

HUBEI HONGSHAN IFM (CONVERSION OF LOGGED TO PROTECTED FOREST) PROJECT



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Table of Contents

1 Summary of Project Benefits 1

 1.1 Unique Project Benefits 1

 1.2 Standardized Benefit Metrics 2

2 General 6

 2.1 Project Description 6

 2.2 Project Implementation Status 13

 2.3 Stakeholder Engagement 17

 2.4 Management Capacity 25

 2.5 Legal Status and Property Rights 27

3 Climate 30

 3.1 Monitoring GHG Emission Reductions and Removals 30

 3.2 Quantification of GHG Emission Reductions and Removals 50

 3.3 Optional Criterion: Climate Change Adaptation Benefits 63

4 Community 64

 4.1 Net Positive Community Impacts 64

 4.2 Other Stakeholder Impacts 67

 4.3 Community Impact Monitoring 67

 4.4 Optional Criterion: Exceptional Community Benefits 73

5 Biodiversity 74

 5.1 Net Positive Biodiversity Impacts 74

 5.2 Offsite Biodiversity Impacts 76

 5.3 Biodiversity Impact Monitoring 76

 5.4 Optional Criterion: Exceptional Biodiversity Benefits 79

6 Additional Project Implementation Information 79

7 Additional project Impact Information 79

1 SUMMARY OF PROJECT BENEFITS

1.1 Unique Project Benefits

Outcome or Impact	Achievements during the Monitoring Period	Section Reference	Achievements during the Project Lifetime
1) Improve local production conditions and ecological environment, enhance the quality of life, create a good investment and development environment and play a leading and demonstration role.	Slight improvement of forest coverage	5	Improve local production conditions and ecological environment
2) Provide local village community with experience of forest management in hilly land	Implementation experience of forest management	4	Implementation experience of forest management
3) Improve the ecological environment of the project area and its surrounding area	Slight improvement of ecological environment	5	Slight improvement of ecological environment

1.2 Standardized Benefit Metrics

Category	Metric	Achievements during Monitoring Period	Section Reference	Achievements during the Project Lifetime
GHG emission reductions & removals	Net estimated emission removals in the project area, measured against the without-project scenario	1,356,080 tCO ₂ e	3.2	1 st MP: 932,144 tCO ₂ e 2 nd MP: 1,356,080 tCO ₂ e Total: 2,288,224 tCO ₂ e
	Net estimated emission reductions in the project area, measured against the without-project scenario	/	/	N/A
Forest ¹ cover	For REDD ² projects: Number of hectares of reduced forest loss in the project area measured against the without-project scenario	/	/	N/A
	For ARR ² projects: Number of hectares of forest cover increased in the project area measured against the without-project scenario	/	/	N/A
Improved land management	Number of hectares of existing production forest land in which IFM ³ practices have occurred as a result of the project's activities, measured against the without-project scenario	23,769.42ha	2.1	23,769.42ha
	Number of hectares of non-forest land in which improved land management has occurred as a result of the project's activities, measured against the without-project scenario	/	/	N/A

¹ Land with woody vegetation that meets an internationally accepted definition (e.g., UNFCCC, FAO or IPCC) of what constitutes a forest, which includes threshold parameters, such as minimum forest area, tree height and level of crown cover, and may include mature, secondary, degraded and wetland forests (*VCS Program Definitions*)

² Reduced emissions from deforestation and forest degradation (REDD) - Activities that reduce GHG emissions by slowing or stopping conversion of forests to non-forest land and/or reduce the degradation of forest land where forest biomass is lost (*VCS Program Definitions*)

² Afforestation, reforestation and revegetation (ARR) - Activities that increase carbon stocks in woody biomass (and in some cases soils) by establishing, increasing and/or restoring vegetative cover through the planting, sowing and/or human-assisted natural regeneration of woody vegetation (*VCS Program Definitions*)

³ Improved forest management (IFM) - Activities that change forest management practices and increase carbon stock on forest lands managed for wood products such as saw timber, pulpwood and fuelwood (*VCS Program Definitions*)

Category	Metric	Achievements during Monitoring Period	Section Reference	Achievements during the Project Lifetime
Training	Total number of community members who have improved skills and/or knowledge resulting from training provided as part of project activities	1,800 ⁴ (include 1,710 temporary workers and 90 full-time technicians)	2.3	1,800
	Number of female community members who have improved skills and/or knowledge resulting from training provided as part of project activities of project activities	1,080(include 1,040 temporary workers and 40 full-time technicians)	2.3	1,080
Employment	Total number of people employed in of project activities, ⁵ expressed as number of full-time employees ⁶	1,800(include 1,710 temporary workers and 90 full-time technicians)	2.3	1,800
	Number of women employed in project activities, expressed as number of full-time employees	1,080(include 1,040 temporary workers and 40 full-time technicians)	2.3	1,080
Livelihoods	Total number of people with improved livelihoods ⁷ or income generated as a result of project activities	1,800(include 1,710 temporary workers and 90 full-time technicians)	2.3	1,800
	Number of women with improved livelihoods or income generated as a	1,080(include 1,040 temporary	2.3	1,080

⁴ Source from “Description of participants of Hongshan project from forestry bureau”, which has been provided to VVB

⁵ Employed in project activities means people directly working on project activities in return for compensation (financial or otherwise), including employees, contracted workers, sub-contracted workers and community members that are paid to carry out project-related work.

⁶ Full time equivalency is calculated as the total number of hours worked (by full-time, part-time, temporary and/or seasonal staff) divided by the average number of hours worked in full-time jobs within the country, region or economic territory (adapted from UN System of National Accounts (1993) paragraphs 17.14[15.102];[17.28])

⁷ Livelihoods are the capabilities, assets (including material and social resources) and activities required for a means of living (Krantz, Lasse, 2001. *The Sustainable Livelihood Approach to Poverty Reduction*. SIDA). Livelihood benefits may include benefits reported in the Employment metrics of this table.

Category	Metric	Achievements during Monitoring Period	Section Reference	Achievements during the Project Lifetime
	result of project activities	workers and 40 full-time technicians)		
Health	Total number of people for whom health services were improved as a result of project activities, measured against the without-project scenario	/	/	N/A
	Number of women for whom health services were improved as a result of project activities, measured against the without-project scenario	/	/	N/A
Education	Total number of people for whom access to, or quality of, education was improved as a result of project activities, measured against the without-project scenario	/	/	N/A
	Number of women and girls for whom access to, or quality of, education was improved as a result of project activities, measured against the without-project scenario	/	/	N/A
Water	Total number of people who experienced increased water quality and/or improved access to drinking water as a result of project activities, measured against the without-project scenario	/	/	N/A
	Number of women who experienced increased water quality and/or improved access to drinking water as a result of project activities, measured against the without-project scenario	/	/	N/A
Well-being ⁹	Total number of community members whose well-being ⁸ was improved as a	1,800 (include 1,710 temporary	2.3	1,800

⁸ Well-being is people's experience of the quality of their lives. Well-being benefits may include benefits reported in other metrics of this table (e.g. Training, Employment, Health, Education, Water, etc.), but could also include other benefits such as empowerment of community groups, strengthened legal rights to resources, conservation of access to areas of cultural significance, etc.

Category	Metric	Achievements during Monitoring Period	Section Reference	Achievements during the Project Lifetime
	result of project activities	workers and 90 full-time technicians)		
	Number of women whose well-being was improved as a result of project activities	1,080 (include 1,040 temporary workers and 40 full-time technicians)	2.3	1,080
Biodiversity conservation	Change in the number of hectares significantly better managed by the project for biodiversity conservation, ⁹ measured against the without-project scenario	23769.42ha	5.2	23769.42ha
	Number of globally Critically Endangered or Endangered species ¹⁰ benefiting from reduced threats as a result of project activities, ¹¹ measured against the without-project scenario	0	5.2	0

⁹ Biodiversity conservation in this context means areas where specific management measures are being implemented as a part of project activities with an objective of enhancing biodiversity conservation.

¹⁰ Per IUCN's Red List of Threatened Species

¹¹ In the absence of direct population or occupancy measures, measurement of reduced threats may be used as evidence of benefit

2 GENERAL

2.1 Project Description

2.1.1 Implementation Description

The project has been registered as a VCS project in 07/2020, has been approved as a CCB project in 05/2022. And got the 1st monitoring issuance approval in 07/2020 and added the CCB label for the issued VCU in 05/2022. The project type is “Improved Forest Management: Logged to Protected Forest (LtPF)”. Before the implementation of the project activity, the trees are logged based on a government-approved timber management plan for harvesting the project area. The implementation of the project activity converses the trees to protected forest to reduce the GHG emissions.

Until the end of this monitoring period (30 Sep. 2023), the project has been implemented for 105 months. All the areas within the Project Area, for a total of 23,769.42 ha, and the trees are growing and healthy.

The species of this project are Oak, Masson Pine, Broad-Leaved Mixed Forest and Coniferous and Broad-Leaved Mixed Forest. Since protecting trees, there was no natural disaster. Because of good forestry practice, the percentage of forest coverage rate has increased in the project area, as well as mitigating the impacts of soil and water loss and climate change expanding habitat for flora and fauna in the project area. During this monitoring period, no events affecting emission reduction and monitoring occurred in the project area.

All risk factors have been monitored and managed:

For non-permanence risk factors, during the monitoring period, all the technicians are doing regular forest inspection for every month, especially strictly checked the stranger into the forest in order to stop deforestation; In the fire-prone season, they are doing forest inspection every day, preventing all sources of fire into forest. If there are any emergencies, they will inform the superior leadership and project contact person of PP at once and stay where the emergency happens until anyone come for help.

Strictly obeying the Forest Management Manual, technicians inspect the occurrence of diseases and insect pests in spring and autumn and use insecticides and pesticides according to the national standards.

-There have not been any fires that have damaged the forest.

-There have not been any climatic disasters (floods, droughts, tornadoes, frosts, etc.) that have damaged the forest.

-There have not been any earthquakes.

The detail results of the monitoring and evaluation was summarized in the relevant non-permanence risk report.

The project proponent has conducted a field monitoring for the climate, community and biodiversity impacts of the project actually achieved during the second monitoring period (from 01-07-2019 to 30-09-2023).

During this monitoring period, the project has generated totally 1,738,565 tCO₂e GHG emission removals of which credits withheld in VCS buffer account is 382,485 tCO₂e and the GHG emission reductions or removals after buffer deduction is 1,356,080 tCO₂e and thus, improved local environment through growing of the trees, increased income of local residents by offering job opportunities from the project, enhanced the capabilities of local communities and residents by providing their relevant technical skills and training, and increased local biodiversity as a result of protecting forest of native trees.

There are no changes in the Project Proponents, Land owner and other entities.

2.1.2 Project Category and Activity Type

The project is developed under VCS scope 14 "Agriculture, Forestry and Other Land Use (AFOLU)" with a project category of conversion of logged to protected forest (LtPF). The project is not a grouped project.

2.1.3 Project Proponent(s)

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Zhejiang Zhongzheng Forestry Development Co., Ltd is the project proponent.

2.1.4 Other Entities Involved in the Project

Organization name	Zhong Che (Beijing) Environment Energy Technology Development Co., Ltd.
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Zhong Che (Beijing) Environment Energy Technology Development Co. Ltd. is the consultant, who prepares the Project Description and monitoring report, assist project proponent to complete the registration of the project, issue and transact of the VCU.

2.1.5 Project Start Date (G1.9)

The project start date is the date on which activities that lead to the generation of GHG emission reductions or removals are implemented, for this project, the project start date is 01/01/2015

2.1.6 Project Crediting Period (G1.9)

The project crediting period is from 01/01/2015 to 31/12/2044 with a lifetime of 30 years which is the same as the CCB benefits assessment period.

2.1.7 Project Location

The project is located in Hongshan Town, Suizhou City, Hubei Province of P.R.China. The geo-coordinate range of the project is 112°43'E~113°46'E and 31°19'N~32°26'N. The subcompartments are spreading over Baoji Country, Wangtai Country, Baiguofan Country, Huoyantao Country, Jimingsi Country, Sanshenmiao Country, Peijiayan Country, Qiaohe Country, Shuangfeng Country, Zhoujiawan Country, Qinglongmiao Country, Wushenggong Country, Yutingling Country, Jieshanchong Country, Yunlin Country, Sishan Neighborhood committee, Maocifan Neighborhood committee, Zhoujiazui Country, Huanglongsi Country, Wenquan Country, Gaojianshan Country, Xujiachong Country, Guanyintang Country, Zhuji Country, Dujiadian Country, Liangtinghe Country, Wangheshan Country, Guoji Country, Dianzihe Country, Huangjiafan Country, Guihuayuan Country. All the subcompartments had the legal right to harvest issued by local Forestry Bureau before the implementation of the project activity. Before 2015, they were all forests which the trees could be logged and sold based on the timber harvest plan. After 2015, they are all converted to protected forests by the project implementation.

According to CCB standard, the Hongshan Town is defined as the project zone, and the stopping logging area is defined as project area. The area of the project activity is 23,769.42ha, the area of project zone is 47,788 ha. The forest coverage rate of Hongshan town is 60.85%. The schematic diagram of the location of the project is shown in Figure 2-1 and Figure 2-2 below, and the KML file has also been uploaded to Verra Registry.

Besides, as described in the following Section 3.3, there is no leakage of the project, therefore, no offsite climate impacts were predicted. And as described in Section 5.3.2, there are no potential negative offsite impacts on biodiversity, thus no offsite biodiversity impacts were predicted either. And no HCVs was identified related to biodiversity in the project zone.

The location of communities is showed as below.

Country	Geographic coordinates (X Y)		Area(ha)
Baoji Country	38408024.5	3503753.7	1421.21
Wangtai Country	38408366.4	3505349.6	1431.53
Baiguofan Country	38400379.7	3510185.5	759.52
Huoyantao Country	38391528.1	3509974.7	717.44
Jimingsi Country	38396378.5	3509634.7	731.36
Sanshenmiao Country	38396299.9	3516245.8	968.88
Peijiayan Country	38398235.9	3505971.3	178.01
Qiaohe Country	38382206.6	3505056.2	243.93
Shuangfeng Country	38389961.5	3505015.9	569.7
Zhoujiawan Country	38383245.6	3500771.7	432.49
Qinglongmiao Country	38387891.5	3501789.6	1200.01
Wushenggong Country	38390757.4	3504420.3	423.26
Yutingling Country	38387293.4	3510015.1	586.01
Jieshanchong Country	38383049.4	3503433.3	717.3
Yunlin Country	38388689.8	3509829.7	966.29
Sishan Neighborhood committee	38397553.5	3501145.3	510.69
Maocifan Neighborhood committee	38395845.2	3504802.6	16.27
Zhoujiazui Country	38392494.2	3512239.5	984.55
Huanglongsi Country	38389011.8	3514151.8	1019.95
Wenquan Country	38392477.0	3503648.6	980.26
Gaojianshan Country	38394354.1	3501978.5	1160.59
Xujiachong Country	38394729.9	3507361.4	440.28
Guanyintang Country	38382352.2	3514073.7	434.78
Zhuji Country	38402409.7	3502087.8	925.54
Dujiadian Country	38385871.7	3506152.6	47.42
Liangtinghe Country	38400760.4	3503617.3	820.55
Wangheshan Country	38391369.0	3495824.9	1339.58
Guoji Country	38382108.1	3511515.6	119.61
Dianzihe Country	38402757.0	3503715.8	786.72
Huangjiafan Country	38404127.9	3501232.5	340.14
Guihuayuan Country	38401085.1	3510569.8	2495.55



Figure 2-1: The project location and project zone

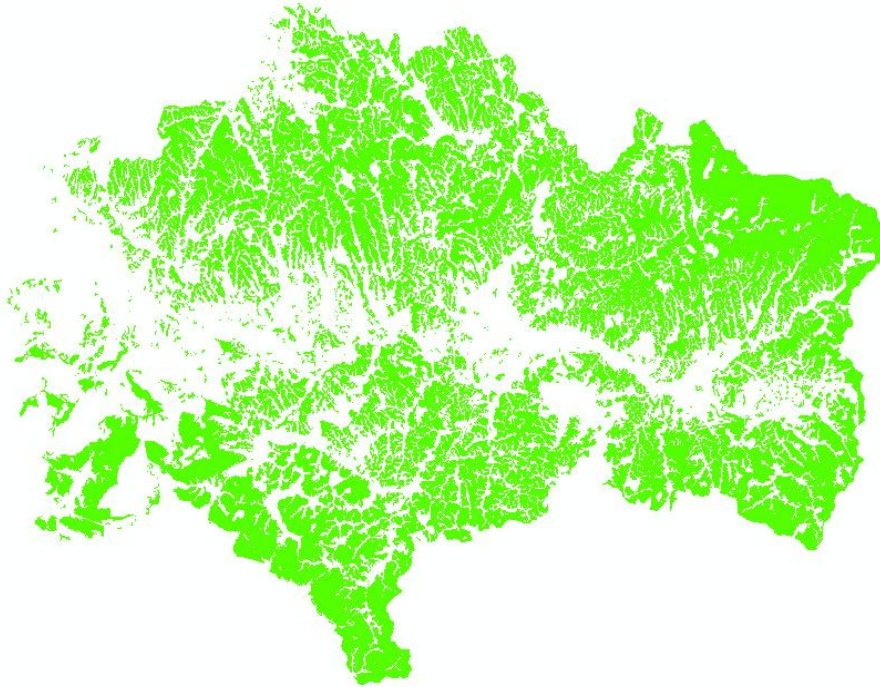


Figure 2-2. The Project Area

2.1.8 Title and Reference of Methodology

VM0010 version 1.3: Methodology for Improved Forest Management: Conversion of Logged to Protected Forest.

This methodology uses the latest versions of the following methodologies, modules and tools:

- CDM Tool for Calculation of the Number of Sample Plots for Measurements within A/R CDM Project Activities
- CDM Tool for testing significance of GHG emissions in A/R CDM project activities
- VCS methodology VM0003 Methodology for Improved Forest Management through Extension of Rotation Age
- VCS methodology VM0005 Methodology for Conversion of Low-Productive Forests to High-Productive Forests
- VCS methodology VM0007 REDD+ Methodology Framework (REDD-MF)
- VCS methodology VM0011 Methodology for Improved Forest Management: Calculating GHG Benefits from Logged to Protected Forest
- VCS tool VT0001 Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities

2.1.9 Other Programs (G5.9)

The project does not reduce GHG emissions from activities that are included in an emissions trading program or any other mechanism that includes GHG allowance trading;

The project has not sought or received another form of GHG-related environmental credit, including renewable energy certificates, during this monitoring period;

The project is not seeking registration under any other GHG programs.

2.1.10 Sustainable Development

The project contributes to achieving sustainable development as following:

The Project provides many benefits that will help achieve China's Sustainable Development Goals, a set of 17 universal goals covering the thematic areas of environmental, economic and social development (Figure 2-3).



Figure 2-3. The 17 Sustainable Development Goals

One of the Sustainable Development Goals (SDGs) is to take urgent measures to combat climate change and provide sustainable security for life in the future.

The Project contributes to develop some of China's Sustainable Development Goals:

- Achieve gender equality and empower all women and girls (Goal 5); (See section 4.1.1 community impact on female rural workers)
- Decent work and economic growth (Goal 8); (See section 4.3.1 variable monitored on household income)
- Action to combat climate change and its impacts (Goal 13); (See section 3 for details)
- Sustainably manage forests and halt biodiversity loss (Goal 15); (See section 5 for details).

2.2 Project Implementation Status

2.2.1 Implementation Schedule (G1.9)

Date	Milestone(s) in the project's development and implementation	Evidence
12/11/2014	Villager Representative meeting of the project for applying for forestry carbon sequestration project	Village committee Decision for applying for forestry carbon sequestration project
17/11/2014	Stakeholders meeting for explaining the forestry carbon sequestration project	Minutes of Stakeholders meeting
12/2014	Distribution and collection of the project opinion questionnaires	Project opinion questionnaires
10/12/2014	Village committee apply to Hongshan Forestry Bureau for stopping logging	Village committee' application for cessation of commercial logging
18/12/2014	Reply on stopping logging from Hongshan Forestry Bureau	Approval of application for logging suspension was issued by local government, Hongshan Forestry Bureau
01/01/2015	The date of stopping logging (start date of crediting period)	Approval of application for logging suspension was issued by local government, Hongshan Forestry Bureau
06/01/2015	Village committee and Zhong Che signed development contracts for forestry carbon credits projects	Development contracts for forestry carbon credits project
01/2015	Participatory Rural Appraisal (PRA) report of the project was completed.	Zhong Che (Beijing) Environment Energy Technology Development Co., Ltd. (hereinafter Zhong Che) conducted PRA-2015
01/2017	Participatory Rural Appraisal (PRA) report of the project was completed.	Zhong Che conducted PRA-2017
01/2019	Participatory Rural Appraisal (PRA) report of the project was completed.	Zhong Che conducted PRA-2019
05/2019	Training technical worker yearly	Training record
09/2019	On-site VCS validation	/
05/2020	Training technical worker yearly	Training record
05/2021	Training technical worker yearly	Training record
05/2021	Participatory Rural Appraisal (PRA) report of	Zhong Che conducted PRA-2021

	the project was completed.	
10/2021	On-site CCB validation	/
05/2022	Training technical worker yearly	Training record
05/2022	Distribution and collection of the CCB questionnaire	Zhong Che conducted CCB questionnaire

2.2.2 Methodology Deviations

N/A

2.2.3 Minor Changes to Project Description (Rules 3.5.6)

N/A

2.2.4 Project Description Deviations (Rules 3.5.7 – 3.5.10)

N/A.

2.2.5 Grouped Projects

This is not a grouped project.

2.2.6 Risks to the Project (G1.10)

For the identification of probable natural risks and those induced by man, the tool approved by the VCS Standard was used: "Tool for the Risk of Non-Permanence of the Agriculture, Forestry and Other Land Uses" sector.

Identify Risk	Potential impact of risk on climate, community and/or biodiversity benefits	Actions needed and designed to mitigate the risk
Fire	After the trees grow to a certain age (about 30 years), the risk of fire may increase, and the project owner will adopt the necessary measures for fire preventing.	During this monitoring period PP and forestry bureau strengthened the forest fire prevention propaganda and education work, which has raised the whole society's forest fire prevention consciousness. We have actively carried out educational activities with the forest law and regulations on forest fire prevention as the main contents to popularize basic knowledge of fire control. The forest rangers carried out regular forest inspections. Besides, the local forestry bureau has also set regulations on forest fire prevention and no fires occurred in the project area since the start of the project activity.

Diseases and Insects	There could be diseases and insects that may damage the planted trees, but the diseases and insects will be prevented by routine overseeing.	During this monitoring period, the supervision of serious insect pests has been strengthened. Upon routine overseeing, the diseases will be treated immediately by biological control once occurred. If any insect pests occur, chemical pesticides can only be used in accordance with the national pesticide policy in serious cases. During this monitoring period, there is diseases and insects happened.
Pesticide	Improper pesticide application would be harmful to natural environment, including polluting soil, water and air conditions, as well as the habitat of the wildlife.	Monitoring pesticides in the interim is strictly managed by trained personnel. In addition, environmentally friendly measures such as mixed species arrangements and seed and seedling quarantine have been adopted. In particular, biological measures have been taken to control pests and diseases. As a result, the use of pesticides has been limited. During this monitoring period, there is no chemical agent used.
Frost	According to historic records, frost damage on trees was not common in the project area. During winter, there could be frost that might damage the trees that have suffered wounds before. Warming measures will be adopted to keep the survival rate.	During the monitoring period, the monitoring work on frost damage of trees was strengthened, and no frost damage occurred. If there are frozen branches found after winter, they will be cut off in spring, which enhances their ability of self-healing and is good for the growth of new leaves and branches.
Human-induced	People illegal logged and destroy the trees	During the monitoring period, the monitoring work of stealing felling was strengthened, and there was no stealing felling. The forestry bureau supervises the forest cutting in the project area, illegal logging is strictly forbidden. The individual would be heavily punished if he/she is found to steal felling. Also, the forestry bureau would count the amount of trees being illegally logged and plan for replacement planting.

Also, please refer to Non-Permanence Risk Report of the project for more detailed analysis of project risk.

2.2.7 Benefit Permanence (G1.11)

To maintain and enhance the climate, community and biodiversity benefits, the implementation of the project activity includes the conversion from logged to protected forests. In addition, according to Approval on the strengthening the protection of the forest resource issued by Hongshan Forestry Bureau, commercial logging is forbidden and human interference is minimized.

Zhejiang Zhongzheng Forestry Development Co., Ltd.(The project proponent) is responsible for the implementation and management of the project, and the local Forestry Bureau takes over of the responsibility beyond the project lifetime. The forest of the project will be protected with continual tending work, prohibiting cutting, and preventing diseases and pests, which will maintain and enhance the climate, community and biodiversity benefits beyond the project lifetime.

First of all, even after the end of the project's life cycle is over, the local government and forestry bureau continues to supervise and manage according to the PRC Forest Law and the PRC Forest Law Implementing Regulations. It is illegal to cut down trees of this project, so the trees will continue to be protected. At the same time, the local government and forestry bureau shall continuously supervise and patrol the plants and animals in the project area according to the Law of the People's Republic of China on the Protection of Wild Animals, so the local plant and animal population will continue to maintain or increase. During this monitoring period, there was no illegal logging nor poaching occurred. Besides, during the 30 years of the project implementation process, the project proponent regular management measures, such as training, patrol, publicity, etc, further enhance the ecological protection consciousness of residents. During this monitoring period, the PP and local Forestry Bureau have carried out the educational training on ecological environment protection and published the poster of ecological protection on the notice boards which have enhanced the residents' awareness of ecological protection, and strengthened the importance of the ecological environment to the residents. So, after the project, they can still protect the forest and animals.

Secondly, during the 30 years of the project life period, the project proponent will provide annual training for the technicians hired to ensure that they can acquire rich professional experience and the ecological protection consciousness. During this monitoring period, the training were held in May 2020, May 2021, May 2022 and May 2023 respectively.

Finally, the women involved in this project activity not only increase the family income but also learn extra skills during the project implementation period, which equipped them with well ecological environment protection consciousness and improved their social status. After the 30 years project lifetime, they still have relevant professional ability to play a role in forestry, such as working for the forestry bureau, or choosing to work in forestry companies and other social organizations, so as to continue to reflect the value of women in society.

The measures implemented to maintain the climate, community, and biodiversity benefits beyond the project lifetime are:

- In the Project Zone, any kind of hunting is strictly forbidden.
- The Animal population is growing.
- All the workers and their families are provided with the best living conditions, fair wages and social welfare.
- All the technicians are trained every year, with priority given to the following training topics:
 - Forest management.

- Pruning and Fertilization.
- Pests control and prevention of fires.
- First aid and dangerous animals.
- Use and maintenance of equipment.

All these measures will maintain climate, community, and biodiversity benefits beyond the Project lifetime.

2.3 Stakeholder Engagement

2.3.1 Stakeholder Access to Project Documents (G3.1)

The full project documentation has published on VCS and CCB website for public comments, as well as the project summary in Chinese version, and the local communities and other stakeholders can easily download from the website. The project proponent has noticed local stakeholders through the routine villager assembly regarding every milestone of the project development, including listing, registered, issuance, etc, and provided the relevant documents to the residents who are uneasily access to internet if they needed.

2.3.2 Dissemination of Summary Project Documents (G3.1)

After the monitoring activities finished, the project proponent prepared a draft monitoring report along with a short version of MR summary in Chinese which has been published on Verra website. Also, the summary of monitoring results, monitoring manuals and other relevant documents have been disseminated to local communities through local project leader and the contact information of monitoring staff from project proponent has also been provided on the noticeboards of the village committees in case the local communities have any questions regarding the monitoring procedures and results.

2.3.3 Informational Meetings with Stakeholders (G3.1)

In November 2014, Notices of stakeholder meetings are posted on the noticeboards of the Forestry Bureau and the village committees. On 17/11/2014, the project proponent held a stakeholder consultation meeting to gather their opinions and suggestions, and distributed questionnaires to the participants to collect their feedback. The villagers, representative of forestry Bureau expressed their opinions about the project activities. The villagers are willing to participate in the project. All of them expressed their willingness to be involved in the project not only because of the revenue obtained from job and training opportunities created for the local village communities but also improvement in living conditions. In addition, in January 2015, January 2017 and January 2019, there were 3 PRA surveys being conducted in Hongshan Town.

During this monitoring period, in May 2021 when the PRA was conducted, a total of 100 questionnaires were distributed to the representatives of the local stakeholders from local government and surrounding villages, and 100 copies were collected with valid answers. The

representatives covered different ages, different occupations and different education levels which was summarized as follows.

25% of the respondents is female, 75% is male; 8% of the respondents is age 20-30, 72% is age 30-50, 20% is age above 50; 36% of the respondents' education is senior middle school, 64% is Junior high school and below; 100% is Han; 88% is farmers, 12% is workers. 60% has worked for the project and 40% has not worked for the project.

- Most local residents are well aware of the benefits of conversion of logged to protected forest. They understand that forestry can reduce soil erosion, clean the air, protect the land, and reduce natural disasters. And they also have a strong sense of protection for animals and plants.

- Local residents believe that the project can 1) create jobs; 2) get more benefits from selling carbon credits; 3) improve the local environment, protect cultivated land, and reduce natural disasters; 4) create more education opportunities for local people.

- All the stakeholders agreed with the project design and willing to participate the implementation and follow-up management of the project activity.

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

In November 2014, Notices of stakeholder meetings are posted on the noticeboards of the Forestry Bureau and the village council. On 17/11/2014, the project proponent held a stakeholder consultation meeting to gather their opinions and suggestions, and distributed questionnaires to the participants to collect their feedback. The villagers, representative of forestry Bureau expressed their opinions about the project activities. In addition, in January 2015, January 2017 and January 2019, there were 3 PRA surveys being conducted in Hongshan Town. During the PRA survey and stakeholder meeting, project proponent explained the potential costs, risks and benefits to relevant communities and stakeholders by using the Theory of Change, and invited them to give their feedback.

In May 2021, there was an on-the-spot interview during the PRA survey around local villages to collect their opinions and willingness of the project, especially for the potential costs, risks and benefits. All villagers expressed their understanding for the risks and costs.

Potential costs: 1. Massive manpower needed.

Potential risks: 1. Emergent disease when patrolling; 2. Nature disaster.

Benefits: 1. carbon credit revenue; 2. Long-term living condition improvement due to the better air quality; 3. Soil improvement; 4. increasing rainfall benefit the crops; 5. provide abundant job opportunities.

2.3.5 Information to Stakeholder on Verification Process (G3.3)

The status and process of the project for CCB and VCS second verification will be published through routine villager assembly and posted on local bulletin boards of village committees. On the other hand, after the project proponent has known the on-site visit time, the technicians will begin notice the villagers from door to door. The mobile phone number of contact person of the

project will be provided to the stakeholders so they can directly make a call in case they have any problem about the project.

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

About a week prior to the on-site visit, the project proponent informed residents (including women), Local Forestry Bureau, Rural workers about the details of the audit process and arranged stakeholder meeting.

The auditor will preside over the on-site visit meeting of the project, and people from Zhong Che, PP, the Forestry Bureau, villagers will attend the meeting. At the meeting, the auditor will interview the impact of the project on the local natural environment, community economy, living standards and biodiversity, and also interview everyone's opinions and suggestions on the project.

2.3.7 Stakeholder Consultation (G3.4)

As mentioned above, the stakeholder consultation includes PRA, meetings and on-the-spot interview, the stakeholders were asked to raise their opinions of the project design and their willingness to participate the following implementation. The contents of the questionnaires including but not limited to:

- What are the changes to the surrounding environment after the implementation of the project?
- What is the level of female participation in the project?
- What will be the impact on the project area after implementation of the project?
- Has it improved your standard of living?
- Are you willing to participate in project activities?
- What suggestions and ideas do you have for the implementation of the project?
- What do you think are the risks and benefits of the project?
- Are you getting jobs and training? etc.

In November 2014, Notices of stakeholder meetings are posted on the noticeboards of the Forestry Bureau and the village council. On 17/11/2014, the project proponent held a stakeholder consultation meeting to gather their opinions and suggestions, and distributed questionnaires to the participants to collect their feedback. The villagers, representative of Forestry Bureau expressed their opinions about the project activities. The villagers are willing to participate in the project. All of them expressed their willingness to be involved in the project not only because of the revenue obtained from job and training opportunities created for the local village communities but also improvement in living conditions. In addition, in January 2015, January 2017, January 2019, January 2021 and January 2023, there were 5 PRA surveys being conducted in Hongshan Town.

In May 2022, a total of 100 questionnaires were distributed to the representatives of the local stakeholders from local government and surrounding villages, and 100 copies were collected with valid answers. The representatives covered different ages, different occupations and different education levels which was summarized as follows.

25% of the respondents is female, 75% is male; 8% of the respondents is age 20-30, 72% is age 30-50, 20% is age above 50; 36% of the respondents' education is senior middle school, 64% is Junior high school and below; 100% is Han; 88% is farmers, 12% is workers.

-Most local residents are well aware of the benefits of protecting forest. They understand that forestry can reduce soil erosion, clean the air, protect the land, and reduce natural disasters. And they also have a strong sense of protection for animals and plants.

-Local residents believe that the project can 1) create jobs and improve living level; 2) get more benefits from selling carbon credits; 3) improve the local environment, protect cultivated land, and reduce natural disasters; 4) create more education opportunities for local people; They are all willing to participate in the project activities.

Stakeholders have no negative views on project implementation.

2.3.8 Continued Consultation and Adaptive Management (G3.4)

Throughout the lifetime of the project, the project proponent, through 1 or 2 their on-site project staffs, maintained a direct line of communication with community members and relevant stakeholders. This established a commitment to communication and consultation to keep stakeholders informed of project activities including restoration, maintenance, monitoring and the CCB validation and verification process. The project staffs in the field maintained communications with other stakeholders through in-person meetings when the stakeholders have the individual questions. And the project proponent actively listened to recommendations made by any identified community members, or other stakeholder groups, and adapt and improved methods as necessary. For example, during the patrolling process, when some villagers reported that their farming tools were old, the project proponent decided timely replaced them with new tools.

There is a Suggestion Book published on the notice board in each of villages throughout the lifetime of the project. Stakeholders can write their comments or suggestions in the book anytime anonymously as they wish. The project proponent has checked the book each quarter and collected all the comments received. The villagers can talk directly to on-site project staffs or even the local forestry bureau if they have any opinions. Meanwhile, on-site project staffs also paid a visit to the villages and collected comments each quarter. For example, during the patrolling process, when some villagers suggested that their working shoes were old, the project proponent decided timely replaced them with new shoes.

The project has an adaptive management plan to effectively evolve as the project progresses, and systematically develop existing practices through project monitoring and evaluation. The project has periodically reviewed plans, methods, goals and objectives, to incorporate new lessons learned, available technology, and scientific knowledge. These strategies are in accordance with project's Standard Operating Procedures (SOPs) and monitoring plans.

So far, the design and implementation of the project have not been modified, as comment received do not affected the design of the project.

2.3.9 Stakeholder Consultation Channels (G3.5)

During this monitoring period, firstly, stakeholders were informed of the status and progress of the project through the bulletin board updated quarterly by the village committee, and their comments were recorded in the village committee's complaint book. This information is fed back to the project proponent by the contact person in each village for a timely response. Secondly, the villagers can also make suggestions on the project during the technicians' quarterly visits. Finally, stakeholders can communicate and give feedback to the project proponent at any time through the published phone number of contact person.

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

In the project planning phase, stakeholders were fully involved in stopping logging, protecting forest, etc, through villagers meeting and PRA methods. During the project implementation, the local communities and Hongshan Forestry Bureau played as the direct implementer of the project, and the project proponent is the coordinator, responsible for the overall management of the project.

As mentioned in Section 2.3.3, during this monitoring period, 100 questionnaires have been collected from the representatives of the local stakeholders of local government and surrounding villages integrated with PRA survey taken in May 2022. Stakeholders from different age, gender and culture background has been prudently taken into account during the distribution of the questionnaires, and the feedback reflected in the interview and questionnaire has been seriously addressed immediately. 25% of the respondents is female, 75% is male; 8% of the respondents is age 20-30, 72% is age 30-50, 20% is age above 50; 36% of the respondents' education is senior middle school, 64% is Junior high school and below; 100% is Han; 88% is farmers, 12% is workers.

In this process, the survey organizers fully considered the living habits of different genders in the project area, and conducted targeted field visits to investigate the views of the villagers of the project. The survey organizers also introduced the purpose, process, benefits, potential costs and risks of the project in detail. Villagers agree to join the project and are willing to participate in protecting forest. In terms of gender-sensitive manner, the survey paid special attention to the opinions of women. The PRA survey methods include meetings, household interviews, questionnaires and telephone contacts to collect villagers' willingness to protect forest. The final results of PRA showed that all villagers agreed to implement this project. Most young people and healthy women want to participate in projecting. The project proponent also guaranteed to give priority to female workers in protecting forest activities.

Local villagers were also asked to raise their opinions about the project during the PRA survey, and they said there were no natural disasters since the project began which has been reported on PRA report.

All important information about the decision is posted on the bulletin board of the village committee so that local stakeholders can read it. It is considered that some female villagers with a

lower level of education, the information obtained through the technicians. If there were any feedback from stakeholders, the decision would be revised after further discussion. In addition, project development status and the information on contact person have also been regularly posted on the bulletin board. If there were any negative feedback, a meeting shall be held immediately in the villages to discuss the solutions.

According to the feedback received during this monitoring period, all of the representatives of stakeholders represented their satisfaction regarding the implementation of the project.

2.3.11 Anti-Discrimination Assurance (G3.7)

The project proponent should obey Labor Law of the People's Republic of China with anti-discrimination assurance, and workers have been hired voluntarily regardless of gender, race, religion or any other basis. In case of any discrimination proved to be true, the person who is responsible for the discrimination shall be fired immediately and the project proponent will find someone else to take over his/her job. During the project implementation, the total number of the local villagers who participated in forest management are about 1800, and 60% of them are women.

No discrimination complaint received during this monitoring period.

2.3.12 Grievances (G3.8)

If there is a conflict and grievance of interest between the parties, the stakeholders can appeal through the village representative or directly to the owner of the project, which is the most effective way to solve the problem. They appeal through the phone number of the relevant contact or file a complaint during the meeting. In addition, community villagers participate in project implementation and can identify or seek to resolve conflicts and grievance in the project.

The project proponents have appointed a staff member to record and collect conflicts and grievance between local communities and individual farmers. Employed forest patrols played an important role in dealing with common conflicts and grievance.

Upon receipt of the patrolman's report, the project proponent contacted and discussed with the relevant community or other stakeholders within 3 days.

The specific staff member proposed a solution and mediation plan within one week based on all the information collected by the relevant parties, and the conflict and grievance would be handled within 30 days.

If the project proponent is unable to resolve the grievance through the agreed dispute resolution method within 30 days, according to the provisions of the Chinese Civil Law Code, it can apply to the local arbitral agency for arbitration. If the arbitration is invalid, the parties can directly file a civil lawsuit to the local court, which will decide the grievance.

No grievances received during this monitoring period.

2.3.13 Worker Training (G3.9)

Annual training for technicians was held in May 2020, May 2021, May 2022 and May 2023 respectively during this monitoring period from July 2019 to Sep. 2023. The training was divided

into two sessions in order to facilitate the workers to participate and ensure the attendance of all the workers. One session was held within the county forestry bureau while the other one was held in the conference room of the village where the project is located. For the training held in the conference room of the village, the villagers could also take part in if they are interested in. The experts from the local forestry bureau were also invited to participate in teaching for each training session. The training is mainly in the aspects of physical safety, health and monitoring technology, such as to measure tree height and DBH, etc. These workers are all from the villages where the project is located. They are very familiar with the local villagers and the natural environment, and also have the ability to learn the knowledge of forest monitoring, so they represent local capacity. Priority is given to the following training topics:

-Forest land inspection

Fire is the most concerning. Forest inspections shall be conducted regularly to strictly check the purpose of strangers entering the forest and to prevent the phenomenon of cutting and logging furtively. Patrol shall be reinforced in the fire-prone season, inter alia, before and after the tomb-sweeping day. At the same time, the civilized sacrifice activities shall be encouraged, so as to eliminate all kinds of fire and fire hazards for preventing fire occurrence. If there are endangered plants, protective action should be taken in time, such as hanging warning signs, pulling warning lines, and then the circumstance should be reported to relevant departments by taking photos, videos and recordings. The wild animals in the forest must be protected and recorded by taking photos and photographing as far as possible, which can strengthen publicity and raise the villagers' awareness of animal protection. With respect to the growth and situation of plants and animals in the forest lands, reporting and keeping in touch with the contact person of PP should be timely and constantly. When necessary, guarding in the forest and waiting for the contact person of PP to protect the forest lands together.

-Forest fire prevention and fighting

Forestry Bureau experts introduced the classification of forest fire and fire source types, forest fire serious consequences and threats also made the corresponding case analysis. The prevention methods of forest fire mainly include establishing fire prevention works, strengthening forecast and fire source management. For the fire that has happened, we should pay attention to it at the early stage, and thorough fire fighting is the focus of fire fighting. At the same time to do a good job in logistics support, provide complete equipment, follow the fire discipline, to ensure their own safety to complete the rescue work.

-The use of monitoring and measuring instruments

Monitoring and measuring instruments were used during the inspection. The height of the tree can be measured by altimeter while the circumference of the tree can be measured by tape measure. For precisely locating the fixed monitoring sample, the GPS measuring instrument shall be used. Records information including the geographic location of the site, latitude and longitude, the site number, the carbon layer, the height and DBH of each tree. The score data measurement team consists of technicians who should prepare all the instruments and materials for monitoring within a week after the monitoring period was determined. They conducted the measurement of

tree height and diameter separately and all the measurements and data recording were completed in 1 month. In the end, the data summary statistics was submitted to PP for verification.

2.3.14 Community Employment Opportunities (G3.10)

The project mobilized the whole community involvement, including the community of women and poor people. All people from the communities were given an equal opportunity to fill all work positions if the job requirements were met. Women who came from the poorest local households were not only be provided with equal opportunities but also consciously ensured that they can be part of the project.

For the selection of forest rangers, the village committee and project proponent had a principle to find qualified and reliable staff without any discrimination of age, sex, marital status, ethnicity, social status or religious convictions, political ideas and/or sexual orientation.

During the implementation of the project, the total number of local villagers involved in managing forest as forest rangers and other workers was approximately 1,800¹² of which 60% were women. Before the project implementation, approximately 1,800 locals were regularly trained for forest management and maintenance in relevant skills.

They are responsible for project-related management and monitoring, and the villagers' daily communication, field survey, Measure and record the data of the trees in the sample plot, the formation of feedback mechanism with PP.

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

The local people were under the protection of Labor Law of the People's Republic of China and no forced labor is allowed, and they are free to establish and join any labor organizations as they wish. There was regular new-employee training provided to workers before they started the job, which clearly indicates their rights and mechanism for grievance appeal, and the worker's rights are guaranteed in the labor contracts for each worker. The new employee training was in accordance with the Labor Law of People's Republic of China which guarantees the protection of employee's rights and benefits.

2.3.16 Occupational Safety Assessment (G3.12)

The project proponent has referenced Safety and Healthy in Forestry Work published by ILO and Labor Law of the People's Republic of China and adapted them to meet the local conditions to ensure workers' health and safety. The workers' health and safety policy, evacuation plans is made available for workers and implemented by the village committee.

The substantial risks to worker safety that could arise due to project implementation are forest fire, etc. In forest protection and forest fire prevention and other training, targeted safety training has been carried out for potential risks. Inform workers of risks and how to minimize them during training. In daily work, forest rangers also patrol and inspect to prevent potential risks. The forestry Management Manual developed by PP and Hongshan Forestry Bureau details the risks

¹² Source from "Description of participants of Hongshan project", which has been provided to VVB

and preventive measures at work. PP has taken measures for technicians timely during this monitoring period, i.e., to replace the old tools and shoes timely, notifies and reminds technicians of the weather forecast to avoid the patrol against the extreme weather.

2.4 Management Capacity

2.4.1 Required Technical Skills (G4.2)

The following skills are required for the development of the project:

Community engagement:

- Ability to get the authorization: the rural project is a project with large number land owners so that the developer should have the ability for getting the authorization that require abundant employee and times; All the villagers agreed to use suitable land for forest collectively owned by the villages to protect forest. Approximately 1,800 local residents who were directly involved in trees maintenance of project, of whom 1,080 were women, accounting for 60 percent.
- Ability to communicate with and invite the villages to participate survey, stakeholder meeting
- Ability to deal with dispute: If there is any intense dispute, the one shall have the ability to deal with it as soon as possible. Moreover, the organizing and coordination ability is essential for the stakeholders' meetings and relevant surveys.

Biodiversity assessment

- Ability to identify the monitoring indicators by means of using method of Pressure, State, and Response (PSR), monitor the net impacts to biodiversity of the project.
- Skill to do CCB monitoring for the developer such as whether the animal increased, their living range enlarged, the number of plants and species increased
- Skills on the development of environmental services: conduct the monitoring plan, evidence collected, draft PD and monitoring report.

Carbon measurement and monitoring skills:

- Conduct the monitoring plan to collect the evidences, measure and record the data of the plots to calculate GHG sink and so on.
- Skills on the development of carbon projects and environmental services: how to draft PD, what evidence collected, how to hold the stakeholders meeting, how to conduct the monitoring plan, how to calculate GHG sink and so on.

2.4.2 Management Team Experience (G4.2)

As mentioned above, local Forestry bureau is the supervision organization which is in charge of guiding and coordinating the project's overall implementation. Local Forestry bureau is in rich experience in carbon measurement, monitoring and biodiversity assessment, artificial afforestation, forest protection and management, forest damage control and technical training.

Zhejiang Zhongzheng Forestry Development Co., Ltd. is the project proponent. The project proponent provides financial support and organizational management. Zhejiang Zhongzheng Forestry Development Co., Ltd. is in rich experience in forest carbon project organizational management. PP and the local forestry bureau play as the expert group that in charge of guiding and coordinating the project's overall implementation and decision-making including community

engagement. The expert group has the adequate experience to organize forestry protection projects with local communities in the past i.e. well-understanding of the social-economic situation of rural areas, demands and livelihoods of rural residents, and familiar with the relevant laws, rules and regulations, thus are capable to communicate smoothly with and invite the village to express their perspectives by different means i.e. meeting, interview, questionnaire, and then to get the authorization with the consent of local residents as well as to deal with dispute under supervision of local forestry bureau, especially the team leader, Mr. Lingfeng Weng, who worked as the village secretary before, and the mainly routine work was communicate with and invite the village, investigating public opinion and resolving disputes for community and etc. He has rich experience in this field. Furthermore, there are also local people from the local forestry bureau who work in this team, who are familiar with local culture and could speak local language. Local government also support the PP to properly engage with local stakeholders.

Zhong Che (Beijing) Environment Energy Technology Development Co., Ltd. is experienced in carbon measurement and monitoring. In the past, Zhong Che (Beijing) Environment Energy Technology Development Co., Ltd. has successfully developed many different carbon projects, including validation and verification under VCS and CDM standard. These experiences will help project proponent to ramp up the capability of project implementing and management.

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

Local Forestry Bureau is in rich experience in carbon measurement, monitoring and biodiversity assessment, artificial afforestation, forest protection and management, forest damage control and technical training. Forestry Bureaus already set up an expert pool on the land, soil, vegetation, animals and other natural resources affected by forests. Besides, forestry bureau fed massive data to the biodiversity report and the experts from that pool will provide assistance and share experience during the biodiversity monitoring.

PP is in rich experience in forest carbon project organizational management and development, are experienced in community engagement in previous project development, including financing, artificial afforestation, forest protection and management, forest damage control and technical training. PP and the local forestry bureau play as the expert group that in charge of guiding and coordinating the project's overall implementation and decision-making including community engagement. The expert group has the adequate experience to organize forestry protection projects with local communities in the past i.e. well-understanding of the social-economic situation of rural areas, demands and livelihoods of rural residents, and familiar with the relevant laws, rules and regulations, thus are capable to communicate smoothly with and invite the village to express their perspectives by different means i.e. meeting, interview, questionnaire, and then to get the authorization with the consent of local residents as well as to deal with dispute under supervision of local forestry bureau, especially the team leader, Mr. Lingfeng Weng, who worked as the village secretary before, and the mainly routine work was communicate with and invite the village, investigating public opinion and resolving disputes for community and etc. He has rich experience in this field. Furthermore, there are also local people from the local forestry bureau who work in this team, who are familiar with local culture and could speak local language. Local government also support the PP to properly engage with local stakeholders.

Zhong Che (Beijing) Environment Energy Technology Development Co., Ltd. is rich experienced in development of carbon projects and forest project management, community engagement.

Therefore, the project management team and project participants have sufficient experience and skills required by the project. The management team of the project is experience in forest project management and carbon project development, including local Forestry Bureau has provided instruction of afforestation and forest management, conduct the specific supervision of the implementation. The local Forestry Bureau would provide technical support for forest management.

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

All the project participators including Zhejiang Zhongzheng Forestry Development Co., Ltd. and Zhong Che are legally registered companies in China, and according to the public information listed in National Enterprise Credit Information Publicity System, none of them were involved in nor complicit in any form of corruption such as bribery, embezzlement, fraud, favoritism, cronyism, nepotism, extortion, and collusion. All the project participators have been running well for several years. Furthermore, PP has carried out financial audit, so PP continued to exist and continue to operate the project. The financial audit report attests to the financial health of the company.

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

As legally registered companies, the project proponent and other involved entities have the obligation to comply with relevant regulations, including anti-corruption law. The annual audit by the government makes sure that it operates with full compliance with China law and regulations.

For preventing the occurrence of corruption, in stakeholder meetings, technical training meetings, villagers' opinion survey, and other personnel gathering occasions, project proponent and village committee leaders have repeatedly reiterated the serious consequences of corruption and immoral behavior, so that project participants have been awakened and paid attention to this. In addition, project proponent set up a mechanism for villagers to report violations if they are found. The contact between stakeholders is two-way feedback, and project information can be shared at all levels of platforms, so there is no corruption in any form.

2.4.6 Commercially Sensitive Information (Rules 3.5.13 – 3.5.14)

None of the project documents will be considered as commercially sensitive information, and all of the documentations are available to any stakeholders.

2.5 Legal Status and Property Rights

2.5.1 Recognition of Property Rights (G5.1)

The ownership of the forest land of the project belongs to the local village committee, the right to use the forest land belongs to the villagers, and there is no dispute over land ownership in the

project site. The villagers signed Project Development Cooperation Agreement¹³ with Zhong Che (Beijing) Environment Energy Technology Development Co., Ltd. (Founded in May 2013 and hereafter “Zhong Che”) on 06/01/2015, the local village committee authorizes Zhong Che to use the land for the forest management. Due to the shortage of funds in the later stage of project operation, Zhong Che terminated the agreement on project development. On 15/02/2019, a new tripartite Carbon Sink Cooperation Development Agreement¹⁴ was signed by local village committee, Zhejiang Zhongzheng Forestry Development Co., Ltd. (Founded in January 2019) and Zhong Che (Beijing) Environment Energy Technology Development Co., Ltd. Zhejiang Zhongzheng Forestry Development Co., Ltd. was the new project proponent, and Zhong Che was the consultant of the project. The project proponent was authorized by local village committees to use the land for the forest management while the local village committees and PP have the ownership and legal right of the carbon sink credit of this project.

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

Before signing the initial Project Development Cooperation Agreement, the original PP Zhong Che has carried out the stakeholder consultation and all villagers agreed to participate in the project. Due to the shortage of funds in the later stage of project operation, to make sure the successful development of the project, a new tripartite Carbon Sink Cooperation Development Agreement was signed by the local village committees, the new PP (Zhejiang Zhongzheng Forestry Development Co., Ltd.) and Zhong Che (the consultant). Before signing the new agreement, PP put the notice about the change of PP on the bulletin boards and informed the local villagers through routine villager assembly and no objection was raised. Thus, the agreement is signed based on the principle of voluntary and legal. The new agreement clearly defines the rights of each party involved, so, the project will not encroach uninvited on private property, community property or government property.

2.5.3 Property Right Protection (G5.3)

Prior to the project implementation, the project land use continues to be used as the timber harvest land, the village committee and the villagers of the village voluntarily converse the trees to protected forest instead of logging, villagers with forest land also have no other forest land outside the project boundary, which will not lead to the transfer of project activities. Therefore, the project activities will not force rights holder to relocate activities important to their culture or livelihood. The village committees signed the carbon sink project development agreement on the basis of equality, freedom and prior informed. If the villagers carried out any housing relocation and other situations within the scope of the agreement, they would receive fair compensation. During this monitoring period, there was no housing relocation and other situations.

2.5.4 Identification of Illegal Activity (G5.4)

According to the "Constitution of the People's Republic of China" and the "Forest Law of the People's Republic of China", the land is village collective property, that is, Local farmers have the right to use the land within the project boundary, and local government is responsible for the comprehensive implementation and management of the project.

According to the reply on cessation of commercial logging from Hongshan Forestry Bureau, commercial timber harvesting will be completely stopped from January 1, 2015. The forestry

¹³ The agreement has been submitted to VVB

¹⁴ The agreement has been submitted to VVB

bureau would strengthen the forest cutting supervision mechanism to ensure that commercial logging is stopped in strict accordance with the requirements. The forestry bureau would strengthen the supervision of cutting area design, cutting operation and wood transportation, implement the accountability system and clarify the supervision responsibility. During the project period, PP also hired villagers as forest rangers to manage and protect the forest to prevent logging.

Under current law of China, any illegal logging activities will be fined or sentenced to punishment. Currently all project lands are defined for forestry purpose by local government. Deforestation must be carried on under the approval of local Forestry Bureau, and the forests are nursed by project staff regularly as a result of the implementation of the project, so there will not be illegal deforestation. The cutting is forbidden during the lifetime of the project¹⁵. The project benefits are gained from legal activities. Therefore, the project's climate, community and biodiversity impacts would not be affected by the illegal activities.

2.5.5 Ongoing Disputes (G5.5)

The forest land was developed reasonably and legally with the consent of villagers, meanwhile, there is no ongoing disputes have been informed about to the project developer during the project implementation. So, there is neither ongoing or unresolved conflicts or disputes over rights to lands, territories and resources nor any disputes that were resolved and recorded during this monitoring period.

2.5.6 National and Local Laws (G5.6)

The project conforms to all kinds of regulations in the forestry field, as listed below:

PRC Constitution, PRC Forest Law, PRC Forest Law Implementing Regulations, PRC Wildlife Protection Law, Forest Fire Prevention Regulations, Insect Control Regulation, PRC Production Safety Law, PRC Labour Law; PRC anti-corruption law; Regulations for tending of forest;

As legally registered companies, the project proponent and other involved entities have the obligation to comply with relevant regulations, including anti-corruption law. The annual audit makes sure that it operates with full compliance with China law and regulations. In China, all the companies and projects should comply with relevant laws, otherwise will be punished. The project from the declaration, design, maintenance and so on the whole process is under the supervision and guidance of the government departments.

The project has complied with the above regulations and laws during construction period and will be under regular inspection by local government during the implementation period to ensure the continuous compliance.

¹⁵ Source from PRC Forest Law Implementing Regulations, and there is a ban on logging in the project development contract.

3 CLIMATE

3.1 Monitoring GHG Emission Reductions and Removals

3.1.1 Data and Parameters Available at Validation

Data / Parameter:	$V_{l,j,i,sp}$
Data unit:	m ³
Description:	Merchantable volume for tree l of species j in sample plot sp in stratum i
Source of data:	<p>Calculated from volume tables or equations linking diameter at breast height (DBH, at typically 1.3 m aboveground level), and merchantable height (MH), to commercial (merchantable) volume of trees in the sample plots above the minimum DBH set in the timber harvest plan.</p> <p>If locally derived equations or yield tables are not available use relevant regional, national or default equations from IPCC literature, national inventory reports or published peer-reviewed studies– such as those provided in Tables 4.A.1 to 4.A.3 of the GPG-LULUCF (IPCC 2003).</p>
Value applied:	See the detailed excel spreadsheet
Justification of choice of data or description of measurement methods and procedures applied:	<p>It is necessary to verify the applicability of equations used. Allometric equations can be verified by both:</p> <ol style="list-style-type: none"> 1. Verification of equation conditions Justification should be provided for the applicability of the equation to the project locations. Such justification should include identification of climatic, edaphic, geographical and taxonomic similarities between the project location and the location in which the equation was derived. Any equation used should have an r2 value of greater than 0.5 (50%) and a p value that is significant (<0.05 at the 95% confidence level). 2. Additional field verification The following limited measures method must be used for field verification: select at least 10 trees per species distributed across the age range (but excluding trees less than 15 years old for which there is rarely a great relative inaccuracy in equations); measure DBH, and height to a 10 cm diameter top or to the first branch; calculate stem volume from measurements; and plot the estimated volume of all the measured trees along with the curve of volume against diameter as predicted by the allometric equation. If the estimated volume of the measured trees are distributed both above and below the curve (as predicted by the allometric equation)

	the equation may be used. The equation may also be used if the measured individuals have a volume consistently higher than predicted by the equation. The equation may not be used if >75% of the measured trees have a volume lower than the predicted curve. In this instance another equation must be selected.
Purpose of Data	Calculation of baseline emissions
Comments:	N/A

Data / Parameter	CF _j
Data unit	tC*td*m ⁻¹
Description	Carbon fraction of dry matter for species j
Source of data	According to VM0010 version 1.3, the default value 0.5 tC·t d.m. ⁻¹ is used and the same value is used in all instances where this parameter is used.
Value applied:	0.5
Justification of choice of data or description	N/A
Purpose of Data	Calculation of baseline emissions
Comments	N/A

Data / Parameter	D _j										
Data unit	td.m.m ⁻³										
Description	Basic wood density of species j in t d.m.m ⁻³										
Source of data	Registered VCS PD										
Value applied:	<table border="1"> <thead> <tr> <th>Tree species</th> <th>D_j</th> </tr> </thead> <tbody> <tr> <td>Oak</td> <td>0.676</td> </tr> <tr> <td>Masson Pine</td> <td>0.380</td> </tr> <tr> <td>Broad-Leaved Mixed</td> <td>0.482</td> </tr> <tr> <td>Coniferous and Broad-Leaved Mixed</td> <td>0.486</td> </tr> </tbody> </table>	Tree species	D _j	Oak	0.676	Masson Pine	0.380	Broad-Leaved Mixed	0.482	Coniferous and Broad-Leaved Mixed	0.486
Tree species	D _j										
Oak	0.676										
Masson Pine	0.380										
Broad-Leaved Mixed	0.482										
Coniferous and Broad-Leaved Mixed	0.486										
Justification of choice of data or description of measurement methods and	National GHG inventory										
Purpose of Data	Calculation of baseline emissions										
Comments	N/A										

Data / Parameter:	Allometric equation for aboveground volume of tree species
Data unit:	m ³ .tree ⁻¹
Description:	Allometric equations for tree species linking measured DBH to aboveground volume of living trees
Source of data:	Sourced from one-way volume table published by Hubei Province Forestry Bureau
Value applied	<p>Oak: $V=0.000050479054*(-0.00865256+0.98022711*DBH)^{1.9085054}*(45.800405-2312.6324/(DBH+53))^{0.99076507}$</p> <p>Masson Pine: $V=0.000060049144*(-0.12811477+0.98667991*DBH)^{1.8719753}*(22.154621-401.74642/(DBH+17))^{0.97180232}$</p> <p>Broad-Leaved Mixed: $V=0.000050479054*(-0.08545945+0.98378931*DBH)^{1.9085054}*(47.585585-2982.1638/(DBH+65))^{0.99076507}$</p> <p>Coniferous and Broad-Leaved Mixed: $V=0.000058777042*(-0.22853712+0.98797212*DBH)^{1.9699831}*(56.012561-4023.9105/(DBH+73))^{0.89646157}$</p>
Justification of choice of data or description of measurement methods and procedures applied:	<p>The allometric equations for aboveground volume of trees are sourced from one-way volume table published by Hubei Province Forestry Bureau based on the measurement of the tree species in Hubei Province where the project locates in.</p> <p>The allometric equations are based on the datasets that comprise more than 100 trees, and use the significant regressions equation calculated by using computer programs, the R² is >0.9.</p> <p>The compiling process follows the "Technical regulations of drafting of one-way volume table (LY/T2414-2015)"¹⁶ and published by Provincial Forestry Bureau</p>
Purpose of Data	Calculation of project emissions
Comments:	N/A

Data / Parameter:	BCEFR
Data unit:	td.m.m ⁻³
Description:	Biomass conversion and expansion factor applicable to wood removals in the project area
Source of data:	<p>The source of data must be chosen with priority from higher to lower preference as follows:</p> <p>Existing local forest type-specific;</p> <p>National forest type-specific or eco-region-specific (eg, from</p>

¹⁶ <https://www.renrendoc.com/paper/207744006.html>

	<p>national GHG inventory); Forest type-specific or eco-region-specific from neighboring countries with similar conditions. Sometimes (c) might be preferable to (b); Global forest type or eco-region-specific (eg, IPCC 2006 INV GLs AFOLU Chapter 4 Table 4.5). Alternatively: $BCEFR = BEF * D$ Where $BCEFR$ values are not directly available, they can be calculated as Biomass Expansion Factor (BEF)* basic wood density (D). Application of this equation requires caution because basic wood density and biomass expansion factors tend to be correlated. If the same sample of trees was used to determine D, BEF or BCEF, conversion will not introduce error, therefore, it is acceptable to use this equation. If, however, basic wood density is not known with certainty, transforming one into the other might introduce error, as BCEF implies a specific but unknown basic wood density, therefore, all conversion and expansion factors must be derived or their applicability checked locally. "Land Use Change and Forestry GHG Inventory (2013)" of "Second National Information Notification on China Climate Change" matches the second choice.</p>										
Value applied:	<table border="1" data-bbox="651 1079 1159 1375"> <thead> <tr> <th data-bbox="651 1079 875 1129">Tree species</th> <th data-bbox="875 1079 1159 1129">$BCEFR$</th> </tr> </thead> <tbody> <tr> <td data-bbox="651 1129 875 1178">Oak</td> <td data-bbox="875 1129 1159 1178">0.916</td> </tr> <tr> <td data-bbox="651 1178 875 1226">Masson Pine</td> <td data-bbox="875 1178 1159 1226">0.559</td> </tr> <tr> <td data-bbox="651 1226 875 1283">Broad-Leaved Mixed</td> <td data-bbox="875 1226 1159 1283">0.73</td> </tr> <tr> <td data-bbox="651 1283 875 1375">Coniferous and Broad-Leaved Mixed</td> <td data-bbox="875 1283 1159 1375">0.805</td> </tr> </tbody> </table>	Tree species	$BCEFR$	Oak	0.916	Masson Pine	0.559	Broad-Leaved Mixed	0.73	Coniferous and Broad-Leaved Mixed	0.805
Tree species	$BCEFR$										
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Masson Pine	0.559										
Broad-Leaved Mixed	0.73										
Coniferous and Broad-Leaved Mixed	0.805										
Justification of choice of data or description of measurement methods and procedures applied:	National GHG inventory										
Purpose of Data	Calculation of baseline emissions										
Comments:	<p>The combustion factor is a measure of the proportion of the fuel that is actually combusted, which varies as a function of the size and architecture of the fuel load (ie, a smaller proportion of large, coarse fuel such as tree stems will be burnt compared to fine fuels, such as grass leaves), the moisture content of the fuel and the type of fire (ie, intensity and rate of spread). Default values must be updated whenever new guidelines are produced by the IPCC</p>										

Data / Parameter:	G _{gi}
Data unit:	g kg ⁻¹ dry matter burnt
Description:	Emission factor for stratum i for gas g
Source of data:	Defaults can be found in Volume 4, Chapter 2, of the IPCC 2006 Inventory Guidelines in table 2.5
Value applied:	Please refer to the spreadsheet
Justification of choice of data or description of measurement methods and procedures applied:	N/A
Purpose of Data	Calculation of baseline emissions
Comments:	Default values shall be updated whenever new guidelines are produced by the IPCC

Data / Parameter:	OF, SLF, WW
Data unit:	Kg kg ⁻¹
Description:	<p>OF = Fraction of wood products that will be emitted to the atmosphere between 3 and 100 years after production;</p> <p>SLF = Fraction of wood products that will be emitted to the atmosphere within 3 years of production; and</p> <p>WW = Fraction of extracted biomass effectively emitted to the atmosphere during production</p> <p>Wood waste fraction (WW):</p> <p>Winjum et al. 1998 indicate that the proportion of extracted biomass that is oxidized (burning or decaying) from the production of commodities to be equal to 19% for developed countries, 24% for developing countries.</p> <p>Short-lived fraction (SLF)</p> <p>Winjumetal1998 give decay rates for proportions of wood products, which were converted to with short-term (<3yr) uses (applicable internationally) as below:</p> <p>Sawnwood 0.12</p> <p>Woodbase panels 0.06</p> <p>Other industrial roundwood 0.18</p> <p>Paper and Paperboard 0.24</p> <p>Additional oxidized fraction (OF)</p> <p>Winjum et al 1998 gives annual oxidation fractions for each class of wood products split by forest region (boreal, temperate and tropical).</p> <p>This methodology projects these fractions over 95 years to give the additional proportion that is oxidized between the 3rd and the 100th</p>

	year after initial harvest:																							
	<table border="1"> <thead> <tr> <th rowspan="2">Wood Product Class</th> <th colspan="3">OF</th> </tr> <tr> <th>Boreal</th> <th>Temperate</th> <th>Tropical</th> </tr> </thead> <tbody> <tr> <td>Sawnwood</td> <td>0.39</td> <td>0.62</td> <td>0.86</td> </tr> <tr> <td>Woodbase panels</td> <td>0.62</td> <td>0.86</td> <td>0.98</td> </tr> <tr> <td>Other industrial roundwood</td> <td>0.86</td> <td>0.98</td> <td>0.99</td> </tr> <tr> <td>Paper and paperboard</td> <td>0.39</td> <td>0.62</td> <td>0.99</td> </tr> </tbody> </table>	Wood Product Class	OF			Boreal	Temperate	Tropical	Sawnwood	0.39	0.62	0.86	Woodbase panels	0.62	0.86	0.98	Other industrial roundwood	0.86	0.98	0.99	Paper and paperboard	0.39	0.62	0.99
Wood Product Class	OF																							
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Paper and paperboard	0.39	0.62	0.99																					
Source of data:	According to VM0010 version 1.3, the default values are chosen.																							
Value applied:	<table border="1"> <thead> <tr> <th>Parameters</th> <th>Species</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>OF</td> <td>Oak/ Masson Pine/Broad-Leaved Mixed/Coniferous and Broad-Leaved Mixed</td> <td>0.62</td> </tr> <tr> <td>SLF</td> <td>Oak/ Masson Pine/Broad-Leaved Mixed/Coniferous and Broad-Leaved Mixed</td> <td>0.12</td> </tr> <tr> <td>WW</td> <td>Oak/ Masson Pine/Broad-Leaved Mixed/Coniferous and Broad-Leaved Mixed</td> <td>24%</td> </tr> </tbody> </table>	Parameters	Species	Value	OF	Oak/ Masson Pine/Broad-Leaved Mixed/Coniferous and Broad-Leaved Mixed	0.62	SLF	Oak/ Masson Pine/Broad-Leaved Mixed/Coniferous and Broad-Leaved Mixed	0.12	WW	Oak/ Masson Pine/Broad-Leaved Mixed/Coniferous and Broad-Leaved Mixed	24%											
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WW	Oak/ Masson Pine/Broad-Leaved Mixed/Coniferous and Broad-Leaved Mixed	24%																						
Justification of choice of data or description of measurement methods and procedures applied:	National GHG inventory																							
Purpose of Data	Calculation of baseline emissions																							
Comments:	N/A																							

Data / Parameter:	RGR _i
Data unit:	tC.ha ⁻¹ .yr ⁻¹
Description:	Forest regrowth rate post timber harvest for stratum i
Source of data:	Regrowth rate must be calculated from either a) data generated in a reference area using measurements of timber volume in a chrono sequence of replicated sample plots; or b) published data on forest growth after timber harvest of the same forest type within the same region as the project; or c) the IPCC default values for aboveground net biomass growth in natural forests.

Value applied:	<table border="1"> <thead> <tr> <th>Species</th> <th>Value</th> <th>Unit</th> </tr> </thead> <tbody> <tr> <td>Oak</td> <td>1.5</td> <td>m³.ha⁻¹.yr⁻¹</td> </tr> <tr> <td>Masson Pine</td> <td>1.5</td> <td>m³.ha⁻¹.yr⁻¹</td> </tr> <tr> <td>Broad-Leaved Mixed</td> <td>1.5</td> <td>m³.ha⁻¹.yr⁻¹</td> </tr> <tr> <td>Coniferous and Broad-Leaved Mixed</td> <td>1.5</td> <td>m³.ha⁻¹.yr⁻¹</td> </tr> </tbody> </table>	Species	Value	Unit	Oak	1.5	m ³ .ha ⁻¹ .yr ⁻¹	Masson Pine	1.5	m ³ .ha ⁻¹ .yr ⁻¹	Broad-Leaved Mixed	1.5	m ³ .ha ⁻¹ .yr ⁻¹	Coniferous and Broad-Leaved Mixed	1.5	m ³ .ha ⁻¹ .yr ⁻¹
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	Broad-Leaved Mixed	1.5	m ³ .ha ⁻¹ .yr ⁻¹													
Coniferous and Broad-Leaved Mixed	1.5	m ³ .ha ⁻¹ .yr ⁻¹														
Justification of choice of data or description of measurement methods and procedures applied:	<p>Method b is applied. The average annual regrowth is confirmed by local Forestry Bureau.</p> <p>And the RGR_i can therefore be calculated by the biomass expansion factor, density and carbon fraction of the separate species.</p>															
Purpose of Data	Calculation of baseline emissions															
Comments:	Default values must be updated whenever new guidelines are produced by the IPCC															

Data / Parameter:	V _{EX,j,i} BSL
Data unit:	m ³ .ha ⁻¹
Description:	Mean volume of extracted timber per unit area for species j in stratum i
Source of data:	The timber harvest plan sets the allowable mean extracted volume is equal to the merchantable volume of timber in the forest inventory (V _{j,i} BSL), based on legal limits.
Value applied:	please refer to ER sheet
Justification of choice of data or description of measurement methods and procedures applied:	The measurement method is from academic paper and equations developed for regional forest types. Please refer to ER sheet
Purpose of Data	Calculation of baseline emissions
Comments:	N/A

Data / Parameter:	A _{i,p}
Data unit:	Ha
Description:	Area covered by stratum i over land parcel p
Source of data:	Geodetic coordinates and/or Remote Sensing data and/or legal parcel records
Value applied:	See the detailed Project Land Form
Justification of choice of data or description of measurement methods	N/A

and procedures applied:	
Purpose of Data	Calculation of baseline emissions-
Comments:	It must be assumed ex-ante that land parcel boundaries and strata areas must not change through time

Data / Parameter:	$A_{1,i,p}$
Data unit:	Ha
Description:	The area of stratum i in land parcel p that was harvested 1 year ago
Source of data:	Geodetic coordinates, GIS Files or legal parcel records
Value applied:	See the detailed Project Land Form
Justification of choice of data or description of measurement methods and procedures applied:	N/A
Purpose of Data	Calculation of baseline emissions
Comments:	N/A

Data / Parameter:	$A_{2-10,i,p}$
Data unit:	Ha
Description:	The area of stratum i in land parcel p that was harvested between 2 and 10 year ago
Source of data:	Geodetic coordinates, GIS Files or legal parcel records
Value applied:	See the detailed Project Land Form
Justification of choice of data or description of measurement methods and procedures applied:	N/A
Purpose of Data	Calculation of baseline emissions
Comments:	N/A

Data / Parameter:	$A_{11-20,i,p}$
Data unit:	Ha
Description:	The area of stratum i in land parcel p that was harvested between 11 and 20 year ago
Source of data:	Geodetic coordinates, GIS Files or legal parcel records
Value applied:	See the detailed Project Land Form
Justification of choice of data or description of measurement methods and	N/A

procedures applied:	
Purpose of Data	Calculation of baseline emissions
Comments:	N/A

Data / Parameter:	A_t^*
Data unit:	Ha
Description:	Cumulative area harvested until time t^*
Source of data:	Geodetic coordinates, GIS Files or legal parcel records
Value applied:	See the detailed Project Land Form
Justification of choice of data or description of measurement methods and procedures applied:	N/A
Purpose of Data	Calculation of baseline emissions
Comments:	N/A

Data / Parameter:	$A_{s,p}$
Data unit:	Ha
Description:	Area of sample plot
Source of data:	Recording and archiving of size of sample plots
Value applied	0.04
Justification of choice of data or description of measurement methods and procedures applied:	Standard procedures for plot delineation in forest timber inventory surveys shall be used
Purpose of Data	Calculation of baseline emissions
Comments:	Ex-ante the size of the plots shall be defined and recorded in the monitoring plan.

3.1.2 Data and Parameters Monitored

Data / Parameter:	Illegal Logging PRA Results
Data unit:	Dimensionless
Description:	N/A
Source of data:	PRA
Description of measurement methods and procedures to be applied:	The PRA must evaluate whether timber harvest may be occurring in the project area and shall consist of semi-structured interviews/questionnaires. If $\geq 10\%$ of those interviewed/surveyed believe that illegal logging may be occurring within the project boundary then the limited on-

	<p>the-ground illegal logging survey shall be triggered.</p> <p>An additional output of the PRA shall be a depth of penetration of illegal logging pressure. A maximum distance shall be recorded for penetration into the forest from access points (such as roads, rivers, already cleared areas) for the purpose of harvesting timber.</p>
Frequency of monitoring/recording:	Every two years
Value monitored:	No illegal logging occurs during the monitoring period within the project boundary.
Monitoring equipment:	N/A
QA/QC procedures to be applied:	N/A
Purpose of Data	Calculation of project emissions
Calculation method:	N/A
Comments:	Ex ante estimation shall be made of illegal logging in the with-project case. If the belief is that zero illegal logging will occur within the project boundaries then this parameter may be set to zero if clear infrastructure, hiring and policies are in place to prevent illegal logging.

Data / Parameter:	Result of Limited Illegal Logging Survey
Data unit:	Dimensionless
Description:	N/A
Source of data:	Limited on-the-ground illegal logging survey
Description of measurement methods and procedures to be applied:	Sampled by surveying multiple transects of known length and width across the access-buffer area to check whether new tree stumps are evident or not. The access-buffer area shall be equal in area to at least 1% of $A_{DIST_IL,i}$
Frequency of monitoring/recording:	Must to be repeated each time the PRA indicates a potential for illegal logging.
Value monitored:	0
Monitoring equipment:	N/A
QA/QC procedures to be applied:	There is no Illegal Logging log recorded by forest rangers during this monitoring period and there is clear infrastructure, hiring and policies are in place to prevent illegal logging.
Purpose of Data	Calculation of project emissions
Calculation method:	N/A
Comments:	Ex ante an estimation shall be made of illegal logging in the with-project case. If the belief is that zero illegal logging will occur within the project boundaries then this parameter may be set to zero if clear infrastructure, hiring and policies are in place to prevent illegal logging.

Data / Parameter:	$A_{burn,i,t}$
Data unit:	ha
Description:	Area burnt in stratum i at time t
Source of data:	Geodetic coordinates and / or Remote Sensing data
Description of measurement methods and procedures to be applied:	N/A
Frequency of monitoring/recording:	Areas burnt must be monitored at least every five years
Value monitored:	0
Monitoring equipment:	N/A
QA/QC procedures to be applied:	Standard quality control/quality assurance (QA/QC) procedures for forest inventory including field data collection and data management shall be applied. Use or adaptation of QA/QCs already applied in national forest monitoring, or available from published handbooks, or from the IPCC GPG LULUCF 2003, is recommended.
Purpose of Data	Calculation of project emissions
Calculation method:	N/A
Comments:	Ex ante estimations of areas burned shall be based on historic incidence of fire in the Project region

Data / Parameter:	$A_{dist,i,t}$
Data unit:	Ha
Description:	Area disturbed in stratum i at time t
Source of data:	Geodetic coordinates and / or Remote Sensing data
Description of measurement methods and procedures to be applied:	N/A
Frequency of monitoring/recording:	Areas disturbed shall be monitored at least every five years
Value monitored:	0
Monitoring equipment:	N/A
QA/QC procedures to be applied:	Standard quality control/quality assurance (QA/QC) procedures for forest inventory including field data collection and data management shall be applied. Use or adaptation of QA/QCs already applied in national forest monitoring, or available from published handbooks, or from the IPCC GPG LULUCF 2003, is

	recommended.
Purpose of Data	Calculation of project emissions
Calculation method:	N/A
Comments:	Ex ante estimations of areas burned must be based on historic incidence of fire in the Project region

Data / Parameter:	A _{DIST_IL,i}
Data unit:	ha
Description:	Area potentially impacted by illegal logging in stratum i
Source of data:	GIS delineation and ground truthing
Description of measurement methods and procedures to be applied:	Must be composed of a buffer from all access points (access buffer), such as roads and rivers or previously cleared areas. The width of the buffer shall be determined by the depth of degradation penetration as defined as a PRA output
Frequency of monitoring/recording:	Repeated each time the PRA indicates a potential for degradation
Value monitored:	0
Monitoring equipment:	N/A
QA/QC procedures to be applied:	N/A
Purpose of Data	Calculation of project emissions
Calculation method:	N/A
Comments:	Ex ante a limited survey can be used to determine a likely depth of degradation penetration

Data / Parameter:	C _{DIST_IL,i,t PRJ}
Data unit:	tCO ₂ e
Description:	Biomass carbon of trees cut and removed through illegal logging in stratum i at time t
Source of data:	Field measurements in sample plots
Description of measurement methods and procedures to be applied:	The sampling plan must be designed using plots systematically placed over the buffer zone so that they sample at least 3% of the area of the buffer zone (A _{DIST_IL,i}). The diameter of all tree stumps will be measured and conservatively assumed to be the same as the DBH. Where the stump is a large buttress, several individuals of the same species nearby shall be located and a ratio of the diameter at DBH to the diameter of buttress at the same height above ground as the measured stumps shall be determined. This ratio will be applied to the measured stumps to estimate the likely DBH of the cut tree. The aboveground carbon stock of each harvested tree will be estimated using the allometric regression

	equations chosen for forest growth in the project scenario. The mean aboveground carbon stock of the harvested trees is conservatively estimated to be the total emissions and to all enter the atmosphere
Frequency of monitoring/recording:	Repeated each time limited sampling of A _{DIST_IL} , indicates illegal logging
Value monitored:	0
Monitoring equipment:	N/A
QA/QC procedures to be applied:	Standard quality control/quality assurance (QA/QC) procedures for forest inventory including field data collection and data management shall be applied. Use or adaptation of QA/QCs already applied in national forest monitoring, or available from published handbooks, or from the IPCC GPG LULUCF 2003, is recommended.
Purpose of Data	Calculation of project emissions
Calculation method:	N/A
Comments:	If species-specific equations are used and species cannot be identified from stumps then it shall be assumed that the harvested species is the species most commonly harvested. A PRA shall be used to determine the most commonly harvested species.

Data / Parameter:	AP _i
Data unit:	ha
Description:	Total area of illegal logging sample plots in stratum i
Source of data:	Ground measurement
Description of measurement methods and procedures to be applied:	A sampling plan must be designed using multiple sample plots systematically placed across the buffer zone so that they sample at least 3% of the area of the buffer zone.
Frequency of monitoring/recording:	Not more than five years
Value monitored:	0
Monitoring equipment:	N/A
QA/QC procedures to be applied:	Standard quality control/quality assurance (QA/QC) procedures for forest inventory including field data collection and data management shall be applied. Use or adaptation of QA/QCs already applied in national forest monitoring, or available from published handbooks, or from the IPCC GPG LULUCF 2003, is recommended.
Purpose of Data	Calculation of project emissions
Calculation method:	N/A

Comments:	Ex ante estimation should be made of area of plots. This should be set to exactly 3% of the buffer zone $A_{DIST_IL,i}$
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Data / Parameter:	PMP _i																	
Data unit:	%																	
Description:	Merchantable biomass as a proportion of total aboveground tree biomass for stratum i within the project boundaries																	
Source of data:	Within each stratum divide the summed merchantable biomass (defined as total gross biomass of a tree 15cm DBH or larger) by the summed total of aboveground tree biomass.																	
Description of measurement methods and procedures to be applied:	A sampling plan must be designed using multiple sample plots systematically placed across the buffer zone so that they sample at least 3% of the area of the buffer zone.																	
Frequency of monitoring/recording:	Not more than five years																	
Value monitored:		<table border="1"> <thead> <tr> <th>Strata</th> <th>Tree species</th> <th>PMP_i</th> </tr> </thead> <tbody> <tr> <td>Strata-1</td> <td>Oak</td> <td>0.04%</td> </tr> <tr> <td>Strata-2</td> <td>Masson Pine</td> <td>0.43%</td> </tr> <tr> <td>Strata-3</td> <td>Broad-Leaved Mixed</td> <td>0.30%</td> </tr> <tr> <td>Strata-4</td> <td>Coniferous and Broad-Leaved Mixed</td> <td>0.07%</td> </tr> </tbody> </table>	Strata	Tree species	PMP _i	Strata-1	Oak	0.04%	Strata-2	Masson Pine	0.43%	Strata-3	Broad-Leaved Mixed	0.30%	Strata-4	Coniferous and Broad-Leaved Mixed	0.07%	
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Monitoring equipment:	N/A																	
QA/QC procedures to be applied:	Standard quality control/quality assurance (QA/QC) procedures for forest inventory including field data collection and data management shall be applied. Use or adaptation of QA/QCs already applied in national forest monitoring, or available from published handbooks, or from the IPCC GPG LULUCF 2003, is recommended.																	
Purpose of Data	Calculation of project emissions																	
Calculation method:	N/A																	
Comments:	Ex-ante a time zero measurement shall be made of this factor. The timber harvest plan sets the allowable mean extracted volume from the merchantable volume of timber in the forest inventory ($V_{j,i BSL}$), based on legal limits.																	

Data / Parameter	A _i
Data unit	ha
Description	Area of stratum i; Size of sample plot in stratum i
Source of data	Field measurements

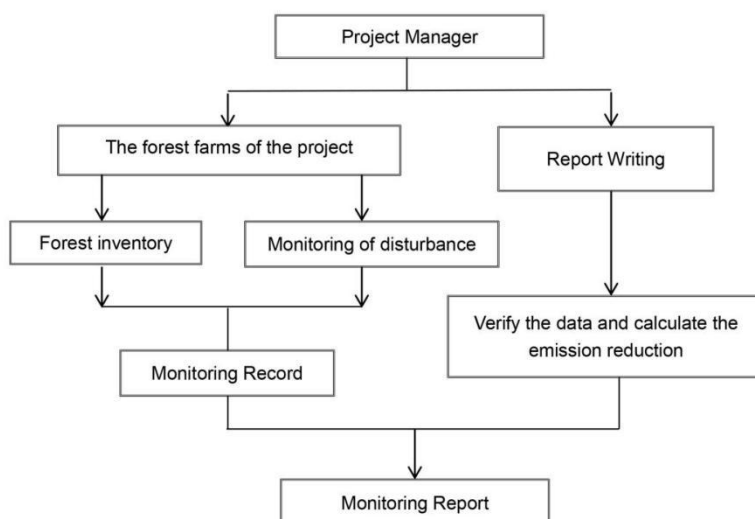
Description of measurement methods and procedures to be applied	Standard operating procedures (SOPs) prescribed under national forest inventory are applied. In absence of these, SOPs from published handbooks, National standard: LY/T 2253-2014 <Guidelines on carbon accounting and monitoring for afforestation project> issued by National Forestry Bureau or from the IPCC GPG LULUCF 2003, may be applied.																	
Frequency of monitoring/recording	Before every verification event																	
Value monitored:	<table border="1"> <thead> <tr> <th>Strata</th> <th>Tree species</th> <th>Area (ha)</th> </tr> </thead> <tbody> <tr> <td>Strata-1</td> <td>Oak</td> <td>7415.59</td> </tr> <tr> <td>Strata-2</td> <td>Masson Pine</td> <td>3087.63</td> </tr> <tr> <td>Strata-3</td> <td>Broad-Leaved Mixed</td> <td>7244.29</td> </tr> <tr> <td>Strata-4</td> <td>Coniferous and Broad-Leaved Mixed</td> <td>6021.91</td> </tr> </tbody> </table>			Strata	Tree species	Area (ha)	Strata-1	Oak	7415.59	Strata-2	Masson Pine	3087.63	Strata-3	Broad-Leaved Mixed	7244.29	Strata-4	Coniferous and Broad-Leaved Mixed	6021.91
Strata	Tree species	Area (ha)																
Strata-1	Oak	7415.59																
Strata-2	Masson Pine	3087.63																
Strata-3	Broad-Leaved Mixed	7244.29																
Strata-4	Coniferous and Broad-Leaved Mixed	6021.91																
Monitoring equipment	Geographic Information System (GIS)																	
QA/QC procedures to be applied	Quality control/quality assurance (QA/QC) procedures prescribed under National Forest Inventory are applied. In absence of these, QA/QC procedures from published handbooks or from IPCC GPG LULUCF 2003 may be applied.																	
Purpose of data	The parameter is used to calculate volume of trees, and then calculate project removals.																	
Calculation method	N/A																	
Comments	N/A																	

Data / Parameter	DBH
Data unit	cm
Description	Diameter at breast height of tree
Source of data	Field measurements in sample plots
Description of measurement methods and procedures to be applied	Usually, the diameter at breast height of the tree, but it could be any other diameter or dimensional measurement (e.g. basal diameter, root-collar diameter, basal area, etc.) applicable for the model or data source used. Standard operating procedures (SOPs) prescribed under national forest inventory are applied. In the absence of these, SOPs from published handbooks, or from the IPCC GPG LULUCF
Frequency of monitoring/recording	Before every verification event (No more than five years)

Value monitored:	See details in ER-sheet
Monitoring equipment	Vernier caliper The equipment mentioned above has a state-recognized certificate of qualification and no need to be calibrated.
QA/QC procedures to be applied	Standard quality control / quality assurance (QA/QC) procedures for forest inventory including field data collection and data management shall be applied. Use or adaptation of QA/QCs already applied in national forest monitoring, or available from published handbooks, or from the IPCC GPG LULUCF 2003, is recommended.
Purpose of data	Calculation of tree volume, then to carbon stock change further to the project emissions.
Calculation method	N/A
Comments	N/A

3.1.3 Monitoring Plan Operation and management structure

The local forestry bureau and Zhong Che set up a team to conduct the monitoring. Zhong Che is the consultant, who prepares the monitoring report. The team is in charge of collecting, monitoring and verifying the data, while the project manager will be assisted by the consultant company. The team has received professional training before the start of the project. The findings should be reported to the project manager and work out a solution. The operational and management structure is as follows:



Monitoring is required to

- a) determine changes in forest carbon stocks and greenhouse gas emissions from project activity;

- b) confirm project activity; and
- c) determine changes in forest carbon stocks and greenhouse gas emissions from disturbance and illegal logging.

In some cases monitoring may also be implemented to update stratification.

The monitoring plan addresses the monitoring of project implementation, the monitoring of actual carbon stock changes from project activity, and estimation of ex-post net carbon stock changes from the conversion of logged to protected forest.

All data collected as part of monitoring were archived electronically, and kept at least for 2 years after the end of the project crediting period. All the forest investigation is implemented according to the primary technical code for the forest resource planning, design and investigation issued by the State Forestry Administration in 2003.

Data archiving took both electronic and paper forms, and copies of all data are available to be provided to each project participant.

All electronic data and reports are copied on hard disk and stored in multiple locations.

The archives include:

Copies of all sample spots recording sheet (including the detailed information of the spot location), forest volume table;

Estimates of the carbon stock changes in all pools and non-CO₂ GHG and corresponding calculation spreadsheets;

GIS products; and

Copies of the measuring and monitoring reports.

The geographic position of the project boundary is recorded for all areas of land;

The geographic coordinates of the project boundary (and any stratification inside the boundary) are established, recorded, archived and achieved by using geo-referenced spatial data of maps.

Principles of forest inventory and management are implemented;

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

The project plan, together with a record of the plan as actually implemented during the project, is available for validation or verification as appropriate.

Based on the availability of data regarding the nature and composition of forest stocks in the project area, stratification is developed on the basis of existing vegetation stratification, where these are documented in the legal right to harvest. In the VCS-PD, 4 strata are specified according to the tree species.

Carbon stocks are measured according to the stock assessment equations with field sampling based on forest inventory methods. Various sources exist to assist with the design of a verifiable forest field inventory based on best practice for sampling, data management and analysis (Box 3).

In the project area the inventory plan is specified as below:

a) adequate forest stratification, sample size estimation methods and consider uncertainty:

The forest stratification is based on the species, which is adequate according to the methodology. The sample size estimation methods, allocation among strata and uncertainty consideration is according to the “Calculation of the number of sample plots for measurements within A/R CDM project activities” (version 02.1.0) approved by the CDM Executive Board.

b) a sampling framework including sample size, plot size, plot shape and information to determine plot location:

The sample size estimation methods, allocation among strata and uncertainty consideration is according to the most recent version of the tool for the “Calculation of the number of sample plots for measurements within A/R CDM project activities” (version 02.1.0) approved by the CDM Executive Board. The calculation process is shown below:

Parameter	Unit	Description
n	dimensionless	Number of sample plots required for estimation of biomass stocks within the project boundary
n_i	dimensionless	Number of sample plots allocated to stratum i for estimation of biomass stocks within the project boundary

The sample plot will be 0.04 ha and at least 3 sample plots will be selected in 1 stratum. Approximate value of the standard deviation of biomass stock in each stratum at the time of estimation is either known from existing data applicable to the project area or existing data related to a similar area, or is estimated on the basis of a preliminary sample or an expert judgement. Number of sample plots required for estimation of biomass stocks within the project boundary is calculated iteratively

Therefore, the following simplified equation can be used for estimating the number of sample plots according to the CDM tool:

$$n = \frac{N * t_{VAL}^2 * (\sum_i w_i * s_i)^2}{N * E^2 + t_{VAL}^2 * \sum_i w_i * s_i^2} \quad (1)$$

where:

n	Number of sample plots required for estimation of biomass stocks within the project boundary; dimensionless
t _{VAL}	Two-sided Student's t-value at infinite degrees of freedom for the required confidence level; dimensionless
E	Acceptable margin of error (i.e. one-half the confidence interval) in estimation of biomass stock within the project boundary; t d.m. (or t d.m. ha ⁻¹), i.e. in the units used for S _i
ω _i	Relative weight of the area of stratum i (i.e. the area of the stratum i divided by the project area); dimensionless
S _i	Estimated standard deviation of biomass stock in stratum i; t d.m. (or t d.m. ha ⁻¹)
i	1, 2, 3, ... biomass stock estimation strata within the project boundary

After the estimation of total number of sample plots (n), allocation of number of sample plots among strata is calculated as:

$$n_i = n * \frac{\omega_i + S_i}{\sum_i \omega_i + S_i} \quad (2)$$

where:

n _i	Number of sample plots allocated to stratum i; dimensionless
n	Number of sample plots required for estimation of biomass stocks within the project boundary; dimensionless
ω _i	Relative weight of the area of stratum i (i.e. the area of the stratum i divided by the project area); dimensionless
S _i	Estimated standard deviation of biomass stock in stratum i; t d.m. (or t d.m. ha ⁻¹)
i	1, 2, 3, ... biomass stock estimation strata within the project boundary

Based on the data of biomass stocks in a carbon pool in the baseline scenario, the estimation of number of sample plots required is shown in the VCS-PD, total number of plots is 171.

According to the Guidelines for sampling and surveys for CDM project activities and programmes of activities, version 0.4.0, the sampling approach type of this project is Stratified random sampling. The total number of sample plots required of each stratum is calculated according to the approved CDM A/R Methodological Tool "Calculation of the number of sample plots for measurements within A/R CDM project activities" (version 02.1.0) and are shown in the above table. And the selection of the sample plots for each stratum was by random following the next 3 steps:

- 1) Give each plot in each stratum with numbering (ID) from 1 to total number of plots;
- 2) Select the sampling plots' IDs randomly according to the number of samplings of each stratum by using excel function rand between (1, number of samplings). The duplicated number will be replaced by another random selection;
- 3) Confirm the required sample plots' location.

Carbon stock changes over time have been estimated by taking measurements in plots at each monitoring event measured in 2014 just before the project started and re-measured in June 2023. The number of years between the monitoring intervals July 2019 and September 2023 is 4.25 years.

The monitoring campaign of individual trees which were to be harvested in the baseline scenario of the sampling plot were measured, which includes the ages, species, DBH and any parameters the needed.

QA/QC procedures

QA/QC systematic internal review and correction process were used to assure/control the quality. The technicians provided the original records, local Forestry Bureau and PP checked the original data. When they find the negative growth which may be caused by data entry errors, they should turn to technicians and then correct the data before sharing with Zhong Che. Zhong Che should draft the monitoring report based on the raw data and cross-check with the forestry bureau experts. If there are no further comments from the experts, Zhong Che finalised the monitoring report. All parties are required to reply to any questions raised within 30 days. The monitoring equipment should be calibrated if needed or updated if there are more efficient monitoring equipment available. The forestry bureaus are responsible for the monitoring equipment calibration or update.

The following QA/QC procedures were adopted:

- a) Training was provided to the staff to guarantee the implementation of the monitoring plan, all the relevant staff is obliged to take the training course before the operation starts;
- b) The monitoring team checked the monitoring equipment regularly to make sure their normal operation and routine calibration will be conducted by the monitoring team before each monitoring activities;
- c) If the validated monitoring plan cannot be conducted during the following monitoring process due to some reason, an updated monitoring plan should be submitted to VVB during the corresponding verification by indicating the relevant deviation of the original plan and the reason for the deviation.

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

After the monitoring activities finished, the project proponent prepared a draft monitoring report along with a short version of MR summary in Chinese which has been published on Verra website. Also, the summary of monitoring results and monitoring plan have been disseminated to local communities through local project leader and the contact information of monitoring staff from project proponent has also been provided in case the local communities have any questions regarding the monitoring procedures and results.

Technical staff from local Forestry Bureau also explained the monitoring plan to local farmers, especially to illiterate or under-educated farmers. Also, a contact person with phone numbers was

published in case any stakeholders want to directly contact the project proponent and raise opinions.

During this verification, the monitoring team summarized all the comments received from stakeholders and corresponding responses regarding the monitoring plan and results, and published on VCS and CCB website along with the monitoring report for each monitoring period.

3.2 Quantification of GHG Emission Reductions and Removals

3.2.1 Baseline Emissions

Baseline projections are calculated ex-ante and are not adjusted through-out the project lifetime.

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

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

The annualized calculations vary between years 1, 2-10; 11-20; and all years since the start of the project activity, depending on which decay functions apply.

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

$$\Delta C_{NET|BSL(1)} = \sum_{i,p} A_{1,i,p} * \sum_{i=1}^M (C_{DWSLASH,i,p|BSL}/10) + C_{WP0,i,p|BSL} + (C_{WP100,i,p|BSL}/20) \quad (3)$$

Where:

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

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

$$\Delta C_{NET|BSL(2-10)} = \sum_{i,p} A_{2-10,i,p} * \sum_{i=1}^M (C_{DWSLASH,i,p|BSL}/10) + (C_{WP100,i,p|BSL}/20) \quad (4)$$

Where:

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

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

$$\Delta C_{NET|BSL(11-20)} = \sum_{i,p} A_{11-20,i,p} * \sum_{i=1}^M (C_{WP100,i,p|BSL}/20) \quad (5)$$

Where:

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

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

$$\Delta C_{NET|BSL(1+)} = \sum_i A_{t+} * \sum_{i=1}^M (-\Delta C_{RG,i,p|BSL}) \quad (6)$$

Where:

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

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

$$\Delta C_{NET|BSL,t^*} = \sum_{p=1}^P \Delta C_{NET|BSL(1)} + \Delta C_{NET|BSL(2-10)} + \Delta C_{NET|BSL(11-20)} + \Delta C_{NET|BSL(1+)} \quad (7)$$

Where:

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

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

$$GHG_{NET|BSL,t^*} = \Delta C_{NET|BSL,t^*} * \frac{44}{12} \quad (8)$$

Where:

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

The baseline emission process has been demonstrated in the PD of the project.

3.2.2 Project Emissions

The net greenhouse gas emissions in the project scenario will be equal to emissions resulting from forest disturbance (both illegal logging and natural disturbances) minus carbon sequestration through ongoing forest growth.

Carbon stock changes:

The annual carbon stock change in aboveground biomass of trees in year t is the difference in mean carbon stock in aboveground biomass between sampling events and, when expressed in tCO_{2e}, is calculated as:

$$\Delta C_{AB,t,PRJ} = \left(\sum_{i=1}^M \left(A_i * \frac{C_{AB,i,t2,PRJ} - C_{AB,i,t1,PRJ}}{T} \right) \right) * \frac{44}{12} \quad (9)$$

$\Delta C_{AB,t,PRJ}$ Annual carbon stock change in aboveground biomass of trees in year t. tCO_{2e}yr⁻¹

$\Delta C_{AB,j,t,PRJ}$ Mean aboveground biomass carbon stock of trees in stratum i at time t. tC ha⁻¹

A_i Area covered by stratum i, ha;

sp 1, 2, 3 ... SP sample plots;

T Number of years between monitoring time t1 and t2 (T= t₂-t₁); years;

I 1,2,3... M strata;

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

44/12 Ratio of molecular weights of carbon dioxide and carbon, tCO_{2e} tC⁻¹.

In PE calculation, it is reasonable to use the whole area of the project, as follows:

First of all, all the trees began to sequester the carbon from the start of the project activity, and there will be no logging in the project scenario, so all the carbon will be absorbed in the trees started from the beginning of the project.

Secondly, when calculating PE in the methodology, A_i (Area covered by stratum i) is used, which considers the carbon sequestration of all trees in the project area, which is consistent with the methodology.

In conclusion, this project uses the whole area of the project to calculate PE, which is consistent with the methodology requirements, and is reasonable.

Table 3-1 Basic Parameter used in the project activity

Basic Parameter	Value	Data Unit	Data Source
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D _j	Oak	0.676	t d.m. m ⁻³	"Land Use Change and Forestry GHG Inventory (2013)" of "Second National Information Notification on China Climate Change"
	Masson Pine	0.38	t d.m. m ⁻³	
	Broad-Leaved Mixed	0.482	t d.m. m ⁻³	
	Coniferous and Broad-Leaved Mixed	0.486	t d.m. m ⁻³	
BEF	Oak	1.355	dimensionless	
	Masson Pine	1.472	dimensionless	
	Broad-Leaved Mixed	1.514	dimensionless	
	Coniferous and Broad-Leaved Mixed	1.656	dimensionless	
BCEFR	Oak	0.916	t d.m. m ⁻³	Calculated by BEF and D
	Masson Pine	0.559	t d.m. m ⁻³	
	Broad-Leaved Mixed	0.73	t d.m. m ⁻³	
	Coniferous and Broad-Leaved Mixed	0.805	t d.m. m ⁻³	
CF _j	Oak/Masson Pine/Broad-Leaved Mixed/Coniferous and Broad-Leaved Mixed	0.5	tC t d.m. ⁻¹	VM0010 version 1.3
WW	Oak/Masson Pine/Broad-Leaved Mixed/Coniferous and Broad-Leaved Mixed	24%	kg kg ⁻¹	
SLF	Oak/Masson Pine/Broad-Leaved Mixed/Coniferous and Broad-Leaved Mixed	0.12	kg kg ⁻¹	

OF	Oak/Masson Pine/Broad- Leaved Mixed/Conife rous and Broad- Leaved Mixed	0.62	kg kg ⁻¹	
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Put the result coming from the above equation into the formula, we can get the change in carbon stocks for the project.

Forest disturbance in the project scenario

Natural disturbance - fire

Therefore, based on the IPCC 2006 Inventory Guidelines, estimation of greenhouse gas emissions from biomass burning shall be calculated as:

$$\Delta C_{DIST_{FR,t|PRJ}} = \sum_{i=1}^M A_{burn,i,t} * B_{i,t|PRJ} * COMF_i * G_{g,i} * 10^{-3} * GWP_{CH4} \quad (10)$$

As there is no fire occurred during the monitoring period, $\Delta C_{DIST-FR,t,PRJ}$ is equal to 0.

Natural disturbance – non fire

It is conservatively assumed that the natural disturbance is a stand-replacing disturbance, and that the biomass change as a result of the natural disturbance ($\Delta C_{DIST,t,PRJ}$) is emitted in the year of disturbance.

$$\Delta C_{DIST,t,PRJ} = \sum_{i=1}^M (A_{dist,i,t} * \sum_{j=1}^J \{C_{AB,j,i,BSL}\}) * \frac{44}{12} \quad (11)$$

As indicates by the relevant statement issued by the local authority, there were natural disasters occurring during this monitoring period

Illegal logging

A participatory rural appraisal (PRA) of the communities surrounding the project area must be completed to determine if there is the potential for illegal extraction of trees from the project area. If this assessment finds no potential pressure for these activities then illegal logging ($\Delta C_{DISTLI,i,t,PRJ}$) can be assumed to be zero and no monitoring is needed.

If the results of the PRA suggest that there is a potential for illegal logging activities, then limited field sampling must be undertaken.

Therefore, where the PRA or the limited sampling indicate no illegal logging occurring:

$$\Delta C_{DIST_IL,t,PRJ} = 0$$

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

$$\Delta C_{DIST-IL,t,PRJ} = \sum_{i=1}^M (A_{DIST-IL,j} * \frac{C_{DIST-IL,i,t,PRJ}}{AP_i}) \quad (12)$$

During this monitoring period, no illegal logging activity occurred, thus, $\Delta C_{DIST-IL,t,PRJ} = 0$

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

$$\Delta C_{NET,t,PRJ} = (\Delta C_{DIST-FR,t,PRJ} + \Delta C_{DIST,t,PRJ} + \Delta C_{DIST-IL,t,PRJ}) - \Delta C_{AB,t,PRJ} \quad (13)$$

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

$$GHG_{NET,PRJ} = \sum_{t=1}^t \Delta C_{NET,t,PRJ} \quad (14)$$

As $\Delta C_{DIST-FR,t,PRJ}$, $\Delta C_{DIST,t,PRJ}$, $\Delta C_{DIST-IL,t,PRJ}$ are zero during the monitoring period and based on the calculation results of $\Delta C_{AB,t,PRJ}$ above, the values of net greenhouse gas emissions across in the project scenario ($GHG_{NET,PRJ}$) during this monitoring period is shown in the table below:

Period	$\Delta C_{DIST-FR,t,PRJ}$ (tCO _{2e})	$\Delta C_{DIST,t,PRJ}$ (tCO _{2e})	$\Delta C_{DIST-IL,i,t,PRJ}$ (tCO _{2e})	$\Delta C_{AB,t,PRJ}$ (tCO _{2e})	$\Delta C_{NET,t,PRJ}$ (tCO _{2e})	$GHG_{NET,PRJ}$ (tCO _{2e})
01/07/2019-31/12/2019	0	0	0	179,507	-179,507	-179,507
01/01/2020-31/12/2020	0	0	0	380,262	-380,262	-380,262
01/01/2021-31/12/2021	0	0	0	397,007	-397,007	-397,007
01/01/2022-31/12/2022	0	0	0	397,007	-397,007	-397,007
01/01/2023-30/09/2023	0	0	0	297,755	-297,755	-297,755
Total	0	0	0	1,649,306	-1,649,306	-1,649,306
Average annual value	0	0	0	388,597	-388,597	-388,597

3.2.3 Leakage

Activity shifting leakage

The project does not involve in the activity shifting leakage. In China, the forest timber harvest is strictly controlled by the authority. Also, the China Forest Law also clearly stipulates the punishment for the illegal logging, which not only requires 5-10 times compensation of replanting, but also 2-10 times economic penalty. In China, the timber harvest is tightly controlled by the forestry authority, the illegal logging is severely punished.

Therefore, for the project activity, the PP have no right to harvest more in other parcels outside the project activity and the project does not involve in the activity shifting leakage.

Market leakage

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

$$GHG_{LK|LtPF} = LF_{ME} * GHG_{NET|BSL,t^*} \quad (15)$$

Where:

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

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

The Leakage factor calculation

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

Therefore,

$$LF_{ME} = 0$$

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

The amount of leakage is determined by where in the country's forest estate harvesting would likely be displaced. If harvesting is displaced to forests where a lower proportion of forest biomass is merchantable material from harvest table species than in the project area, then in order to extract a given volume higher emissions should be expected as more trees will need to be cut to supply the same volume.

In contrast if a higher proportion of the total biomass of commercial species is merchantable in the displacement forest than in the project forests, then a smaller area would have to be harvested and lower emissions would result.

Therefore, each project must calculate within each stratum the ratio of merchantable biomass to total biomass (PMP_i). This shall then be compared to the ratio of merchantable biomass to total biomass for each forest type (PML_{FT}).

The following deduction factors (LF_{ME}) shall be used:

PML _{FT} is equal ($\pm 15\%$) to PMP _i	$LF_{ME} = 0.4$
PML _{FT} is $> 15\%$ less than PMP _i	$LF_{ME} = 0.7$
PML _{FT} is $> 15\%$ greater than PMP _i	$LF_{ME} = 0.2$

Where:

PML_{FT}: mean merchantable biomass as a proportion of total aboveground tree biomass for each forest type, %;

PMP_i: merchantable biomass as a proportion of total aboveground tree biomass for stratum *i* within the project boundaries, %; and

LF_{ME} : Leakage factor for market-effects calculations; dimensionless.

Where sufficient variation exists in PMP_i relative to PML_{FT} that multiple values of LF_{ME} result, then an area weighted final value for LF_{ME} shall be calculated. The area of stratum *i* as a proportion of the total project area shall be multiplied by LF_{ME} . All values are then summed to arrive at the area weighted final value of LF_{ME} .

For the project,

- The total national harvest volume limit of this monitoring period is $101,614.4 \times 10^4 \text{m}^{317}$ and the planned harvest volume of the project during this monitoring period is $8.66 \times 10^4 \text{m}^3$, accounting for 0.008% of the national harvest volume, which is fairly low compared to the country level. Therefore, the project activities will not lead to change in the balance of supply and market demand.
- Although the risk of market leakage caused by the project activity is very low and can be ignored, to conservatively calculate the emission reductions, we calculated the market leakage discount factor (LF_{ME}) according to the VCS Standard V4.3 and applied methodology VM0010, V1.3.

According to VM0010, V1.3, each project must calculate within each stratum the ratio of merchantable biomass to total biomass (PMP_i). This shall then be compared to the ratio of merchantable biomass to total biomass for each forest type (PML_{FT}).

We select Hubei Province which is located in the subtropical area with subtropical monsoon climate and dominated by forest type of subtropical humid forest as the reference area (harvest most likely to be displaced) since China has a vast and varied territory across tropical, subtropical, temperate, cold temperate, cold and its climate, elevation and wood supply and demand are huge different. We have set 4 strata based on the tree species which are Oak, Masson Pine, Broad-leaved Mixed Forest and Coniferous and Broad-Leaved Mixed Forest for the project.

¹⁷ From the 13th and 14th Five-year Forest Harvest Limit issued by State Council.

- Hence, the calculation is below
- $PMP_{Oak} = 1,953m^3 / 4,752,256 m^3 = 0.04\%$
- $PMP_{Masson Pine} = 8,812m^3 / 2,059,279 m^3 = 0.43\%$
- $PMP_{Broad-leaved Mixed} = 5,245m^3 / 1,732,205 m^3 = 0.30\%$
- $PMP_{Coniferous and Broad-Leaved Mixed} = 1,314 m^3 / 1,773,953 m^3 = 0.07\%$
- $PML_{Subtropical humid forest} = 1,013.1 \cdot 10^4 m^3 / 6,007.07 \cdot 10^4 m^3 = 12.93\%$
- $PML_{Subtropical humid forest}$ is 31,361.95% greater than PMP_{Oak}
- $PML_{Subtropical humid forest}$ is 2,920.98% greater than $PMP_{Masson Pine}$
- $PML_{Subtropical humid forest}$ is 4,169.22% greater than $PMP_{Broad-leaved Mixed}$
- $PML_{Subtropical humid forest}$ is 17,355.93% greater than $PMP_{Coniferous and Broad-Leaved Mixed}$
- PMP_i was calculated by the data sourced from the Timber Harvest Plan and the data of the Forest management inventory data of Hubei Province. And PML_{FT} is calculated based on the data from China Forestry Statistical Yearbook¹⁸. From above calculation, it is indicated that the PML_{FT} is > 15% greater than PMP_i , the ratio of merchantable biomass to total biomass is higher within the area to which harvesting is displaced compared to the project area. Therefore, according to the applied VCS Methodology VM0010, V1.3, the market leakage discount factor is 20%.

In summary, $LF_{ME} = 0.2$

3.2.4 Net GHG Emission Reductions and Removals

According to VM0010 version 1.3, the Net Project Greenhouse Gas Emission Reductions are calculated as:

$$GHG_{CREDITS|LIPF,t^*} = GHG_{NET|BSL,t^*} - GHG_{NET|PR,t^*} - GHG_{LK|LIPF,t^*} \quad (16)$$

Where:

$GHG_{CREDITS LIPF,t^*}$	project greenhouse gas credits associated with the implementation of improved forest management (IFM) activities in the year t^* since the start of the project activity, in the project scenario, tCO_2^e
$GHG_{NET BSL,t^*}$	net greenhouse gas emissions in the baseline scenario in the year t^* since the start of the project activity, tCO_2^e

¹⁸ <https://navi.cnki.net/knavi/yearbooks/YCSRT/detail>

GHG _{NET PRJ,t*}	net greenhouse gas emissions in the project scenario in the year t* since the start of the project activity, tCO ₂ ^e ; and
GHG _{LK LTPF,t*}	total greenhouse gas emissions due to leakage arising outside the project boundary as a result of the implementation of improved forest management (IFM) activities in the year t* since the start of the project activity, in the project scenario, tCO ₂ ^e

The net anthropogenic GHG removals by the project are summarized below.

Period	Net GHG emission reductions or removals (tCO ₂ e)
01/07/2019-31/12/2019	193,476
01/01/2020-31/12/2020	407,113
01/01/2021-31/12/2021	415,959
01/01/2022-31/12/2022	413,095
01/01/2023-30/09/2023	308,922
Total	1,738,565
Average annual value	409,074

Adjustment for uncertainty

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

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

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

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

$$U_{\text{Total}|LTPF} = \sqrt{U_{\text{PRJ}}^2 + U_{\text{BSL}}^2} \quad (17)$$

If $U_{\text{Total}|LTPF} \leq 0.15$ then no deduction will result for uncertainty.

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

$$Credits_{total|LtPF} = GHG_{credits|LtPF} \cdot (1 - U_{total|LtPF}) \quad (18)$$

For the baseline scenario:

As ex-ante calculated in the VCS-PD, the U_{BSL} is 1.32% for the baseline scenario.

For the project scenario:

According to *IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*¹⁹, the uncertainty in the baseline scenario is associated with parameters and coefficients including estimates of area, carbon stocks, and expansion factors, the calculation process follows the two rules below:

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

Using this interpretation, a simple equation can be derived for the uncertainty of the sum, that when expressed in percentage terms becomes:

$$U_{total} = \frac{\sqrt{(U_1 \times E_1)^2 + (U_2 \times E_2)^2 + \dots + (U_n \times E_n)^2}}{E_1 + E_2 + \dots + E_n} \quad (19)$$

Where:

U_{total} is the percentage uncertainty in the sum of the quantities (half the 95% confidence interval divided by the total (i.e. mean) and expressed as a percentage);

E_i and U_i are the uncertain quantities and the percentage uncertainties associated with them, respectively

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

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

$$U_{total} = \sqrt{U_1^2 + U_2^2 + \dots + U_n^2} \quad (20)$$

¹⁹ IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories, Chapter 6, Quantifying Uncertainties in Practice.

Where:

U_{total} is the percentage uncertainty in the product of the quantities (half the 95% confidence interval divided by the total and expressed as a percentage);

U_i is the percentage uncertainties associated with each of the quantities.

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

As the uncertainty in the baseline scenario is associated with parameters and coefficients including estimates of area, carbon stocks and expansion factors, the calculation of the 3 parameters and coefficients are shown below:

1) Uncertainty of Area:

In the baseline and project scenario, the area of every stratum are quoted from the field survey inventory data and legal right of harvest, so no data are from measurement and monitoring. Therefore, it is deemed as 0 in the period of validation. It will be monitored in the period of verification.

2) Uncertainty of expansion factors:

The Sample size, Sample mean and Standard error of expansion factors are quoted from Forestry Part of China's greenhouse gas emissions list divided as tree species, and the uncertainty of expansion factors are calculated as below.

Total uncertainty

Total uncertainty for LtPF project is calculated according to the equation (29) in VCS-PD:

$$U_{Total|LtPF} = \sqrt{U_{PRJ}^2 + U_{BSL}^2} = \sqrt{8.31^2 + 1.32\%^2} = 8.41\% = 0.0841$$

As $U_{total} \leq 0.15$, then no deduction will result for uncertainty.

The detailed calculation process regarding the sample plots has been demonstrated in the ER calculation sheets.

Calculation of verified carbon units

Based on the VCS Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination version 3.3, the amount of VCUs that can be issued at time t=t2 (the date of verification) for monitoring period T=t2-t1, is calculated as the equation (31) in VCS-PD:

$$VCU_{net|LtPF} = (Credits_{total,t2|LtPF} - Credits_{total,t1|LtPF}) - Bu_{IFM-VCS} \tag{21}$$

The non-permanence risk rating of the Project is derived from the risk report calculation and corresponds to 22%. This value was specifically calculated during this Monitoring Period and coincides with the calculated value presented in the PD.

Therefore, the amount of verified carbon units of this crediting period is:

Period	Net GHG emission reductions or removals (tCO _{2e})	Buffer pool allocation (tCO _{2e})	VCU _{NET,IFM} (tCO _{2e})
01/07/2019-31/12/2019	193,476	42,565	150,911
01/01/2020-31/12/2020	407,113	89,565	317,548
01/01/2021-31/12/2021	415,959	91,511	324,448
01/01/2022-31/12/2022	413,095	90,881	322,214
01/01/2023-30/09/2023	308,922	67,963	240,959
Total	1,738,565	382,485	1,356,080
Average annual value	409,074	/	/

3.3 Optional Criterion: Climate Change Adaptation Benefits

N/A.

3.3.1 Activities and/or processes implemented for Adaptation (GL1.3)

N/A.

4 COMMUNITY

4.1 Net Positive Community Impacts

4.1.1 Community Impacts (CM2.1)

During this monitoring period, the project community was evaluated by means of questionnaires. The contents of the questionnaires including: “what are the changes to the surrounding environment after the implementation of the project”, “what is the level of female participation in the project”, “What will be the impact on the project area after implementation of the project”, “has it improved your standard of living”, “are you getting jobs and training”, etc.

In May 2021, a total of 100 questionnaires were issued and recovered to stakeholders, and the statistical survey results showed that: 90% of stakeholders believe that project activities have brought them employment opportunities and increased their income; 90% of the stakeholders believe that the participation of women in the activities of the project is the same or higher than that of men; 100% of the stakeholders felt that the project had a positive impact in the project area; Project activities have greatly improved the environment of the project site; They have also received varying degrees of training.

The Community impacts for each group are summarized as follow:

Community Group	Residents of Hongshan Town
Impact	Improved the living environment, increased household income and standard of living (direct impact on 1,710 temporary workers and 90 long-term technicians)
Type of Benefit/Cost/Risk	Actual direct benefits
Change in Well-being	<p>During this monitoring period, the stakeholder questionnaires showed that the living environment of the villagers in the project area has been improved:</p> <ol style="list-style-type: none"> 1. Increased household income and standard of living: During this monitoring period, it is known through the stakeholders meeting and questionnaires that the income of 90 long-term technicians has increased by gain the payment about CNY 1,800-4,000 for this project. They are satisfied with the increasing income, working opportunities and technical training (e.g., fire prevention, emergency handling) provided to them, and believe the project helps them solve the problems i.e. leaving home for making money, the left behind elderly people and children. 2. Improved the household income and living environment: temporary workers can get paid CNY 100 per person per day. The income of each worker depends on the actual number of days involved in project. Through protecting forest, the green area has increased, the living environment has also been improved.

Community Group	Female workers involved in the project
Impact	Get more job opportunities and training from the project and have more chance to participate in local activities
Type of Benefit/Cost/Risk	Actual direct benefits
Change in Well-being	During this monitoring period, the stakeholder questionnaires showed that: 1. Get more job opportunities: During this monitoring period, 40 long-term female technicians and 1,040 female temporary workers were employed by the project. 2. Get training from the project and have more chance to participate in local activities: knowledge and skill about forest management gained, improved personal ability for more decent job opportunities, raised status in society, reduced burden of life.

Community Group	Rural workers involved in the project
Impact	The job positions offered by the project will give some migrant rural workers more opportunities who may choose to work in their living villages instead of going outside.
Type of Benefit/Cost/Risk	Actual direct benefits
Change in Well-being	During this monitoring period, the stakeholder questionnaires showed that: The project activity provides technical training and job opportunities to local residents. 23 rural workers were employed as permanent worker in the project activity and paid 1,800~4,000 CNY/month. They stayed in the living village instead of go outside. And they can spend more time with their family and have more happiness. And the living environment is improved with project activity.

Community Group	Local Forestry Bureau
Impact(s)	Strengthen the public awareness of forest management and local ecological environment protection
Type of Benefit/Cost/Risk	Actual indirect benefits
Change in Well-being	During project verification, local Forestry Bureau checked and accepted the goals: Through this project, the green area has increased, the public's awareness of forest management and environment protection has also been improved, and forestry-related laws and regulations, management techniques, and knowledge of pest control have been more effectively popularized. Along with providing experts for annual training of technicians, and recording technicians' inspection and protection of forests, local Forestry Bureau has been assisted in achieving the goal of forest management.

Community Group	Local village committees
Impact(s)	It has increased the opportunities for communication of the villages, improved the working methods of the villagers, enhance capacity of villages with technical training, and increased income without going out to work. At the same time, women's job opportunities, income and social status have

	increased and thus, improved the gender equity
Type of Benefit/Cost/Risk	Actual direct benefits
Change in Well-being	Through the implementation of this project, the village committee concentrated training and organized villagers to carry out the implementation project together, which strengthened the communication of the village collective. The village committee helps villagers with skills, including female villagers, to become project employees, so that they can earn more money without working outside. This improves their quality of life and standard of living, thereby improving the health and well-being of local people. At the same time, the income of working women has increased, which has not only improved the status of the family, but also improved their social status.

4.1.2 Negative Community Impact Mitigation (CM2.2)

In order to mitigate the negative well-being impact on community groups, the project proponent has established a problem handling mechanism and provided a variety of ways for communities to reflect problems, including setting up a liaison in each village i.e., provided opinion books in the village committee, published telephone numbers of project leaders. In these ways, the problems and negative well-being impacts of community groups can be smoothly and timely reflected to the project proponents. After the project proponents are informed of these problems, the project leader will be designated to conduct detailed investigation at the place where the problems occur and solve these negative effects.

According to the Baseline of the community, and no HCVs was identified related to community well-being in the project zone since the project area was the legally approved logging area which does not contain any ecological protection areas, ethnic minority settlements, historic conservation areas nor community residential areas. Thus, there is no negative well-being impact on community groups in this monitoring period.

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

The main source of income for communities associated with the agricultural project area. Their production methods are backward, affected by disasters such as floods, and agricultural production is also low. The project benefited county economically and socially during the monitoring period.

1) Income improvement: During the project period, the net income generated by the project includes employment and labor income as well as carbon trading income.

2) Job creation: Since December 2014, before the project started, the village committees conducted a survey of the local villagers willingness to protect trees. This was done through meetings and interviews with villagers. The project provided permanent and temporary employment opportunities. Most of the work belonged to local villagers involved in the project, and over 60% of them are adult women. 23 migrant rural workers are employed as permanent worker in the project activity, and approximately 1,800 local residents who were directly involved in trees maintenance of project.

3) Increase the interaction within the community: The project provides people not only increased income but also a joyful life style. Protecting forest formed a close interaction between individuals, the people of the community have more contact with each other during the training, and help each other during the work, which increased the interaction within the community. For instance, the villagers can often gather up for meetings and training becoming more bonded. In addition, the improved transportation facilitates their communication activities.

4) Technical training and demonstration: The community generally lacks fire protection, forest pest control, forest management. The project is organized by the local forestry bureau to help farmers understand and evaluate problems in the implementation of the project, such as forest management, forest fire prevention, pest control.

During the implementation of this project, Hongshan Forestry Bureau organized many training for villagers on forest management, Forest fire prevention, pest control, i.e. in May 2020, May 2021 and May 2022 respectively during this monitoring period. These knowledge and skills are very useful to villagers.

5) After the project is implemented, it increased the area of green space and beautify the environment, which not lead to deforestation and obstruction projects. In summary, the relevance of the project area does not have a negative impact on the high value of protection.

4.1.4 Protection of High Conservation Values (CM2.4)

No HCVs was identified related to community well-being in the project zone since the project area was the legally approved logging area which does not contain any ecological protection areas, ethnic minority settlements, historic conservation areas nor community residential areas. Thus none of the HCVs related to community well-being will be negatively affected by the project.

4.2 Other Stakeholder Impacts

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

There are no negative well-being impacts on other stakeholders during this monitoring period.

4.2.2 Net Impacts on Other Stakeholders (CM3.3)

The project does not cause any negative impacts within and beyond the project zones. Besides, it increased the income of the local communities and bring positive environmental benefits. Therefore, this project will not create negative impacts on the other stakeholder groups.

4.3 Community Impact Monitoring

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

To assess the actual changes in well-being resulting from the project activities for community groups, the project proponent conducted a stakeholder meeting for each community groups affected by the project and collect all the relevant information through questionnaires. Also any

feedback or suggestions from them were collected and addressed immediately to initiate an adaptive management plan if necessary.

Procedures:

a) Establishing PRA team: The teams were set up to conduct the PRA process, which consists of social experts, project officers, Hongshan Forestry Bureau and technical staff with various background (forestry, sociology and ecology)

b) Developing SOPs for the field PRA process;

c) Training: A training workshop was held for discussing and training of PRA teams in order to ensure all PRA members fully understand the purposes, contents, procedures and specific methods of the PRA field survey;

d) Preparation: Developing detail PRA field survey plan including responsibility of each member of PRA team; and contacting with relevant project villages, towns and informing them PRA plan.

e) PRA survey: conducting PRA survey following SOPs in May 2021.

Methods:

a) Village meeting: Meeting of villager representatives was held in villages in May 2021. The general agenda are:

(i) Introducing PRA team members and the purpose, procedures, methods and time schedules of the PRA process;

(ii) Explaining the way of villagers' participation;

(iii) Collecting information regarding the project progress, social-economic and environmental benefits shared from the projects, existing problems/difficulties encountered by local communities during the project implementation, as well as comments and suggestions on improvement of the project.

b) Semi-structured interviews: This includes VIP interview, farmer household interview and group Interview for the comments and suggestions of the project. Five villages committees were randomly selected as the interview sites. These villages contain all the tree species, the forest area is large and the geographical environment is suitable for tree growth and different community groups were involved as representatives from local village committees,

(i) Interviewing of VIP: including villager leaders, distinguished villagers, elder villagers

(ii) Interviewing of household: Some farmer households were selected for the interview. The interviewed households shall cover rich household, poor household, new inhabitant household, etc.

c) Questionnaire: Questionnaire forms were developed and distributed among different stakeholders, including farmer households, village committees and Forestry Bureau.

In May 2021, a total of 100 questionnaires were distributed to the representatives of the local stakeholders from local government and surrounding villages, and 100 copies were collected with valid answers. The contents of the questionnaires including but not limited to:

- What are the changes to the surrounding environment after the implementation of the project?
- What is the level of female participation in the project?
- What will be the impact on the project area after implementation of the project?
- Has it improved your standard of living?
- Are you willing to participate in project activities?
- What suggestions and ideas do you have for the implementation of the project?
- What do you think are the risks and benefits of the project?
- Are you getting jobs and training? etc.

The following key variables will be monitored during each verification of the project:

Variable	Increase household income and standard of living
Monitoring methods to be applied	Questionnaire and interview
Frequency of monitoring/recording	Before every verification event
Affected community groups	Residents of Hongshan Town, Female workers in Hongshan Town, Rural workers involved in the project
Result of monitoring	The meeting, interview and questionnaire survey records show that 60% of the respondents have worked for the project and 40% have not worked for the project. 100% of respondents who have participated in the project from the 100 questionnaires reported that the implementation of the project increased their income. This income provided is a very effective and direct way to improve living standards. After the project implementation, the household income was increased. Villagers hired as the technicians earned an extra CNY 1,800 per month. During the investigation, technicians participated in the project reported that the implementation of the project increased their income. The project provides an income of CNY 2,400 for each technician.

Variable	Provide more job opportunities
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Monitoring methods to be applied	Questionnaire and interview
Frequency of monitoring/recording	Before every verification event
Affected community groups	Residents of Hongshan Town, Female rural workers in Hongshan Town, Rural workers involved in the project
Result of monitoring	Approximately 1,710 temporary planting workers and 90 long-term technicians for local villagers. And there are 1,080 female workers, include 1,040 temporary workers and 40 full-time technicians. 23 rural workers were employed as permanent worker in the project activity. And all villagers as recorded in the interview records and 90% of local villagers from the 100 questionnaires reported they all got the jobs from the project so that will not go outside the county to make money.

Variable	Provide training and improve the working skills
Monitoring methods to be applied	Questionnaire and interview
Frequency of monitoring/recording	Before every verification event
Affected community groups	Residents of Hongshan Town, Female workers in Hongshan Town, Rural workers involved in the project, Local village committees
Result of monitoring	The trainings on fire prevention, firefighting and integrated pest management were conducted in May 2020, May 2021, May 2022 and May 2023 respectively during this monitoring period. And the experts of Hongshan Forestry Bureau were very patient. All villagers as recorded in the interview records and 100% of local villagers from the 100 questionnaires reported they all participated in the training. The capacity building, knowledge and skills were improved of local residents resulting from the project activity.

Variable	Improve the gender equity
monitoring methods to be applied	Questionnaire and interview

Frequency of monitoring/recording	Before every verification event
Affected community groups	Female workers in Hongshan Town
Result of monitoring	During this monitoring period, the collected questionnaire results show that 90% of Local Villagers from the 100 questionnaires believed that the gender equity have been improved due to the implementation of the project and the happiness due to job opportunities provided by the project. As reported in the interview records, the local villages believed the high level of female participation in the project has improved the status of women in the local life. Approximately 1,800 local residents who were directly involved in planting trees maintenance of project, of whom 1,080 were women, accounting for 60 percent

Variable	Improve the living environment
monitoring methods to be applied	Questionnaire and interview
Frequency of monitoring/recording	Before every verification event
Affected community groups	Residents of Hongshan Town, Female rural workers in Hongshan Town, Rural workers involved in the project
Result of monitoring	During this monitoring period, the collected questionnaire results show that 100% of local villagers from the 100 questionnaires administered believed that villagers' living level have been improved due to the implementation of the project and the happiness due to job opportunities provided by the project. As shown in interview records, local villagers believe project has made the living environment better.

Variable	Strengthen the public awareness of forest management and local ecological environment protection
monitoring methods to be applied	Questionnaire, meeting and interview
Frequency of monitoring/recording	Before every verification event

Affected community groups	Local Forestry Bureau
Result of monitoring	According to the questionnaire, 100% of the villagers from the 100 questionnaires believe that the implementation of the project has improved their awareness of forest management and ecological environment protection; 100% of villagers from the 100 questionnaires administered believe that the implementation of the project has protected the forest and also the local environment. Public awareness of forest management and ecological environment protection were strengthened after the implementation of the project.

Variable	Enhance communication between villages
monitoring methods to be applied	Questionnaire, meeting and interview
Frequency of monitoring/recording	Before every verification event
Affected community groups	Local village committees
Result of monitoring	<p>100% of the villagers from the 100 questionnaires think the communication of among the villages has been enhanced. Protecting forest formed a close interaction between individuals, which strengthen communication between communities and local governments and between different villages. The project forest mainly connects several villages so villagers have been connected by projecting forest.</p> <p>The villagers often gathered up for making decision, expressing opinion and receiving training and therefore, they are becoming unity. Besides the project meeting, they can gather up for festivals themselves which improves the social connection of villages .</p>

4.3.2 Monitoring Plan Dissemination (CM4.3)

After the monitoring activities finished, the project owner prepared a draft monitoring report along with a short version of MR summary in Chinese which has been published on Verra website. Also, the summary of monitoring results has been disseminated to local communities through local project leader and the contact information of monitoring staff from project proponent has also been provided in case the local communities have any questions regarding the monitoring procedures and results.

When the Monitoring Report has been posed for public comments, community monitoring plans and result for this monitoring period have also been posted on notice boards in villages.

For each verification, the monitoring team has summarized all the comments received from stakeholders and corresponding responses regarding the monitoring plan and results, which has been published on VCS and CCB website along with the monitoring report for each monitoring period.

During this monitoring period, no comments on the community monitoring plan and results received.

4.4 Optional Criterion: Exceptional Community Benefits

N/A

4.4.1 Short-term and Long-term Community Benefits (GL2.2)

N/A

4.4.2 Marginalized and/or Vulnerable Community Groups (GL2.4)

N/A

4.4.3 Net Impacts on Women (GL2.5)

N/A

4.4.4 Benefit Sharing Mechanisms (GL2.6)

N/A

4.4.5 Governance and Implementation Structures (GL2.8)

N/A

4.4.6 Smallholders/Community Members Capacity Development (GL2.9)

N/A

5 BIODIVERSITY

5.1 Net Positive Biodiversity Impacts

5.1.1 Biodiversity Changes (B2.1)

Change in Biodiversity	Forest cover of the project zone
Monitored Change	Increased
Justification of Change	For the project zone, the forest is protected instead of logging, project sites have become ecological community with the domain species of tall trees, which provided a growing environment for more plants. The area of deforestation is reduced for the project implementation, therefore the forest cover is maintained or increased which could benefit the local environment in a long time by improving the condition of local micro climate.

Change in Biodiversity	Species of animals
Monitored Change	Increased
Justification of Change	<p>During the monitoring period, Monitor the observed the species and number of reptiles and mammals occurred around the monitoring points during a whole day. Some reptiles and mammals are nocturnal, and the reptiles and mammals were rarely seen and were not monitored at the monitoring points during this monitoring period.</p> <p>During the monitoring period, Monitor the observed numbers of the birds occurred around the monitoring points during a whole day, by recording the species of birds flies over a monitoring site, the site passes an average of 10 species birds a day which is more than 7 species before the implementation of the project.</p> <p>The species of animals were increased due to the better environment of habitat.</p>

5.1.2 Mitigation Actions (B2.3)

The primary objective of the project is protecting forest. The management team are experienced with forest management as mentioned in Section 2.4.2, and has established an integrated management system for implementation of the project, including fire prevention, insect control and technical training of employees, which could minimize the intensity and periodicity of required interventions.

The plant faced potential risks on fire, diseases and insects, the project proponent has established forest management manual with specific instruction for fire prevention, pest and disease prevention and control. Therefore, the implementation of the project would not decrease the biodiversity of project sites.

During this monitoring period, rangers patrolled regularly and no potential risks were detected.

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

The native ecosystem through the project provided significant positive biodiversity benefits by:

- Stopping logging to protect the forest created a corridor, hence enhance the connectivity between forests, and provide much needed expansion of important wildlife habitat areas. This facilitated gene flow through allowing once-isolated wildlife groups to interact and enhance the viability of their populations.
- No illegal poaching activities happened because after the implementation of the project, there were forest rangers working in the field frequently. These could prevent the illegal poachers from going into this area.
- Generating increased income to local communities from the project. During this monitoring period, long-term technicians' income has also increased by gain the payment about CNY 1,800-4,000 for this project. Temporary workers can get paid CNY 100 per person per day. This income provided is a very effective and direct way to improve living standards. Before the project, due to lack of money and consciousness of protecting the ecological environment, some low-income residents would break the law for poaching and sell them to earn some money. After the project implementation, the household income was increased and the villagers' (especially those who have the illegal poaching behaviour before) consciousness of protecting the ecological environment has been improved through the receiving the educational training. All such reduced the tendency of local communities to degrade biodiversity through practices such as illegal poaching.

Therefore, the 'with project' scenario has produced the net positive biodiversity benefits compared to "without project" scenario.

The forest management manual provide animal protection measures, the technician and Hongshan Forestry Bureau conducted regular patrol and supervision to prevent hunting, and local villagers who are raising the awareness of sustainable development and animal protection through training provided during this monitoring period.

5.1.4 High Conservation Values Protected (B2.4)

This project zone does not involve national or local conservation of High Conservation Values since the project area was the legally approved logging area which does not contain any endangered animal or vegetation species nor rare ecosystems.

5.1.5 Invasive Species (B2.5)

All the trees protected from logging are native species and no invasive species will be introduced into any area affected by the project.

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

N/A.

5.1.7 GMO Exclusion (B2.7)

N/A.

5.1.8 Inputs Justification (B2.8)

Name	Chemical pesticides
Justification of Use	The chemical pesticides are allowed to be used only if there is a serious disease problem erupted in the project area, and the pesticides will be used in accordance with the National Pesticides Policy.
Adverse Effect	Improper pesticide application would be harmful to natural environment, including polluting soil, water and air conditions, as well as the habitat of the wildlife. But for this project, pesticide will be strictly managed by well trained technicians to minimize the potential effect. Especially the biological measures to control pests and diseases will be adopted. Therefore, the pesticide application will be limited. During monitoring period, no chemical pesticides, so there is no effect.

Name	Biological control agents
Justification of Use	Upon routine overseeing, the pest will be treated by biological control once occurred according to local Pest Control and Prevention Policy.
Adverse Effect	The biological control agents are natural enemy of pest which are native species and have no adverse effect on local environment and communities. During monitoring period, no biological control agents, so there is no effect.

5.2 Offsite Biodiversity Impacts

5.2.1 Negative Offsite Biodiversity Impacts (B3.1) and Mitigation Actions (B3.2)

During this monitoring period, the project activities increased the area of the habitat, as well as improved the habitats' quality, only positive biodiversity impacts can be identified. Therefore, there are no potential negative offsite impacts on biodiversity.

5.2.2 Net Offsite Biodiversity Benefits (B3.3)

During this monitoring period, there are no potential negative offsite impacts on biodiversity, the net offsite biodiversity benefits are positive.

5.3 Biodiversity Impact Monitoring

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

As mentioned above, according to Theory of Change, the main objective of the project is to increase forest cover by preventing logging forest. And based on the analysis in Section 2.1.18, the risks of fire, diseases and insects, pesticide and frost might threat the aim of the project and need to be intervened.

Sample Plots

The sample plots for monitoring animals, forest cover and plants in line with the registered PD are 85. These 85 sample sites were historically rich in biological resources, and these sites are relatively far from villages and less affected by human activity, making them suitable for observing. Forest rangers and technicians are responsible for recording biodiversity data during routine inspection and monitoring

Survey Method

The survey is conducted by the forest rangers under the supervision of local Forestry Bureau. The monitoring frequency is before each verification. Hongshan Forestry Bureau summarize the monitoring results of forest rangers. The monitoring of animals mainly adopts the Variable Distance Line Transect Method. The set-up of transect lines is in accordance with the "Technical Guidelines for Biodiversity Observation" issued by the Ministry of Environmental Protection of the P.R.China. Choose 3 to 5 representative areas, set up multiple transects lines for each plot, and try to cover different habitats and different altitudes. A total of 85 plots and transect lines were set up. The monitoring period is the most active time for animals, from 07:00-19:00. During the observation, travel along the transect line at a speed of 1.5~3km/h and record the population numbers within three distances (0~25m, 25~100m, and more than 100m) on the transect line. The monitoring of plants is carried out in the fixed sample plots which are the same as those for GHG monitoring following the "Technical Guidelines for Biodiversity Observation – terrestrial vascular plants" issued by the Ministry of Environmental Protection of the P.R.China.

Animals Survey

The sample plot searching line map GPS locator, telescope, pedometer, etc. In the routine sample zone survey, the belt transect method was adopted. The survey shall be started at finding and recording the starting point of the sample zone according to the sample plot searching line map. Then, at a speed of 2-3 km/h, starting point travels along the direction of northeast-southwest, and records the number of birds entities or traces found, the vertical distance from the center line of the sample zone, the habitat, altitude, and other relevant data and information. The actual walking route was chosen according to the actual situation in the investigation area.

Plant survey

The survey tools are tape measure, tape, scissors, specimen bag, specimen holder, the ropes with the length of 1 meter, 2 meters, 5 meters and 10 meters, oil-based marker, etc. Plant species survey: Several vertical and horizontal, throughout different habitats, sample lines were established in the survey area. Lines shall be set up by using a typical sampling method and the density shall be calculated on average 3 km² controlled by a single line. A group containing 2 people observed and proceeded along the line during the survey to fill in the name of each recognized plant and collect the plant specimens of each unacquainted plant (try to avoid collecting specimens in general).

According to Theory of Change, the main objective of the project is to protect forest instead of logging. And based on the analysis of the risks of fire, diseases and insects, pesticide and frost might threat the aim of the project and need to be intervened.

The detailed monitoring results for biodiversity is listed in the following table:

Table 5-3 Monitoring variables for biodiversity during this monitoring period

Data type	Description	Monitoring indicator	Monitoring results	Monitoring method	Monitoring date
State variables	The quantity and quality of forest in the project area	Forest cover	The area of protected forest is 23,769.42 ha	Measure by forest rangers and confirmed by local Forestry Bureau	04/09/2023-28/09/2023
		Species of vegetation	Tree species: Oak, Masson Pine, Broad-Leaved Mixed Forest and Coniferous and Broad-Leaved Mixed Forest Herbage: semen psyllii, morning glory, clove, honeysuckle, dandelion, Platycodon grandiflorum, purslane.	Measure sample spots set during monitoring of Climate	04/09/2023-28/09/2023
		Species of animals (birds, reptiles and mammals animals)	There are 10 species of birds occurred around the monitoring points. And there is no reptiles and mammals occurred	Monitor the observed the species of reptiles, mammals and birds occurred around the monitoring points during a whole day.	04/09/2023-28/09/2023
Pressure variables	The frequency or intensity of anthropogenic impacts that are directly harmful to biodiversity in the project zone	Number of fires occurred	0	Recorded by forest rangers and confirmed by local Forestry Bureau	Once every year
		Effected forest area suffered insects and disease	0	Recorded by forest rangers and confirmed by local Forestry Bureau	Once every year
Response variables	The frequency or intensity of project interventions relevant to biodiversity	Forest area under prevention control from fires	23,769.42ha	Recorded by forest rangers and confirmed by local Forestry Bureau	Once every year
		Forest area under prevention control from insects and	23,769.42ha	Recorded by forest rangers and confirmed by local Forestry Bureau	Once every year

		diseases			
		Forest area recovered from fire, insects or diseases	0	Recorded by forest rangers and confirmed by local Forestry Bureau	Once every year
		Number of trees replanted	/	Recorded by forest rangers and confirmed by local Forestry Bureau	Once every year

5.3.2 Biodiversity Monitoring Plan Dissemination (B4.3)

Both registered Chinese and English version of the Project Description, monitoring manual and biodiversity monitoring plan have been posted on bulletin boards in local villages and on the VERRA website which can be easily download by stakeholders. A brief project progress including project location, project registered date, expected annual emission reduction, monitoring period and expected verification date has also been posted for stakeholders.

When the Monitoring Report has been posed for public comments, biodiversity monitoring plans and manuals for project monitoring periods have also been posted on bulletin boards in villages. The monitoring report and summary have been published on the VERRA website, and the relevant villagers have understood the progress of the project. The project leader also communicated effectively with the local villagers during the publicity, and the technician also have explained how the project was monitoring, how to collect data, and how to record the ranger inspection.

For each verification, the monitoring team summarized all the comments received from stakeholders and corresponding responses regarding the monitoring plan and results, which was published on VCS and CCB website along with the monitoring report for each monitoring period.

During this monitoring period, no comments on the monitoring plan and results received yet.

5.4 Optional Criterion: Exceptional Biodiversity Benefits

N/A

5.4.1 Trigger Species Population Trends (GL3.3)

N/A

6 ADDITIONAL PROJECT IMPLEMENTATION INFORMATION

N/A

7 ADDITIONAL PROJECT IMPACT INFORMATION

N/A