VALIDATION REPORT

LIANGDU AFFORESTATION PROJECT

Document Prepared By Shenzhen CTI International Certification Co., Ltd (CTI)

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6

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Summary:

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

After conducting on-site inspections and document validation of the proposed VCS project, CTI confirmed that the proposed VCS project activity "Liangdu Afforestation Project" involves the afforestation of 23,720 hectares of forests, which were conducted in Shuicheng County, Pan County, Liuzhi Special District, Liupanshui City, Guizhou Province, P. R. China established by planting directly on the barren or degraded land of the county. The native tree species include China fir, cypress, Pinus yunnanensis and masson pine. The approved AR-CDM methodology AR-ACM0003/Version 2.0.0 "Afforestation and reforestation of lands except wetlands" is used to quantify the amount of greenhouse gas removals achieved in the project. The calculation of project emissions removals is carried out in a transparent and conservative manner. The project is being developed and validated with the Climate, Community and Biodiversity Standards (CCBS).

- **The purpose and scope of validation**

The validation objective is an independent assessment by a VVB of a proposed project activity against all defined criteria set for the registration under the VCS&CCB. 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&CCB rules, project conformance to the applied methodology, including the procedure for the demonstration of additionality specified in the methodology; and likelihood that methods a 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&CCB 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/CCB registry. The ultimate decision on the registration of a proposed project activity rests with the VCSA/CCBA.

- **The method and criteria used for validation**

Validation is conducted using VCS Validation and Verification Manual V3.2 in line with the requirements specified in the latest version of the VCS Standard and applying related GHG auditing techniques. The validation team assessed the proposed project activity's compliance under the VCS Version 4.0, the CCB Standard Third Edition, the selected 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 and CCB included the following:

- VCS Standard Version 4.0,
- VCS Program Guide Version 4.0,
- AFOLU Non-Permanence Risk Tool Version 4.0,
- CCB Standards version 3.1,
- CCB Program Rules version 3.1
- CDM Methodology AR-ACM0003 version 2.0.0 – "Afforestation and reforestation of lands except wetlands".

- **The number of findings raised during validation**

In the course of the validation 28 Corrective Action Requests (CARs), 6 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**

Timing Carbon Asset Management Co., Ltd has commissioned CTI to carry out the Verified Carbon Standard (VCS) joint with Climate, Community & Biodiversity (CCB) validation of the project, Liangdu Afforestation Project (2083) with regard to the relevant requirements of VCS standard Version 4.0 and CCB Standards version 3.1.

CTI confirms all validation activities including objectives, scope and criteria, level of assurance, monitoring and project documentation adhere to VCS Version 4.0 and CCB Standards version 3.1 and all associated updated as documented in this report, are complete.

In conclusion, CTI concludes that the latest version of Project Description (PD) to “Liangdu Afforestation Project” meets the requirements of VCS joint CCBS and all associated updated. The ex-ante GHG calculation sheet provided by Timing Carbon Asset Management Co., Ltd which has been validated by CTI that the project will result in the expected GHG emission reductions or removal of 10,077,450 tCO_2e (without considering the buffer) over the 29 years crediting period.

Table of Contents

1 Introduction 5
1.1 Objective 5
1.2 Scope and Criteria 5
1.3 Summary Description of the Project 6
2 Validation Process 7
2.1 Audit Team Composition (*Rules* 4.3.1) 7
2.2 Method and Criteria 7
2.3 Document Review 9
2.4 Interviews 9
2.5 Site Inspections 11
2.6 Public Comments 12
2.7 Resolution of Findings 13
3 Validation Findings 14
3.1 Summary of Project Benefits 14
3.2 General 14
3.3 Climate 34
3.4 Community 52
3.5 Biodiversity 56
4 Validation Conclusion 61
Appendix 1. Abbreviations 62
Appendix 2. Documents reviewed or referenced 63
Appendix 3. Clarification requests, corrective action requests and forward action requests 70

1 INTRODUCTION

1.1 Objective

Timing Carbon Asset Management Co., Ltd has commissioned CTI to carry out the Verified Carbon Standard (VCS) joint with Climate, Community & Biodiversity (CCB) validation of the project, Liangdu Afforestation Project in China with regard to the relevant requirements of VCS standard Version 4.0/44/ and CCB Standards version 3.1/47/.

The validation objective is an independent assessment by a VVB of a proposed project activity against all defined criteria set for the registration under the VCS&CCB. 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&CCB rules, project conformance to the applied methodology, including the procedure for the demonstration of additionality specified in the methodology; and likelihood that methods a 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/CCB registry. The ultimate decision on the registration of a proposed project activity rests with the VCSA/CCBA.

1.2 Scope and Criteria

The validation scope is to review the criteria against the VCS Version 4.0 and CCB Standards version 3.1 requirements, to given as a thorough independent and objective assessment of the project design and description 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 impacts, Climate impacts, Community impacts, Biodiversity impacts and monitoring plan, which are included in the VCS&CCB PD and other relevant supporting documents, to ensure that the proposed VCS&CCB project activity meets all relevant and applicable criteria as follow,

- VCS Program Guide, v4.0/43/
- VCS Standard, v4.0/44/
- Program Definitions, v4.0/42/
- AFOLU Non-Permanence Risk Tool, v4.0/41/
- CCB Standards, v3.1/47/
- CCB Program Rules, v3.1/46/

The following documents are also taken into account in the VCS&CCB validation, as a CDM methodology was used:

- the Kyoto Protocol, in particular § 12 and modalities and procedures for the CDM;
- further COP/MOP decisions with reference to the CDM (e.g. decisions 4-8/CMP.1);
- decisions and specific guidance by the EB published under http://cdm.unfccc.int;
- approved baseline and monitoring methodologies (including GHG inventories).

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 4.0.

The validation is based on the information made available to CTI and on the contract conditions. CTI can't be held liable by any entities for making its validation opinion based on any false or misleading information supplied to it during the course of validation.

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

1.3 Summary Description of the Project

The Liangdu Afforestation Project (hereafter "the project") is located in Shuicheng County, Pan County, Liuzhi Special District, Liupanshui City, Guizhou Province, China. The project is to afforest on the barren land for GHG removal and finally contribute to local climate, community and biodiversity sustainable development. The project is implemented by Guizhou Xinzhanxin Agricultural Technology Co., Ltd.

23,720ha of forest was planted on degraded lands. 1 District and 2 Counties including Shuicheng County, Pan County, Liuzhi Special District which belongs to Liupanshui City, Guizhou Province are involved in the project, and Liupanshui City has been defined as the project zone according to the VCS standard for AFOLU project.

All the project sites were previously barren hill and degraded lands. There is no natural renewal and reforestation before the project which has been confirmed by CTI via checking the project baseline survey/13/. Furthermore, through on-site observation and checking the Afforestation Project Design Report/11/ and Seedling Purchase Contract/21/, CTI verified that the mainly planted tree species of China fir, Cypresses, Pinus yunnanensis and Masson pine, which are native species.

The implementation of the project would reduce the GHG emissions for 10,077,450 tCO_2e in 29 years crediting period, with an average annual GHG emission of 347,498 tCO_2e through checking the GHG removals calculation sheet/4/.

The proposed project activity will reduce GHG emission by changing the use of land from barren hill and degraded lands to sustainable forest production systems which will improve ecological environment and Karst rocky desertification and increase the forest cover in the project zone thus generating a typical landscape formed by biological and productive areas that produce climate, financial, social and environmental benefits to local communities and biodiversity.

The project is being developed and will be registered under the Verified Carbon Standard (VCS) and the Climate, Community and Biodiversity Standard (CCBS).

2 VALIDATION PROCESS

2.1 Audit Team Composition (*Rules* 4.3.1)

Lead Auditor/VCS-CCB Validator: Lin Shunrong is qualified by CTI in Validation and Verification of Clean Development Mechanism Requirements (CDM projects) and other voluntary schemes as VCS, CCB and SD. She has experience with more than 100 validation and verification projects including CDM, VS and GS projects involved in renewal energy and agriculture sectors. She has a bachelor degree of Horticulture and master degree of International Agriculture Development. Thus, she has the relevant social and cultural expertise in this region and also have relevant ecological and biodiversity experience due to the education background. She speaks mandarin which is the common language in China and the regional residents can speak and understand this language.

Technical Expert: Yan Shun has Bachelor degree in Plant Protection, and work experience more than 20 years as a stationmaster in plant protection, cultivation, and agriculture techonolgy extension station, qualified by CTI in Secope 14. Thus he has the relevant agriculture, forestry and or other land use experience in China due to education background and working experience. He speaks mandarin which is the common language in China and the regional residents can speak and understand this language.

Table 2-1 Validation team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/Doc review	On-site inspection	Interview(s)	Verification findings
1.	Team Leader (also verifier)	IR	LIN	Shunrong	CTI	☒	☒	☒	☒
2.	Technical expert	OR	YAN	Shun	Xianfeng County Agricultural Technology Extension Station	☒	☒	☒	☒

Table 2-2 Technical reviewer and approver

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer	IR	WANG	Guolian	CTI
2.	Approver	IR	ZHOU	Lu	CTI

2.2 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&CCB project description (VCS&CCB PD)[/1/]
- A desk review of the VCS&CCB PD[/1/] submitted by the client and additional supporting documents with the use of customised validation documents checklist
- 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 Action Requests (CARs) and Clarification Requests (CLs)
- Final validation reporting
- Technical review
- Final approval of the validation.

The validation criteria consisted of the following:

- VCS Program Guide, v4.0
- VCS Standard, v4.0
- Program Definitions, v4.0
- AFOLU Non-Permanence Risk Tool, v4.0
- CCB Standards, v3.1
- CCB Program Rules, v3.1
- CDM Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities
- CDM methodological tool for estimation of change in soil organic stocks due to the implementation of A/R CDM project activities

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 6. X=√6=3
Stratum 2, number of plots y is 8. X=√8=3
Stratum 3, number of plots y is 4. X=√4=2
Stratum 4, number of plots y is 3. X=√3=2
Stratum 5, number of plots y is 3. X=√3=2
Stratum 6, number of plots y is 3. X=√3=2
Stratum 7, number of plots y is 3. X=√3=2
Stratum 8, number of plots y is 3. X=√3=2
Stratum 9, number of plots y is 3. X=√3=2
Stratum 10, number of plots y is 3. X=√3=2

A ground inspection of the project area was conducted during the site visit and validation team members 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 22 targeted areas. Targeted area can represent the characteristics of each stratification, thus used as sampling area for checking the project design and planting approach.

2.3 Document Review

The VCS&CCB PD/1/ and supporting background documents related to the project design and baseline were reviewed. Documents reviewed included data used to set baseline, land rights certificate, carbon rights contract, additionality analysis, maps and aerial images, GHG removal calculation spreadsheets.

Furthermore, the validation team used additional documentation by third and official 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.

2.4 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 representatives of project developer/I1/, representatives of local government officer/I2/, representatives of local residents/I3/ and Project VCS&CCB development consultant/I4/. The interviews were performed by the validation team on-site (within the project area, in Shuicheng County, Pan County, Liuzhi Special District, Liupanshui City, Guizhou Province, 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.	Yang/I1/	Zhize	Guizhou Xinzhanxin Agricultural Technology Co., Ltd/ Project Manager	23/04/2020~ 26/04/2020	-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	Lin Shunrong Yan Shun

					-Ownership -local stakeholder consultation	
2.	Huang[/I2/]	Jianbo	Forestry Bureau of Liupanshui City/ Forest Section Director	23/04/2020	-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	Lin Shunrong Yan Shun
4.	Song[/I3/]	Yunhua	Luchupo Village/ Resident	24/04/2020	-job opportunities -living condition -training -local stakeholder consultation -impact to local residents -impact to local environment -impact to local biodiversity	Lin Shunrong Yan Shun
5.	Xiao[/I3/]	Lijuan	Luchupo Village/ Resident	24/04/2020		
6.	Li[/I3/]	Hong	Luchupo Village/ Resident/ worker as forest technician	24/04/2020		
7.	Sun[/I3/]	Yuxiao	Xinglong Village/ Resident/ worker as forest technician	25/04/2020		
8.	Lu[/I3/]	Yun	Xinglong Village/ Resident/ worker as forest technician	25/04/2020		
9.	Zhao[/I3/]	Haicun	Xinglong Village/ Resident	25/04/2020		
10.	Lu[/I3/]	Zhi	Gezhi Village / Resident/ worker to plant trees	26/04/2020		
11.	Lu[/I3/]	Guoqing	Gezhi Village / Resident/	26/04/2020		

			worker to plant trees			
12.	Li[/I3/]	Liang	Gezhi Village / Resident	26/04/2020		
13.	Wang[/I3/]	Zhi	Gezhi Village / Resident/ worker as forest technician	26/04/2020		
14.	Liu[/I4/]	Kanyan	Timing Carbon Asset Managemen t Co., Ltd/ Manager	23/04/2020~ 26/04/2020	-Financial aspects -Deviations -Crediting period -Project activity starting date -Baseline study assumptions -Additionality -Monitoring - Editorial issues of the VCS&CCB PD	Lin Shunrong Yan Shun

2.5 Site Inspections

The validation site inspection was conducted on 23/04/2020~26/04/2020. A ground inspection of the project area was conducted during the site visit and members of the validation team visited 22 targeted areas within the project area. During the site inspection the validation team was accompanied by the project developer, local government officers, consultant and forest technicians.

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 22 targeted areas. Targeted area can represent the characteristics of each stratification, thus used as sampling area for checking the project design and planting approach.

Hence during the site inspection, the 22 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
23/04/2020	Strata1, Area1	26°13′07″N	105°31′14″E	Each area is verifed as located in the project boundary by checking the grographical coordinates. Tree species and planting approaches are consistent as per the project design for the stratifications.
	Strata2, Area1	26°12′59″N	105°30′35″E	
	Strata4, Area1	26°13′02″N	105°32′06″E	
	Strata7, Area1	26°17′55″N	105°14′53″E	
	Strata5, Area1	26°19′44″N	105°22′17″E	
	Strata3, Area1	26°09′16″N	105°26′30″E	
24/04/2020	Strata8, Area1	26°05′47″N	105°24′03″E	

	Strata2, Area2	26°26′57″N	105°10′30″E	
	Strata3, Area2	26°26′21″N	105°06′07″E	
	Strata10, Area1	26°29′52″N	105°05′16″E	
	Strata8, Area2	26°31′11″N	105°06′28″E	
	Strata5, Area2	26°21′44″N	105°46′59″E	
25/04/2020	Strata2, Area3	26°16′47″N	104°48′00″E	
	Strata10, Area2	26°06′36″N	104°46′02″E	
	Strata6, Area1	26°03′42″N	104°43′16″E	
	Strata1, Area2	26°03′46″N	104°48′06″E	
	Strata6, Area2	25°53′43″N	104°33′13″E	
	Strata1, Area3	25°40′14″N	104°23′39″E	
26/04/2020	Strata4, Area2	25°38′26″N	104°25′55″E	
	Strata9, Area1	25°25′30″N	104°39′17″E	
	Strata7, Area2	25°22′15″N	104°41′47″E	
	Strata9, Area2	25°22′21″N	104°45′47″E	

There are total 10 project stratifications for carbon calculation in the 1 District and 2 Counties, the validation team visited targeted area for each project stratification, total 22 targeted areas. The detail of the area and tree species are in the below table

Table 2-2 Targeted area in 10 project stratifications

Targeted Area	Dimension for each stratification (ha)	Tree species	Plant Year
Strata1-1,2,3	5,033.33	China fir	2015
Strata2-1,2,3	7,000	China fir	2016
Strata3-1,2	3,666.67	China fir	2017
Strata4-1,2	300	Cypresses	2015
Strata5-1,2	499.67	Cypresses	2016
Strata6-1,2	200	Cypresses	2017
Strata7-1,2	3,500	Pinus yunnanensis	2015
Strata8-1,2	1,920.33	Pinus yunnanensis	2016
Strata9-1,2	500	Pinus yunnanensis	2017
Strata10-1,2	1,100	Masson pine	2015

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.

2.6 Public Comments

According CCBS requirements the Project Description was submitted for public comment period. The public comment period started on 30/01/2020 and ended on 29/02/2020

(https://registry.verra.org/app/projectDetail/CCB/2083). No comments were received during this period which has been verified through checking the confirmation mail from VERRA/40/.

2.7 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 28 Corrective Action Requests (CARs), 6 Clarification Requests (CLs) were raised and successfully closed. The assessment is included in the report.

2.7.1 Forward Action Requests

No FAR was raised during the validation process.

3 VALIDATION FINDINGS

3.1 Summary of Project Benefits

As per the information available in the PD/2/ and confirmed by the PP during the on-site visit, CTI verified that this section is appropriate for estimating the benefits or outcome that created by the project.

The benefits are achieved as below:

- Climate objectives consist in the afforestation of degraded land and barren hill, which would continue to remain degraded and barren, increasing the carbon stocks in the following pools: above-ground biomass and below-ground biomass.
- Community objectives would ensure the creation of employment and provide relevant training (skilled labour force), which would positively influence the livelihoods and well-being of the population.
- Biodiversity objectives would preserve the conservation of wildlife and of biodiversity in the Region.

Via checking the whole PD, CTI verified that all the achievements reported are corresponding to the information provided in the relevant parts of the PD.

3.2 General

3.2.1 Summary Description of the Project (G1.2)

- Technologies/measures to be implemented by the project and eligibility of the project.

  The project zone is located in the Liupanshui City, in the west of Guizhou Province and bordering Yunnan Province, Guizhou Province is categorized with karst rocky desertification landform including karst hills and karst isolation plain. The project area is located in Shuicheng County, Pan County, Liuzhi Special District of project zone. The location of both project zone and area is confirmed via on-site inspection and checking the project design/11/.

  Guizhou Province is characterized by a typical karst rocky desertification landform which is a process of land degradation involving serious soil erosion, and the potential rocky desertification area in Guizhou Province is 1971.20×103hm^2, even accounting for 11.34% of the total province's land area, CTI has verified this characteristic of this province by checking the baseline survey/13/ and on-site inspection.

  The project zone is characterized by North subtropical monsoon humid region climate /67/, with altitude range from 1,400 to 1,900 meters, average temperature 13°C -14°C, the annual precipitation is 1,200 to 1,500 mm /67/, population of Liupanshui City is 2.9 million including 2,907,000 people in Shuicheng County, Pan County, Liuzhi Special District/14/. Through checking the project design/11/ and via on-site inspection, CTI verified that Liupanshui has karst geology, the landform types are diverse and complex, where the mountains, hills, basins and the river valleys are interlaced. The terrain is higher in the Dawan town in Zhongshan district and lower in the Maokou township in Liuzhi special District, which has been verified through on-site inspection and checking the project design/11/.

  CTI confirmed that the PD sufficiently describes the social and physical parameters of the project area and zone. The project aim in afforestation of barren hill and degraded lands, which would continue to remain degraded and barren, planting with native trees including China fir, Cypresses, Pinus yunnanensis and Masson pine. The documented evidences/11/,/21/ and the site inspection confirmed the description.

- Project proponent and other entities involved in the project.
  Through checking the information available in the PD/2/ and confirmed by the PP during the on-site visit/I1/, the primary project proponent responsible for project develop, project design, project implementation and project management is Guizhou Xinzhanxin Agricultural Technology Co., Ltd.
  The contact details are:
  Heng Zhang (Project Manager)
  - *No. 2, Floor 1, Unit 2, Building 71, Pantaoyuan Community, 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/16/.
  As per the information available in the PD/2/ and confirmed by the PP/I1/ and consultant/I4/ during the on-site visit, the other entities involved is the VCS&CCB development consultant who has signed the Consultant Agreement/37/ with the project developer. The contact details are:
  Yanyan Liu (V.P)
  - *Room 155, 6F, Taohuixintian, 219 Wangfujing Street, Dongcheng District, Beijing, China*

- Project start date
  The PD/2/ states, and confirmed by the PP during the interview, that the project start date is 28/04/2015 based on the date when the planting started, which is verified via checking the Project Starting Date evidence (Planting Construction Contracts) issued by Local County Forest Bureau and Guizhou Meiruite Forest Development Co., Ltd./24/.
  Agreements between the landowner and the project proponent are available defining the validity and the land used/20/. The project lifetime is 30 years/23/ and the PP choose GHG accounting period of 29 years which is less than the project lifetime. The starting date is defined on 28/04/2015 when the planting started as described above and it represents the date on which the project began generating GHG emission reductions or removals as defined by the VCS AFOLU requirements.

- Project scale and estimated GHG emission reductions or removals.
  Project scale is selected as “Large Project” at estimated average annual emission reductions of 347,498 tCO_2 per year (average) greater than the 300,000 tons of CO_2 per year, which indicates a “Large Project” per VCS Standard section 3.9.1.

- Project location.
  The project zone Shuicheng County, Pan County, Liuzhi Special District are located in the Liupanshui City, in the west of Guizhou Province and bordering Yunnan Province, Guizhou Province is categorized with karst rocky desertification landform including karst hills and karst isolation plain, which CTI has confirmed via on-site inspection/11/. The PD includes a map of the project zone as well as the geographical coordinates of Shuicheng County, Pan County, Liuzhi Special District and a map of the project areas (planted areas).
  The PD/2/ lists the local name and the geodetic coordinates (the geographical coordinates of the project are listed as below table). All the information has been cross-checked through the maps/10/,/58/.

Location	East longitude	North latitude
Project Area	104°18'-105°42'	25°19'-26°55'
Liupanshui City	104°18'-105°42'	25°19'-26°55'
Liuzhi Special District	105°08'-105°42'	25°59'-26°33'

Shuicheng County	104°33'-105°15'	26°02'-26°55'
Pan County	104°18'-104°57'	25°29'-26°17'

- The scenario existing prior to the implementation of the project.
  As per the PD/2/ and confirmed during the on-site interview, CTI verified that in the absence of the project, there is no forestry land in the project area before the project, which is also verified via checking the project baseline survey/13/. The lands will remain barren hill and degraded lands without the project. The baseline scenario is the same as the conditions existing prior to the project initiation.

- The project's climate, community and biodiversity objectives.
  Climate objectives consist in the afforestation of degraded land, which would continue to remain degraded, increasing the carbon stocks in the following pools: above-ground biomass and below-ground biomass/11/.
  Community objectives would ensure the creation of employment and provide relevant training (skilled labour force), which would positively influence the livelihoods and well-being of the population/14/.
  Biodiversity objectives would preserve the conservation of wildlife and of biodiversity in the Region/15/.
  The project's objectives are defined and are reasonable for the project's location and the actual situation.

The validation team by the mean of on-site inspection at Shuicheng County, Pan County, Liuzhi Special District and cross check with the supporting documents/11/,/13/,/15/,/14/,/23/,/24/ provided during the validation process, is able to conclude that the description of Shuicheng County, Pan County, Liuzhi Special District afforestation project within the PD is accurate, complete, and provides an understanding of the nature of the project.

CAR 01 and CL 01 was raised and successfully closed, Refer to Appendix 3 for details.

3.2.2 Physical Parameters (G1.3)

The PD/2/ sufficiently describes the physical parameters of the project area and zone, the assessment and document assessed has been stated as following,

- Topography
  The project zone Liupanshui City is located in the Guizhou Province. Guizhou Province is characterized by a typical karst rocky desertification landform which is a process of land degradation involving serious soil erosion, and the potential rocky desertification area in Guizhou Province is 1971.20×103hm^2, even accounting for 11.34% of the total province's land area, CTI has verified this characteristic of this province by checking the baseline survey/13/ and on-site inspection.
  The terrain of Liupanshui is high in the west and low in the east & high in the north and low in the south which has been verified through on-site inspection and checking the project design/11/. The topography is a typical karst rocky desertification landform mainly mountains and hilly in Guizhou Province of the project zone which is also confirmed by on-site observation and interview with local officers/I2/.

- Soils
  The soil composition of Liupanshui is complex and various, which mainly include yellow loam, mountain yellow and brown loam, mountain scrub meadow soil, lime soil, purple soil, rice soil, tide soil and swampy soil, and soil types are divided into 24 subtypes, 74 soil genera and 141 soil species, the characteristic are confirmed through on-site observation and verified by analityical results in Biodiversity survey/15/.

- Climate
  The project zone is characterized by North subtropical monsoon humid region climate /67/, with average temperature 13°C -14°C, the annual precipitation is 1,200 to 1,500 mm, and frost- free period of 200 to 300 days/67/,/15/.

- Hydrology
  The water system of Liupanshui belongs to the Yangtze River and the Pearl River. The mainstream of the Pearl river system is the Beipanjiang river, which runs through the belly of the city from west to east. There are 71 rivers including 14 Wujiang river system and 57 Zhujiang river system. The Wujiang river system, with Sancha river as its mainstream in the city, is located in the northern region, including Shuicheng county, Liuzhi special District and part of the Zhongshan District. All the features are verified by checking the survey report/13/,/11/ and via on-site investifation.

- Types of vegetation
  The main tree species in Liupanshui are wild plants, such as herbage, medicinal, fruit and other types. There are 514 species of herbage in 192 genera and 40 families. There are about 700 species of medicinal plants, 195 of which are the main species, which are confirmed via on-site interview with the local officers from forest bureau and through checking the biodiversity survey report/15/. Total are 223 arbor species and bamboo species, belonging to 62 species and 140 genera, which is confirmed via on-site interview with the local officers from forest bureau and through checking the biodiversity survey report/15/.

CTI confirmed that the PD sufficiently describes the physical parameters of the project area and zone. The site visit and the supporting documents/15/,/13/,/11/ confirmed the description and verified the descriptions are correct and actual.

3.2.3 Social Parameters (G1.3)

- Main settlements
  The project area for planting is degraded land/12/. The community living inside and in the vicinity of the project area is limited/14/. The project zone Liupanshui is one of six prefecture-level Cities in Guizhou province, bordering Yunnan Province to the west. The 1 District and 2 Counties where the project located are all under jurisdiction of Liupanshui City, which is famous as the China's 'Cool Capital' confirmed by on-site inspection and checking the supporing document/14/. The project region is located in the western region of Guizhou Wumeng Mountain Area with typical karst landform/14/.

- Land use and economic activities
  Through on-site interview and inspection, CTI verified that the project zone is abundant with natural and social resources, especially the industrial base of energy and raw materials and also the main power transmission location from the west to the east in China. Most of the lands are used for agricultural and economic activities are mainly from agriculture. The project area for planting is barren hill and degraded land which can be confirmed from the project approval/12/.

- Relevant historical conditions
  The related historical situation has been listed in the PD with the different condition in different historical period which CTI verified through checking the public website relevant to this City.

- Socio-cultural information
  The social-cultural information and economical parameters including population, income, education, health and emplyment figures are checked have been detail listed in the PD

within Liupanshui City, which are confirmed as actual and credible and verified by on-site observation and checking the community baseline sruvey/14/.

In conclusion, CTI verified that the PD sufficiently describes the social parameters of the project area and zone. The site visit and the supporting documents confirmed the description.

CAR 02 was raised and successfully closed, Refer to Appendix 3 for details.

3.2.4 Project Zone Map (G1.4-7, G1.13, CM1.2, B1.2)

The project zone covers a total area of approximately 23,720 ha located in Shuicheng County, Pan County, Liuzhi Special District of Liupanshui City in Guizhou Province. The location of the project area and zone is defined and confirmed through on-site investigtion by GPS devices used by validation team and through checking the maps /10/ and the geographical coordinates/58/.

The project zone map is confirmed as clear with the relevant information on the location of stakeholders, location of communities, onsite climate impacts, other stakeholder impact, and areas where biodiversity impacts are predicted, which is confirmed as in line with the requirement of the PD template.

Furthermore, based on the carbon sink calculation, CTI verified that there is no leakage of the project, hence, no offsite climate and biodiversity impacts were predicted in the Map.

The information in the map is confirmed as consistent with the project design. The impacted area and stakeholders are confirmed as defined reasonably which was verified by on-site inspection and checking the Afforestation Project Design Report, Biodiversity Baseline Survey Report and Community Baseline Survey Report.

Furthermore, the stratification of different tree species types are defined in the map with 10 different colours and the number is verified corresponding to the Section 3.2.2 of the PD. The map is confirmed as in line with the project design in Afforestation Project Design Report/11/ and verified by on-site inspection.

Site observations confirmed the targeted areas are located within the administrative division of Shuicheng County, Pan County, Liuzhi Special District and the geographical coordinates of the project as described by the PD and by the supporting documents/10/,/58/.

CAR 03 was raised and successfully closed, Refer to Appendix 3 for details.

3.2.5 Stakeholder Identification (G1.5)

The stakeholders should be all the communities and parties which are relavant to the project activity or impacted by the project or have interest in the project. The PD/2/ 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 according to the Social and Biodiversity Impact Assessment Manual (SBIA Manual).

The stakeholders are identified as residents living in the involved villages from Shuicheng County, Pan County, Liuzhi Special District who are directly affected by the project activities, village communities in 1 District and 2 Counties, the local Forest Bureaus in 1 District and 2 Counties that involved in providing the basic planting technology, governments of the 1 District and 2 Counties.

Through the SBIA Manual, 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, VVB visited the project area and communities in 1 District and 2 Counties, interviewed with the stakeholders representative from local villagers, Liupanshui City Forest Bureau, local villagers who involved in the project implementation such as tree planting workers and technicians. By seeing the project implementation and interview with stakeholders in communities, it is confirmed the project is implemented in 1 District and 2 Counties which impact the villagers in this area, and local government is responsible to the approval and related environmental and social issues, and during the project planting and maintenance, the local villagers involved in the project are paid by PP and trained by the local Forestry Bureau and PP.

Checking the relevant docs and evidence

The stakeholders identification is confirmed as complete by checking the related docs of project, Community Baseline Survey Report/14/ and Afforestation Project Design Report/11/ which define the communities, community groups in 1 District and 2 Counties and impact to the local communities; Approval of afforestation project design/12/ which was approved by Liupanshui City Forest Bureau; Other government agencies of the County which are confirmed by checking the government functions; Technical Training Record/30/ which are used to prove that Planting techniques provided by the local Forestry Bureaus. The cooperative development agreement signed by project proponent with the village collective/17/ has been checked to prove the Village committees in project area is responsible for collecting opinions from the respective locals and villages with the project proponent.

Therefore, CTI verified that each stakeholder is identified correclty, 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/I2/,/I3/.

CAR 04 was raised and successfully closed, Refer to Appendix 3 for details.

3.2.6 Stakeholder Descriptions (G1.6, G1.13)

The stakeholders are identified as residents living in the involved villages from Shuicheng County, Pan County, Liuzhi Special District who are directly affected by the project activities, village communities in 1 District and 2 Counties, the local Forest Bureau in 1 District and 2 Counties that involved in providing the basic planting technology and local governments of the 1 District and 2 Counties.

See above section for the approaches taken to validate the process of stakeholder identification and analysis.

The identified stakeholders seems to be the ones with influence or interest on project design and seems reasonable. This is was confirmed during the on-site visit and the interview with the local stakeholders/I2/,/I3/.

CAR 05 was raised and successfully closed, Refer to Appendix 3 for details.

3.2.7 Sectoral Scope and Project Type

The proposed project falls into VCS Sectoral Scope 14: Agriculture Forestry and Other Land Use (AFOLU), and the aim of the project is the afforestation of any land that does not fall into the category of wetland. According the VCS requirement, the project is eligible under AFOLU project categories ARR (Afforestation, Reforestation and Revegetation). As per the AFOLU requirements, eligible ARR activities are those that increase sequestration and/or reduce GHG emissions by establishing, increasing or restoring vegetative cover. The project is confirmed as not a grouped project via verifed by Approval of afforestation project design/12/.

The native ecosystem in the project area was no longer present and the goal of the project is to plant species in a degraded area/11/. As stated in the PD during the crediting period, all project areas will be not subjected to cut activity, this is verifed by checking the project lifetime evidence/23/ and through on-site interview with local officers/I2/.

3.2.8 Project Activities and Theory of Change (G1.8)

The theory of change analysis is discussed in the PD and the continuous baseline situation has been demonstrated and the PD discusses the expected outputs, outcomes and impacts due to the project implementation. The activities are identified in afforestation, monitoring and training.

For each of the above activities are identified the expected outcomes on climate, community and biodiversity:

- Climate – Generate GHG emission removals /11/,/13/

- Community – Improve well-being of local residents /11/,/14/

- Community – Enhance social cohesion /11/,/14/

- Biodiversity – Increase local biodiversity /11/,/15/

Based on checking the project design/11/ against the baseline project status based on the baseline survey for project/13/, community/14/ and biodiversity/15/, CTI verified that PD and project design/11/ provides an understanding of the nature of the project and the project will achive the climate, community, and biodiversity objectives as above after the operation of the project comparing with the baseline (without change) scenario.

CAR 06 was raised and successfully closed. Refer to Appendix 3 for details.

3.2.9 Sustainable Development

The project activity will generate GHG emission removals and sequester carbon dioxide and mitigating climate change by foregoing the afforestation on degraded lands which would remain degraded which has been verifed by the project design/11/ and on-site inspection; The project also generates social and environmental co-benefits as the generation of income and job opportunities for local communities which is verified by checking the labor contracts and periodical payroll/29/ and also confirmed by on-site interview with local residents/I3/; Enhance biodiversity conservation by increasing the connectivity of forests which is critical for wildlife which is verified by checking the project design/11/ against the baseline of biodiversity/15/ and also confirmed by on-site interview with local officers/I3/; Improve soil and water conservation in the Karst region which is verified by checking the project design/11/ against the baseline survey/15/ and also confirmed by on-site interview with local officers/I3/.

Due to the on-site inspection by CTI has been conducted after 5 years operation of the project, thus the project's sustainable development contributions have been verified during on-site inspection as following,

i. GHG emission reductions and sequester carbon dioxide and mitigating climate change have been achieved upon the trees' growing verified by on-site inspection;

ii. income and job opportunities for local communities has been generated via checking the the labor contracts and periodical payroll/29/;

iii. connectivity of forests have been increased with the trees' growing verified by on-site inspection;

iv. soil and water conservation has been improved with the trees' growing verified by on-site inspection and interview with local officers/I3/.

Thus CTI verified that the project's sustainable development contributions is positive and can be achieved after project operation.

3.2.10 Implementation Schedule (G1.9)

The PD/2/ states, and confirmed by the PP during the interview, that the project start date is 28/04/2015 based on the date when started planting which has been confirmed by CTI via the Planting Construction Contracts issued by Local County Forest Bureau and Guizhou Meiruite Forest Development Co., Ltd./24/ as described in previous section. The implementation schedule is as following,

Date	Milestone(s) in the project's development and implementation
15-09-2014	Started the baseline survey/13/
09-01-2015	The Afforestation Project Design Report in 2015 was finished/11/
18-01-2015	The afforestation project design in 2015 was approved by Liupanshui City Forest Bureau/12/
14-02-2015	Biodiversity Baseline Survey Report of the project was completed/15/
24-02-2015	Participatory Rural Appraisal (PRA) report of the project was completed/25/
28-04-2015	Started planting trees (start date of the project)/24/
01-01-2016	Start date of crediting period
20-01-2016	The Afforestation Project Design Report in 2016 was finished/11/
22-02-2016	The afforestation project design in 2016 was approved by Liupanshui City Forest Bureau/12/
10-01-2017	The Afforestation Project Design Report in 2017 was finished/11/
20-01-2017	The afforestation project design in 2017 was approved by Liupanshui City Forest Bureau/12/
15-10-2017	Completed planting/22/
05-09-2019	Started collecting and sorting data to write PD/1/
11-12-2019	Issued the draft PD and preparation of the public/1/
30-01-2020 to 29-02-2020	PD and PD Summary listed for Global Stakeholder Consultation
23-04-2020 to 26-04-2020	Site visit by CTI

Via on-site interview with local officers and checking all the supporting evidences listed in the table above, CTI verified that the key dates and milestones in the project's development and implementation are actual.

CL 02 was raised and successfully closed, Refer to Appendix 3 for details.

3.2.11 Benefits Assessment and Crediting Period (G1.9)

During the crediting period and project lifetime quantitative and qualifying studied on biodiversity, climate and community will be done periodically; no cut activity is expected in project area during the crediting period 29 years and the lifetime of the project is 30 years/23/. The crediting period started on 01-January-2016 which is less than the project lifetime is considered as reasonable based on the project lifetime.

3.2.12 Risks to the Project (G1.10)

The PD/2/ states the overall risks to the project are low, no major 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.

Natural risk identified are fire, diseases and insects, pesticide risks.

Fire risk is considered low because planting area is mostly barren land, 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 and interview with local officers/I2/ and forest technician/I3/.

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/33/. The project construction unit and the county&district forest bureau have signed the pest control responsibility document to minimize the impact by insects and disease/34/.

The prevention and control methods by using biological control will be mainly adopted, and chemical agents can be appropriately used for the areas where the diseases and insect pests are particularly serious. There was no damage caused by insects and disease since the project operation which is confirmed during the on-site visit and interview with local officers/I2/ and forest technician/I3/.

The pesticide 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 which has been determined in the Forest Management Manual/33/. As the biological measures to control pests and diseases will be mainly adopted, the pesticide application will be limited. There was no use since the project operation which is confirmed during the on-site visit and interview with local officers/I2/ and forest technician/I3/.

Hence, it is concluded that the risks to the expected climate, community, and biodiversity benefits during the project lifetime are asessed accurately and the mitigation measures included in the PD is deeded as actual via checking the Forest Management Manual/33/ and on-site visit and interview with local officers/I2/ and forest technicians/I3/. As per the technical knowledge of the validation team it can be confirmed that the techniques for risk prevention are in accordance with best forest practice.

3.2.13 Benefit Permanence (G1.11)

The measures needed and taken to extend project benefits beyond the project lifetime include the selection of the species planted which assure the endurance as confirmed in the Seedling Purchase Contract/21/ which can make sure the good growing of the trees and the lifetime of the trees are longer than the project lifetime, the land use agreements with the land owner and project proponent/20/ is verified to confirm the land using is legal and the land using period is longer than the project lifetime, commercial logging will be forbidden as defined in the Project Lifetime evidence issued by Guizhou Forestry Investigation and Design Co., Ltd./23/. In addition, the Forest Management Manual/33/ was verified by CTI to concluded that the

forest of the project will be carefully managed by the experienced team to control all the potential risks even beyond the project lifetime.

Thus it is concluded that based on the measures taken, the project can maintain and enhance the climate, community, and biodiversity benefits beyond the project lifetime. This is also confirmed by the on-site visit and interview with local officers/I2/ and project proponent/I1/.

CAR 07 was raised and successfully closed, Refer to Appendix 3 for details.

3.2.14 Financial Sustainability (G1.12)

As declared by the PPs during the interview, the project fund partly secured by the special funds for afforestation to Liupanshui City and partly funded by Provincial and City government funds and for the future after seriously considered the carbon revenue and thought the revenue could help to mitigate the investment barrier.

Guizhou Xinzhanxin Agricultural Technology Co., Ltd has signed the Consulting Agreement with Timing Carbon Asset Management Co., Ltd which has been confirmed by checking the Consulting Agreement/37/, and Timing Carbon Asset Management Co., Ltd will find VER buyer to purchase the carbon credits generated from the project in the following years' operation.

The project proponent will be responsible for the continuous project implementation, management and maintenance of the forest with the potential subsidy from carbon revenue, by checking the land usa agreement/20/ and project approval/12/, CTI verified that the project financial mechanisms can provide an adequate funds for project implementation to achieve the project's climate, community and biodiversity benefits.

CL 03 was raised and successfully closed, Refer to Appendix 3 for details.

3.2.15 Grouped Projects

N/A

3.2.16 Land-Use Scenarios without the Project (G2.1)

In the absence of the project the land would be degraded land and barren hill. There is no forestry land in the project area before the project. The lands will remain degraded and barren without the project.

This is confirmed by onsite interview with local government officer/I2/ and documents review/13/.

3.2.17 Most-Likely Scenario Justification (G2.1)

The most-likely land use scenario would be the same as baseline scenario via checking the baseline survey/13/ and approval of the afforestation project plan/12/. Through on-site inspection, interview with the local officers and checking the related documents/25/,/13/,/12/, CTI verified that the most-likely land use scenario is determined by considering the poverty assessments and farming knowledge assessments. The lands will remain degraded and barren without the project.

Hence it is concluded that the most-likely land-use scenario is justified.

3.2.18 Community and Biodiversity Additionality (G2.2)

As stated in the PD, there are not ongoing or unresolved disputes or conflicts regarding land, prior to the project initiation, the project land is village collective property as confirmed by checking the land use

agreement/20/. Local farmers have the right to use the land within the project boundary, and the project proponent and forestry department are responsible for the comprehensive implementation and management of the project.

China has successively issued a series of laws and administrative regulations related to forestry, such as the <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> etc. aimed at providing the guidelines in the forest sector development process (forestry and industry) in order to maximize the economic, social and environmental benefits. The project is not required by law which is confirmed by checking the approval of the afforestation project plan/12/.

According to the land planning, the afforestation activity location is legally defined as forestry land. Farming and grazing is not allowed in these plots.

Demonstration of project activity would not have been implemented under the without-project scenario due to significant financial, technological, institutional or capacity barriers is listed in the section 3.3.5 of this report.

Climate, community and biodiversity benefits is listed in the section 3.3-3.5 of this report.

In conclusion, the project benefits would not have occurred in the absence of the project, the additionality of the project activities is confirmed.

CL 04 was raised and successfully closed, Refer to Appendix 3 for details.

3.2.19 Stakeholder Access to Project Documents (G3.1)

The PD is available in English and a summary document of the PD is Chinese version/6/. The full project documentation has been published on VCS and CCB website for public comments as per checking the VCS website. Thus the local communities and other stakeholders can easily download documents from the website. The project proponent has noticed local stakeholders through the routine villager assembly regarding project listing in VCS website and has been confirmed by checking the routine villager assembly record/27/ and interview with local residents/I3/. Futhermore, the project proponent will notice local stakeholders through the routine villager assembly regarding every milestones of the project development, including registered, issuance, etc..

In conclusion, the PP has made project documentation accessible to communities and other stakeholders.

During the public consultation period, no comments were received via cheking the VCS and CCB websites.

CAR 08 was raised and successfully closed, Refer to Appendix 3 for details.

3.2.20 Community Costs, Risks and Benefits (G3.2)

Within the project area was made a Participatory Rural Appraisal (PRA) survey in Sep. 2014 with stakeholder meeting by the PP inviting local villagers, permanent workers in the project, forestry experts and government officers to inform people of the possible impact in terms of economics, social and biodiversity aspects that the project might have on the community. This was confirmed by the PPs and by the Participatory Rural Appraisal (PRA) survey report/25/ provided during the site visit. Via checking the contents in the PRA, it is concluded that the project design detailes, relevancy and adequacy of the information has been provided to communities, and the analysis of project benefits to communities including

all the potential impacts are provided to the stakeholders to let all the participants know the project's potential costs, risks and benefits. All the costs, risks and benefits are idendtified completely and adequately in the PRA process and during the site visit, by interviewed with the local stakeholders, CTI verified that they understand the project's potential costs, risks and benefits to communities with the project development and process. There is no any important costs, risks and benefits missed.

3.2.21 Information to Stakeholders on Validation and Verification Process (G3.3)

As stated before a consultation through PRA with the stakeholders was made for informing people about the project impacts. In particular the project proponent informed and explained about the means of the validation process through routine villager assembly and posted on local bulletin boards before the validation site visit took place as confirmed by checking the routine villager assembly record/27/ and bulletin boards photo/39/. In addition, by interview with the local stakeholders, CTI verified that the mobile phone number of a contact person of PP has been provided and they will call if they have any issues about the project at anytime. This was also confirmed by the PPs and interview with local stakeholders during the site visit.

In the future, the PP will use same manner to inform communities and other stakeholders of the process for CCB verification as promised by the PP.

CAR 09 was raised and successfully closed, Refer to Appendix 3 for details.

3.2.22 Site Visit Information and Opportunities to Communicate with Auditor (G3.3)

Before the on-site visit, the audit plan was sent to PP from auditor of CTI, auditor have to conduct communication with local stakeholders during the site visit process. Hence the PP informed representatives of the local stakeholders after receiving the audit plan. During site visit, auditor arranged a stakeholder door to door interview[1]. Thus CTI verified that the communities and other stakeholders were informed of the auditor's site visit before the site visit occurred.

During the site visit from 23 to 26, April 2020, Auditor had a direct and independent communication with communities and other stakeholders representatives.

During the communications, Auditor asked stakeholders representatives several questions with a questionnaire including following,

1. General information of the interviewee
2. How do you know the project?
3. If the project provided the employment opportunitiy to you? Permanent or temporaty?
4. If your living or income improved by the implementation of the project?
5. Have you attended any training hold by project proponent or local forest bureau?
6. Have you been invited to provide the comments before the project started?
7. Have you been invited to provide the agreement or disagreement with the project start?
8. Do you think you comments have been considered?

[1] Due to the coronavirus was epidemic in China since Jan 2020, the gathered meeting was not allowed by local government, hence auditor conducted door to door interview with each representative of the local stakeholders and get their comment separately.

9. Do you think the project benefits to the local communities?
10. Do you think the project benefits to the local biodiversity?
11. Have you known the Carbon trade after the implementation of the project?
12. Are you satisfied with the surounding environmental quality after the implementation of the project?
13. Do you support the project?

All the interviewees gave positive reply to all the issues, and they confirmed that many of the local stakeholders from local government and surrounding villages have participated in the stakeholder meeting which was held before the project start, all the participants agree the implementaton of the project then the project can be started. Thus CTI verified that stakeholders participated in Decision-Making and Implementation of the project.

CAR 10 was raised and successfully closed, Refer to Appendix 3 for details.

3.2.23 Stakeholder Consultations (G3.4)

As stated before a consultation through PRA and meetings with the stakeholders was made for introducing people about the project impacts and ask them to raise their opinions of the project design and their willingness to participate the following implementation. This has been confirmed by checking the PRA/25/ and related meeting questionnaires/26/. The stakeholders are invited to provide their comments regarding the project implementation and impacts to them, also PP considered their participation in decision-making by asking all the participants to fill the questionnaires.

Via checking all the questionnaires/26/ and by interview with the respresentatives/I2,I3/ during site visit, CTI verified that all the participants agreed the implementaton of the project, therefore,from that point, the project design was not modified and the project started with local stakeholder's agreement.

PPs further declares that they will continue the communication with stakeholders and monitor the community impacts. This is was confirmed during the on-site visit and the interview with the project developer/I1/ and local stakeholders/I2/,/I3/. Hence, CTI concluded that the project's method for conducting stakeholder consultations is effective.

CAR 11 was raised and successfully closed, Refer to Appendix 3 for details.

3.2.24 Stakeholder Consultation Channels (G3.5)

As stated in the PD, the documentation and information regarding the project were made available to the community through routine villager assembly in both project listing and validation process, which has been confirmed by checking the routine villager assembly record/27/ and interview with local residents/I3/. Moreover, local policy makers and forest experts were also invited by phone calls during the PRA and validation process which has been confirmed by checking the PRA/25/ and interview with local officers/I3/. All the stakeholder have been informed directly or through their legitimate representatives.

During the meetings the main information about the climate change and the carbon market were provided/25/, and all the stakeholders could raise questions and discuss issues they cared about with the PP during the meeting directly. This is deemed as the most direct approach for the consultation.

The PPs have gone to considerable lengths to consult with local stakeholders and engage them in the project during the project development proess. This is was confirmed during the on-site visit and the interview with the local stakeholders. Hence, it is concluded that adequate levels of information sharing has occurred.

3.2.25 Stakeholder Participation in Decision-Making and Implementation (G3.6)

As stated before a consultation through PRA and meetings with the stakeholders was made for introducing people about the project impacts and ask them to raise their opinions of the project design and their willingness to participate the following implementation. This has been confirmed by checking the PRA/25/ and related meeting questionnaires/26/. The stakeholders are invited to provide their comments regarding the project implementation and impacts to them, also PP considered their participation in decision-making by asking all the participants to fill the questionnaires.

Via checking all the questionnaires/26/ and by interview with the respresentatives/I2,I3/ during site visit, CTI verified that all the participants agreed the implementaton of the project, therefore, from that point, the project design was not modified and the project started with local stakeholder's agreement.

The following measures have been taken and will be continued to ensure participation is maintained which has been confirmed by on-site observation, interview and as promised by the PP: PRA is confirmed by checking the PRA report/25/, local consultation meetings for each project development process, community monitoring in the verification process, dissemination of project information for project listing and validation as confirmed by checking the routine villager assembly record/27/, training sessions as confirmed by checking the training record/30/. No any gender factor is considered during these measures.

Due to the nature of stakeholders, the communication and participation can be considered adequate to the project, and the decision should be revised according to further discussion in case there is any feedback from stakeholders. This is was confirmed during the on-site visit and the interview with the local stakeholders. Hence, CTI concluded that project proponent have been and will enable effective participation in culturally appropriate and gender sensitive manner with all communities.

3.2.26 Anti-Discrimination Assurance (G3.7)

As stated in the PD and confirmed by the PP during the interview/I1/, the PP should obey <Labor Law of the People's Republic of China>/57/ with anti-discrimination assurance and are not involved in or complicit in any form of discrimination or sexual harassment with respect to the project.

Both the project proponent and the project developer are not involved in or complicit in any form of discrimination or sexual harassment with respect to the project, due to the labor contract was signed based on the <Labor Law of the People's Republic of China>/57/ with anti-discrimination assurance. <Labor Law of the People's Republic of China> is the national law to protect the legitimate rights and interests of workers, the clause 12 in this law is related to anti-discrimination assurance. Thus this law as specific policy is put in place by the project proponents to prevent discrimination, thus it is sured that the project proponent and all other entities involved in project design and implementation will not violate the standard's anti-discrimination requirement.

The stakeholder involvement was inclusive without any discrimination of gender, cultural identity and religion. The national policies/57/ guarantee that no type of discrimination is tolerated at any point of the project development.

3.2.27 Feedback and Grievance Redress Procedure (G3.8)

The PD describes a grievance redress process; a specific staff in charge of recording and collecting conflicts and grievances of local communities and individual farmers was nominated who is the first responsible for responding to requests from the community which has been confirmed during on-site interview with the project proponent/I1/.

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

PP promised that grievances will be addressed in a reasonable amount of time, usually contacted and discussed with relevant community within 3 days, answered and proposes a solution within 1 week in case of claims or complaints and dealt within 30 working days in case of suggestions. The PP declares to be available to adjust the grievance mechanism according the recorded dynamics and evaluation of effectiveness of the process in place.

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

3.2.28 Worker Training (G3.9)

Via checking the training records/30/ and interview with the workers of project/I3/, CTI verified that technical advice and technical training are offered continuously for workers for different topics like producing high quality seedlings and for successful tree planting, as well as for preventing planted trees from being subject to fire, pest and disease attack, etc.

The training are normally composed by theoretical class room and field training as confirmed by checking the training records/30/. The training for employees is held once a year, starting from every October from 2014, mainly in the aspects of employee safety and health and technology, and is also related to the knowledge of forest land clearing, how to plant trees, afforestation and management, carbon sink afforestation and carbon emission, this is verified through checking the training records/30/. Workers are properly trained and efforts are made to maintain a high level of skills confirmed by interview with the workers of project/I3/.

CL 05 was raised and successfully closed, Refer to Appendix 3 for details.

3.2.29 Community Employment Opportunities (G3.10)

The PP stated that the hiring profile is established according with the vacant position given an equal opportunity without any discrimination of age, sex, marital status, ethnicity, social status or religious convictions, political ideas or sexual orientation, and in compliance with the local law. The project makes an effort to hire locally as evidenced by the onsite interview with project developer and project workers/I3/. Hiring criteria are based on skill sets without any discrimination as defined in the labor contract/28/.

During the project implementation, the total number of the local residents who participated in planting are about 15,220 by verified the labor contract/28/, and 70% of them are confirmed as women. Besides, about 90 local people are employed as project management. This is confirmed via checking the labor contract/28/, periodical payroll/29/ and on site interview with tree planting workers and forest technicians/I3/.

Thus it is concluded that project provides equal employment to people from communities.

3.2.30 Relevant Laws and Regulations Related to Worker's Rights (G3.11)

The PD/2/ states that the project shall meet or exceed all applicable laws and regulations regarding workers' rights. Relevant law < Labor Law of the People's Republic of China> to which the PPs have to comply is checked by the validation team, this law is confirmed as the national law to guarantee the employment's right, health and safety. The hiring process is governed by the labour code and all workers have a contract in which its duties, rights and laws that protect them are reported. This is confirmed via checking the labor contract/28/ and on site interview with local government officer/I2/ and forest technician/I3/.

3.2.31 Occupational Safety Assessment (G3.12)

The PD/2/ states that the project proponent shall meet <Safety and Healthy in Forestry Work> published by ILO and <Labor Law of the People's Republic of China> regarding workers' health and safety. Both the two regulations are confirmed as international and national rule and laws which can be used as the occupational safety regulations to obey. The activities that endanger workers are those related to workplace accidents due to the use of dangerous machinery that requires qualified personnel and basic supplies and uniform to prevent accidents and the workers are also trained providing information and practical exercises to prevent any risk. For the project activity, due to the fire risk, basic supplies and uniform for evacuation plan is available to the workers which has been confirmed during site observation and interview with the workers.

In conclusion, the measures are designed to minimize project related risk.

3.2.32 Project Governance Structures (G4.1)

The actors involved in the project are three: Guizhou Xinzhanxin Agricultural Technology Co., Ltd (project developer/owner), local forestry bureau (local government) and Timing Carbon Asset Management Co., Ltd (VCS&CCB developer).

The local forestry bureau and Timing Carbon Asset Management Co., Ltd composed as the expert group as defined into the Forest Management Manual/33/ and Monitoring Manual/36/ and confirmed by on-site observation, whose responsibility is to guide and coordinate the project's overall implementation and decision-making;

Guizhou Xinzhanxin Agricultural Technology Co., Ltd established a project working group (covering aspects of carbon sink, ecology, forestry, community, geographic information, etc.) who provide technical support for the project development and implementation, this has been confirmed by interview with PP and onsite observation;

The responsibility of local forestry bureau is daily supervision and data management, providing technical advice and training to technicians during the project implementation which has been verified by onsite interview with the local officers from forestry bureau/I2/ and project technicians/I3/.

The PD list the project actors and their responsibilities clearly, they all know their own roles and responsibilities by on-site interview.

CL 06 was raised and successfully closed, Refer to Appendix 3 for details.

3.2.33 Required Technical Skills (G4.2)

The PD lists the key technical skills required to implement the project. Via checking the staff list of above three parties/28/,/29/, CTI verified that for each individual, experience and education and other qualifications are cited. The PPs and team have the skills necessary to required to implement the project successfully, including community engagement, biodiversity assessment and carbon measurement and monitoring skills.

CAR 12 was raised and successfully closed, Refer to Appendix 3 for details.

3.2.34 Management Team Experience (G4.2)

The project proponent Guizhou Xinzhanxin Agricultural Technology Co., Ltd. is in rich experience in forest management in Guizhou Province, including artificial afforestation, forest protection and management, forest damage control and technical training, this has been confirmed by checking the business license of

the company/16/ and on-site interview with the representative from this company/I1/ and local officers from government/I2/.

The local forestry bureau and Timing Carbon Asset Management Co., Ltd composed the expert group is defined as the management team as stated above. The experiences of two entities are assessed as below,

The responsibility of local forestry bureau is daily supervision and data management, providing technical advice and training to technicians during the project implementation which has been verified by onsite interview with the local officers from forestry bureau/I2/ and project technicians/I3/;

Timing Carbon Asset Management Co., Ltd is experienced in carbon measurement and monitoring including successfully developed over 30 carbon projects in China via checking the UNFCCC/60/, GS/61/, VCS/59/ and other GHG schemes' website.

Hence, it is concluded that the management team have the skills necessary to successfully manage this project so that to achieve the carbon emisison reduction and CCB benefits.

CAR 13 was raised and successfully closed, Refer to Appendix 3 for details.

3.2.35 Project Management Partnerships/Team Development (G4.2)

As stated above, the local forestry bureau and Timing Carbon Asset Management Co., Ltd composed the expert group is defined as the management team. Besides, local Forestry Bureau provide instruction of afforestation and forest management, conduct the specific supervision of the implementation, and collect specific activity data at routine basis. This is confirmed by on site interview with officers from local Forestry Bureau/I2/. Thus, it is concluded that no other organizations needed to support the project through partnerships, management team have the sufficient experiences to implement the project and already filled any gaps.

CAR 14 was raised and successfully closed, Refer to Appendix 3 for details.

3.2.36 Financial Health of Implementing Organization(s) (G4.3)

During the on-site visit and checking the business license/16/ of the participant parties, CTI verified that the project proponent Guizhou Xinzhanxin Agricultural Technology Co., Ltd is a privacy and legally registered company. Other involved entity Timing Carbon Asset Management Co., Ltd is also a legally registered company in China. Furthermore, through checking the company information in National Enterprise Credit Information Publicity System/64/, CTI verified that all the companies are legally operated, the financial health is verified. And by checking the website, CTI verified that neither the project proponent and nor the other parties have been suspected of charged with or found guilty of corruption, bribery, embezzlement, fraud, favoritism, cronyism, nepotism or collusion. Via checking the public website of credit information system of Chinese company/64/, CTI verified that the statement in PD is actual and credible.

Thus, it is concluded that the financial health of the implementing organizations is verified and they can ensure adequate financial support over the project lifetime.

3.2.37 Avoidance of Corruption and Other Unethical Behavior (G4.3)

As legally registered companies according to above assessment, the project proponent and other involved entity in project design and implementation have the obligation to comply with relevant regulations, including anti-corruption law. This is verified by checking the company information in National Enterprise Credit Information Publicity System/64/ and on-site observation with company business license/16/.

Thus it is concluded that the project is not involved or complicit in any form of corruption.

3.2.38 Commercially Sensitive Information (*Rules* 3.5.13 – 3.5.14)

No commercially sensitive information in project documents.

3.2.39 Statutory and Customary Property Rights (G5.1)

Prior to the project initiation, the project land is village collective property, this is verified by checking the certification of land rights/18/. The local villagers have the right to the use of land, and Guizhou Xinzhanxin Agricultural Technology Co., Ltd. is authorized by all the villagers to implement the project as a project proponent, which is confirmed by checking the land use agreement/20/. Thus CTI verified that prior and informed consent has been obtained from villagers whose property rights are affected by the project through a transparent and agreed process.

The project proponent and forestry department are responsible for the comprehensive implementation and management of the project as defined in the land use agreement and project approval/20/, /12/. Via on-site interview with the local officer and villagers, CTI verified that no entity can encroach the project area as private property and change the land usage type without all villagers' agreement. And by checking the project approval/12/ and stated by local officer, CTI verified that the local government will be responsible to supervise the local villager's right to the land.

Hence, based on above assessment, CTI concluded that the project does not complicit of involuntary relocation as within the project area there are no communities living or depending on the resources located inside the areas through checking the land use agreement and project approval/20/, /12/ and onsite observations and interview with local residents/I3/. And the project will not violate the ownership of the land by the villagers and stakeholders, and then will not encroach uninvited on private property, community property, or government property, which is in line with the CCB rules.

3.2.40 Recognition of Property Rights (G5.1)

Refer to assessment in 3.2.39 above. CTI verified that all property rights are recognized, respected and supported.

3.2.41 Free, Prior and Informed Consent (G5.2)

The project is implemented in project land which is village collective property as defined in the land use agreement /20/. Thus the project does not encroach on any private property, community property, or government property beyond the boundaries of the project land.

Villagers voluntarily use these lands to plant trees confirmed by checking the land use agreement/20/, the land use agreement is confirmed as signed before the project implementation with all the villager's consent.

Due to the voluntarily using lands to plant trees, thus no compensation need to be allocated to any parties whose lands have been or will be affected by the project, this is confirmed by on site interview with officers from local Forestry Bureau/I2/ and local residents/I3/.

In conclusion, the project is respecting the property rights of the communities.

3.2.42 Property Rights Protection (G5.3)

The VCS project is implemented by a private company which has been confirmed by checking the business license and project approval/16/, /12/. Villagers voluntarily use these lands to plant trees confirmed by checking the land use agreement/20/, the land use agreement is confirmed as signed before the project implementation with all the villager's consent.

Due to the voluntarily using lands to plant trees, thus no compensation need to be allocated to any parties whose lands have been or will be affected by the project, this is confirmed by on site interview with officers from local Forestry Bureau/I2/ and local residents/I3/.

Thus it is concluded that the project does not result in the involuntary removal or relocation of property rights holders from their lands or territories and do not force rights holders to relocate activities important to their culture or livelihood as there were no residents located in the project area with most of degraded and barren land as stated in the baseline survey/13/.

3.2.43 Illegal Activity Identification (G5.4)

Via checking the Community Baseline Survey Report/14/ and on-site observation, CTI verified that there are no illegal activities inside the project area or in neighboring areas; the area is considered as being peaceful and excluded from social conflict. Furthermore, any illegal logging activities will be fined or sentenced to punishment according to Chinese laws/54/, and the forests are preserved by project staff regularly as determined in the Forest Management Manual/33/, thus it is confirmed no illegal deforestation will be occurred. This is confirmed by on site interview with officers from local Forestry Bureau/I2/ and local villagers/I3/.

In conclusion, the project's climate, community and biodiversity impacts will not be affected by the illegal activities.

3.2.44 Ongoing Disputes (G5.5)

The cooperative development agreement signed by project proponent with the village collective/17/ has been checked, CTI verified that the villagers voluntarily use these lands to plant trees. Thus, there are no ongoing or unresolved conflicts or disputes over land, territories and resources rights/18/.

Furthermore, by on site interview with officers from local Forestry Bureau/I2/ and local residents/I3/ and checking the land use agreement/20/, CTI verified that no any disputes that were resolved during the last twenty years.

The project is implemented in project land which is village collective property as defined in the land use agreement /20/. Villagers voluntarily use these lands to plant trees confirmed by checking the land use agreement/20/, the land use agreement is confirmed as signed before the project implementation with all the villager's consent. During the on-site observation, the trees have been planted for 5 years and by interview with the local residents, CTI verified that no activity is undertaken by the project that could prejudice the outcome of an unresolved dispute relevant to the project.

In conclusion, no measures needed and designed to resolve conflicts or disputes.

3.2.45 National and Local Laws (G5.6)

The PD provides an extensive list of national and local laws and regulations, and explains their applicability to the project and the way compliance with the law is achieved by the project where applicable. The laws and regulations are confirmed through checking the public website/54/, /56/ which has been compared with the actual situation of the project by on-site observation, CTI verified that the project is complying with relevant national and local laws and regulations.

3.2.46 Approvals (G5.7)

The project is approved by the local government authority Liupanshui Forest Bureau on 18/01/2015 for year 2015 and approved by the local government authority Liupanshui Forest Bureau on 22/02/2016 for year

2016 and approved by the local government authority Liupanshui Forest Bureau on 20/01/2017 for year 2017 by checking the Approvals of afforestation project design/12/. Based on local expertise of validation team, CTI verified that the project is legally approved in China.

CAR 15 was raised and successfully closed, Refer to Appendix 3 for details.

3.2.47 Project Ownership (G5.8)

During the on-site visit and checking the business license/16/ of the participant parties, the government approval of the project/12/, the land use agreement of the project area/20/, CTI verified that the project developer Guizhou Xinzhanxin Agricultural Technology Co., Ltd is a privacy company, who is in charge of the integrated implementation and management of the project. The area land involved in the project was collectively owned by the village.

The project proponent and forestry department are responsible for the comprehensive implementation and management of the project and project developer have the right to conduct the project and have the right to the environmental credits (VCUs) derived from it which is confirmed by checking the government approval of the project/12/ and consultant agreement/37/.

3.2.48 Management of Double Counting Risk (G5.9)

This project will not seeks to generate or has received any form of environmental or social credit which is verified by checking the public website of other environmental or social credit scheme. The project is being simultaneously validated through VCS. The issuance of VCUs will ensure the avoidance of double counting.

3.2.49 Emissions Trading Programs and Other Binding Limits

Net GHG emission reductions or removals generated by the project will not be used for compliance with an emission trading program or for meeting binding limits on GHG emissions which has been confirmed by checking the declaration from the PP/38/ and checking the public website of other emission trading program/60/,/61/.

3.2.50 Other Forms of Environmental Credit

The project has not created another form of Environmental Credit including renewable energy certificates which has been confirmed by checking the declaration from the PP/38/.

3.2.51 Participation under Other GHG Programs

The GHG emission reductions or removals generated by the project have not counted or used under other GHG Programs/60/,/61/, and/or other forms of environmental credit. The project has no desire to or registration in any other GHG program as verified by checking other GHG Programs/60/,/61/.

3.2.52 Projects Rejected by Other GHG Programs

There is no evidence of the project's rejection from any other GHG programs via checking the GS, VCS and CDM project data base/60/,/61/,/59/.

3.2.53 Double Counting (G5.9)

The project is being simultaneously validated through VCS. The issuance of VCUs will ensure the avoidance of double counting as the credits generated from the project will be sold as offsets on VCS

registry publicly, the series number of the issued credits can be tracked to avoid any potential double counting. This is promised by PP as per the declaration/38/.

3.3 Climate

3.3.1 Title and Reference

The CDM approved baseline and monitoring methodology AR-ACM0003 "Afforestation and reforestation of lands except wetlands", version 2.0.0/48/ is correctly applied for the project activity. The application of the methodology is subject to the following A/R methodological tools which is applicable to the project activity:

(a) Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities, version 01/49/;
(b) Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities, version 04.2/50/;

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)	The land subject to the project activity does not fall in wetland category;	The satellite images show that the land subject to the project activity does not fall in wetland category.	Via checking the satellite images from google earth/58/ and on-site inspection, CTI verified that the project area is not involved in wetland.
(b)	Soil disturbance attributable to the project activity does not cover more than 10 per cent of area in each of the following types of land, when these lands are included within the project boundary: (i) Land containing organic soils;	The disturbance is cave-shaped, rather than banding. All the project land contain organic soils, but the disturbance on the soil triggered by the project activity is no more than 4.96%.	The soil analysis in Afforestation Project Design Report/11/ is checked, CTI verified that project land contain organic soils within the project boundary, project land contain organic soils, and the disturbance on the soil triggered by the project activity is no more than 4.96%[2].
	(ii) Land which, in the baseline, is subjected to land-use and management practices and receives inputs listed in appendices 1 and 2 to this methodology.	Appendix 1 lists cropland in which soil disturbance is restricted. Appendix 2 lists grassland in which soil disturbance is restricted. According to Participatory Rural Appraisal Report of the project, the land does not contain the listed type of cropland and grassland.	Through checking the Afforestation Project Design Report/11/ and Participatory Rural Appraisal Report/25/, CTI verified that the land within the project boundary before the implementation of the project activity was a degraded grasslands and barren land without receiving inputs listed in the applied methodology.

Thus, CTI verified that AR-ACM0003 (Version 2.0.0) is applicable for the proposed project.

A project activity applying this methodology shall also comply with the applicability conditions of the tools contained within the methodology and applied by the project activity as following:

[2] Proportion of soil disturbed area: $0.16m^2*3,100/10,000m^2=4.96\%$, 0.16 m^2 was derived from the surface area calculated from the specification of artificial afforestation cavities in the Project Design (40cm*40cm) which has been inspected during site visit.

Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities (Version 01)			
No.	Applicability Criteria	PP demonstration	VVB assessment
(a)	Forestation of the land within the proposed project boundary performed with or without being registered as the VCS project activity shall not lead to violation of any applicable law even if the law is not enforced	Forestation of the land within the project boundary does not lead to violation of any applicable law	The afforestation activity within the project boundary does not lead to violation of any applicable law as demonstrated in the Additionality section 3.3.5 of this report.
(b)	The tool is not applicable to small-scale afforestation and reforestation project activities	The proposed project is large-scale afforestation project.	The project is verified as a large-scale project in section 3.2.1 of this report.

Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities (Version 04.2)			
No.	Applicability Criteria	PP demonstration	VVB assessment
1	No internal applicability conditions.	No applicability conditions, thus is applicable to the project.	N/A

CTI hereby confirmed that the selected baseline and monitoring methodology has been approved by the CDM Executive Board, and is applicable to the project, which complies with all the applicability conditions therein, and the selected version is valid at the time of the validation commencement. It is also confirmed that the methodology and the methodological tools are correctly applied by comparing it with the actual text of the applicable versions.

Eligibility for AFOLU Project Categories

According to Appendix of 1 Eligible AFOLU Project Categories of the VCS Standard V4.0, the validation team check the project activity eligibility as below:

As the project activity is an afforestation project, via the section A1.1 of Appendix of 1 Eligible AFOLU Project Categories of the VCS Standard V4.0,

“Afforestation, Reforestation and Revegetation (ARR)

A1.1 Eligible ARR activities are those that increase carbon sequestration and/or reduce GHG emissions by establishing, increasing or restoring vegetative cover (forest or non forest) through the planting, sowing or human-assisted natural regeneration of woody vegetation. Eligible ARR projects may include timber harvesting in their management plan. The project area shall not be cleared of native ecosystems within the 10 year period prior to the project start date, as set out in Section 3.2.4.”

The PD/2/ states that since 1970s till now, all of the project area were barren hill and degraded lands with no agricultural and deforestation activities. To verify this, CTI checked the certificate of land qualification/19/ which was issued by Forest Bureau of Liupanshui City dated on 13/11/2014, further conducted on-site interview with the local officer and residents/I2/,/I3/, CTI verified that the project sites were previously degraded grassland and barren land, not deforested since 1970s.

CAR 16 was raised and successfully closed, Refer to Appendix 3 for details.

3.3.3 Project Boundary

The VCS Standard requires that the project describe the project boundary, identify, and select appropriate carbon pools. The PD defines the project area, which has an extension of 23,720 ha, inside the Shuicheng County, Pan County, Liuzhi Special District of Liupanshui City. The area and location has been confirmed via checking the project design/11/ and project approval/12/. The boundaries include the administrative boundaries of cities, counties and forest farm. The following table present the carbon pool considered within the project boundary:

Baseline

Source		Gas	Included?	Justification/Explanation
Baseline	Above-ground biomass	CO_2	Yes	This is the major carbon pool subjected to project activity
		CH_4	No	Not included in carbon pool
		N_2O	No	Not included in carbon pool
	Below-ground biomass	CO_2	Yes	Carbon stock in this pool is expected to increase due to the implementation of the project activity
		CH_4	No	Not included in carbon pool
		N_2O	No	Not included in carbon pool
	Dead wood Litter and Soil organic carbon	CO_2	No	Insignificant and exclusion is conservative.
		CH_4	No	Not included in carbon pool
		N_2O	No	Not included in carbon pool

Project

Source		Gas	Included?	Justification/Explanation
Project	Above-ground biomass	CO_2	Yes	This is the major carbon pool subjected to project activity
		CH_4	No	Not included in carbon pool
		N_2O	No	Not included in carbon pool
	Below-ground biomass	CO_2	Yes	Carbon stock in this pool is expected to increase due to the implementation of the project activity
		CH_4	No	Not included in carbon pool
		N_2O	No	Not included in carbon pool
	Burning of woody biomass	CO_2	No	CO_2 emissions due to burning of biomass are accounted as a change in carbon stock
		CH_4	Yes	Burning of woody biomass for the purpose of site preparation, or as part of forest management, is allowed under this methodology
		N_2O	Yes	Burning of woody biomass for the purpose of site preparation, or as part of forest management, is allowed under this methodology

By checking the information and evidences/11/,/12/,/13/ available and by the physical site, the validation team can confirm that the appropriate carbon pools have been considered and the description in the PD is accurate and complete, and also the selected carbon pools are justified for the proposed project activity.

3.3.4 Baseline Scenario

The procedure for determination of the baseline scenario in the project activity was applied using the methodological tool Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities (version 01)/49/. The assessment is step-wise as below,

Step 0 - preliminary screening based on the starting date of the A/R project activity:

following the provision of the combined tool, the proposed project activity starting date is verified after 31/12/1999 but before the date of registration, PP showed that: (a) the Planting Construction Contract was signed on 28/04/2015/24/, thus after 31/12/1999; (b) the incentive from the planned sale of the carbon credit was seriously considered in the decision to proceed with the project activity as demonstrated by the project approval/12/. Both the evidence of project starting date/24/ and project approval/12/ have been checked by CTI during site observation, it is concluded that the compliance of these two conditions is confirmed.

Step 1 – identification of alternative land use scenarios to the proposed VCS project activity

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

following the provision of the combined tool, the PP has identified plausible alternative land-use scenarios:

(1) Continuation of the pre-project scenario, which means lands remain barren.

(2) Agricultural use of the land

(3) Forestation of the land within the project boundary without being registered as the VCS project,

CTI confirms that no reasonable alternative baseline scenario was excluded in the analysis of baseline scenarios based on the local expertise and baseline survey/13/. Based on the validated assumptions, CTI considers that the identified credible alternative land use scenarios are reasonable.

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

All the above identified alternatives are consistent with enforced mandatory applicable laws and regulations as discussed in the PD and confirmed by the PPs during the interview and site visit. The PD lists all the mandatory applicable laws and regulations which have been checked by the validation team/54/, /56/. The approval of the afforestation project plan/12/ is checked to be confirmed that the project area is legally defined as forestry land. Farming and grazing are not allowed in these plots as confirmed by checking the carbon sink afforestation cooperation and development agreement/17/ and land use agreement/20/. Therefore, scenario 2 is verified as not a plausible alternative baseline land-use scenario.

Hence, alternative 1 would be a plausible alternative baseline land-use and would be consistent with current laws and regulations.

Therefore, both the land-use scenarios 1 and 3 are confirmed as in compliance with mandatory legislation and regulations taking into account the enforcement in the region on national and/or sectoral policies and regulations/54/,/56/,/12/.

3.3.5 Additionality

The project additionality has been demonstrated following the provision of the combined tool[/49/].

Step 2 – Barrier analysis

Sub-step 2a. Identification of barriers that would prevent the implementation of at least one alternative land use scenarios

The project participants used the barrier analysis in order to demonstrate the additionality of the project. The presented barriers are

- **Investment barriers**
- **Technological barriers**

The assessment team checked first if any barrier has a clear direct impact on the financial returns of the project activity which can be expressed with reasonable certainty in monetary terms. The final PD is verified does include only barriers without such impact on the financial returns.

The barriers were furthermore assessed against official documents and discussed during onsite visit.

Investment barriers:

It was confirmed that there are no credit mechanisms are in place for villagers to make long term investment in plantation forestry via onsite observation and interview with local villagers/I3/. The project lands are collective-owned by local villages and local villagers have the right to the use of land which is confirmed during the on-site interview/I2/,/I3/ and checking the certification of land right/18/ and lands use agreement/20/. However, the income of villagers in the project area is verified as lower than the general level of local townships and counties through checking the Community Baseline Survey Report/14/. Agriculture is the main income source for the local villagers. While the total investment of the project is more than 935 million CNY, among this figure, only 655 million CNY was funded by government, and remaining more than 280 million CNY need to be raised by the village committees and villagers. The results of the Participatory Rural Appraisal Report/25/, Community Baseline Survey Report/14/ and Statistical Report on the local government Liupanshui City/66/ are checked to confirm that the average annual income of the villagers in the project zone is only 7,522CNY/14/,/66/ and therefore is far under the investment of the project. Thus CTI verified that the local villagers do not have enough disposable personal income to make such big investment in plantation forestry.

Furthermore, since the forest planting was established in degraded or barren land by checking the baseline survey/13/ and project design/11/, and the trees planted will not be sold as timber or lumber as per the law/54/ and carbon sink afforestation cooperation and development agreement/17/, it is a common sense that there would be no direct revenue from the implementation of the afforestation project expect for environmental and ecological benefits and thus unattractive for banks to provide the commercial loan for the purpose of afforestation only.

The barriers described in the PDD were furthermore cross-checked during the onsite visit through interviews with local people/I2/,/I3/. It is concluded that due to the low income level of the region, local villagers are not able to afford the high plantation establishment investment in the early stage.

Technical barriers:

Project developers are confronted with diverse technical barriers. The technical barriers described are the lack of access to quality seed sourced and the lack of necessary skills to produce high quality seedlings and to perform successful plantings, these barriers were confirmed during site observation and interview with the local officers and residents/I2/,/I3/. Furthermore the missing knowledge and experience regarding the prevention of forest fires, pest and diseases are considered as stated in the Participatory Rural Appraisal Report/25/, Community Baseline Survey Report/14/ and interview with the local officers and residents/I2/,/I3/. The technical barriers are based on the results of the Participatory Rural Appraisal Report/25/ and were cross-checked during the onsite visits through interviews with local people/I2/,/I3/. The result of this assessment shows clearly that the barriers presented in the PD can be considered real.

Based on above assessment, it is concluded that these barriers prevent the project activity from being implemented without registered as a VCS project (scenario 3). Thus upon the decision of applying for VCS and CCB project, the project proponent singed a consultant agreement/37/ with Timing Carbon Asset Management Co., Ltd to find potential VCU buyers wanting to sell credits expected to be generated, through checking the consultant agreement/37/, CTI verified that VCU buyer works with the owner to work out better implementation plan for the project, and help local farmers to conduct the planting activity better. Thus CTI verified that without applying for VCS, local farmers would face the above mentioned technical barriers.

Sub-step 2b: Elimination of land use scenarios that are prevented by the identified barriers.

These identified barriers would prevent the project activity from being implemented without registered as a VCS project (scenario 3) while it would not prevent at least the baseline of the project. This was confirmed based on the documentation review, interviews and local and sectoral expertise of the validation team.

Thus Scenario 1, continuation of pre-project use (i.e. lands remain barren), remains the possible baseline scenario.

STEP 3. Investment analysis

Not applicable as only scenario 1 is the plausible baseline scenario.

STEP 4. Common practice analysis

The region for the common practice analysis was defined as the Guizhou Province where the project area is located, based on the social and ecological condition/13/&/25/. Firstly, the forest in Guizhou Province is mainly public welfare forest and stone desertification control forest land and different from other provinces due to the poor resource, vulnerable ecology, multiple disasters and low economic benefits, this is confirmed via checking the local public website/65/. 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 Participatory Rural Appraisal Report/25/. Therefore, the presented approach is considered appropriate for the common practice analysis.

Evidences for reforestation statistics in the region have been reviewed. Most of the reforested area is covered under the “Grain for Green Program” which is verified as subsidized by the government by checking the Programs on Forestry In China/55/ and “Grain for Green Program” /53/. In addition, according to the Programs on Forestry In China/55/ and “Grain for Green Program” /53/, only conversion of farmland to forest is eligible for the subsidy while tree planting on other types of lands (e.g. barren land) is not eligible. The project area is not classified as farmland as defined in the baseline survey/13/ and project approval/12/.

Furthermore, by means of checking the document/25/ and on-site interview with the project participant/I1/, CTI verified that the proposed project does not get direct financial support from NGOs.

Finally, via checking the GHG scheme website/59/,/61/,/60/ and interview with local government officer/I2/, CTI verified that there are three Afforestation project registered as VCS&CCB in Guizhou province with tree species of China Fir and Cypress different from this project, and those projects also applied the GHG scheme, and no more other similar A/R projects in defined region.

The audit team reviewed respective documentation and also confirmed during the onsite visit, that the proposed AR-CDM project activity features essential distinction to other afforestation activities in the region, as described above.

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

Finally, the project is considered additional as degraded lands are afforested which otherwise would have remained degraded lands – summarized due to unavailability of funding for such afforestation activities and technological barriers, 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 17 was raised and successfully closed, Refer to Appendix 3 for details.

3.3.6 Methodology Deviations

N/A

3.3.7 Quantification of GHG Emission Reductions and Removals

The emission reduction is calculated according the applied methodology AR-ACM0003. The algorithms and formulae used are provided in this section.

Baseline net GHG removals by sinks

According the applied methodology, the Baseline net GHG removals by sinks consist of the following components and determined as:

$$\Delta C_{BSL,t} = \Delta C_{TREE_BSL,t} + \Delta C_{SHRUB_BSL,t} + \Delta C_{DW_BSL,t} + \Delta C_{LI_BSL,t} \quad (1)$$

Where:

$\Delta C_{BSL,t}$	=	Baseline net GHG removals by sinks in year t; t CO_2-e
$\Delta C_{TREE_BSL,t}$	=	Change in carbon stock in baseline tree biomass within the project boundary in year t, as estimated in the tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities"; t CO_2-e
$\Delta C_{SHRUB_BSL,t}$	=	Change in carbon stock in baseline shrub biomass within the project boundary, in year t, as estimated in the tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities"; t CO_2-e
$\Delta C_{DW_BSL,t}$	=	Change in carbon stock in baseline dead wood biomass within the project boundary, in year t, as estimated in the tool "Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities"; t CO_2-e
$\Delta C_{LI_BSL,t}$	=	Change in carbon stock in baseline litter biomass within the project boundary, in year t, as estimated in the tool "Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities"; t CO_2-e

One baseline scenario was identified, which is degraded area without any trees, and the dead wood biomass and litter biomass would not be changed by local farmers. Hence, by checking the baseline survey/13/, the change in carbon stock in baseline dead wood biomass $\Delta C_{DW_BSL,t}$ and litter biomass $\Delta C_{LI_BSL,t}$ within the project boundary is verified as negligible.

To be conservative, most of the project area are bare land with very little grasses, therefore changes in carbon stocks in trees and shrubs in the baseline can be accounted as zero based on the tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities". The audit team confirmed this via checking the baseline survey/13/ and Participatory Rural Appraisal Report/25/. In summary the calculation of the baseline stocks and GHG removals are in compliance with the applied methodology and carried out correctly.

CTI verified that for simplicity, the baseline net GHG removal by sinks is considered to be 0 tCO_2e.

Actual net GHG removals by sinks

The actual net GHG removals by sinks shall be calculated as the sum of the changes in carbon stocks in the project minus the increase in non-CO_2 GHG emissions within the project boundary, which is shown as follows:

$$\Delta C_{ACTUAL,t} = \Delta C_{P,t} - GHG_{E,t} \quad (2)$$

Where:

$\Delta C_{ACTUAL,t}$	=	Actual net GHG removals by sinks, in year *t*; t CO_2-e
$\Delta C_{P,t}$	=	Change in the carbon stocks in project, occurring in the selected carbon pools, in year *t*; t CO_2-e
$GHG_{E,t}$	=	Increase in non-CO_2 GHG emissions within the project boundary as a result of the implementation of the A/R CDM project activity, in year t, as estimated in the tool "Estimation of non-CO_2 GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity"; t CO_2-e

Via checking the "Estimation of non-CO_2 GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity", CTI verified that the use of fire for site preparation and/or to clear the land of harvest residue prior to replanting is specifically excluded from the project management and therefore $GHG_{E,t} = 0$.

Change in the carbon stocks in project, occurring in the selected carbon pools in year *t* shall be calculated as follows:

$$\Delta C_{P,t} = \Delta C_{TREE_PROJ,t} + \Delta C_{SHRUB_PROJ,t} + \Delta C_{DW_PROJ,t} + \Delta C_{LI_PROJ,t} + \Delta SOC_{AL,t} \quad (3)$$

Where:

$\Delta C_{P,t}$	=	Change in the carbon stocks in project, occurring in the selected carbon pools, in year t; t CO_2-e
$\Delta C_{TREE_PROJ,t}$	=	Change in carbon stock in tree biomass in project in year t, as estimated in the tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities"; t CO_2-e
$\Delta C_{SHRUB_PROJ,t}$	=	Change in carbon stock in shrub biomass in project in year t, as estimated in the tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities"; t CO_2-e
$\Delta C_{DW_PROJ,t}$	=	Change in carbon stock in dead wood in project in year t, as estimated in the tool "Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities"; t CO_2-e

$\Delta C_{LI_PROJ,t}$ = Change in carbon stock in litter in project in year t, as estimated in the tool "Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities"; t CO_2-e

$\Delta SOC_{AL,t}$ = Change in carbon stock in SOC in project, in year t, in areas of land meeting the applicability conditions of the tool "Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities", as estimated in the same tool; t CO_2-e

As defined in the Project boundary, the changes in carbon stock above and below the ground are the only changes in carbon stocks to be considered in the project. And only the planted trees change above the ground is considered. Hence,

$$\Delta C_{P,T} = \Delta C_{TREE_PROJ,t} \quad (4)$$

The calculation of $\Delta C_{TREE_PROJ,t}$ is confirmed as conducted in line with the methodology tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities" (version 04.2).

According to the tool, change in carbon stock in trees between two points of time is estimated by using one of the following methods or a combination thereof:

(a) Difference of two independent stock estimations;

(b) Direct estimation of change by re-measurement of sample plots;

(c) Estimation by proportionate crown cover;

(d) Demonstration of "no-decrease".

Method (b) is efficient when there is a significant correlation between the plot biomass values on the two occasions (e.g. when there has been no harvest or disturbance in a stratum and therefore no significant spatial re-distribution of biomass has occurred in the stratum after the first estimation) For the project, there will be no harvest or disturbance during the project period, thus Method (b) should be selected to be selected, but this method is applicable only in ex-post estimation of change in carbon stock in trees for monitoring of project activities. Therefore, Method (a) is used for the ex-ante estimation during validation, and method (b) will be used in the monitoring of the following verification.

Under Method (a), the change in carbon stock in trees and the associated uncertainty are estimated as follows:

$$\Delta C_{TREE} = C_{TREE,t1} - C_{TREE,t2} \quad (5)$$

$$u_{\Delta C} = \frac{\sqrt{(u_1 \times C_{TREE,t1})^2 + (u_2 \times C_{TREE,t2})^2}}{|\Delta C_{TREE}|} \quad (6)$$

Where:

ΔC_{TREE} = Change in the carbon stocks in trees during the period between two points of time t1 and t2; t CO_2-e

$C_{TREE,t1}$ = Carbon stock in trees as estimated at time t1; t CO_2-e

$C_{TREE,t2}$ = Carbon stock in trees as estimated at time t2; t CO_2-e

$u_{\Delta C}$ = Uncertainty in ΔC_{TREE}

u_1, u_2 = Uncertainties in $C_{TREE,t1}$ and $C_{TREE,t2}$ respectively

Carbon stock in trees at a point of time is estimated by using one of the following methods or a combination thereof:

(a) Estimation by measurement of sample plots;
(b) Estimation by modelling of tree growth and stand development;
(c) Estimation by proportionate crown cover;
(d) Updating the previous stock by independent measurement of change.

For the project, Method (b) is used for the *ex-ante* estimation during validation.

According to the Tool, under Method (b), existing data are used in combination with tree growth models to predict the growth of trees and the development of the tree stand over time, and ex-ante estimation (projection) of carbon stock in tree biomass is not subjected to uncertainty control.

Stand parameters such as stocking (e.g. number of stems per hectare or basal area per hectare), age-class structure, and species composition at different points of time are simulated from assumed (planned) tree planting and management practices (e.g. planting density, survival rate, thinning and pruning operations and their timing).

Tree growth (e.g. diameter or height increment) is simulated by taking into account local tree-growth data from past experience (e.g. age-diameter curves, yield tables, yield curves) while also considering relevant site factors (e.g. soil, terrain, slope, aspect, precipitation) and stand parameters.

For the project, the growth curve equations are used to estimate the average volume of one tree, and the carbon stock in trees in the tree biomass estimation strata is estimated as follows:

$$C_{TREE,i,j} = \sum_{i,j} A_i \times N_{i,j} \times \frac{44}{12} \times CF_{TREE,j} \times B_{TREE,j} \quad (7)$$

$$B_{TREE,j} = V_{TREE,j} \times D_j \times BEF_j \times (1 + R_j) \quad (8)$$

Where:

$C_{TREE,i,j}$ = Carbon stock in trees of tree species *j* of strata *i*; t CO_2-e

A_i = Area of strata *i*; Mu

$N_{i,j}$ = Number of the tree species *j* of strata *i*; trees/ha

$CF_{TREE,j}$ = Carbon fraction of tree biomass for tree species *j*; t C/t d.m.

$B_{TREE,j}$ = Biomass of one tree of tree species *j*; t d.m.

$V_{TREE,j}$ = Stem volume of one tree of tree species *j*; t d.m.

D_j = Density of tree species *j*; t d.m/m^3

BEF_j = Biomass expansion factor for conversion of tree stem biomass to above-ground tree biomass, for tree species *j*; dimensionless

R_j = Root-shoot ratio for tree species *j*; dimensionless

The tree species adopted in the project are all native trees, including China fir, Cypresses, Pinus yunnanensis and Masson pine.

The values of D_j, BEF_j and R_j are verified as correct through checking The People's Republic of China Second National Communication on Climate Change, issued by NDRC, 2013/52/.

Via checking the Afforestation Project Design Report/11/, CTI verified that the Project Stratification for carbon calculation are determined correctly on different planting pattern and tree species.

For the *ex ante* estimation of the carbon change from the project, CTI verified that the growth curve (age-volume) equations are used to estimate the stem volume of one tree ($V_{TREE,j}$).

For simplification, the following equations are applied:

China fir: $V_{TREE,j}=0.1962(1-e^{-0.08A})^{3.9012}$ (9)

Cypresses: $V_{TREE,j}=0.20420(1-e^{-0.05A})^{4.66995}$ (10)

Pinus yunnanensis: $V_{TREE,j}=0.103743(1-e^{-0.067959A})^{3.3420}$ (11)

Masson pine: $V_{TREE,j}=0.19073(1-e^{-0.11A})^{6.06248}$ (12)

Where,

$V_{TREE,j}$ = average merchantable volume of one tree in category i, at time t; m^3/tree

A = stand age, year

It should be noticed that due to lack of reliable data source for all the tree species, for ex-ante estimation, the growth curve equations of China fir, Cypresses, Pinus yunnanensis and Masson pine is verified as acceptable which has been checked as below

China fir /35/: Review on the Growth Equations of Pinus Massoniana, China Fir and Pinuselliottii in China [Journal of Northwest Forestry University]

Cypresses/35/: The biomass growth rule and forest biomass change of main vegetation types in Banqiao river small watershed at the early stage of (1991) governance were studied [Guizhou forestry science and technology, 1991, vol. 19, no. 4]

Masson pine/35/: Study on biomass growth rule and forest biomass change of main vegetation types in early stage of Banqiao river small watershed management [Guizhou forestry science and technology, 1991].

Pinus yunnanensis/35/: Analysis of Growth Process Pinus yunnanensis Natural Secondary Forests in Yongren county of Yunnan Province [Journal of West China Forestry Science]

Corresponding *ex ante* calculations were carried out based on calculation spreadsheets/4/. Correctness of calculations can be confirmed as they were reproduced by the audit team using the information provided. The values and estimates presented in the PD are considered reasonable based on the documentation reviewed/11/, further references and the result of the interviews during the onsite visit.

While, for the ex-post estimation during the following verification, the allometric equations or growth models of each tree species will be used to calculate the stem volume, and the allometric equation used will be demonstrated to be appropriate for the purpose of estimation of tree biomass by applying the tool "Demonstrating appropriateness of allometric equations for estimation of aboveground tree biomass in A/R CDM project activities" in project monitoring report.

Leakage

The leakage is estimated as follows:

$$LK_t = LK_{AGRIC,t} \tag{13}$$

Where:

LK_t	=	GHG emissions due to leakage, in year t; tCO_2-e
$LK_{AGRIC,t}$	=	Leakage due to the displacement of agricultural activities in year t, as estimated in the tool "Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity"; tCO_2-e

According to the applicable methodology leakage has to be estimated based on the methodological tool "Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity"/51/. Leakage emission resulting from displacement of the activities is composed of decrease in carbon stock in the carbon pools of the land and change in soil organic carbon stock due to land-use change in the land.

$$LK_{AGRIC,t} = \frac{44}{12} \times (\mathrm{D}C_{BIOMASS,t} + \mathrm{D}SOC_{LUC,t}) \tag{14}$$

Where:

$LK_{AGRIC,t}$	=	Leakage due to the displacement of agricultural activities in year t; tCO_2-e
$\mathrm{D}C_{BIOMASS,t}$	=	Decrease in carbon stock in the carbon pools of the land receiving the activity displaced in year t; t d.m
$\mathrm{D}SOC_{LUC,t}$	=	Change in soil organic carbon (SOC) stock due to land-use change in the land receiving the displaced activity in year t; tC ha

As already discussed in the previous sections, the project was implemented by manual operation, rather than mechanical operation and the project does not expect any displacement of agricultural activities and any harvesting activity, thus the leakage is accounted to 0.

Net anthropogenic GHG removals by sinks

According the applied methodology, the net anthropogenic GHG removals by sinks are calculated as follow:

$$\Delta C_{AR,t} = \Delta C_{ACTUAL,t} - \Delta C_{BSL,t} - LK_t \tag{15}$$

Where:

$\Delta C_{AR,t}$	=	Net anthropogenic GHG removals by sinks, in year *t*; t CO_2-e
$\Delta C_{ACTUAL,t}$	=	Actual net GHG removals by sinks, in year *t*; t CO_2-e
$\Delta C_{BSL,t}$	=	Baseline net GHG removals by sinks, in year *t*; t CO_2-e
LK_t	=	GHG emissions due to leakage, in year *t*; t CO_2-e

For the *ex-ante* determination on baseline emissions and leakage emissions, based on the above assessment CTI verified that the estimated baseline emissions and leakage emissions are both 0 tCO_2e for the project. Hence, the net anthropogenic GHG removals by sinks is equal to actual net GHG removals by sinks.

The estimates on the expected anthropogenic GHG removals by sinks which are likely to be achieved by the envisioned afforestation under the project scenario are in compliance with the applied AR-CDM methodology and with the respective VCS requirements.

Data and parameter applied for the calculation of biomass are listed in the PD and net anthropogenic GHG removals by sinks calculation sheets/4/, the data and respective sources were reviewed by the validation team and found in compliance with requirements of the methodology. Changes in carbon stocks of soil organic carbon, litter and dead wood are conservatively neglected. For tree biomass the allometric equations method was applied and the stepwise approach was followed. Over the crediting period of 29 years, total net anthropogenic removals by sinks of **10,077,450** tCO_2e are expected.

All calculations are in compliance with the applied AR-CDM methodology. The steps of the calculations are fully traceable and adequate for the project conditions. In summary, the calculations for net anthropogenic GHG removals by sinks are fully traceable, adequate for the project conditions and considered as correct:

- All assumptions and data used by the project participants are listed in the PD, the references and sources have been confirmed as correctly quoted;
- All documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PD;
- All values used in the PD are considered reasonable in the context of the proposed VCS project activity;
- The baseline methodology has been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions;
- All estimates of the baseline emissions can be replicated using the data and parameter values provided in the PD.

CAR 18 was raised and successfully closed, Refer to Appendix 3 for details.

3.3.8 Monitoring Plan

The monitoring plan presented in the PD complies with the requirement of the methodology.

The following data and parameters has been available at validation:

No.	**Data/Parameter**	Unit	Description	**Determination method**
1	A_i	ha	Area of strata i	Through field measurement
2	$BEF_{2,j}$	Dimensionless	Biomass expansion factor for conversion of stem biomass to above-ground biomass	The People's Republic of China Second National Communication on Climate Change, issued by NDRC, 2013/52/
3	CF_{TREE}	t C t^{-1} d.m.	Carbon fraction of tree biomass for species or group of species j	The People's Republic of China Second National Communication on Climate Change, issued by NDRC, 2013/52/
4	D_j	t d.m.m^{-3}	Basic wood density	The People's Republic of China Second National Communication

				on Climate Change, issued by NDRC, 2013/52/
5	R_j	Dimensionless	Root-shoot ratio	The People's Republic of China Second National Communication on Climate Change, issued by NDRC, 2013/52/
6	t_{VAL}	Dimensionless	Two-sided Students t-value, at infinite degrees of freedom for the required confidence level	Students t-distribution table in the tool "Calculation of the number of sample plots for measurements within A/R CDM project activities" (Version 02.1.0)

The following data and parameters will be monitored in accordance with the applied methodology AR-ACM0003:

No.	**Data/Parameter**	Unit	Description	**Determination method**
1	$V_{TREE,j}$, $V_{TREE,l,p,j,i}$	m^3	Stem volume of tree species *j*; Stem volume of tree *l* of species *j* in sample plot *p* of stratum *i*	Calculated. For ex ante estimation, the growth curve (age-volume) equations as stated in above section are used to estimate the stem volume. For the ex-post estimation during the following verification will use allometric equations of each tree species to calculate the stem volume.
2	$H_{l,p,j,l}$, $DBH_{l,p,j,i}$	m, cm	Height of trees, Diameter at breast height of tree	Every verification through Field measurements in sample plots
3	A_i, $A_{PLOT,i}$	ha	Area of stratum *i*, Size of sample plot in stratum *i*	Field measurement. Standard operating procedures (SOPs) prescribed under national forest inventory are applied.
4	$N_{i,j}$	tree/ha	Number of the tree species *j* of strata *i*	Field measurement. Standard operating procedures (SOPs) prescribed under national forest inventory are applied.
5	n	Dimensionless	The number of sample plots	Calculation by $n = \left(\frac{t_{VAL}}{E}\right)^2 \times (\sum_i w_i \times s_i)^2$ as per the tool "Calculation of the number of sample plots for measurements within A/R CDM project activities" (Version 02.1.0)
6	n_i	Dimensionless	Number of sample plots allocated to strata i	Calculation by $n_i = n \times \frac{w_i \times s_i}{\sum_i w_i \times s_i}$ as per the tool "Calculation of the number of sample plots for measurements within A/R CDM project activities" (Version 02.1.0)
7	w_i	Dimensionless	Relative weight of the area of stratum *i*	Calculated. The relative weight of the area of a stratum i is equal to the area of the stratum i divided by the project area.

8	S_i	Dimensionless	Estimated standard deviation of biomass stock per unit area in strata *i*	Calculated as per the tool "Calculation of the number of sample plots for measurements within A/R CDM project activities" (Version 02.1.0)
9	E	t d.m. ha^{-1}	Acceptable margin of error (i.e. one-half the confidence interval) in estimation of biomass stock within the project boundary	Calculated as per the tool "Calculation of the number of sample plots for measurements within A/R CDM project activities" (Version 02.1.0). A default value equal to 10% of the mean biomass stock within the project boundary was used, and the mean biomass stock within the project boundary was estimated from the preliminary sample plots.

The validation team checked all parameters presented in the monitoring plan against the requirements of the methodology. For the monitoring of carbon stock changes the requirements and parameter list as per methodology were followed.

The monitoring plan was included to the project documentation.

The monitoring plan in section 3.3 is confirmed as designed according to the methodology and applicable tool, especially for the monitoring process, post-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 listed under paragraphs 3 and 4 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. The corresponding monitoring process has been described to monitor the boundary, check the applicability, and monitor changes in carbon stocks, project emissions and leakage emissions.

And the description of the boundary 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)". The procedures were reviewed by the assessment team on paper and through interviews with the relevant personnel/I1,I2/; 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 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.

CTI 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.

The chosen monitoring frequency for the parameters is in line with the methodology and VCS standard. It is considered that there is no systematic coincidence of verifications with peaks in carbon stocks since no harvesting operations are foreseen within the crediting period.

As per the technical knowledge of the validation team, CTI confirmed that the monitoring plan is in accordance with best forest practice.

CAR 19 and CAR 20 were raised and successfully closed, Refer to Appendix 3 for details.

3.3.9 Dissemination of Monitoring Plan and Results (CL4.2)

The proposed project activity is undergoing concurrent VCS validation, therefore the monitoring plan and the results of the future monitoring will be publicly available in the VCS website after the approval of the VCS Board.

The information on dissemination of the monitoring plan regarding to how the monitoring plan and any results will be made publicly available and how summaries will be communicated to the public has been further discussed. The approaches used by PP is confirmed as effective and reasonable.

During site inspection, it is observed that each village have its own public notice boards in village committee office, many important information was disseminated by these channels, CTI verified that local stakeholders can get the access to the monitoring plan, results and summaries through this. Finally, PP promised that after the validation finished, the monitoring plan and related monitoring manual will be also available in the village committees and the local forestry bureaus.

Via checking the descriptions and confirmed with project management team, CTI verified that after the monitoring plan is approved by VERRA, the monitoring plan, future verification results, the Chinese version summaries will be effectively disseminated to the local stakeholders and their comments will be collected and considered by PP.

3.3.10 Non-Permanence Risk Analysis

The non-performance risk report/8/ and Risk Calculation Sheet/9/ are provided by PP, the risk assessment was conducted according to the VCS Procedural Document “AFOLU Non-Permanence Risk Tool” (Version 4.0)/41/. PP adopted the Risk Report Short template and combining with the Risk-Report- Calculation-Tool excel sheet.

Each risk category was calculated based on the VCS guidance and the input provided by the PPs. The information was validated and cross-checked through document and literature review/12/&/11/&/33/, onsite visits of the project area and interviews conducted/I1/. Details of the assessment are provided as follow.

Risk factor	Validation findings
Internal risks	
Project Management	The management team includes individuals who have successfully managed projects through validation of GHG credits under the CDM, CCER, VCS Program/59/,/62/,/60/, therefore this mitigation is scored as -2. There is a specific mitigation plan made by project proponent for 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/36/, therefore this mitigation is scored as -2.
Financial Viability	According to the reported barren hills and degraded land data in the project design/11/, the forestry departments at all levels counted and approved the

	afforestation area, and allocated the funds and provincial-level funds and local funds issued to the counties. So project cash flow breakeven point is greater than 10 years from the current risk assessment. The cash out of the project is mainly for implementation of the project during the first three years, which has been fully secured by the project proponent and consulting firm. Therefore this mitigation is scored as 6.
Opportunity Cost	The NPV from the project is negative while the NPV from the most reasonable alternative land use activity (the land continued to be barren with no use) is zero. Therefore this mitigation is scored as 0.
Project Longevity	Since the main tree species planted in the project are *China fir, Cypresses, Pinus yunnanensis and Masson pine* which all are suitable for the growth on Karst landforms, therefore the project longevity selected 30 years/23/ and the crediting period is selected to be 29 years. Therefore this mitigation is scored as 0.
External risks	
Land Tenure and Resource Access Impacts	Project Approval/12/ is checked, CTI verified that the land of the project is all collective-owned, and the project proponent holds a concession for operating and management of the forest on the land which has been verified through the land use agreement/20/. Therefore this mitigation is scored as 0.
Community Engagement	The project land are mostly barren land by checking the baseline survey/13/, no residents living within the project area/14/. And for the households living within 20km of the project boundary outside the project area, nearly all of them have been consulted during the Participatory Rural Appraisal/25/ of the project. According to the PRA report/25/, the project generates net positive impacts on the social and economic well-being of the local communities who derive livelihoods from the project area. Therefore this mitigation is scored as -5.
Political Risk	The project is located in China. According to World Bank Institute's WGI, the six indicators of China are respectively -0.30, 0.30, -0.47, -0.25, -0.39 and -1.59, averaged over the most recent five years, so the mean score is -0.45. Governance Score is -0.45 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.
Natural risks	
Fire	Major. Fire risk is considered low in the early phase of the project because planting area is mostly barren land, after the trees grow to a certain age (over 30 years), the risk of fire may increase, and the project proponent will adopt the necessary measures for fire preventing. Thus, LS= 2 Furthermore, 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/33/. Therefore the mitigation is scored as 0.25.
Pest and Disease Outbreaks	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. Hence the risk is less than every 10 years. LS=2 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/33/. The biological measures to control pests and diseases will be mainly adopted. 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/33/. 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.
Extreme Weather	Minor There is basically no extreme weather in the project area based on weather reports collected from historic records from local government/67/; LS=1. Therefore the mitigation is scored as 0.25.
Geological Risk	Minor The geological risk such as earthquakes around the project area are mostly low intensity, so the damage will be minor. According to historical records from local government/67/, there is no earthquakes or volcanoes occurred in recent 30 years around the project area as confirmed during the on-site interview with local officer. LS=1. Furthermore, 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/33/. Therefore the mitigation is scored as 0.25.
Other risks	None is observed.

The overall risk rating according to the applied tool is 10%. 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, CTI 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.

3.3.11 Optional Gold Level: Regional Climate Change Scenarios (GL1.1)

N/A

3.3.12 Optional Gold Level: Climate Change Impacts (GL1.2)

N/A

3.3.13 Optional Gold Level: Measures Needed and Designed for Adaptation (GL1.3)

N/A

3.4 Community

3.4.1 Descriptions of Communities at Project Start (CM1.1)

The PD/2/ states that project zone covers the whole Liupanshui City which has been confirmed by onsite observations. Via checking the Community Baseline Survey Report/14/, CTI verified that the information on the community groups present in the project zone including the economic indicators of the region, the cultural and economic history of the mentioned communities, well-being information and community characteristics, diversity within the community described in the PD is correct and actual.

The diversity within the community and the financial status of the project zone is confirmed by checking the Community Baseline Survey Report/14/ and interview with local officers and residents. Based on the project location consideration the proposed project aims to have long and short-term impacts on the communities include increasing the number of forest workers and promoting professional expertise, increasing their incomes and promote improvements in professional career.

Reference documents mentioned and site visit interviews with the local officer/I2/ and forest technician/I3/ confirmed all these aspects.

CAR 21 was raised and successfully closed, Refer to Appendix 3 for details.

3.4.2 Interactions between Communities and Community Groups (CM1.1)

The PD/2/ states that the local communities are mainly village collective, and due to low economic level, the community groups were barely active with low interactions between communities and community groups at the start of the project. CTI verified by site visit interviews with the local officer/I2/ and forest technician/I3/.

CAR 22 was raised and successfully closed, Refer to Appendix 3 for details.

3.4.3 High Conservation Values (CM1.2)

No HCVs was identified related to community well-being in the project zone. CTI verified by site visit interviews with the local officer/I2/ and forest technician/I3/ and checking the land use agreement/20/ and approval of the afforestation project plan/12/.

3.4.4 Without-Project Scenario: Community (CM1.3)

During the on-site visit and the interview with the project proponent/I1/ and local officer/I2/, CTI verified that in the project is located in 1 District and 2 Counties, in vicinity of the project zone there were community, community groups and indigenous groups prior the project implementation.

Without the project land use scenario, by checking the Community Baseline Survey Report/14/ and interview with local communities, CTI verified that agriculture to grow corn and potatoes are the main surviving sources of the communities, and the villagers cannot improve their well-being in terms of salary,

welfare of workers and their families, know how about the forest area; this is also confirmed because the communities have no habit to make use of the selected land for any land use as defined in the baseline survey/13/ and land use agreement/20/. All these aspects were also confirmed during the site visit and interviews with the local officer/I2/ and forest technician/I3/, who works in the local area for almost 30 years and knows both the baseline scenario and the project scenario.

Without the project scenario, since the area consists in degraded lands and barren hill, the local communities which are located in project zone would be negatively impacted by continuous land erosion, such as unstable harvest and mudslide threatening, and the local communities have to face the bad environment and ecosystem which reduces their well-being, and even create life risk. Thus it is concluded that continuing the "non-use" of the current land will have no positive effect on the livelihood and well-being conditions of the local communities and community groups.

Moreover, in without project-scenario, long time land degradation would negatively affect the ecosystem and the biodiversity conservation.

The description of the consequences to community provided in the PD are likely accurate and are confirmed based on the assessment of evidences mentioned above.

CAR 23 was raised and successfully closed, Refer *to Appendix 3 for details.*

3.4.5 Expected Community Impacts (CM2.1)

The PD/2/ states that the project will generate positive community impacts through increasing local job opportunities, household income and living level so that to provide actual direct benefits to community group-local villages. The analysis of the net benefits to the communities is conducted to each category of local residents. Each benefit has been verified by checking the labor contracts/28/, periodical payroll/29/ and on-site observation and interview with local residents.

No negative well-being impacts have been identified and verified by the validation team by checking the project design/11/ against with the Community Baseline Survey Report/14/, while it is expected that the forest will generate benefits on the quality of the environment and on living level of the local residents and increasing local job opportunities as checked by labor contracts/28/, improve the household income by getting job positions as checked by periodical payroll/29/ and training opportunities from the project as checked by training records/30/, and improve local women's capability. This is also confirmed during the on-site visit and the interview with the local residents and forest technicians/I3/.

Hence, it is concluded that all the expected impacts for each community identified in the project description has been addressed.

3.4.6 Negative Community Impact Mitigation (CM2.2)

No HCVs has been identified based on above assessment and through checking the Community Baseline Survey Report/14/ and baseline survey/13/, hence there is no negative well-being impacts on community groups.

3.4.7 Net Positive Community Well-Being (CM2.3, GL1.4)

The PD/2/ states that the project is designed and implemented to produce net positive well-being impacts on local communities. This will be demonstrated over time.

Without the project land use scenario, by checking the Community Baseline Survey Report/14/ and interview with local communities, CTI verified that farming is the main income sources of the local village

communities, and the farmers cannot improve their well-being in terms of salary, welfare of workers and their families, know how about the forest area; this is also confirmed because the communities have no habit to make use of the selected land for any land use as defined in the baseline survey/13/ and land use agreement/20/. All these aspects were also confirmed during the site visit and interviews with the local officer/I2/ and forest technicians/I3/, who works in the local area for almost 30 years and knows both the baseline scenario and the project scenario.

The PD/2/ states that the project will generate positive community impacts through increasing local job opportunities, improving household income and living level, enhancing social cohesion, providing technical training, increase the green space and good environment so that to provide actual direct benefits to community group-local villages.

The positive impacts including change to economic indicators of the region, the cultural and economic history of the mentioned communities and the interactions between the communities, also changes on the ecosystem services, the expected changes in the well-being conditions and other characteristics of communities are stated in the PD. Descriptions in PD has been checked, CTI verified that the information on the community groups in baseline scenario is correct via checking the Community Baseline Survey Report/14/ and by site inspection and interview with local stakeholders.

How the community changed has been specified in PD section 4.2.3. Via checking the project design comparing with the Community Baseline Survey Report/14/, CTI verified that the expected changes is reasonable and can be achieved.

CAR 24 was raised and successfully closed, Refer to Appendix 3 for details.

3.4.8 High Conservation Values Protected (CM2.4)

No HCVs was identified related to community well-being in the project zone based on above assessment and through checking the Community Baseline Survey Report/14/ and baseline survey/13/, thus none of the HCVs related to community well-being will be negatively affected by the project.

3.4.9 Impacts on Other Stakeholders (CM3.1)

The PD/2/ states that no negative effects are expected to cause on the well-being of other stakeholders during the project lifetime. Oppositely, the project will provide valued experience of forest management and carbon trading to other stakeholders as determined in the training record/30/, which in some way could encourage more followers to engage in similar projects for sustainable development. This will be demonstrated over the time. The local officer/I2/ and forest technician/I3/, during the on-site visit and the interview, confirmed that the project will not result in net negative impact on other stakeholders.

3.4.10 Mitigation of Negative Impacts on Other Stakeholders (CM3.2)

N/A

Please refer to section 3.4.9.

3.4.11 Net Impacts on Other Stakeholders (CM3.3)

Please refer to section 3.4.9.

3.4.12 Community Monitoring Plan (CM4.1, CM4.2, GL1.4, GL2.2, GL2.3, GL2.5)

The PP established a community monitoring plan in the PD.

To validate the community monitoring plan, CTI take stepwise as following,

a). Check the monitoring plan contents

The monitoring indicators are confirmed as consistent with the net positive change which created by the project. Also a PRA process will be conducted to collect the issues and comments from communities, and to improve the implementation of the project activity periodically. PRA survey is confirmed will be conducted as per the SOPs. This is was confirmed during the on-site visit and the interview with the management team.

b). Verify the reasonability of the plan

Procedures and approaches are listed in the PD, via checking the contents, CTI verified that PP will establish a series of procedures including organizing an expertise team, training, preparation and PRA survey. The sub procedures are verified as capable to do the monitoring, which is confirmed by interview with the local officer/I2/ and based on the experience of the management team.

The PRA survey will be conducted i) by organize local communities meeting, CTI verified that PP can share the progress and implementation status, also collect the direct information from the communities, ii) by interviews, CTI verified that through the face-to-face channel with different household and groups will be efficient to get the comments and suggestions from stakeholders, iii) by questionnaires, CTI verified that this way can cover more people who are not willing to face to the PP, they can raise the comments through this.

Thus it is concluded that the plan has considered all the possible methods and procedures to monitor the change to the communities. This is was confirmed during the on-site visit and the interview with the local officer/I2/ and management team.

3.4.13 Monitoring Plan Dissemination (CM4.3)

The monitoring plan and results of every verification will be published on VCS and CCB website according to the VCS and CCB rules, which can be easily download by stakeholders. The local stakeholders has been and will be noticed through the routine villager assembly as confirmed by checking the routine villager assembly record/27/. In addition, by interview with the local stakeholders, CTI verified that the mobile phone number of a contact person of PP has been provided and they will call if they have any issues about the project at anytime. Finally, PP promised that after the validation finished, the monitoring plan and related monitoring manual will be also available in the village committees and the local forestry bureaus.

This is was confirmed during the on-site visit and the interview with the project proponent/I1/ and local officer/I2/ and residents/I3/.

In the future, the PP will use same manner to inform communities and other stakeholders of any results of monitoring undertaken in accordance with the monitoring plan as promised by the PP.

3.4.14 Optional Gold Level: Exceptional Community Criteria (GL2.1)

N/A

3.4.15 Optional Gold Level: Short-term and Long-term Community Benefits (GL2.2)

N/A

3.4.16 Optional Gold Level: Community Participation Risks (GL2.3)

N/A

3.4.17 Optional Gold Level: Marginalized and/or Vulnerable Community Groups (GL2.4)

N/A

3.4.18 Optional Gold Level: Net Impacts on Women (GL2.5)

N/A

3.4.19 Optional Gold Level: Benefit Sharing Mechanisms (GL2.6)

N/A

3.4.20 Optional Gold Level: Benefits, Costs, and Risks Communication (GL2.7)

N/A

3.4.21 Optional Gold Level: Governance and Implementation Structures (GL2.8)

N/A

3.4.22 Optional Gold Level: Smallholders/Community Members Capacity Development (GL2.9)

N/A

3.5 Biodiversity

3.5.1 Existing Conditions (B1.1)

The project zone is characterized by extensive and long-term farming and no other activities have been developed during the years, and ecological structure of most project sites is relatively homogenous due to traditional farming practices which is verified by CTI on-site observation and interview with local officers and residents/I2/,/I3/. Via checking the baseline survey report/13/ and Biodiversity Baseline Survey Report/15/, CTI verified that at the project start, the project sites are mostly degraded lands which are mainly Karst rocky desertification area, therefore the biodiversity was verified as low.

CAR 25 was raised and successfully closed, Refer to Appendix 3 for details.

3.5.2 High Conservation Values (B1.2)

No HCVs has been identified related to biodiversity based on above assessment and through checking the Community Baseline Survey Report/14/ and baseline survey/13/.

3.5.3 Without-project Scenario: Biodiversity (B1.3)

Please refer to section 3.5.1. The without project scenario would clearly have no effect on biodiversity of the area.

3.5.4 Expected Biodiversity Changes (B2.1)

Via checking the Biodiversity Baseline Survey Report/15/ and project design/11/, CTI verified that the local tree species plantation has different positive impact on soil, climate and biodiversity; when local tree species

are planted in degraded areas, an increase of flora and fauna biodiversity can be recorded which has been confirmed during on-site observations. The study also highlight how a certain variety of mammals, birds and insects can be observed in planted forests as determined in the Biodiversity Baseline Survey Report/15/. Therefore CTI verified that the project's impact on biodiversity will be overwhelmingly positive when compared to "without project" scenario.

CAR 26 was raised and successfully closed, Refer to Appendix 3 for details.

3.5.5 Mitigation Measures (B2.3)

Since no negative impacts are expected on biodiversity to the project implementation confirmed by checking the Biodiversity Baseline Survey Report/15/ and project design/11/, no specific mitigation measures will be taken to improve positive impacts. Afforestation in this project uses local species which is confirmed by checking the Seedling Purchase Contract/21/, implement afforestation activity through scientific and reasonable method with no burning and slash, and protect the existing vegetation as much as possible which has been determined in the project design/11/ and project approval/12/, in addition, due to the afforestation activity has been finished during on-site observations, thus CTI verified that the measures have been designed to improve positive impacts on biodiversity.

CAR 27 was raised and successfully closed, Refer to Appendix 3 for details.

3.5.6 Net Positive Biodiversity Impacts (B2.2, GL1.4)

The local tree species plantation has different positive impact on soil, climate and biodiversity; when local tree species are planted in degraded areas, an increase of flora and fauna biodiversity can be recorded. This afforestation activity is implemented with scientific and reasonable configuration method, with no burning and slash. With the planted trees gradually grow up to forest, project sites will become ecological community with the domain species of tall trees, which will improve biodiversity. Above assessment have been demonstrated in the section 3.5.4 and 3.5.5.

Furthermore, via on-site inspection and checking the map/10/, CTI verified that as the project site is located in Liupanshui City in Guzhou Province, the surrounding area is concentrated of wildlife. Therefore revegetation of project sites will facilitate biodiversity protection of the whole project zone confirmed by checking the Biodiversity Baseline Survey Report/15/.

Based on the situation of biodiversity within the project zone at baseline scenario, the project area will continue to be barren hill and degraded lands and with low biodiversity condition. The main change by the project scenario is to create forest cover of the project area with local native species which has great vitality and adaptation to Karst area, this has been verified by site inspection.

The local tree species plantation has different positive impact on soil, climate and biodiversity; when local tree species are planted in desert areas, an increase of flora and fauna biodiversity can be recorded, including species of animals could be increased and original wild animals around project area can be protected. 11 national protected species of flora and fauna are in the project zone confirmed by checking the Biodiversity Baseline Survey Report/15/ and checking the "Study on Rare and Endangered Plant Species Resources in Guizhou"/31/, and 1 of them are confirmed as globally endangered species according to IUCN/32/. And number of these animal species will be increased.

These will be protected by the improvement on ecological environment of the surrounding area through the project activity implementation, the improvement on ecological environment of the surrounding area has been confirmed during the site observation.

Furthermore, this afforestation activity is implemented with scientific and reasonable configuration method, with efficient measures of fire prevention and insect control. With the planted trees gradually grow up to forest, project sites will become ecological community with the domain species of tall trees, which will make sure the project bring net biodiversity benefit/11/,/12/.

Furthermore, after the implementation of the project, the hydrological cycle can be adjusted, drought and flood risk will be reduced, soil nutrient and local micro-climate will be improved which has been verified in the project design and approval /11/,/12/ and confirmed by site inspection.

CAR 28 was raised and successfully closed, Refer to Appendix 3 for details.

3.5.7 High Conservation Values Protected (B2.4)

No HCVs has been identified related to biodiversity based on above assessment and through checking the Community Baseline Survey Report/14/ and baseline survey/13/.

3.5.8 Species Used (B2.5)

The species used is native trees including China fir, Cypresses, Pinus yunnanensis and Masson pine developed in China which is verified by checking the Seedling Purchase Contract/21/ and onsite observations. These are not considered as invasive species.

3.5.9 Impacts of Non-native Species (B2.6)

Only native species are used in the project activities planned so far which is verified by checking the Seedling Purchase Contract /21/ and onsite observations, thus there are no adverse effects from non-native species.

3.5.10 GMO Exclusion (B2.7)

The PPs declared and assured that no GMOs will be used in the project to generate GHG emissions reductions or removals which is also verified by checking the Seedling Purchase Contract /21/ and onsite observations.

3.5.11 Inputs Justification (B2.8)

As assessment in 3.2.12 in this report, CTI verified that no fertilizers are used in the project, chemical pesticides are allowed to be used only if there is a serious disease problem erupted in the project area, biological control agents are used in the project according to local Pest Control and Prevention Policy/33/. Therefore no adverse effects from fertilizers and pesticides will be used in accordance with the National Pesticides Policy which is also confirmed by on-site observation. Hence, there is no adverse effects as the pesticide application will be limited.

3.5.12 Waste Products (B2.9)

As per the information available in the PD, some waste would be resulting from project activities including rubbish and human waste, this is confirmed by on-site observations and interview with the forest technician/I3/. However, the frequent visit has been and will be conducted by project proponent to ensure the waste and waste products are well identified and cleaned. During the on-site observation, CTI verified that there is no waste and waste products laid on the project area. In addition, the amount of human waste will be quite small and can be degraded naturally. This is confirmed by on-site observation and interview with project proponent/I1/ and forest technician/I3/.

3.5.13 Negative Offsite Biodiversity Impacts (B3.1) and Mitigation Measures (B3.2)

The PD/2/ states that no potential negative impacts on biodiversity outside of the project zone would resulting from project activities; the project contributes to the conservation of the biodiversity and ecosystem. Refer to 3.5.4 and 3.5.5 of this report for detail assessment.

3.5.14 Net Offsite Biodiversity Benefits (B3.3)

Refer to section 3.5.5 and 3.5.5.

3.5.15 Biodiversity Monitoring Plan (B4.1, B4.2, GL1.4, GL3.4)

The PP established a biodiversity monitoring plan in the PD.

To validate the biodiversity monitoring plan, CTI take stepwise as following,

i). Check the monitoring plan contents

The monitoring indicators are confirmed as consistent with the net positive change which created by the project. Three indicator types which covering PRS (Pressure, State, and Response) scope have been listed. For the State variables, forest cover, species of flora and fauna biodiversity will be monitored. The monitoring sites for forest cover and vegetation species will be the fixed sample plots for the carbon sink monitoring. For the animal species, the monitoring points will be set randomly and the numbers occurred will be observed to show the impacts to the birds. And the monitoring frequency is defined as before every verification is confirmed as reasonable.

For the Pressure variables, the risk to the project and the harmful impacts to biodiversity, indicators of fire, insects and disease will be monitored annually through examined by the forest rangers and will be confirmed by local Forest Bureau. Via site inspection and interview with the officer from Forest Bureau, CTI verified that the monitoring method and frequency is reasonable.

For the Response variables, forest area under control, recovered from control and trees re-planted will be monitored to reflect the project interventions relevant to biodiversity. These will be monitored annually through examined by the forest rangers and will be confirmed by local Forest Bureau. Via site inspection and interview with the officer from Forest Bureau/I2/, CTI verified that the monitoring method and frequency is reasonable.

ii). Verify the reasonability of the plan

The monitoring variables are listed in the PD, via checking the table, CTI verified that PP will set fixed sample plots and select random plots to monitor the biodiversity change which is confirmed by interview with the management team.

The target monitoring indicators are listed clearly and is confirmed as accurate. Monitoring frequency is determined as before each verification or annually which is confirmed as reasonable due to the results will be used for each monitoring report for verification. This is confirmed as in line with the verification requirement.

Thus CTI concluded that the plan has considered all the possible monitoring variables, methods and procedures to monitor the change to the biodiversity. This is was confirmed during the on-site visit and interview with the management team.

3.5.16 Biodiversity Monitoring Plan Dissemination (B4.3)

The monitoring plan and results of every verification will be published on VCS and CCB website according to the VCS and CCB rules, which can be easily download by stakeholders. The local stakeholders has been and will be noticed through the routine villager assembly as confirmed by checking the routine villager assembly record/27/. In addition, by interview with the local stakeholders, CTI verified that the mobile phone number of a contact person of PP has been provided and they will call if they have any issues about the project at anytime. Finally, PP promised that after the validation finished, the monitoring plan and related monitoring manual will be also available in the village committees and the local forestry bureaus.

The information on dissemination of the monitoring plan regarding to how the monitoring plan and any results will be made publicly available and how summaries will be communicated to the public has been further discussed. The approaches used by PP is confirmed as effective and reasonable.

During site inspection, it is observed that each village have its own public notice boards in village committee office, many important information was disseminated by these channels, CTI verified that local stakeholders can get the access to the monitoring plan, results and summaries through this.

Via checking the descriptions and confirmed with project management team, CTI verified that after the monitoring plan is approved by VERRA, the monitoring plan, future verification results, the Chinese version summaries will be effectively disseminated to the local stakeholders and their comments will be collected and considered by PP.

In the future, the PP will use same manner to inform communities and other stakeholders of any results of monitoring undertaken in accordance with the monitoring plan as promised by the PP.

3.5.17 Optional Gold Level: High Biodiversity Conservation Priority Status (GL3.1)

N/A

3.5.18 Optional Gold Level: Trigger Species Population Trends (GL3.2, GL3.3)

N/A

4 VALIDATION CONCLUSION

Timing Carbon Asset Management Co., Ltd has commissioned the CTI to carry out the validation of the "Liangdu Afforestation Project" in P. R. China. The validation was performed based on VCS Version 4.0 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 CTI with sufficient evidence to determine the fulfilment of stated criteria.

The proposed VCS&CCB project activity conducts an afforestation of 23,720 ha of forest established by direct planting on degraded lands in Shuicheng County, Pan County, Liuzhi Special District in Liupanshui City, Guizhou Province, P. R. China with local tree species. The approved AR-CDM methodology AR-ACM0003 (version 2.0.0) is applied to quantify the GHG removals achieved in this project.

In the course of the validation 28 Corrective Action Requests (CARs), 6 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 CTI 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 10,077,450 tCO_2e are most likely to be achieved within the 29 years crediting period started from 01-January-2016.

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 4.0 without any qualifications or limitations.

Also CTI confirms all validation activities, including objectives, scope and criteria, level of assurance and the PD adherence to the CCB Standards Third Edition, as documented in this report are complete. It concludes without any qualifications or limiting conditions that the project "Liangdu Afforestation Project" in P. R. China meets the requirements of the CCB Third edition and all the three Benefits, including Climate Change Adaption, Exceptional Community and Exceptional Biodiversity Benefits.

Lin Shunrong	Zhou Lu
CTI	CTI
Validation Team Leader	Final Approval
07-May-2020	07-May-2020

Appendix 1. Abbreviations

Abbreviations	Full texts
ARR	Afforestation, Reforestation and Revegetation
AFOLU	Agriculture, Forestry and Other Land Use
BAU	Business as usual
CAR	Corrective Action Request
CCB	Climate, Community & Biodiversity
CCBA	Climate, Community & Biodiversity Association
CDM	Clean Development Mechanism
CL	Clarification Request
CO2	Carbon dioxide
CO2e	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)
GMO	Genetically modified organism
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
NPRA	Non-Permanence Risk Analysis
PD	Project Description
PP	Project Participant
PRA	Participatory Rural Appraisal
QC/QA	Quality control/Quality assurance
REDD	Reduced Emissions from Deforestation and Degradation
SBIA	Social and Biodiversity Impact Assessment
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. Documents reviewed or referenced

Reference	Author	Title	References to the document	Provider
/1/	Timing Carbon Asset Management Co., Ltd	Draft Project Description	Draft Project Description of "Liangdu Afforestation Project" (Version No. 01, dated 11/12/2019)	Timing Carbon Asset Management Co., Ltd
/2/	Timing Carbon Asset Management Co., Ltd	Final Project Description	Final Project Description of "Liangdu Afforestation Project" (Version No. 02, dated 06/05/2020)	Timing Carbon Asset Management Co., Ltd
/3/	Timing Carbon Asset Management Co., Ltd	Draft Net anthropogenic GHG removals by sinks calculation spreadsheets	Draft ER Calculation spreadsheets of "Liangdu Afforestation Project" (Version No. 01, dated 11/12/2019)	Timing Carbon Asset Management Co., Ltd
/4/	Timing Carbon Asset Management Co., Ltd	Final Net anthropogenic GHG removals by sinks calculation spreadsheets	Final ER Calculation spreadsheets of "Liangdu Afforestation Project" (Version No. 02, dated 01/05/2020)	Timing Carbon Asset Management Co., Ltd
/5/	Timing Carbon Asset Management Co., Ltd	Draft Project Description Summary in Chinese Version	Draft Project Description Summary in Chinese Version of "Liangdu Afforestation Project" (Version No. 01, dated 11/12/2019)	Timing Carbon Asset Management Co., Ltd
/6/	Timing Carbon Asset Management Co., Ltd	Final Project Description Summary in Chinese Version	Final Project Description Summary in Chinese Version of "Liangdu Afforestation Project" (Version No. 02, dated 01/05/2020)	Timing Carbon Asset Management Co., Ltd
/7/	Timing Carbon Asset Management Co., Ltd	Draft Non-performance risk report	Draft Non-performance risk report (Version No. 01, dated 05/01/2020)	Timing Carbon Asset Management Co., Ltd
/8/	Timing Carbon Asset Management Co., Ltd	Final Non-performance risk report	Final Non-performance risk report (Version No. 02, dated 01/05/2020)	Timing Carbon Asset Management Co., Ltd
/9/	Timing Carbon Asset Management Co., Ltd	Risk Calculation Sheet	Risk Calculation Sheet (Version No. 01, dated 01/05/2020)	Timing Carbon Asset Management Co., Ltd
/10/	Guizhou Forestry Investigation and Design Co., Ltd.	Map of project area	1. Map with land-use types and the boundaries of all the plots for identifying the project location and boundaries of the project	PP

			2. Separate KML file shows the correct project boundaries	
/11/	Guizhou Forestry Investigation and Design Co., Ltd.	Afforestation Project Design Report	Afforestation Project Design Report for project activity issued by Guizhou Forestry Investigation and Design Co., Ltd. for year 2015 on 09/01/2015 Afforestation Project Design Report for project activity issued by Guizhou Forestry Investigation and Design Co., Ltd. for year 2016 on 20/01/2016 Afforestation Project Design Report for project activity issued by Guizhou Forestry Investigation and Design Co., Ltd. for year 2017 on 10/01/2017	PP
/12/	Liupanshui City Forest Bureau	Approval of afforestation project design	Approval of afforestation project design approved by Liupanshui City Forest Bureau on 18/01/2015 for year 2015 Approval of afforestation project design approved by Liupanshui City Forest Bureau 22/02/2016 for year 2016 Approval of afforestation project design approved by Liupanshui City Forest Bureau 20/01/2017 for year 2017	PP
/13/	Guizhou Provincial Academy of Social Sciences	Baseline Survey Report	Baseline Survey Report issued by Guizhou Provincial Academy of Social Sciences in Dec. 2014	PP
/14/	Guizhou Provincial Academy of Social Sciences	Community Baseline Survey Report	Community Baseline Survey Report issued by Guizhou Provincial Academy of Social Sciences dated on 09/01/2015	PP
/15/	Guizhou Provincial Academy of Social Sciences	Biodiversity Baseline Survey Report	Biodiversity Baseline Survey Report issued by Guizhou Provincial Academy of Social Sciences in Feb. 2015	PP
/16/	Local Administration for Industry and Commerce	Business License	Business License of all the participants of the project	PP
/17/	Guizhou Xinzhanxin Agricultural Technology Co., Ltd. and land owner (Village committee represent villagers)	Carbon sink afforestation cooperation and development agreement	Carbon sink afforestation cooperation and development agreement signed between Guizhou Xinzhanxin Agricultural Technology Co., Ltd. and the village collective which had the ownership of forest land dated in Sep. 2014	PP

/18/	County Bureau of land resources	Certification of land rights	Certification of land rights issued by County Bureau of land resources in 1 District and 2 Counties dated in Sep. 2014	PP
/19/	Forest Bureau of Liupanshui City	Certificate of land qualification	Certificate of land qualification issued by Forest Bureau of Liupanshui City dated on 13/11/2014	PP
/20/	Local village committee in project area (landowner) and Project proponent	Land Use Agreement	Land Use Agreement signed by Local village committee in project area and Project proponent on 22/02/2015	PP
/21/	Local Forest Bureau and local Garden nursery company	Seedling Purchase Contract	Seedling Purchase Contract signed between Local Forest Bureau and local Garden nursery company dated in 2015, 2016 and 2017	PP
/22/	Guizhou Yide Forest Industry Development Co., Ltd.	Completion acceptance report	Carbon sink afforestation completion acceptance report of Liuzhi Special District for year 2015 finished in Jan. 2016. Carbon sink afforestation completion acceptance report of Pan County for year 2015 finished in Jan. 2016. Carbon sink afforestation completion acceptance report of Shuicheng County for year 2015 finished in Jan. 2016. Carbon sink afforestation completion acceptance report of Liuzhi Special District for year 2016 finished in Feb. 2017. Carbon sink afforestation completion acceptance report of Shuicheng County for year 2016 finished in Feb. 2017. Carbon sink afforestation completion acceptance report of Liuzhi Special District for year 2017 finished in Jan. 2018. Carbon sink afforestation completion acceptance report of Pan County for year 2017 finished in Jan. 2018. Carbon sink afforestation completion acceptance report of Shuicheng County for year 2017 finished in Jan. 2018.	PP
/23/	Guizhou Forestry Investigation and Design Co., Ltd.	Project Lifetime evidence	Project Lifetime evidence issued by Guizhou Forestry Investigation and Design Co., Ltd.	PP

/24/	Local Forest Bureau and Guizhou Meiruite Forest Development Co., Ltd.	Project Starting Date	Project Starting Date evidence (Planting Construction Contracts) issued by Local Forest Bureau and Guizhou Meiruite Forest Development Co., Ltd. showed that the earliest project start date is 28/04/2015 based on the date when the planting started	PP
/25/	Guizhou Provincial Academy of Social Sciences	Participatory Rural Appraisal	Participatory Rural Appraisal (PRA) report of the project issued by Guizhou Provincial Academy of Social Sciences on 24/02/2015	PP
/26/	Villagers	Questionnaires	PRA and CCB questionnaires filled out by villagers	PP
/27/	Local communities	Routine villager assembly record	Routine villager assembly record about the project listing and VCS+CCB validation process	PP
/28/	Project proponent	Labor Contract	Labor Contract of project staffs and person who planted trees	PP
/29/	Project proponent	Periodical payroll	Periodical payroll to project staffs and person who planted trees	PP
/30/	Project proponent	Technical Training Record	Technical Training Record and safety, carbon sink training record on the planting tree held by PP and local Forestry Bureau, and Local village committee in project area in year 2014~2019	PP
/31/	Zhang Huahai	Study on Rare and Endangered Plant Species Resources in Guizhou	Study on Rare and Endangered Plant Species Resources in Guizhou [Resources and utilization] Zhang Huahai, 1001-4705(2009) 04-0063-05	PP
/32/	International Union for Conservation of Nature	International Union for Conservation of Nature	The IUCN Red List Categories and Criteria (version 3.1)	PP
/33/	Guizhou Xinzhanxin Agricultural Technology Co., Ltd.	Forest Management Manual	Forest Management Manual issued by Guizhou Xinzhanxin Agricultural Technology Co., Ltd.	PP
/34/	County forest bureau	Pest control responsibility document	Pest control responsibility document signed by project construction unit and the county forest bureau	PP
/35/	Northwest Forestry University, Guizhou forestry science and technology, West China Forestry Science	China fir, Cypresses, Pinus yunnanensis and Masson pine growth curve equations	1. China fir: Review on the Growth Equations of Pinus Massoniana, China Fir and Pinus elliottii in China [Journal of Northwest Forestry University] 2. Cypresses: The biomass growth rule and forest biomass change of main vegetation types in Banqiao river small watershed at the early stage of (1991) governance were	PP

			studied [Guizhou forestry science and technology, 1991, vol. 19, no. 4] 3. Masson pine: Study on biomass growth rule and forest biomass change of main vegetation types in early stage of Banqiao river small watershed management [Guizhou forestry science and technology, 1991]. 4. Pinus yunnanensis: Analysis of Growth Process Pinus yunnanensis Natural Secondary Forests in Yongren County of Yunnan Province [Journal of West China Forestry Science]	
/36/	Timing Carbon Asset Management Co., Ltd	Monitoring Manual	Monitoring Manual created by PP in Jan. 2019	PP
/37/	Guizhou Xinzhanxin Agricultural Technology Co., Ltd and Timing Carbon Asset Management Co., Ltd	Consultant Agreement	Consultant Agreement signed Guizhou Xinzhanxin Agricultural Technology Co., Ltd and Timing Carbon Asset Management Co., Ltd dated on 29/09/2014	PP
/38/	Guizhou Xinzhanxin Agricultural Technology Co., Ltd	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 in Dec. 2019	PP
/39/	CTI	On-site photo taken by validation team	On-site photo taken by validation team including trees, project location, bulletin boards photo, etc.	CTI
/40/	VERRA	No comments mail from VERRA	No comments mail from VERRA dated on 02/03/2020	Timing Carbon Asset Management Co., Ltd
/41/	VCSA	AFOLU Non-Permanence Risk Tool, Version 4.0	https://verra.org/project/vcs-program/rules-and-requirements/	VCS website
/42/	VCSA	VCS Program Definitions, Version 4.0	https://verra.org/project/vcs-program/rules-and-requirements/	VCS website
/43/	VCSA	VCS Program Guide, Version 4.0	https://verra.org/project/vcs-program/rules-and-requirements/	VCS website
/44/	VCSA	VCS Standard, Version 4.0	https://verra.org/project/vcs-program/rules-and-requirements/	VCS website

/45/	VCSA&CCBA	Project Development Process	"VCS+CCB Project Development Process" (version 3.0)	VCS website
/46/	CCBA	CCB Program Rules, version 3.1	https://verra.org/project/ccb-program/rules-requirements-and-guidance/	CCB website
/47/	CCBA	CCB Standard, version 3.1	https://verra.org/project/ccb-program/rules-requirements-and-guidance/	CCB website
/48/	UNFCCC	Afforestation and reforestation Methodology	AR-ACM0003 "Afforestation and reforestation of lands except wetlands", version 2.0.0	UNFCCC website
/49/	UNFCCC	Methodological tool	Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities, version 01	UNFCCC website
/50/	UNFCCC	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/	UNFCCC	Methodological tool	Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity, version 02.0	UNFCCC website
/52/	NDRC	Climate Change Index	The People's Republic of China Second National Communication on Climate Change, issued by NDRC, 2013	NDRC website
/53/	The State Council of China	Grain for Green Program	Grain for Green Program issued by the State Council of China	National public website
/54/	PRC Government	Laws related to forestry	<PRC Forest Law>, <PRC Forest Law Implementing Regulations>, <PRC Wildlife Protection Law>, <Forest Fire Prevention Regulations>, <Insect Control Regulation>, <PRC Production Safety Law>	National public website
/55/	PRC Government	Programs on Forestry In China	Natural Forest Conservation Program (launched in 1998), the Nature Reserve Development and Wild Conservation Program (started in 2000), Intensively Managed Commercial Timber Plantation Base Program (started in 2000), Poverty Alleviation Program	National public website
/56/	PRC Government	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	National public website

			Forest Diseases and Pests Control>	
/57/	Standing Committee of the National People's Congress of China	Labor Law	Labor Law of the People's Republic of China	National public website
/58/	Google	Google Earth	Google Earth Map	Public software
/59/	VCS	VCS	http://www.v-c-s.org/	Website
/60/	UNFCCC	UNFCCC	http://cdm.unfccc.int	Website
/61/	Gold Standard Organization	Gold Standard	http://www.goldstandard.org/	Website
/62/	China Certified Emission Reduction Exchange Info-platform	China Certified Emission Reduction	http://cdm.ccchina.org.cn/ccer.aspx	Website
/63/	IPCC	IPCC publications	www.ipcc-nggip.iges.or.jp	Website
/64/	State market supervision and administration	National Enterprise Credit Information Publicity System	http://www.gsxt.gov.cn/index.html	National public website
/65/	Local Forest Burea	Local public Website	http://www.gywb.cn/content/2014-12/10/content_2003257.htm	Website
/66/	Liupanshui City government	Average income in Liupanshui City	http://www.tjcn.org/tjgb/24gz/32922_4.html	Website
/67/	Local government	Local Weather	http://www.gzlps.gov.cn/	Website

Appendix 3. Clarification requests, corrective action requests and forward action requests

Table 1. CL from this validation

CL ID	01	**Section no.**	2.1.3	**Date :** 27/04/2020
Description of CL				
The introduction of the Project Proponent and other entities is not clarified.				
Project participant response				**Date :** 01/05/2020
The introduction of both parties is added in section 2.1.3.				
Documentation provided by project participant				
/2/, /16/				
DOE assessment				**Date:** 05/05/2020
Through checking the revised PD, CTI verified that the introduction is correct by comparing the information is the business licenses/16/ of both parties. CL 01 is closed.				

CL ID	02	**Section no.**	2.1.13	**Date :** 27/04/2020
Description of CL				
1. The Afforestation Project Design Report and approval dates for year 2016 and 2017 are missing in table of 2.1.13. 2. The period for GSC and on-site validation is not listed in table of 2.1.13. 3. During the findings discussion process with project consultant and project proponent, they confirmed that the crediting period will start on 01/01/2016 due to business reason, the relevant information need to be clarified in the PD and the related revisions need to be carried out.				
Project participant response				**Date :** 01/05/2020
1. The Afforestation Project Design Report in 2016 was finished on 20-01-2016, and the approval date is 22-02-2016, the Afforestation Project Design Report in 2017 was finished on 10-01-2017, and the approval date is 20-01-2017, which have been listed in the section 2.1.13. 2. The period for GSC and on-site validation have been added in table of 2.1.13. 3. The start date of crediting period is changed to 01/01/2016 voluntarily by Proponent considering the business reason.				
Documentation provided by project participant				
/2/, /11/, /12/				
DOE assessment				**Date:** 05/05/2020
1. Through checking the revised PD, the time has been confirmed as added and correct by checking the Afforestation Project Design Report in 2016/11/ and approval in 2016/12/. 2. The period for GSC and on-site validation is confirmed as correct. 3. The start date of crediting period is confirmed as changed to 01/01/2016 voluntarily by Proponent considering the business reason. All the related information has been confirmed as revised in the PD by considering this change including the adjustment of GHG removals data. CL 02 is closed.				

CL ID	03	**Section no.**	2.1.20	**Date :** 27/04/2020
Description of CL				
The fund composition of the project is not clearly clarified in section 2.1.20.				
Project participant response				**Date :** 01/05/2020

The fund composition of the project is added into the section 2.1.20 of the PD. According to the reported barren mountain area data, the forestry departments at all levels have made counting and verification on the afforestation area. Finally, according to the counted planting area, the nationality issued special funds for afforestation to Liupanshui city, together with provincial funds from Guizhou and local funds from Liupanshui city, to form the funds for this project. In the investment scale of this project, the total amount of funds from governments at all levels accounts for 70%, and the remaining 30% shall be jointly raised by the village committee and the villagers.
Documentation provided by project participant
/2/, /12/, /37/, /20/
DOE assessment **Date:** 05/05/2020
As declared by the PPs during the interview, the project fund partly secured by the special funds for afforestation to Liupanshui City and partly funded by Provincial and City government funds and for the future after seriously considered the carbon revenue and thought the revenue could help to mitigate the investment barrier. Guizhou Xinzhanxin Agricultural Technology Co., Ltd has signed the Consulting Agreement with Timing Carbon Asset Management Co., Ltd which has been confirmed by checking the Consulting Agreement/37/, and Timing Carbon Asset Management Co., Ltd will find VER buyer to purchase the carbon credits generated from the project in the following years' operation. The project proponent will be responsible for the continuous project implementation, management and maintenance of the forest with the potential subsidy from carbon revenue, by checking the land usa agreement/20/ and project approval/12/, CTI verified that the project financial mechanisms can provide an adequate funds for project implementation to achieve the project's climate, community and biodiversity benefits. CL 03 is closed.

CL ID	04	**Section no.**	2.2.3	**Date :** 27/04/2020
Description of CL				
The description of section 2.2.3 is not in line with the PD template's requirement: Document that community, and biodiversity project benefits would not occur in the absence of the project.				
Project participant response				**Date :** 01/05/2020
Project activity would not have been implemented under the without-project scenario due to technological, investment, and social barriers. Therefore, the community and biodiversity benefits would not have the opportunity to occur either. Community benefits In the absence of the project, people would continue to depend on the agricultural economy. This approach would result in that the long-term benefits of forests for biodiversity and climate change would continue to be poorly understood. Interviews with local village communities have shown that local villagers often lack access to quality seed sources, skills to produce quality seedlings and successfully plant trees, and skills to protect planted trees from fire, disease and insect attacks. This is a major obstacle for local villagers to plant trees on their land. In the proposed project activity, the local forestry bureau, as well as project proponent, had organized the training for local village communities on seed and seedling selection, nursery management, site preparation, planting models and integrated pest management. Without this project, locals would have trouble with developing alternative livelihoods, resulting in a worse economy. Staff training was held once a year, mainly for staff safety, health, technology and other aspects. The training covers forest clearing, afforestation, afforestation management, carbon sink afforestation, carbon emission and other related knowledge. The project mobilized the participation of the entire community, including women, minorities and the poor. It provided everyone with equal opportunities to get a job. Biodiversity benefits In the absence of the project, animal habitat, plant biodiversity and overall landscape degradation would continue to be lost. Soil erosion and degradation would be continued causing soil erosion and degradation. The project activities generate new habitats for biodiversity by increasing quality and quantity of forest cover. The project is focused on afforestation, biodiversity and conservation of ecosystem services. However, barriers to investment and the current ecological and social conditions of the land limit such initiatives.				

These barriers have negative repercussions on production. (Please refer to section 3.1.4 for detailed information). China has successively issued and revised a series of laws and administrative regulations related to forestry, such as the 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 , etc. To facilitate the restoration of forest resources, Chinese government has launched several programs over the past years, such as the Land Conversion Project (started in 2001) that subsidizes farmers to convert cropland to forest or grassland, the Natural Forest Conservation Program (launched in 1998), and China's wildlife protection and nature reserve construction project (started in 2000), etc. Although these programs had set overall development goals for forestry development and were started before the adoption by the COP of the CDM M&P (/decision 17/CP.7, 11 November 2001), none of the programs mandate the forestation on desert lands. Moreover, these programs have not been written in laws. Besides the project is located in an undeveloped county, whose economy is struggling with low. In addition, the investment in afforestation of native tree species has no economic return for decades, so there is no commercial attraction. Due to this reason, the project area maintained a Rocky desertification before the afforestation project.
Documentation provided by project participant
/2/
DOE assessment **Date:** 05/05/2020
Through checking the revised PD, CTI verified that the description in section 2.2.3 is in line with the PD template's requirement, the description of community, and biodiversity project benefits that would not occur in the absence of the project has been demonstrated. And the community and biodiversity additionality is confirmed. Refer to section 3.2.18 of this report for detail assessment. CL 04 is closed.

CL ID	05	**Section no.**	2.3.14	**Date :** 27/04/2020
Description of CL				
The description of section 2.3.14 is not complete, the actual training conducted are not specified clearly.				
Project participant response				**Date :** 01/05/2020
The PD is revised, below are added into section 2.3.14. The training for technicians is held on every October, starting from 2014, mainly focusing on the safety, health and technology of technicians. The training covers forest clearing, afforestation, afforestation management, carbon sink afforestation, carbon emission and other related knowledge. Any employee who cannot complete the training cannot become a forest technician. As there is annual training, recruits will be trained.				
Documentation provided by project participant				
/2/, /30/				
DOE assessment				**Date:** 05/05/2020
Through checking the revised PD, CTI verified that the training for employees is held once a year, starting from every October from 2014, mainly in the aspects of employee safety and health and technology, and is also related to the knowledge of forest land clearing, how to plant trees, afforestation and management, carbon sink afforestation and carbon emission, this is verified through checking the training records[/30/]. Workers are properly trained and efforts are made to maintain a high level of skills. CL 05 is closed.				

CL ID	06	**Section no.**	2.4.1	**Date :** 27/04/2020
Description of CL				
The description of section 2.4.1 is not in line with the PD template's requirement: Describe the project's governance structures, and roles and responsibilities of all entities involved in project design and implementation.				
Project participant response				**Date :** 01/05/2020
The Project Management Offices (PMOs) that have been established by the project proponent was				

responsible for coordinating the project participants and providing technical services. The local Forestry Bureau provided technical advice and training to technicians and project entity staff to measure and monitor actual greenhouse gas removals and leakages from proposed project activities. Timing Carbon Asset Management Co., Ltd has relevant experience in implementing carbon emission projects and has set up a project expert group with relevant technical personnel from the forestry bureau to manage the project. Guizhou Xinzhanxin has rich experience in planting. The working group and expert group established for this project was jointly provide project guidance, training and various notifications to local villagers and committees in the project area.
Documentation provided by project participant
/2/
DOE assessment **Date:** 05/05/2020
Through checking the revised PD, CTI verified that the description in section 2.4.1 is in line with the PD template's requirement, the project's governance structures, and roles and responsibilities of all entities involved in project design and implementation has been demonstrated. Refer to section 3.2.32 of this report for detail assessment. CL 06 is closed.

Table 2. CAR from this validation

CAR ID	01	**Section no.**	2.1.1	**Date :** 27/04/2020
Description of CAR				
The summary description of the project is not complete as per the PD template requirement, revision is requested.				
Project participant response				**Date :** 01/05/2020
More detail description of the project is added into the section 2.1.1 of the revised PD. Liangdu Afforestation Project (hereafter refer to as "the project") is located in Liupanshui City, Guizhou Province of China,Guizhou is an inland province, bordering Yunnan to the west, Sichuan to the northwest, Hunan to the east and Chongqing to the North. Guizhou province has a total population of 34 million. The project aims to plant native species on barren lands for GHG removal whilst contributing to local sustainable development goals. 23,720ha (355,800 Mu[3]) of the forest was planted on barren lands in Shuicheng county, Pan county, Liuzhi special district which used to be poor sustainable ecological environment and karst rocky desertification. The project involves including 1 district and 2 counties: Shuicheng county, Pan county, Liuzhi special district, The project zone with a total population of nearly 2,900,753. All the barren lands for afforestation activities belong to the villagers and the village committees manage the lands on behalf of villagers. Guizhou Xinzhanxin Agricultural Technology Co., Ltd. (hereafter referred to as Guizhou Xinzhanxin) has been fully authorized by all the village committees to act as the project proponent to implement project management and monitoring, and to sell VCUs generated from the project so that Guizhou Xinzhanxin consolidate the offset resources into sizeable forestry offset projects. Guizhou Xinzhanxin will profit-share with the villagers from selling VCUs. The implementation of the project activity has provided 15,220 jobs for local villagers, among which 70 percent are women				
Documentation provided by project participant				
/2/,/11/,/13/,/15/,/14/,/23/,/24/				
DOE assessment				**Date:** 05/05/2020
The PD is checked as revised, CTI verified that the summary description of the project is correct and complete according to the template request. The validation team by the mean of on-site inspection at Shuicheng County, Pan County, Liuzhi Special District and cross check with the supporting documents provided during the validation process/11/,/13/,/15/,/14/,/23/,/24/, is able to conclude that the description of Shuicheng County, Pan County, Liuzhi Special District afforestation project within the PD is accurate, complete, and provides an understanding of the nature of the project. CAR 01 is closed.				

CAR ID	02	**Section no.**	2.1.6	**Date :** 27/04/2020

[3]A Chinese metric unit of area, 1ha = 15 Mu.

Description of CAR	
The description of the section 2.1.6 is not in line with the CCB&VCS Project Description Template, especially the description of "ethnicity, gender, age, household income, land ownership, education, health statistics, migration patterns, etc." is missing.	
Project participant response	**Date :** 01/05/2020
This part of information has been corrected according to the CCB&VCS Project Description Template.	
Documentation provided by project participant	
/2/	
DOE assessment	**Date:** 05/05/2020
CTI verified that the revised description of the basic social parameters of the project provided the information of project zone, which has been verified through checking the Community Baseline Survey Report[/14/] and Participatory Rural Appraisal (PRA) report [/25/]. Refer to the section 3.2.3 of this report for detail assessment. CAR 02 is closed.	

CAR ID	03	**Section no.**	2.1.7	**Date :** 27/04/2020
Description of CAR				
1. The definition of project zone is not consistent with the description in section 2.1.5. 2. The geographical coordinates of 1 District and 2 Counties are not listed. 3. The boundaries of the project zone is not clear in map, the Location of communities, areas were other stakeholders will be impacted, areas where offsite biodiversity impacts are predicted are all not shown in the figures as per the PD template. 4. Separate KML file shows the correct project boundaries need to be provided.				
Project participant response				**Date :** 01/05/2020
1. The project zone is defined as Liupanshui City which is consistent with the description in section 2.1.5. 2. The geographical coordinates of 1 District and 2 Counties are listed in a table of section 2.1.7. 3. The corresponding maps has been corrected according to the requirement in the PD template. 4. Separate KML file has been provided.				
Documentation provided by project participant				
/2/, /10/, /11/, /58/				
DOE assessment				**Date:** 05/05/2020
1. Through checking the revised PD, CTI verified that the project zone is correctly defined. 2. Through checking the revised PD, CTI verified that the geographical coordinates of 1 District and 2 Counties are correct via checking the google earth map[/58/] and on-site inspection. 3. The revised figures have been checked, CTI verified that the boundaries of the project zone and project area have been clearly shown in the figures. Via checking the Afforestation Project Design Report[/11/] and on-site inspection, CTI verified that the boundaries are consistent with the project design. 4. KML file is checked as provided, and is verified as consistent with the Afforestation Project Design Report[/11/]and on-site inspection. Refer to the section 3.2.4 of this report for detail assessment. CAR 03 is closed.				

CAR ID	04	**Section no.**	2.1.8	**Date :** 27/04/2020
Description of CAR				
1. Stakeholders are not identified as per the requirement in SBIA Manual, the identification is not step-wised. 2. The description of the stakeholders is not corresponding to the section 4.2.1.				
Project participant response				**Date :** 01/05/2020
1. The steps for identification stakeholders are listed in 2.1.8. All communities in 1 District and 2 Counties are affected by project activities, so all local residents in these district and counties are identified as stakeholders. Forest planting needs to be approved by the local government and the local forestry bureau should be identified as a stakeholder. Planting techniques are provided by the Forestry Bureau, which is also identified as a stakeholder. In order to assess the environmental and social benefits of project outcomes, local governments in county were identified as stakeholders, and finally, to represent the local villagers, the Village committees were identified as stakeholders.				

2. The related description has been added into revised PD.	
Documentation provided by project participant	
/2/	
DOE assessment	**Date:** 05/05/2020
1. The PD/2/ states that the stakeholders were identified as all local residents in the 1 District and 2 Counties who are affected by the project activities, the local Forest Bureau who involved in providing the basic planting technology, local government of the 1 District and 2 Counties, and Village committees in project area. The list of primary stakeholder is provided in the PD and seems reasonable for a project of this nature. This is confirmed during the on-site visit and the interview with the local stakeholders/I2/,/I3/. 2. Through checking the revised PD, CTI verified that the description of the stakeholders is corresponding to the section 4.2.1. Refer to the section 3.2.5 of this report for detail assessment. CAR 04 is closed.	

CAR ID	05	**Section no.**	2.1.9	**Date :** 27/04/2020
Description of CAR				
The stakeholders listed in section 2.1.9 are not consistent with section 2.1.8.				
Project participant response				**Date :** 01/05/2020
The table in 2.1.9 is revised, including all the stakeholders in 2.1.8.				
Documentation provided by project participant				
/2/				
DOE assessment				**Date:** 05/05/2020
Through checking the revised PD, CTI verified that stakeholders listed in table in 2.1.9 are consistent with the section 2.1.8. Refer to the section 3.2.6 of this report for detail assessment. CAR 05 is closed.				

CAR ID	06	**Section no.**	2.1.11	**Date :** 27/04/2020
Description of CAR				
1. The description of Theory of Change is missing. 2. The expected output, outcomes and impacts of the climate, community, and biodiversity of project is not complete and accurate.				
Project participant response				**Date :** 01/05/2020
1. The description of Theory of Change is added. 2. The description of expected output, outcomes and impacts of the climate, community, and biodiversity of project has been added. According to the completion acceptance report of the project, all the trees planted have met the requirements of the project design and have good quality evaluation.				
Documentation provided by project participant				
/2/, /22/, /11/, /13/, /14/, /15/				
DOE assessment				**Date:** 05/05/2020
1. Through checking the revised PD, CTI verified that the description of Theory of Change is added. 2. Through checking the revised PD, CTI verified that the description of expected output and outcomes is added, and the relevant description is confirmed as consistent with the other parts of the PD. Based on checking the project design/11/ and Completion Acceptance Report/22/ of all the trees against the pre-project status based on the baseline survey for project/13/, community/14/ and biodiversity/15/, CTI verified that PD and project design/11/ provides an understanding of the nature of the project and the project will achieve the climate, community, and biodiversity objectives as above after the operation of the project. CAR 06 is closed.				

CAR ID	07	**Section no.**	2.1.19	**Date :** 27/04/2020
Description of CAR				
The detail description of the Forest Management Manual is missing.				
Project participant response				**Date :** 01/05/2020
The description of the Forest Management Manual in section 2.1.19 has been revised in the updated				

PD.	
Documentation provided by project participant	
/2/, /33/	
DOE assessment	**Date:** 05/05/2020
The revised PD has been checked, CTI verified that the detail description of the Forest Management Manual is added. And via checking the Forest Management Manual[/33/], CTI verified that the description in the PD is correct. CAR 07 is closed.	

CAR ID	08	**Section no.**	2.3.1&2.3.2&2.3.3	**Date :** 27/04/2020
Description of CAR				
1. The actual status of stakeholder access to project documents before or during the validation is missing in 2.3.1. 2. The actual status of dissemination of summary project documents is missing in 2.3.2. 3. The actual survey conducted during the PRA is missing in 2.3.3.				
Project participant response				**Date :** 01/05/2020
1. The actual status is revised in the updated PD. 2. The actual status is revised in the updated PD. 3. The actual status is revised in the updated PD.				
Documentation provided by project participant				
/2/, /6/, /27/, /40/				
DOE assessment				**Date:** 05/05/2020
1. The PD is available in English and a summary document of the PD is Chinese version[/6/]. The full project documentation has been published on VCS and CCB website for public comments as per checking the VCS website. Thus the local communities and other stakeholders can easily download documents from the website. 2. The project proponent has noticed local stakeholders through the routine villager assembly regarding project listing in VCS website and has been confirmed by checking the routine villager assembly record[/27/] and interview with local residents[/I3/]. Futhermore, the project proponent will notice local stakeholders through the routine villager assembly regarding every milestones of the project development, including registered, issuance, etc.. 3. A consultation through PRA and meetings with the stakeholders was made for introducing people about the project impacts and ask them to raise their opinions of the project design and their willingness to participate the following implementation. This has been confirmed by checking the PRA[/25/] and related 100 filled questionnaires[/26/]. Hence CTI verified that the stakeholders were invited to provide their comments regarding the project implementation and impacts to them. CTI concluded that the PP has made project documentation accessible to communities and other stakeholders. During the public consultation period, no comments were received via the mail confirmation from VERRA[/40/]. CAR 08 is closed.				

CAR ID	09	**Section no.**	2.3.5	**Date :** 27/04/2020
Description of CAR				
The relevant information to Stakeholders on Validation and Verification Process is not provided actually.				
Project participant response				**Date :** 01/05/2020
The actual situation has been modified in the relevant 2.3.5. The status and process of the project for CCB and the validation and verification for VCS would has been published through routine villager assembly and posted on local bulletin boards. The mobile phone number of the contact person of the project would has been provided to all the stakeholders so they can directly make a call in case they have any problems about the project. In addition, the relevant information of the verification will be announced in the manner described above.				
Documentation provided by project participant				
/2/, /27/				
DOE assessment				**Date:** 05/05/2020

As stated before a consultation through PRA with the stakeholders was made for informing people about the project impacts. In particular the project proponent informed and explained about the means of the validation process through routine villager assembly and posted on local bulletin boards before the validation site visit took place as confirmed by checking the routine villager assembly record/27/ and bulletin boards photo/39/. In addition, by interview with the local stakeholders, CTI verified that the mobile phone number of a contact person of PP has been provided and they will call if they have any issues about the project at anytime. This was also confirmed by the PPs and interview with local stakeholders during the site visit. In the future, the PP will use same manner to inform communities and other stakeholders of the process for CCB verification as promised by the PP. CAR 09 is closed.

CAR ID	10	**Section no.**	2.3.6	**Date :** 27/04/2020
Description of CAR				
As the on-site validation was finished, the relevant information needed to be revised based on the actual situation.				
Project participant response				**Date :** 01/05/2020
The actual situation has been modified in the relevant section 2.3.6.				
Documentation provided by project participant				
/2/				
DOE assessment				**Date:** 05/05/2020
Before the on-site visit, the audit plan was sent to PP from auditor of CTI, auditor have to conduct communication with local stakeholders during the site visit process. Hence the PP informed representatives of the local stakeholders after receiving the audit plan. During site visit, auditor arranged a stakeholder door to door interview[4]. Thus CTI verified that the communities and other stakeholders were informed of the auditor's site visit before the site visit occurred. During the site visit, Auditor had a direct and independent communication with communities and other stakeholders representatives. During the communications, Auditor asked stakeholders representatives several questions with a questionnaire. The relevant information has been confirmed as stated in the revised PD. CAR 10 is closed.				

CAR ID	11	**Section no.**	2.3.7	**Date :** 27/04/2020
Description of CAR				
The summary of the questionnaires distributed during PRA is not provided including questions and answers.				
Project participant response				**Date :** 01/05/2020
The summary of the questionnaires distributed during PRA is added including all the questions and answers.				
Documentation provided by project participant				
/2/, /26/, /25/				
DOE assessment				**Date:** 05/05/2020

[4] Due to the coronavirus was epidemic in China since Jan 2020, the gathered meeting was not allowed by local government, hence auditor conducted door to door interview with each representative of the local stakeholders and get their comment separately.

As stated before a consultation through PRA and meetings with the stakeholders was made for introducing people about the project impacts and ask them to raise their opinions of the project design and their willingness to participate the following implementation. This has been confirmed by checking the PRA/25/ and related meeting questionnaires/26/. The stakeholders are invited to provide their comments regarding the project implementation and impacts to them, also PP considered their participation in decision-making by asking all the participants to fill the questionnaires. Via checking all the 100 filled questionnaires/26/ and by interview with the respresentatives/I2,I3/ during site visit, CTI verified that all the participants agreed the implementaton of the project, therefore,from that point, the project design was not modified and the project started with local stakeholder's agreement. PPs further declares that they will continue the communication with stakeholders and monitor the community impacts. CTI confirmed during the on-site visit and the interview with the project developer/I1/ and local stakeholders/I2/,/I3/. Hence, CTI concluded that the project's method for conducting stakeholder consultations is effective. CAR 11 is closed.

CAR ID	12	**Section no.**	2.4.2	**Date :** 27/04/2020
Description of CAR				
The required technical skills are not listed.				
Project participant response				**Date :** 01/05/2020
The Key skills required to implement the project activity are listed in table in section 2.4.2.				
Documentation provided by project participant				
/2/, /28/, /29/				
DOE assessment				**Date:** 05/05/2020
The PD lists the key technical skills required to implement the project. Via checking the staff list of above three actors/28/,/29/, CTI verified that for each individual, experience and education and other qualifications are cited. The PPs and team have the skills necessary to required to implement the project successfully, including community engagement, biodiversity assessment and carbon measurement and monitoring skills. CAR 12 is closed.				

CAR ID	13	**Section no.**	2.4.3	**Date :** 27/04/2020
Description of CAR				
As per the PD template, the expertise of local forestry bureau who are in management team is missing.				
Project participant response				**Date :** 01/05/2020
The related information is added into updated PD. Forestry bureaus already set up an expert pool on the land, soil, vegetation, animals and other natural resources affected by forests. Besides, forestry bureaus fed massive data to the biodiversity report and the experts from that pool will provide assistance and share experience during the biodiversity monitoring.				
Documentation provided by project participant				
/2/				
DOE assessment				**Date:** 05/05/2020
Through checking the revised PD, CTI verified that the description of prior experience implementing land management of each entity is explicit. The local forestry bureau and Timing Carbon Asset Management Co., Ltd composed the expert group is defined as the management team as stated above. The experiences of forest bureaus are assessed as: The responsibility of local forestry bureau is daily supervision and data management, providing technical advice and training to technicians during the project implementation which has been verified by onsite interview with the local officers from forestry bureau/I2/ and project technicians/I3/. CAR 13 is closed.				

CAR ID	14	**Section no.**	2.4.4	**Date :** 27/04/2020
Description of CAR				
The description of Project Management Partnerships/Team Development is not stated as per the request in PD template.				

Project participant response	**Date :** 01/05/2020
The related information is revised into updated PD. The management team of the project is experience in forest project management and carbon project development, also, local Forestry Bureau provided instruction of reforestation and forest management, conducted the specific supervision of the implementation, and collected specific activity data at routine basis. When the verification begins, the measurement of data and the monitoring of biodiversity are mainly undertaken by 90 technicians employed by Guizhou Xinzhanxin. The local Forestry Bureau and local government provided technical support for community engagement and biodiversity assessment. The project manager of Guizhou Xinzhanxin will be responsible for on-site verification, continuously guiding the tasks and specifications of these technicians, and the final data collection and inspection. Therefore, the project management team and monitoring team has sufficient experience and skills required by the project.	
Documentation provided by project participant	
/2/	
DOE assessment	**Date:** 05/05/2020
The local forestry bureau and Timing Carbon Asset Management Co., Ltd composed the expert group is defined as the management team. Besides, local Forestry Bureau provide instruction of afforestation and forest management, conduct the specific supervision of the implementation, and collect specific activity data at routine basis. This is confirmed by on site interview with officers from local Forestry Bureau[/I2/]. Thus, it is concluded that no other organizations needed to support the project through partnerships, management team have the sufficient experiences to implement the project and already filled any gaps. CAR 14 is closed.	

CAR ID	15	**Section no.**	2.5.8	**Date :** 27/04/2020
Description of CAR				
The approvals of the project are not complete, the approvals for year 2016 and 2017 are not provided.				
Project participant response				**Date :** 01/05/2020
Both the approvals for year 2015, 2016 and 2017 are described in the section 2.5.8 of the PD.				
Documentation provided by project participant				
/2/, /12/				
DOE assessment				**Date:** 05/05/2020
The project is approved by the local government authority Liupanshui Forest Bureau on 18/01/2015 for year 2015 and approved by the local government authority Liupanshui Forest Bureau on 22/02/2016 for year 2016 and approved by the local government authority Liupanshui Forest Bureau on 20/01/2017 for year 2017 by checking the Approval of afforestation project design[/12/]. Based on local expertise of validation team, CTI verified that the project is legally approved in China. CAR 15 is closed.				

CAR ID	16	**Section no.**	3.1.2	**Date :** 27/04/2020
Description of CAR				
The demonstration of applicability of Appendix of 1 Eligible AFOLU Project Categories of the VCS Standard V4.0, Eligible AFOLU Project Categories is not provided and evidence is missing.				
Project participant response				**Date :** 01/05/2020
The PD is revised as according to the land eligibility certificate of Liupanshui City Forestry Bureau, the project site is barren land since 1970.				
Documentation provided by project participant				
/2/, /19/				
DOE assessment				**Date:** 05/05/2020
The PD/2/ states that since 1970s till now, all of the project area were barren hill and degraded lands with no agricultural and deforestation activities. To verify this, the validation team checked the certificate of land qualification[/19/] which was issued by Forest Bureau of Liupanshui City dated on 13/11/2014, further conducted on-site interview with the local officer and residents[/I2/,/I3/], CTI verified that the project sites were previously degraded grassland and barren land, not deforested since 1970s. CAR 16 is closed.				

CAR ID	17	**Section no.**	3.1.4	**Date :** 27/04/2020
Description of CAR				
1. The accurate figures of the description in investment barrier is not provided. 2. The number of the Afforestation project registered as VCS&CCB in Guizhou province is not correct for common practice analysis.				
Project participant response				**Date :** 01/05/2020
1. The PD is revised as below: The investment scale of this project is 935,042,400 CNY, of which the total funds of governments at all levels is 654,529,680, and the remaining 280,512,720 needs to be raised by village committees and villagers. According to the Liupanshui city Prefecture Government Work Report, the average annual income of the villagers in the project area is only 7,522 CNY, and the main source of income is farming and labor. This income level is far from the required investment. 2. The number of the Afforestation project registered as VCS&CCB in Guizhou province is revised to 3.				
Documentation provided by project participant				
/2/, /18/, /20/, /14/, /25/				
DOE assessment				**Date:** 05/05/2020
1. It was confirmed that there are no credit mechanisms are in place for villagers to make long term investment in plantation forestry via onsite observation and interview with local villagers/I3/. The project lands are collective-owned by local villages and local villagers have the right to the use of land which is confirmed during the on-site interview/I2/,/I3/ and checking the certification of land right/18/ and lands use agreement/20/. However, the income of villagers in the project area is verified as lower than the general level of local townships and counties through checking the Community Baseline Survey Report/14/. Agriculture is the main income source for the local villagers. While the total investment of the project is more than 935 million CNY, among this figure, only 655 million CNY was funded by government, and remaining more than 280 million CNY need to be raised by the village committees and villagers. The results of the Participatory Rural Appraisal Report/25/, Community Baseline Survey Report/14/ and Statistical Report on the local government Liupanshui City/66/ are checked to confirm that the average annual income of the villagers in the project zone is only 7,522 CNY /14/,/66/ and therefore is far under the investment of the project. Thus CTI verified that the local villagers do not have enough disposable personal income to make such big investment in plantation forestry. 2. Through checking the revised PD, CTI confirmed that the number of the Afforestation project registered as VCS&CCB in Guizhou province revised to 3 is correct via checking the VCS&CCB website. Via comparing the other three projects and checking the GHG scheme website/59/,/61/,/60/ and interview with local government officer/I2/, CTI verified that three Afforestation project registered as VCS&CCB in Guizhou province with tree species of China Fir and Cypress different from this project, and those projects also applied the GHG scheme, and no more other similar A/R projects in defined region. CAR 17 is closed.				

CAR ID	18	**Section no.**	3.2	**Date :** 27/04/2020
Description of CAR				
The source of growth curve equations used for different tree species are not provided separately and clearly.				
Project participant response				**Date :** 01/05/2020
The PD is revised as below: Volume growth equation of China fir; Review on the Growth Equations of Pinus Massoniana, China fir and Pinus elliottii in China [Journal of Northwest Forestry University] Volume growth equation of Cypresses: The biomass growth rule and forest biomass change of main vegetation types in Banqiao river small watershed at the early stage of (1991) governance were studied [Guizhou forestry science and technology, 1991, vol. 19, no. 4]. Volume growth equation of Pinus yunnanensis: Analysis of Growth Process Pinus yunnanensis Natural Secondary Forests in Yongren County of Yunnan Province [Journal of West China Forestry Science] Volume growth equation of Masson pine: Study on biomass growth rule and forest biomass change of main vegetation types in early stage of Banqiao river small watershed management [Guizhou forestry science and technology, 1991].				
Documentation provided by project participant				
/35/				

DOE assessment	**Date:** 05/05/2020
The source of growth curve equations used in this section are provided separately. Refer to section 3.3.7 of this report for details of assessment of the source of growth curve equations[/35/]. CAR 18 is closed.	

CAR ID	19	**Section no.**	3.3.2	**Date :** 27/04/2020
Description of CAR				
The ex-ante and ex-post parameters for determine the sampling plots number as per the tool "Calculation of the number of sample plots for measurements within A/R CDM project activities (Version 02.1.0)" are missing in the section 3.3.2.				
Project participant response				**Date :** 01/05/2020
The ex-ante and ex-post parameters for determine the sampling plots number are added into section 3.3.2.				
Documentation provided by project participant				
/2/				
DOE assessment				**Date:** 05/05/2020
Revised PD has been checked, CTI verified that all the ex-ante and ex-post parameters for determine the sampling plots number have been added into the updated PD which are in line with the tool "Calculation of the number of sample plots for measurements within A/R CDM project activities (Version 02.1.0)". Refer to section 3.3.8 of this report for detail assessment. CAR 19 is closed.				

CAR ID	20	**Section no.**	3.3.3	**Date :** 27/04/2020
Description of CAR				
1. The monitoring process of the applicability conditions listed in methodology and tools is not stated. 2. The description of monitoring team is missing. 3. The steps used to determine the number of plots are not stated. 4. QA/QC procedure is missing.				
Project participant response				**Date :** 01/05/2020
1. The monitoring process of the applicability conditions listed in methodology and tools are added. 2. The description of monitoring team is added. 3. The steps used to determine the number of sample plots are provided as per the tool. 4. QA/QC procedure is added.				
Documentation provided by project participant				
/2/, /36/				
DOE assessment				**Date:** 05/05/2020
1. Revised PD has been checked, CTI verified that the monitoring process of the applicability conditions listed in methodology and tools is stated. 2. Revised PD has been checked, CTI verified that the description of monitoring team is stated. 3. Revised PD has been checked, CTI verified that the steps used to determine the number of plots are stated as per the tool. 4. Revised PD has been checked, CTI verified that the QA/QC procedure is provided and consistent with the monitoring manual[/36/]. Refer to section 3.3.8 of this report for detail assessment. CAR 20 is closed.				

CAR ID	21	**Section no.**	4.1.1	**Date :** 27/04/2020
Description of CAR				
The description in 4.1.1 is not in line with the PD template requirement.				
Project participant response				**Date :** 01/05/2020
The description in 4.1.1 is revised as according to the PD template requirement. Sub title three are listed and related contents are provided.				
Documentation provided by project participant				
/2/, /14/				

DOE assessment	**Date:** 05/05/2020
The PD/2/ states that project zone the whole Liupanshui City which has been confirmed by onsite observations. Via checking the Community Baseline Survey Report/14/, CTI verified that the information on the community groups present in the project zone including the economic indicators of the region, the cultural and economic history of the mentioned communities, well-being information and community characteristics, diversity within the community described in the PD is correct and actual. The diversity within the community and the financial status of the project zone is confirmed by checking the Community Baseline Survey Report/14/ and interview with local officers and residents. Based on the project location consideration the proposed project aims to have long and short-term impacts on the communities include increasing the number of forest workers and promoting professional expertise, increasing their incomes and promote improvements in professional career. Reference documents mentioned and site visit interviews with the local officer/I2/ and forest technician/I3/ confirmed all these aspects. CAR 21 is closed.	

CAR ID	22	**Section no.**	4.1.2	**Date :** 27/04/2020
Description of CAR				
The description in 4.1.2 is not clearly state the interactions between Communities and Community Groups.				
Project participant response				**Date :** 01/05/2020
The description in 4.1.1 is revised as below, The local village communities within the project zone consist of 1 district and 2 counties. Villages within the project area are not far from each other, but due to poor infrastructure, it is difficult for villagers to visit and communicate with each other (whether through mountains or muddy roads). Part of the revenue from the sale of the carbon credit will be used to improve local infrastructure, such as the roads connecting villages within the project area. Without the project, they may not gather together due to the bad country roads, but now they can easily visit any villages. In recent years, more and more ethnic minorities are joined their festivals.				
Documentation provided by project participant				
/2/				
DOE assessment				**Date:** 05/05/2020
The PD/2/ states that the local communities are mainly village collective, and due to low economic level, the community groups were barely active with low interactions between communities and community groups at the start of the project. CTI verified by site visit interviews with the local officer/I2/ and forest technician/I3/. CAR 22 is closed.				

CAR ID	23	**Section no.**	4.1.4	**Date :** 27/04/2020
Description of CAR				
The description in 4.1.4 is not clearly state the community status in without-project scenario.				
Project participant response				**Date :** 01/05/2020
The description in 4.1.4 is revised as “Agriculture is the main source of income for the community. The communities have no necessary skills, knowledge and funds to make use of the barren land for any land use. Thus, in the absence of project land use scenario, continued ‘non-use’ of existing land would have no benefit on the livelihoods and well-being of local communities and the community groups. Without the program, villagers would have to grow corn and potatoes to survive. Besides, only a few cash crops can be exchanged for very little money. Villagers’ average income would remain lower than the local minimum standard in Liupanshui City Persistent erosion can lead to erratic harvests and in some years no harvest at all. Desertification can also lead to mudslides that threaten villages in the area. All the above would pose significant risks to the local population and the next generation, such as life risks, persistent poverty and low education levels”.				
Documentation provided by project participant				
/2/				
DOE assessment				**Date:** 05/05/2020

The PD/2/ states that the local communities are mainly village collective, and due to low economic level, the community groups were barely active with low interactions between communities and community groups at the start of the project. CTI verified by site visit interviews with the local officer/I2/ and forest technician/I3/. CAR 23 is closed.

CAR ID	24	**Section no.**	4.2.3	**Date :** 27/04/2020
Description of CAR				
The description in section 4.2.3 is not complete as per the requirement in PD template.				
Project participant response				**Date :** 01/05/2020
The net positive changes to the community are stated completely in section 4.2.3.				
Documentation provided by project participant				
/2/, /14/				
DOE assessment				**Date:** 05/05/2020
Through checking the revised PD, CTI verified that the description of how the community changed has been specified in PD section 4.2.3. Via checking the project design comparing with the Community Baseline Survey Report/14/, CTI verified that the expected changes is reasonable and can be achieved. Refer to section 3.4.7 of this report for detail assessment. CAR 24 is closed.				

CAR ID	25	**Section no.**	5.1.1	**Date :** 27/04/2020
Description of CAR				
The description in 5.1.1 is not as per the PD template requirement: “Describe the biodiversity within the project zone at the start of the project and threats to that biodiversity. Explain and justify key assumptions, rationale and methodological choices. Provide all references.”, especially the baseline status of the flora and fauna.				
Project participant response				**Date :** 01/05/2020
The description in 5.1.1 has been corrected. The comprehensive control of the rocky desertification is still an urgent problem. The increasingly serious rocky desertification will restrict the sustainable development of the region and make the region poorer. At the same time, the continued rocky desertification has affected the survival of animal and plant species such as Grus nigricollis, Trachypithecus francoisi, Handeliodendron bodinieri, and Paphiopedilum micranthum. Continued rocky desertification will cause the soil layer to become thinner and more exposed rocks, which will eventually lead to the inability of vegetation to grow and the animals to be reduced due to lack of habitat. This is the main threat to biodiversity caused by rocky desertification. The rocky desertification in the karst mountainous areas of southwestern China where the project is located is a specific phenomenon of land degradation, which is one of the most serious environmental problems that need to be resolved urgently.				
Documentation provided by project participant				
/2/, /13/, /15/				
DOE assessment				**Date:** 05/05/2020
Through checking the revised PD, CTI verified that the project zone is characterized by extensive and long-term farming and no other activities have been developed during the years, and ecological structure of most project sites is relatively homogenous due to traditional farming practices which is verified by on-site observation and interview with local officers and residents/I2,I3/. The project site are mostly wasteland, mainly covered with grass and scattered shrubs, therefore the biodiversity was low, which has been verified through checking the baseline survey report/13/ and Biodiversity Baseline Survey Report/15/. CAR 25 is closed.				

CAR ID	26	**Section no.**	5.2.1	**Date :** 27/04/2020
Description of CAR				
The justification of change for Species of plants and animals is not accurate.				
Project participant response				**Date :** 01/05/2020
The description in 5.2.1 has been corrected. Afforestation of this project will use China Fir, Cypresses, Masson pine and Pinus yunnanensis which				

have great vitality and adaptation to Karst area, implement afforestation activity through scientific and reasonable configuration method with no burning and slash. When planted trees gradually grow up to the forest, project sites will gradually become ecological communities with the domain species of tall trees, which will improve the biodiversity. Moreover, the reconstruction of the Karst desertification ecosystem is the key issue in deciding the sustainable development of the economy and society in the project area. Enlarged forest area, will increasing rainfall and improving soil and bring more types of crop and they grew faster than ever, such as pitaya, walnut, coriariasinica and purple perilla. And the number of animals including Enicurus scouleri will increase
Documentation provided by project participant
/2/, /11/, /15/
DOE assessment **Date:** 05/05/2020
Via checking the Biodiversity Baseline Survey Report/15/ and project design/11/, CTI verified that the local tree species plantation has different positive impact on soil, climate and biodiversity; when local tree species are planted in degraded areas, an increase of flora and fauna biodiversity can be recorded which has been confirmed during on-site observations. The study also highlight how a certain variety of mammals, birds and insects can be observed in planted forests as determined in the Biodiversity Baseline Survey Report/15/. Therefore CTI verified that the project's impact on biodiversity will be overwhelmingly positive when compared to "without project" scenario. CAR 26 is closed.

CAR ID	27	**Section no.**	5.2.2	**Date :** 27/04/2020
Description of CAR				
The mitigation measures is not provided accurately.				
Project participant response				**Date :** 01/05/2020
The description in 5.2.1 has been corrected. Afforestation of this project will use of China fir, Cypress, Pinus yunnanensis and Masson pine with strong vitality and adapted to karst area, implement afforestation activity through the scientific and reasonable method with no burning and slash, and protect the existing vegetation as much as possible. Therefore, the implementation of this project will not decrease the biodiversity of project sites and thus no mitigation measures are required				
Documentation provided by project participant				
/2/, /11/, /15/, /21/, /12/				
DOE assessment				**Date:** 05/05/2020
Since no negative impacts are expected on biodiversity to the project implementation confirmed by checking the Biodiversity Baseline Survey Report/15/ and project design/11/, no specific mitigation measures will be taken to improve positive impacts. Afforestation in this project uses local species which is confirmed by checking the Seedling Purchase Contract/21/, implement afforestation activity through scientific and reasonable method with no burning and slash, and protect the existing vegetation as much as possible which has been determined in the project design/11/ and project approval/12/, in addition, due to the afforestation activity has been finished during on-site observations, thus CTI verified that the measures have been designed to improve positive impacts on biodiversity. CAR 27 is closed.				

CAR ID	28	**Section no.**	5.2.3	**Date :** 27/04/2020
Description of CAR				
The description in 5.2.3 is not clear about the impact by the project directly.				
Project participant response				**Date :** 01/05/2020
The description in 5.2.3 has been corrected.				
Documentation provided by project participant				
/2/, /15/, /31/, /11/, /12/, /32/				
DOE assessment				**Date:** 05/05/2020
The local tree species plantation has different positive impact on soil, climate and biodiversity; when local tree species are planted in desert areas, an increase of flora and fauna biodiversity can be recorded, including species of animals could be increased and original wild animals around project area can be protected. 11 national protected species of flora and fauna are in the project zone confirmed by checking the Biodiversity				

Baseline Survey Report[/15/] and checking the "Study on Rare and Endangered Plant Species Resources in Guizhou"[/31/], and 1 of them are confirmed as globally endangered species according to IUCN[/32/]. And number of these animal species will be increased. These will be protected by the improvement on ecological environment of the surrounding area through the project activity implementation, the improvement on ecological environment of the surrounding area has been confirmed during the site observation. Furthermore, this afforestation activity is implemented with scientific and reasonable configuration method, with efficient measures of fire prevention and insect control. With the planted trees gradually grow up to forest, project sites will become ecological community with the domain species of tall trees, which will make sure the project bring net biodiversity benefit[/11/,/12/]. Furthermore, after the implementation of the project, the hydrological cycle can be adjusted, drought and flood risk will be reduced, soil nutrient and local micro-climate will be improved which has been verified in the project design and approval [/11/,/12/] and confirmed by site inspection. CAR 28 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				
DOE assessment				**Date:**