 801, Pearl River International Building, No.112 Yuehua Road, Yuxiu District, Guangzhou City, Guangdong Province, P. R. China

Ownership

The section 1.7 of the PD has been checked, and during the on-site visit and checking the business license^{/BL/} of the participant parties, the Certificate of Forest Right^{/CFR/}, and the carbon reduction project Development Cooperation Agreement signed between the forest stations, local farmers, village collective, Huanjiang Maonan Autonomous County Huashan Forestry Investment Co., Ltd. and Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd.^{/DCA/}, it is verified that the project developer Huanjiang Maonan Autonomous County Huashan Forestry Investment Co., Ltd. is a privacy company, who is in charge of the integrated implementation and management of the project. The forests involved in the project are state-owned forests or privately-owned or collective-owned which has been confirmed by site interview with local officer from Forest Bureau^{/12/} and checking the Certificate of Forest Right^{/CFR/} and Certification of land rights^{/CLR/}.

The project proponent is responsible for the comprehensive implementation and management of the project and project proponent have the right to conduct the project and have the right to the decisions of environmental credits (VCUs) derived from it which is confirmed by checking the carbon reduction project Development Cooperation Agreement /DCA/ and interview with PP/¹¹/.

CL 02 was raised and successfully closed. Refer to Appendix 4 for detail assessment.

Project start date

The project start date is 01-July-2016 which is verified as the date when the application for logging suspension and start the IFM project was approved by Huanjiang Maonan Autonomous County Forestry Bureau, and it represents the date on which the project began generating GHG emission reductions or removals as defined by the VCS requirements. Via checking the Notice of Guangxi Huanjiang IFM (Conversion of Logged to Protected Forest) Project issued by Huanjiang Maonan Autonomous County Forestry Bureau/^{NIFM}/, it is verified that the start date is correct and in line with the VCS Standard Version 4.1.

Via checking the Notice of Guangxi Huanjiang IFM (Conversion of Logged to Protected Forest) Project issued by Huangjiang Maonan Autonomous County Forestry Bureau on 28-Dec-2015, it is confirmed that this notice is an approval to the project issued by local government. Hence the content is only relevant to the project, the notice stipulated that in order to implement Guangxi Huanjiang IFM (conversion of logged to protected forest) Project, commercial logging would be strictly forbidden and forest protection would be implemented from 01-July-2016. It is verified that 01-July-2016 is the project start date based on the notice. And since the project start date, the project activity includes the Improved Forest Management (IFM) of the forests are all converted to protected forests and prevent any commercial logging.

CAR 03 was raised and successfully closed. Refer to Appendix 4 for detail assessment.

Project crediting period

For the VCS crediting period, PP has chosen 20 years crediting period started from 01-July-2016 to 30-June-2036 which is in line with the concept for crediting period in section 3.8.3 and 3.8.5 of the VCS standard 4.1.

Refer to CAR 03.

Project scale and estimated GHG emission reductions or removals

The average annual ERs of the project are 83,486 tCO₂e, which is lower than the threshold of large-projects (300,000 tCO₂e per year). Therefore the project falls in the category of "Project" as per definition in VCS standard. And the estimated total Estimated GHG Emission Reductions or Removals during the 20 years of VCS crediting period (01-July-2016 to 30-June-2036) is 1,669,732 tCO₂e.

Project location

The project site is located in Huanjiang Maonan Autonomous County, Hechi City, Guangxi Zhuang Autonomous Region of P. R. China. The geographical coordinates for the project site are between 107° 51' and 108° 43' east longitude and between 24° 44' and 25° 33' north latitude. The location of the project site is verified with on-site investigation by GPS devices and checking the google earth map/^{GEM/}.

There are 1,306 subcompartments spreading over Huashan forest farm, Chuanshan Town, Dongxing Town, Luoyang Town, Minglun Town, ShuiRMB Town, Si'en Town, Da'an Township, Lonyan Township, Tiancai Township, Xianan Township, Xunle Township, Changmei Township of Huanjiang Maonan Autonomous County. KML file with project boundary is checked as provided/^{KML/}, and is verified as consistent with the PD and on-site investigation by GPS devices and checking the google earth map/^{GEM/}.

CAR 04 and CAR 05 were raised and successfully closed. Refer to Appendix 4 for detail assessment.

Conditions prior to project initiation

The forest within the project area was logged annually (rotation) which is verified by checking the timber harvest plan/^{THP/} and legal right to harvest/^{LRH/} issued by Forest bureau of Huanjiang Maonan Autonomous County, this is the condition existing prior to the project in project area. The conditions prior to project initiation has been validated in the PD to be the same as the baseline scenario identified in the PD section 3.4, i.e. Continuation of the pre-project land use as the timber harvest plan.

The baseline scenario is the same as the scenario existing prior to the implementation of the project activity, which has been confirmed during the site interview with local officer/^{I2/} and checking the timber harvest plan/^{THP/}. Thus it is verified that the baseline scenario is reasonable and correct.

Therefore, the project is confirmed not to be implemented to generate GHG emissions for the purpose of their subsequent reduction, removal or destruction.

Due to the project is an AFOLU project, the appropriate information on the climate, hydrology, topography, relevant historic conditions, soils, vegetation and ecosystems including the present and prior environmental conditions of the project area has been provided in PD as assessed as correct and actual via site inspection and checking the public information and checking the IFM Program/^{IFMP/} of the project and also cross-checked by interview with local officer/^{I2/}, local residents/^{I3/}.

CAR 06 was raised and successfully closed. Refer to Appendix 4 for detail assessment.

Project compliance with applicable laws, statutes and other regulatory frameworks

The PD has stated that the project is in line with the Forest Law of People's Republic of China/^{LAW/} and all the trees in the project will not be logged within the project crediting period. According to the Notice of Guangxi Huanjiang IFM (Conversion of Logged to Protected Forest) Project issued by Huanjiang Maonan Autonomous County Forestry Bureau/^{NIFM/}, the project has complied with the above regulations and laws during construction period and will be under regular inspection by local government during the implementation period to ensure the continuous compliance based on the local expertise of the VVB and confirmed by interview with local officer/^{I2/},

Participation under other GHG programs:

- Projects registered (or seeking registration) under other GHG program(s)

The project has neither been registered nor seeking registration under any other GHG programs which has been confirmed via checking the UNFCCC/unfccc/, GS/gS/, VCS/vcs/ and other GHG schemes' website and checking the Declaration of non-participation any other schemes/DN/. It is verified that the project is seeking registration only in VCS program/vcs/.

- Rejection by other GHG programs

The project has neither been rejected by any other GHG programs which has been confirmed via checking the UNFCCC/unfccc/, GS/gS/, VCS/vcs/ and other GHG schemes' website and checking the Declaration of non-participation any other schemes/DN/.

Other forms of credit:

- Emissions trading programs and other binding limits

The project proponent is not part of any emission trading program which has been confirmed via checking the UNFCCC/unfccc/, GS/gS/, VCS/vcs/ and other GHG schemes' website and checking the Declaration of non-participation any other schemes/DN/. The net GHG emission reductions from the project will not be used for compliance with emission trading programs or to meet binding limits on GHG emissions. The project activity has not participated under any other GHG programs which has been confirmed via checking the UNFCCC/unfccc/, GS/gS/, VCS/vcs/ and other GHG schemes' website. Further Chinese NDAs on UNFCCC website have been checked. Up to date there is no clear information about other binding limits for forestry sector and how this will or will not be accounted for.

- Other forms of environmental credit sought or received and eligible to be sought or received

Via interview with the project proponent^{/11/} and checking the Declaration of non-participation any other schemes/DN/ and based on above assessment, it is confirmed that the project has not created any other form of environmental credit.

Additional information relevant to the project

- Leakage management for AFOLU projects

The project does not involve in the activity shifting leakage. In China, the forest timber harvest is strictly controlled by the authority. Also, the China Forest Law also clearly stipulates the punishment for the illegal logging. Based on the local expertise of validation team, it is confirmed that, the timber harvest is tightly controlled by the forestry authority, the illegal logging is severely punished in China.

Therefore, for the project activity, the PP have no right to harvest more in other parcels outside the project activity and the project does not involve in the activity shifting leakage. And after the project implemented, the leakage factor is determined by considering where in the country logging will be increased as a result of the decreased supply of the timber caused by the project. If the areas liable to be logged have a higher ratio of merchantable biomass to total biomass higher than the project area it is likely that the proportional leakage is higher and vice versa.

Therefore, based on the above assessments by VVB, it is confirmed that for the project, no market-effects leakage will occur within national boundaries, since there are no new concessions assigned. As the strict law and regulations, the illegal logging is also absent in the project.

However, in order to demonstrated the market leakage factor of the proposed project in a more conservative way, PP discuss it according to the VCS Standard Section 3.14.8, 3.14.9 and the remained option stated in the VM0010 (V1.3) Section 8.3.2. PP has calculated the market leakage ratio and make deductions following the procedure set out in Box 2 of VM0010 (refer to section 3.3.6 of this validation report for detail assessment of the market leakage ratio)

Hence, according to the VCS standard/^{VCSS}/, this FM project has applied the appropriate market leakage discount factor and the demonstration of market leakage has been clarified in the PD.

CL 03 was raised and successfully closed. Refer to Appendix 4 for detail assessment.

- Commercially sensitive information

It is confirmed that no commercially sensitive information relevant to the project description has been excluded from the public version of the project description.

- Sustainable development contributions

The Project is confirmed contributing to sustainable development in the following ways which have been stated in the PD:

- a. protection of local forest that will enrich the biodiversity;
- b. provide more opportunity for adaptive response to natural challenges and economic development (e.g. climate change);
- c. result in significant carbon sequestration and contribute to the environment (e.g. biodiversity conservation rocky desertification control and soil erosion control).

Based on above assessment and demonstration, it is concluded that the description in the PD is accurate, complete, and the nature of the project is actual and understandable, and it is confirmed that the project has been implemented as described in the PD via site inspection.

3.2 Safeguards

3.2.1 No Net Harm

The analysis of the potential negative environmental and socio-economic impacts of the project activity is sufficiently described in PD. The assessment is as below,

It is considered that the project is implemented to convert logged forests to protected forests. It eliminates harvesting for timber, biomass carbon stocks are protected and can increase as the forest continues to grow, so there is no big change to the baseline scenario that made any planting or construction in the project area, so there was no adverse effect on the ecology, air, water and solid waste, for the project protect the forest and there are no any negative impacts found in the project location during the project implementation.

Measures to mitigate - As per above assessment, it is confirmed that there are no potential negative environmental and socio-economic impacts thus no measures need to be carried out to mitigate. Via

interview with the local officer/^{12/} and local resident/^{13/}, it is confirmed that they are satisfactory with the environment during the project implementation.

Furthermore, via interview with local officer and farmers, it is confirmed that the implementation of the project, the commercial logging subsidy and reward funds will be stopped, and the dynamic adjustment mechanism of forest compensation standards will be improved to improve the management and protection mechanism of forest, so government pay compensates and funds to make up for the loss of timber harvest income for the foresters, also an additional income will be compensated to foresters when the VCUs are sold which has been verified by checking the Guideline of the General Office of the State Council on improving the compensation mechanism for ecological protection funds/^{GCM/} and Subsidy agreements to foresters/^{SAF/} and the training records/^{TTR/}.

In conclusion, there are no impacts on environment during the implementation period which has been demonstrated in the PD, prohibit logging have some socio-economic impacts to the owner of the forest, but the related compensation has been provided according to Guideline of the General Office of the State Council on improving the compensation mechanism for ecological protection funds/^{GCM/} to the foresters/^{SAF/}, thus prove the proper measurements have been carried out to mitigate such impacts.

CL 04 was raised and successfully closed. Refer to Appendix 4 for detail assessment.

3.2.2 Local Stakeholder Consultation

A stakeholder survey was carried out by the project developer using questionnaire surveys during December 2015 which was prior to the start date of the project.

Survey questionnaires were distributed to relevant personnel of village representatives, relevant governmental officials, forest stations and village committees by PP in December 2015, totally 50 copies of questionnaires were issued to relevant personnel with 50 pieces of reply received. The stakeholders' background information and comments from questionnaires were summarized and recorded in the PD, Section 2.2.

Via checking the 50 filled questionnaires/^{LSC/}, it is verified that all respondents knew or heard about the Project. Most of them are supportive of the project implementation, and think the protection of forest instead of cutting is good the environment, and will benefit the sustainable development.

And some respondents have concerns about if the proposed project can improve local environmental situation and increase employment opportunities at the same time, these impacts have already been considered by the PP has explained to the interviewees, the local environmental situation will be improved due to protect the forest to be not logged, and the project will provide thousands of employment opportunities to local residents involved in the forest management which has been verified by checking the labor contracts/^{LC/}.

Finally, it is verified that there is no one thinks that the project will have a negative impact on the local life and environment, local stakeholders are supportive of the project implementation by checking the questionnaires/^{LSC/}, and thus no need to change the project design based on the stakeholder inputs.

For the project implementation, via site inspection and interview with local officer, it is confirmed that the local forestry bureau would continue to conduct a questionnaire survey among stakeholders to understand their opinions and there was no comments or suggestions raised during the implementation

period since 2016 as the project is running normally, and via interview with PP and local officers^{/12/}, it is verified that PP has got agreements with various local stakeholders of the project, which are supervised by the local forestry bureau.

Via interview with the local officer^{/12/} and local resident^{/13/} during site visit, it is verified that there were no comments and issues from the local stakeholders during the implementation period and the project approved by local government. Hence there is no need to change the project design based on the stakeholder inputs.

Furthermore, due to the project is an AFOLU project, according to the PD template, the special requests for the AFOLU projects have been demonstrated by PP in the PD. Assessment is listed as below,

- how the project has or will communicate the project design and implementation, including the results of monitoring.

Through local stakeholders' meetings and questionnaire survey, the project has or will communicate the project design and implementation, including the results of monitoring which has been confirmed by interview with local resident^{/13/} and checking the LSC records^{/LSC/}.

- how the project has or will communicate the risks, costs and benefits the project may bring to local stakeholders.

Through local stakeholders' meetings and questionnaire survey, the project has or will communicate the risks, costs and benefits the project may bring to local stakeholders which has been confirmed by interview with local resident^{/13/} and checking the LSC records^{/LSC/}.

- how the project has or will communicate all relevant laws and regulations covering workers' rights in the host country.

Through local stakeholders' meetings and training, the project has or will communicate all relevant laws and regulations covering workers' rights in the host country which has been confirmed by interview with resident and worker^{/13/} and checking the LSC records^{/LSC/} and training records^{/TTR/}.

- how the project has or will communicate the process of VCS Program validation and verification and the validation/ verification body's site visit.

Informed local stakeholders by invitation through email and calls about the process of VCS Program validation and the validation body's site visit confirmed by interview with local resident^{/13/} during site visit by VVB^{/PHT/}.

CAR 07 and CL 05 were raised and successfully closed. Refer to Appendix 4 for detail assessment.

3.2.3 Environmental Impact

In China, according to Chinese law "Environmental Impact Assessment Law of the People's Republic of China"^{/LEIA/}, it is confirmed that there is no requirement from any environmental impact assessments to the type of the project that changed logged to protected.

It is considered that the project is implemented to convert logged forests to protected forests. It eliminates harvesting for timber, biomass carbon stocks are protected and can increase as the forest continues to grow, so there is no big change to the baseline scenario that made any planting or construction in the project area, so there was no adverse effect on the ecology, air, water and solid waste,

for the project protect the forest and there are no any negative impacts found in the project location during the project implementation.

Hence the analysis of the positive environmental impacts of the project activity is sufficiently described by PP in the PD.

As per interview with local officer^{/12/} and checking the IFM Program of the project^{/IFMP/}, it is confirmed that there is no negative environmental impact created by the project during forest management implementation period.

In conclusion, the impacts are verified as actual and reasonable and there are no negative impacts to the environment were identified.

CAR 08 was raised and successfully closed. Refer to Appendix 4 for detail assessment.

3.2.4 Public Comments

The project sought the registration with the VCS Program, according to VCS requirements the Project Description was submitted for public comment period. The project was allocated with VCS ID 2327. The public comment period started on 08-September-2020 and ended on 08-October-2020 (<https://registry.verra.org/app/projectDetail/VCS/2327>).

No comments were received during this period which has been verified by checking the dedicated webpage as above.

CL 06 was raised and successfully closed. Refer to Appendix 4 for detail assessment.

3.2.5 AFOLU-Specific Safeguards

PD has provided the details of AFOLU-Specific safeguards related to the project and the assessment are demonstrated as below,

Local stakeholder identification process and the description of results

The stakeholders should be all the communities and parties which are relevant to the project activity or impacted by the project or have interest in the project. The PD/^{PD/} states that the stakeholders were identified as all communities, community groups, and other stakeholders who will be directly and indirectly affected by the implementation of the project.

The stakeholders are identified as local residents (local households lives near by the project) who are directly affected by the project activities, including state-owned forest farms, collective-owned forestry owners and private forestry owners in Huanjiang Maonan Autonomous County who lives near by the project and the local government.

Following approaches has been taken to validate the process of stakeholder identification and analysis as stepwised,

On-site inspection and interview--Via on-site inspection, validation team visited the project area and interviewed with the stakeholder representatives from involved village, forest bureau and forest farms. By seeing the project scenario and interview with stakeholders, it is confirmed the project is implemented in project area which impact the nearby households in this area, and local forest bureau is responsible to the approval and related design, and during the project implementation, the workers in forest farms

involved in the project area are trained by the Forest Bureau of Huanjiang Maonan Autonomous County and PP.

Checking the relevant docs and evidence—The stakeholders identification is confirmed as complete by checking the related docs of project, carbon reduction project Development Cooperation Agreement signed between the forest stations, local farmers, village collective, Huanjiang Maonan Autonomous County Huashan Forestry Investment Co., Ltd. and Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd/^{DCA/} which define the households and forest farms and village collectives; Notice of Guangxi Huanjiang IFM (Conversion of Logged to Protected Forest) Project issued by Huanjiang Maonan Autonomous County Forestry Bureau on 28-December-2015/^{NIFM/} which are used to prove that local government approved the IFM project.

Furthermore, survey questionnaires were distributed to stakeholders by PP in December 2015, totally 50 copies of questionnaires were issued to relevant personnel with 50 pieces of reply received. Via checking the 50 filled questionnaires/^{LSC/}, it is verified that all respondents knew or heard about the Project.

Besides, the project provides thousands of employment opportunities to local residents involved in the forest management which has been verified by checking the labor contracts/^{LC/} and via the contracts and interview with the local stakeholders, it is verified that the workers are not discriminated against in employment on the basis of their ethnic group, race, sex or religious belief, women enjoy equal rights with men in employment which is verified in line with the Chapter II of the Labour Law of the People's Republic of China/^{LAW/}. And via site interview with the local officers, it is verified that local forestry Bureau supervised that all parties of the project did not violate any related laws, including labour and criminal laws, so as to avoid discrimination (gender/age/religion) and sexual harassment during the implementation of the project.

Therefore, it is verified that each stakeholder is identified correctly, and relevant analysis and assessment, stakeholder's relevance to project activities in the PD is sufficient.

The list of primary stakeholder is provided in the PD and seems reasonable for a project of this nature. This is was confirmed during the on-site visit and the interview with the local stakeholders.

Risks to local stakeholders and mitigation measures

The PD/^{PD/} states the there is no risk to local stakeholders due to the project implementation by considering the type of the project changed forests from logged to protected, no risks have arisen that may cause any loss of project benefits for the local community, climate and biodiversity, so that the long-term viability is assured which has been verified by checking the Development Cooperation Agreement/^{DCA/}.

Risks to local stakeholder resources and mitigation measures

The local forestry Bureau held a mobilization meeting about the project activities prior to the implementation of the project in Jan 2016 which has been verified by checking the meeting records/^{MMR/}. Via the meeting, the project, the risks, costs and benefits to the local stakeholders have been introduced by PP and local forest bureau, which has also confirmed by site interview with local officers and local stakeholders.

The PD/PD/ states the overall risks to the stakeholder resources is that the forests owners could not living for selling the tree due to no logging, this major risks have arisen that may cause financial loss of benefits for the local community, but PP has applied the project to be registered as a VCS project so that the selling of VCU can compensate the financial loss of owners which has been defined in the carbon reduction project Development Cooperation Agreement/^{DCA}/. Furthermore, before the project implementation, the PP has got the agreements from all the forest owners as confirmed by checking the Notice of Guangxi Huanjiang IFM (Conversion of Logged to Protected Forest) Project issued by Huanjiang Maonan Autonomous County Forestry Bureau on 28-December-2015/^{NIFM}/ and checking the carbon reduction project Development Cooperation Agreement/^{DCA}/ and interviewed with PP and local officer/¹²/, hence it is verified that project will not impact local stakeholder's property rights without the free, prior and informed consent.

Processes to ensure ongoing communication and consultation

The PD describes a feedback and grievance redress process; the local forestry bureau who as a supervisor, would resolve any conflicts which may arise between the PP and local stakeholder according to the relevant law, and ensure the effective implementation of the project which has been confirmed during on-site interview with the project owner and local stakeholders.

In addition, by interview with the stakeholders, they confirm that they can either appeal through PP or directly to the local forestry bureau for their comments to the project.

For the project implementation, via site inspection and interview with local officer, it is confirmed that the local forestry bureau would continue to conduct a questionnaire survey among stakeholders to understand their opinions and there was no comments or suggestions raised during the implementation period since 2016 as the project is running normally, and via interview with PP and local officers/¹²/, it is verified that PP has got agreements with various local stakeholders of the project, which are supervised by the local forestry bureau.

Hence it is verified that the participatory rural appraisal tools such as field trips, questionnaires, community meetings and interviews with representative of the local stakeholders have been provided as **grievance redress procedure to resolve any conflicts**.

In conclusion, the feedback and grievance procedure is properly addressed.

CL 07 was raised and successfully closed, Refer to Appendix 4 for detail assessment.

3.3 Application of Methodology

3.3.1 Title and Reference

The approved VCS methodology applied in the project activity is VM0010 version 1.3: Methodology for Improved Forest Management: Conversion of Logged to Protected Forest/^{VM0010}/.

This methodology and project also refers to the latest approved version of the following tools and guidelines:

- CDM Tool for Calculation of the Number of Sample Plots for Measurements within A/R CDM Project Activities (Version 02.1.0)^{/TCNSP/}
- VCS tool VT0001 Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities (Version 3.0)^{/TDAA/}
- VCS Tool for “AFOLU Non-Permanence Risk Analysis” (Version 4.0)^{/NPRT/}

CAR 09 was raised and successfully closed, Refer to Appendix 4 for detail assessment.

3.3.2 Applicability

The proposed project activity meets the criteria defined in the applied methodology as described below:

No.	Applicability Criteria	PP demonstration	VVB assessment
(a)	Forest management in the baseline scenario must be planned timber harvest	There is a planned timber harvest before the conversion of Logged to Protected Forest as the baseline scenario.	Via checking the Certificate of Forest Right ^{/CFR/} , also reviewing the timber harvest plan ^{/THP/} and legal right to harvest ^{/LRH/} issued by Forest bureau of Huanjiang Maonan Autonomous County and on-site interview with local officer ^{/I2/} , it is verified that the forest management in the baseline scenario can be validated as planned timber harvest.
(b)	Under the project scenario, forest use must be limited to activities that do not result in commercial timber harvest or forest degradation.	Under the project scenario, there is no forest use for commercial timber harvest or forest degradation. Only forest tending and managing are allowed in the timber harvest plan, which has been strictly carried out by the project proponent.	Via checking the timber harvest plan ^{/THP/} and IFM Program of the project ^{/IFMP/} , it is verified that under the project scenario, the forest use of the Project activity is switched to forestry management and conservation, logging is forbidden, thus the forest use would do not result in commercial timber harvest or forest degradation.
(c)	Planned timber harvest must be estimated using forest inventory methods that determine allowable off take as volume of timber ($\text{m}^3 \text{ha}^{-1}$)	There are regular forest inventory taken by forestry survey company and the local forestry bureau who is qualified, experienced for the forestry investigation. Then local forestry bureau uses these data, based mainly on the stock volume to estimate the planned timber harvest and then to determine allowable offtake as volume of timber ($\text{m}^3 \text{ha}^{-1}$). In the project scenario, the planned timber harvest would not be cut, just be tended.	Via checking the timber harvest plan ^{/THP/} based on the forest inventories conducted by local forestry bureau, it is confirmed that the timber harvest plan estimated using forest inventory methods and estimated the stock volume of timber with the allometric equation for the local region and the special species of the Project to determine allowable off take as volume of timber ($\text{m}^3 \text{ha}^{-1}$) and the planned timber harvest would not be cut, just be tended in project scenario.
(d)	The boundaries of the forest land must be	The boundaries of the forest land could be clearly defined	Via checking the IFM Program of the project ^{/IFMP/} , the forest second class

	clearly defined and documented.	and documented through the maps and the forest inventory data. The location of the forest is measured by GPS and draw map. Both the forest map and forest second class investigation will be monitored periodically by the government according to the local laws and regulations.	investigation data and tables/ ^{FSCI/} and the maps/ ^{KML/} , it is confirmed the boundaries of the forest land are clearly defined in line with administrative division in the maps and documented in IFM Program of the project/ ^{IFMP/} , the forest second class investigation data and tables/ ^{FSCI/} .
(e)	The baseline scenario cannot include conversion to managed plantations	According to the previously issued timber harvest plan, the project baseline scenario is planned timber harvest within the project area, which doesn't include conversion to managed plantations.	Via checking the Certificate of Forest Right/ ^{CFR/} , also reviewing the timber harvest plan/ ^{THP/} and legal right to harvest/ ^{LRH/} issued by Forest bureau of Huanjiang Maonan Autonomous County and on-site interview with local officer/ ^{12/} , it is verified that the forest management in the baseline scenario can be validated as always been planned timber harvest, which did not include conversion to managed plantations.
(f)	The baseline scenario, project scenario and project case cannot include wetland or peatland	The baseline scenario, project scenario and project case don't include wetland or peatland.	Via checking the Certificate of Forest Right/ ^{CFR/} , also reviewing the timber harvest plan/ ^{THP/} and legal right to harvest/ ^{LRH/} issued by Forest bureau of Huanjiang Maonan Autonomous County and the IFM Program of the project/ ^{IFMP/} and on-site interview with local officer/ ^{12/} , it is verified that the baseline scenario, project scenario and project case does not include wetland or peatland.
(g)	All applicability conditions of VCS and CDM tools used in conjunction with this methodology must be met.	The project is applicable to all applicability conditions of VCS and CDM tools used in conjunction with this methodology. See below table for tools.	Refer to below assessments for all applicability conditions of VCS and CDM tools used in conjunction with this methodology. It is verified that the project is applicable to all applicability conditions.

Thus, it is verified that VM0010 version 1.3/^{VM0010/}is applicable for the project activity.

In addition, the project meets the applicability conditions of the applied tool as follow table,

Tool	Criteria	Validation Assessment	Conclusion
(a) Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU)	AFOLU activities the same or similar to the proposed project activity on the land within the proposed project boundary performed with or without being registered as the VCS AFOLU project shall not lead to violation	The PD has stated that the project is in line with the Forest Law of People's Republic of China/ ^{LAW/} and all the trees in the project will not been logged within the project crediting period. According to the Notice of	Applicable

Tool	Criteria	Validation Assessment	Conclusion
Project Activities-version 3.0	of any applicable law even if the law is not enforced	Guangxi Huanjiang IFM (Conversion of Logged to Protected Forest) Project issued by Huanjiang Maonan Autonomous County Forestry Bureau on 28-December-2015/ ^{NIFM} /, the project has complied with the above regulations and laws and will not lead to violation of any applicable law based on the local expertise of the VVB and confirmed by interview with local officer/ ¹² /.	
	The use of this tool to determine additionality requires the baseline methodology to provide for a stepwise approach justifying the determination of the most plausible baseline scenario. Project proponent(s) proposing new baseline methodologies shall ensure consistency between the determination of a baseline scenario and the determination of additionality of a project activity	PP use this tool to determine additionality requires the baseline methodology to provide for a stepwise approach justifying the determination of the most plausible baseline scenario. No new baseline methodologies involved.	N/A
(b) CDM Tool for Calculation of the Number of Sample Plots for Measurements within A/R CDM Project Activities-Version 2.1	This tool has no internal applicability conditions.	The project can use this tool to calculate the number of sample plots for measurements.	Applicable
(c) Tool for "AFOLU Non-Permanence Risk Analysis"-Version 4.0	Same to applied methodology VM0010 version 1.3	See above for assessment	Applicable

Thus, it is verified that all the relevant methodological tools are applicable to the project activity.

In conclusion, it is confirmed that project is applicable to all the applicability of the methodology, and all the tools selected by the project proponent.

Furthermore, as per the applied methodology, the project activity meets the eligibility criteria defined in the applied methodology as described below:

Legal Right to Harvest

Via checking the Certificate of Forest Right/^{CFR/}, also reviewing the timber harvest plan/^{THP/} and legal right to harvest/^{LRH/} issued by Forest bureau of Huanjiang Maonan Autonomous County and on-site interview with local officer/^{I2/}, it is verified that the legal right to harvest have been pre-existed the implementation of the project. The legal right to harvest/^{LRH/} has been issued by a relevant government body Forest bureau of Huanjiang Maonan Autonomous County which has defined a legal allocation of rights to a forest timber resource, and include a plan for forest management that includes a definition of the spatial extent of the forest, the volume of the timber resource to be extracted and a description of harvesting practices.

Rights to forest management, i.e. the IFM Program/^{IFMP/} of the project issued by Guangxi Academy of Forestry Sciences has demonstrated by documentary proof of legal permissibility for timber harvest, intent to harvest and a description of the timber resource. This IFM Program/^{IFMP/} has been approved by Forest bureau of Huanjiang Maonan Autonomous County.

Intent to Harvest

Via checking the Certificate of Forest Right/^{CFR/}, also reviewing the timber harvest plan/^{THP/} and legal right to harvest/^{LRH/} issued by Forest bureau of Huanjiang Maonan Autonomous County and on-site interview with local officer/^{I2/}, it is verified that the intent to harvest through the evidence originating prior to the date in pursuit of carbon finance/consideration of IFM.

PP has provided a valid and verifiable government-approved timber management plan for harvesting the project area by reviewing the timber harvest plan/^{THP/} and legal right to harvest/^{LRH/} issued by Forest bureau of Huanjiang Maonan Autonomous County.

Hence it is verified that the eligibility in the applied methodology is fulfilled.

CAR 10 and CL 08 were raised and successfully closed. Refer to Appendix 4 for detail assessment.

3.3.3 Project Boundary

The VCS Standard requires that the project describe the project boundary, identify, and select appropriate carbon pools.

Geographical Boundaries

The PD defines the physical project boundaries. The area and location has been confirmed via checking the forest second class investigation data and tables/^{FSCI/} and the maps/^{KML/}. Via checking the forest second class investigation data and tables/^{FSCI/}, it is confirmed that there are total 1,306 compartments (discrete areas) of land within the project spatial boundaries and the information of name, unique identifier as used in the timber harvest plan/^{THP/}, maps of area/^{KML/}, Geographic coordinates of each polygon vertex, total land area and Details of forest land rights holder and user rights, that has been verified in line with the requests in the methodology.

Temporal Boundaries

The temporal boundaries are defined by the project start date on 01-July-2016 and length of the project crediting period of 20 years.

And the PP promised the monitoring period is more than one year and less than 10 years.

Carbon Pools

The boundaries include the administrative boundaries of towns and forest farm. The following table present the carbon pool considered within the project boundary:

Carbon pools	Included/Optional / Excluded	Justification / Explanation of choice
Aboveground trees	Included	The stock change in the aboveground tree biomass is estimated
Aboveground non-tree	Excluded	Exclusion is always conservative as forests remains as forest in the project
Belowground	Excluded	Unlikely to change significantly in forests remaining as forests and is difficult to measure - omission is conservative
Dead wood (logging slash)	Included in the baseline	The dead wood (logging slash) carbon pool is expected to be larger in the baseline than in the project scenario, and therefore this pool must be included
Dead wood (naturally accumulated)	Excluded	Following IPCC guidelines, it is assumed that carbon stocks in the naturally occurring dead wood pool (both standing and lying) are equivalent in both the project and baseline scenario, and therefore this pool is conservatively excluded.
Harvested wood products	Included	Will be greater in baseline than project scenario and significant
Litter	Excluded	Insignificant and exclusion is conservative
Soil organic carbon	Excluded	Exclusion is always conservative as forests remains as forest

Greenhouse Gases

Source	Gas	Included?	Justification/Explanation
Baseline Combustion of fossil fuels (in	CO ₂	Excluded	Conservative as emissions will be greater in the baseline scenario than in the project scenario.

Source		Gas	Included?	Justification/Explanation
	vehicles, machinery and equipment)	CH ₄	Excluded	Conservative as emissions will be greater in the baseline scenario than in the project scenario.
		N ₂ O	Excluded	Conservative as emissions will be greater in the baseline scenario than in the project scenario.
	Removal of herbaceous vegetation	CO ₂	Excluded	Based on CDM EB decision reflected in paragraph11ofthe report of the 23rd session of the board: https://cdm.unfccc.int/Panels/ar/023/ar_023_rep.pdf
	Burning of biomass	CH ₄	Included	Included as CO ₂ equivalent emission
		N ₂ O	Excluded	Potential emissions are negligible
	Nitrogen based fertilizer	N ₂ O	Excluded	Potential emissions are negligible. Following the VCS update to the Tool for AFOLU Methodological Issues and Guidance for AFOLU Projects, emissions through the use of fertilizer are considered insignificant and are not considered here.
Project	Combustion of fossil fuels (in vehicles, machinery and equipment)	CO ₂	Excluded	Conservative as emissions will be greater in the baseline scenario than in the project scenario.
		CH ₄	Excluded	Conservative as emissions will be greater in the baseline scenario than in the project scenario.
		N ₂ O	Excluded	Conservative as emissions will be greater in the baseline scenario than in the project scenario.
	Removal of herbaceous vegetation	CO ₂	Excluded	Based on CDM EB decision reflected in paragraph11ofthe report of the 23rd session of the board: https://cdm.unfccc.int/Panels/ar/023/ar_023_rep.pdf
	Burning of biomass	CH ₄	Included	Included as CO ₂ equivalent emission
		N ₂ O	Excluded	Potential emissions are negligible
	Nitrogen based fertilizer	N ₂ O	Excluded	Potential emissions are negligible. Following the VCS update to the Tool for AFOLU Methodological Issues and Guidance for AFOLU Projects, emissions through the use of fertilizer are considered insignificant and are not considered here.

By checking the information and evidences/PDAO/,/AAPP/,/BLS/ available and by the physical site, the validation team can confirm that the appropriate carbon pools and GHG sources have been considered and the description in the PD is accurate and complete, and also the selected carbon pools and GHG sources are justified for the project activity in line with the applied methodology/VM0010/.

CAR 11 was raised and successfully closed. Refer to Appendix 4 for detail assessment.

3.3.4 Baseline Scenario

1. Selection of Baseline

In line with the applied methodology, the latest version of the “Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities” (version 3.0) has been used by PP to determine the baseline and demonstrate the additionality for the project activity as following steps,

- a) STEP 1. Identification of alternative land use scenarios to the AFOLU project activity;
- b) STEP 2. Investment analysis to determine that the proposed project activity is not the most economically or financially attractive of the identified land use scenarios; or
- c) STEP 3. Barriers analysis; and
- d) STEP 4. Common practice analysis.

As this part is to determine the baseline scenario, so only the below step 1 and sub-step 1a are applicable, for the other steps as listed in the tool, they will be all assessed in the next section 3.5. for demonstration of additionality.

Step 1. Identification of alternative land use scenarios to the proposed VCS AFOLU project activity

Sub-step 1a. Identify credible alternative land use scenarios to the proposed VCS AFOLU project activity

a) Identify realistic and credible land-use scenarios that would have occurred on the land within the proposed project boundary in the absence of the AFOLU project activity under the VCS. The scenarios should be feasible for the project area taking into account relevant national and/or sectoral policies and circumstances, such as historical land uses, practices and economic trends. The identified land use scenarios at least include:

- i) Continuation of the pre-project land use as the timber harvest plan;
- ii) Project activity on the land within the project boundary performed without being registered as the VCS AFOLU project;
- iii) If applicable, activities similar to the proposed project activity on at least part of the land within the project boundary of the proposed VCS AFOLU project at a rate resulting from:
 - Legal requirements; or
 - Extrapolate similar activities in the geographical area under similar socioeconomic and ecological conditions to the proposed VCS AFOLU project activity which cover a period began a decade earlier than the project start date.

For the alternative ii), it is confirmed that if the project is not registered as the VCS AFOLU project, then no profit will get to implement the project, then it is obvious that the NPV under this scenario is not

financially attractive compared to the scenario of the alternative i), i.e. logging as per the timber harvest plan, so this alternative need to be ruled out.

And for alternative iii), via checking the Certificate of Forest Right/CFR/, it is confirmed that the forests in project have been managed under Forest Land for over 10 years before the project start date, and it is verified that the lands within the project boundary of the proposed VCS AFOLU project are all with the same legal requirements. So this alternative need to be ruled out.

Therefore, the it is concluded that the baseline scenario is alternative i) continuation of the pre-project land use as the timber harvest plan. And via checking the reviewing the timber harvest plan/THP/ and legal right to harvest/LRH/ issued by Forest bureau of Huanjiang Maonan Autonomous County and on-site interview with local officer/I2/, it is verified that the baseline scenario is correctly defined in the PD.

CL 09 was raised and successfully closed. Refer to Appendix 4 for detail assessment.

2. Modelling the baseline scenario

As per the applied methodology/^{VM0010/}, the PP must determine how to model the baseline management scenario. A Historical Baseline Scenario must be used where data is available, so a historical baseline scenario is used for determining how to model the baseline management scenario as assessed as below:

1. Via checking the historical records of forest management since 2011/^{HCFM/}, it is verified that the forest management has been exist for 5 years preceding the project start date 01-July-2016.

2. Via checking the timber harvest plan/THP/ and historical records of forest management/^{HCFM/}, it is verified that historical records indicate that the maximum timber harvest is strictly controlled by the national forest authority, which not means forbidding timber harvest as per the Forest law of the People's Republic of China/^{LAW/}. Therefore, the project owner has the right to decide the quantity of logging within the authorized limit. Thus, it means that the management practices have surpassed the legal requirements (provided by conforming to all local and regional forest legislation/^{LAW/}).

3. Via checking the timber harvest plan/THP/ and historical records of forest management/^{HCFM/}, it is verified that historical records that indicate that there would have been an objective timber harvest income for local stakeholders to help them surpasses financial barriers.

Based on the applied methodology, for the historical baseline scenario, description of harvesting in the form of a timber harvest plan forms the basis of the baseline scenario for greenhouse gas accounting, so a timber harvest plan/THP/ was provided by PP and checked by VVB, it is confirmed that the plan includes a detailed timber harvesting schedule based on the historical common practice and the academic research/^{THP/}. The validation team checked the evidences/^{THP/} provided and cross-checked with legal right to harvest/^{LRH/} issued by Forest bureau of Huanjiang Maonan Autonomous County and confirmed by on-site interview with local officer/I2/, it is verified that the timber harvest plan is reasonable and following local best practice for timber harvest and the timber resource volume and extraction quotas defined in the legal requirements.

Via checking the timber harvest plan/^{THP}/, it is confirmed that the species to be harvested are clearly defined in the timber harvest plan/^{THP}/ as Chinese Fir, Pinus massoniana and Broad-Leaved tree, thus timber harvest plan describes the harvest of timber products and the below requirement are fulfilled by project as below assessment in the table.

Requirement in the Meth	PP justification	VVB assessment
1) Reference the forest volume inventory (see Section 8.1.1 – parameter $V_{j,i BSL}$) to identify the relative number of trees per hectare potentially available for harvest by species in each stratum	According to the forest volume inventory, the $V_{j,i BSL}$ is listed in PD.	Via checking the timber harvest plan/ ^{THP} / and forest volume inventory/ ^{FVI} /, it is confirmed that the value of $V_{j,i BSL}$ for each strata is correctly calculated.
2) Demarcate all non-harvest areas within the forest based on legally required exclusions for environmental features such as slope, swamp areas or conservation buffers	The project area only includes commercial forests, the ecological forests are excluded from the project boundary. Therefore, the legally required exclusions for environmental features such as slope, swamp areas or conservation buffer are obviously non-harvest areas, which are also excluded from the project boundary.	Via checking the map of the project boundary/ ^{KML} /, it is confirmed that the project area only includes commercial forests and all non-harvest areas and environmental features such as slope, swamp areas or conservation buffers are all excluded.
3) Divide the harvestable forest into annual operating areas (referred to throughout this methodology as land parcels) using common practice	Yes, the harvestable forests are listed into annual operating areas using clear felling. The timber harvest plan is announced by Huanjiang Maonan Autonomous County Forestry Bureau in 2015 is a long-term plan of 5 years.	The validation team checked the timber harvest plan/ ^{THP} / provided and cross-checked with legal right to harvest/ ^{LRH} / issued by Forest bureau of Huanjiang Maonan Autonomous County and on-site interviewed with local officer/ ^{I2} /, it is verified that the harvestable forest are divided into annual operating areas since 2015 with a plan in 5 years' harvest.
4) Include a design and presentation of the forestry	Because the emission from forestry infrastructure is hard to	Via checking the timber harvest plan/ ^{THP} / and forest volume

infrastructure to harvest, skid/haul, store and move harvested timber products from the land parcels to downstream processing or market entry points. Where the project proponent accounts for emissions from forestry infrastructure, the design and presentation must include all forest roads, skidtrails and log landings that would be established under the baseline scenario as a georeferenced layer (shapefile or equivalent), and must list necessary harvest and transport machinery.	calculate, and if it is accounted in the baseline scenario, the total emission reduction will be greater. Considering the cost effectiveness and conservative, the project proponent didn't account for emission from forestry infrastructure.	inventory/^{FVI}/, it is confirmed that the plan includes a design and presentation of the forestry infrastructure to harvest, which including skid/haul, store and move harvested timber products from the land parcels to downstream processing or market entry points which has been verified as reasonable and common practice in local area for the harvest market by interview with local officer. And the emission from forestry infrastructure is not considered by PP due to it is hard to calculate and measure, which is confirmed as conservative.
5) The timber harvest plan must follow local best practice for timber harvest practices, including planning of roads, skidtrails and log landings-and the timber resource volume and extraction quotas defined in any legal requirements.	The timber harvest plan has followed local best practice for timber harvest practices. The planning of roads, skidtrails and log landings meet the related national regulations and standard. The timber resource volume and extraction quota is defined according to forest second investigation data, which comply with the legal requirements.	Via checking the timber harvest plan/^{THP}/ and forest second class investigation data and tables/^{FSCI}/, it is verified that the plan has followed local best practice for timber harvest practices. And Via checking the Forestry Industry Standard in People's Republic of China "Forest Logging Operation Regulations" (LY/T1646-2005)/^{FLOR}/, it is confirmed that the plan is strictly in compliance with the legal requirements.
For the purpose of estimating the net annual changes in carbon stocks resulting from planned timber harvest in the baseline scenario, a detailed planned timber harvesting schedule will be developed from the timber harvest plan, setting out details of harvest and forestry infrastructure establishment for each land parcel in the project area in terms of the following:		
1) The species to be harvested	The species within the project area are Broad-leaved tree (e.g. Castanopsis hystrix, Oak,	Via checking the timber harvest plan/^{THP}/, it is confirmed that the species to be harvested are

	Schima Wallichii, Acacia, Other soft Broad-leaved tree, etc), Chinese fir and Pinus massoniana	clearly defined in the timber harvest plan/ ^{THP} / as Chinese Fir, Pinus massoniana and Broad-Leaved tree.
2) The year (1,2,3...) in which timber harvest and/or forestry infrastructure establishment in of each land parcel is scheduled to occur	The harvest plan has demonstrated the year in which timber harvest is scheduled to occur. According to the timber harvest plan, there are 199 wood depots would be built, 41 in 2016, 34 in 2017, 34 in 2018, 45 in 2019, 45 in 2020, considering of the shape of the logging area, the location of the logging subcompartment, the terrain, and the existing road.	The validation team checked the timber harvest plan/ ^{THP} / provided and cross-checked with legal right to harvest/ ^{LRH} / issued by Forest bureau of Huanjiang Maonan Autonomous County and on-site interviewed with local officer/ ^{I2} /, it is verified that harvest plan has demonstrated the year in which timber harvest is scheduled to occur and forestry infrastructures have been established.
3) The number of years each land parcel is in a post-harvest and/or post forestry infrastructure establishment state during the project crediting period	According to the timber harvest plan, the land parcel would be regenerated after timber harvest occurred, the post-harvest state during the project crediting period would be not more than a year.	The validation team checked the timber harvest plan/ ^{THP} / provided and cross-checked with legal right to harvest/ ^{LRH} / issued by Forest bureau of Huanjiang Maonan Autonomous County and on-site interviewed with local officer/ ^{I2} /, it is verified land parcel would be regenerated after timber harvest occurred and the post-harvest state during the project crediting period would be not more than a year.
4) The maximum and minimum diameters at breast height (DBH), at stump and at top for tree harvesting	In baseline scenario, the maximum diameters at DBH were 45cm and the minimum were 6cm. The maximum diameters at stump were 50cm and the minimum were 8cm. The maximum diameters at top	The validation team checked the timber harvest plan/ ^{THP} / provided and cross-checked with legal right to harvest/ ^{LRH} / issued by Forest bureau of Huanjiang Maonan Autonomous County and on-site interviewed with local officer/ ^{I2} /,

	were 10m and the minimum were 1.5m.	it is verified the values are correct.
5) The planned harvesting regime (clearfelling, specie/stratum-selective logging, area- selective logging)	The planned harvesting regime is clear felling for the project.	The validation team checked the timber harvest plan/ ^{THP} / provided and cross-checked with legal right to harvest/ ^{LRH} / issued by Forest bureau of Huanjiang Maonan Autonomous County and on-site interviewed with local officer/ ^{I2} /, it is verified that the planned harvesting regime is clearly listed in the plan.
6)The fraction of merchantable timber volume from clearing of forest roads, skidtrails and log landings that is to be processed into wood products ($F_{V,INF,HWP}$). Based on this fraction, as well as forest inventory and forestry infrastructure data, $V_{EX,INF,j,i BSL}$ and $V_{notEX,INF,j,i BSL}$ will be calculated.	The fraction of merchantable timber volume from clearing of forest roads, skidtrails and log landings that is to be processed into wood products is very small and hard to calculate precisely, so we didn't take the $V_{EX,INF,j,i BSL}$ and $V_{notEX,INF,j,i BSL}$ into account for calculate the baseline scenario emission. As this is conservative for emission reduction of the project, so it is reasonable.	PP did not claim the baseline scenario emission related to the merchantable timber volume which is deemed as conservative.
7) The technical specifications for the categories of wood products to be harvested	Sawnwood The product produced by cutting logs with vertical and horizontal sawing. Generally called sawnwood. Sawnwood products are mainly plank, square, sleepers and so on. They would be determined by the requirements of the customers.	The validation team checked the timber harvest plan/ ^{THP} / provided and cross-checked with legal right to harvest/ ^{LRH} / issued by Forest bureau of Huanjiang Maonan Autonomous County and on-site interviewed with local officer/ ^{I2} /, it is verified that the technical specifications for the categories of wood products to be harvested is clearly listed in the plan.

8) The total volumes or fractions to be harvested, broken down by categories of wood products defined as sawnwood, wood-based panels, other industrial roundwood, paper and paper board, and other.	The total volume to be harvested is 1,296,901.25 m ³ . The wood product of the project is only sawnwood, there is no others such as wood-based panels, other industrial roundwood, paper and paper board, etc.	The validation team checked the timber harvest plan/ ^{THP} / provided and cross-checked with legal right to harvest/ ^{LRH} / issued by Forest bureau of Huanjiang Maonan Autonomous County and on-site interviewed with local officer/ ^{I2} /, it is verified that the categories of wood products to be harvested is clearly listed as only sawnwood in the plan and the total volumes or fractions to be harvested of sawnwood is provided in the plan.
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3. Stratification

Via site inspection and checking the IFM Program/^{IFMP}/ of the project and timber harvest plan/^{THP}/, it is confirmed that the project activity area contains different forest types or forests with different carbon density. Hence to be in compliance with the applied methodology, stratification is carried out in order to improve the accuracy and precision of carbon stock estimates. The details of the sub-compartments (e.g. area, age, species, stock volume and location) are shown in forest second class investigation/^{FSCI}/ and confirmed by validation team.

Based on the availability of data regarding the nature and composition of forest stocks in the project area, stratification is developed on the basis of existing vegetation stratification, where these are confirmed have been documented in the legal right to harvest/^{LRH}/ . The purpose of strata is to improve accuracy and reduce the sampling cost. As per the applied methodology, the strata need to be determined considering the tree species, age and canopy density, but by considering the more strata means more workload and cost, so for this project, not all these factors have been considered for define the final strata numbers.

Therefore, for this project, the factor of species for strata could reduce the variation within the same stratum and reach the accuracy level of 90% under certain degree of freedom. So the strata are verified as reasonable and feasible. The strata is showed as following:

Serial number of strata	Area (ha)	Tree species	Source
1	4,440.05	Broad-Leaved tree	Forest second class investigation/ ^{FSCI} /
2	2,736.96	Chinese Fir	
3	2,169.71	Pinus massoniana	

Total	9,346.72 ha
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In conclusion, the alternative i) Continuation of the pre-project land use as the timber harvest plan is a plausible alternative baseline land-use which has been determined as the baseline scenario and the identified baseline scenario is justified as per the tool.

For the demonstration of additionality, refer to below section for details.

CL09, CAR 12 and CAR 13 were raised and successfully closed. Refer to Appendix 4 for detail assessment.

3.3.5 Additionality

According to VM0010 version 1.3/^{VM0010}, the additionality of the project is demonstrated using the VCS “Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities” version 3.0/^{TDAA}. The steps demonstration used in the PD was assessed by VVB as below:

Step 1: Identification of alternative land use scenarios to the AFOLU project activity;

Sub-step 1a: Identify credible alternative land use scenarios to the proposed VCS AFOLU project activity

a) Identify realistic and credible land-use scenarios that would have occurred on the land within the proposed project boundary in the absence of the AFOLU project activity under the VCS. The scenarios should be feasible for the project area taking into account relevant national and/or sectoral policies and circumstances, such as historical land uses, practices and economic trends.

The identified land use scenarios shall at least include:

- i) Continuation of the pre-project land use as the timber harvest plan as analysed in section 2.4;
- ii) Project activity on the land within the project boundary performed without being registered as the VCS AFOLU project.
- iii) If applicable, activities similar to the proposed project activity on at least part of the land within the project boundary of the proposed VCS AFOLU project at a rate resulting from:

☐ • Legal requirements; or

☐ • Extrapolate similar activities in the geographical area under similar socioeconomic and ecological conditions to the proposed VCS AFOLU project activity which cover a period began a decade earlier than the project start date.

For alternative iii), via checking the Certificate of Forest Right/^{CFR}, it is confirmed that the forests in project have been managed under Forest Land for over 10 years before the project start date, and it is verified that the lands within the project boundary of the proposed VCS AFOLU project are all with the same legal requirements. So this alternative need to be ruled out.

Pre-project land use scenario is the timber forest as confirmed by legal right to harvest^{/LRH/}, it is feasible for the project area taking into account Forest Law of People's Republic of China^{/LAW/}. Via checking the VCS website and comparing with the project area in map^{/KML/}, it is confirmed that there is no land within the project boundary performed being registered as the VCS AFOLU project.

b) All identified land use scenarios must be credible. All land-uses within the boundary of the proposed VCS AFOLU project that are currently existing or that existed at some time in the period beginning ten years prior to the project start date but no longer exist, may be deemed realistic and credible. For all other land use scenarios, credibility shall be justified. The justification shall include elements of spatial planning information (if applicable) or legal requirements and may include assessment of economic feasibility of the proposed land use scenario.

The (i) and (ii) identified land-use scenarios that would have occurred on the land within the proposed project boundary in the absence of the AFOLU project activity under the VCS are confirmed as realistic and credible, as all land-uses within the boundary of the project activity that existed in the period beginning ten years prior to the project start date but no longer exist which has been verified by checking the Certificate of Forest Right^{/CFR/}. Therefore, it is deemed realistic and credible.

c) Outcome of Sub-step 1a: List of credible alternative land use scenarios that could have occurred on the land within the project boundary of the VCS AFOLU project.

Based on above demonstration and assessment, it is confirmed that the identified land use scenarios include the two below after this step:

- i) Continuation of the pre-project land use as the timber harvest plan,
- ii) Project activity on the land within the project boundary performed without being registered as the VCS AFOLU project.

Sub-step 1b: Consistency of credible land use scenarios with enforced mandatory applicable laws and regulations

a) Apply the following procedure:

- i) Demonstrate that all land use scenarios identified in the sub-step 1a: are in compliance with all mandatory applicable legal and regulatory requirements;
- ii) If an alternative does not comply with all mandatory applicable legislation and regulations then show that, based on an examination of current practice in the region in which the mandatory law or regulation applies, those applicable mandatory legal or regulatory requirements are systematically not enforced and that non-compliance with those requirements is widespread, i.e., prevalent on at least 30% of the area of the smallest administrative unit that encompasses the project area;
- iii) Remove from the land use scenarios identified in the sub-step 1a, any land use scenarios which are not in compliance with applicable mandatory laws and regulations unless it can be shown these land use scenarios result from systematic lack of enforcement of applicable laws and regulations.

The two remaining scenarios are feasible for the project area are confirmed as in compliance with Forest Law of People's Republic of China/^{LAW}. Therefore, the 2 identified realistic and credible alternative land used scenarios that could have occurred on the land within the project boundary of the VCS AFOLU project are listed below.

b) Outcome of Sub-step 1b: List of plausible alternative land use scenarios to the VCS AFOLU project activity that are in compliance with mandatory legislation and regulations taking into account their enforcement in the region or country and EB decisions on national and/or sectoral policies and regulations.

Based on above assessment, the identified land use scenarios include the two below:

- i) Continuation of the pre-project land use as the timber harvest plan,
- ii) Project activity on the land within the project boundary performed without being registered as the VCS AFOLU project.

Sub-step 1c. Selection of the baseline scenario: 2.1.3

The baseline methodology that would use this tool shall provide for a stepwise approach justifying the selection and determination of the most plausible baseline scenario.

→ Proceed to Step 2 (Investment analysis) or Step 3 (Barrier analysis), as it is necessary to undertake at least one of them.

It is confirmed that the most plausible baseline scenario has been assessed by a stepwise approach following the tool. And Step 2 is proceeded.

Step 2: Investment analysis

This section will determine whether the proposed project activity, without the revenue from the sale of GHG credits is economically or financially less attractive than at least one of the other land use scenarios. To conduct the investment analysis, use the following sections.

Sub-step 2a: Determine appropriate analysis method

Determine whether to apply simple cost analysis, investment comparison analysis or benchmark analysis. If the VCS AFOLU project generates no financial or economic benefits other than VCS related income, then apply the simple cost analysis (Option I). Otherwise, use the investment comparison analysis (Option II) or the benchmark analysis (Option III). Note, that Options I, II and III are mutually exclusive hence, only one of them can be applied.

According to the tool, Option I is not applicable for the proposed project since the project will generate other financial and economic benefits (e.g. income from tending and managing instead of commercial harvest) other than VCS related income.

The benchmark analysis is not applicable for the proposed project since there is neither practical nor public available standard benchmark for forest industry within the project area.

Therefore, the project will use the investment comparison analysis (Option II) since the 2 alternatives identified in step 1 both have cost and benefit separately.

Sub-step 2b: Option II. Apply investment comparison analysis

As above demonstration, the 2 scenarios identified in step 1 should be compare to determine which one is more economic attractive, thus the NPV was selected to be used as the financial indicator to calculate the discounting in 20 years for decision-making context.

Sub-step 2c: Calculation and comparison of financial indicators (only applicable to options II and III):

a) As pe the tool, PP has calculated the suitable financial indicator for the proposed VCS AFOLU project without the financial benefits from the VCS for the 2 alternatives identified in step 1. It is confirmed that the calculation include all relevant costs and revenues, and, as appropriate, non-market cost and benefits in the case of public investors which have been assessed in below table.

Basic Parameters					
Item	Unit	Baseline value	Project value	Data source	Assessment by VVB
Revenue					
Broad-leaved tree Price	RMB/m³	900	0	Historical Records of Agreements and Sales Receipts	The Historical Records of Agreements /HRA/ and Sales Receipts/SR/ are checked, it is confirmed that the values listed in PD are correct and actual. Furthermore, via checking the public information of the price of timber/pt/, it is verified that the price is reasonable.
Chinese fir Price	RMB/m³		0		
Pinus massoniana Price	RMB/m³		0		
Other timber product from tending and managing instead of commercial harvest	RMB/m³	300	300		
Extracted Volume					
Broad-leaved tree	m³	679106.66	0	Timber Harvest Plan	Via reviewing the timber harvest plan/THP/ and legal
Chinese fir	m³	316732.24	0		
Pinus massoniana	m³	301062.35	0		

Other timber product from tending and managing instead of commercial harvest	m³ /year	9346.79	9346.79		right to harvest ^{/LRH/} issued by Forest bureau of Huanjiang Maonan Autonomous County, it is confirmed that the values listed in PD are correct and actual.
Total Extracted Volume	m³	1,296,901.25	0		
Total Area	Mu	140201.80	140201.80		
Cost					
A/R cost	RMB/Mu	300	0	Historical Records of Agreements and Sales Receipts	The Historical Records of Agreements ^{/HRA/} and Sales Receipts ^{/SR/} are checked, it is confirmed that the values listed in PD are correct
Harvest cost	RMB/m³	180	0		
Management Fee	RMB/Mu	120	120		
Additional maintenance cost for protected forest	RMB/Mu /working day	0	0.1		

b) Present the investment analysis in a transparent manner and provide all the relevant assumptions in the VCS AFOLU project description

Based on the above basic parameters and checking the NPV calculation sheet^{/NPV/}, it is confirmed that the below NPV results are correct.

Scenario	NPV (10 ⁴ RMB)
Logging (baseline)	¥19,090
Protected (project without VCUs revenue)	¥-17,206
With VCUs revenue	¥-16,100

Therefore, it is verified that the NPV under the scenario of protected forest is obviously not financially attractive compared to the scenario of logging. Even, by taking into account the VCUs revenue, the NPV under the scenario of protected forest is increased to be ¥ -16,100*10⁴ RMB.

In conclusion, the scenario ii) Project activity on the land within the project boundary performed without being registered as the VCS AFOLU project is confirmed as not financially attractive compared to the scenario of baseline scenario, i.e., logging. And by plus the revenue from VCS at the assumed price level, the project would be more financially attractive.

Sub-step 2d: Sensitivity analysis

PP has selected key parameters of Price of the trees, the O&M cost, and the extracted volume as the factors to carry out the sensitivity analysis which is deemed as reasonable.

Based on calculation results of sensitivity analysis in NPV calculation sheet^{/NPV/}, it is confirmed that the NPV values under project scenario (without VCUs revenue) will not exceed the baseline scenario if the price of the trees, the O&M cost and the extracted volume varies within $\pm 10\%$

Finally, via checking the calculation results of in NPV calculation sheet^{/NPV/}, it is confirmed that the project receives revenue from the commercial harvest in baseline. While, all the commercial harvest has been cancelled and only tending and managing is allowed in project (without VCUs revenue), which make the revenue of the project scenario is very little income from the selling of the timber products from tending and managing, the same amounts as the baseline. Hence, it is confirmed that it is impossible for the NPV of the project scenario to reach to the baseline scenario no matter how the two parameters vary.

Therefore, the result of the sensitivity analysis confirms that the project is financially unattractive comparing with baseline.

According to the tool, if after the sensitivity analysis it is concluded that the proposed VCS AFOLU project without the financial benefits from the VCS is unlikely to be financially most attractive (Option II and Option III), then proceed directly to Step 4 (Common practice analysis).

Step 4. Common practice analysis

Via checking the “Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities” (version 3.0)^{/TDAA/}, it is confirmed that the common practice analysis need to be demonstrated as below,

Provided an analysis to which extent similar activities to the one proposed as the VCS AFOLU project activity have been implemented previously or are currently underway. Similar activities are defined as that which are of similar scale, take place in a comparable environment, inter alia, with respect to the regulatory framework and are undertaken in the relevant geographical area, subject to further guidance by the underlying methodology. Other registered VCS AFOLU project activities shall not be included in this analysis. Considerations shall be limited to the period beginning 10 years prior to the project start date.

China has a vast territory, the development policies and economic environment for projects in each province of China are not same. The investment environment varies considerably from province to province depending on the local conditions. The region for the common practice analysis was defined as the Guangxi Province where the project area is located, based on the social and ecological condition. Secondly, the chosen region has unique characteristics in regard to forest structure, transportation condition, population structure and ethnic minorities which has been determined in the IFM program^{/IFMP/}. Therefore, the presented approach is considered appropriate for the common practice analysis.

Via checking the GHG scheme website^{/vcs/, /gs/, /unfccc/} and interview with local government officer^{/12/}, it is verified that there is another one Guangxi Jinxiu IFM (Conversion of logged to Protected Forest Project in Guangxi Zhuang Autonomous Region has been under validation as VCS&CCB in Guangxi province, and there are no more other similar A/R projects in defined region.

Therefore, it is confirmed that the proposed project activity is not a common practice in the defined region.

In conclusion, it is sufficiently demonstrated that the project is not a likely baseline scenario and that the emission reductions resulting from the project are additional.

CAR 14 and CAR 15 were raised and successfully closed. Refer to Appendix 4 for detail assessment.

3.3.6 Quantification of GHG Emission Reductions and Removals

The emission reductions are calculated according the applied methodology VM0010, version 1.3/VM0010/. The algorithms and formulae used are provided in this section.

Baseline Emissions

Via checking the applied methodology, it is confirmed that calculation of baseline emissions for all land parcels under both the historical and common practice baseline scenarios requires the application of the equations presented in Sections 8.1.1 to Section 8.1.6 of the applied methodology.

And as defined by applied methodology, it is requested that the baseline projections are calculated ex-ante and are not adjusted throughout the project crediting period.

According to the methodology, “Section 8.1.1 serves to calculate carbon stocks in commercial timber volumes. Next, baseline emissions are estimated based on the calculation of deadwood (logging slash) generated in the process of timber harvest and establishment of forestry infrastructure (Section 8.1.2), the emissions resulting from production and subsequent retirement of wood products derived from timber harvesting (including timber harvesting from the establishment of forestry infrastructure (Section 8.1.3)), the combustion of fossil fuels in forestry machinery including mechanized felling, skidding / forwarding /hauling, loading and transporting inside the project area, and processing (Section 8.1.5), minus the rates of forest regrowth post-timber harvest (Section 8.1.6).”

Thus as per the methodology, the following table lists the baseline emissions modelled by the methodology,

Included in modelling
All projects: 1. Emission from wood product conversion 2. Decomposition of deadwood from harvested trees 3. Emissions from wood product retirement 4. Stock change due to regrowth following timber harvest 5. Decomposition of trees incidentally killed during tree felling Where project proponent accounts for forestry infrastructure: 6. Decomposition of trees killed through skid trail creation 7. Decomposition of trees killed through road construction

Optional (as omission is conservative):
8. Emissions from fossil fuels burned in baseline harvesting practices
Conservatively excluded from modelling
1. Emissions through subsequent forest re-entry

The options of 5 to 8 and are hard to calculate and tiny in baseline scenario, it is confirmed that the emission exclusion is conservative so it is verified that this is reasonable to exclude those from baseline emissions modelling.

Baseline commercial timber volumes must be derived for development of the timber harvest plan/^{THP}/ and for ex-post accounting of emissions resulting from natural forest disturbance.

The equations below calculate the total emissions across the project crediting period for each emission source. Total emissions are averaged across the crediting period to give annual emissions and are multiplied by t^* , time elapsed since the start of project activity. Ex-post, t^* is updated so baseline projections are available for each proposed future verification date.

Data for input into these carbon stock change calculations for the baseline scenario shall be established from the same data used to create the timber harvest plan/^{THP}/.

According to VM0010 version 1.3/^{VM0010}/, the baseline emissions are calculated in the sections below:

Calculation of carbon stocks in commercial timber volumes

This section calculates $C_{HB,j,i|BSL}$, the mean carbon stock in total harvested biomass in $tC\text{ha}^{-1}$ and $C_{EX,j,i|BSL}$, the mean carbon stock in extracted timber (merchantable timber that leaves the forest) in $tC\text{ha}^{-1}$.

The pre-existing forest inventory data are used for this purpose provided that the pre-existing data:

- a) represents the project strata;
- b) is not more than 10 years old.

Via checking the forest second class investigation data and tables/^{FSCI}/ and the timber harvest plan/^{THP}/, it is confirmed that the forest inventory data used the method of sample plot inventory. These data were carried out through field surveys which were finished at the end of 2015 by who is qualified, experienced for the forestry investigation/^{THP}. The project involves 3 strata and 1,306 subcompartments. For each stratum, mean volume is estimated from sample plot size of 0.04 ha and at least 1 sample plot will be selected in 1 subcompartment within the project area using standard forest inventory assessment methods, which satisfies the number of sample plots required by the Tool for Calculation of the Number of Sample Plots for Measurements within A/R CDM Project Activities (version 02.1.0) /^{TCNSP}/.

The estimate of merchantable volume for each species j at the sample plot level will be calculated as:

$$V_{j,i,sp} = \sum_{l=1}^L V_{lj,i,sp} \quad (1)$$

Where:

$V_{j,i,sp}$	Merchantable volume for species j in stratum i in sample plot sp , m ³ ;
$V_{lj,i,sp}$	Merchantable volume for tree l of species j in stratum i in sample plot sp ; m ³
l	1,2,3... L sequence of individual trees in sample plot;
i	1,2,3 ... M strata;
sp	1,2,3 ... SP sample plots; and
j	1,2,3 ... J tree species

Therefore, the merchantable volume per unit area of species j in stratum i will be calculated as the mean merchantable volume in all sample plots in stratum i :

$$V_{j,i|BSL} = \frac{1}{SP} * \sum_{sp=1}^{SP} \frac{V_{j,i,sp}}{A_{sp}} \quad (2)$$

Where:

$V_{j,i BSL}$	Mean merchantable volume per unit area of species j in stratum i in the baseline scenario, m ³ ·ha ⁻¹ ;
$V_{j,i,sp}$	Merchantable volume for species j in stratum i in sample plot sp ; m ³
ASP	Area of sample plot sp , ha
i	1,2,3 ... M strata;
sp	1,2,3 ... SP sample plots; and
j	1,2,3 ... J tree species

Therefore, the carbon stock of timber harvested per unit area for species j in stratum i will be calculated from this mean volume of extracted timber:

$$C_{HB,j,i|BSL} = V_{EX,j,i|BSL} * BCEF_R * CF_j \quad (3)$$

Where:

$C_{HB,j,i BSL}$	mean carbon stock of harvested biomass per unit area for species j in stratum i , tC·ha ⁻¹ ;
$V_{EX,j,i BSL}$	mean volume of extracted timber per unit area for species j in stratum i , m ³ ·ha ⁻¹ ;

BCEFR	biomass conversion and expansion factor applicable to wood removals in the project area, t.d.m m ⁻³
CF _j	carbon fraction of biomass for species <i>j</i> , tC t d.m. ⁻¹
<i>i</i>	1,2,3 ...M strata; and
<i>j</i>	1,2,3 ...J tree species.

Not all of the harvested biomass leaves the forest because the timber harvested has two components: 1) wood removed to market (extracted timber) and, 2) wood remaining in the forest as a result of harvest.

Therefore, the mean carbon stock of extracted timber per unit area for species *j* in stratum *i* will be calculated from the mean volume of extracted timber multiplied by density and carbon fractions:

$$C_{EX,j,i|BSL} = V_{EX,j,i|BSL} * D_j * CF_j \quad (4)$$

Where:

C _{EX,j,i BSL}	mean carbon stock of extracted timber per unit area for species <i>j</i> in stratum <i>i</i> , tC ha ⁻¹ ;
V _{EX,j,i BSL}	mean volume of extracted timber per unit area for species <i>j</i> in stratum <i>i</i> , m ³ ha ⁻¹ ;
D _j	basic wood density of species <i>j</i> ; t.d.m m ⁻³
CF _j	carbon fraction of biomass for species <i>j</i> , tC t d.m. ⁻¹
<i>i</i>	1,2,3 ...M strata; and
<i>j</i>	1,2,3 ...J tree species.

Calculation of dead wood (logging slash) generated in the process of timber harvest

This section calculates ΔC_{DW_{SLASH},i,p|BSL}, the change in carbon stock in dead wood resulting from timber harvest in stratum *i* in land parcel *p*, using C_{EX,j,i|BSL} and C_{HB,j,i|BSL}.

The simplifying assumption is made that dead wood created during timber harvest is emitted in the year of harvest.

Therefore, the change in carbon stock in the dead wood pool in stratum *i* in land parcel *p* will be calculated as the difference between the total carbon stock of the harvested biomass and the carbon stock of the extracted timber:

$$\Delta C_{DW_{SLASH},i,p|BSL} = \left[\sum_{j=1}^J (C_{HB,j,i|BSL} - C_{EX,j,i|BSL}) \right] \quad (5)$$

Where:

$\Delta C_{DWSLASH,i,p BSL}$	change in carbon stock of dead wood as logging slash resulting from timber harvest per unit area in stratum i in land parcel p , in $tC\text{ha}^{-1}$;
$C_{HB,j,i BSL}$	mean carbon stock of harvested biomass per unit area for species j in stratum i , $tC\text{ha}^{-1}$;
$C_{EX,j,i BSL}$	mean carbon stock of extracted timber per unit area for species j in stratum i , $tC\text{ha}^{-1}$;
i	1, 2, 3 ...M strata; and
j	1, 2, 3 ...J tree species.
p	1, 2, 3 ...P land parcels.

Calculation of baseline carbon sequestered in wood products

The carbon stock of extracted timber across species is calculated as:

$$C_{EX,i|BSL} = \sum_{j=1}^J C_{EX,j,i|BSL} \quad (6)$$

Where:

$C_{EX,i BSL}$	change in carbon stock of extracted wood products resulting from timber harvest per unit area in stratum i in land parcel p , $tC\text{ha}^{-1}$;
$C_{EX,j,i BSL}$	mean carbon stock of extracted timber per unit area for species j in stratum i , $tC\text{ha}^{-1}$;
i	1, 2, 3 ...M strata; and
j	1, 2, 3 ...J tree species.

In line with the applied methodology, via checking the VCS AFOLU Requirements in VCS standard/VCSS/, the amount of carbon stored in wood products that would decay within 3 years after harvest (ie, the Wood Waste (WW) and the Short Lived Fraction (SLF)), are assumed to be emitted at the time of harvest.

Wood products that are retired between 3 and 100 years after harvest (ie, the Additional Oxidised Fraction, OF), must be accounted according to a 20 year linear decay function. This decay function is applied when the net greenhouse gas emissions/removals are calculated on an annual basis in Equations 11 and 12 below.

All other wood product pools are considered to permanently store carbon.

Therefore, the carbon stock of extracted timber that is immediately emitted to the atmosphere at the time of harvest is calculated as

$$C_{WP0,i|BSL} = \sum_k C_{EX,i,k|BSL} * (WW_k + SLF_k) \quad (7)$$

Where:

$C_{WP0,i BSL}$	carbon stock of extracted timber from stratum i that is assumed to be emitted immediately at the time of harvest, in tC·ha ⁻¹ ;
$C_{EX,i BSL}$	mean carbon stock of extracted timber per unit area in stratum i, for wood product type k, tC·ha ⁻¹ ;
WW_k	fraction of biomass carbon from wood waste that is assumed to be emitted to the atmosphere immediately at the time of harvest for wood product k, dimensionless;
SLF_k	fraction of biomass carbon from the short lived wood product pool that is assumed to that be emitted to the atmosphere immediately at the time of harvest for wood product k, dimensionless;
i	1, 2, 3 ...M strata; and
k	Wood products (sawnwood, wood base products, etc).

The amount of extracted carbon stock that is assumed to enter the wood products pool that is not immediately emitted at harvest is calculated as per equation 8 below:

$$C_{WPI|BSL} = \sum_k C_{EX,i,k|BSL} - C_{WP0,i|BSL} \quad (8)$$

Where:

$C_{WP,i BSL}$	carbon stock of extracted timber from stratum i that is assumed to enter the wood products pool that is not immediately emitted at the time of harvest, in tC·ha ⁻¹ ;
$C_{EX,i BSL}$	mean carbon stock of extracted timber per unit area in stratum i, for wood product type k, tC·ha ⁻¹ ;
$C_{WP0,i BSL}$	carbon stock of extracted timber from stratum i that is assumed to be emitted immediately at the time of harvest, in tC·ha ⁻¹ ;
i	1, 2, 3 ...M strata; and
k	Wood products (sawnwood, wood base products, etc).

Therefore, the carbon stock of wood products assumed to be retired between 3 -100 years following harvest is calculated as:

$$C_{WP100,i|BSL} = C_{WP,i|BSL} * OF_k \quad (9)$$

Where:

$C_{WP100,i,p BSL}$	Amount of carbon stored in wood products that are assumed to be retired between 3-100 years after harvest from stratum i in land parcel p, tC $\cdot$ ha $^{-1}$;
$C_{WP,i BSL}$	carbon stock of extracted timber from stratum i that is assumed to enter the wood products pool that is not immediately emitted at the time of harvest, in tC $\cdot$ ha $^{-1}$;
OF_k	fraction of biomass carbon for wood product type k that is assumed to be emitted to the atmosphere between 3 and 100 years of timber harvest, dimensionless; and
i	1, 2, 3 ...M strata

Change in carbon stocks due to forest regrowth after harvest

The carbon sequestration in the baseline resulting from forest regrowth after timber harvest up to year t is equal to the forest regrowth rate of each stratum.

Therefore, carbon sequestration resulting from forest regrowth after timber harvest is calculated as:

$$C_{RG,i,p|BSL} = \sum_i RGR_i \quad (10)$$

Where:

$C_{RG,i,p BSL}$	carbon sequestration resulting from forest regrowth after timber harvest in stratum i in land parcel p, tC ha $^{-1}$ yr $^{-1}$;
RGR_i	regrowth rate of forest post timber harvest for stratum i, tC $\cdot$ ha $^{-1}$ yr $^{-1}$;
i	1, 2, 3 ...M strata

Calculation of baseline scenario greenhouse gas emissions from change in carbon stocks

The net carbon stock change to be converted to emissions is equal to the carbon stock change as a result of timber harvest plus the carbon stock change resulting from conversion and retirement of wood products minus carbon sequestration from forest regrowth after harvest.

In order to generate the annual carbon stock change in the baseline scenario, the total net change in carbon stocks for parcels within is multiplied by the area of forest in the particular age class (ie, years since harvest in the baseline).

The annualized calculations vary between years 1, 2-10; 10-20; and all years since the start of the project activity, depending on which decay functions apply.

Therefore, the net change in carbon stock from wood products and logging slash across all parcels within the first year of harvest in the baseline is calculated as:

$$\Delta C_{NET|BSL(1)} = \sum_{i,p} A_{1,i,p} * \sum_{i=1}^M (C_{DWSLASH,i,p|BSL}/10) + C_{WP0,i,p|BSL} + (C_{WP100,i,p|BSL}/20) \quad (11)$$

Where:

$\Delta C_{NET BSL(1)}$	net change in carbon stock across all parcels in the baseline scenario in the first year since harvest in the baseline scenario, in tC;
$\Delta C_{DWSLASH,i,p BSL}$	change in carbon stock of dead wood as logging slash resulting from timber harvest per unit area in stratum i in land parcel p, in tC ha ⁻¹ ;
$\Delta C_{WP0,i,p BSL}$	change in carbon stock resulting from wood product conversion and retirement from stratum i in land parcel p, that is assumed to be emitted in the first year of harvest in the baseline tC ha ⁻¹ ;
$\Delta C_{WP100,i,p BSL}$	Amount of carbon stored in wood products that is assumed to be retired between 3-100 years after harvest from stratum i in land parcel p, tC ha ⁻¹ ;
$A_{1,i,p}$	the area of stratum i in land parcel p that was harvested 1 year ago, ha;
i	1, 2, 3 ...M strata; and
p	1, 2, 3 ...P land parcels harvested within the project crediting period.

The net change in carbon stock from wood products and logging slash across all parcels the years 2-10 since harvest in the baseline are calculated as:

$$\Delta C_{NET|BSL(2-10)} = \sum_{i,p} A_{2-10,i,p} * \sum_{i=1}^M ((\Delta C_{DWSLASH,i,p|BSL}/10) + (\Delta C_{WP100,i,p|BSL}/20)) \quad (12)$$

Where:

$\Delta C_{NET BSL(2-10)}$	net change in carbon stock across all parcels in the baseline scenario in years 2-10 since harvest in the baseline scenario, in tC;
$\Delta C_{DWSLASH,i,p BSL}$	change in carbon stock of dead wood as logging slash resulting from timber harvest per unit area in stratum i in land parcel p, in tC ha ⁻¹ ;
$\Delta C_{WP100,i,p BSL}$	Amount of carbon stored in wood products that is assumed to be retired between 3-100 years after harvest from stratum i in land parcel p, tC ha ⁻¹ ;
$A_{2-10,i,p}$	the area of stratum i in land parcel p that was harvested 2 and 10 years ago, ha;
i	1, 2, 3 ...M strata; and
p	1, 2, 3 ...P land parcels harvested within the project crediting period.

The net change in carbon stock from wood products across all parcels the years 11 -20 since harvest in the baseline are calculated as:

$$\Delta C_{NET|BSL(11-20)} = \sum_{i,p} A_{11-20,i,p} * \sum_{i=1}^M (\Delta C_{WP100,i,p|BSL}/20) \quad (13)$$

Where:

$\Delta C_{NET BSL(11-20)}$	net change in carbon stock across all parcels in the baseline scenario in years 11-20 since the start of the project activity, in tC;
$\Delta C_{WP100,i,p BSL}$	Amount of carbon stored in wood products that is assumed to be retired between 3-100 years after harvest from stratum i in land parcel p, tC ha ⁻¹ ;
$A_{11-20,i,p}$	the area of stratum i in land parcel p that was harvested 11 and 20 years ago, ha;
i	1, 2, 3 ...M strata; and
p	1, 2, 3 ...P land parcels harvested within the project crediting period.

The net change (sequestration) in carbon stock due to forest regrowth across all parcels in all years since harvest in the baseline scenario is calculated according to equation 14 below. Note that there will be no more emissions quantified from decay of logging slash or wood products.

$$\Delta C_{NET|BSL(1+)} = \sum_{i,p} A_{t*} * \sum_{i=1}^M (-\Delta C_{RG,i,p|BSL}) \quad (14)$$

Where:

$\Delta C_{NET BSL(1+)}$	net change in carbon stock due to forest regrowth in all parcels that have been harvested in the baseline scenario, in tC;
$\Delta C_{RG,i,p BSL}$	carbon sequestration resulting from forest regrowth after timber harvest in stratum i in land parcel p, tC ha ⁻¹
A_{t*}	Cumulative area harvested until time t*, ha;
i	1, 2, 3 ...M strata; and
p	1, 2, 3 ...P land parcels harvested within the project crediting period.

Therefore, net change in carbon stock across all parcels harvested over each year of the project crediting period in the baseline scenario since the start of the project activity is calculated as:

$$\Delta C_{NET|BSL,t*} = \sum_{p=1}^P \Delta C_{NET|BSL(1)} + \Delta C_{NET|BSL(2-10)} + \Delta C_{NET|BSL(11-20)} + \Delta C_{NET|BSL(1+)} \quad (15)$$

Where:

$\Delta C_{NET BSL,t*}$	net change in carbon stock across all parcels in the baseline scenario in the year t* since the start of the project activity, in tC;
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$\Delta C_{NET BSL(1)}$	net change in carbon stock in the baseline scenario for all parcels p that are within 1 year of harvest in the baseline scenario, in tC;
$\Delta C_{NET BSL(2-10)}$	net change in carbon stock in the baseline scenario for all parcels p, that were harvested between 2-10 years ago in the baseline scenario, in tC;
$\Delta C_{NET BSL(11-20)}$	net change in carbon stock in the baseline scenario in parcel p, that were harvested between 11-20 years ago in the baseline scenario, in tC;
$\Delta C_{NET BSL(1+)}$	net change in carbon stock due to forest regrowth in the baseline scenario for all parcels p that have been harvested in the baseline scenario, in tC;
t^*	time elapsed since the start of the project, in years; and
p	1, 2, 3 ...P land parcels harvested within the project crediting period.

The net carbon stock change in the baseline scenario must be converted to net greenhouse gas emissions and is calculated as:

$$GHG_{NET|BSL,t^*} = \Delta C_{NET|BSL,t^*} * \frac{44}{12} \quad (16)$$

Where:

$GHG_{NET BSL,t^*}$	net greenhouse gas emissions in the baseline scenario in the year t^* since the start of the project activity, tCO ₂ e;
$\Delta C_{NET BSL}$	net change in carbon stock across all parcels in the baseline scenario in the year t^* since the start of the project activity, tC; and
44/12	ratio of molecular weights of carbon dioxide and carbon, tCO ₂ -e tC ⁻¹ .

Because carbon stock of other timber product from tending and managing instead of commercial harvest in baseline scenario is assumed to be the same as in project scenario, they offset each other, and are therefore not included in the overall ER calculation..

Project Emissions

Ongoing forest growth in the project scenario

This section calculates $\Delta C_{AB,t|PRJ}$ annual carbon stock change in aboveground biomass of trees in the project scenario, in tCO₂e.

Allometry

PP has to select the appropriate allometric equation for forest type/group of species j (e.g. tropical humid forest or tropical dry forest) or for each species or family j (group of species) found in the

inventory (hereafter referred to as species group) that converts tree dimensions from field timber inventories on sample plots to aboveground biomass of trees.

Measurements

Only the individual trees, species and strata which were to be harvested in the baseline scenario are to be measured. Any minimum values employed in inventories are held constant for the duration of the project.

Determining Sample Plot Carbon Stocks

The carbon stock in aboveground biomass for each individual tree of species group j in the sample plot located in stratum i will be estimated using the selected allometric equation applied to the tree dimensions resulting from section above for Measurements.

Therefore, the sum of the carbon stock in each sample plot will be calculated as:

$$C_{AB,j,i,t,sp|PRJ} = \sum_{l=1}^{L_{j,i,t,sp}} f_j(X, Y \dots) * CF \quad (17)$$

Where:

$C_{AB,j,i,t,sp PRJ}$	carbon stock in aboveground biomass of trees of species j in plot sp in stratum i at time t in the project scenario, tC
CF_j	carbon fraction of biomass for tree group j , $tC \text{ t d.m.}^{-1}$;
$f_j(X, Y \dots)$	aboveground biomass of trees based on allometric equation for species group j based on measured tree variable(s), $t. \text{ d.m. tree}^{-1}$;
i	1, 2, 3, ...M strata;
j	1, 2, 3 ... J tree species;
l	1, 2, 3, ... $L_{j,i,t,sp}$ sequence number of individual trees of species group j in stratum i at time t in sample plot sp ;
t	0, 1, 2, 3, ... t^* years elapsed since start of the project activity; and
sp	1, 2, 3 ...SP sample plots.

Determining Stratum Carbon Stocks

The total carbon stock in the aboveground biomass of all trees present in sample plot sp in stratum i at time t , must be calculated as:

$$C_{AB,i,t,sp|PRJ} = \sum_{j=1}^J C_{AB,j,i,t,sp|PRJ} \quad (18)$$

Where:

$C_{AB,i,t,sp PRJ}$	aboveground biomass carbon stock of all trees of stratum i at time t in sample plot sp in the project scenario, tC;
$C_{AB,j,i,t,sp PRJ}$	carbon stock in aboveground biomass of trees of species j in stratum i at time t in plot sp in the project scenario, tC;
i	1, 2, 3, ...M strata;
j	1, 2, 3 ... J tree species; and
t	0, 1, 2, 3 ...t* years elapsed since the start of the project activity.

Determining Mean Carbon Stocks

Therefore, the mean carbon stock in aboveground biomass for each stratum per unit area is calculated as:

$$C_{AB,i,t|PRJ} = \frac{1}{SP} * \sum_{sp=1}^{SP} \left(\frac{C_{AB,i,t,sp|PRJ}}{A_{sp}} \right) \quad (19)$$

Where:

$C_{AB,i,t PRJ}$	mean aboveground biomass carbon stock of trees in stratum i at time t, -1;
$C_{AB,i,t,sp PRJ}$	aboveground biomass carbon stock of trees in stratum i at time t in sample plot sp, tC;
A_{sp}	area of sample plot sp, ha;
sp	1, 2, 3 ... SP sample plots;
i	1, 2, 3 ... M strata; and
t	0, 1, 2, 3 ... t* years elapsed since the start of the project activity.

Determining Carbon Stock Changes

The annual carbon stock change in aboveground biomass of trees in year t is the difference in mean carbon stock in aboveground biomass between sampling events and, when expressed in tCO₂e, is calculated as:

$$\Delta C_{AB,t|PRJ} = \left(\sum_{i=1}^M \left(A_i * \frac{C_{AB,i,t2|PRJ} - C_{AB,i,t1|PRJ}}{T} \right) \right) * \frac{44}{12} \quad (20)$$

Where:

$\Delta C_{AB,t PRJ}$	annual carbon stock change in aboveground biomass of trees in year t, tCO ₂ e yr ⁻¹ ;
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$C_{AB,i,t PRJ}$	mean aboveground biomass carbon stock of trees in stratum i at time t;
A_i	area covered by stratum i, ha;
sp	1, 2, 3 ... SP sample plots;
T	number of years between monitoring time t1 and t2 ($T=t_2 - t_1$); years;
i	1, 2, 3 ... M strata; and
t	0, 1, 2, 3 ... t* years elapsed since the start of the project activity; and
44/12	ratio of molecular weights of carbon dioxide divided carbon, $tCO_2e \ tC^{-1}$.

The carbon stock change in aboveground biomass of trees ($\Delta C_{AB,t|PRJ}$) is the output of this section and is necessary to calculate net greenhouse gas emissions in the project scenario.

Forest disturbance in the project scenario

This section calculates $\Delta C_{DIST_FR,t|PRJ}$, carbon stock change due to fire disturbance in the project scenario; tCO_2e , $\Delta C_{DIST,t|PRJ}$, carbon stock change due to non-fire natural disturbance in the project scenario; tCO_2e

Natural disturbance

Option A: Natural Disturbance - Fire

If fires occur ex post in the project area, the area burned shall be delineated. Therefore, via checking the IPCC 2006 Inventory Guidelines/IPCC/, estimation of greenhouse gas emissions from biomass burning shall be calculated as:

$$\Delta C_{DIST-FR,t|PRJ} = \sum_{i=1}^M A_{burn,i,t} * B_{i,t|PRJ} * COMF_i * G_{g,i} * 10^{-3} * GWP_{CH_4} \quad (21)$$

Where:

$\Delta C_{DIST_FR,t PRJ}$	net greenhouse gas emissions resulting from fire disturbance in year t, tCO_2e ;
$A_{burn,i,t}$	area burnt for stratum i at time t, ha;
$B_{i,t PRJ}$	average aboveground biomass stock present in the project scenario but absent in the baseline scenario before burning stratum i, time t; t d. m. ha^{-1} ;
$COMF_i$	combustion factor for stratum i, dimensionless;
$G_{g,i}$	emission factor for stratum i for methane, $g \ kg^{-1}$ dry matter burnt;
GWP_{CH_4}	global warming potential for CH_4 (IPCC default: 21), $tCO_2e \ tCH_4^{-1}$;
i	1, 2, 3 ...M strata; and

t 1, 2, 3, ... t* years elapsed since the start of the IFM project activity.

The average aboveground biomass stock present in the project scenario but absent in the baseline scenario before burning for a particular stratum shall be calculated as:

$$B_{i,t|PRJ} = \sum_{j=1}^J \{V_{EX,i,j|BSL} * BCEF_R\} \quad (22)$$

Where:

$B_{i,t PRJ}$	average aboveground biomass stock present in the project scenario but absent in the baseline before burning for stratum i, time t, t d. m. ha ⁻¹ ;
$V_{EX,i,j BSL}$	mean volume of extracted timber per unit area for species j in stratum i, m ³ ·ha ⁻¹ ;
$BCEF_R$	biomass conversion and expansion factor applicable to wood removals in the project area, t.d.m m ⁻³ ;
i	1, 2, 3 ...M strata;
j	1, 2, 3 ...J tree species; and
t	1, 2, 3, ... t* years elapsed since the start of the IFM project activity.

Option B: Natural Disturbance – Non-Fire

There are no fire disturbance occurred in the project area, therefore, $\Delta C_{DIST_FR,t|PRJ}=0$

Where non-fire natural disturbances occur ex post in the project area, the area disturbed must be delineated.

$$\Delta C_{DIST,t|PRJ} = \sum_{i=1}^M \left(A_{dist,i,t} * \sum_{j=1}^J \{C_{AB,j,i|BSL}\} \right) * \frac{44}{12} \quad (23)$$

Where:

$\Delta C_{DIST,t PRJ}$	net greenhouse gas emissions resulting from non-fire natural disturbance in year t, tCO ₂ e;
$A_{dist,i,t}$	area disturbed for stratum i at time t, ha;
$C_{AB,i BSL}$	carbon stock in aboveground biomass per unit area in stratum i, tC·ha ⁻¹ ;
44/12	ratio of molecular weights of carbon dioxide and carbon, tCO ₂ e tC ⁻¹ ;
i	1, 2, 3 ...M strata;
j	1, 2, 3 ...J tree species; and

t 1, 2, 3, ... t* years elapsed since the start of the IFM project activity.

Via site inspection of the project site after project implemented 4 to 5 years, it is confirmed that there are non-fire natural disturbances occur ex post in the project area, therefore, $\Delta C_{DIST,t|PRJ}=0$.

Illegal logging

Where the PRA (participatory rural appraisal) and the limited sampling indicate degradation is occurring, net carbon stock changes as a result of illegal logging shall be calculated as:

$$\Delta C_{DIST-IL,t|PRJ} = \sum_{i=1}^M \left(A_{DIST-IL,i} * \frac{C_{DIST-IL,i,t|PRJ}}{AP_i} \right) \quad (24)$$

Where:

$\Delta C_{DIST-IL,t PRJ}$	net carbon stock changes as a result of illegal logging at time t, tCO ₂ e;
$A_{DIST-IL,i}$	area potentially impacted by illegal logging in stratum I, ha;
$C_{DIST-IL,i,t PRJ}$	biomass carbon of trees cut and removed through illegal logging in stratum i at time t, tCO ₂ e;
AP_i	total area of illegal logging sample plots in stratum i, ha;
i	1, 2, 3 ...M strata in the in the project case; and
t	1, 2, 3, ... t years elapsed since the projected start of the project activity.

Via site inspection of the project site after project implemented 4 to 5 years and checking the PRA report/^{PRA}, it is confirmed that there are no degradation occurred indicated in PRA and limited sampling, therefore, $\Delta C_{DIST-IL,t|PRJ} = 0$.

Net greenhouse gas emissions in the project scenario

This section calculates $\Delta C_{NET,t|PRJ}$, the net greenhouse gas emissions in the project scenario in year t, in tCO₂e.

The net greenhouse gas emissions in the project scenario are the sum of net greenhouse gas emissions resulting from fire and non-fire forest disturbance, plus any carbon stock changes that occur as a result of illegal logging, minus the annual carbon stock change in the aboveground biomass of trees due to forest growth.

Therefore, net greenhouse gas emissions in the project scenario in year t, is calculated as:

$$\Delta C_{NET,t|PRJ} = (\Delta C_{DIST-FR,t|PRJ} + \Delta C_{DIST,t,PRJ} + \Delta C_{DIST-IL,t|PRJ}) - \Delta C_{AB,t|PRJ} \quad (25)$$

Where:

$\Delta C_{NET,t PRJ}$	net greenhouse gas emissions in the project scenario in year t, tCO ₂ -e
$\Delta C_{DIST,FR,t PRJ}$	net greenhouse gas emissions resulting from fire disturbance in year t, tCO ₂ e
$\Delta C_{DIST,t PRJ}$	net greenhouse gas emissions resulting from non-fire natural disturbance in year t, tCO ₂ e
$\Delta C_{DIST,IL,t PRJ}$	Net carbon stock changes as a result of illegal logging at time t, tCO ₂ e
$\Delta C_{AB,t PRJ}$	annual carbon stock change in aboveground biomass of trees in year t, tCO ₂ e yr ⁻¹ ; and
t	1, 2, 3, t* years elapsed since start of the project activity.

The net greenhouse gas emissions across in the project scenario since the start of the project activity is calculated as:

$$GHG_{NET|PRJ} = \sum_{t=1}^{t^*} \Delta C_{NET,t|PRJ} \quad (26)$$

Where:

$GHG_{NET PRJ}$	net greenhouse gas emissions in the project scenario since the start of the project activity, tCO ₂ e
$\Delta C_{NET,t PRJ}$	net greenhouse gas emissions in the project scenario in year t, tCO ₂ e; and
t	1, 2, 3, t* years elapsed since start of the project activity.

Carbon stock of other timber product from tending and managing instead of commercial harvest in project scenario

Because carbon stock of other timber product from tending and managing instead of commercial harvest in project scenario was same as in baseline scenario, they offset each other.

Leakage

Activity shifting leakage

During site interview with local officer^{/12/} and checking the legal right to harvest^{/LRH/} issued by Forest bureau of Huanjiang Maonan Autonomous County, it is confirmed that the forest timber harvest is strictly controlled by the authority in China. In addition, via reviewing the China Forest Law^{/LAW/}, it is verified that the Law clearly stipulates the punishment for the illegal logging in China, the punishment is confirmed as 5-10 times compensation of replanting and 2-10 times economic penalty.

Therefore, for the project activity, the PP have no right to harvest more in other parcels outside the project activity as defined in the legal right to harvest^{/LRH/} issued by Forest bureau of Huanjiang Maonan Autonomous County and it is proved that the project does not involve in the activity shifting leakage.

Market leakage

Leakage due to market effects is equal to the net emissions from planned timber harvest activities in the baseline scenario multiplied by an appropriate leakage factor:

$$GHG_{LK|LtPF,t^*} = LF_{ME} * GHG_{NET|BSL,t^*} \quad (27)$$

Where:

$GHG_{LK LtPF}$	is total market leakage as a result of IFM LtPF activities, tCO ₂ e;
LF_{ME}	is the dimensionless leakage factor for market-effects calculations;
$GHG_{NET BSL,t^*}$	net greenhouse gas emissions in the baseline scenario in the year t* since the start of the project activity, tCO ₂ e.

The leakage factor is determined by considering where in the country logging will be increased as a result of the decreased timber supply caused by the project.

Leakage Factor Calculation

The leakage factor is determined by considering where in the country logging will be increased as a result of the decreased supply of the timber caused by the project. If the areas liable to be logged have a higher ratio of merchantable biomass to total biomass higher than the project area it is likely that the proportional leakage is higher and vice versa.

If it can be demonstrated that no market-effects leakage will occur within national boundaries, that is if no new concessions are being assigned AND annual extracted volumes cannot be increased within existing national concessions AND illegal logging is absent (or de minimis) in the host country.

Hence the leakage factor is determined for this project as below,

Via checking the Forest law of the People's Republic of China Article 6/26/38/^{LAW/} and Regulations of the People's Republic of China on forestry law Article 28/30/39, it is confirmed that the forest cutting management quota system is implemented in China. As per the law, the National Government issued the maximum timber harvest volume (quota) for provinces and the province government issued the quota to the projects in the geographic area.

In addition, according to Forest law of the People's Republic of China/^{LAW/} for the Guangxi Zhuang Autonomous Region in Article 36, once the quota is issued in Guangxi Zhuang Autonomous Region, the maximum harvest volume for provincial or the projects has been fixed and could not be changed or shifted. Therefore, it is confirmed that through the Law, the harvest volume is not only strictly restricted nationwide, but also province-wide.

Furthermore, via VVB's local expertise, it is confirmed that Guangxi Zhuang Autonomous Region is the key ecologically area in China, forest cutting management quota system and no illegal logging is strictly enforced in this region.

In conclusion, the reduction in harvesting of the project in Guangxi Zhuang Autonomous Region will not cause any increase of quota for any other authorized area.

Besides, via checking the 13th Five-year Forest Harvest Limit/^{FHL}/ issued by State Council (Guohan [2016] No.32)¹, it is confirmed that China regulates that forest are related to national ecological security, and management of harvest volume limit shall be implemented. Hence, during the 13th Five-Year Plan period, the annual forest harvest volume limit is the maximum limit for the annual forest cutting and consumption stock, all regions and departments must strictly abide by the Forest Law and other relevant laws and regulations.

Via checking the 13th Five-year Forest Harvest Limit issued by State Council/^{FHL}/, it is confirmed that the total harvest volume limit from 2016 to 2020 is $4,460.9 \times 10^4 \text{ m}^3$ each year, and the total harvest volume limit of Huanjiang Maonan Autonomous County from 2016 to 2020 is $67.27 \times 10^4 \text{ m}^3$ each year². The planned harvest volume of the project is $26.6 \times 10^4 \text{ m}^3$, accounting 0.59% of the Guangxi volume and 39.5% of local volume. Hence it is verified that the project timber harvest not only just cover very small fraction of total timber harvest in Guangxi Zhuang Autonomous Region but also did not exceed the local harvest volume limit. The implementation of this project will not lead to changes in timber price of market. The stable timber price made that the country logging will not increase as a result of the decreased supply of the timber caused by the project which is confirmed by local expertise of VVB.

Via checking the Forestry law Article 38 and Article 39/^{LAW}/, it is confirmed that the punishment for the illegal logging has been clearly defined. According to the volume and quantity of illegal logging, punishment includes not only 5-10 times compensation of replanting, but also 2-10 times economic penalty. Therefore, implementation of this project will not result in the significant national concession and illegal logging.

And more assessment has been provided as below,

Via checking the Data table of Wood output of Provinces and cities in China from 2015 to 2019/^{DTW}/, it is confirmed that the annual timber production in Guangxi Zhuang Autonomous Region from 2015 to 2019 is $2,106 \times 10^4 \text{ m}^3$, $2,687 \times 10^4 \text{ m}^3$, $3,059 \times 10^4 \text{ m}^3$, $3,175 \times 10^4 \text{ m}^3$, $3,500 \times 10^4 \text{ m}^3$, annual average is $2,905.4 \times 10^4 \text{ m}^3$, and Guangxi Zhuang Autonomous Region is confirmed as the largest timber supply area in China. As per the figure in PD, with the project implementation, it is confirmed that annual supply of wood products in the project area will be reduced by $26.6 \times 10^4 \text{ m}^3$, hence is verified accounting for only 0.92% of the annual supply of wood in Guangxi Zhuang Autonomous Region.

Besides, via checking the Measures for the Implementation of the Forest Law of the People's Republic of China in Guangxi Zhuang Autonomous Region/^{MIFL}/ and based on local expertise of validation team, it is

¹http://www.gov.cn/zhengce/content/2016-02/16/content_5041486.htm

² <http://lyj.gxzf.gov.cn/zfxgkz/fdzdgknr/gggs/t2207085.shtml>

confirmed that in China, all the area should strictly implement the quota system for cutting, so all counties in Guangxi strictly implement the quota system for cutting, and the harvest volume is fixed and could not be changed or shifted. Also, based on local expertise of validation team, it is confirmed that wood procurement costs are highly affected by hauling distances between the forest and the sawmills, potential effect on total timber harvest volumes must be determined within a certain (regional) area where such leakage could likely happen and be related to the conservation project.

Furthermore, via checking the List of annual forest cutting quotas in Guangxi Zhuang Autonomous Region during the 13th Five-Year Plan Period/^{LACQ}, it is confirmed that the maximum timber harvest volume in the counties located nearest to Huanjiang Maonan Autonomous County is far less than the reduction in harvesting within the project area. Hence, it is confirmed that none of the counties that located nearest to Huanjiang Maonan Autonomous County has enough logging quotas to produce more timber to make up for the reductions in the project area.

Besides, most of Guangxi wood production area belongs to remote mountainous area, long-distance transportation is bound to increase sales cost greatly, no one will pay such a large additional cost. Hence, based on above demonstration, it is verified that even if the project is implemented, the amount of logging in other counties of Guangxi will not increase due to the quota system for cutting is strictly controlled by local government in each Five-Year Plan Period.

In addition, via checking the Forest Resources Planning and Design Survey Report of Huanjiang Maonan Autonomous County/^{FRP}, it is confirmed that all forests in other areas outside the project area are young and middle-aged forest or ecological public-welfare forests, which are not allowed to be commercial logged in comply with the Article 551 of Forest law of the People's Republic of China. Hence, it is confirmed that the ratio of merchantable biomass to total biomass in other areas outside the project area is 0%.

And due to the project area is all timber forests, commercial logging was the main task before the implementation of the project, hence, it is confirmed that the ratio of merchantable biomass to total biomass in project area is 100% with merchantable timber volume of 1,296,901.25 m³ and total volume of 1,296,901.25 m³.

In conclusion, it is confirmed that the ratio of merchantable biomass to total biomass in project area is 100% which was obviously higher than that of other areas outside the project area with ratio of 0%.

However, based on the above assessment, the local logging quotas are strictly controlled and commercial logging plans are strictly established by national government and local government, hence the logging quantities in the project area cannot be replaced by other regions.

So based on above demonstration, it is concluded that the amount of logging in other areas will not increase and the project hasn't caused market leakage.

Therefore, based on above assessment in compliance with the applied methodology and VCS standard 4.1/^{VCSS}, it is verified that $LF_{ME} = 0$.

However, in order to demonstrated the market leakage factor of the proposed project in a more conservative way, PP discuss it again according to the VCS Standard Section 3.14.8, 3.14.9 and the remained option stated in the VM0010(V1.3) Section 8.3.2. According VCS Standard(3.14.8), Market leakage assessments shall occur per the requirements set out in the applied methodology(s) at validation and verification. According VCS Standard (3.14.9), Notwithstanding the requirement set out in Section 3.14.8, IFM projects may apply the appropriate market leakage discount factor identified in Table 3 to

the net change in carbon stock associated with the activity that reduces timber harvest to determine market leakage”.

As above assessment, VVB confirmed that Guangxi Huangjiang IFM project is a logged to protected forest IFM activity. The project activities permanently protect the forests in the project area, and harvesting activity is permanently stopped. As mentioned earlier, even if the market demand for timber increases, under the existing legal framework, annual extracted volumes cannot be increased. So project activities are more in line with option 3 (IFM activity that substantially reduces harvest levels permanently). And market leakage discount factor conditional upon where timber harvest is likely to be shifted follow the VCS Standard table 3 and VCS Methodology. Therefore, each project must calculate within each stratum the ratio of merchantable biomass to total biomass (PMP_i). This shall then be compared to the ratio of merchantable biomass to total biomass for each forest type (PML_{FT}).

Via checking the calculation process, it is confirmed that PP select Guangxi Zhuang Autonomous Region which located in the subtropical area with subtropical monsoon climate and dominated by forest type of Subtropical humid forest as the reference area (harvest most likely to be displaced) which is verified as reasonable, since China has a vast and varied territory across tropical, subtropical, temperate, cold temperate, cold and its climate, elevation and wood supply and demand are huge different based on VVB's expertise. PP has set 3 stratum based on the tree species which are Broad-leaved Tree, Chinese Fir and Pinus Massoniana for the project. Thus, it is confirmed that PML_{FT} is $PML_{\text{Subtropical humid forest}}$.

And in the baseline scenario modeling, PP has set 3 stratum based on the tree species which are Chinese Fir, Pinus Massoniana and Broad-leaf trees for the project. Thus, PMP_i is $PMP_{\text{Chinese Fir}}$, $PMP_{\text{Pinus Massoniana}}$ and $PMP_{\text{Broad-leaf trees}}$.

Then the final calculation results are confirmed as below,

$$PMP_{\text{Broad-leaved trees}} = 124,791 \text{ m}^3 / 9,914,981 \text{ m}^3 = 1.26\%$$

$$PMP_{\text{Chinese Fir}} = 62,676 \text{ m}^3 / 5,891,553 \text{ m}^3 = 1.06\%$$

$$PMP_{\text{Pinus Massoniana}} = 62,716 \text{ m}^3 / 1,774,702 \text{ m}^3 = 3.53\%$$

$$PML_{\text{Subtropical humid forest}} = 4,460.9 * 10^4 \text{ m}^3 / 22,272.16 * 10^4 \text{ m}^3 = 20.03\%$$

$$PML_{\text{Subtropical humid forest}} \text{ is } 1,491.4\% \text{ greater than } PMP_{\text{Broad-leaved trees}}$$

$$PML_{\text{Subtropical humid forest}} \text{ is } 1,782.7\% \text{ greater than } PMP_{\text{Chinese Fir}}$$

$$PML_{\text{Subtropical humid forest}} \text{ is } 466.8\% \text{ greater than } PMP_{\text{Pinus Massoniana}}$$

Via checking the updated ER calculation sheet, it is confirmed that PMP_i data is correctly calculated and the data sources are checked as Timber Harvest Plan/^{THP}/ and the data of the Forest Resources Planning and Design Survey Report/^{FRP}/, the referred values are confirmed as correctly derived from data sources. PML data is confirmed as come from the 13th Five-year Forest Harvest Limit/^{FHL}/ issued by State Council (Guohan [2016] No.32) and 2016 China forestry statistical yearbook/^{cfsr}/, the referred values are confirmed as correctly derived from data sources.

The ER calculation sheet is checked by validation team, it is confirmed that the calculation and parameters are correct, then based on the above calculation results, it is verified that the PML_{FT} is > 15% greater than PMP_i , the ratio of merchantable biomass to total biomass is higher within the area to which harvesting is displaced compared to the project area. Therefore, whether according to VCS Standard table 3 or VCS Methodology, the market leakage discount factor is finally determined as 20%.

In summary, $LF_{ME} = 0.2$.

And this ratio has been used for the calculation of leakage and the leakage value has been finally included in the calculation of Net GHG Emission Reductions and/or Removals.

Net GHG Emission Reductions and/or Removals

In line with the applied methodology VM0010/VM0010/, the net Project Greenhouse Gas Emission Reductions are calculated as

$$GHG_{CREDITS|LtPF,t^*} = GHG_{NET|BSL,t^*} - GHG_{NET|PRJ,t^*} - GHG_{LK|LtPF,t^*} \quad (28)$$

Where:

$GHG_{CREDITS LtPF,t^*}$	project greenhouse gas credits associated with the implementation of improved forest management (IFM) activities in the year t^* since the start of the project activity, in the project scenario, tCO_2e
$GHG_{NET BSL,t^*}$	net greenhouse gas emissions in the baseline scenario in the year t^* since the start of the project activity, tCO_2e
$GHG_{NET PRJ,t^*}$	net greenhouse gas emissions in the project scenario in the year t^* since the start of the project activity, tCO_2e ; and
$GHG_{LK LtPF,t^*}$	total greenhouse gas emissions due to leakage arising outside the project boundary as a result of the implementation of improved forest management (IFM) activities in the year t^* since the start of the project activity, in the project scenario, tCO_2e

Project Verified Carbon Units

In line with the applied methodology, it is confirmed that the number of Verified Carbon Units (VCUs) for each year t in the project crediting period is the greenhouse gas emission reductions and removals adjusted for uncertainty and risk.

Adjustment for uncertainty

Estimated greenhouse gas emissions and emission reductions from IFM activities have uncertainties associated with parameters and coefficients including estimates of area, carbon stocks, regrowth and expansion factors. It is assumed that the uncertainties associated with input data are available, either as default uncertainty values given in most recent IPCC guidelines, or as statistical estimates based on sampling.

Uncertainty at all times is defined at the 95% confidence interval where the estimated variance exceeds +/- 15 percent from the mean. Procedures including stratification and the allocation of sufficient measurement plots will help ensure that low uncertainty results and ultimately full crediting can result.

Uncertainties arising from the measurement and monitoring of carbon pools and greenhouse gases shall always be quantified. Errors in each pool shall be weighted by the size of the pool so that projects may reasonably target a lower precision level in pools that only form a small proportion of the total stock.

For both the baseline and the with-project case the total uncertainty is equal to the square root of the sum of the squares of each component uncertainty and is calculated at the time of reporting through propagating the error in the baseline stocks and the error in the project stocks.

Therefore, total uncertainty for LtPF project is calculated as:

$$U_{TOTAL|LtPF} = \sqrt{U^2_{PRJ} + U^2_{BSL}} \quad (29)$$

Where:

$U_{total LtPF}$	total uncertainty for LtPF Project, dimensionless;
U_{PRJ}	total uncertainty for the improved forest management activities in the project scenario, dimensionless; and
U_{BSL}	total uncertainty for the baseline scenario, dimensionless.

Via checking the VCS-PD, it is confirmed that PP has justified the selection of uncertainty propagation as below method defined in the applied methodology,

If $U_{total|LtPF} \leq 0.15$ then no deduction will result for uncertainty.

If $U_{total|LtPF} > 0.15$ then the amount of greenhouse gas emission credits associated with IFM activities will be deducted as follows:

$$Credits_{total|LtPF} = GHG_{credits|LtPF} * (1 - U_{total|LtPF}) \quad (30)$$

Where:

$Credits_{total LtPF}$	total greenhouse gas credits adjusted for uncertainty for each year t in the project crediting period;
$GHG_{credits LtPF}$	project greenhouse gas credits associated with the implementation of improved forest management (IFM) activities in the project scenario, tCO ₂ e/year ¹ ; and
$U_{total LtPF}$	total uncertainty for LtPF Project, dimensionless.

Calculation of verified carbon units

The amount of greenhouse gas credits estimated above shall be adjusted to account for risk.

The risk need to be justified in compliance with the most recent version of the VCS Tool for AFOLU Non-Permanence Risk Analysis/^{NPRT/} and Buffer Determination. Refer to section 3.4 below for the detail Non-Permanence Risk Analysis for this project.

Therefore, the amount of VCU's that can be issued at time $t=t_2$ (the date of verification) for monitoring period $T=t_2-t_1$, is calculated as:

$$VCU_{net|LtPF} = (Credits_{total,t2|LtPF} - Credits_{total,t1|LtPF}) - Bu_{|IFM-VCS} \quad (31)$$

Where:

$VCU_{net LtPF}$	number of verified carbon units; dimensionless;
$Credits_{total,t1 LtPF}$	net anthropogenic greenhouse gas removals by sinks, as estimated for $t^*=t_1$ in tCO ₂ e;
$Credits_{total,t2 LtPF}$	net anthropogenic greenhouse gas removals by sinks, as estimated for $t^*=t_2$ in tCO ₂ e; and
$Bu_{ IFM-VCS}$	total number of credits withheld in VCS buffer account

Calculation process and result of Net GHG Emission Reductions and/or Removals

Calculation process and result of Baseline emissions

Based on the above calculation equations listed for calculation of the baseline emissions $GHG_{NET|BSL}$, the basic parameters used in the equations are listed and assessed as below table

Basic Parameters	Type	Value	Unit	Assessment of Data by VVB
Total Area of Stratum	Broad-leaved tree	4,440.05	ha	The data listed in both PD and ER sheet/ ^{XLS/} are confirmed as consistent with Timber harvest plan/ ^{THP/}
	Chinese fir	2,736.96	ha	
	Pinus massoniana	2,169.71	ha	
$V_{j,i,BSL}$	Broad-leaved tree	152.95	m ³ /ha	
	Chinese fir	115.72	m ³ /ha	
	Pinus massoniana	138.76	m ³ /ha	
$V_{EX,j,i BSL,y}$	Refer to ER sheet		m ³ /ha	The data listed in both PD and ER sheet/ ^{XLS/} are confirmed as consistent with "Land Use Change and Forestry GHG Inventory (2013)" of "Second National Information Notification on China Climate Change"/ ^{LUCF/}
$A_{i,p,y}$	Refer to ER sheet		ha	
D_j	Broad-leaved tree	0.482	t d.m. m ⁻³	
	Chinese fir	0.307	t d.m. m ⁻³	
	Pinus massoniana	0.380	t d.m. m ⁻³	
BEF	Broad-leaved tree	1.514	dimensionless	
	Chinese fir	1.634	dimensionless	
	Pinus massoniana	1.472	dimensionless	
$BCEFR$	Broad-leaved tree	0.730	t d.m. m ⁻³	
	Chinese fir	0.502	t d.m. m ⁻³	
	Pinus massoniana	0.559	t d.m. m ⁻³	

CF _j	Broad-leaved tree/ Chinese fir/ Pinus massoniana	0.5	tC t d.m. ⁻¹	The data listed in both PD and ER sheet ^{/XLS/} are confirmed as consistent with default values provided in VM0010 version 1.3/VM0010/
WW	Broad-leaved tree/ Chinese fir/ Pinus massoniana	24%	kg kg ⁻¹	
SLF	Broad-leaved tree/ Chinese fir/ Pinus massoniana	0.12	kg kg ⁻¹	
OF	Broad-leaved tree/ Chinese fir/ Pinus massoniana	0.86	kg kg ⁻¹	
Regrowth rate in baseline scenario	Broad-leaved tree	2.06	m ³ .ha ⁻¹ .yr ⁻¹	The data listed in both PD and ER sheet ^{/XLS/} are confirmed with IPCC Guidelines for National Greenhouse Gas Inventories (2006), Table4.9/IPCC/(1.5 td.m./ha/y * BCEF _R)/
	Chinese fir	2.99	m ³ .ha ⁻¹ .yr ⁻¹	
	Pinus massoniana	2.68	m ³ .ha ⁻¹ .yr ⁻¹	

Hence, based on the above calculation equations listed for calculation of the baseline emissions $GHG_{NET|BSL}$, the ex-ante baseline emissions for the crediting period are calculated as below

Year	$\Delta C_{NET BSL}$ (tCO ₂ e)	$GHG_{NET BSL}$ (tCO ₂ e)
01-July-2016~30-June-2017	22,203	81,411
01-July-2017~30-June-2018	24,300	89,099
01-July-2018~30-June-2019	30,024	110,088
01-July-2019~30-June-2020	35,356	129,639
01-July-2020~30-June-2021	35,102	128,707
01-July-2021~30-June-2022	14,601	53,537
01-July-2022~30-June-2023	14,601	53,537
01-July-2023~30-June-2024	14,601	53,537
01-July-2024~30-June-2025	14,601	53,537
01-July-2025~30-June-2026	14,601	53,537
01-July-2026~30-June-2027	11,948	43,808
01-July-2027~30-June-2028	9,360	34,322
01-July-2028~30-June-2029	6,436	23,600
01-July-2029~30-June-2030	3,227	11,832
01-July-2030~30-June-2031	406	1,489
01-July-2031~30-June-2032	406	1,489
01-July-2032~30-June-2033	406	1,489
01-July-2033~30-June-2034	406	1,489
01-July-2034~30-June-2035	406	1,489
01-July-2035~30-June-2036	406	1,489
Total	253,398	929,126
Average	12,669	46,456

Calculation process and result of Project emissions

Based on the above calculation equations listed for calculation of the project emissions $GHG_{NET|PRJ}$, the basic parameters used in the equations are listed and assessed as below table,

Basic Parameters	Type	Value	Unit	Assessment of Data by VVB
Total Area of Stratum	Broad-leaved tree	4,440.05	ha	The data listed in both PD and ER sheet ^{/XLS/} are confirmed as consistent with Timber harvest plan ^{/THP/} and calculated from Forest second class investigation ^{/FSCI/}
	Chinese fir	2,736.96	ha	
	Pinus massoniana	2,169.71	ha	
D_j	Broad-leaved tree	0.482	t d.m. m ⁻³	The data listed in both PD and ER sheet ^{/XLS/} are confirmed as consistent with "Land Use Change and Forestry GHG Inventory (2013)" of "Second National Information Notification on China Climate Change" ^{/LUCF/}
	Chinese fir	0.307	t d.m. m ⁻³	
	Pinus massoniana	0.380	t d.m. m ⁻³	
BEF	Broad-leaved tree	1.514	dimensionless	The calculation is verified as correct based on values of BEF and D_j
	Chinese fir	1.634	dimensionless	
	Pinus massoniana	1.472	dimensionless	
$BCEFR$	Broad-leaved tree	0.730	t d.m. m ⁻³	The data listed in both PD and ER sheet ^{/XLS/} are confirmed as consistent with default values provided in VM0010 version 1.3 ^{/VM0010/}
	Chinese fir	0.502	t d.m. m ⁻³	
	Pinus massoniana	0.559	t d.m. m ⁻³	
CF_j	Broad-leaved tree/ Chinese fir/ Pinus massoniana	0.5	tC t d.m. ⁻¹	The data listed in both PD and ER sheet ^{/XLS/} are confirmed as consistent with default values provided in VM0010 version 1.3 ^{/VM0010/}
Ongoing growth rate in project scenario	Broad-leaved tree	3.55	m ³ .ha ⁻¹ .yr ⁻¹	The data listed in both PD and ER sheet ^{/XLS/} are confirmed with the statement on the growth volume in Huanjiang ^{/SGV/}
	Chinese fir	4.96	m ³ .ha ⁻¹ .yr ⁻¹	
	Pinus massoniana	5.73	m ³ .ha ⁻¹ .yr ⁻¹	

Via checking the timber harvest plan^{/THP/} based on the forest inventories conducted by local forestry bureau, it is confirmed that the forest inventory didn't include the detail of each tree in the sub-compartment, so PP does not use allometric equation to estimate the project emission as ex ante approach. Via checking the applied methodology^{/VM0010/}, it is verified that use pre-existing forest inventory data and ongoing growth rate to predict the ex ante estimated project emission is acceptable.

Via checking the statement on the growth volume in Huanjiang^{/SGV/}, it is confirmed that on-going growth rate is predicted by the local forest bureau based on the historical data, so the emissions of each year during the whole crediting period are same. In the subsequent monitoring report during the verification, the actual stock volume will be measured, then project emission value will be re-calculated within the monitoring period.

Hence, based on the above calculation equations listed for calculation of the project emissions $GHG_{NET|PRJ}$, the ex-ante project emissions for the crediting period are calculated as below,

Year	$\Delta C_{AB,t PRJ}$	$\Delta C_{DIST_FR,t PRJ}$	$\Delta C_{DIST,t PRJ}$	$\Delta C_{DIST_IL,t PRJ}$	$\Delta C_{NET,t PRJ}$
01-July-2016~30-June-2017	46,321	0	0	0	-46,321
01-July-2017~30-June-2018	46,321	0	0	0	-46,321
01-July-2018~30-June-2019	46,321	0	0	0	-46,321
01-July-2019~30-June-2020	46,321	0	0	0	-46,321
01-July-2020~30-June-2021	46,321	0	0	0	-46,321
01-July-2021~30-June-2022	46,321	0	0	0	-46,321
01-July-2022~30-June-2023	46,321	0	0	0	-46,321
01-July-2023~30-June-2024	46,321	0	0	0	-46,321
01-July-2024~30-June-2025	46,321	0	0	0	-46,321
01-July-2025~30-June-2026	46,321	0	0	0	-46,321
01-July-2026~30-June-2027	46,321	0	0	0	-46,321
01-July-2027~30-June-2028	46,321	0	0	0	-46,321
01-July-2028~30-June-2029	46,321	0	0	0	-46,321
01-July-2029~30-June-2030	46,321	0	0	0	-46,321
01-July-2030~30-June-2031	46,321	0	0	0	-46,321
01-July-2031~30-June-2032	46,321	0	0	0	-46,321
01-July-2032~30-June-2033	46,321	0	0	0	-46,321
01-July-2033~30-June-2034	46,321	0	0	0	-46,321
01-July-2034~30-June-2035	46,321	0	0	0	-46,321
01-July-2035~30-June-2036	46,321	0	0	0	-46,321
Total	926,420	0	0	0	-926,420
Average	46,321	0	0	0	-46,321

Forest disturbance in the project scenario:

According to the analysis in section 3.2, $\Delta C_{DIST_FR,t|PRJ}$, $\Delta C_{DIST,t|PRJ}$ and $\Delta C_{DIST_IL,i,t|PRJ}$ are all = 0.

Therefore,

$$GHG_{LK|LtPF} = 0$$

Uncertainty for the baseline scenario

Via checking the “IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories”/IPCC/, it is confirmed that the uncertainty in the baseline scenario is associated with parameters and coefficients including estimates of area, carbon stocks, regrowth and expansion factors, the calculation process will follow the two rules A and B below:

“Rule A: Where uncertainties are to be combined by addition, the standard deviation of the sum will be the square root of the sum of the squares of the standard deviations of the quantities that are added with the standard deviations all expressed in absolute terms (this rule is exact for uncorrelated variables).”

Following this rule, a simple equation can be derived for the uncertainty of the sum, that when expressed in percentage terms become:

$$U_{total} = \frac{\sqrt{(U_1 \times E_1)^2 + (U_2 \times E_2)^2 + \dots + (U_n \times E_n)^2}}{E_1 + E_2 + \dots + E_n} \quad (32)$$

Where:

- U_{total} is the percentage uncertainty in the sum of the quantities (half the 95% confidence interval divided by the total (i.e. mean) and expressed as a percentage);
- E_i and U_i are the uncertain quantities and the percentage uncertainties associated with them, respectively

“Rule B: Where uncertain quantities are to be combined by multiplication, the same rule applies except that the standard deviations must all be expressed as fractions of the appropriate mean values (this rule is approximate for all random variables)”

A simple equation can also be derived for the uncertainty of the product, expressed in percentage terms:

$$U_{total} = \sqrt{U_1^2 + U_2^2 + \dots + U_n^2} \quad (33)$$

Where:

- U_{total} is the percentage uncertainty in the sum of the quantities (half the 95% confidence interval divided by the total (i.e. mean) and expressed as a percentage);
- E_i and U_i are the percentage uncertainties associated with each of the quantities

The uncertainty is calculated per stratum by dividing the 95% confidence interval by the mean value of the uncertainty quantities. The corresponding standard deviation is calculated over the measured plot values of the uncertainty quantities. The 95% confidence interval is calculated based on the standard deviation and the t-value for n-1 degree of freedom of plots per stratum.

Hence, for determination of the uncertainty for this project, it is confirmed that the uncertainty in the baseline scenario is associated with parameters and coefficients including estimates of area, carbon stocks, regrowth and expansion factors which is in compliance with the IPCC, the calculation of the 4 parameters and coefficients are shown below:

1) Uncertainty of Area:

In the baseline scenario, the values of area of every stratum are confirmed by checking the field survey inventory data^{/FVI/} and legal right of harvest^{/LRH/}, no data are from measurement and monitoring.

Therefore, it is deemed as 0 for ex-date and will be monitored in the period of verification.

2) Uncertainty of expansion factors

The Sample size, Sample mean and Standard error of expansion factors are confirmed by checking the Forestry Part of China's greenhouse gas emissions list^{LUCF}/ divided as tree species, and the uncertainty of expansion factors are calculated as below

For Broad-leaved tree:

Uncertainty of BCEF- Broad-leaved tree		3.02%	
Uncertainty of BEF Broad-leaved tree	2.99%	Uncertainty of D- Broad-leaved tree	0.42%
BEF		D	
Sample size	153	Sample size	189
Sample mean (BEF)	1.514	Sample mean (D)	0.443
Standard deviation	0.283	Standard deviation	0.013
Average error	0.023	Average error	0.001
Confidence level	0.95	Confidence level	0.95
Degree of freedom	152	Degree of freedom	188
Two-sided Student's t-value	1.976	Two-sided Student's t-value	1.973
Allowable error	0.045	Allowable error	0.002
Lower confidence limit	1.469	Lower confidence limit	0.441
Upper confidence limit	1.559	Upper confidence limit	0.445
Confidence interval	0.045	Confidence interval	0.002

For Chinese fir:

Uncertainty of BCEF- Chinese fir		2.21%	
Uncertainty of BEF- Chinese fir	2.06%	Uncertainty of D- Chinese fir	0.80%
BEF		D	
Sample size	71	Sample size	54
Sample mean (BEF)	1.323	Sample mean (D)	0.307
Standard deviation	0.115	Standard deviation	0.009
Average error	0.014	Average error	0.001
Confidence level	0.95	Confidence level	0.95
Degree of freedom	70	Degree of freedom	53
Two-sided Student's t-value	1.994	Two-sided Student's t-value	2.006
Allowable error	0.027	Allowable error	0.002
Lower confidence limit	1.296	Lower confidence limit	0.305
Upper confidence limit	1.350	Upper confidence limit	0.309
Confidence interval	0.027	Confidence interval	0.002

For Pinus massoniana:

Uncertainty of BCEF- Pinus massoniana		2.38%	
Uncertainty of BEF- Pinus massoniana	1.82%	Uncertainty of D- Pinus massoniana	1.54%
BEF		D	

Sample size	68	Sample size	43
Sample mean (BEF)	1.305	Sample mean (D)	0.380
Standard deviation	0.098	Standard deviation	0.019
Average error	0.012	Average error	0.003
Confidence level	0.95	Confidence level	0.95
Degree of freedom	67	Degree of freedom	42
Two-sided Student's t-value	1.996	Two-sided Student's t-value	2.018
Allowable error	0.024	Allowable error	0.006
Lower confidence limit	1.281	Lower confidence limit	0.374
Upper confidence limit	1.329	Upper confidence limit	0.386
Confidence interval	0.024	Confidence interval	0.006

3) Uncertainty of carbon stock:

The calculation of uncertainty of carbon stock is based on the uncertainty of volume in every stratum multiply by the uncertainty of expansion factors using formula (32) as above:

Uncertainty of carbon stock- Broad-leaved tree	4.25%	Uncertainty of carbon stock- Chinese fir	5.32%	Uncertainty of carbon stock- Pinus massoniana	4.24%
Uncertainty of volume- Broad-leaved tree	2.99%	Uncertainty of volume – Chinese fir	4.84%	Uncertainty of volume – Pinus massoniana	3.51%
carbon stock- Broad-leaved tree	274488.36	carbon stock- Chinese fir	115567.36	carbon stock- Pinus massoniana	109849.82
Area(ha)	4440.05	Area(ha)	2736.96	Area(ha)	2169.71
Sample size	646	Sample size	310	Sample size	349
Sample mean (m ³ /ha)	152.95	Sample mean (m ³ /ha)	115.72	Sample mean (m ³ /ha)	138.76
Standard deviation	59.40	Standard deviation	50.30	Standard deviation	46.50
Average error	2.34	Average error	2.86	Average error	2.49
Confidence level	0.95	Confidence level	0.95	Confidence level	0.95
Degree of freedom	645	Degree of freedom	309	Degree of freedom	348
Two-sided Student's t- value	1.96	Two-sided Student's t- value	1.96	Two-sided Student's t- value	1.96
Allowable error	4.58	Allowable error	5.60	Allowable error	4.88
Lower confidence limit	148.37	Lower confidence limit	110.12	Lower confidence limit	133.88
Upper confidence limit	157.53	Upper confidence limit	121.32	Upper confidence limit	143.64

Confidence interval	4.58	Confidence interval	5.60	Confidence interval	4.88
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4) Uncertainty of regrowth

The uncertainty of regrowth is only associated with the parameter RGR_i , via checking the National Forest Resource Continuous Investigation Technical Regulation/^{NFRCI} issued by the State Forestry Bureau, it is confirmed that the uncertainty of 10% is adopted properly and conservative for the project, and based on the local expertise from the validation team, it is confirmed that the value is based on the expertise of the national forest authority and is deemed as credible and reasonable.

Based on the calculation of the above four parameters and coefficients, the calculation results of $U_{Broad-leaved\ tree|BSL}$, $U_{Chinese\ fir|BSL}$ and $U_{Pinus\ massoniana|BSL}$ are confirmed as correct as listed in PD and ER sheet.

Then, based on the number of 3 strata in the project activity, the uncertainty across combined strata is calculated with the revised equation below:

$$U_{|BSL} = \frac{\sqrt{(U_{Broad-leaved\ Tree|BSL} \times E_{Broad-leaved\ Tree|BSL})^2 + (U_{Chinese\ fir|BSL} \times E_{Chinese\ fir|BSL})^2 + (U_{Pinus\ massoniana|BSL} \times E_{Pinus\ massoniana|BSL})^2}}{E_{Broad-leaved\ Tree|BSL} + E_{Chinese\ fir|BSL} + E_{Pinus\ massoniana|BSL}} \quad (34)$$

Where:

$U_{ BSL}$	Total uncertainty in baseline scenario; %
$U_{1 BSL}$	Uncertainty in baseline scenario in stratum Masson Pine; %;
$U_{2 BSL}$	Uncertainty in baseline scenario in stratum Chinese Fir; %;
$U_{3 BSL}$	Uncertainty in baseline scenario in stratum Hard Broad-Leaved tree; %;
$E_{1 BSL}$	Sum of net change in carbon stock in the baseline scenario in stratum Masson Pine in the baseline case; t CO ₂ e
$E_{2 BSL}$	Sum of net change in carbon stock in the baseline scenario in stratum Chinese Fir in the baseline case; t CO ₂ e
$E_{3 BSL}$	Sum of net change in carbon stock in the baseline scenario in stratum Hard Broad-Leaved tree in the baseline case; t CO ₂ e

In conclusion, the calculation result of uncertainty for baseline scenario $U_{|BSL}$ is confirmed as 0.92% which is verified as correctly calculated.

Uncertainty for the project scenario:

The uncertainty for the project is calculated according to formular (32) as above, via checking the PD and ER sheet, it is confirmed that the calculation result of uncertainty for project scenario $U_{|PRJ}$ is confirmed as 6.18% which is verified as correctly calculated.

Total uncertainty:

Total uncertainty for this project is calculated according to the follow equation:

$$U_{\text{Total LtPF}} = \sqrt{U_{\text{PRJ}}^2 + U_{\text{BSL}}^2} = \sqrt{0.92\%^2 + 6.18\%^2} = 6.25\% = 0.0625$$

Finally, in comply with the methodology, if $U_{\text{total, LtPF}} \leq 0.15$ then no deduction will result for uncertainty, due to the U_{total} is calculated less than 0.15, then no deduction will result from the uncertainty.

Calculation of verified carbon units

As per the assessment to the NON-PERMANENCE RISK REPORT/NPRR/ in section 3.4 below, it is confirmed that the overall risk rating is 23, then it means that 23% of the total emission reductions should be deducted for the carbon pool.

Then finally the verified carbon unit from this project is calculated in below table

Year	Estimated baseline emissions or removals (tCO ₂ e)	Estimated project emissions or removals (tCO ₂ e)	Estimated leakage emissions (tCO ₂ e)	Estimated net GHG emission reductions or removals (tCO ₂ e)	Estimated net GHG emission reductions or removals with buffer deduction (tCO ₂ e)
01/07/2016-30/06/2017	81,411	-46,321	16,282	111,450	85,816
01/07/2017-30/06/2018	89,099	-46,321	17,819	117,601	90,553
01/07/2018-30/06/2019	110,088	-46,321	22,017	134,392	103,482
01/07/2019-30/06/2020	129,639	-46,321	25,927	150,033	115,525
01/07/2020-30/06/2021	128,707	-46,321	25,741	149,287	114,950
01/07/2021-30/06/2022	53,537	-46,321	10,707	89,151	68,645
01/07/2022-30/06/2023	53,537	-46,321	10,707	89,151	68,645
01/07/2023-30/06/2024	53,537	-46,321	10,707	89,151	68,645
01/07/2024-30/06/2025	53,537	-46,321	10,707	89,151	68,645
01/07/2025-30/06/2026	53,537	-46,321	10,707	89,151	68,645
01/07/2026-30/06/2027	43,808	-46,321	8,761	81,368	62,653
01/07/2027-30/06/2028	34,322	-46,321	6,864	73,779	56,809
01/07/2028-30/06/2029	23,600	-46,321	4,720	65,201	50,205
01/07/2029-30/06/2030	11,832	-46,321	2,366	55,787	42,955
01/07/2030-30/06/2031	1,489	-46,321	297	47,513	36,585

01/07/2031-30/06/2032	1,489	-46,321	297	47,513	36,585
01/07/2032-30/06/2033	1,489	-46,321	297	47,513	36,585
01/07/2033-30/06/2034	1,489	-46,321	297	47,513	36,585
01/07/2034-30/06/2035	1,489	-46,321	297	47,513	36,585
01/07/2035-30/06/2036	1,489	-46,321	297	47,513	36,585
Total	929,126	926,420	185,814	1,669,732	1,285,683
Average	46,456	46,321	9,290	83,486	64,284

CAR 16, CAR 17, CAR 18, CAR 19, CAR 20, CAR 21, CAR 22 and CAR 23 were raised and successfully closed. Refer to Appendix 4 for detail assessment.

3.3.7 Methodology Deviations

There are no any methodology deviations applied to the project.

3.3.8 Monitoring Plan

1. Data and parameters available at validation

Please refer to the following tables for assessment of each parameter determined ex-ante:

$V_{l,j,i,sp}$	Merchantable volume for tree l of species j in sample plot sp in stratum i
Title in line with Methodology?	Yes
Data unit correctly expressed?	Yes, m ³
Appropriate description?	Yes
Source clearly referenced? (appropriate?)	The source is from timber harvest plan/ ^{THP} /. The applied values from the timber harvest plan have been compared with applying appropriate allometric equations to the same dbh and height. As a result it turned out that the values in the timber harvest plan are similar but more conservative and have thus been applied for the baseline determination of the project/ ^{XLS} /.
Correct value provided?	Yes – Refer to ER sheet for details/ ^{XLS} /
Has this value been verified?	Yes. The value has been verified against the data source timber harvest plan/ ^{THP} /. And the Allometric equations will be verified by verification of equation conditions and additional field verification
Choice of data correctly justified?	Yes
Measurement method correctly described?	N/A

CF_j	Carbon fraction of dry matter for species j
Title in line with Methodology?	Yes

Data unit correctly expressed?	Yes, tC·td.m. ⁻¹
Appropriate description?	Yes
Source clearly referenced? (appropriate?)	The source is default value in the applied methodology VM0010 version 1.3/ ^{VM0010/}
Correct value provided?	Yes – 0.5 is the default value in Meth.
Has this value been verified?	Yes. The value has been verified against the data source applied methodology VM0010 version 1.3/ ^{VM0010/} .
Choice of data correctly justified?	Yes
Measurement method correctly described?	N/A

D _j	Basic wood density of species j in t d.m. m ⁻³									
Title in line with Methodology?	Yes									
Data unit correctly expressed?	Yes, t d.m. m ⁻³									
Appropriate description?	Yes									
Source clearly referenced? (appropriate?)	The source is from "Land Use Change and Forestry GHG Inventory (2013)" of "Second National Information Notification on China Climate Change"/LUCF/ which is in line with the requirement in the applied methodology VM0010 version 1.3/VM0010/									
Correct value provided?	<table><tr><td>Tree species</td><td>D_j</td></tr><tr><td>Broad-leaved tree</td><td>0.482</td></tr><tr><td>Chinese fir</td><td>0.307</td></tr><tr><td>Pinus massoniana</td><td>0.380</td></tr></table>		Tree species	D _j	Broad-leaved tree	0.482	Chinese fir	0.307	Pinus massoniana	0.380
Tree species	D _j									
Broad-leaved tree	0.482									
Chinese fir	0.307									
Pinus massoniana	0.380									
Has this value been verified?	Yes. The value has been verified against the data source "Land Use Change and Forestry GHG Inventory (2013)" of "Second National Information Notification on China Climate Change"/LUCF/									
Choice of data correctly justified?	Yes									
Measurement method correctly described?	N/A									

f_j (X, Y...)	Allometric equation(s) for species j linking measured tree variable(s) to aboveground biomass of living trees	
Title in line with Methodology?	Yes	
Data unit correctly expressed?	Yes, t d.m. tree ⁻¹	
Appropriate description?	Yes	
Source clearly referenced? (appropriate?)	The source will be from National species-, genus-, family-specific equations which is in line with the requirement in the applied methodology VM0010 version 1.3/ ^{VM0010/}	
Correct value provided?	Yes -	
Has this value been verified?	Yes. The value has been verified against the data source from the statement by the local forest authority	
Choice of data correctly justified?	Yes	
Measurement method correctly described?	N/A	

BCEF_R	Biomass conversion and expansion factor applicable to wood removals in the project area
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Title in line with Methodology?	Yes								
Data unit correctly expressed?	Yes, t d.m. m ⁻³								
Appropriate description?	Yes								
Source clearly referenced? (appropriate?)	The source is from "Land Use Change and Forestry GHG Inventory (2013)" of "Second National Information Notification on China Climate Change"/LUCF/ which is in line with the requirement in the applied methodology VM0010 version 1.3/VM0010/								
Correct value provided?	Yes – <table border="1"> <tr> <td>Tree species</td><td>BCEF_R</td></tr> <tr> <td>Broad-leaved tree</td><td>0.730</td></tr> <tr> <td>Chinese fir</td><td>0.502</td></tr> <tr> <td>Pinus massoniana</td><td>0.559</td></tr> </table>	Tree species	BCEF _R	Broad-leaved tree	0.730	Chinese fir	0.502	Pinus massoniana	0.559
Tree species	BCEF _R								
Broad-leaved tree	0.730								
Chinese fir	0.502								
Pinus massoniana	0.559								
Has this value been verified?	Yes. The value has been verified against the data source "Land Use Change and Forestry GHG Inventory (2013)" of "Second National Information Notification on China Climate Change"/LUCF/								
Choice of data correctly justified?	Yes								
Measurement method correctly described?	N/A								

G_{gi}	Emission factor for stratum i for gas g
Title in line with Methodology?	Yes
Data unit correctly expressed?	Yes, g kg ⁻¹ dry matter burnt
Appropriate description?	Yes
Source clearly referenced? (appropriate?)	The source is from Volume 4, Chapter 2, of the IPCC 2006 Inventory Guidelines in table 2.5/IPCC/ which is in line with the requirement in the applied methodology VM0010 version 1.3/VM0010/
Correct value provided?	Yes – Refer to ER sheet for details/XLS/
Has this value been verified?	Yes. The value has been verified against the data source Volume 4, Chapter 2, of the IPCC 2006 Inventory Guidelines in table 2.5/IPCC/
Choice of data correctly justified?	Yes
Measurement method correctly described?	N/A

OF, SLF, WW	Refer to PD for details		
Title in line with Methodology?	Yes		
Data unit correctly expressed?	Yes, Kg kg ⁻¹		
Appropriate description?	Yes		
Source clearly referenced? (appropriate?)	The source is from default values in the applied methodology VM0010 version 1.3/ ^{VM0010/}		
Correct value provided?	Yes –		
	Parameters	Species	Value
	OF	Broad-leaved tree/	0.86
	SLF	Chinese fir/ Pinus	0.12
	WW	massoniana	24%
Has this value been verified?	Yes. The value has been verified against the applied methodology VM0010 version 1.3/ ^{VM0010/}		

Choice of data correctly justified?	Yes
Measurement method correctly described?	N/A

RGR _i	Forest regrowth rate post timber harvest for stratum i	
Title in line with Methodology?	Yes	
Data unit correctly expressed?	Yes, tC.ha ⁻¹ .yr ⁻¹	
Appropriate description?	Yes	
Source clearly referenced? (appropriate?)	The source is from the IPCC Guidelines for National Greenhouse Gas Inventories (2006), Table4.9 (1.5 td.m./ha/y * CF) /IPCC/.	
Correct value provided?	Yes –	
	Tree species	RGR _i
	Broad-leaved tree	0.75
	Chinese fir	0.75
	Pinus massoniana	0.75
Has this value been verified?	Yes. The value has been verified through the source/IPCC/	
Choice of data correctly justified?	Yes	
Measurement method correctly described?	N/A	

V_{EX,j,i} BSL	Mean volume of extracted timber per unit area for species j in stratum i	
Title in line with Methodology?	Yes	
Data unit correctly expressed?	Yes, m ³ .ha ⁻¹	
Appropriate description?	Yes	
Source clearly referenced? (appropriate?)	The source is from timber harvest plan/ ^{THP} / which is in line with the request from applied methodology VM0010 version 1.3/ ^{VM0010} /	
Correct value provided?	Yes – Refer to ER sheet for details/ ^{XLS} /	
Has this value been verified?	Yes. The value has been verified against the timber harvest plan/ ^{THP} /	
Choice of data correctly justified?	Yes	
Measurement method correctly described?	N/A	

A_{i,p}	Mean volume of extracted timber per unit area for species j in stratum i	
Title in line with Methodology?	Yes	
Data unit correctly expressed?	Yes, Ha	
Appropriate description?	Yes	
Source clearly referenced? (appropriate?)	The source is from timber harvest plan/ ^{THP} / which has been verified as legal parcel records.	
Correct value provided?	Yes – Refer to ER sheet for details/ ^{XLS} /	
Has this value been verified?	Yes. The value has been verified against the timber harvest plan/ ^{THP} /	
Choice of data correctly justified?	Yes	
Measurement method correctly described?	N/A	

A_{1,i,p}	The area of stratum i in land parcel p that was harvested 1 year ago
Title in line with Methodology?	Yes
Data unit correctly expressed?	Yes, Ha
Appropriate description?	Yes
Source clearly referenced? (appropriate?)	The source is from timber harvest plan/ ^{THP} / which has been verified as legal parcel records.
Correct value provided?	Yes –Refer to ER sheet for details/ ^{XLS} /
Has this value been verified?	Yes. The value has been verified against the timber harvest plan/ ^{THP} /
Choice of data correctly justified?	Yes
Measurement method correctly described?	N/A

A_{2-10,i,p}	The area of stratum i in land parcel p that was harvested between 2 and 10 year ago
Title in line with Methodology?	Yes
Data unit correctly expressed?	Yes, Ha
Appropriate description?	Yes
Source clearly referenced? (appropriate?)	The source is from timber harvest plan/ ^{THP} / which has been verified as legal parcel records.
Correct value provided?	Yes –Refer to ER sheet for details/ ^{XLS} /
Has this value been verified?	Yes. The value has been verified against the timber harvest plan/ ^{THP} /
Choice of data correctly justified?	Yes
Measurement method correctly described?	N/A

A_{11-20,i,p}	The area of stratum i in land parcel p that was harvested between 11 and 20 year ago
Title in line with Methodology?	Yes
Data unit correctly expressed?	Yes, Ha
Appropriate description?	Yes
Source clearly referenced? (appropriate?)	The source is from timber harvest plan/ ^{THP} / which has been verified as legal parcel records.
Correct value provided?	Yes –Refer to ER sheet for details/ ^{XLS} /
Has this value been verified?	Yes. The value has been verified against the timber harvest plan/ ^{THP} /
Choice of data correctly justified?	Yes
Measurement method correctly described?	N/A

A_{t*}	Cumulative area harvested until time t*
Title in line with Methodology?	Yes
Data unit correctly expressed?	Yes, Ha
Appropriate description?	Yes
Source clearly referenced? (appropriate?)	The source is from timber harvest plan/ ^{THP} / which has been verified as legal parcel records.

Correct value provided?	Yes –Refer to ER sheet for details/ ^{XLS/}
Has this value been verified?	Yes. The value has been verified against the timber harvest plan/ ^{THP/}
Choice of data correctly justified?	Yes
Measurement method correctly described?	N/A

A_{s,p}	Area of sample plot sp
Title in line with Methodology?	Yes
Data unit correctly expressed?	Yes, Ha
Appropriate description?	Yes
Source clearly referenced? (appropriate?)	The source is from Recording and archiving of size of sample plots/ ^{RAS/} which has been verified as applicable.
Correct value provided?	Yes –0.04 ha
Has this value been verified?	Yes. The value has been verified against the Recording and archiving of size of sample plots/ ^{RAS/}
Choice of data correctly justified?	Yes
Measurement method correctly described?	N/A

CAR 24 and CAR 25 were raised and successfully closed. Refer to Appendix 4 for detail assessment.

2. Data and Parameters Monitored

The monitoring parameters required by the methodology and applicable tools for the project are summarized in the below table.

Illegal Logging PRA Results	N/A
Title in line with Methodology?	Yes
Ex-ante Value	0
Data unit correctly expressed?	Yes, Dimensionless
Appropriate description?	Yes
Source clearly referenced? (appropriate?)	Yes–to determine by PRA report
Correct value provided?	Yes
Has this value been verified?	Yes
Choice of data correctly justified?	Yes –to determine by PRA report which evaluate whether timber harvest may be occurring in the project area and shall consist of semi-structured interviews / questionnaires
Measurement method correctly described?	Yes –to determine by PRA report which is in line with the applied methodology.
Monitoring frequency correctly described?	Every two years - verified as per the applied methodology
Monitoring equipment correctly described?	N/A
QA/QC procedure correctly described?	N/A as from PRA
Purpose of data?	PE calculation

Result of Limited Illegal Logging Survey	N/A
Title in line with Methodology?	Yes
Ex-ante Value	0
Data unit correctly expressed?	Yes, Dimensionless
Appropriate description?	Yes
Source clearly referenced? (appropriate?)	Yes—to determine by Limited on-the-ground illegal logging survey
Correct value provided?	Yes
Has this value been verified?	Yes
Choice of data correctly justified?	Yes –to determine by Limited on-the-ground illegal logging survey which will be sampled by surveying multiple transects of known length and width across the access-buffer area to check whether new tree stumps are evident or not. The access-buffer area shall be equal in area to at least 1% of $A_{DIST_IL,i}$
Measurement method correctly described?	Yes –to determine by Limited on-the-ground illegal logging survey which is in line with the applied methodology.
Monitoring frequency correctly described?	Must to be repeated each time the PRA indicates a potential for illegal logging - verified as per the applied methodology
Monitoring equipment correctly described?	N/A
QA/QC procedure correctly described?	N/A
Purpose of data?	PE calculation

$A_{burn,i,t}$	Area burnt in stratum i at time t
Title in line with Methodology?	Yes
Ex-ante Value	0
Data unit correctly expressed?	Yes, Ha
Appropriate description?	Yes
Source clearly referenced? (appropriate?)	Yes—to determine by Geodetic Coordinates and / or Remote Sensing Data
Correct value provided?	Yes
Has this value been verified?	Yes
Choice of data correctly justified?	Yes –to determine by Geodetic Coordinates and / or Remote Sensing Data
Measurement method correctly described?	Yes –to determine by Geodetic Coordinates and / or Remote Sensing Data which is in line with the applied methodology.
Monitoring frequency correctly described?	Areas burnt must be monitored at least every five years - verified as per the applied methodology
Monitoring equipment correctly described?	Monitoring System and forest authority
QA/QC procedure correctly described?	Yes- Standard quality control/quality assurance (QA/QC) procedures for forest inventory including field data collection and data management shall be applied. Use or adaptation of QA/QCs already applied in national forest monitoring, or available from published handbooks, or from the IPCC GPG LULUCF 2003/IPCC/, is recommended - verified as per the applied methodology
Purpose of data?	PE calculation

Adist _{i,t}	Area disturbed in stratum i at time t
Title in line with Methodology?	Yes
Ex-ante Value	0
Data unit correctly expressed?	Yes, Ha
Appropriate description?	Yes
Source clearly referenced? (appropriate?)	Yes—to determine by Geodetic Coordinates and / or Remote Sensing Data
Correct value provided?	Yes
Has this value been verified?	Yes
Choice of data correctly justified?	Yes –to determine by Geodetic Coordinates and / or Remote Sensing Data
Measurement method correctly described?	Yes –to determine by Geodetic Coordinates and / or Remote Sensing Data which is in line with the applied methodology.
Monitoring frequency correctly described?	Areas distributed must be monitored at least every five years - verified as per the applied methodology
Monitoring equipment correctly described?	Monitoring System and forest authority
QA/QC procedure correctly described?	Yes- Standard quality control/quality assurance (QA/QC) procedures for forest inventory including field data collection and data management shall be applied. Use or adaptation of QA/QCs already applied in national forest monitoring, or available from published handbooks, or from the IPCC GPG LULUCF 2003/IPCC/, is recommended - verified as per the applied methodology
Purpose of data?	PE calculation

Adist _{IL,i}	Area potentially impacted by illegal logging in stratum i
Title in line with Methodology?	Yes
Ex-ante Value	0
Data unit correctly expressed?	Yes, Ha
Appropriate description?	Yes
Source clearly referenced? (appropriate?)	Yes—to determine by GIS delineation and ground truthing
Correct value provided?	Yes
Has this value been verified?	Yes
Choice of data correctly justified?	Yes –to determine by GIS delineation and ground truthing
Measurement method correctly described?	Yes –Must be composed of a buffer from all access points (access buffer), such as roads and rivers or previously cleared areas. The width of the buffer shall be determined by the depth of degradation penetration as defined as a PRA output which is in line with the applied methodology.
Monitoring frequency correctly described?	Repeated each time the PRA indicates a potential for degradation - verified as per the applied methodology
Monitoring equipment correctly described?	Monitoring System and forest authority
QA/QC procedure correctly described?	Yes- Standard quality control/quality assurance (QA/QC) procedures for forest inventory including field data collection and data management shall be applied. Use or adaptation of QA/QCs already applied in national forest monitoring, or available from published handbooks, or from the IPCC GPG LULUCF 2003/IPCC/, is recommended - verified as per the applied methodology

Purpose of data?	PE calculation
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C_{DIST_IL,i,t} PRJ	Biomass carbon of trees cut and removed through illegal logging in stratum i at time t
Title in line with Methodology?	Yes
Ex-ante Value	0
Data unit correctly expressed?	Yes, tCO ₂ e
Appropriate description?	Yes
Source clearly referenced? (appropriate?)	Yes—to determine by Field measurements in sample plots
Correct value provided?	Yes
Has this value been verified?	Yes
Choice of data correctly justified?	Yes –to determine by Field measurements in sample plots
Measurement method correctly described?	Yes –sampling plan must be designed using plots systematically placed over the buffer zone so that they sample at least 3% of the area of the buffer zone (A _{DIST_IL,i}) which is in line with the applied methodology.
Monitoring frequency correctly described?	Repeated each time limited sampling of A _{DIST_IL} , indicates illegal logging - verified as per the applied methodology
Monitoring equipment correctly described?	Monitoring System and forest authority
QA/QC procedure correctly described?	Yes- Standard quality control/quality assurance (QA/QC) procedures for forest inventory including field data collection and data management shall be applied. Use or adaptation of QA/QCs already applied in national forest monitoring, or available from published handbooks, or from the IPCC GPG LULUCF 2003/ ^{IPCC} , is recommended - verified as per the applied methodology
Purpose of data?	PE calculation

AP_i	Total area of illegal logging sample plots in stratum i
Title in line with Methodology?	Yes
Ex-ante Value	Not used for ex ante ER calculation
Data unit correctly expressed?	Yes, Ha
Appropriate description?	Yes
Source clearly referenced? (appropriate?)	Yes—to determine by Ground Measurement
Correct value provided?	Yes
Has this value been verified?	Yes
Choice of data correctly justified?	Yes –to determine by Ground Measurement in sample plots
Measurement method correctly described?	Yes –sampling plan must be designed using multiple sample plots systematically placed across the buffer zone so that they sample at least 3% of the area of the buffer zone which is in line with the applied methodology.
Monitoring frequency correctly described?	Not more than five years - verified as per the applied methodology
Monitoring equipment correctly described?	N/A
QA/QC procedure correctly described?	Yes- Standard quality control/quality assurance (QA/QC) procedures for forest inventory including field data collection and data management shall be applied. Use or adaptation of

	QA/QCs already applied in national forest monitoring, or available from published handbooks, or from the IPCC GPG LULUCF 2003 ^{/IPCC/} , is recommended - verified as per the applied methodology
Purpose of data?	PE calculation

PMP_i	Merchantable biomass as a proportion of total aboveground tree biomass for stratum i within the project boundaries
Title in line with Methodology?	Yes
Ex-ante Value	Not used for ex ante ER calculation
Data unit correctly expressed?	Yes, %
Appropriate description?	Yes
Source clearly referenced? (appropriate?)	Yes—to be determined within each stratum divide the summed merchantable biomass (defined as total gross biomass of a tree 15cm DBH or larger) by the summed total of aboveground tree biomass.
Correct value provided?	Yes
Has this value been verified?	Yes
Choice of data correctly justified?	Yes -to determine by summed total of aboveground tree biomass
Measurement method correctly described?	Yes -sampling plan must be designed using multiple sample plots systematically placed across the buffer zone so that they sample at least 3% of the area of the buffer zone which is in line with the applied methodology.
Monitoring frequency correctly described?	Not more than five years - verified as per the applied methodology
Monitoring equipment correctly described?	N/A
QA/QC procedure correctly described?	Yes- Standard quality control/quality assurance (QA/QC) procedures for forest inventory including field data collection and data management shall be applied. Use or adaptation of QA/QCs already applied in national forest monitoring, or available from published handbooks, or from the IPCC GPG LULUCF 2003 ^{/IPCC/} , is recommended - verified as per the applied methodology
Purpose of data?	PE calculation

A _i	Area in ha per stratum i			
Title in line with Methodology?	Yes			
Ex-ante Value	Serial number of strata	Area (ha)	Tree species	
	1	4,440.05	Broad-leaved tree	
	2	2,736.96	Chinese fir	
	3	2,169.71	Pinus massoniana	
	Total	9,346.72		
Data unit correctly expressed?	Yes, Ha			
Appropriate description?	Yes			
Source clearly referenced? (appropriate?)	Yes—to be determined by Geodetic coordinates and/or Remote Sensing data and/or legal parcel records			

Correct value provided?	Yes
Has this value been verified?	Yes – by checking the second class forestry inventory/ ^{FSCI/}
Choice of data correctly justified?	Yes –to be determined by Geodetic coordinates and/or Remote Sensing data and/or legal parcel records
Measurement method correctly described?	Yes –the stratum is from the second class forestry inventory/ ^{FSCI/}
Monitoring frequency correctly described?	Every ten years - verified as per the applied methodology
Monitoring equipment correctly described?	Yes - Tape Measure, GPS device
QA/QC procedure correctly described?	Yes- Standard quality control/quality assurance (QA/QC) procedures for forest inventory including field data collection and data management shall be applied. Use or adaptation of QA/QCs already applied in national forest monitoring, or available from published handbooks, or form the IPCC GPG LULUCF 2003/ ^{IPCC/} , is recommended - verified as per the applied methodology
Purpose of data?	PE calculation

DBH	Diameter at breast height of tree
Title in line with Methodology?	Yes
Ex-ante Value	No Ex-ante value of this parameter is used
Data unit correctly expressed?	Yes, cm
Appropriate description?	Yes
Source clearly referenced? (appropriate?)	Yes–to be determined by on site measuring on the sample plots
Correct value provided?	Yes
Has this value been verified?	N/A
Choice of data correctly justified?	Yes –to be determined by on site measuring on the sample plots
Measurement method correctly described?	Yes –The National Forest Resource Continuous Investigation Technical Regulation/ ^{NFRCI/} issued by the State Forestry Bureau has detailed requirement of the measurement method.
Monitoring frequency correctly described?	Not more than five years - verified as per the applied methodology
Monitoring equipment correctly described?	Yes - Tape Measure
QA/QC procedure correctly described?	Yes- Standard quality control/quality assurance (QA/QC) procedures for forest inventory including field data collection and data management shall be applied. Use or adaptation of QA/QCs already applied in national forest monitoring, or available from published handbooks, or form the IPCC GPG LULUCF 2003/ ^{IPCC/} , is recommended - verified as per the applied methodology
Purpose of data?	PE calculation

The validation team checked all parameters presented in the monitoring plan against the requirements of the methodology. For the monitoring of carbon stock change the requirements and parameter list as per methodology/^{VM0010/} were followed. The major parameters to be monitored were discussed with the PPs, as well as the inventory processes, data management, quality assurance and quality control procedures that will be implemented in the context of the project. The PPs follows defined Standard Operating Procedures (SOP) towards carbon monitoring in order to ensure the collection of reliable field

data. The chosen monitoring frequency for the parameters is in line with the methodology and VCS standard.

CAR 26 and CAR 27 were raised and successfully closed. Refer to Appendix 4 for detail assessment.

Monitoring plan

The monitoring plan with monitoring parameters can determine changes in forest carbon stocks and greenhouse gas emissions from project activity; and determine changes in forest carbon stocks and greenhouse gas emissions from disturbance and illegal logging. Commonly accepted principles of forest inventory and management are implemented;

Commonly accepted principles of forest inventory and management are implemented;

The ante stratification of the project area in the project scenario maybe adjusted based sample because of:

- a) unexpected disturbances occurring during the project crediting period affecting differently various parts of an originally homogeneous stratum and/or
- b) forest management activities that are implemented in a way that affects the existing stratification in the project scenario.

Sample method

To monitoring the actual carbon stock changes of the Project, field sample method will be adopted with 1) adequate forest stratification, sample size estimation methods and consider uncertainty, 2) a sampling framework including sample size, plot size, plot shape and information to determine plot location according to the latest version of "Tool for calculation of the number of sample plots for measurements within A/R CDM project activity" /TCNSP/

QA/QC

Standard operating procedures (SOPs) and quality control/quality assurance (QA/QC) procedures for forest inventory including field data collection and data management will be applied. SOPs already applied in national forest monitoring or available from published handbooks or from the IPCC GPG LULUCF 2003 will be used.

All data collected as part of monitoring will be archived electronically and be kept at least for 2 years after the end of the project crediting period. All measurements will be conducted according to relevant standards. Data archiving shall take both electronic and paper forms, and copies of all data shall be provided to each project participant.

The archives shall include:

- ☐ Copies of all original field measurement data, laboratory data, data analysis spreadsheets;
- ☐ Estimates of the carbon stock changes in all pools and non-CO₂ GHG and corresponding calculation spreadsheets;
- ☐ GIS products; and

- ☐ Copies of the measuring and monitoring reports.
- ☐ Conservative approach and uncertainty

Project proponents will also apply all relevant equations for the ex-ante calculation of net anthropogenic GHG removals by sinks with care and provide transparent estimations for the parameters that are monitored during the project crediting period. These estimates shall be based on measured or existing published data where possible and project proponents should retain a conservative approach; that is, if different values for a parameter are equally plausible, a value that does not lead to over-estimation of net anthropogenic GHG removals by sinks must be selected.

An uncertainty analysis is required for all estimates from monitoring related to change in area, change in carbon stocks and emissions for both the baseline and project case.

The monitoring plan was included to the project documentation/^{PD/}.

The monitoring plan in PD is confirmed as designed according to the methodology and applicable tool, especially for the monitoring process, stratification and sampling approach.

In the applied methodology, the monitoring plan request:

“The monitoring plan shall provide for collection of all relevant data necessary for:

- (a) Verification that the applicability conditions have been met;
- (b) Verification of changes in carbon stocks in the pools selected;
- (c) Verification of project emissions and leakage emissions.”

The PD is revised to be consistent with the requirement of the applied methodology and tool. And the monitoring and sampling approach is confirmed as correct and complete via site inspection of the project against the methodology and tool of “Calculation of the number of sample plots for measurements within A/R CDM project activities” (version 02.1.0)/^{TCNSP/}. The procedures were reviewed by the assessment team on paper and through interviews with the relevant personnel/^{11/./12/}; this information together with a physical inspection allows the assessment team to confirm that the proposed monitoring plan is feasible within the project design.

The validation team concludes that the PP will be able to implement the monitoring plan to report ex-post GHG net anthropogenic removals, which can also be verified. As per the technical knowledge of the validation team it can be confirmed that the monitoring plan is in accordance with best forest practice.

CAR 28 was raised and successfully closed. Refer to Appendix 4 for detail assessment.

3.4 Non-Permanence Risk Analysis

The Non-Permanence Risk Report/^{NPRR/} are provided by PP, the risk assessment was conducted according to the VCS standard/^{VCSS/}. PP adopted the latest version of the Non-Permanence Risk Report Template/^{NPRRT/}.

Each risk category was calculated based on the VCS guidance and the input provided by the PP. The information was validated and cross-checked through document and literature review, onsite visits of the project area and interviews conducted^{/11/,/12/}.

Details of the assessment are provided as follow.

Internal Risk

Project Management			VVB Assessment
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating	
a)	Species planted (where applicable) associated with more than 25% of the stocks on which GHG credits have previously been issued are not native or proven to be adapted to the same or similar agro-ecological zone(s) in which the project is located.	Not applicable	There is a specific Monitoring Manual/MM/ made by project proponent for a complete set of management regulation in the operation & maintenance including potential risks to the project, which includes a process for monitoring progress and documenting lessons learned or corrections that may be needed, and incorporating them into project decision-making in future monitoring periods, which has been verified in the Monitoring Manual/MM/, therefore this mitigation is scored as -2.
b)	Ongoing enforcement to prevent encroachment by outside actors is required to protect more than 50% of stocks on which GHG credits have previously been issued.	Not applicable	
c)	Management team does not include individuals with significant experience in all skills necessary to successfully undertake all project activities (i.e., any area of required experience is not covered by at least one individual with at least 5 years' experience in the area).	Not applicable	
d)	Management team does not maintain a presence in the country or is located more than a day of travel from the project site, considering all parcels or polygons in the project area.	Not applicable	
e)	Mitigation: Management team includes individuals with significant experience in AFOLU project design and implementation, carbon accounting and reporting (e.g., individuals who have successfully managed projects through validation, verification and issuance of GHG credits) under the VCS Program or other approved GHG programs.	Not applicable	
f)	Mitigation: Adaptive management plan in place. <i>PP demonstration: Based on the monitoring manual, the project proponent has established a complete set of management regulation in the operation & maintenance, disturbance prevention and the related contingency plan.</i>	-2	
Total Project Management (PM) [as applicable, (a + b + c + d + e + f)]		-2	OK
Total may be less than zero.			

Financial Viability			VVB Assessment
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating	
a)	Project cash flow breakeven point is greater than 10 years from the current risk assessment PP demonstration: Based on Huanjiang comparison NPV sheet, project cash flow is negative in crediting period, so cash flow breakeven point is greater than 10 years from the current risk assessment.	3	Via reviewing the NPV sheet/ ^{NPV} , it is confirmed that project cash flow is negative in crediting period. So project cash flow breakeven point is greater than 10 years from the current risk assessment. Therefore this mitigation is scored as 3.
b)	Project cash flow breakeven point is greater than 7 and up to 10 years from the current risk assessment	Not applicable	
c)	Project cash flow breakeven point greater than 4 and up to 7 years from the current risk assessment	Not applicable	
d)	Project cash flow breakeven point is 4 years or less from the current risk assessment	Not applicable	
e)	Project has secured less than 15% of funding needed to cover the total cash out before the project reaches breakeven	Not applicable	
f)	Project has secured 15% to less than 40% of funding needed to cover the total cash out required before the project reaches breakeven	Not applicable	
g)	Project has secured 40% to less than 80% of funding needed to cover the total cash out required before the project reaches breakeven	Not applicable	
h)	Project has secured 80% or more of funding needed to cover the total cash out before the project reaches breakeven	Not applicable	
i)	Mitigation: Project has available as callable financial resources at least 50% of total cash out before project reaches breakeven	Not applicable	
Total Financial Viability (FV) [as applicable, ((a, b, c or d) + (e, f, g or h) + i)] Total may not be less than zero.		3	OK

Opportunity Cost			VVB Assessment
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating	
a)	NPV from the most profitable alternative land use activity is expected to be at least 100% more than that associated with project activities; or where baseline activities are subsistence-driven, net positive community impacts are not demonstrated	8	The NPV from the project is negative as verified in the NPV sheet/ ^{NPV} , and via checking

	<i>PP demonstration: According to section 3.5.2 of Project Description, the NPV from baseline scenario is 19,090*10⁴ RMB, and the NPV from project is -17,206*10⁴ RMB</i>		the carbon reduction project Development Cooperation Agreement signed between the forest stations, local farmers, village collective, Huanjiang Maonan Autonomous County Huashan Forestry Investment Co., Ltd. and Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd./DCA/, it is confirmed that project is protected by legally binding commitment to continue management practices that protect the credited carbon stocks over the length of the project crediting period. Therefore this mitigation is scored as 6.
b)	NPV from the most profitable alternative land use activity is expected to be between 50% and up to 100% more than from project activities	Not applicable	
c)	NPV from the most profitable alternative land use activity is expected to be between 20% and up to 50% more than from project activities	Not applicable	
d)	NPV from the most profitable alternative land use activity is expected to be between 20% more than and up to 20% less than from project activities; or where baseline activities are subsistence-driven, net positive community impacts are demonstrated	Not applicable	
e)	NPV from project activities is expected to be between 20% and up to 50% more profitable than the most profitable alternative land use activity	Not applicable	
f)	NPV from project activities is expected to be at least 50% more profitable than the most profitable alternative land use activity	Not applicable	
g)	Mitigation: Project proponent is a non-profit organization	Not applicable	
h)	Mitigation: Project is protected by legally binding commitment (see Section 0) to continue management practices that protect the credited carbon stocks over the length of the project crediting period <i>PP demonstration: The contract of developing VCS project signed between Huanjiang Maonan Autonomous County Huashan Forestry Investment Co., Ltd. and Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd. demonstrated that the credited carbon stocks will be protected over the length of the project crediting period.</i>	-2	
i)	Mitigation: Project is protected by legally binding commitment (see Section 0) to continue management practices that protect the credited carbon stocks over at least 100 years	Not applicable	
Total Opportunity Cost (OC) [as applicable, (a, b, c, d, e or f) + (g + h or i)] Total may be less than 0.		6	OK

Project Longevity		VVB Assessment	
a)	Without legal agreement or requirement to continue the management practice	Not applicable	Since the main tree species in

b)	With legal agreement or requirement to continue the management practice	=30-(30/2)=15	the project all suitable for the growth without harvest, therefore the project longevity selected 30 years/ ^{PL} / and the crediting period is selected to be 20 years. Therefore this mitigation is scored as 15.
Total Project Longevity (PL) May not be less than zero		15	

Internal Risk		VVB Assessment
Total Internal Risk (PM + FV + OC + PL) Total may not be less than zero.		22 Based on above score for each internal risk factor, it is confirmed that the final score of 27 is correct and reasonable.

External Risk

Land Tenure and Resource Access/Impacts			VVB Assessment
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating	
a)	Ownership and resource access/use rights are held by same entity(s)	Not applicable	Project developer Huanjiang Maonan Autonomous County Huashan Forestry Investment Co., Ltd. is a privacy company, who is in charge of the integrated implementation and management of the project. The forests involved in the project are state-owned
b)	Ownership and resource access/use rights are held by different entity(s) (e.g., land is government owned and the project proponent holds a lease or concession)	2	
c)	In more than 5% of the project area, there exist disputes over land tenure or ownership	Not applicable	
d)	There exist disputes over access/use rights (or overlapping rights)	Not applicable	
e)	WRC projects unable to demonstrate that potential upstream and sea impacts that could undermine issued credits in the next 10 years are irrelevant or expected to be insignificant, or that there is a plan in place for effectively mitigating such impacts.	Not applicable	
f)	Mitigation: Project area is protected by legally binding commitment (e.g., a conservation easement or	-2	

	protected area) to continue management practices that protect carbon stocks over the length of the project crediting period		forests or privately-owned or collective-owned which has been confirmed by site interview with local officer from Forest Bureau/ ¹² / and checking the Certificate of Forest Right/ ^{CFR} / and Certification of land rights/ ^{CLR} /. Therefore this mitigation is scored as 0.
g)	Mitigation: Where disputes over land tenure, ownership or access/use rights exist, documented evidence is provided that projects have implemented activities to resolve the disputes or clarify overlapping claims	Not applicable	
Total Land Tenure (LT) [as applicable, ((a or b) + c + d + e + f + g)]		0	OK
Total may not be less than zero.			

Community Engagement			VVB Assessment
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating	
a)	Less than 50 percent of households living within the project area who are reliant on the project area, have been consulted	Not applicable	Based on the survey of forest management implemented by the project proponent in 2015, the local communities have positive attitude towards the implementation of the project. As assessed in above section, the project generates net positive impacts on the social and economic well-being of the local communities who derive livelihoods
b)	Less than 20 percent of households living within 20 km of the project boundary outside the project area, and who are reliant on the project area, have been consulted	Not applicable	
c)	Mitigation: The project generates net positive impacts on the social and economic well-being of the local communities who derive livelihoods from the project area <i>PP Demonstration: Based on the survey of forest management implemented by the project proponent in 2015, the local communities have positive attitude towards the implementation of the project.</i>	-5	

			from the project area.
Total Community Engagement (CE) [where applicable, (a + b + c)]		-5	OK
Total may be less than zero.			

Political Risk			VVB Assessment
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating	
a)	Governance score of less than -0.79	Not applicable	The project is located in China. According to World Bank Institute's WGI, the six indicators of China are respectively -- 0.36, 0.44, -0.23, -0.29, -0.28 and -1.56, averaged over the most recent five years, so the mean score is -0.38. Governance Score is -0.38 then the final score is 4. China has an established Designated National Authority under the CDM and has at least one registered CDM Afforestation/Reforestation project, therefore this mitigation is scored as -2. Total Score is 2.
b)	Governance score of -0.79 to less than -0.32 <i>PP demonstration:</i> http://info.worldbank.org/governance/wgi/index.aspx#home	4	
c)	Governance score of -0.32 to less than 0.19	Not applicable	
d)	Governance score of 0.19 to less than 0.82	Not applicable	
e)	Governance score of 0.82 or higher	Not applicable	
f)	Mitigation: Country is implementing REDD+ Readiness or other activities, as set out in this Section 2.3.3. <i>PP demonstration: China has an established Designated National Authority under the CDM and has at least one registered CDM Afforestation/Reforestation project. Thus, the mitigation discount can be applied (http://cdm.unfccc.int/)</i>	-2	
Total Political (PC) [as applicable ((a, b, c, d or e) + f)]		2	OK
Total may not be less than zero.			

External Risk	VVB Assessment
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Total External Risk (LT + CE + PC)	0	Based on above score for each external risk factor, it is confirmed that the score is sum to -3, then the final score of 0 is correct and reasonable.
Total may not be less than zero.		

Natural Risk

Natural Risk (Fire)	
Significance	Major. Fire risk is considered low due to there is a separation zone at a certain distance in the project area. Via site inspection, it is confirmed that there are grasses in the biological fire zone, fire roads, forest access roads, and via interview with local officers, it is confirmed that the grasses were managed yearly to prevent the fire risk.
Likelihood	As assessed above, the risk is low and project proponent has adopted the necessary measures for fire preventing, the technicians for manage and maintain the forest has carried out regular inspections and investigations and make good forecasts.
Score (LS)	0
Mitigation	Local government sets the fireproofing period when using fire is forbidden in the open air and no fires occurred in the project areas as confirmed during the on-site visit. Also the fire will be strictly controlled by project proponent who experienced in local natural risk control to minimize the potential effect and established fire prevention procedure in Forest Management Manual/ ^{FMM} . Therefore the mitigation is scored as 0.25.

Natural Risk (Pest and Disease outbreaks)	
Significance	Insignificant. According to historical records, the pest and disease risk are not common, and the mixed plantation will prevent the trees from pest and disease outbreaks in a certain way based on technical experience.
Likelihood	The planted trees may would be damaged by insects and disease, but the risk is considered low because it can be prevented by routine overseeing and the PP have in place a full Forest Management Manual/ ^{FMM} . The biological measures to control pests and diseases will be mainly adopted. Hence the risk is less than every 10 years.
Score (LS)	0

Mitigation	The chemical pesticides are allowed to be used only if there is a serious pest problem erupted in the project area, while improper pesticide application would be harmful to natural environment, but the risk is considered low because pesticide will be strictly managed by well trained staff to minimize the potential effect^{/FMM/}. As the biological measures to control pests and diseases will be mainly adopted, the pesticide application will be limited. Therefore the mitigation is scored as 0.25.
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Natural Risk (Extreme Weather)

Significance	Insignificant Considering the data based on weather reports collected from historic records, the frost damage on trees was not common in the project area due to the project is located in the tropical areas in China.
Likelihood	Not common due to the project is located in the tropical areas in China.
Score (LS)	0
Mitigation	During winter with frost, warming measures will be adopted. Frost risk are identified as low. If there are frozen branches found after winter, they will be cut off in spring, which enhances their ability of self-healing and is good for the growth of new leaves and branches. The risk is considered low because natural risk control will be strictly managed by well trained staff to minimize the potential effect^{/FMM/}. Therefore the mitigation is scored as 0.25.

Natural Risk (Geological Risk)

Significance	Minor The geological risk such as earthquakes around the project area are mostly low intensity, so the damage will be minor.
Likelihood	According to historical records from local government, there is no earthquakes or volcanoes occurred in recent 100 years around the project area as confirmed during the on-site interview with local officer.
Score (LS)	0
Mitigation	Local government will be responsible for the recovery of the forest if there is an earthquake occurred as confirmed during the on-site visit. Also the project proponent is experienced in local natural risk control to minimize the potential effect and established specific instruction in geological risk control in Forest Management Manual^{/FMM/}. Therefore the mitigation is scored as 0.25.

Natural Risk (Other natural risk)	
Significance	None is observed.
Likelihood	Not applicable
Score (LS)	Not applicable
Mitigation	Not applicable

Score for each natural risk applicable to the project (Determined by $LS \times M$)	
Fire (F)	0.25
Pest and Disease Outbreaks (PD)	0.25
Extreme Weather (W)	0.25
Geological Risk (G)	0.25
Other natural risk (ON)	0
Total Natural Risk (as applicable, $F + PD + W + G + ON$)	1

Overall Risk Rating

Risk Category	Rating
Internal Risk	22
External Risk	0
Natural Risk	1
Overall Risk Rating ($a + b + c$)	23

The overall risk rating according to the applied tool is 23%. The validation team concludes that this risk rating is purely based on the tool cited above, according to VCS requirements.

The risk rating should not be used for any other purpose than retiring VCUs according to the VCS permanence rules. The risk will be reassessed at time of the first verification and with that prior to any issuance of VCUs. The current buffer is subject to change at verification also in line with further guidance from the VCS on this matter.

Hence, in conclusion, it is verified that the methodology and any referenced tools have been applied correctly to calculate baseline emissions, project emissions, leakage and net GHG emission reductions and removals.

CAR 29 was raised and successfully closed. Refer to Appendix 4 for detail assessment.

4 VALIDATION CONCLUSION

Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd. has commissioned the TÜV NORD JI / CDM Certification Program to carry out the validation of the “Guangxi Huanjiang IFM (conversion of logged to protected forest) Project” in P. R. China. The validation was performed based on VCS Version 4.1 requirements as well as criteria given to provide for consistent project operations, monitoring and reporting. The review of the project design documentation and the subsequent follow-up interviews have provided TÜV NORD with sufficient evidence to determine the fulfilment of stated criteria. The proposed VC project activity conducts an Improved Forest Management(IFM) of 9,346.72ha of forest established by conversion of logged to protected forest in Huanjiang Maonan Autonomous County, Hechi City, Guangxi Zhuang Autonomous Region of China with local tree species. The approved VCS methodology VM0010/Version 1.3 is applied to quantify the GHG removals achieved in this project.

In the course of the validation 29 Corrective Action Requests (CARs), 9 Clarification Requests (CLs) were raised and successfully closed. No Forwarded Action Requests (FARs) was raised.

The review of the project design documentation and additional documents related to baseline and monitoring methodology and subsequent background investigation have provided the TÜV NORD JI/CDM CP with sufficient evidence to validate the fulfilment of the stated criteria.

In detail the conclusions can be summarized as follows:

- A reasonable level of assurance has been applied.
- All data and information used for ex-ante calculation of emission reductions is of projected and/or hypothetical nature.
- The project is in line with all relevant host country legislation incl. its GHG assertions, where applicable.
- The project additionality is sufficiently justified in the VCS-PD.
- The monitoring plan is transparent and adequate.
- The calculation of the project emission removals is carried out in a transparent and conservative manner, so that the calculated emission removals of 1,285,683 tCO₂e are most likely to be achieved within the 20 years crediting period.

The conclusions of this report show, that the project, as it was described in the project description, is in line with all criteria applicable for the validation against the VCS Standard Version 4.1 without any qualifications or limitations.

Beijing, 19-July-2022

A handwritten signature in blue ink that reads 'Fanyu Zhao'.

Zhao Xuejiao

TÜV NORD JI/CDM Certification Program

Validation Team Leader

Essen, 19-July-2022

A handwritten signature in blue ink that reads 'anuske'.

Alexandra Nuske

TÜV NORD JI/CDM Certification Program

Final Approval

APPENDIX 1 ABBREVIATIONS

Abbreviations	Full texts
AFOLU	Agriculture, Forestry and Other Land Use
BAU	Business as usual
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CL	Clarification Request
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
CP	Certification Program // Crediting Period
DNA	Designated National Authority
EB	CDM Executive Board
ER	Emission Reductions
ETS	Emission Trading Scheme
FAR	Forward Action Request
GHG	Greenhouse gas(es)
GS	Gold Standard
HCVs	High Conservation Values
IFM	Improved Forest Management
IPCC	Intergovernmental Panel on Climate Change
JNR	Jurisdictional and Nested REDD+
MP	Monitoring plan
MR	Monitoring Report
NDRC	National Development and Reform Commission
NPRR	Non-Permanence Risk Report
PD	Project Description
PP	Project Participant
PRA	Participatory Rural Appraisal
QC/QA	Quality control/Quality assurance
REDD	Reduced Emissions from Deforestation and Degradation
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Verified Carbon Standard
VCSA	Verified Carbon Standard Association
VCU	Verified Carbon Unit
VVB	Validation/Verification Body

APPENDIX 2 COMPETENCE OF TEAM MEMBERS AND TECHNICAL REVIEWERS



Statement of Competence
Appointment and authorization according to the procedures of the TÜV NORD J/CDM Certification Program

Ms. Xue Jiao Fancy Zhao

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification)	2022-11-01
VCS / ISO 14064-2	Senior Assessor	2022-11-01

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.1	Thermal energy generation
1.2	Renewables
3.1	Energy Demand
8.1	Mining and mineral production
13.1	Solid waste and wastewater
13.2	Manure

230 - Rev. 10, Date: 2020-06-29

230_201-VAB0-F20_2020-06-29_v11 201-VAB0-F20 v4.1 / 2019-10-25



Statement of Competence
Appointment and authorization according to the procedures of the TÜV NORD J/CDM Certification Program

Ms. Guifang Li

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
14.1	Afforestation and Reforestation

375 - Rev. 0, Date: 2018-09-05

375_201-VAB0-F20_2018-09-05_v01.doc 201-VAB0-F20 v4.1 / 2019-10-25



Statement of Competence
Appointment and authorization according to the procedures of the TÜV NORD J/CDM Certification Program

Ms. Alexandra Nuske

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification) Technical Reviewer	2022-03-03
JR	Senior Assessor Technical Reviewer	2022-03-03
VCS / ISO 14064-2	Senior Assessor Technical Reviewer	2022-03-03

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewables
14.1	Afforestation and reforestation

095 - Rev. 9, Date: 2019-03-01

095_201-VAB0-F20_2019-03-01_v9.doc 201-VAB0-F20 v3.1 / 2019-10-25

APPENDIX 3 DOCUMENTS REVIEWED OR REFERENCED

No.	Author	Reference	Title	References to the document	Provider
1.	Local Administration for Industry and Commerce	/BL/	Business License	Business License of Huanjiang Maonan Autonomous County Huashan Forestry Investment Co., Ltd	PP
2.	Guizhou Provincial Academy of Social Sciences	/BLS/	Baseline Survey Report	Baseline Survey Report issued by Guizhou Provincial Academy of Social Sciences in Nov. 2015	PP
3.	Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd. and Huanjiang Maonan Autonomous County Huashan Forestry Investment Co., Ltd	/CA/	Consultant Agreement	Consultant Agreement signed Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd. and Huanjiang Maonan Autonomous County Huashan Forestry Investment Co., Ltd dated in April 2019	PP
4.		/CAR/	Completion acceptance report	Carbon sink afforestation completion acceptance report of Anlong County for year 2016 finished in Jan. 2017. Carbon sink afforestation completion acceptance report of Huangping County for year 2016 finished in Jan. 2017. Carbon sink afforestation completion acceptance report of Weng'an County for year 2016 finished in Jan. 2017. Carbon sink afforestation completion acceptance report of Anlong County for year 2016 finished in Nov. 2017. Carbon sink afforestation completion acceptance report of Huangping County for year 2016 finished in Nov. 2017. Carbon sink afforestation completion acceptance report of Weng'an County for year 2016 finished in Nov. 2017.	PP
5.	National Forest Bureau and	/CFR/	Certificate of Forest Right	Certificate of Forest Right issued by National Forest Bureau and	PP

	Government of Guangxi Zhuang Autonomous Region			Government of Guangxi Zhuang Autonomous Region	
6.	National Forest Bureau and Government of Guangxi Zhuang Autonomous Region	/CLR/	Certification of land rights	Certification of land rights issued by National Forest Bureau and Government of Guangxi Zhuang Autonomous Region	PP
7.	Forest stations, local farmers, village collective, Huanjiang Maonan Autonomous County Huashan Forestry Investment Co., Ltd. and Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd.	/DCA/	Development Cooperation Agreement	Carbon reduction project Development Cooperation Agreement signed among the forest stations, local farmers, village collective, Huanjiang Maonan Autonomous County Huashan Forestry Investment Co., Ltd. and Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd.	PP
8.	Huanjiang Maonan Autonomous County Huashan Forestry Investment Co., Ltd	/DN/	Declaration of non-participation	Declaration of non-participation in any emission trading or other binding limit program or mechanism and no desire to or receiving of another form of GHG-related environmental credit, including renewable energy certificates dated on 23-October-2020	PP
9.	National statistical bureau	/DTW/	Data table of Wood output	Data table of Wood output of Provinces and cities in China from 2015 to 2019 http://data.chinabaogao.com/non_glinmuyu/2021/02245334322021.html	Public Website
10.	State Council of China	/FHL/	Forest Harvest Limit	13 th Five-year Forest Harvest Limit issued by State Council	Public Website
11.	National Forest Bureau	/FLOR/	Forest Logging Operation Regulation	Forest Logging Operation Regulations (LY/T1646-2005)	Public website
12.	PP	/FMM/	Forest Management Manual	Forest Management Manual for risk control and forest management	PP
13.	Guangxi Zhuang Autonomous	/FRP/	Forest Resources Planning and	Forest Resources Planning and Design Survey Report of Huanjiang Maonan Autonomous County	PP

	Region forestry survey and design Institute		Design Survey Report		
14.	Forest Bureau of Huanjiang Maonan Autonomous County	/FSCI/	Forest second class investigation data and tables	Forest second class investigation data and tables issued by Forest Bureau of Huanjiang Maonan Autonomous County	PP
15.	Forestry Investigation, Planning and Design Team of Huanjiang Maonan Autonomous County	/FVI/	Forest volume inventory	Forest volume inventory issued by Forestry Investigation, Planning and Design Team of Huanjiang Maonan Autonomous County	PP
16.	General Office of the State Council	/GCM/	Guideline of compensation	Guideline of the General Office of the State Council on improving the compensation mechanism for ecological protection funds	PP
17.	Google	/GEM/	Google Earth Map	Google Earth Map	Public software
18.	Government of Huanjiang Maonan Autonomous County	/HCFM/	Historical records	Historical records of forest management since 2011	PP
19.	Foresters and forest stations	/HRA/	Historical Records of Agreements	Historical Records of forest management Agreements	PP
20.	Guangxi Academy of Forestry Sciences	/IFMP/	IFM Program	IFM Program of the project issued by Guangxi Academy of Forestry Sciences in October 2016	PP
21.	IPCC	/IPCC/	IPCC	IPCC 2006 Inventory Guidelines	Public Website
22.	Guangxi Academy of Forestry Sciences and Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd.	/KML/	Map of project area	Map with the boundaries of all the plots for identifying the project location and boundaries of the project in KML file	PP
23.	Guangxi Province Government	/LACQ/	List of annual forest cutting quotas	List of annual forest cutting quotas in Guangxi Zhuang Autonomous Region during the 13 th Five-Year Plan Period http://lyj.gxzf.gov.cn/zfxgkzl/fdzdgk nr/gggs/W020200317623579770434.xls	Website

24.	PRC Government	/LAW/	Laws related to forestry and labor	<PRC Forest Law>, <PRC Forest Law Implementing Regulations>, <PRC Wildlife Protection Law>, <Forest Fire Prevention Regulations>, <Insect Control Regulation>, <PRC Production Safety Law> <Labour Law of the People's Republic of China>	Website
25.	Project Owner	/LC/	Labor Contract	Labor Contract of project staffs and person for forest management	PP
26.	National Government	/LEIA/	Environmental Impact Assessment Law	Environmental Impact Assessment Law of the People's Republic of China	Public website
27.	Forest bureau of Huanjiang Maonan Autonomous County	/LRH/	Legal right to harvest	Legal right to harvest issued by Forest bureau of Huanjiang Maonan Autonomous County dated 12-March-2015	PP
28.	PP	/LSC/	local stakeholder consultation record	50 filled questionnaires during the local stakeholder consultation process	PP
29.	National Government	/LUCF/	Land Use Change and Forestry GHG Inventory	"Land Use Change and Forestry GHG Inventory (2013)" of "Second National Information Notification on China Climate Change"	Public website
30.	Guangxi People Government	/MIFL/	Measures	Measures for the Implementation of the Forest Law of the People's Republic of China in Guangxi Zhuang Autonomous Region http://www.gld.gov.cn/flfg/gx/201606/t20160602_577949.htm	Public website
31.	PP	/MM/	Monitoring Manual	Monitoring Manual created by PP	PP
32.	PP and Huanjiang Maonan Autonomous County Forestry Bureau	/MMR/	Mobilization meeting records	Mobilization meeting records in Jan 2016	PP
33.	National Forestry Bureau	/NFRCI/	National Regulation	National Forest Resource Continuous Investigation Technical Regulation	Public Website
34.	Huanjiang Maonan Autonomous County Forestry Bureau	/NIFM/	Notice of IFM project	Notice of Guangxi Huanjiang IFM (Conversion of Logged to Protected Forest) Project issued by Huanjiang Maonan Autonomous County Forestry Bureau on 28-December-2015	PP
35.	Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd.	/NPRR/	Non-performance risk report	Non-performance risk report, Draft version 03, dated 13-January-2021 Final version 05, dated 06-May-2022	PP

36.	VERRA	/NPRRT/	Non-Permanence Risk Report Template	https://verra.org/project/vcs-program/rules-and-requirements/	VCS website
37.	VERRA	/NPRT/	AFOLU Non-Permanence Risk Tool, Version 4.0	https://verra.org/project/vcs-program/rules-and-requirements/	VCS website
38.	PP	/NPV/	NPV calculation sheet	NPV calculation sheet	PP
39.	Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd.	/PD/	Project Description	Draft Project Description of “ANHUANG Afforestation Project” (Version No. 02, dated 13-May-2020) Project Description of “ANHUANG Afforestation Project” (Version No. 04, dated 26-September-2021) Project Description of “ANHUANG Afforestation Project” (Version No. 05, dated 21-November-2021) Project Description of “ANHUANG Afforestation Project” (Version No. 06, dated 18-January-2022) Final Project Description of “ANHUANG Afforestation Project” (Version No. 07, dated 26-February-2022) Final Project Description of “ANHUANG Afforestation Project” (Version No. 08, dated 18-July-2022)	PP
40.	VCSA&CCBA	/PDP/	Project Development Process	“VCS+CCB Project Development Process” (version 3.0)	VCS website
41.	TUV NORD	/PHT/	On-site photo taken by validation team	On-site photo taken by validation team including trees, project location etc.	TUV NORD
42.	PP	/PRA/	Participatory Rural Appraisal	Participatory Rural Appraisal (PRA) report of Huanjiang Maonan Autonomous County in 2016	PP
43.	PP	/PTHC/	Planned timber harvesting schedule	Planned timber harvesting schedule-English version which will be submitted to VERRA	PP
44.	PP	/RAS/	Recording	Recording and archiving of size of sample plots	PP
45.	Huanjiang Maonan Autonomous County Forestry Bureau	/SGV/	Statement	Statement on the growth volume in Huanjiang	PP
46.	Forest stations, villagers and buyers	/SR/	Sales Receipts	Sales Receipts of timber	PP
47.	Local government and forester	/SAF/	Subsidy agreements to foresters	Subsidy agreements to foresters	PP

48.	UNFCCC	/TCNSP/	CDM Tool	CDM Tool for Calculation of the Number of Sample Plots for Measurements within A/R CDM Project Activities (Version 02.1.0)	UNFCCC website
49.	VERRA	/TDAA/	Methodological tool	Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities (Version 3.0)	VCS website
50.	UNFCCC	/TEC/	Methodological tool	Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities, version 04.2	UNFCCC website
51.	Forestry Investigation, Planning and Design Team of Huanjiang Maonan Autonomous County	/THP/	Timber harvest plan	Timber harvest plan issued by Forestry Investigation, Planning and Design Team of Huanjiang Maonan Autonomous County dated in February 2015	PP
52.	Project Owner	/TTR/	Technical Training Record	Technical Training Record, carbon sink training record held by PP and local Forestry Bureau in project area in year 2019 and 2020	PP
53.	VERRA	/VCSPD/	VCS Program Definitions, Version 4.1	https://verra.org/project/vcs-program/rules-and-requirements/	VCS website
54.	VERRA	/VCSPG/	VCS Program Guide, Version 4.0	https://verra.org/project/vcs-program/rules-and-requirements/	VCS website
55.	VERRA	/VCSS/	VCS Standard, Version 4.1	https://verra.org/project/vcs-program/rules-and-requirements/	VCS website
56.	VERRA	/VM0010/	VCS Methodology VM0010	VCS Methodology VM0010- Version 1.3 “Methodology for Improved Forest Management: Conversion of Logged to Protected Forest”	VCS website
57.	VERRA	/VVM/	VCS Validation Verification Manual v3.2	https://verra.org/project/vcs-program/rules-and-requirements/	VCS website
58.	Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd.	/XLS/	Net anthropogenic GHG removals by sinks calculation spreadsheets	ER Calculation spreadsheets of “ANHUANG Afforestation Project” (Draft Version No. 3.0, dated 22/05/2020) (Final Version No. 5.0, dated 18-July-2022)	PP
59.	China Certified Emission Reduction Exchange Info-platform	/ccer/	China Certified Emission Reduction	http://cdm.ccchina.org.cn/ccer.aspx	Website
60.	Gold Standard Organization	/gs/	Gold Standard	http://www.goldstandard.org/	Website

61.	IPCC	/ipcc/	IPCC publications	www.ipcc-nggip.iges.or.jp	Website
62.	Public information	/pt/	Price of timber	Public information of the price of timber	Website
63.	PRC Government	/regu/	Administrative regulations related to forestry	<Regulations for Implementing the Forest Law>, the <Regulations for Grain for Green>, the <Regulations for the Protection of Wild Plants and Animals>, the <Regulation for Nature Reserve>, the <Regulation for Forest Fire Control>, and the <Regulation for Forest Diseases and Pests Control>	National public website
64.	UNFCCC	/unfccc/	UNFCCC	http://cdm.unfccc.int	Website
65.	VCS	/vcs/	VCS	http://www.v-c-s.org/	Website
66.	State Forestry and Grassland Administration	/cfsr/	2016 China forestry statistical yearbook	https://navi.cnki.net/knavi/yearbooks/YCSRT/detail	Website

APPENDIX 4 CLARIFICATION REQUESTS, CORRECTIVE ACTION REQUESTS AND FORWARD ACTION REQUESTS

Table 1. CL from this validation

CL ID	01	Section no.	1.3	Date : 09/11/2020
Description of CL				
PP is not justify how the project is eligible under the scope of the VCS Program in PD as per the section 2.1.1 of VCS Standard Version 4.1 in section 1.3				
Project participant response				Date : 02/06/2021
It's modified into: 1. The six Kyoto Protocol greenhouse gases. 2. Ozone-depleting substances. 3. Project activities supported by a methodology approved under the VCS Program through the methodology approval process. 4. Project activities supported by a methodology approved under a VCS approved GHG program, unless explicitly excluded under the terms of Verra approval. 5. Jurisdictional REDD+ programs and nested REDD+ projects as set out in the VCS Program document Jurisdictional and Nested REDD+ (JNR) Requirements. The scope of the VCS Program excludes projects that can reasonably be assumed to have generated GHG emissions primarily for the purpose of their subsequent reduction, removal or destruction. The project activity related to generation of GHG emission reductions and removals, does not include carbon footprint assessments or carbon neutrality claims. The project activities supported by a methodology of VM0010 version 1.3 is approved under the VCS Program through the methodology approval process and approved under a VCS approved GHG program³, not excluded under the terms of Verra approval. The project is eligible under the scope of the VCS Program.				
Documentation provided by project participant				
☒	Changes in the PD	Section(s): 1.3	New version No.: 04	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☐	Other:			
DOE assessment				Date: 21/06/2021
The revised PD is checked, it is confirmed that PP has demonstrated the project is eligible under the scope of the VCS Program which is verified as in line with the VCS standard. Refer to section 3.1 of this report for details assessment.				
Conclusion Tick the appropriate checkbox		☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

CL ID	02	Section no.	1.7	Date : 09/11/2020
Description of CL				

³ <https://verra.org/methodologies/>

The description of the ownership in section 1.7 is not consistent with section 1.1, PP is requested to clarify the ownership of the forest, land and project and provide supporting evidence to prove the statement and also keep the consistency in the whole PD.			
Project participant response			Date : 02/06/2021
The forests of this project are owned by many different owners, including stated-owned owners, privately-owned and collective-owned. According to the agreements signed by the owners, Huanjiang Maonan Autonomous County Huashan Forestry Investment Co., Ltd and Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd, Huanjiang Maonan Autonomous County Huashan Forestry Investment Co., Ltd, which is authorized by the forest owners will execute the corresponding power of distributing CERS revenue. Huanjiang Maonan Autonomous County Huashan Forestry Investment Co., Ltd commissioned Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd to apply the emission reductions from their IFM project activity using VCS standard.			
Documentation provided by project participant			
☒	Changes in the PD	Section(s): 1.7	New version No.: 04
☐	Changes in XLS	Worksheet(s):	New version No.:
☒	Other:	/DCA/, /CFR/, /CLR/	
DOE assessment			Date: 21/06/2021
The revised PD is checked, it is confirmed that the ownership in section 1.7 is consistent with section 1.1 and consistent in the whole PD.			
The section 1.7 of the PD has been checked, and during the on-site visit and checking the business license/ ^{BL} / of the participant parties, the Certificate of Forest Right/ ^{CFR} /, and the carbon reduction project Development Cooperation Agreement signed between the forest stations, local farmers, village collective, Huanjiang Maonan Autonomous County Huashan Forestry Investment Co., Ltd. and Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd./ ^{DCA} /, it is verified that the project developer Huanjiang Maonan Autonomous County Huashan Forestry Investment Co., Ltd. is a privacy company, who is in charge of the integrated implementation and management of the project. The forests involved in the project are state-owned forests or privately-owned or collective-owned which has been confirmed by site interview with local officer from Forest Bureau/ ^{I2} / and checking the Certificate of Forest Right/ ^{CFR} / and Certification of land rights/ ^{CLR} /.			
The project proponent is responsible for the comprehensive implementation and management of the project and project proponent have the right to conduct the project and have the right to the decisions of environmental credits (VCUs) derived from it which is confirmed by checking the carbon reduction project Development Cooperation Agreement / ^{DCA} / and interview with PP/ ^{I1} /.			
Conclusion Tick the appropriate checkbox		☐ Additional action should be taken (finding remains open) ☒ The finding is closed	

CL ID	03	Section no.	1.17	Date : 09/11/2020
Description of CL				
As per section 3.14.9 of VCS standard 4.1, "IFM projects may apply the appropriate market leakage discount factor identified in Table 2 to the net change in carbon stock associated with the activity that reduces timber harvest to determine market leakage", the related information of leakage is not clarified by PP.				
Project participant response				Date : 02/06/2021

The total timber harvest volumes are based on the logging quotas which approved by local forest bureau. When the IFM project activity was implemented, there would be no logging quotas for the forests in the area of the project be approved. The country logging could not be increased without any logging quotas. Therefore, the IFM project activity was with no effect on timber harvest volumes, there is no leakage risk.			
Documentation provided by project participant			
☒	Changes in the PD	Section(s): 1.17	New version No.: 04
☐	Changes in XLS	Worksheet(s):	New version No.:
☒	Other:		
DOE assessment			Date: 21/06/2021
The revised PD is checked, it is confirmed that related information has been added. The project does not involve in the activity shifting leakage. In China, the forest timber harvest is strictly controlled by the authority. Also, the China Forest Law also clearly stipulates the punishment for the illegal logging. Based on the local expertise of validation team, it is confirmed that, the timber harvest is tightly controlled by the forestry authority, the illegal logging is severely punished in China. Therefore, for the project activity, the PP have no right to harvest more in other parcels outside the project activity and the project does not involve in the activity shifting leakage. And after the project implemented, the leakage factor is determined by considering where in the country logging will be increased as a result of the decreased supply of the timber caused by the project. If the areas liable to be logged have a higher ratio of merchantable biomass to total biomass higher than the project area it is likely that the proportional leakage is higher and vice versa. Therefore, based on the above assessments by VVB, it is confirmed that for the project, no market-effects leakage will occur within national boundaries, since there are no new concessions assigned. As the strict law and regulations, the illegal logging is also absent in the project. However, in order to demonstrated the market leakage factor of the proposed project in a more conservative way, PP discuss it according to the VCS Standard Section 3.14.8, 3.14.9 and the remained option stated in the VM0010 (V1.3) Section 8.3.2. PP has calculated the market leakage ratio and make deductions following the procedure set out in Box 2 of VM0010 (refer to section 3.3.6 of this validation report for detail assessment of the market leakage ratio) Hence, according to the VCS standard/^{VCSS}/, this FM project has applied the appropriate market leakage discount factor and the demonstration of market leakage has been clarified in the PD.			
Conclusion <i>Tick the appropriate checkbox</i>		☐ Additional action should be taken (finding remains open) ☒ The finding is closed	

CL ID	04	Section no.	2.1	Date : 09/11/2020
Description of CL				
In section 2.1 of the no net harm, PP is requested to clarify the project situation and describing what government documents are used to determine that the project has no negative environmental or socio-economic impact, instead of just writing this conclusion. In particular, it is necessary to discuss whether the forest owner will have a socio-economic impact after logging not allowed, and what measures have been taken to compensate or reduce the impact must be clearly clarified.				
Project participant response				Date : 02/06/2021
An Environmental Impact Assessment (EIA) is not required for logged to protected forest projects according to Construction project classification management of environmental impact assessment list15. The key				

mitigation action of the project activity is avoiding the illegal harvest of the forest, which can protect and improve the surviving environment, keep the ecological balance, save the species resources and enhance homeland security. According to the guideline of the General Office of the State Council on improving the compensation mechanism for ecological protection⁴, the commercial logging subsidy and reward funds will be stopped, and the dynamic adjustment mechanism of forest compensation standards will be improved to improve the management and protection mechanism of forest, which mainly relies on government purchase of services. In this way, this will make up for the loss of timber harvest income for the foresters, as well as an additional income when the VCU are sold. Therefore, there is no potential negative environmental or socio-economic impact due to the project.			
Documentation provided by project participant			
☒	Changes in the PD	Section(s): 2.1	New version No.: 04
☐	Changes in XLS	Worksheet(s):	New version No.:
☒	Other:		
DOE assessment			Date: 21/06/2021
The revised PD is checked, it is confirmed that PP has clarified the project actual situation. Refer to section 3.2.1 of this report for detail assessment.			
Conclusion Tick the appropriate checkbox		☐ Additional action should be taken (finding remains open) ☒ The finding is closed	

CL ID	05	Section no.	2.2	Date : 09/11/2020
Description of CL				
In section 2.2, the requirement for the AFOLU project in the PD template is not demonstrated by PP.				
Project participant response				Date : 02/06/2021
During the implementation of the project, the local forestry bureau would continue to conduct a questionnaire survey among stakeholders to understand their opinions. Since the project is running normally, local stakeholders have no opinion. The local forestry bureau also conducts regular training on ecological forest conservation for stakeholders to ensure better implementation of the project. ● The project design and implementation, including the results of monitoring. 1) It will be announced by the local forestry bureau. ● The risks, costs and benefits the project may bring to local stakeholders. 2) PP has entered into agreements with various local stakeholders of the project, which are supervised by the local forestry bureau. ● All relevant laws and regulations covering workers' rights in the host country. 3) The local forestry bureau has publicized to the local stakeholders of the project. ● The process of VCS Program validation and verification and the validation/verification body's site visit. 4) The validation body's visit has completed in Nov, 2020. The process of validation will be completed before June, 2021.				
Documentation provided by project participant				
☒	Changes in the PD	Section(s): 2.2	New version No.: 04	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☒	Other:			
DOE assessment				Date: 21/06/2021

⁴ http://www.gov.cn/zhengce/content/2016-05/13/content_5073049.htm

The revised PD is checked, it is confirmed that PP has demonstrated the project actual situation in line with requirement for the AFOLU project as per the PD template. Refer to section 3.2.2 of this report for detail assessment.	
Conclusion <i>Tick the appropriate checkbox</i>	☐ Additional action should be taken (finding remains open) ☒ The finding is closed

CL ID	06	Section no.	2.4	Date : 09/11/2020
Description of CL				
In section 2.4, the actual of the public period and if comments received for this project is not provided.				
Project participant response				Date : 02/06/2021
This project was open for public comment from 08-September-2020 to 08-October-2020. No comments were received.				
Documentation provided by project participant				
☒	Changes in the PD	Section(s): 2.4	New version No.: 04	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☒	Other:			
DOE assessment				Date: 21/06/2021
The project sought the registration with the VCS Program, according to VCS requirements the Project Description was submitted for public comment period. The project was allocated with VCS ID 2327. The public comment period started on 08-September-2020 and ended on 08-October-2020 (https://registry.verra.org/app/projectDetail/VCS/2327).				
No comments were received during this period which has been verified by checking the dedicated webpage as above.				
Conclusion Tick the appropriate checkbox		☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

CL ID	07	Section no.	2.5	Date : 09/11/2020
Description of CL				
1. The identification of local stakeholder is not complete. 2. As per the request in PD template, "For AFOLU projects with no impacts on local stakeholders, provide evidence of such", PP has demonstrated that there is no risk to local stakeholders due to the project implementation, but not provide the evidence description, clarification is requested. 3. How the PP get the local stakeholder's prior and informed consent is not clarified. 4. Based on the PP statement that the PRA (Participatory Rural Appraisal) will be done every two years, due to the project was implemented in 2016, PP should have conducted two times PRA, the related information need to be provided to prove ongoing communication and consultation with local stakeholder and related PRA reports need to be provided. 5. There are new requirements for stakeholder consultation in the new standard 4.1 sec 3.16.9. Paragraph: 3.16.11 to 3.16.18 have to be demonstrated here as well. Support the single steps with evidences. 6. The process that ensures ongoing grievance process is not clarified.				
Project participant response				Date : 02/06/2021
1. The local stakeholder mainly include state-owned forest farms, collective-owned forestry owners and private forestry owners in Huanjiang Maonan Autonomous County. 2. According to agreement between PP and local stakeholders, there is no risk to local stakeholders due to the project implementation.				

3. When the project implement, the local stakeholders could not living for selling trees. The PP applied the project to VCS project and the local stakeholder could live for selling the VCU and managing forest, it's according the agreements which were signed by the PP and the local stakeholders, and the property rights of local stakeholders are protected by the Civil Code of the People's Republic of China, so the project will not impact local stakeholder's property rights without the free, prior and informed consent.
4. PRA has been provided and information is updated.
5. Prior to the implementation of the project, the local forestry Bureau held a mobilization meeting about the project activities. The local forestry bureau informed the representatives of each stakeholder to participate the meeting through the forestry stations of each township. The mobilization meeting was held in Jan 2016. The project proponent presented: what the project activity was, the benefit of the local stakeholders, the risks, costs and benefits the project might bring to local stakeholders, the relevant laws and regulations, the rights of workers, the process of VCS Program validation and verification and the validation/verification body's site visit, etc in the meeting. When the project implemented, the local stakeholders could not get timber harvest. But according the agreements signed by the PP and the local stakeholders, the PP would apply the project to VCS project. Then the local stakeholders could live for selling VCUs instead of selling timber harvest. Meanwhile, local forestry bureau would provide more jobs opportunities for the local stakeholders to manage and protect the forest, so as to ensure that the income of stakeholders was increased. So the project will not impact local stakeholder's property rights without the free, prior and informed consent. All the local stakeholders were excited and indicated that they would support the project activity.
When the project implemented, the local stakeholders could not living for selling trees. The PP applied the project to VCS project and the local stakeholder could live for selling the VCUs and managing forest, it's according the agreements which were signed by the PP and the local stakeholders, and the property rights of local stakeholders are protected by the Civil Code of the People's Republic of China, so the project will not impact local stakeholder's property rights without the free, prior and informed consent. Processes to ensure ongoing communication and consultation with local stakeholders, including a grievance redress procedure to resolve any conflicts which may arise between the project proponent and local stakeholders. Based on participatory rural appraisal tools such as field trips, questionnaires, community meetings and interviews with representative of the local stakeholders, the project activity was evaluated. The results showed that: The project activity could well reflect the livelihood development needs of local stakeholders, and would contribute not only to climate change mitigation, but also to community economic development and environmental protection. Relevant stakeholders such as farmers, communities and governments have put forward useful suggestions for the implementation of the project.
According to Chapter II of the Labour Law of the People's Republic of China, workers are not discriminated against in employment on the basis of their ethnic group, race, sex or religious belief. Women enjoy equal rights with men in employment, and employers are prohibited from recruiting minors under the age of 16. As the supervisor of the project, the local forestry Bureau supervised that all parties of the project did not violate laws during the implementation of the project, including labour and criminal laws, so as to avoid discrimination (gender/age/religion) and sexual harassment. PRA (Participatory Rural Appraisal) will be done every two years, and the local government resolves any conflicts which may arise between the project proponent and local stakeholder according to the relevant law.
6. Processes to ensure ongoing communication and consultation with local stakeholders, including a grievance redress procedure to resolve any conflicts which may arise between the project proponent and local stakeholders. Based on participatory rural appraisal tools such as field trips, questionnaires, community meetings and interviews with representative of the local stakeholders, the project activity was evaluated. The results showed that: The project activity could well reflect the livelihood development needs of local stakeholders, and would contribute not only to climate change mitigation,

but also to community economic development and environmental protection. Relevant stakeholders such as farmers, communities and governments have put forward useful suggestions for the implementation of the project. PRA (Participatory Rural Appraisal) will be done every two years, and the local government resolves any conflicts which may arise between the project proponent and local stakeholder according to the relevant law			
Documentation provided by project participant			
☒	Changes in the PD	Section(s): 2.5	New version No.: 04
☐	Changes in XLS	Worksheet(s):	New version No.:
☒	Other:	/LSC/, /PRA/	
DOE assessment			Date: 21/06/2021
1. The revised PD is checked, it is confirmed that the identification of local stakeholder is updated to be complete. 2. The revised PD is checked, it is confirmed that the PP has demonstrated that there is no risk to local stakeholders due to the project implementation which is confirmed as correct by checking the questionnaires/^{LSC}/. 3. The revised PD is checked, it is confirmed that the PP get the local stakeholder's prior and informed consent has been clarified. 4. The revised PD is checked, it is confirmed that PRA description in this section has been updated accordingly which is confirmed by checking the PRA/^{PRA}/. 5. The related description has been added into the PD, and supporting evidence is provided and assessed by VT, and the related assessment has been added into the FVR. The explanation has been included about how discrimination (gender/age/religion) and sexual harassment will be avoided which is confirmed in line with the Labour Law of the People's Republic of China/^{LAW}/. 6. The clarification is confirmed as in line with the requirement. The ongoing grievance process is defined accordingly. PD has been checked and confirmed. Refer to section 3.2.5 of this report for detail assessment.			
Conclusion <i>Tick the appropriate checkbox</i>		☐ Additional action should be taken (finding remains open) ☒ The finding is closed	

CL ID	08	Section no.	3.2	Date : 09/11/2020
Description of CL				
1. As per the applied methodology VM0010, demonstration of Eligibility in section 4.1 of the methodology is not clarified in section 3.2 of PD. 2. Applicability of Meth: if timber harvesting only means tending, no harvest is not clarified in this section.				
Project participant response				Date : 02/06/2021
1. Eligibility Legal Right to Harvest According to Forest law of the People's Republic of China and Regulations of the People's Republic of China on Forestry Law, the forest owner cannot increase timber harvest freely according to timber market without government approval. Baseline deforestation in the project area was planned by Forestry Investigation, Planning and Design Team who is qualified. And the forest lands in the project area were legally permitted by local forestry bureau before the project started. Intent to Harvest According to the Forest Resources Planning and Design Survey Report of Huanjiang Maonan Autonomous County taken by Guangxi Zhuang Autonomous Region forestry survey and design Institute, all the woodlands in the project are timber forests. Before 2016, all forests in the project area which the trees could be logged				

and sold once reached the cutting rotation age under Timber Harvest Agreements based on Forest Cutting Quota which approved by government of Guangxi. 2. The section is updated with the planned timber harvest would not be cut, just be tended.			
Documentation provided by project participant			
☒	Changes in the PD	Section(s): 3.2	New version No.: 04
☐	Changes in XLS	Worksheet(s):	New version No.:
☒	Other:	/CFR/,/THP/,/LRH/	
DOE assessment			Date: 21/06/2021
1. The revised PD is checked, it is confirmed that demonstration of Eligibility in section 4.1 of the methodology is clarified as per the applied methodology. Legal Right to Harvest Via checking the Certificate of Forest Right/^{CFR/}, also reviewing the timber harvest plan/^{THP/} and legal right to harvest/^{LRH/} issued by Forest bureau of Huanjiang Maonan Autonomous County and on-site interview with local officer/^{12/}, it is verified that the legal right to harvest have been pre-existed the implementation of the project. The legal right to harvest/^{LRH/} has been issued by a relevant government body Forest bureau of Huanjiang Maonan Autonomous County which has defined a legal allocation of rights to a forest timber resource, and include a plan for forest management that includes a definition of the spatial extent of the forest, the volume of the timber resource to be extracted and a description of harvesting practices. Rights to forest management, i.e. the IFM Program/^{IFMP/} of the project issued by Guangxi Academy of Forestry Sciences has demonstrated by documentary proof of legal permissibility for timber harvest, intent to harvest and a description of the timber resource. This IFM Program/^{IFMP/} has been approved by Forest bureau of Huanjiang Maonan Autonomous County. Intent to Harvest Via checking the Certificate of Forest Right/^{CFR/}, also reviewing the timber harvest plan/^{THP/} and legal right to harvest/^{LRH/} issued by Forest bureau of Huanjiang Maonan Autonomous County and on-site interview with local officer/^{12/}, it is verified that the intent to harvest through the evidence originating prior to the date in pursuit of carbon finance/consideration of IFM. PP has provided A valid and verifiable government-approved timber management plan for harvesting the project area by reviewing the timber harvest plan/^{THP/} and legal right to harvest/^{LRH/} issued by Forest bureau of Huanjiang Maonan Autonomous County. Hence it is verified that the eligibility in the applied methodology is fulfilled. 2. Revision is confirmed as correct and revised PD has been checked.			
Conclusion <i>Tick the appropriate checkbox</i>		☐ Additional action should be taken (finding remains open) ☒ The finding is closed	

CL ID	09	Section no.	3.4.1	Date : 09/11/2020
Description of CL				
1. As per the applied "Tool for the Demonstration and Assessment of Additionality in VCS Agriculture,				

Forestry and Other Land Use (AFOLU) Project Activities” (version 3.0), there are 4 steps listed in section 3.4.1, however, only step 1 and 1.a was analyzed, clarification is requested. 2. How to prove the “lands within the project boundary of the proposed VCS AFOLU project are all with the same legal requirements and are existed as forests more than ten years prior to the project start date” is not clarified.			
Project participant response			Date : 02/06/2021
1. Step 1. Identification of alternative land use scenarios to the proposed VCS AFOLU project activity Sub-step 1a. Identify credible alternative land use scenarios to the proposed VCS AFOLU project activity Sub-step 1b. Consistency of credible land use scenarios with enforced mandatory applicable laws and regulations Sub-step 1c. Selection of the baseline scenario Step 2. Investment analysis Sub-step 2a. Determine appropriate analysis method Sub-step 2b. – Option I. Apply simple cost analysis Sub-step 2b. – Option II. Apply investment comparison analysis Sub-step 2b – Option III. Apply benchmark analysis Sub-step 2c. Calculation and comparison of financial indicators (only applicable to options II and III) Sub-step 2d. Sensitivity analysis (only applicable to options II and III) Step 3. Barrier analysis Sub-step 3a. Identify barriers that would prevent the implementation of the type of proposed project activity Sub-step 3b. Show that the identified barriers would not prevent the implementation of at least one of the alternative land use scenarios (except the proposed project activity) Step 4. Common practice analysis This section focuses on how to determine the selection of baseline, so only sub-step 1a is mentioned in this section. The remaining steps (e.g. sub-step 1b, sub-step 1c, step 2, step 3, step 4) are expounded in section 3.5. 2. It is according to the Forest Resources Planning and Design Survey Report of Huanjiang Maonan Autonomous County taken by Guangxi Zhuang Autonomous Region forestry survey and design Institute, of Huanjiang Maonan Autonomous County.			
Documentation provided by project participant			
☒	Changes in the PD	Section(s): 3.4.1	New version No.: 04
☐	Changes in XLS	Worksheet(s):	New version No.:
☒	Other:	/FSCI/, /FRP/	
DOE assessment			Date: 21/06/2021
1. The revised PD is checked, it is confirmed that there are 4 steps as per the applied “Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities” (version 3.0) have been listed in section 3.4.1 and related steps have been analyzed in section 3.5. 2. The revised PD is checked, it is confirmed that “lands within the project boundary of the proposed VCS AFOLU project are all with the same legal requirements and are existed as forests more than ten years prior to the project start date” is proved by forest second class investigation /FSCI/ of Huanjiang Maonan Autonomous County.			
Conclusion		☐ Additional action should be taken (finding remains open) ☒ The finding is closed	

Tick the appropriate checkbox	
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Table 2. CAR from this validation

CAR ID	01	Section no.	1.1	Date : 09/11/2020
Description of CAR				
1. The description of “the geo-coordinate of the project proponent is 107°51'E~108°43'E and 24°44'N~25°33'N” is not correct, the coordinates need to be relevant to project area not to PP. Revision is requested. 2. The value of total area is not consistent in the whole section 1.1, revision is requested. 3. The value of project area and numbers of subcompartments are not consistent with the related evidence. 4. Who have the legal right to forest ownership is not provided clearly. 5. Clarify the historical use of the forest. Are these older plantations or is the forest a natural forest that is managed since when?. 6. To get a better understanding of the projects forest type, please include information on history of the forest (natural forest under management or planted forest under management), since when this forest is managed historically, what is the usual type of management (clearcutting, etc) and a rough age structure of the forests and trees. At one point in the PD a list of main broad-leave species shall be included. 7. When the harvesting plan was approved is not provided.				
Project participant response				Date : 02/06/2021
1. It's a mistake of description, the geo-coordinate of the project is 107°51'E~108°43'E and 24°44'N~25°33'N, which includes the Improved Forest Management (IFM) of the forests in the conversion of logged to protected forest. 2. The area of the project activity is 9,346.72 ha 3. At the beginning, the data of the harvest timber plan is wrong, and now it's corrected. 4. There are many different owners of different ownership in this project, including state-owned, privately-owned and collective-owned. All the owners authorized the project proponent to access the project to their behalf. 5. The historical use of the forest is for timber harvest before the implementation of the project. According the timber harvest plan, the forest would be clear-cut from 2016 to 2020. The historical use of the forest was for timber harvest before the implementation of the project. According to the timber harvest plan, the forest would be clear-cut from 2016 to 2020. The age of Broad-leaved tree was 17-87, Chinese fir was 13-59, Pinus massoniana was 13-52. According to IPCC Guidelines for National Greenhouse Gas Inventories (2006), Table4.9, the regrowth rate in baseline scenario was re-calculated. 6. The species involved in the project are Broad-leaved tree (e.g.Castanopsishystrix, Oak, SchimaWallichii, Acacia, Other soft Broad-leaved tree, etc), Chinese fir and Pinus massoniana. The forest of the project was older plantations or natural forest under managing. The forest age was around 13-87. Before the implantation of the project, the usual type of management was clearcutting. And these will be added into the PD. 7. In the baseline scenario, the harvest timber plan for the area has been completed and approved by the Forestry Bureau of Huanjiang Maonan Autonomous County on 31-Mar-2015.				
Documentation provided by project participant				
☒	Changes in the PD	Section(s): 1.1	New version No.: 04	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☒	Other:	/IFMP/, /CLR/, /CFR/, /BL/, /DCA/, /THP/		
DOE assessment				Date: 21/06/2021
1. The revised PD is checked, it is confirmed that description has been corrected accordingly.				

2. The revised PD is checked, it is confirmed that value of total area has been corrected accordingly. 3. The revised PD is checked, it is confirmed that value of project area and numbers of subcompartments has been corrected accordingly and consistent with the related evidence/IFMP/. 4. The revised PD is checked, it is confirmed that the ownership has been updated in the whole PD to be consistent. The section 1.1 of the PD has been checked, and during the on-site visit and checking the business license/BL/ of the participant parties, the Certificate of Forest Right/CFR/, and the carbon reduction project Development Cooperation Agreement signed between the forest stations, local farmers, village collective, Huanjiang Maonan Autonomous County Huashan Forestry Investment Co., Ltd. and Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd./DCA/, it is verified that the forests involved in the project are state-owned forests or privately-owned or collective-owned which has been confirmed by site interview with local officer from Forest Bureau/12/ and checking the Certificate of Forest Right/CFR/ and Certification of land rights/CLR/. 5. The related information is confirmed as in line with the provided timber harvest plan and the PD has been updated accordingly with the latest data based on TR comments. 6. The clarification is confirmed as clear and following with the request, the information is verified by site visit and checking the harvest plan/THP/. 7. The date is confirmed as correct by checking the harvest plan/THP/	
Conclusion Tick the appropriate checkbox	☐ Additional action should be taken (finding remains open) ☒ The finding is closed

CAR ID	02	Section no.	1.2	Date	09/11/2020
Description of CAR					
1. The scope of the project is not completely provided, AFOLU need the whole explanation. 2. Why the project is applicable to AFOLU category is not clearly clarified as per the Appendix I of VCS standard 4.1.					
Project participant response					Date
1. AFOLU means Agriculture, Forestry and Other Land Use 2. Eligible IFM activities are those that increase carbon sequestration and/or reduce GHG emissions on forest lands managed for wood products such as sawtimber, pulpwood and fuelwood by increasing biomass carbon stocks through improving forest management practices. The baseline and project scenarios for the project area shall qualify as forests remaining as forests, such as set out in the IPCC 2006 Guidelines on National GHG Inventories, and the project area shall be designated, sanctioned or approved for wood product management by a national or local regulatory body (e.g., as logging concessions or plantations). According to the Forest Resources Planning and Design Survey Report of Huanjiang Maonan Autonomous County taken by Guangxi Zhuang Autonomous Region forestry survey and design Institute of Huanjiang Maonan Autonomous County, the woods in the project area are timber forests, and they meet the commercial logging standards. In the baseline scenario, the harvest timber plan for the area has been completed and approved by the Forestry Bureau of Huanjiang Maonan Autonomous County. In the project scenario, the forestry bureau of Huanjiang Maonan Autonomous County announced that commercial logging in the area was banned and forest protection was implemented as of 01-July-2016. Therefore, the project accord with Improved Forest Management: Logged to Protected Forest (LtPF)					02/06/2021
Documentation provided by project participant					
☒	Changes in the PD	Section(s):	1.2	New version No.:	04
☐	Changes in XLS	Worksheet(s):		New version No.:	
☐	Other:				
DOE assessment					Date:
					21/06/2021

1. The revised PD is checked, it is confirmed that scope of the project is completely provided. 2. The revised PD is checked, it is confirmed that the project is applicable to AFOLU category have been clearly clarified as per the Appendix I of VCS standard 4.1. Refer to section 3.1 of this report for detail assessment.	
Conclusion <i>Tick the appropriate checkbox</i>	☐ Additional action should be taken (finding remains open) ☒ The finding is closed

CAR ID	03	Section no.	1.8&1.9	Date : 09/11/2020
Description of CAR				
1. Why the start date is adjusted from 01/01/2016 to 01/07/2016 need to be clarified. 2. How the start date of the project is determined based on the requirement of VCS standard 4.1 is not clarified. 3. The project lifetime is not provided in section 1.9 to comparing with the crediting period, so that prove the 20 years length of period is reasonable.				
Project participant response				Date : 02/06/2021
1. Mistakes were made because the submitter provided a misstatement. 2. This is according to the Notice of Guangxi Huanjiang IFM (Conversion of Logged to Protected Forest) Project issued by Huangjiang Maonan Autonomous County Forestry Bureau on December 28, 2015. The Notice stipulated that commercial logging would be strictly forbidden and forest protection would be implemented from July 1, 2016. 3. According to VCS Standard version 4.1, the start date of the project activity is 01-July-2016, which is indicated in the notice on the forbidding commercial logging was issued by Huangjiang Maonan Autonomous County Forestry Bureau on 28-Decmber-2015. It is indicated in this notice issued by local forest authority that from 01-July-2016 the commercial timber harvest was strictly forbidden within the project boundary. The project crediting period is from 01-July-2016 to 30-June-2036 with the total length of 20 years, indicated in the VCS development consultation and service agreement. According to the owner's forest ownership document, each owner had more than 60 years of ownership of forest in the project site since the project started. Therefore, the project lifetime can be considered as at least 30 years base on conservative principles.				
Documentation provided by project participant				
☒	Changes in the PD	Section(s):1.8&1.9	New version No.: 04	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☒	Other:	/NIFM/,/IFMP/		
DOE assessment				Date: 21/06/2021
1. The revised PD is checked, it is confirmed that the original start date is a typo mistake. The project start date is 01-July-2016 which is verified as the date when the application for logging suspension and start the IFM project was approved by Huanjiang Maonan Autonomous County Forestry Bureau, and it represents the date on which the project began generating GHG emission reductions or removals as defined by the VCS requirements. Via checking the Notice of Guangxi Huanjiang IFM (Conversion of Logged to Protected Forest) Project issued by Huanjiang Maonan Autonomous County Forestry Bureau^{/NIFM/}, it is verified that the start date is correct and in line with the VCS Standard Version 4.1. Hence it is verified that the start date adjusted from 01/01/2016 to 01/07/2016 is correct and reasonable. 2. The revised PD is checked, it is confirmed that the start date of the project is determined based on the requirement of VCS standard 4.1 has been clarified. See above assessment. 3. The revised PD is checked, it is confirmed that the project lifetime of 30 years is provided in section 1.9 to comparing with the crediting period, which prove the 20 years length of crediting period is reasonable. Via checking the IFM program^{/IFMP/}, it is verified that the lifetime of project is reasonable.				

Conclusion Tick the appropriate checkbox	☐ Additional action should be taken (finding remains open) ☒ The finding is closed
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CAR ID	04	Section no.	1.11	Date : 09/11/2020
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Description of CAR

1. The area value for each stratum is not correct and data source is not relevant.
2. The requirement for the AFOLU project in the PD template is not demonstrated by PP in section 1.11.

Project participant response
Date : 02/06/2021

1. The area of stratum 1 (Broad-leaved tree) is 4440.05 ha, The area of stratum 2 (Chinese fir) is 2736.96 ha, The area of stratum 3 (Pinus massoniana) is 2169.71 ha, The total area is 9346.72 ha. The data source is from the timber harvest plan issued by Huanjiang Autonomous County Forestry Investigation, Planning and Design Team
2. The project will promote local sustainable development by the conversion of logged to protected forest. Major contributions of the project are as follows:

- (1) The implementation of the project will control soil and water erosion and land degradation, and will prevent rocky desertification in the project areas;
- (2) The implementation of the project will enhance biodiversity conservation by increasing forest cover and nature habitat connectivity;
- (3) The implementation of the project will absorb and fix carbon dioxide every year by conversion of logged to protected forest, and reduce GHG emission.
- (4) The implementation of the project will generate income for the local Foresters by regular forest management. Local people's standard of living has been developed.

When the project was implemented, the local forestry bureau would not issue cutting quotas to all forest-owners within the project area. The PP, Huanjiang Maonan Autonomous County Huashan Forestry Investment Co., Ltd would organize forest-owners to turn the personnel for logging into those for forest protection. In this case, the PP was responsible for the organization and coordination, the forest-owners or the employees were responsible for the implementation of management, protection and planting, and the local forestry bureau is responsible for the supervision

When the project was implemented, the project was not located within a jurisdiction covered by a jurisdictional REDD+ program.

Documentation provided by project participant

☒	Changes in the PD	Section(s): 1.11	New version No.: 04
☐	Changes in XLS	Worksheet(s):	New version No.:
☒	Other:		

DOE assessment
Date: 21/06/2021

1. The revised PD is checked, it is confirmed that the area value for each stratum is correct and data source is relevant.
2. The revised PD is checked, it is confirmed that the requirement for the AFOLU project in the PD template has been demonstrated by PP in section 1.11.

Refer to section 3.1 of this report for detail assessment.

Conclusion Tick the appropriate checkbox	☐ Additional action should be taken (finding remains open) ☒ The finding is closed
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CAR ID	05	Section no.	1.12	Date : 09/11/2020
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Description of CAR

The map of the project area is missing.

Project participant response		Date : 02/06/2021	
The map of project area has been provided.			
Documentation provided by project participant			
☒	Changes in the PD	Section(s): 1.12	New version No.: 04
☐	Changes in XLS	Worksheet(s):	New version No.:
☒	Other:	/KML/, /GEM/	
DOE assessment		Date: 21/06/2021	
The revised PD is checked, it is confirmed that the map of the project area is added accordingly. There are 1,306 subcompartments spreading over Huashan forest farm, Chuanshan Town, Dongxing Town, Luoyang Town, Minglun Town, ShuiRMB Town, Si'en Town, Da'an Township, Lonyan Township, Tiancai Township, Xianan Township, Xunle Township, Changmei Township of Huanjiang Maonan Autonomous County. KML file with project boundary is checked as provided/KML/, and is verified as consistent with the PD and on-site investigation by GPS devices and checking the google earth map/GEM/.			
Conclusion <i>Tick the appropriate checkbox</i>		☐ Additional action should be taken (finding remains open) ☒ The finding is closed	

CAR ID	06	Section no.	1.13	Date : 09/11/2020
Description of CAR				
1. PD is not specified as per the PD template as sentence: "Where the baseline scenario is the same as the conditions existing prior to the project initiation, there is no need to repeat the description of the scenarios (rather, just state that this is the case and refer the reader to Section 3.4 (Baseline Scenario)". 2. The requirement for the AFOLU project in the PD template ("For AFOLU projects, include the present and prior environmental conditions of the project area, including as appropriate information on the climate, hydrology, topography, relevant historic conditions, soils, vegetation and ecosystems.") is not demonstrated by PP in section 1.13.				
Project participant response				Date : 02/06/2021
1. The baseline scenario is the same as the conditions existing prior to the project initiation. 2. The project is located in Huanjiang Maonan Autonomous County. The project area is located in the southern edge of the central Guizhou plateau slope zone, the general terrain is high in the north and low in the south, the surrounding mountains are rolling, the central south is hilly, slightly basin, the west and northwest are mostly stone mountains, the northeast is more earthen mountains. The county can be divided into four geomorphologic types: north and northeast of the erosion of the middle and low mountain landforms, is a part of the Miaoling Mountains ninety thousand mountains, huge mountains, ravines and valleys, is the main forest distribution area in the county; The central and northern part of the land form is low mountain cluster; In the middle and south, there are middle and high mound erosion geomorphic areas. The southwest is the Karst landform area. County elevation between 400~1,000 m, the highest peak for Biaoshan Village nameless peak, 1,693 m above sea level; The lowest place is the riverbed of Bafu Village, Changmei Township, with an altitude of 149 m and a relative elevation difference of 1,544 m. Throughout the county, geomorphic types are mainly low mountains and hills. Huanjiang County is a subtropical monsoon climate zone, mild climate, abundant rain, adequate sunshine, winter without cold, summer without heat, rain and heat in the same season, long frost-free period. The average annual temperature in the southern hilly area is 19.9 °C, and the northern				

mountainous area is 15.7°C. The average temperature in January is 10.1°C, the average temperature in July is 28°C, and the lowest temperature in the past year is -5.2°C. The frost-free period was 290 days, and the average annual sunshine duration was 145.1 hours. The annual solar radiation is 98.89 kcal /cm²; The annual average rainfall is 1750.0mm in the north and 1389.1mm in the south, concentrated in April to September, accounting for 70% of the annual rainfall. The minimum rainfall in the past year is 922.8mm, the evaporation is 1571.1mm, and the average relative humidity of air is 79%.

Huanjiang County has two major rivers: the Great Huanjiang River and the Little Huanjiang River, both originating in Guizhou Province, running through the county from the north to the Longjiang River, and all the rivers of the county are emptying into the two rivers respectively. Dahuan River is 164.8 km in length, 147.2 km within the county, with a basin area of 8850 km², and an average annual flow of 62.4 m³/s. Xiaohuan River is 136.5 km in length, 94.1 km in length within the county, with a basin area of 2338 km² and an average annual flow of 39.3 m³/s. There are 136 tributaries of the two rivers with a rainwater collecting area of more than 10 km², and the total length of the rivers in the county is 631.3 km. Within the scope of forest, it had a whole south Asia tropical mountain forest ecosystem. Prior to project implementation, the present ecosystem is emerging more and more fragile due to years of logging.

The natural soils in Huanjiang County can be divided into six subtypes: red soil, yellow red soil, yellow soil, brown calcareous soil and black calcareous soil. The parent rock of the soil formation is sand shale, limestone, sandstone and shale. Yellow soil is distributed in the middle and low mountains with an altitude of over 800 m. Yellow red soil is a transitional type from red soil to yellow soil, which is distributed at an altitude of 500~800 m. Yellow red soil and yellow red soil have obvious layers, high organic matter content, pH value between 5.5 and 6.8, deep soil layer, and strong natural fertility. Red soil is distributed in the hilly terrains or the middle and lower parts of the low mountains below 500 m, with obvious soil development levels. The pH value ranges from 4.3 to 5.5, and it is rich in organic matter. Calcareous soil is mainly distributed in limestone areas, with dark color, heavy texture, pH between 6.0 and 7.4, not obvious layers and high organic matter content. The project area used to be covered by dense primordial forest, the quantity and species of wild animals and plants were plentiful. Prior to project implementation, the quantity and species of wild animals and plants are less and less due to years of timber harvest.

The implementation of project (conversion of logged to protected forest) will increase the stability of the ecosystem, enhance biodiversity conservation by increasing forest cover and nature habitat connectivity.

Documentation provided by project participant

☒	Changes in the PD	Section(s): 1.13	New version No.: 04
☐	Changes in XLS	Worksheet(s):	New version No.:
☐	Other:		

DOE assessment
Date: 21/06/2021

1. The revised PD is checked, it is confirmed that PD is specified as per the PD template as sentence: "baseline scenario is the same as the conditions existing prior to the project initiation" which is verified as correct.
2. The revised PD is checked, it is confirmed that PD has been updated based on the requirement for the AFOLU project in the PD template.

Refer to section 3.1 of this report for detail assessment.

Conclusion

Tick the appropriate checkbox

- ☐ Additional action should be taken (finding remains open)
☒ The finding is closed

CAR ID	07	Section no.	2.2	Date : 09/11/2020
Description of CAR				
1. The description of the local stakeholders only mentioned residents who lives in the community, it is not complete as there will be more parties and communities, forest farms who are impacted by the project need to be defined as the local stakeholders. 2. The summary of the information of 50 interviewees need to be provided. 3. As per the PD template, the information related to “How due account of all and any input received during the consultation has been taken. Include details on any updates to the project design or justify why updates are not appropriate” is not provided.				
Project participant response				Date : 02/06/2021
1. Questionnaires were distributed by the project proponent to the residents who lives in the community, officers of the local forestry bureau, staffs of Huashan Forestry farm, villagers committee, and other closely related to the project. 2. The summary of the information of 50 interviewees is provided in table in PD. 3. The project could reduce tree logging by more than 300,000m ³ and manage forest effectively, so that it can control soil and water erosion and land degradation, prevent rocky desertification, enhance biodiversity conservation by increasing forest cover and nature habitat connectivity, absorb and fix carbon dioxide every year by conversion of logged to protected forest, and reduce GHG emission. At the same time, the project will provide thousands of employment opportunities for managing forest.				
Documentation provided by project participant				
☒	Changes in the PD	Section(s): 2.2	New version No.: 04	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☒	Other:	/SPC/,/LUA/,/PL/		
DOE assessment				Date: 21/06/2021
1. The revised PD is checked, it is confirmed that the description of the local stakeholders are complete. 2. The revised PD is checked, it is confirmed that the summary of the information of 50 interviewees has been provided. 3. The revised PD is checked, it is confirmed that the related information has been added. Refer to section 3.2.2 of this report for detail assessment.				
Conclusion Tick the appropriate checkbox		☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

CAR ID	08	Section no.	2.3	Date : 09/11/2020
Description of CAR				
The conclusion of the environmental impact by the project is not provided.				
Project participant response				Date : 02/06/2021
An Environmental Impact Assessment (EIA) is not required for logged to protected forest projects according to Construction project classification management of environmental impact assessment list. The key mitigation action of the project activity is avoiding the illegal harvest of the forest, which can protect and improve the surviving environment, keep the ecological balance, save the species resources and enhance homeland security. Therefore, the project has no negative impact on the environment.				
Documentation provided by project participant				
☒	Changes in the PD	Section(s): 2.3	New version No.: 04	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☐	Other:	/LEIA/		
DOE assessment				Date: 21/06/2021

In China, according to Chinese law “Environmental Impact Assessment Law of the People’s Republic of China”/LEIA/, it is confirmed that there is no requirement from any environmental impact assessments to the type of the project that changed logged to protected.

It is considered that the project is implemented to convert logged forests to protected forests. It eliminates harvesting for timber, biomass carbon stocks are protected and can increase as the forest continues to grow, so there is no big change to the baseline scenario that made any planting or construction in the project area, so there was no adverse effect on the ecology, air, water and solid waste, for the project protect the forest and there are no any negative impacts found in the project location during the project implementation.

Hence the analysis of the positive environmental impacts of the project activity is sufficiently described by PP in the PD.

As per interview with local officer/^{12/} and checking the IFM Program of the project/^{IFMP/}, it is confirmed that there is no negative environmental impact created by the project during forest management implementation period.

In conclusion, the impacts are verified as actual and reasonable and there are no negative impacts to the environment were identified.

Conclusion

Tick the appropriate checkbox

- ☐ Additional action should be taken (finding remains open)
☒ The finding is closed

CAR ID	09	Section no.	3.1	Date : 09/11/2020
Description of CAR				
1. The version numbers to all the applied methodologies and tools need to be provided. 2. PP is requested to list all the methodologies and tools applied by the project, there are come are not relevant need to be deleted. 3. The name of methodology VM0011 is not correct.				
Project participant response				Date : 02/06/2021
1. VM0010 version 1.3: Methodology for Improved Forest Management: Conversion of Logged to Protected Forest This methodology uses the latest versions of the following methodologies, modules and tools: ● CDM Tool for Calculation of the Number of Sample Plots for Measurements within A/R CDM Project Activities V2.1 ● Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities”, V3.0 ● Tool for “AFOLU Non-Permanence Risk Analysis”, V4.0 2 The methodologies and tools which are not relevant has been deleted. 3 The methodology VM0011 has been deleted.				
Documentation provided by project participant				
☒	Changes in the PD	Section(s): 3.1	New version No.: 04	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☐	Other:			
DOE assessment				Date: 21/06/2021

1. The revised PD is checked, it is confirmed that version numbers to all the applied methodologies and tools have been provided. 2. The revised PD is checked, it is confirmed that PP has listed all the methodologies and tools applied by the project, some not relevant have been deleted. 3. The revised PD is checked, it is confirmed that methodology VM0011 is deleted accordingly.	
Conclusion <i>Tick the appropriate checkbox</i>	☐ Additional action should be taken (finding remains open) ☒ The finding is closed

CAR ID	10	Section no.	3.2	Date : 09/11/2020
Description of CAR				
1. PP stated that the forest tending and managing are allowed in the timber harvest plan, while the timber harvest plan is related to harvest not the forest tending and managing, revision is requested. 2. The evidence is not provided to prove "The baseline scenario, project scenario and project case don't include wetland or peatland". 3. As per the PD template, PP is requested to justify how the project activity(s) meets each of the applicability conditions of the methodology(s), and tools (where applicable) applied by the project. Address each applicability condition separately.				
Project participant response				Date : 02/06/2021
1. Under the project scenario, there is no forest use for commercial timber harvest or forest degradation. Only forest tending and managing are allowed in the forest management plan, which has been strictly carried out by the local forestry bureau. 2. According to the forest second class investigation by Huanjiang Maonan Autonomous County Forestry Investigation, Planning and Design Team, the baseline scenario, project scenario and project case don't include wetland or peatland. 3. The project meets all applicability conditions of VCS and CDM tools used in conjunction with this methodology. 1) CDM Tool for Calculation of the Number of Sample Plots for Measurements within A/R CDM Project Activities V2.1 This tool has no internal applicability conditions, so the project can use this tool to calculate the number of sample plots for measurements. 2) Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities", V3.0 The applicability conditions are: a) AFOLU activities the same or similar to the proposed project activity on the land within the proposed project boundary performed with or without being registered as the VCS AFOLU project shall not lead to violation of any applicable law even if the law is not enforced; Yes, all projects are in conformity with law. b) The use of this tool to determine additionality requires the baseline methodology to provide for a stepwise approach justifying the determination of the most plausible baseline scenario. Project proponent(s) proposing new baseline methodologies shall ensure consistency between the determination of a baseline scenario and the determination of additionality of a project activity. Yes, the baseline methodology uses a stepwise approach justifying the determination of the most plausible baseline scenario. And project proponent proposing new baseline methodologies ensure consistency between the determination of a baseline scenario and the determination of additionality of a project activity. 3) Tool for "AFOLU Non-Permanence Risk Analysis", V4.0				

The applicability conditions are the same as the methodology VM0010.			
Documentation provided by project participant			
☒	Changes in the PD	Section(s): 3.2	New version No.: 04
☐	Changes in XLS	Worksheet(s):	New version No.:
☒	Other:		
DOE assessment			Date: 21/06/2021
1. The revised PD is checked, it is confirmed that the description is updated accordingly. 2. The revised PD is checked, it is confirmed that the evidence description is provided to prove "The baseline scenario, project scenario and project case don't include wetland or peatland" which is verified as correct by checking the timber harvest plan/^{THP}/ and IFM Program/^{IFMP}/. 3. The revised PD is checked, it is confirmed that PP has justified how the project activity(s) meets each of the applicability conditions of the methodology(s), and tools (where applicable) applied by the project. Address each applicability condition separately. Refer to section 3.3.2 of this report for detail assessment.			
Conclusion Tick the appropriate checkbox		☐ Additional action should be taken (finding remains open) ☒ The finding is closed	

CAR ID	11	Section no.	3.3	Date : 09/11/2020
Description of CAR				
1. The information of project boundary is not provided as per the requirement of applied methodology. 2. The sources of Greenhouse Gases table is not in line with the applied methodology.				
Project participant response				Date : 02/06/2021
1. When describing physical project boundaries, the information is shown in Figure 1 above. The details of the sub-compartments (e.g. compartment number, sub-compartment number, local name, Unique identifier for each discrete land parcel used in the timber harvest plan, area, age, species, stock volume and geographic coordinates of each polygon vertex) are shown in timber harvest plan and forest second class investigation as appendix submitted to DOE. 2. The emissions sources included in or excluded from the project boundary are shown in the table below. The project proponent has chosen to exclude to account for GHG emissions related to the combustion of fossil fuels, which is conservative. If the application of the most recent version of the CDM Tool for testing significance of GHG emissions in A/R CDM project activities leads to the conclusion that the emission source is insignificant. In addition, the sum of decreases in carbon pools and increases in emissions that may be neglected must be less than 5% of the total project GHG benefits.				
Documentation provided by project participant				
☒	Changes in the PD	Section(s): 3.3	New version No.: 04	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☐	Other:			
DOE assessment				Date: 21/06/2021
1. The revised PD is checked, it is confirmed that the information of project boundary is provided as per the requirement of applied methodology. 2. The revised PD is checked, it is confirmed that the sources of Greenhouse Gases table is in line with the applied methodology. Refer to section 3.3.3 of this report for detail assessment.				
Conclusion Tick the appropriate checkbox		☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

CAR ID	12	Section no.	3.4.2	Date : 09/11/2020
Description of CAR				
1. The historical records of forest management are not provided by PP. 2. The demonstration of determining how to model the baseline management scenario is not related to the project itself, just the copy from the applied methodology, revision is requested. 3. After three points demonstration, PP listed the box 1 of the Timber Harvest Plan, however, why the box 1 need to be listed here is not explained, the related information is not listed. 4. As per the requested from the applied methodology, PP is requested to provide the planned timber harvesting schedule and submitted by the project proponent as part of the project documents, the English version or the translated version of the planned timber harvesting schedule need to be provided by PP. 5. Point 3.: This section is not adequately responded. It has not been shown that in the past, when timber was harvested in the area, there were no financial barriers that prevented the harvesting (for example due to low financial return). Provide evidence (log-books of timber harvested before project start, and invoices of timer selling in the past). 6. Timber harvest schedule: a) please list all broad leave species; b) Pls. state whether or not there are any max or min diameters for stump and top of the tree. (e.g. usable diameters for industrial use/sawnwood)				
Project participant response				Date : 02/06/2021
1. The Forest Management Plan of Huanjiang Maonan Autonomous County (2011-2015) will be provided by PP. 2. It's according to the timber harvest plan, Forest law of the People's Republic of China, Regulations of the People's Republic of China on Forestry Law, and the 13th Five-year Forest Harvest Limit issued by State Council (Guohan [2016] No.32), the maximum timber harvest volume in Guangxi Zhuang Autonomous Region during the period from 2016 to 2020 is $4460.9 \times 10^4 \text{ m}^3$ per year. Therefore, the maximum timber harvest is strictly controlled by the national forest authority, which not means forbidding timber harvest. Therefore, the project owner has the right to decide the quantity of logging within the authorized limit. (The project activity conversion of logged to protected forest on the land within the project boundary without being registered as the VCS AFOLU project) is not mandated by any systematically enforced law, statute or other regulatory framework, and is compliance with enforced mandatory applicable laws and regulations. 3. A timber harvest plan including a detailed timber harvesting schedule based on the historical common practice and the academic research are provided. The timber harvest plan of the project and cross-checked with local forestry bureau, and confirm the timber harvest plan is reasonable and consistent with the applicable laws and regulations. 4. The translated version of the planned timber harvesting schedule will be provided by PP. 5. According to log-books of timber harvested before project start, and receipts of timer selling in the past, timber harvest could be sold 900RMB/m³. It's considerable timber harvest income for the local stakeholders. There was no other income for the local stakeholders without timber harvest in the past. Therefore, there were no financial barriers that prevented the harvesting when timber was harvested in the area in the past. 6. The species within the project area are Broad-leaved tree (e.g.Castanopsishystrix, Oak, SchimaWallichii, Acacia, Other soft Broad-leaved tree, etc), Chinese fir and Pinus massoniana. b) In baseline scenario, the maximum diameters at DBH were 30cm 45cm and the minimum were 6cm. The maximum diameters at stump were 50cm and the minimum were 8cm. The maximum diameters at top were 10m and the minimum were 1.5m.				
Documentation provided by project participant				
☒	Changes in the PD	Section(s): 3.4.2	New version No.: 04	

☐	Changes in XLS	Worksheet(s):	New version No.:
☒	Other:	/HCFM/, /PTHC/	
DOE assessment			Date: 21/06/2021
1. The historical records of forest management have been provided by PP. Via checking the historical records of forest management since 2011/^{HCFM}/, it is verified that the forest management has been exist for 5 years preceding the project start date 01-July-2016. 2. The revised PD is checked, it is confirmed that the demonstration of determining how to model the baseline management scenario is related to the project actual situation. 3. The revised PD is checked, it is confirmed that the clarification has been provided. 4. The revised PD is checked, it is confirmed that PP has provided the planned timber harvesting schedule/^{PTHC}/ and submitted by the project proponent as part of the project documents, the English version of the planned timber harvesting schedule has been provided by PP. And it will submitted to VERRA accordingly. 5. The log-books of timber harvested before project start and receipts of timer selling in the past have been checked/^{SR}/, and it is verified that the financial return for timber harvest is considerable based on local expertise and searching the public information of the timber harvest price in China. So it is verified that there would no financial barriers that prevented the harvesting when timber was harvested in the area in the past. 6. All the Broad-leaved tree including Castanopsishystrix, Oak, SchimaWallichii, Acacia, Other soft Broad-leaved tree have been provided in line with the harvest plan and confirmed by site visit. The values of max or min diameters for at DBH and top of the tree have been provided which is in line with the harvest plan and confirmed by site visit. Refer to section 3.3.4 of this report for detail assessment.			
Conclusion <i>Tick the appropriate checkbox</i>		☐ Additional action should be taken (finding remains open) ☒ The finding is closed	

CAR ID	13	Section no.	3.4.2	Date : 09/11/2020
Description of CAR				
1. For the demonstration of a) of timber harvest and management plan, the values of area and volume are not correct. 2. For the demonstration of d) of timber harvest and management plan, whether the plan includes a design and presentation of the forestry infrastructure to harvest, skid/haul, store and move harvested timber products from the land parcels to downstream processing or market entry points is not clarified. 3. For the demonstration of b) timber harvest schedule, here is the plan to include relevant descriptions of logging equipment and facilities, it is considered not be established when the company was founded. It is hard to predict what will be used in the following logging years since company established, clarification is requested. 4. For the demonstration of d) timber harvest schedule, according to the methodology requirements, the DBH must be formulated in the plan, it is necessary to be provided although it is not required by Chinese laws and regulations. Revision is requested. 5. For the demonstration of g) timber harvest schedule, according to the methodology requirements, the Plan has to have technical specifications for the categories of wood products to be harvested, revision is requested. 6. For the demonstration of h) timber harvest schedule, whether Sawnwood has the total volumes or fractions data to be harvested is not clarified.				
Project participant response				Date : 02/06/2021
1. The values are corrected. 2. According to the timber harvest plan, the wood depots and skid trails would be planned to build,				

considering of considering of the shape of the logging area, the location of the logging subcompartment, the terrain, and the existing road. In line with the principle of saving the cost of timber collection and loading, the wood depots would be located in the area with flat terrain and good drainage, which is convenient for operation. The ecological environment should be taken into consideration in the design of the skid trail. If possible, the timber should be collected uphill. It is strictly prohibited to build the soil slide road which is easy to cause soil erosion on the hillside. Because the emission from forestry infrastructure is hard to calculate, and if it is accounted in the baseline scenario, the total emission reduction will be greater. Considering the cost effectiveness and conservative, the project proponent didn't account for emission from forestry infrastructure.			
3. The timber harvest plan has demonstrated the year in which timber harvest is scheduled to occur. According to the timber harvest plan, there are 199 wood depots would be built, 41 in 2016, 34 in 2017, 34 in 2018, 45 in 2019, 45 in 2020, considering of the shape of the logging area, the location of the logging subcompartment, the terrain, and the existing road.			
4. In baseline scenario, the maximum DBH is 30cm and the minimum is 10cm.			
5. There is no technical specifications for the categories of the wood products, they will be determined by the requirements of the customers.			
6. The total volume to be harvested is 1,296,901.25 m³. The wood products of the project is only sawnwood, there is no others such as wood- based panels, other industrial roundwood, paper and paper board, etc.			
Documentation provided by project participant			
☒	Changes in the PD	Section(s): 3.4.2	New version No.: 04
☐	Changes in XLS	Worksheet(s):	New version No.:
☒	Other:		
DOE assessment			Date: 21/06/2021
1. The revised PD is checked, it is confirmed that for the demonstration of a) of timber harvest and management plan, the values of area and volume are correct.			
2. The revised PD is checked, it is confirmed that for the demonstration of d) of timber harvest and management plan, whether the plan includes a design and presentation of the forestry infrastructure to harvest, skid/haul, store and move harvested timber products from the land parcels to downstream processing or market entry points has been clarified.			
3. The revised PD is checked, it is confirmed that for the demonstration of b) timber harvest schedule, here is the plan to include relevant descriptions of logging equipment and facilities, it is considered not be established when the company was founded. It is hard to predict what will be used in the following logging years since company established, clarification is provided.			
4. The revised PD is checked, it is confirmed that for the demonstration of d) timber harvest schedule, according to the methodology requirements, the DBH value have been provided.			
5. The revised PD is checked, it is confirmed that for the demonstration of g) timber harvest schedule, the Plan have technical specifications for the categories of wood products to be harvested.			
6. The revised PD is checked, it is confirmed that for the demonstration of h) timber harvest schedule, whether Sawnwood has the total volumes or fractions data to be harvested is clarified.			
Refer to section 3.3.4 of this report for detail assessment.			
Conclusion <i>Tick the appropriate checkbox</i>		☐ Additional action should be taken (finding remains open) ☒ The finding is closed	

CAR ID	14	Section no.	3.5.1	Date : 09/11/2020
Description of CAR				
The Step 1c in the tool is not provided in section 3.5.1.				
Project participant response				Date : 02/06/2021

Sub-step 1c. Selection of the baseline scenario:

The baseline methodology that would use this tool shall provide for a stepwise approach justifying the selection and determination of the most plausible baseline scenario.

The identified land use scenarios include the two below:

i) Continuation of the pre-project land use as the timber harvest plan as analysed in section 3.4;

Project activity on the land within the project boundary performed without being registered as the VCS AFOLU project.

Documentation provided by project participant

☒	Changes in the PD	Section(s): 3.5.1	New version No.: 04
☐	Changes in XLS	Worksheet(s):	New version No.:
☐	Other:		

DOE assessment
Date: 21/06/2021

The revised PD is checked, it is confirmed that the Step 1c in the tool is provided in section 3.5.1 accordingly.

Refer to section 3.3.5 of this report for detail assessment.

Conclusion

Tick the appropriate checkbox

- ☐ Additional action should be taken (finding remains open)
☒ The finding is closed

CAR ID	15	Section no.	3.5.2	Date	09/11/2020
Description of CAR					
- Historical Records of Agreements is not provided. - Baseline revenue value is not correct and consistent with the receipts. - Baseline extracted volume value is not correct and consistent with the receipts. - The NPV under the scenario of logging and protected is not consistent with the NPV sheet. - The values on NPV comparison sensitivity analysis and related figures are not correct. - The threshold analysis for each sensitive parameter is not provided. - If there are similar projects in Guangxi for common practice analysis is not provided.					
Project participant response					Date
- There are only receipts for the timber purchase, no any agreements. The agreements for A/R, harvest and management will be provide soon. - Baseline revenue value is revised and consistent with the receipts. - Baseline extracted volume value is revised and consistent with the receipts - The NPV before and after the conversion of logged to protected forest is shown in the table below. The NPV under the scenario of logging is ¥19,090*10⁴ RMB with the discount rate of 8%. However, the NPV under the scenario of protected forest is ¥-17,206*10⁴ RMB with the discount rate of 8%, which is lower than the scenario of logging. Therefore, the NPV under the scenario of protected forest is obviously not financially attractive compared to the scenario of logging. By taking into account the VCU's revenue, the NPV under the scenario of protected forest is increased to be ¥-16,114*10⁴ RMB. With revenue from VCS at the assumed price level, the project would be more financially attractive. Table 3 shows the comparison of the NPV between project and baseline scenario. - The values on NPV comparison sensitivity analysis and related figures are corrected. - By referring to the Figures above, the NPV under protected scenario will not exceed the baseline scenario if the price, the O&M cost and the extracted volume varies within ±10%. In the baseline scenario, the project receives revenue from both the commercial harvest and timber products derived from tending and managing. The latter covers a very small fraction. Under the project scenario, all the commercial harvest has been cancelled and only tending and managing is allowed, the only revenue of the project scenario is the very little income from the selling of the timber products from tending and managing, which remains the same amounts as the baseline scenario. It is obvious that the revenue of the project is only a small part of the baseline scenario, which would not be influenced by the variation of the timber price and extracted volume. On the other hand, the cost in the					02/06/2021

project scenario will increase due to the more cost on tending and maintenance. Therefore, it is impossible for the NPV of the project scenario to reach to the baseline scenario no matter how the two parameters vary.

In order to show the opportunity of the NPV under protected scenario exceeding the baseline scenario is very little, the analysis of critical assumption is conducted as below. That is, for the three parameters, to what extent, the NPV of the project scenario can reach to that of the baseline scenario.

1) Timber price

It is assumed that only when the timber product price for tending and managing increased 1,318.39%, the nominal NPV of the project scenario could reach to $19,090 \times 10^4$ RMB. Since the timber price for the project scenario and the baseline scenario remains the same. Therefore, the project scenario will not become equal to the baseline scenario.

2) O&M cost

The NPV of the Project will reach to $19,090 \times 10^4$ RMB if the O&M cost reduced by 181.85%, and it is obvious that when the O&M cost reduced by 100%, it would become zero, that is impossible to occur for the normal project operating, not even to mention the decrease of 181.85%. In fact, the cost of labor index has increased recently according to the data of National Bureau of Statistics of China.

3) Extracted Volume

It is assumed that only when the extracted volume for tending and managing increased 1,318.39%, the nominal NPV of the project scenario could reach to $19,090 \times 10^4$ RMB. As the extracted volume of the project is determined in the timber production plan issued by the forestry authority based on the forest survey, it is also impossible to increase 1,318.39%. Therefore, it is impossible for the NPV of the project scenario to reach to the baseline scenario within the crediting period.

Therefore, the result of the sensitivity analysis confirms that the project is financially unattractive.

According to the tool, if after the sensitivity analysis it is concluded that the proposed VCS AFOLU project without the financial benefits from the VCS is unlikely to be financially most attractive (Option II and Option III), then proceed directly to Step 4 (Common practice analysis).

7. Therefore, only activities in Guangxi Zhuang Autonomous Region are included in the analysis. By searching the VCS, CDM websites and so on, we found that Guangxi Huanjiang IFM (Conversion of logged to Protected Forest Project in Guangxi Zhuang Autonomous Region has been under validation. And there is no similar project without applying the VCS, CDM or other voluntary emission reduction project.

Documentation provided by project participant

☒	Changes in the PD	Section(s): 3.5.2	New version No.: 04
☐	Changes in XLS	Worksheet(s):	New version No.:
☒	Other:	/HRA/, /SR/, /NPV/	

DOE assessment

Date: 21/06/2021

1. The revised PD is checked, it is confirmed that the historical Records of Agreements/^{HRA/} are provided.
2. The revised PD is checked, it is confirmed that the Baseline revenue value is correct and consistent with the receipts/^{SR/}.
3. The revised PD is checked, it is confirmed that the Baseline extracted volume value is correct and consistent with the receipts/^{SR/}.

4. The revised PD is checked, it is confirmed that the NPV under the scenario of logging and protected is consistent with the NPV sheet/ ^{NPV} /. 5. The revised PD is checked, it is confirmed that the values on NPV comparison sensitivity analysis and related figures are correct. 6. The revised PD is checked, it is confirmed that the threshold analysis for each sensitive parameter is provided. 7. The revised PD is checked, it is confirmed that the common practice analysis is provided accordingly. Refer to section 3.3.5 of this report for detail assessment.	
Conclusion Tick the appropriate checkbox	☐ Additional action should be taken (finding remains open) ☒ The finding is closed

CAR ID	16	Section no.	4.1, 4.2	Date : 09/11/2020
Description of CAR				
1. The title of section 4 is not consistent with the PD template. 2. PP stated that "This decay function is applied when the net greenhouse gas emissions/removals are calculated on an annual basis in equations 11 and 12", however, the equation number is derived from the methodology, not same with PD, revision is requested. 3. It shall be clarified whether the losses for tending of 1m ³ /ha/year are included in the BE / PE calculations. Missing clarification in the PD.				
Project participant response				Date : 02/06/2021
1. Quantification of GHG Emission Reductions and Removals 2. This decay function is applied when the net greenhouse gas emissions/removals are calculated on an annual basis in equations 9 and 10. 3. Related information has been added in section 4.1. Because carbon stock of other timber product from tending and managing instead of commercial harvest in baseline scenario was same as in project scenario, they offset each other.				
Documentation provided by project participant				
☒	Changes in the PD	Section(s): 4.1, 4.2	New version No.: 04	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☐	Other:			
DOE assessment				Date: 21/06/2021
1. The revised PD is checked, it is confirmed that the title of section 4 is consistent with the PD template. 2. The revised PD is checked, it is confirmed that the number has been adjusted accordingly. 3. It has been clarified that tending emissions have not been include di the ER calculation as they are assumed to be the same rate in BE & PE und thus offset each other. This is adequate.				
Conclusion Tick the appropriate checkbox		☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

CAR ID	17	Section no.	4.3.2	Date : 09/11/2020
Description of CAR				
1. The Market leakage analysis is not provided in line with the requirement in VCS standard section 3.14.9. 2. The planned harvest volume of the project is not correct.				
Project participant response				Date : 02/06/2021
1. The total timber harvest volumes are based on the logging quotas which approved by local forest bureau. When the IFM project activity was implemented, there would be no logging quotas for the				

forests in the area of the project be approved. The country logging could not be increased without any logging quotas. Therefore, the IFM project activity was with no effect on timber harvest volumes, there is no leakage risk. 2. the planned harvest volume of the project is $129.69 \times 10^4 \text{ m}^3$, accounting 0.51% of the national harvest volume, which will not result in the significant national concession and illegal logging;			
Documentation provided by project participant			
☒	Changes in the PD	Section(s): 4.3.2	New version No.: 04
☐	Changes in XLS	Worksheet(s):	New version No.:
☐	Other:		
DOE assessment			Date: 21/06/2021
1. The revised PD is checked, it is confirmed that Market leakage analysis is provided in line with the requirement in VCS standard section 3.14.9. 2. The revised PD is checked, it is confirmed that the planned harvest volume of the project is correct. Refer to section 3.3.6 of this report for detail assessment.			
Conclusion <i>Tick the appropriate checkbox</i>		☐ Additional action should be taken (finding remains open) ☒ The finding is closed	

CAR ID	18	Section no.	4.4.2	Date : 09/11/2020
Description of CAR				
1. PP has stated that "Project proponents must justify the selection of uncertainty propagation in the VCS-PD" is the requirement from methodology, PP is requested to clarify the project actual situation. 2. Values in table 5 for the baseline emission including Total Area of Stratum and $V_{j,l,BSL}$ is not correct and the data source is not accurate. 3. The baseline emission during the crediting period is not correctly calculated in table 6. 4. Values in table 7 for the baseline emission including Total Area of Stratum is not correct and the data source is not accurate.				
Project participant response				Date : 02/06/2021
1. Project proponents have justified the selection of uncertainty propagation in section 4.4.4 of the VCS-PD. 2. Refer to updated table 5 in PD. 3. Refer to updated table 6 in PD. 4. Refer to updated table 7 in PD.				
Documentation provided by project participant				
☒	Changes in the PD	Section(s): 4.4.2	New version No.: 04	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☒	Other:	/CBSR/		
DOE assessment				Date: 21/06/2021
1. The PD is checked, it is confirmed that PP has stated accordingly. 2. The PD is checked, it is confirmed that Values in table 5 are all accurate. 3. The PD is checked, it is confirmed that the baseline emission during the crediting period is correctly calculated in table 6. 4. The PD is checked, it is confirmed that the Values in table 7 for the baseline emission including Total Area of Stratum is correct and the data source is accurate. Refer to section 3.3.6 of this report for detail assessment.				
Conclusion <i>Tick the appropriate checkbox</i>		☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

CAR ID	19	Section no.	4.4.3	Date : 09/11/2020
Description of CAR				
1. PP stated that "On-going growth rate is predicted by the project owner" which is not correct. Revision is requested. 2. The project emission during the crediting period is not correctly calculated in table 8.				
Project participant response				Date : 02/06/2021
1. On-going growth rate is certified by Huanjiang Maonan Autonomous County Forestry Bureau based on the historical data. 2. Refer to updated table 8 in PD.				
Documentation provided by project participant				
☒	Changes in the PD	Section(s): 4.4.3	New version No.: 04	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☐	Other:			
DOE assessment				Date: 21/06/2021
1. The revised PD is checked, it is confirmed that statement is corrected accordingly. 2. The revised PD is checked, it is confirmed that project emission during the crediting period is correctly calculated in table 8. Refer to section 3.3.6 of this report for detail assessment.				
Conclusion Tick the appropriate checkbox		☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

CAR ID	20	Section no.	4.4.4	Date : 09/11/2020
Description of CAR				
1. The values of Uncertainty of expansion factors for three species are not correct. 2. The values of Uncertainty of carbon stock for three species are not correct. 3. The values of Uncertainty of regrowth for three species are not correct. 4. The species listed in the formular 34 is not the case of the project, revision is requested.				
Project participant response				Date : 02/06/2021
1. The values of Uncertainty of expansion factors for three species are revised. 2. The values of Uncertainty of carbon stock for three species are revised. 3. The values of Uncertainty of regrowth for three species are revised. 4. The species listed in the formular 34 is revised.				
Documentation provided by project participant				
☒	Changes in the PD	Section(s): 4.4.4	New version No.: 04	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☐	Other:			
DOE assessment				Date: 21/06/2021
1. The revised PD is checked, it is confirmed that the values of Uncertainty of expansion factors for three species are correct. 2. The revised PD is checked, it is confirmed that the values of Uncertainty of carbon stock for three species are correct. 3. The revised PD is checked, it is confirmed that the values of Uncertainty of regrowth for three species are correct. 4. The revised PD is checked, it is confirmed that the species listed in the formular 34 is correct. Refer to section 3.3.6 of this report for detail assessment.				

Conclusion <i>Tick the appropriate checkbox</i>	☐ Additional action should be taken (finding remains open) ☒ The finding is closed
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CAR ID	21	Section no.	4.4.4	Date : 09/11/2020
Description of CAR				
The values of uncertainty for the project scenario are not correct.				
Project participant response				Date : 02/06/2021
The values of uncertainty for the project scenario is revised accordingly				
Documentation provided by project participant				
☒	Changes in the PD	Section(s): 4.4.4	New version No.: 04	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☐	Other:			
DOE assessment				Date: 21/06/2021
The revised PD is checked, it is confirmed that the values of uncertainty for the project scenario are correct. Refer to section 3.3.6 of this report for detail assessment.				
Conclusion <i>Tick the appropriate checkbox</i>	☐ Additional action should be taken (finding remains open) ☒ The finding is closed			

CAR ID	22	Section no.	4.4.4	Date : 09/11/2020
Description of CAR				
The total uncertainty value is not correctly calculated.				
Project participant response				Date : 02/06/2021
The total uncertainty value is not revised accordingly.				
Documentation provided by project participant				
☒	Changes in the PD	Section(s): 4.4.4	New version No.: 04	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☐	Other:			
DOE assessment				Date: 21/06/2021
The revised PD is checked, it is confirmed that the total uncertainty value are correct. Refer to section 3.3.6 of this report for detail assessment.				
Conclusion <i>Tick the appropriate checkbox</i>	☐ Additional action should be taken (finding remains open) ☒ The finding is closed			

CAR ID	23	Section no.	4.4.5	Date : 09/11/2020
Description of CAR				
The calculation result of VCU is not correct.				
Project participant response				Date : 02/06/2021
The calculation result of VCU is updated.				
Documentation provided by project participant				
☒	Changes in the PD	Section(s): 4.4.5	New version No.: 04	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☐	Other:			
DOE assessment				Date: 21/06/2021
The revised PD is checked, it is confirmed that the calculation result of VCU is correct. Refer to section 3.3.6 of this report for detail assessment				

Conclusion Tick the appropriate checkbox	☐ Additional action should be taken (finding remains open) ☒ The finding is closed
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CAR ID	24	Section no.	5.1	Date : 09/11/2020
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Description of CAR

- For the parameter f_j (X, Y...), PP just copy the request from applied methodology to source of data, the actual situation of the project is not clarified.
- The value applied for parameter f_j (X, Y...) is missing.
- For the parameter RGR_i , the values applied for three species are not correct.
- For the parameter RGR_i , justification of choice of data is not consistent, PP stated method b is used however the value from IPCC which is method c.

Project participant response

Date : 02/06/2021

- The source of data was chosen as a) National species-, genus-, family-specific.
- As for the project tree species, there are no allometric equation applied in the project area, the average annual growth is adopted for the estimated calculation of carbon stock change.
The average annual growth is determined as 3.55, 4.96 and 5.73 m³/ha/year for broad-leaved trees, Chinese fir and pinus massoniana respectively, which is adopted from the statement by the local forest authority.
During the monitoring period, the average annual growth will be monitored by the total growth divided by the length of the monitoring period.

3.

Broad-leaved tree	0.75
Chinese fir	0.75
Pinus massoniana	0.75

- Method c is applied. No local data available, thus IPCC values from IPCC Guidelines for National Greenhouse Gas Inventories (2006), Table 4.9 applied. The project is located in Huanjiang County which is defined as a subtropical area in China. As above figure, aboveground biomass growth of subtropical dry forest is 1.5 tonnes d.m./ha/yr. And the RGR_i = aboveground biomass (tonnes d.m./ha/yr) * CF_j (0.5 tC t d.m.⁻¹), then the units of RGR_i is tC.ha⁻¹.yr⁻¹ as stated in the PD, the values are updated in PD accordingly.

Documentation provided by project participant

☒	Changes in the PD	Section(s): 5.1	New version No.: 04
☐	Changes in XLS	Worksheet(s):	New version No.:
☐	Other:		

DOE assessment

Date: 21/06/2021

- The revised PD is checked, it is confirmed that for the parameter f_j (X, Y...), related clarification has been added.
- The revised PD is checked, it is confirmed that value applied for parameter f_j (X, Y...) is added.
- The revised PD is checked, it is confirmed that for the parameter RGR_i , the values applied for three species are correct.
- The revised PD is checked, it is confirmed that for the parameter RGR_i , justification of choice of data is revised be (c). The IPCC was cross checked to confirm the aboveground biomass data of 1.5 tonnes d.m./ha/yr is correct. And the RGR_i calculation method is confirmed as correct. Values in PD is confirmed as updated also.

Refer to section 3.3.8 of this report for detail assessment.

Conclusion Tick the appropriate checkbox	☐ Additional action should be taken (finding remains open) ☒ The finding is closed
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CAR ID	25	Section no.	5.1	Date : 09/11/2020
Description of CAR				
1. For the parameters $A_{i,p}$, $A_{1,i,p}$, $A_{2-10,i,p}$, $A_{11-20,i,p}$, A_{t*}, source of data is not clearly stated due to this is an ex-ante determined value, so the source need to be provided based on the actual situation of the project. 2. The values applied for parameters $A_{i,p}$, $A_{1,i,p}$, $A_{2-10,i,p}$, $A_{11-20,i,p}$, A_{t*} need refer to ER sheet or PD, but not a evidence as the ex-ante determined value has to be used for determine the ER values. 3. For the parameter $A_{s,p}$, the source of data is not accurate, how to measure or determine the sample plot area needs to be clarified, because this is an ex-ante determined value. 4. For the parameter $A_{s,p}$, values applied column is missing. 5. For the parameter $A_{s,p}$, justification of choice of data is not accurate, the actual selection is not specified for ex ante value. 6. For the parameter $V_{i,j,sp}$ (Merchnadable volume for tree), the exact source for this parameter is not clarified.				
Project participant response				Date : 02/06/2021
1. $A_{i,p}$, Area covered by stratum i over land parcel p, source of data is from timber harvest plan whose geodetic coordinates were determined. $A_{1,i,p}$, $A_{2-10,i,p}$, $A_{11-20,i,p}$, A_{t*} were calculated by $A_{i,p,y}$ through the ER sheet. 2. The values applied for parameters $A_{i,p}$, $A_{1,i,p}$, $A_{2-10,i,p}$, $A_{11-20,i,p}$, A_{t*} referred to the ER sheet. $A_{i,p}$ is source of data from timber harvest plan which geodetic coordinates were determined. $A_{1,i,p}$, $A_{2-10,i,p}$, $A_{11-20,i,p}$, A_{t*} were calculated by $A_{i,p,y}$ through the ER sheet. 3. For the parameter $A_{s,p}$, the source of data is from the monitoring Manual issued by Shenzhen Huanong gardening Co., Ltd who is qualified. 4. For the parameter $A_{s,p}$, values applied column is 0.04 ha. 5. For the parameter $A_{s,p}$, justification of choice of data is standard procedure for plot delineation in forest timber inventory surveys must be used. 6. The data came from Second class forest resources survey. According to binary volume equation provide by local forestry bureau, calculation of the tree volume is below: $V_{\text{Broad-leaved tree}} = 0.0000667054 * DBH^{1.8479545} * H^{0.96657509}$$V_{\text{Chinese fir}} = 0.000065671 * DBH^{1.769412} * H^{1.069769}$$V_{\text{Pinus massoniana}} = 0.0000714265437 * DBH^{1.86701} * H^{0.901463}$The result of calculation of volume for tree is generally greater than the data of Second class forest resources survey. Hence, the value from Second class forest resources survey used in the PD is considered as conservative.				
Documentation provided by project participant				
☒	Changes in the PD	Section(s): 5.1	New version No.: 04	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☐	Other:			
DOE assessment				Date: 21/06/2021

1. The revised PD is checked, it is confirmed that for the parameters $A_{i,p}$, $A_{1,i,p}$, $A_{2-10,i,p}$, $A_{11-20,i,p}$, A_{t*} , source of data is clearly stated. 2. The revised PD is checked, it is confirmed that for values applied for parameters $A_{i,p}$, $A_{1,i,p}$, $A_{2-10,i,p}$, $A_{11-20,i,p}$, A_{t*} have been provided. 3. The revised PD is checked, it is confirmed that for the parameter $A_{s,p}$, the source of data is correct. 4. The revised PD is checked, it is confirmed that for the parameter $A_{s,p}$, values applied column is added. 5. The revised PD is checked, it is confirmed that for the parameter $A_{s,p}$, justification of choice of data is accurate. Refer to section 3.3.8 of this report for detail assessment.	
Conclusion Tick the appropriate checkbox	☐ Additional action should be taken (finding remains open) ☒ The finding is closed

CAR ID	26	Section no.	5.2	Date : 09/11/2020
Description of CAR				
1. For the monitored parameters Illegal Logging PRA Results, Result of Limited Illegal Logging Survey, $A_{burn,i,t}$, $A_{dist,i,t}$, $A_{DIST_IL,i}$, $C_{DIST_IL,i,t PRJ}$, AP_i , PMP_i , ex ante values applied are not provided. 2. For the monitored parameters $A_{burn,i,t}$, $A_{dist,i,t}$, $A_{DIST_IL,i}$, $C_{DIST_IL,i,t PRJ}$, AP_i , PMP_i , monitoring equipment is missing.				
Project participant response				Date : 02/06/2021
1. (1) Values applied of Illegal Logging PRA Results is ex ante 0. In addition to the national and local law and policy to prevent the illegal logging, the project proponent has also taken comprehensive prevention measures. The actual situation will be confirmed by the forest authority during the monitoring period. (2) Values applied of Result of Limited Illegal Logging Survey is ex ante 0. In addition to the national and local law and policy to prevent the illegal logging, fire and other disease & insect pest, the project proponent has also taken comprehensive prevention measures. The actual situation will be confirmed by the forest authority during the monitoring period. (3) Values applied of $A_{burn,i,t}$ is ex ante 0 based on historic incidence. In addition to the national and local law and policy to prevent fire, the project proponent has also taken comprehensive prevention measures. The actual situation will be confirmed by the forest authority during the monitoring period. (4) Values applied of $A_{dist,i,t}$ is ex ante 0 based on historic incidence, since there is no disturbance other than fire. In addition to the national and local law and policy to prevent other natural disturbance, the project proponent has also taken comprehensive measures. (5) Values applied of $A_{DIST_IL,i}$ is ex ante 0. In addition to the national and local law and policy to prevent illegal logging, the project proponent has also taken comprehensive prevention measures. The actual situation will be confirmed by the forest authority during the monitoring period. (6) Values applied of $C_{DIST_IL,i,t PRJ}$ is ex ante 0. In addition to the national and local law and policy to prevent illegal logging, the project proponent has also taken comprehensive prevention measures. The actual situation will be confirmed by the forest authority during the monitoring period. (7) Values applied of AP_i is ex ante 0. In addition to the national and local law and policy to prevent illegal logging, the project proponent has also taken comprehensive prevention measures. The actual situation will be confirmed by the forest authority during the monitoring period. (8) Values applied of PMP_i is not applicable, as there is no leakage of the project activity, the leakage factor of this project is zero, it is unnecessary to calculate PMP_i . 2. (1) The monitoring equipment for $A_{burn,i,t}$, $A_{dist,i,t}$, $A_{DIST_IL,i}$, $C_{DIST_IL,i,t PRJ}$ is Monitoring System and forest authority.				

(2) The monitoring equipment for AP _i , PMP _i , is not applicable. As for the project area, illegal logging is unlikely to happen, the C _{DIST_IL,i,t PRJ} is ex-ante zero, there is no need for the illegal logging sampling.			
Documentation provided by project participant			
☒	Changes in the PD	Section(s): 5.2	New version No.: 04
☐	Changes in XLS	Worksheet(s):	New version No.:
☐	Other:		
DOE assessment			Date: 21/06/2021
1. The revised PD is checked, it is confirmed that for the monitored parameters Illegal Logging PRA Results, Result of Limited Illegal Logging Survey, A_{burn,i,t}, A_{dist,i,t}, A_{DIST_IL,i}, C_{DIST_IL,i,t PRJ}, AP_i, PMP_i, ex ante values applied are all provided. 2. The revised PD is checked, it is confirmed that for the monitored parameters A_{burn,i,t}, A_{dist,i,t}, A_{DIST_IL,i}, C_{DIST_IL,i,t PRJ}, AP_i, PMP_i, monitoring equipment is added. Refer to section 3.3.8 of this report for detail assessment.			
Conclusion Tick the appropriate checkbox		☐ Additional action should be taken (finding remains open) ☒ The finding is closed	

CAR ID	27	Section no.	5.2	Date : 09/11/2020
Description of CAR				
For the monitored parameter A _i , the monitoring equipment Tape is not match with the data source of Geodetic coordinates and/or Remote Sensing data and/or legal parcel records, revision is requested.				
Project participant response				Date : 02/06/2021
This parameter is sourced from the local second class forest investigation, which is implemented by Guangxi Zhuang Autonomous Region Forestry Survey and Design Institute based on the National Forest Resource Continuous Investigation Technical Regulation issued by the State Forestry Bureau.				
Documentation provided by project participant				
☒	Changes in the PD	Section(s): 5.2	New version No.: 04	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☐	Other:			
DOE assessment				Date: 21/06/2021
The revised PD is checked, it is confirmed that the monitoring equipment is correctly provided.				
Conclusion Tick the appropriate checkbox		☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

CAR ID	28	Section no.	5.3	Date : 09/11/2020																		
Description of CAR																						
The estimation of number of sample plots required is not correctly calculated in table 9.																						
Project participant response				Date : 02/06/2021																		
The number is corrected accordingly.																						
<table border="1"> <thead> <tr> <th rowspan="2">STRATA NO</th> <th rowspan="2">Stratum Name</th> <th colspan="2">Number of Plots</th> </tr> <tr> <th>Plot Quantity</th> <th>Rounded Plot Quantity</th> </tr> </thead> <tbody> <tr> <td>Total Sample Size</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Strata 1</td> <td>Broad-leaved tree</td> <td>31.8</td> <td>32</td> </tr> <tr> <td>Strata 2</td> <td>Chinese fir</td> <td>16.3</td> <td>17</td> </tr> </tbody> </table>					STRATA NO	Stratum Name	Number of Plots		Plot Quantity	Rounded Plot Quantity	Total Sample Size				Strata 1	Broad-leaved tree	31.8	32	Strata 2	Chinese fir	16.3	17
STRATA NO	Stratum Name	Number of Plots																				
		Plot Quantity	Rounded Plot Quantity																			
Total Sample Size																						
Strata 1	Broad-leaved tree	31.8	32																			
Strata 2	Chinese fir	16.3	17																			

Strata 3	Pinus massoniana	11.9	12
TOTAL NUMBER OF PLOTS			61
Documentation provided by project participant			
☒	Changes in the PD	Section(s): 5.3	New version No.: 04
☐	Changes in XLS	Worksheet(s):	New version No.:
☐	Other:		
DOE assessment			Date: 21/06/2021
The revised PD is checked, it is confirmed that estimation of number of sample plots required is correctly calculated in table 9 which is verified as in line with the tool/TCNSP/.			
Conclusion Tick the appropriate checkbox		☐ Additional action should be taken (finding remains open) ☒ The finding is closed	

CAR ID	29	Section no.	Non-Permanence Risk Report	Date : 09/11/2020
Description of CAR				
1. The score rating for project longevity is not in line with the VCS-Risk-Report-Calculation-Tool-v4.0. 2. Risk Rating for Land Tenure and Resource Access/Impacts is not demonstrated based on the project. 3. For natural risks, the table used is not in line with the requirement in VCS-Non-Permanence-Risk-Report-Template-v4.0, revision is requested. 4. The score for each natural risk is missing. 5. The calculation of total VCUs is not correct, the values for the project crediting period need to be calculated for the validation process.				
Project participant response				Date : 02/06/2021
1. It's a mistake of project longevity.				
Project Longevity				
a)	Without legal agreement or requirement to continue the management practice			Not applicable
b)	With legal agreement or requirement to continue the management practice			=30-(30/2)=15
Total Project Longevity (PL)				15
May not be less than zero				
2. All the forests in the projects belong to different owns, some forests are state-owned and some are privately-owned. The owners authorized the project proponent Huanjiang Maonan Autonomous County Huashan Forestry Investment Co., Ltd. to access this project on their behalf. The VCS development consultation and service agreement signed between Huanjiang Maonan Autonomous County Huashan Forestry Investment Co., Ltd. and Guangzhou Guangtan Carbon Emission Development & Investment Co., Ltd. and confirmed that project is protected by legal binding commitment with at least 20 years over the length of the project crediting period. 3. Every natural risk has been explained by each table in the Non Permanence Risk Report. 4. According to the historical record of local forestry bureau, the risks identified (i.e. fire, pest and disease outbreaks, extreme weather events, geological risk, and any other natural risks) is not applicable to the project area. 5. The score for each natural risk is 0. The calculation of total VCUs has been rectified.				
Documentation provided by project participant				
☐	Changes in the PD	Section(s):	New version No.:	

☐	Changes in XLS	Worksheet(s):	New version No.:
☒	Other:	/NPRR/	
DOE assessment			Date: 21/06/2021
1. The revised Non-Permanence Risk Report is checked, it is confirmed that the score rating for project longevity is in line with the VCS-Risk-Report-Calculation-Tool-v4.0. 2. The revised Non-Permanence Risk Report is checked, it is confirmed that the Risk Rating for Land Tenure and Resource Access/Impacts is demonstrated based on the project. 3. The revised Non-Permanence Risk Report is checked, it is confirmed that for natural risks, the table used is in line with the requirement in VCS-Non-Permanence-Risk-Report-Template-v4.0. 4. The revised Non-Permanence Risk Report is checked, it is confirmed that the score for each natural risk is added. 5. The calculation of total VCUs is correct, the values for the project crediting period have been calculated for the validation process. Refer to section 3.4 of this report for detail assessment.			
Conclusion Tick the appropriate checkbox		☐ Additional action should be taken (finding remains open) ☒ The finding is closed	

Table 3. FAR from this validation

FAR ID	N/A	Section No.	-	Date:	-
Description of FAR					
Project participant response					Date:
Documentation provided by project participant					
☐	Changes in the PD	Section(s):	New version No.:		
☐	Changes in XLS	Worksheet(s):	New version No.:		
☐	Other:				
DOE assessment					Date:
Conclusion Tick the appropriate checkbox		☐ To be checked during the next periodic verification			