ADJUSTED WATER MANAGEMENT IN RICE CULTIVATION IN HUANGMEI COUNTY

Document Prepared by Shenzhen CTI International Certification Co., Ltd

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Summary:

- *A description of the project*

The project activity developed in Huangmei County within Huanggang City, Hubei Province, P. R. China, is a project that change the water regime during the rice cultivation period. It changes continuously flooded to intermittent flooded condition during rice cultivation so that to result in reduced anaerobic decomposition of organic matter in rice cropping soils and thus reduced generation of methane. The Project involves a total acreage of 13,120 ha for single-cropping rice. The project is expected to achieve 59,901 tCO_2e of emission reduction annually. The project started operation on 10-May-2018 with the VCS Ref. No. 2902.

- *A description of the validation and verification*

The approved CDM methodology AMS-III.AU. "Methane Emission Reduction by Adjusted Water Management Practice in Rice Cultivation" (version 4.0) is applied to quantify the GHG removals achieved in this project. The calculation of the GHG emission reductions is carried out in a transparent and conservative manner. This project is being developed in conjunction with the validation and 1st periodic of verification.

- *The purpose and scope of validation and verification*

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

The objective of the verification is to have an independent review ex post determination by a VVB (Validation and Verification Body) of the monitored GHG emission reductions that have occurred as a result of the implementation of the project activity during a defined monitoring period.

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

Validation and Verification is conducted using Shenzhen CTI International Certification Co., Ltd (CTI) procedures in line with the requirements specified in the latest version of the VCS Validation and Verification Manual and applying auditing techniques. The validation/verification team assessed the project activity's compliance against the VCS Standard Version 4.2, the selected CDM methodology and the joint project description and monitoring report. The project is eligible under Project Scope 14. The validation/verification criteria followed the guidance documents provided by VCS included the following:

VCS Standard Version 4.2, VCS Program Guide Version 4.1 and the applied CDM methodology AMS-III.AU. "Methane Emission Reduction by Adjusted Water Management Practice in Rice Cultivation" (version 4.0).

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

In the course of the validation and verification, 8 Corrective Action Requests (CARs), 8 Clarification Requests (CLs) were raised and successfully closed. The assessment is included in the report.

- *Any uncertainties associated with the validation and verification*

There are no restrictions of uncertainty for both validation and verification.

- *Summary of the validation and verification conclusions*

Search CO2 (Shanghai) Environmental Science & Technology Co. Ltd. has commissioned the Shenzhen CTI International Certification Co., Ltd to carry out the Verified Carbon Standard (VCS) validation joint with 1st periodical verification of the project, "Adjusted Water Management in Rice Cultivation In Huangmei County" (VCS ID 2902) with regard to the relevant requirements of VCS standard Version 4.2. CTI confirms all validation and verification activities including objectives, scope and criteria, level of assurance, project description, monitoring and monitoring report adhere to VCS Standard Version 4.2 and all associated updated as documented in this report, are complete.

CTI concludes that the project activity "Adjusted Water Management in Rice Cultivation In Huangmei County" in China, as described in the final version of Joint-Project-Description-Monitoring-Report, meets all relevant requirements for VCS validation and verification activity and correctly applied the methodology AMS-III.AU. Version 4.0. Hence CTI is able to certify that the GHG emission reductions from the project during the monitoring period from 10-May-2018 to 31-December-2021 were generated as 241,198 tCO_2e, by considering the net GHG emission reductions generated during this monitoring period have exceeded the threshold required in the small-scale methodology applied, which is the 60,000 tCO_2e per year, the GHG emission reductions are amount to 240,000 tCO_2e can be claimed as VCUs.

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1 INTRODUCTION

1.1 Objective

Search CO2 (Shanghai) Environmental Science & Technology Co. Ltd. has commissioned the Shenzhen CTI International Certification Co., Ltd to carry out the Verified Carbon Standard (VCS) validation joint with 1st periodical verification of the project for the monitoring period from 10-May-2018 to 31-December-2021 (both days included).

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

The objective of verification is to have an independent review ex-post determination by a VVB of the monitored GHG emission reductions that have occurred as a result of the project activity implemented during a defined monitoring period. The evaluation is done against the requirements of the VCS Standard Version 4.2 based on the monitoring report. In order to confirm that the GHG emission reductions sound reasonable and meet the identified criteria, the verification involves the assessment of monitoring plan conformance to VCS rules and applied methodology. Verification is a requirement and is seen as necessary to provide assurance on the generation of VCUs.

1.2 Scope and Criteria

The validation scope is defined as an independent and objective review of the project description (PD) to validate that (a) the project design is actual, (b) the baseline scenario is correctly defined as per the applied methodology and relate tools, (c) the project is additional, (d) the monitoring plan can be implemented and is transparent and adequate and (e) all data and information used for ex-ante calculation of emission reductions is of projected and/or hypothetical nature. The Joint-PD-MR is reviewed against the criteria stated in VCS standard Version 4.2/43/ and the approved baseline and monitoring methodology AMS-III.AU. version 4.0/34/. The validation was based on the requirements VCS Validation and Verification Manual and VCS Standard version 4.2 applying auditing techniques. The validation is not meant to provide any consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the project design.

The scope of the verification is to verify that: (a) the actual monitoring system and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan; (b) the GHG emission reductions data and express a conclusion with a reasonable level of assurance about whether he reported GHG emission reductions data are free from material misstatement; (c) the reported GHG emissions data is sufficiently supported by evidence. Verification shall ensure that the reported GHG emission reductions are complete and accurate in accordance with the applicable VCS criteria in order to be certified. Verification is conducted using CTI procedures in line with the requirements specified in the VCS Program and ISO14064-3 requirements and applying auditing techniques. The VVB assessed and determined that the implementation and operation of the project activity, and steps to report GHG emission reductions comply with the VCS rules. The verification involved a document review of relevant documentation and interview with the project participants. Verification is not meant to provide any consultancy towards the project participants; however, stated request for clarifications and/or corrective actions may have provided input for improvement of the monitoring.

1.3 Level of Assurance

All GHG sinks, sources and GHG emissions equal to or greater than 5% of the total GHG assertions are considered. The project is expected to generated average GHG emission removal of 59,901 tCO_2eper year, and therefore can be considered as a project per the VCS rules, in regards to its scale, subject to a 5% materiality threshold.

The assessment was conducted to provide a reasonable level of assurance of compliance against the defined audit criteria and materiality threshold within the audit scope. Based on the audit findings the validation and verification statement reasonably assure that the GHG assertion is materially correct and is a fair representation of the GHG data and information.

1.4 Summary Description of the Project

The project is implemented by Wuhan Haimingsen Environmental Protection Technology Co., Ltd. which aims to change the water regime during the rice cultivation period. It changes continuously flooded to intermittent flooded condition during rice cultivation so that to result in reduced anaerobic decomposition of organic matter in rice cropping soils and thus reduced generation of methane. The Project involves 17,347 farmers within 4,859 local households with a total acreage of 13,120 ha for single-cropping rice. With the replacing of the continuously flooded method by intermittent flooded method, the project solves the problems of excessive water used during rice cultivation and expected to decrease 48% of the CH_4 emission/54/.

The project activity generates GHG emission reductions by changes continuously flooded to intermittent flooded condition during rice cultivation, which has been verified by on-site inspection, and checking the related documentations, interview with the project implementer. In the monitoring period from 10-May-2018 to 31-December-2021, CTI is able to certify that the GHG emission reductions from the project were generated as 241,198 tCO_2e, by considering the net GHG emission reductions generated during this monitoring period have exceeded the threshold required in the small-scale methodology applied, which is the 60,000 tCO_2e per year, the GHG emission reductions are amount to 240,000 tCO_2e can be claimed as VCUs.

The project activity generates GHG emission reductions by changes continuously flooded to intermittent flooded condition during rice cultivation. Thus the project generates GHG emission reductions and produces financial, social and environmental benefits. The project has resulted in the local sustainable development as described in Section 1 of the Joint Joint-PD-MR/1/. The project applied to be registered as a VCS project activity and the 240,000 tCO_2e of emission reductions have been certified as verified carbon units (VCUs) for 1st monitoring period from 10-May-2018 to 31-December-2021.

2 VALIDATION AND VERIFICATION PROCESS

2.1 Method and Criteria

A project specific validation and verification plan was developed to guide the validation and verification auditing process to ensure efficiency and effectiveness.

The purpose of the validation and verification is to present a risk assessment for determining the nature and extent of validation and verification procedures necessary to ensure the risk of auditing error is reduces to a reasonable level. According to the ISO14064-3, the criteria are the policy, procedure or requirement used as reference against which evidence is compared. Therefore, validation of the project description and verification of the monitoring plan and the reported project results were measured for compliance against the following criteria:

- VCS Standard, v4.2/43/
- VCS Program Guide, v4.1/42/
- VCS Program Definitions, v4.1/41/
- VCS-Joint-Project-Description-Monitoring-Report-Template-v4.1/39/

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

- Document review
- On-site assessment
- The resolution of outstanding issues and the issuance of the final joint validation and verification report and certification.

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

Sampling approaches have been utilized by PP and VVB during this joint validation and verification.

a. PP sampling approach - ex ante baseline determination and local stakeholder survey

PP has applied a sampling method for the ex ante baseline and local stakeholder survey, details are stated as below,

In the project area of 13,120 ha, there are 4,859 households involved in the project due to rice paddies in the project area belong to these households via checking the cooperation agreements signed between the project proponents and all the households which ensure the proper development of the project/8/. All the

households are located in project area in Huangmei County within Huanggang City, Hubei Province, which is a limited area. Simple random sampling approach was selected for this project due to relatively homogenous population being studied, given the similar soil condition and similar cultivation habit of households in Huangmei County. Therefore, simple random sampling (SRS) approach was followed by the PP to determine the sample size for baseline survey, and it is able to confirm the selection of sampling approach is appropriate as per VVB's local knowledge. Target population is defined as all the 4,859 households included in the project.

As per the applied methodology and Joint-PD-MR, a simple random sampling was drawn by the PP from the household database/12/ in line with the Guidelines for Sampling and Surveys for CDM Project Activities and Programme of Activities (hereafter can be referred to as the 'sampling guideline') (version 04.0)/37/.

Following "Sampling and Surveys for CDM Project Activities and Programme of Activities" version 09.0/36/ and "Guideline of Sampling and surveys for CDM project activities and programmes of activities" version 04.0/37/, the verifier checked the sampling results of PP and Hubei Academy of Social Sciences with the following steps:

For determine the baseline, to verify the accuracy and correctness of sampling survey data, VVB has checked the sampling approach as per the "Guideline of Sampling and surveys for CDM project activities and programmes of activities" version 04.0/37/, this sampling approach found to be appropriate as the households are assumed as homogenous based on the experience of Hubei Academy of Social Sciences who conducted the sampling survey.

Via checking the paragraph 12 of 2.1.1 section of the guideline/37/, it confirmed that the Sample size calculation by Simple Random Sampling can be done using following formulae:

$$n \geq \frac{1.645^2 N \times p(1-p)}{(N-1) \times 0.1^2 \times p^2 + 1.645^2 p(1-p)}$$

Where

n	Sample size
N	Total number of farmers
P	Expected proportion, which is defined as 0.75 based on the experience of Hubei Academy of Social Sciences combined with the local condition
1.645	Represents the 90% confidence required
0.1	Represents the 10% relative precision

N is 4,859 as determined of total number of farmers, P is determined as 75%, as per the level of confidence, VVB expects that 90% of the samples taken shall comply with the project requirements.

Hence the *n* is calculated as

$$1.645^2*4{,}859*0.75*(1-0.75)/\{(4{,}859-1)*0.1^2*0.75^2+1.645^2*0.75*(1-0.75)\}=90$$

The sample size of the baseline and local stakeholder survey considering the parameters is calculated in a conservative way, and the least number of the sample size is 90 as above calculation method according to the "Guideline of Sampling and surveys for CDM project activities and programmes of activities" version 04.0/37/. The sample size calculation process is verified by the VVB and confirmed as in line with the sampling guideline/37/, thus the result is confirmed as correct and reasonable. Furthermore, to be

conservative, Hubei Academy of Social Sciences has randomly selected 100 household samples to conduct the baseline survey.

An Ex-ante investigation report with investigation of 100 samples/13/ was supplied by the PP, which was compiled base on the survey done by the Hubei Academy of Social Sciences. In the Survey report, name of households, location, rice cultivation type, flooding type, rice type, cropping season type etc. were investigated and recorded. Via interview with the PP and representative from Hubei Academy of Social Sciences, CTI confirmed that 100 samples are randomly selected from the 4,859 households list by the simple random sampling (SRS) method. The excel function "randbetween" is employed to choose the households sample group. It is able to confirm that the sampling approach was consistent with the related requirements.

b. PP sampling approach – ex post determination of $A_{s,g}$

PP has applied a sampling method for monitoring of farmers' compliance with project cultivation practice (determination of $A_{s,g}$) during the 1st monitoring period, details are stated as below,

The project households database with all 4,859 participated rice households/12/ including name and address of the rice farmer in households, size of the field and additional household specific information, PP has set up a database that allow an unambiguous identification of participating rice farm, and as per the applied methodology, a cultivation logbook shall be maintained for all project fields, thus all the households are required by PP to complete the logbooks. But the reporting and verification shall be done on the basis of samples of the log-books from the households. Then the database/12/ has been used as the basis for PP to conduct the sampling method as stated below.

As per the requests from applied methodology, the reporting and verification shall be done on the basis of samples of the log-books from the households, according to the latest version of the "Standard for sampling and surveys for CDM project activities and programme of activities" (version 09.0)/36/, PP has established a sampling method following this standard and the sampling size is verified as correct and PP has used 90/10 confidence/precision as the criteria for the reliability of sampling efforts for small-scale project activity is deemed as in line with the requirement of the sampling standard/36/.

315 samples have been selected according to stratified sampling method in 6 towns based on the numbers determined for each town calculated by the weight of total households' numbers of each town in project area which is verified as in line with the numbers determined in Joint-PD-MR and in line with the requirement of the sampling standard/36/. And then for sample selection of each town, a random sampling method has been used for determine the household samples in each town and finally the randomly selected 315 samples has been defined. Due to this monitoring period covered nearly 4 years, project proponents randomly selected 315 samples of each year during this monitoring period, that means total 1,260 samples were selected for this monitoring period to check the farmers' logbooks/21/ to determine whether the project fields were cultivated according to the project cultivation practice as defined by the project activity.

The selected sampled farmers' logbooks/21/ including all parameters that are part of the project cultivation practice during cultivation season have been checked, CTI confirmed that 1,260 samples are randomly selected from the 4,859 households list by the simple random sampling (SRS) method. The excel function "randbetween" is employed to choose the farmers sample group. It is able to confirm that the sampling approach was consistent with the related requirements.

c. VVB sampling approach

The sampling plan during on-site validation is determined considering the accessibility and similitude of the areas and the tool for sampling was referred by VVB for the site joint validation and verification.

For Ex ante:

The VVB reviewed the Ex-ante investigation report/13/ and crosschecked with the inspection during the on-site period, including 22 random samples interview. Verified whether the sample plan is reasonable to conduct and the implementation and results of the sample survey can be accepted.

As per the Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities, Version 09.0/35/ (hereafter referred to as the "sampling standard"), CTI has applied acceptance sampling to verify the results of the ex ante baseline and local stakeholder survey.

Using own professional judgement, it is assumed that the Acceptable Quality Level (AQL) is 1% and the Unacceptable Quality Level (UQL) is 20% for this project. The maximum error of producer's risk is assumed at 5% and consumer's risk is assumed at 10%, in compliance with the sampling standard/35/. Based on these assumptions, the VVB refers to the sampling standard and sampling guideline and found that sample size should be not less than 18 and acceptance number is 1.

To be more conservative, before the on-site visit, CTI determined 22 as the sample size and randomly selected 22 samples from the survey list of the 100 samples/13/. For the randomly selection of 22, a pre-randomized order of numbers ranging from 1-100 as calculated by Excel's RAND () function was brought to the field and a farmer list prepared in the field. If for example, the first number is 5, then the farmers' name that was listed 5th on the farmer list would be the one to be surveyed.

During on-site visit, 22 sampled households (total sample size) were chosen by the VVB randomly to check the correctness of data that need to be determined. This considered to be a good practice.

The 22 selected households from Ex-ante investigation report/13/ are interviewed and site inspected by VVB from the sampling conducted by the PP. Via the information got during site interview and comparing with the PP's data in the sample records/13/, it is found that all information is consistent between each other. No discrepancy is found between the sample records/13/ and the site validation sample results. And all the samples confirmed that they participated in the PP's baseline and local stakeholder sampling survey.

As there are no discrepant records, i.e. the discrepant record is less than the acceptance number of 1, the sample records/13/ is accepted as per "Sampling and Surveys for CDM Project Activities and Programme of Activities"/36/.

For Ex post determination of $A_{s,g}$

The sampling plan during on-site verification is determined taking into account the accessibility and similitude of the areas and the tool for sampling was referred by VVB for the site verification.

The VVB reviewed the farmers' logbooks/21/ and cross-checked with the inspection during the on-site period, including 26 random famers interview and related cultivation area visit. Verified whether the sample approach is reasonable to conduct and the implementation and results of the sample survey can be accepted.

As per the Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities, Version 09.0/36/ (hereafter referred to as the "sampling standard"), CTI has applied acceptance

sampling to verify the monitoring results of farmers' compliance with project cultivation practice (determination of $A_{s,g}$) based on farmers' logbooks/21/.

For the households included in the project area, via checking the cooperation agreements signed between the project proponents and all the households which ensure the proper development of the project/8/, CTI confirmed that all the households are located in project area in Huangmei County within Huanggang City, Hubei Province, China. Due to the number of households who were selected with the logbooks involved was too large and scattered to carry out a census, hence based on the principle of cost-effectiveness, based on experience of the VVB, the acceptance sampling approach can be selected for this project due to relatively homogenous population being studied, given the similar soil condition and similar cultivation habit of farmers in Huangmei County.

Using own professional judgement, it is assumed that the Acceptable Quality Level (AQL) is 1% and the Unacceptable Quality Level (UQL) is 15% for this project. The maximum error of producer's risk is assumed at 10% and consumer's risk is assumed at 10%, in compliance with the sampling standard/40/. Based on these assumptions, the VVB refers to the sampling standard and sampling guideline and found that sample size should be not less than 26 and acceptance number is 1. And this sample size is confirmed as the moderate quantity in the table 2 of the standard/40/, thus is confirmed as appropriate number.

Furthermore, 26 households were selected to interview to confirm the information of the $A_{s,g}$ during site visit and if acceptance number is higher than 1, then the VVB will adjust the sampling number.

Also 1,260 farmer's logbooks/10/ have been checked all to check if any issues and if any were found, the VVB will also adjust the sampling number to interview more households to cross-check the information.

To be more conservative, before the on-site visit, CTI determined 26 as the sample size and randomly selected 26 samples from the survey list of the 1,260 samples. For the randomly selection of 26, a pre-randomized order of numbers ranging from 1-1,260 as calculated by Excel's RAND () function was brought to the field and a farmer list prepared in the field. If for example, the first number is 5, then the farmer's name that was listed 5th on the farmer list would be the one to be surveyed.

During on-site visit, 26 households (total sample size) were chosen by the VVB randomly to check the logbook's and interview them together with site and cultivation practice inspection, so that the project cultivation practice for determination of correctness of data $A_{s,g}$ can be verified. This considered to be a good practice.

The 26 selected households from 1,260 samples were interviewed, site and cultivation practice inspected by VVB from the sampling conducted by the PP. Via the information got during site interview and inspection of the cultivation practice comparing with the PP's data in the sample records of logbooks/21/, it is found that all information is consistent between each other. No discrepancy is found between the sample records/21/ and the site verification sample results. And all the samples confirmed that they have required by PP to complete the logbooks which the template was provided by PP.

As there are no discrepant records, i.e. the discrepant record is less than the acceptance number of 1, the sample records/21/ is accepted as per "Sampling and Surveys for CDM Project Activities and Programme of Activities"/36/.

2.2 Document Review

The VCS Joint-PD-MR/1/ of the project and supporting background documents related to the project implementation were reviewed. Documents review was conducted to ensure consistency with and identify any deviation from VCS program requirements. Desk review included an examination of the project design details, baseline scenario, additionality, ex ante and monitoring data and parameters, and quantification of GHG emission reductions.

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

The references used in the course of this validation and verification are summarized in Appendix 3.

The validation and verification were performed basing on the documents check and site inspection/measurements, refer to the section 3 and 4 of this report for the validation and verification process detail and corresponding documents review.

2.3 Interviews

Describe the interview process and identify personnel, including their roles, who were interviewed and/or provided information additional to that provided in the Joint-PD-MR/1/ and any supporting documents.

The objective of the interview process was to solicit important information from personnel related to project and relevant to the validation and verification process. Onsite interviews and information discussions were conducted with project implementer/I1/, local officer from Agriculture Bureau of Huangmei County/I2/, expert from Huazhong Agricultural University and Hubei Academy of Social Sciences/I3/, technicians from local agrotechnical stations/I4/, rice cultivation farmers/I5/ and Project VCS development consultant/I6/. The interviews were performed by the VVB on-site (within the project area, in Huangmei County within Huanggang City, Hubei Province, P. R. China) and the following is a list of the main interviewees and subject.

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Zhang/I1/	Xiaoli	Wuhan Haimingsen Environmental Protection Technology Co., Ltd./ Manager	21-March-2022 ~22-March-2022	- Chronological description of the project activity with documents of key steps of the implementation. - Technical details of the project realization, project feasibility, designing, operational life time - Project Boundary - Baseline - Additionality - Eligibility criteria - ER calculation	Lin Shunrong

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
					- Monitoring plan and arrangements - Monitoring methods and procedures - Crediting period - Project activity starting date - Ownership - local stakeholder consultation - SD indicators	
2.	Wu/I2/	Yuehan	Agricultural Bureau of Huangmei County / Section Staff	21-March-2022	- Baseline - Monitoring devices - Monitoring method - Water regime during the rice cultivation period	
3.	Hu/I3/	Dingquan	Huazhong Agricultural University /expert	21-March-2022		
4.	Chen/I3/	Jing	Hubei Academy of Social Sciences /expert	21-March-2022		
5.	Dong/I4/	LiPing	Technicians	21-March-2022 ~22-March-2022	- Baseline Survey - Farmer survey - Stakeholder comments - Agricultural aspects - Environmental aspects - Local Agricultural characteristics - Local Rice cultivation type - Local filed condition - Local farmers' income - Local rice yield - Local flooding condition - Fertilizer utilization - Technical Training	
6.	Wang	JingLing				
7.	Zhao	JueRong				
8.	Xing	JiangQing				
9.	Ge	GuiYun				
10.	Liu/I5/	ShaoQiu	Farmers participated the Ex ante Survey	21-March-2022	- General information of farmer - Field area - Rice type - Cultivation type - Baseline Scenario - Flooding type in baseline	
11.	Ye	WanChun		21-March-2022		
12.	Wang	YiRu		21-March-2022		
13.	Ye	YanXue		21-March-2022		

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
14.	Liu	JueLong		21-March-2022	- Fertilizer utilization in both baseline and project - Flooding type in project scenario - Rice yield comparison - Technical Training - Field record - Income level - Job opportunities	
15.	Huang	XueGao		21-March-2022		
16.	Ni	JianHua		21-March-2022		
17.	Xiao	RenCang		21-March-2022		
18.	Da	XianBing		21-March-2022		
19.	Huang	ZhuQing		21-March-2022		
20.	Qi	YingLai		21-March-2022		
21.	Ye	SiJiu		21-March-2022		
22.	Da	XianZhu		21-March-2022		
23.	Zhang	MingFang		21-March-2022		
24.	Sun	GuiPing		21-March-2022		
25.	Ni	ChunLin		21-March-2022		
26.	Du	XuLin		21-March-2022		
27.	Yu	JinLong		21-March-2022		
28.	Chen	JinBao		21-March-2022		
29.	Wang	LiangCai		21-March-2022		
30.	Hu	ChouFu		21-March-2022		
31.	Chen	Jin		21-March-2022		
32.	Tao/I5/	FangDe	Farmers sampled for checking the logbook	22-March-2022	- General information of farmer - Field area - Rice type - Cultivation type - Baseline Scenario - Flooding type in baseline	
33.	Hu	QuHeng		22-March-2022		
34.	Huang	JinZhong		22-March-2022		
35.	Rao	ShiCheng		22-March-2022		
36.	Jiao	HongYou		22-March-2022		

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
37.	Xing	LaiSheng		22-March-2022	- Fertilizer utilization in both baseline and project - Flooding type in project scenario - Rice yield comparison - Technical Training - Field record in Logbook - Income level - Job opportunities	
38.	Bao	ShiHua		22-March-2022		
39.	Shi	ZhengBing		22-March-2022		
40.	Huang	CunJin		22-March-2022		
41.	Wang	QiYing		22-March-2022		
42.	Chen	ChangWu		22-March-2022		
43.	Rao	ShiSheng		22-March-2022		
44.	Wang	ZhaoYi		22-March-2022		
45.	Sun	QuanHe		22-March-2022		
46.	Chen	GuoXiu		22-March-2022		
47.	Yang	ShuJie		22-March-2022		
48.	Ji	SanYou		22-March-2022		
49.	Wang	WeiTian		22-March-2022		
50.	Tang	ShunLai		22-March-2022		
51.	Hou	XiangFu		22-March-2022		
52.	Zhang	QiShan		22-March-2022		
53.	Cui	TongFu		22-March-2022		
54.	Hu	YunJiao		22-March-2022		
55.	Yao	ShangRu		22-March-2022		
56.	Lin	GuoMao		22-March-2022		
57.	Liu	JueLei		22-March-2022		
58.	Liu/I6/	Lili	Search CO2 (Shanghai) Environmental Science &	21-March-2022 ~22-March-2022	- Financial aspects - Monitoring period - Project activity starting date	

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
			Technology Co. Ltd./ Project manager		- Assumptions - Baseline study assumptions - Additionality - Crediting period - Monitoring plan and implementation - Monitoring measurements - Editorial issues of the VCS Joint-PD-MR	

2.4 Site Inspections

The joint validation and verification site inspection was conducted on 21-March-2022~22-March-2022. A ground inspection of the project was conducted during the site visit and the joint validation and VVB interviewed project implementer/I1/, local officer from Agriculture Bureau of Huangmei County/I2/, expert from Huazhong Agricultural University and Hubei Academy of Social Sciences/I3/, technicians from local agrotechnical stations/I4/, rice cultivation farmers/I5/ and Project VCS development consultant/I6/.

During the site inspection, the reference fields for both baseline and project scenarios were inspected, the sampled farmers and technicians, experts were interviewed and documents evidence were checked, details as following table,

Duration of on-site inspection: 21-March-2022~22-March-2022				
No.	Activity performed on-site	Site location	Date	Team member
1.	Opening meeting Interview with PP, experts, consultant representatives	Meeting room in Hotel in Huangmei County, Huanggang City, P.R. China	21-March-2022	Lin Shunrong
2	On-site inspection Interview with sampled farmers and technicians	Project Area in Huangmei County within Huanggang City, Hubei Province, P.R. China	21-March-2022~22-March-2022	Lin Shunrong
3	Documents check	Project Area in Huangmei County within Huanggang City, Hubei Province, P.R. China	22-March-2022	Lin Shunrong
4	Finding Summary	Project Area in Huangmei County within Huanggang City, Hubei Province, P.R. China	22-March-2022	Lin Shunrong
5	Close Meeting	Project Area in Huangmei County within Huanggang City, Hubei Province, P.R. China	22-March-2022	Lin Shunrong

During the site inspection, total six baseline and project reference fields were checked, the 6 plot areas are determined by the VVB by site visit and checking the map of the project location, details as following table,

Table 2-1 Locations for site inspection with reference fields

Site Visit time	Area	Coordinates		Inspection Results
Baseline Scenario Reference fields				
22-March-2022	Wuyuanba Village, Zhuogang Town, Huangmei County	115.8274°E	30.015409°N	The baseline reference fields were selected that they are representative of baseline scenario where single-cropping rice was planted by continuously flooded method without any organic amendments, and the geographical coordinates of three fields were verified as consistent with the Joint-PD-MR by GPS device used by VVB. Also the chambers were confirmed as installed on the fields.
		115.827696°E	30.015396°N	
		115.828024°E	30.015993°N	
Project Scenario Reference fields				
22-March-2022	Wuyuanba Village, Zhuogang Town, Huangmei County	115.832844°E	30.008734°N	The measurements on project and baseline reference fields were carried out in an equal manner and simultaneously. The project reference fields were selected that they are representative of project scenario where single-cropping rice was planted by intermittent flooded method without any organic amendments, and the geographical coordinates of three fields were verified as consistent with the Joint-PD-MR by GPS device used by VVB. Also the chambers were confirmed as installed on the fields.
		115.83355°E	30.009124°N	
		115.834323°E	30.009514°N	

Furthermore, during the site inspection, VVB also visited 26 households' (the samples selected for determined the $A_{s,g}$) cultivation area within the project area and interviewed with them about the information in logbooks. Hence during the site inspection, the 26 sampled areas are determined by the VVB by checking the map of the project location, details as following table,

Table 2-2 Locations for famer's area

Site Visit Time	Area	Coordinates		Inspection Results
Project Area				
21-March-2022~22-March-2022	Wuzui Village	115.874802°E	30.028171°N	Each area is verified as located in the project boundary by checking the geographical
		115.874577°E	30.026709°N	
		115.87525°E	30.028619°N	
		115.875405°E	30.026049°N	
		115.874508°E	30.025964°N	
	Wuyuanba Village	115.82961°E	30.006874°N	
		115.830916°E	30.006565°N	

		115.831085°E	30.007355°N	coordinates and KML file. Cultivation and flooding approach are consistent as project design
		115.829409°E	30.005914°N	
		115.830177°E	30.007281°N	
	Baoxing Village	115.822444°E	29.8096499°N	
	Bianzhou Village	115.783805°E	29.8141594°N	
	Shanjiazhou Village	115.852156°E	29.76691°N	
	Dukou village	115.812226°E	29.7992926°N	
	Xinkai Village	115.81128°E	29.8181504°N	
		115.808455°E	29.8198055°N	
	Dengdu Village	115.952847°E	29.8700999°N	
	Denghu Village	115.950926°E	29.8707778°N	
	Guohu Village	115.899264°E	29.8364039°N	
	Wuhe Village	115.893055°E	29.8554176°N	
	Xinggang Village	115.911767°E	29.9050129°N	
	Yudun Village	115.966012°E	29.8668276°N	
	Guoqiao Village	115.904332°E	29.831964°N	
		115.904519°E	29.8303968°N	
	Daxing Village	115.905615°E	29.8142229°N	
	Wanghui Village	115.887678°E	29.7966073°N	

2.5 Resolution of Findings

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

A Corrective Action Request (CAR) is established where:

- The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;
- The VCS Standard Version 4.2 requirements have not been met;
- There is a risk that the emission reductions cannot be monitored or calculated.

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

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

A detailed list of the CARs CLs and FAR raised and discussed in the course of this validation and verification is included in Appendix 4 of this report.

In the course of the validation 8 Corrective Action Requests (CARs), 8 Clarification Requests (CLs) were raised and successfully closed. The assessment is included in the report.

2.5.1 Forward Action Requests

This is the joint validation and 1st VCS verification, thus there is no FAR raised previously.

3 VALIDATION FINDINGS

3.1 Project Details

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

Type:

Through the onsite visit, interviewing the project developer and reviewing the project description/1/, it was confirmed that the project was implemented to change the water regime during the rice cultivation period. It changes continuously flooded to intermittent flooded condition during rice cultivation so that to result in reduced anaerobic decomposition of organic matter in rice cropping soils and thus reduced generation of methane. The Project involves a total acreage of 13,120 ha for single-cropping rice.

As per the Appendix 1 Eligible AFOLU project categories in VCS standard Version 4.2/43/, CTI confirmed that the project belongs to one type of AFOLU categories, i.e. Agricultural Land Management (ALM). While eligible ALM activities are those that reduce net GHG emissions on croplands and grasslands by increasing carbon stocks in soils and woody biomass and/or decreasing CO_2, N_2O and/or CH_4 emissions from soils. By checking the project design, CTI confirmed that the project is applicable to one of eligible ALM activities, i.e. Improved Cropland Management (ICM). For ICM, as per the standard, "this category includes practices that demonstrably reduce net GHG emissions of cropland systems by increasing soil carbon stocks, reducing soil N_2O emissions, and/or reducing CH_4 emissions", and through the onsite visit, interviewing the project developer and reviewing the project design, CTI confirmed that the project takes practices to reduce CH_4 emissions of cropland systems by change the water regime during the rice cultivation period from continuously flooded to intermittent flooded condition so as to increase soil carbon stocks, thus CTI verified that the sectoral scope 14: "Agriculture, Forestry, and other Land Use (AFOLU) is applicable to the project.

Furthermore, via checking the email confirmation from VERRA dated on 19-November-2020 sent by PP/3/, CTI verified that VERRA also confirm that Project type is considered an AFOLU project under the VCS Program. This is in accordance with the definitions of eligible AFOLU project categories set out in Appendix 1 of the VCS standard Version 4.2. So although the project applied CDM approved methodology AMS-III.AU: Methane Emission Reduction by Adjusted Water Management Practice in Rice Cultivation, version 4.0 (which belongs to scope 15 as per the EB's definition), the sectoral scope 14: "Agriculture, Forestry, and other Land Use (AFOLU) is confirmed to be applicable to the project.

It was confirmed that the project is not a grouped project.

- Technologies and measures implemented:

The information and descriptions reported in section 1.1 of the Joint-PD-MR/1/ have been checked.

Adjusted Water Management in Rice Cultivation In Huangmei County (hereinafter referred to as the Project) is a Project that change the water regime during the rice cultivation period. It changes continuously flooded to intermittent flooded condition during rice cultivation so that to result in reduced anaerobic decomposition of organic matter in rice cropping soils and thus reduced generation of methane. The Project involves a total acreage of 13,120 ha for single-cropping rice.

Via site inspection with rice lands/55/ and interview with farmer representatives/I5/, CTI confirmed that before the project implementation, the paddy fields are regarded as an isolate unit and the rice was continuously flooded, and with the project, the cement ditches and reservoirs were constructed and pumps and valves were installed to conduct the intermittent flooded water regime during rice cultivation. With the replacing of the continuously flooded method by intermittent flooded method, the project solves the problems of excessive water used during rice cultivation and expected to decrease 48% of the CH_4 emission/54/.

Via checking the Joint-PD-MR/1/, CTI confirmed that the scenario existing prior to the implementation of the project as stated in the Joint-PD-MR is rice was cultivated by continuously flooded method. The baseline scenario is the same as the scenario existing prior to the implementation of the project activity, which has been confirmed during the site interview with local officer/I2/ and agricultural experts/I3/ and sampled farmers/I5/ and checking the Ex-ante investigation report/13/. Thus CTI verified that the baseline scenario is reasonable and correct.

The project activity generates CH_4 emission reductions by build ditches, reservoir construction, pumps and valves installation for applying intermittently flooded method in project area, that otherwise continuously flooded method was used in rice paddies, which means fields have standing water throughout the rice growing season and may only dry out for harvest and in this condition, the organic matter in rice soil under flooded condition would emit a large amount of methane (CH_4) because of anaerobic decomposition. Due to the CH_4 in rice paddies is produced by the anaerobic decomposition of organic matter after the flooding, hence through the project that allows the field to drain halts CH_4 production, which happens in anaerobic condition, reducing the total quantity of CH_4 released during the cropping season.

The project will not only generate GHG emission reductions but also save water, increase production thus produce financial, social and environmental benefits.

The expected total emission reduction of the Project in the first crediting periods of 7 years (from 10-May-2018 to 09-May-2025) is 419,307 tCO_2e, and the annual emission reduction is estimated to be 59,901 tCO_2e.

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

- Eligibility of the project:

The PP has described and justified how the project is eligible under the scope of the VCS Program in Joint-PD-MR as per the section 2.1.1 of VCS standard Version 4.2. The assessment is provided as below,

1. The project activity generates GHG emission reductions including CH_4 which belong to the six Kyoto Protocol greenhouse gases which belongs to scope 1) of section 2.1.1 of VCS standard Version 4.2.
2. Via checking the Joint-PD-MR/1/ of the project, CTI verified that the project is implemented to change the water regime during the rice cultivation period. It changes continuously flooded to intermittent flooded condition during rice cultivation so that to result in reduced anaerobic decomposition of organic matter in rice cropping soils and thus reduced generation of methane, and the additionality is verified as actual, thus there is no assumption of having generated GHG

emissions primarily for the purpose of their subsequent reduction, removal or destruction for this project.

3. Via checking all the excluded project activities in the table, CTI verified that this project type is not excluded by the scope of VCS program.

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

Furthermore, as per the Appendix 1 Eligible AFOLU project categories in VCS standard Version 4.2/43/, CTI confirmed that the project belongs to one type of AFOLU categories, i.e. Agricultural Land Management (ALM). While eligible ALM activities are those that reduce net GHG emissions on croplands and grasslands by increasing carbon stocks in soils and woody biomass and/or decreasing CO_2, N_2O and/or CH_4 emissions from soils. Via site inspection and checking the Project implementation program/6/, CTI confirmed that the project reduces CH_4 emissions on croplands by replacing the continuously flooded method with the intermittently flooded method, hence, the project is defined as an eligible ALM activity.

In addition, for the ALM type, the project area shall not be cleared of native ecosystems within the 10 year period prior to the project start date, via checking the Certificate of Eligibility for Land provided by Huanggang Agricultural Bureau/29/ and site interview with local officers from agricultural bureau, CTI confirmed that the project areas were not cleared of native ecosystems since 2005 which means that no cleared of native ecosystems in project areas within the 10 year period prior to the project start date.

By checking the project design, CTI confirmed that the project is applicable to one of eligible ALM activities, i.e. Improved Cropland Management (ICM). For ICM, as per the standard, “this category includes practices that demonstrably reduce net GHG emissions of cropland systems by increasing soil carbon stocks, reducing soil N_2O emissions, and/or reducing CH_4 emissions”, and through the onsite visit, interviewing the project developer and reviewing the project design, CTI confirmed that the project takes practices to reduce CH_4 emissions of cropland systems by change the water regime during the rice cultivation period from continuously flooded to intermittent flooded condition so as to increase soil carbon stocks.

Thus CTI verified that the project is eligible to the scope of AFOLU.

• Project design, including eligibility criteria for grouped projects

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

• Project proponent and other entities involved in the project

The project proponent (Wuhan Haimingsen Environmental Protection Technology Co., Ltd., hereinafter "Wuhan Haimingsen”) and the contact information reported in section 1.5 of the VCS Joint-PD-MR have been confirmed to be correct through checking the business license of the company/9/ and interviewing with the PP representative through the on-site visit/I1/.

The other entities involved in the Project is (Search CO2 (Shanghai) Environmental Science & Technology Co. Ltd., hereinafter "Search CO2") acted as consultant and the contact information reported in section 1.6 of the VCS Joint-PD-MR have been confirmed to be correct through checking the business license of the Search CO2 (Shanghai) Environmental Science & Technology Co. Ltd./9/ and interviewing the representative from this company.

• Ownership

The section 1.7 of the Joint-PD-MR has been checked, and during the on-site visit and checking the business license/9/ of the participant parties and the carbon reduction project cooperation agreement signed between the households and Wuhan Haimingsen Environmental Protection Technology Co., Ltd./8/, CTI verified that the project developer Wuhan Haimingsen Environmental Protection Technology Co., Ltd. is a privacy company, who is in charge of the integrated implementation and management of the project. The rice paddies and agricultural fields involved in the project was owned by the households which has been confirmed by checking the Land rights certificate/31/ site interview with farmers/I5/ and local officer from Agriculture Bureau of Huangmei County/I2/.

The project proponent is responsible for the comprehensive implementation and management of the project and households also have right to authorize Wuhan Haimingsen as a representative of the carbon project owner and Wuhan Haimingsen only has the right to make decisions about the carbon reduction project which is confirmed by checking the carbon reduction project cooperation agreement signed between the households and Wuhan Haimingsen Environmental Protection Technology Co., Ltd./8/ and interview with farmers/I5/.

Each household has signed the carbon reduction project cooperation agreement with Wuhan Haimingsen Environmental Protection Technology Co., Ltd., due to the project involves 4,859 rural households, hence to check the proof of right and agreements, VVB has used a sampling method to randomly selected 100 signed agreements from 100 households and checked their carbon reduction project cooperation agreements signed with Wuhan Haimingsen Environmental Protection Technology Co., Ltd/8/. The sample size is determined as follow,

Following "Sampling and Surveys for CDM Project Activities and Programme of Activities" version 09.0/36/ and "Guideline of Sampling and surveys for CDM project activities and programmes of activities" version 04.0/37/, the verifier checked the proof of right and agreements as the following steps:

VVB has checked the sampling approach as per the "Guideline of Sampling and surveys for CDM project activities and programmes of activities" version 04.0/37/, this sampling approach found to be appropriate as the households are assumed as homogenous based on the experience VVB.

Via checking the paragraph 12 of 2.1.1 section of the guideline/37/, it confirmed that the Sample size calculation by Simple Random Sampling can be done using following formulae:

$$n \geq \frac{1.645^2 N \times p(1-p)}{(N-1) \times 0.1^2 \times p^2 + 1.645^2 p(1-p)}$$

Where

n	Sample size
N	Total number of households

P	Expected proportion, which is defined as 0.75 based on the VVB expertise of sampling
1.645	Represents the 90% confidence required
0.1	Represents the 10% relative precision

N is 4,859 as determined of total number of households, P is determined as 75%, as per the level of confidence, VVB expects that 90% of the samples taken shall comply with the project requirements.

Hence the *n* is calculated as

$$1.645^2*4,859*0.75*(1-0.75)/\{(4,859-1)*0.1^2*0.75^2+1.645^2*0.75*(1-0.75)\}=90.$$

The sample size is 90 as above calculation method according to the "Guideline of Sampling and surveys for CDM project activities and programmes of activities" version 04.0/37/, the result is confirmed as correct and reasonable.

Hence to be conservative, VVB take more samples of 100, and randomly selected 100 households from the database/12/ and checked corresponding carbon reduction project cooperation agreements signed with Wuhan Haimingsen Environmental Protection Technology Co., Ltd. Therefore, VVB confirmed that the proof of right and agreements were assessed to a reasonable level of assurance.

Furthermore, Wuhan Haimingsen has already sold the carbon project development right to Search CO2 which has been verified in the emission reduction purchase agreement/15/, thus Search CO2 leads the development and management of the carbon project.

Hence, based on the above assessment, CTI verified that rice paddies and agricultural fields involved in the project was owned by the households, the project proponent is responsible for implementation and management of the project, and Search CO2 plays roles related to carbon including development and management of the carbon project and buyer of VCUs due to Search CO2 has experiences for develop the carbon projects. Furthermore, due to Search CO2 will buy the VCUs of the project, hence to achieve the success of the VCS registration and issuance, Search CO2 participated in compiling the monitoring plan, organizing the training etc. for the carbon development only, which is verified will not have overall control and responsibility for the project itself and also will not violate the project proponent's rights and responsibilities of the project.

- Project start date

The project start date is 10-May-2018 which is verified as the date on which the project land preparation was started. Via checking the Construction Contract/11/ and record in the households database/12/, CTI verified that the start date is correct and in line with the VCS standard Version 4.2.

- Project crediting period

For the VCS crediting period, PP has chosen 21 years renewable crediting period which is in line with the concept for crediting period in section 3.8.2 of the VCS Standard version 4.2. The crediting period of this project will be using a 7-year, twice renewable crediting period, for a combined total project crediting period of 21 years from 10-May-2018 to 09-May-2039, and the first 7-year period is from 10-May-2018 to 09-May-2025.

• Project scale and estimated GHG emission reductions or removals

The average annual ERs of the project are 59,901 tCO_2e, which is lower than the threshold of large-projects (300,000 tCO_2e per year). Therefore the project falls in the category of "Project" as per definition in VCS standard. And the estimated total Estimated GHG Emission Reductions or Removals during the 1st 7 years of VCS crediting period (10-May-2018 to 09-May-2025) is 419,307 tCO_2e.

• Project location

The project site is located at Huangmei County within Huanggang City, Hubei Province, P. R. China. The geographical coordinates for the project site are 115°43'E and 116°07' E, 29°43'N and 30°18'N. The location of the project site is verified with on-site investigation by GPS devices and checking the google earth map/44/.

KML file with project boundary is checked as provided/4/, and is verified as consistent with the Joint-PD-MR and on-site investigation by GPS devices and checking the google earth map/44/.

• Conditions prior to project initiation

The rice was planted under continuously flooded condition existing prior to the project in project area, the irrigation and drainage ditch of rice paddies was made up of soil, which is not enough to make the irrigation and drainage controllable which has been confirmed by checking the Ex-ante investigation report/13/ and interview with farmers/I5/, the project is the construction of new drainage cement ditch and reservoirs and installation of pumps and valves. The conditions prior to project initiation have been validated in the Joint-PD-MR/1/ to be the same as the baseline scenario identified in the Joint-PD-MR/1/ section 3.4, i.e. continuation of the current practice which is continuously flooded water regime without any organic amendment during rice cultivation in the project fields in this project.

The baseline scenario is the same as the scenario existing prior to the implementation of the project activity, which has been confirmed during the site interview with local officer/I2/, agricultural experts/I3/ and local farmers/I5/ and checking the Ex-ante investigation report/13/. Thus CTI verified that the baseline scenario is reasonable and correct.

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

Due to the project is an AFOLU project, the appropriate information on the climate, hydrology, topography, relevant historic conditions, soils, vegetation and ecosystems including the present and prior environmental conditions of the project area has been provided in Joint-PD-MR as assessed as correct and actual via site inspection and checking the public information and checking the Ex-ante investigation report/13/of the project area and also cross-checked by interview with local officer/I2/, agricultural experts/I3/ and local farmers/I5/.

• Project compliance with applicable laws, statutes and other regulatory frameworks

The Joint-PD-MR has stated that the project is in the field of agriculture, the rice cultivation and flooding is confirmed as in line with the laws and regulations as listed in the Joint-PD-MR/52/. For the construction during the construction period, via checking the Inspection and Acceptance Report of the project/7/, CTI verified that the construction is in line with the requirement of national laws and regulations as stated in

the Inspection and Acceptance Report of the project/7/ which means that the project is in line with the national and local laws and regulations based on the local expertise of the VVB. And as stated in the Joint-PD-MR/1/ and confirmed by interview with local officer/I2/, CTI verified that the project will be subject to regular inspection by local government during the implementation period to ensure continuous compliance.

In conclusion, the project complies with all relevant local, regional and national laws, statutes and regulatory frameworks in China.

• Participation under other GHG programs:

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

The project has neither been registered nor seeking registration under any other GHG programs which has been confirmed via checking the UNFCCC/49/, GS/48/, VCS/50/ and other GHG schemes' website. CTI verified that the project is seeking registration only in VCS program/50/.

-Rejection by other GHG programs

The project has neither been rejected by any other GHG programs which has been confirmed via checking the UNFCCC/49/, GS/48/, VCS/50/ and other GHG schemes' website.

• Other forms of credit:

-Emissions trading programs and other binding limits

The project proponent is not part of any emission trading program which has been confirmed via checking the UNFCCC/49/, GS/48/, VCS/50/ and other GHG schemes' website. The net GHG emission reductions during this monitoring period from the project was not used for compliance with emission trading programs or to meet binding limits on GHG emissions. The project activity has not participated under any other GHG programs which has been confirmed via checking the UNFCCC/49/, GS/48/, VCS/50/ and other GHG schemes' website, CTI verified that the implementation of the project is consistent with the description in the Joint-PD-MR and the monitoring system is fully functional to generate Verified Carbon Units (VCUs) without any double counting for this monitoring period from 10-May-2018 to 31-December-2021, which is also proved by the Declaration of no double counting and not involved in the other GHG programs issued by project owner/30/.

Besides, based on VVB's local expertise, China has a national emissions trading scheme only cover the high-emission industries, such as power generation sector that emitted at least 26,000 tons of CO_2e/year which has been verified in the public website/45/, and CTI confirmed that the project activity is not included the mandatory emission control scheme and there is no emission cap enforced for the project owner by checking the enforced company list in public information/46/. Hence, CTI confirmed that the emission reductions will not be double counted.

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

Via interview with the project developer/I1/ and based on above assessment, CTI confirmed that the project has not created any other form of environmental credit.

• Sustainable development contributions

Via on-site inspection, checking the evidence provided as below and interview with the project implementer, CTI verified that the project contributes the sustainable development through the following aspects:

1. *The percentage of increase in rice yield compared to the baseline scenario level (Goal 2 of UN SDG, Target 2.4) - rice production increased of 9.49% approximately during this monitoring period and since the project implemented, the assessment confirmed the value by interview with farmers and experts, and checking the farmers' log books/36/ comparing with the Ex-ante investigation report of Rice Cultivation/23/, hence the contribution to this SDG has been confirmed and the provisions for monitoring and reporting this goal is verified as reasonable;*
2. *Participation stakeholder villages in formal and non-formal education and training (Goal 4 of UN SDG, Target 4.4) - 100% of population in stakeholder villages attend trainings and improve their capacity due to diversified education opportunities during this monitoring period, the percentage is confirmed by interview with local stakeholders and checking the training records/26/, hence the contribution to this SDG has been confirmed and the provisions for monitoring and reporting this goal is verified as reasonable;*
3. *The number of job opportunities provided by this project to local farmers (Goal 8 of UN SDG, Target 8.5) –35 farmers are employed by the project as long-term technicians and paid with salary of CNY 200 per month during this monitoring period since the project implemented, the figure is confirmed by interview with technicians, and checking the labor contracts/44/ with the technicians and related payrolls/45/, hence the contribution to this SDG has been confirmed and the provisions for monitoring and reporting this goal is verified as reasonable.*
4. *Tons of greenhouse gas emissions reduced compared to the baseline scenario level (Goal 13 of UN SDG, Target 13.0) - the total GHG emission reductions generated by the project are 241,198 tCO_2e during this monitoring period, and it is estimated that 419,307 tCO_2e Emissions will be reduced during the 1st 7 years of VCS crediting period (10-May-2018 to 09-May-2025), the value is confirmed by checking the Emission Reduction Calculation sheet/2/, hence the contribution to this SDG has been confirmed and the provisions for monitoring and reporting this goal is verified as reasonable;*
5. *Number of farmers who have received sensitization and awareness events on climate change mitigation, adaption, impact reduction and early warning (Goal 13 of UN SDG, Target 13.3) - all farmers involved with sensitization and awareness events, providing environmental education and education on sustainable development during this monitoring period, the number of farmers is confirmed by interview with local stakeholders and checking the training records/26/, hence the contribution to this SDG has been confirmed and the provisions for monitoring and reporting this goal is verified as reasonable;*

• Additional information relevant to the project, including:

-Leakage management for AFOLU projects

According to the applied methodology AMS-III.AU (Version 04.0)/34/ and the demonstration in the Joint-PD-MR and section 4.4.5.3 of this report, any effects of the project activity on GHG emissions outside

the project boundary are deemed to be negligible and do not have to be considered under this methodology, thus the leakage of the project is zero. Thus no management involved.

-Commercially sensitive information

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

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

CL 01, CAR 01, CAR 02 and CAR 03 were raised and successfully closed. Refer to Appendix 4 for detail assessment.

3.2 Participation under Other GHG Programs

The project has neither been registered nor seeking registration under any other GHG programs which has been confirmed via checking the UNFCCC/49/, GS/48/, VCS/50/ and other GHG schemes' website. CTI verified that the project is seeking registration only in VCS program/50/.

3.3 Safeguards

3.3.1 No Net Harm

The analysis of the potential negative environmental and socio-economic impacts of the project activity is sufficiently described in Joint-PD-MR/1/ and the impacts are verified as actual and reasonable. The assessment is as below,

Environmental impacts - It is considered that the environmental impacts have been comprehensively described in Section 2.1 of Joint-PD-MR/1/ including below,

i. The large amount of construction waste could be generated and construction dust could be produced during the construction period, which will impact on the ecosystem and environment of local area in project area according to the project construction situation and interview with local experts and farmers.

   Via interview with local experts and farmers, there was no adverse effect on the ecology, air, water and solid waste, for the project subject to the implementation of pollution mitigation measures during construction period according to the requirements of Huanggang City Construction Waste Management Measures/53/.

ii. The excessive use of fertilizer and pesticide could cause pollution to soil and surface water if farmers do not control the amount of fertilizer and pesticide well during cultivation in the operation period, which will impact on the ecosystem and environment of local area in project area according

to the project operation situation and interview with local experts/I3/, technicians/I4/ and farmers/I5/.

Via checking the supporting evidence Technical Guidelines for Intermittently Flooded Rice Cultivation Method in Hubei Province issued by Hubei Provincial Department of Agriculture/20/, Report of Measuring Methane Emission Rate by Closed Chamber in Huangmei County in 2017/17/ and Report of Measuring Methane Emission Rate of Rice Paddies with Different Water Regime by Closed Chamber from 2018 to 2021/18/, VVB confirmed that the amount of fertilizer used before the project activity (baseline reference fields) is not larger than that used throughout the project period (project reference fields), both the evidence are finished by third party, hence accepted by VVB.

Environmental impacts mitigation actions - Associated with the interview with local experts/I3/, technicians/I4/ and farmers/I5/ and checking the Technical Guidelines for Intermittently Flooded Rice Cultivation Method/20/, CTI confirmed that technicians patrolled the rice paddies every week and instructed the farmers how to use the optimal amount of fertilizer according to the technical guidelines. Hence CTI verified that there were no excessive use of fertilizer and pesticide and no any negative impacts found in the project location during this monitoring period. Furthermore, via checking the Farmers' log-books/21/, CTI confirmed that the amount of fertilizer used have been recorded in farmers' cultivation logbook, and the summarized value is consistent with the optimal amount of nitrogen fertilizer recommended in Technical Guidelines/20/.

Therefore, based on the applied methodology, CTI verified that due to the optimized N fertilization practice, N_2O emissions do not significantly deviate from the baseline emissions and hence are not considered.

Socio-economic impacts - It is considered that the Socio-economic impacts have been comprehensively described in Section 2.1 of Joint-PD-MR/1/ including

i. The construction of the project would put economic pressure on them, especially farmers and if the intermittently flooded method cannot be conducted strictly during rice cultivation within the project area, then the yield would not be good, and the income will not be increased.

ii. The cement ditches and reservoirs, and pumps and valves were installed were badly damaged without long-term maintenance in the operation period, which will impact on the life safety of farmers and even result in reduced rice production and thus reduced farmers' income according to the project operation situation and interview with local experts/I3/, technicians/I4/ and farmers/I5/.

Socio-economic impacts mitigation actions – Via interview with local officer and farmers, CTI confirmed that the implementation of the project will improve local socio-economic development through providing a part of funds as subsidies to farmers and providing trainings to technicians and farmers involved in this project which has been verified by checking the funds allocation receipts to households/14/ and the training records/26/. Furthermore, associated with the interview with local experts/I3/, technicians/I4/ and farmers/I5/ and checking the Technical Guidelines for Intermittently Flooded Rice Cultivation Method/20/, CTI confirmed that technicians patrolled the rice paddies every week and farmers could immediately call the technician if a ditch broke down in their fields and the technicians can solve the problem within one hour and appeal to local agricultural bureau to activate the emergency mechanism if can't solve by themselves. Furthermore, via checking the farmers' log-books/21/ and confirmed by local

officers/I2/ and technicians/I4/, CTI verified that there were no any damaged ditches and reservoirs, and pumps and valves found in the project location during this monitoring period.

In conclusion, there were some potential impacts on environment and socio-economic during the operation period which has been demonstrated in the Joint-PD-MR/1/, however the proper measurements and mitigation actions have been carried out by project implementer to mitigate such impacts and there is no net harm occurred during this monitoring period.

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

3.3.2 Local Stakeholder Consultation

A stakeholder consultations survey including questionnaires and stakeholder meetings was carried out by the project developer prior to the start date of the project and also during this monitoring period to present local stakeholders' opinions on the implementation of project and their willingness to participate.

Consultation prior to the start date of the project:

First, a local stakeholder consultation meeting was held by Hubei Academy of Social Sciences on 07-July-2017, through meeting notice published on the notice board in each village, the local stakeholders were invited to give their comments and willingness to participate the project during the meeting. Via checking the meeting record/24/, CTI confirmed that all the 47 participants all agreed to implement the project and show their willingness for participation.

In addition, in order to get more comments from the local stakeholders, except the meeting, survey questionnaires were distributed to relevant personnel of village representatives, relevant governmental officials, local households by the Hubei Academy of Social Sciences in July 2017, totally 100 copies of questionnaires were issued to relevant personnel with 100 pieces of reply received. The stakeholders' background information and comments from questionnaires were summarized and recorded in the Joint-PD-MR/1/, Section 2.2. And VVB has confirmed that the survey of 100 samples (among 98 are farmers) is a sufficient sample of all the farmers involved in the project which has been assessed in the section 2.1 of this report.

Via checking the 100 filled questionnaires/24/, CTI verified that all respondents knew or heard about the Project. Most of them are supportive of the project construction, and think the Project will bring more benefit than loss through reducing methane emissions, saving water resource and increasing the rice productivity. Most of the respondents are willing to participate in the construction and operation of the project and they have no opinions on the project implementation.

And some respondents have concerns about the construction funds and how to conduct intermittent flooded water regime well, these impacts have already been considered by the PP has taken related mitigation measures through providing a part of funds as subsidies to farmers and providing trainings to technicians and farmers involved in this project which has been verified by checking the funds allocation receipts to households/14/ and the training records/26/ so that the project can be implemented successfully.

Finally, CTI verified that there is no one thinks that the project will have a negative impact on the local life and environment, local stakeholders are supportive of the project construction by checking the questionnaires/24/, and thus no need to change the project design based on the stakeholder inputs.

Mechanism for on-going communication and Consultation during this monitoring period:

For the project implementation, via site inspection checking the Suggestion Note and the contact information published on the notice board of villages/25/, CTI confirmed that there was no comments or suggestions in the book during the implementation period since 2018, and via interview with PP, CTI verified that they will check the book regularly and collect all the comments received.

Besides, the technicians have paid a regular visit to the villages and collect comments if any and surveyed the project area which has been confirmed by site interview with technicians/I4/, and by interviewed with local farmers, CTI confirmed that local stakeholders have been communicated with relevant laws and regulations, potential costs, risks, and benefits the project, the results of monitoring during this monitoring period and the implementation status of the project.

Via interview with the local officer/I2/ and farmers/I5/ during site visit, CTI verified that there were no comments and issues from the local stakeholders during this monitoring period and the project approved by local government. Hence there is no need to change the project design based on the stakeholder inputs.

AFOLU Specific

Due to the project is an AFOLU project, according to the Joint-PD-MR template/39/ request, below are assessed of how the project has communicated the following with local stakeholders,

- The project design and implementation, including the results of monitoring.

Prior to the project, the notice of stakeholder meeting has been posted on the bulletin board in each village which has been verified by checking the photo of posted notice/55/, besides, a stakeholder meeting was held before the project to explain all the designs of the High-standard farmland construction and carbon development project. In addition, during this monitoring period, the results of project implementation, including the results of monitoring has been communicated with the stakeholders by technicians who paid a regular visit to the villages and collect comments and this is also checked during site inspection and interview with technicians and farmers.

- The risks, costs and benefits the project may bring to local stakeholders

Through stakeholder meeting, questionnaires survey and daily visits of technicians, the risks, costs and benefits the project have been brought to local stakeholders which confirmed by interview with technicians/I4/, local farmers/I5/ and checking the Local Stakeholder Consultation records/24/.

- All relevant laws and regulations covering workers' rights in the host country

Informed stakeholders of all relevant laws and regulations covering workers' rights in the host country by representative of project implementer and under the supervision of the local agricultural bureau and government confirmed by interview with representative of project implementer/I1/, local officers/I2/ and local farmers/I5/.

- The process of VCS Program validation and verification and the validation/verification body's site visit

Informed stakeholders by publishing notification and invitation on the notice board and informed by technicians to farmers about the process of VCS Program verification and the validation/verification

body's site visit confirmed by interview with local farmers/I5/ and checking the photo of posted notice/55/.

In conclusion, there were no negative opinions received from local stakeholders on the project implementation during this monitoring period, therefore, CTI verified that the project continues to communicate the necessary relevant information about the project implementation and the process of VCS Program verification during this monitoring period.

CL 03 and CL 04 were raised and successfully closed. Refer to Appendix 4 for detail assessment.

3.3.3 Environmental Impact

In China, according to Chinese law "Environmental Impact Assessment Law of the People's Republic of China", CTI confirmed that there is no requirement from any environmental impact assessments to the type of the project. Hence the analysis of the environmental impacts of the project activity is sufficiently described by PP in the Joint-PD-MR/1/. The assessment is as below,

Associated with the interview with local experts and farmers, there was no adverse effect on the ecology, air, water and solid waste, for the project subject to the implementation of pollution mitigation measures during construction period according to the requirements of Huanggang City Construction Waste Management Measures/53/. There are no any negative impacts found in the project location during the project implementation.

As per interview with local officer, CTI confirmed that the inspectors from construction entity have to carry out supervision work for the environmental impact arisen from the project activity during construction period, made the wastes were uniformly classified and collected and kept water sprayed frequently to reduce dusts. Via interview with the famers/I5/, CTI confirmed that they are satisfactory with the environmental protection work carried out.

In conclusion, there were some negative impacts on environment during the construction period which has been demonstrated in Joint-PD-MR/1/, also the proper measurements have been carried out by project implementer to mitigate such impacts. And by site inspection of implementation, CTI confirmed that there are no obvious negative impacts during the implementation period only if the ditches would be damaged that may impact the water resources, however, with the proper measurements, this situation is unlikely to happen.

In conclusion, both positive and negative impacts to the environment from the project has been demonstrated and verified as actual and reasonable and there are no significant negative impacts to the environment were identified.

3.3.4 Public Comments

The project sought the registration with the VCS Program, according to VCS requirements the Project Description was submitted for public comment period. The project was allocated with VCS ID 2902. The public comment period started on 15-March-2022 and ended on 15-April-2022 (https://registry.verra.org/app/projectDetail/VCS/2902).

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

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

3.3.5 AFOLU-Specific Safeguards

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

Local stakeholder identification process and the description of results

The Joint-PD-MR/1/ states that the stakeholders were identified as all communities, community groups, and other stakeholders who will be directly and indirectly affected by the implementation of the project.

The stakeholders are identified as residents (17,347 farmers within 4,859 local households of which 10,668 are females, accounting for about 61.5%) involved in the project area who are directly affected by the project activities, Agricultural Bureau of Huangmei County that involved in providing the basic techniques of intermittently flooded method, local governments of Huangmei County involved in local social and environmental management, and village committees of Huangmei County involved in collecting opinions from the respective locals and villages.

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

- *On-site inspection and interview*

Via on-site inspection, VVB visited the project area and interviewed with the stakeholder representatives from involved farmer, local officers, technicians, local experts. By seeing the project scenario and interview with stakeholders, CTI confirmed the project is implemented in project area which impact the 4,859 households in this area, VVB confirmed that the location of communities and local stakeholders outside the project area has been added in Figure 2-1. And the project only affects 4,859 households (17,347 farmers) who owned the rice paddies of project area and lived in the areas outside the project area (as the project area only include the rice paddies) but in vicinity of the project area and local government is responsible to the approval and related environmental and social issues, and during the project implementation, the local farmers involved in the project area are trained by the Agricultural Bureau of Huangmei County and PP.

Via site inspection and based on the assessment of project design in this report, VVB confirmed that the project only changed the water regime of the rice paddies in project area, and as time goes on, there is no change of the project scenario, the farmers just use the intermittent flooded method in different cultivation season for the same project area, so VVB confirmed that there is no any significant changes in the makeup of local stakeholders over time until the end of the monitoring period (December 31, 2021).

Furthermore, via site inspection and interview with local stakeholders and based on the assessment of project design in this report, VVB confirmed that the project design only involves in change of water regime, and project proponent has complied with Labor Law of the People's Republic of China with anti-discrimination and anti-sexual harassment assurance, and by checking the labor contracts, VVB confirmed that workers have signed up voluntarily regardless of gender, race, religion or any other basis. In case of any discrimination and sexual harassment, the project proponent will demand the person who

is responsible for discrimination and sexual harassment end his/her involvement with the project immediately and find someone else to take over his/her job. Hence, VVB confirmed that there is no any form of discrimination or sexual harassment occurred in project design or implementation.

- *Checking the relevant docs and evidence*

The stakeholder's identification is confirmed as complete by checking the related docs of project, carbon reduction project cooperation agreement signed between the households and Wuhan Haimingsen Environmental Protection Technology Co., Ltd./8/ which define the 4,859 households; Technical Training Record/26/ which are used to prove that techniques provided by the Agricultural Bureau of Huangmei County. The Village committees in project area is responsible for collecting opinions from the respective locals and villages with the project proponent by interview with local farmers/I5/.

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

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

Risks to local stakeholders and mitigation measures

The Joint-PD-MR/1/ states the overall risks to the stakeholders are low, no major risks have arisen that may cause any loss of project benefits for the local community, climate and biodiversity, so that the long-term viability is assured which has been verified by site inspection of the project implementation and interview with the local officer/I2/, technicians/I4/ and local farmers/I5/.

Risks to local stakeholder resources and mitigation measures

The Joint-PD-MR/1/ states the overall risks to the stakeholder resources are low, no major risks have arisen that may cause any loss of project benefits for the local community, climate and biodiversity, so that the long-term viability is assured. Before the project implementation, the PP has got all the agreements from involved farmer as confirmed by checking the funds allocation receipts to households/14/ and interviewed with local farmers/I5/, hence CTI verified that project will not impact local stakeholder's property rights without the free, prior and informed consent.

Processes to ensure ongoing communication and consultation

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

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

PP promised that grievances will be addressed in a reasonable amount of time, usually contacted and discussed with all the relevant communities and stakeholders to solve the conflict within 5 days and the solution should be proposed within 10 days and the conflicts should be solved within one month. The PP declares to be available to adjust the grievance mechanism according the recorded dynamics and evaluation of effectiveness of the process in place.

For the project implementation, via site inspection checking the Suggestion Note published on the notice board of villages/25/, CTI confirmed that there was no comments or suggestions in the book during the

implementation period since 2018, and via interview with PP, CTI verified that they will check the book regularly and collect all the comments received.

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

3.4 Application of Methodology

3.4.1 Title and Reference

The approved consolidated methodology applied in the project activity is AMS-III.AU–"Methane Emission Reduction by Adjusted Water Management Practice in Rice Cultivation" (version 04.0)/34/.

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

TOOL 21 "Demonstration of Additionality of Small-scale Project Activities (version 13.1)"/38/

"Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities" (version 09.0)/36/

"Guideline for Sampling and Surveys for CDM Project Activities and Programme of Activities", version 04.0/37/

"General guidelines for SSC CDM methodologies", version 23.1/35/

3.4.2 Applicability

Demonstration regarding the applicability of the methodology, and any tools selected by the project proponent as provided in below table.

Table 3-1 Assessment of Applicability conditions of AMS-III.AU (version 4.0).

No.	Applicability conditions	Validation Assessment	Conclusion
1	The methodology comprises technology/measures that result in reduced anaerobic decomposition of organic matter in rice cropping soils and thus reduced generation of methane. The methodology includes projects such as: (a) Rice farms that change the water regime during the cultivation period from continuously to intermittent flooded conditions and/or a shortened period of flooded conditions; (b) Alternate wetting and drying method and aerobic rice cultivation methods (see <http://www.knowledgebank.irri.org/water management>);	Via checking the Ex-ante investigation report/13/ and interview with farmers/I5/, local experts/I3/ and local officer/I2/, CTI confirmed that the technology utilized by project is type (a) Rice farms that change the water regime during the cultivation period from continuously to intermittent flooded conditions and/or a shortened period of flooded conditions through the construction of cement ditches and installation of pumps and valves for controllable irrigation and drainage by site inspection.	Applicable

No.	Applicability conditions	Validation Assessment	Conclusion
	(c) Rice farms that change their rice cultivation practice from transplanted to direct seeded rice		
2	Rice cultivation in the project area is predominantly characterized by irrigated, flooded fields for an extended period of time during the growing season, i.e. farms whose water regimes can be classified as upland or rainfed and deep water are not eligible to apply this methodology. This shall be shown from a representative survey conducted in the geographical region of the proposed project or by using national data. This project area characterization shall also include information on pre-season water regime and applied organic amendments, so that all dynamic parameters as shown in Table 2 are covered by the baseline study.	Via checking the Ex-ante investigation report/13/ and interview with farmers/I5/, local experts/I3/ and local officer/I2/, CTI confirmed that Rice cultivation in the project area is predominantly characterized by irrigated, flooded fields for an extended period during the growing season. Furthermore, this project area characterization also include information on pre-season water regime and applied organic amendments, all dynamic parameters as shown in Table 2 are covered by the baseline study. The representative baseline survey conducted in the geographical region of the proposed project by Hubei Academy of Social Sciences/13/ is verified to confirm this.	Applicable
3	The project rice fields are equipped with controlled irrigation and drainage facilities such that both during dry and wet season, appropriate dry/flooded conditions can be established on the fields	In the proposed project: The rice fields are equipped with controlled irrigation and drainage facilities, thus the intermittently flooded method can be established on the fields. This is verified by site visit and checking the Inspection and Acceptance Report of the project/7/.	Applicable
4	The project activity does not lead to a decrease in rice yield. Likewise, it does not require the farm to switch to a cultivar that has not been grown before	The project only involved in change the water regime during the rice cultivation period that will not lead to a decrease in rice yield and the type of rice planted in this project is very common and no requirement from the project to lead the farm to switch to a cultivar that has not been grown before. This is verified by site visit and interview with farmers representative/I5/ and checking the Inspection and Acceptance Report of the project/7/.	Applicable

No.	Applicability conditions	Validation Assessment	Conclusion
5	Training and technical support during the cropping season that delivers appropriate knowledge in field preparation, irrigation, drainage and use of fertilizer to the farmer is part of the project activity and is to be documented in a verifiable manner (e.g. protocol of trainings, documentation of on-site visits). In particular the project proponent is able to ensure that the farmer by himself or through experienced assistance is able to determine the crop's supplemental N fertilization need. The applied method shall assess the fertilizer needs using for example a leaf color chart or photo sensor or testing stripes. Alternatively a procedure to ensure efficient fertilization considering the specific cultivation conditions in the project area backed by scientific literature or official recommendations shall be used.	Via checking the technical training records/26/, CTI confirmed that the appropriate knowledge in field preparation, irrigation, drainage and use of fertilizer has been provided to the farmers in every April since 2018 to 2021.	Applicable
6	Project proponents shall assure that the introduced cultivation practice, including the specific cultivation elements, technologies and use of crop protection products, is not subject to any local regulatory restrictions	The project only involved in change the water regime during the rice cultivation period by equipped with controlled irrigation and drainage facilities in project area, which is deemed in line with the local regulatory which has been verified by site interview with local officer/I2/ and expert/I3/ and checking the related laws and regulations/52/.	Applicable
7	Except the case where the default value approach indicated in section 6.1.2 "Emission reductions using IPCC tier 1 approach or default values" is chosen for emission reductions calculations, project proponents have access to infrastructure to measure CH_4 emissions from reference fields using closed chamber method and laboratory analysis	In the Joint-PD-MR/1/, the "Emission reductions using IPCC tier 1 approach or default values" is chosen by PP for ex ante emission reductions calculations, and during site inspection, CTI confirmed that the project proponents have installed infrastructure to measure CH_4 emissions from reference fields using closed chamber method and laboratory analysis as the monitoring method for the actual emission reductions calculations.	Applicable
8	Aggregated annual emission reductions of all fields included under one project activity shall be less than or equal to 60 kt CO_2 equivalent	The project is expected to generate 59,901 tCO_2e annually which is less than or equal to 60 kt CO_2 equivalent.	Applicable

No.	Applicability conditions	Validation Assessment	Conclusion
		And PP stressed that if the emission reductions monitored during the verification excesses the threshold, the project proponent will only claim gap of 60,000 tons according to the Applicability of small-scale methodology. This is verified by checking the Joint-PD-MR/1/ and ER sheet/2/.	
Conclusion: Methodology AMS-III.AU (Version 04.0) is applicable to the project activity.			

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

Table 3-2 Assessment of Applicability conditions of methodological tool

Tool	Criteria	Validation Assessment	Conclusion
(a) TOOL 21 "Demonstration of Additionality of Small-scale Project Activities (version 13.1)"	The use of the methodological tool "Demonstration of additionality of small-scale project activities" is not mandatory for project participants when proposing new methodologies. Project participants and coordinating/managing entities may propose alternative methods to demonstrate additionality for consideration by the Executive Board.	The project activity uses "Demonstration of additionality of small-scale project activities" for additionality demonstration, thus this tool is applicable.	Applicable
	Project participants and coordinating/managing entities may also apply "TOOL19: Demonstration of additionality of microscale project activities" as applicable.	Expected ER value is beyond the microscale. Hence not applicable to "TOOL19: Demonstration of additionality of microscale project activities"	N/A
Conclusion: All the relevant methodological tools are applicable to the project activity.			

Furthermore, due to the project is defined as a small-scale case, according to the section 3.9.3 of VCS Standard version 4.2, "where applying a methodology with scale and/or capacity limits, it shall be demonstrated that the project is not a fragmented part of a larger project or activity that would otherwise exceed such limits. The project shall be considered a fragmented part of a larger project if within one kilometer of the project boundary there exists another project where:

1) The project proponents for both projects are the same.

2) The sectoral scope and project activity for both projects are the same.

3) The other project has been registered under the VCS Program or another GHG program within the previous two years."

Via checking the project boundary in KML file/4/, CTI confirmed that the there is no another project exists within one kilometer of the project boundary, hence CTI verified that the project is not considered as a fragmented part of a larger project.

CL 05 was raised and successfully closed. Refer to Appendix 4 for detail assessment.

3.4.3 Project Boundary

Based on AMS-III.AU (version 04.0)/34/, the Project boundary for this Project activity includes:

Rice fields where the cultivation method and water regime are changed in the project area in Huangmei County, the spatial extent of the project boundary includes all fields that change the cultivation method and water regime in the context of the project activity.

Via site investigation by GPS device and checking the map of the project area/4/, CTI confirmed that the project boundary is correctly defined in line with the applied methodology/34/.

The main emission sources and gases including each GHG source, sink and reservoir included in the project boundary are determined as per the applied methodology, GHG sources, sinks and reservoirs included and excluded from the project boundary is defined as correct and corresponding to the actual status of the project, via on-site inspection and checking the project design in project implementation program/6/, CTI verified that all the relevant sources have been selected.

It is concluded that the project boundary and selected sources are correctly justified for the project.

3.4.4 Baseline Scenario

The Joint-PD-MR applies the baseline scenario given by section 5.2 of the AMS-III.AU/34/, i.e.

Baseline scenario is the continuation of the current practice e.g. continuously flooded rice cultivation in the project fields without any organic amendment during rice cultivation in the project fields.

Via checking the Ex-ante investigation report/13/, CTI confirmed that the continuously flooded method during rice cultivation with no organic amendment is the current practice without project, which is in line with the baseline scenario identified in the applied methodology that is the continuation of the current practice of continuously flooded rice cultivation in the project fields without any organic amendment during rice cultivation in the project fields.

In addition, Via checking the China land management law, VVB confirmed that the right to use rice fields in this project area belongs to the farmers, and according to the relevant requirements of China land management law, farmers have absolute control over their land use methods. Furthermore, via searching all the related laws and regulations as listed in the section 1.14 of the Joint PD/MR, VVB verified that there is no relevant national and/or sectoral policies and circumstances request that the farmer can't use the continuously flooded water regime to plant rice.

Furthermore, via checking the Provincial regulation in Hubei which established in line with the China's Nationally Determined Contributions, such as The Implementation Opinions of Hubei Provincial People's

Government on Speeding Up the Establishment and Improvement of Green and Low-carbon Circular Development Economic System/56/, VVB confirmed that there is no mandatory regulation request the rice planting methods.

Thus CTI verified that identified baseline scenario is justified. Refer to below section for assessment of the project additionality.

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

3.4.5 Additionality

Due to the project is a small-scale, TOOL 21 "Demonstration of Additionality of Small-scale Project Activities (version 13.1)"/38/ is used to demonstrate the additionality.

In addition, the project applied the small-scale methodology and in the section 5 of the methodology AMS-III.AU, it states "Project participants shall apply the "General guidelines for SSC CDM methodologies, "Guidelines on the demonstration of additionality of small-scale project activities". The "Guidelines on the demonstration of additionality of small-scale project activities" has now replaced by TOOL 21"Demonstration of Additionality of Small-scale Project Activities (version 13.1)"/38/. Then it means that PP has used the correct tool for demonstration of additionality of the project.

Demonstration of additionality has been assessed as below:

Based on the applied methodology, CTI verified that no barriers identified that would prevent the baseline scenario prior to the implementation of project as listed above. The step below is used to analyze the additionality of the project by conducting an investment barrier analysis and technical barrier analysis using the related methodological tool.

Investment barrier analysis

The investment barrier analysis is conducted in line with the requirement in the tool, due to the baseline scenario has been determined in the methodology, thus CTI confirmed that the baseline scenario is a financially more viable alternative to the project activity due to there was no financial cost needed to continue the baseline scenario and it would have led to higher emissions. Thus only need to demonstrate the investment barrier of the project scenario.

And based on the comparison of the living standard of the 4,859 households involved in the project with the investment includes material costs (put into build the cement ditches, the total costs of irrigation and drainage facilities) and labor costs in high-standard farmland is 25,584,000 CNY, and based on the Project implementation program/6/, CTI confirmed that local government's funds only covers the 22,960,000 CNY for the material costs (cement and aggregate) which is not enough to fully cover all the costs, and the funds from government only cover the major constructions contains cement and aggregate, however, the labor costs for the construction of irrigation and drainage facilities such as ditches and ponds need to be funded by farmers themselves, this has been confirmed by site interview with local officers and farmers. Therefore, only if the remaining CNY 3,936,000 of the investment paid by the

farmers, the whole project construction can be finished and the intermittently flooded method can be achieved in each farmer's rice fields.

Then the remaining construction cost is CNY 3,936,000 which is about CNY 200/ha is still to be paid by farmers even with the funds. However, via checking the Ex-ante investigation report/13/, it is confirmed that the living balance of local farmers is only CNY 300 a year, many households would be facing difficulties to afford their livings, they don't have enough capacity to pay these costs. In addition, via interview with the farmers, CTI confirmed that they would rather maintain the status quo than spend money on the project, hence, due to the money need to paid to the project verified above and by site interview with households, the farmers would not pay the additional investment. CTI confirmed that in the absence of the project activity, the scenario prior would be existed as no farmers would invest the updated drainage and irrigation system due to they would rather maintain the status quo than spend money on the project. This is verified by on-site interview with the farmers/I5/ and checking the Ex-ante investigation report/13/.

Finally, via checking the funds allocation receipts to households/14/, CTI verified that the project implementer raised funds which need to be paid by farmers. Via checking the Project implementation program/6/, CTI confirmed that there is no profit would be created by the project but the carbon revenue, hence, by checking the Board meeting minute/10/ and emission reduction purchase agreement/15/, VVB confirmed that the project implementer paid the investment based on carbon revenue consideration and solved the investment of the project.

In conclusion, CTI confirmed that the information about the investment barrier have been justified as above and confirmed as correct and actual, and CTI also confirmed that the project faces capital or investment return constraints that can be overcome by the additional revenues associated with the sale of GHG credits, which is verified also in line with the section 3.5.4 of the VCS Methodology Requirement v4.1/51/.

Besides, with points mentioned above, the project proponent has added some clarifications in the "Investment barrier" in Section 3.5 of JPM, which is assessed as follows:

First, the major construction that government provided belongs to a public facility for farmers. The reason why the government invested is that the construction of high-standard farmland (i.e. the public facility) is government's duty and jobs, but is not a participation in these carbon projects which has been verified by site interview with the local officers.

Second, what the government invested in this project are ditches and reservoirs merely. There is no introduction of intermittently flooded method and devices which has been verified by site interview with the local officers and farmers. And the government won't maintain this new flooded regime and repair devices after the construction of the ditches and reservoirs. It is the project proponent who introduced the intermittently flooded methods, provides relevant devices to achieve the intermittently flooding and training, as well as maintain the new flooded regime and repair the devices in the project lifetime which has been confirmed by site inspection and interview with PP, local officers and farmers, also by checking the project design in project implementation program/6/.

And based on the demonstration as above, the project proponent considering the revenue earned from the carbon development is willing to invest this project, so the project could be carried out finally.

To conclude, this project is a small-scale project and the additionality has been analyzed in the JPM in line with the appropriate tool for demonstration of additionality.

Thus CTI verified that baseline scenario is a financially more viable alternative to the project activity but would have led to higher emissions.

Technical barrier analysis

The technical barrier analysis is conducted in line with the requirement in the tool, due to the baseline scenario has been determined in the methodology, thus CTI confirmed that the baseline scenario is a less technologically advanced alternative to the project activity involves lower risks so would have led to higher emissions, which has been verified by on-site interview with the farmers/I5/ and CTI confirmed that without this project, farmers would grow rice by old flooding method, although higher emissions would be resulted.

For the project activity, due to the low market share of the new technology adopted in project zone in Huangmei County with 100% of farmers practiced the continuously flooded method during rice cultivation which has confirmed by checking the Ex-ante investigation report/13/, so the project activity faces technical barrier as no farmers have access to advanced technology about intermittently flooded water regime, which requires regularly drainage and irrigation as in the baseline scenario, local farmers only need to ensure that there is enough water in the paddy fields. This is verified by on-site interview with the farmers/I5/ and checking the Ex-ante investigation report/13/. And with the project implementation, the agricultural experts trained local farmers to popularize the intermittently continuously flooded method to replace the traditional continuously flooded method which has been verified by checking the technical training records/26/ which proved that the project will overcome the technical barrier.

In conclusion, an explanation to show that the project activity would not have occurred due to the two barriers as listed in the TOOL 21 “Demonstration of Additionality of Small-scale Project Activities (version 13.1)”/38/ which have been sufficiently justified as above, thus the VVB was able to reach a reasonable level of assurance that the project is additional.

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

3.4.6 Quantification of GHG Emission Reductions and Removals

For validation of the estimated GHG emission reductions in the Joint-PD-MR/1/ and ER calculation sheet/2/,

Further, the VVB has downloaded from the UNFCCC website the applicable version of the CDM methodology,

Via verify the Joint-PD-MR/1/, CTI confirmed the calculation of ERs is done as per the applied methodology (AMS-III.AU ver. 04.0) with follow steps listed below.

Baseline emissions

According to the methodology, the baseline scenario is the continuation of the current practice e.g. continuously flooded rice cultivation in the project fields.

Hence baseline emissions shall be calculated on a seasonal basis using the following formula:

$$BE_y = \sum_s BE_s \quad (1)$$

$$\mathrm{BE_y} = \sum_{\mathrm{g=1}}^{\mathrm{G}} \mathrm{EF_{BL,s,g}} \times \mathrm{A_{s,g}} \times 10^{-3} \times \mathrm{GWP_{CH_4}} \quad (2)$$

Where:

$\mathrm{BE_y}$	=	Baseline emissions in year y (tCO_2e)
$\mathrm{BE_s}$	=	Baseline emissions from project fields in season s (tCO_2e)
$\mathrm{EF_{BL,s,g}}$	=	Baseline emissions factor of group g in season s ($kgCH_4$/ha per season)
$\mathrm{A_{s,g}}$	=	Area of project fields of group g in season s (ha)
$\mathrm{GWP_{CH_4}}$	=	Global warming potential of CH_4 (tCO_2e/tCH_4)
g	=	Group g, covers all project fields with the same cultivation pattern (G = total number of groups)

Determination of baseline emission factor on reference fields

As per the applied methodology (AMS-III.AU ver. 04.0), Baseline reference fields shall be set up in a way that they are representative of baseline emissions in the project rice fields. For each group of fields with the same cultivation pattern, as defined with the help of Table 2, at least three reference fields with the same pattern shall be determined in the project area. On these fields, measurements using the closed chamber method shall be carried out, each resulting in an emission factor expressed as $kgCH_4$/ha per season. The seasonally integrated baseline emission factor $EF_{BL,s,g}$ shall be derived as average value from the three measurements for each group.

Via checking the Ex-ante investigation report derived from farmer's information/13/, CTI confirmed that all the surveyed sampled farmers using the same cultivation pattern (Continuously flooded, No organic amendment, soil pH within project area is larger than 5.5, soil organic carbon within the range between 1-3% and climate condition is same) as defined with the help of Table 2 in applied methodology, thus only one group was defined for the project to determine the baseline emission factor on reference fields.

The project emission factor on reference fields $EF_{BL,s,g}$ will be monitored during the monitoring period.

Project emissions

Project emissions consist of the CH_4 emissions, which will still be emitted under the changed cultivation practice. Due to the optimized N fertilization practice (cf. applicability criteria in paragraph 3(d), N fertilizer control), N_2O emissions do not significantly deviate from the baseline emissions and hence are not considered.

CH_4 emissions from project fields are calculated on a seasonal basis as follows

$$PE_y = \sum_s PE_s \quad (3)$$

$$PE_s = \sum_{g=1}^{G} EF_{P,s,g} \times A_{s,g} \times 10^{-3} \times GWP_{CH_4} \quad (4)$$

Where:

PE_y	=	Project emissions in year y (tCO_2e)
PE_s	=	Project emissions from project fields in season s (tCO_2e)
$EF_{P,s,g}$	=	Project emission factor of group g in season s ($kgCH_4$/ha per season)

Determination of project emission factor on reference fields

As per the applied methodology (AMS-III.AU ver. 04.0), the seasonally integrated project emission factor $EF_{P,s,g}$ shall be determined using measurements on at least three project reference fields that fulfill the same conditions as the baseline reference fields, with the difference that they are cultivated according to the defined project cultivation practice. Project reference fields shall be established close to the baseline reference fields and begin with the growing season at the same time. $EF_{P,s,g}$ is the average of the measurement results from the three reference fields.

The project emission factor on reference fields $EF_{P,s,g}$ will be monitored during the monitoring period.

Leakage

According to the methodology, any effects of the project activity on GHG emissions outside the project boundary are deemed to be negligible and do not have to be considered under this methodology.

Emission reductions:

$$ER_s = BE_s - PE_s \quad (5)$$

Where:

ER_s	=	Emission reductions in season s ($t\ CO_2e$)

Ex ante estimation of emission reductions

As per the applied methodology (AMS-III.AU ver. 04.0), for the ex ante estimation of emission reductions, project participants shall either refer to own field experiments or estimate baseline and project emissions with the help of national data or IPCC tier 1 default values for emission and scaling factors. Hence PP

has selected IPCC tier 1 default values for emission and scaling factors for ex ante estimation of emission reductions. The approach has been explained and justified in the Joint-PD-MR and assessed as below,

Emission reductions using IPCC tier 1 approach or default values

As an alternative to the reference field approach indicated in paragraphs 12, 13, 16 and 17 of the methodology, project participants calculate emission reductions using Option 1, i.e. Using the IPCC tier 1 approach but undertaking measurements to determine baseline emission factors for continuously flooded fields, as per the following formula:

$$ER_y = EF_{ER} \times A_y \times L_y \times 10^{-3} \times GWP_{CH_4} \quad (6)$$

$$EF_{ER} = EF_{BL} - EF_P \quad (7)$$

$$EF_{BL} = EF_{BL,c} \times SF_{BL,w} \times SF_{BL,p} \times SF_{BL,o} \quad (8)$$

$$EF_P = EF_{BL,c} \times SF_{P,w} \times SF_{P,p} \times SF_{P,o} \quad (9)$$

Where:

ER_y	=	Emission reductions in year y (t CO_2e)
EF_{ER}	=	Adjusted daily emission factor (kgCH_4/ha/day). Alternatively, seasonal emission factor (kg CH_4/ha/season) may be determined
A_y	=	Area of project fields in year y (ha)
L_y	=	Cultivation period of rice in year y (days/year). This is not applicable when seasonal emission factor is determined.
GWP_{CH_4}	=	Global warming potential of CH_4 (t CO_2e/t CH_4) 28 tCO_2/tCH_4 from the Fifth Assessment report, GHG Protocol/32/
EF_{BL}	=	Baseline emission factor (kg CH_4/ha/day) or (kg CH_4/ha/season)
EF_P	=	Project emission factor (kg CH_4/ha/day) or (kg CH_4/ha/season)
$EF_{BL,c}$	=	Baseline emission factor for continuously flooded fields without organic amendments (kg CH_4/ha/day) or (kg CH_4/ha/season)
$SF_{BL,w}$ or $SF_{P,w}$	=	Baseline or project scaling factors to account for the differences in water regime during the cultivation period
$SF_{BL,p}$ or $SF_{P,p}$	=	Baseline or project scaling factors to account for the differences in water regime during the pre-season before the cultivation period
$SF_{BL,o}$ or $SF_{P,o}$	=	Baseline or project scaling factors should vary for both type and amount of organic amendment applied

Determine the value of parameter *$EF_{BL,c}$*

As per the applied methodology (AMS-III.AU ver. 04.0), the baseline emission factor for continuously flooded fields without organic amendments ($EF_{BL,c}$) shall be either determined ex ante prior to the start of the project activity (in this case the ex-ante value should be used to calculate emission reduction during the crediting period) or monitored annually (in this case, the ex post values should be used to calculate emissions reduction during the crediting period).

For this project, as stated in the Joint-PD-MR, $EF_{BL,c}$ is determined ex ante prior to the start of the project activity. As per the applied methodology (AMS-III.AU ver. 04.0), at least three reference fields shall be chosen in the project area. On these fields, measurements shall be carried out using the closed chamber method in accordance with the guidance on methane measurement in the appendix of the applied methodology.

Via checking the Appendix. Guidelines for measuring methane emissions from rice fields in the applied methodology (AMS-III.AU ver. 04.0), for determine the ex-ante value of $EF_{BL,c}$,

The table 4-1 in Section 4.4 of the Joint PD/MR has been checked, VVB confirmed that PP has provided coordinates of all the reference fields for measuring $EF_{BL,C}$, which have been checked by VVB comparing with the submitted KML file, it is verified that these reference fields are in the project area.

Via checking the Report of Measuring Methane Emission Rate by Closed Chamber in Huangmei County in 2017 conducted by Institute of Central Laboratory, School of Plant Science and Technology, Huazhong Agricultural University/17/, CTI confirmed that the report was carried out by experts from Huazhong Agricultural University and the staff of the Agricultural Bureau of Huangmei County who are worked within the agricultural knowledge field and CTI confirmed that the experts are qualified to implementation of methane measurement in rice fields based on VVB's local expertise. And by checking the report/17/ and interview with the expert from Huazhong Agricultural University/I2/, CTI verified that expert gets the qualification and conducted the lab test in line with the requirement in the methodology.

Furthermore, via checking the detailed plan prepared by PP for methane measurements/19/, CTI verified that before the experts conducted the methane measurement in rice fields, PP provided a plan to experts and this plan included the schedule for the field and laboratory measurements, the logistics that are necessary to get the gas samples to the laboratory and a cropping calendar. The plan also included all reference field specific information regarding location and climate, soil, water management, plant characteristics, fertilizer treatment and organic amendments which is in line with the Appendix. Guidelines for measuring methane emissions from rice fields in the applied methodology (AMS-III.AU ver. 04.0).

For the actual methane measurement on the field, the methods are carried out as below table which is verified in line with the Appendix. Guidelines for measuring methane emissions from rice fields in the applied methodology (AMS-III.AU ver. 04.0). See below table for details assessment,

Table 3-3. On the field - technical options for the chamber design

Feature	Conditions	Justification

Chamber material	Option 1: Non-transparent • Commercially available PVC containers or manufactured chambers (e.g. using galvanized iron); • Painted white or covered with reflective material (to prevent increasing inside temperature); • Only suitable for short-term exposure (typically 30 min) followed by immediate removal from the field	Via checking the Report of Measuring Methane Emission Rate by Closed Chamber in Huangmei County in 2017 conducted by Huazhong Agricultural University/17/ and on-site checked the Chamber, CTI confirmed that the chamber used in this project is fulfill with the material request listed in the applied methodology.
Placement in soil	Option 1: Fixed base • Base made of non-corrosive material and remains in the field for the whole season; • Base should allow tight sealing of the chamber; • Base should have bores in the submerged section to allow water exchange between inside and outside; • Base should be installed at least 24 hours before the first sampling	Via checking the Report of Measuring Methane Emission Rate by Closed Chamber in Huangmei County in 2017 conducted by Huazhong Agricultural University/17/ and on-site checked the Chamber, CTI confirmed that the chamber used in this project is fulfill with the placement in soil request listed in the applied methodology.
Auxiliaries of chamber	• Thermometer for measuring the temperature inside the chamber; • Fan (battery operated) inside the chamber for mix the inside air during sampling; • Sampling port (rubber stopper placed in a bore of the chamber)	Via checking the Report of Measuring Methane Emission Rate by Closed Chamber in Huangmei County in 2017 conducted by Huazhong Agricultural University/17/ and on-site checked the Chamber, CTI confirmed that the auxiliaries of chamber used in this project is fulfill with the request listed in the applied methodology.
Basal area	Rectangular or rounded, but has to cover minimum of four rice hills (ca. 0.1 m^2 minimum)	Via checking the Report of Measuring Methane Emission Rate by Closed Chamber in Huangmei County in 2017 conducted by Huazhong Agricultural University/17/ and on-site checked the Chamber, CTI confirmed that the shape and size of chamber used

		in this project is fulfill with the request listed in the applied methodology.
Height	Option 1: Fixed height Total height (protruding base + chamber) should exceed plant height	Via checking the Report of Measuring Methane Emission Rate by Closed Chamber in Huangmei County in 2017 conducted by Huazhong Agricultural University/17/ and on-site checked the Chamber, CTI confirmed that the height of chamber used in this project is higher than the plant height that is fulfill with the request listed in the applied methodology.

Table 3-4. On the field – air sampling

Feature	Conditions	Justification
Replicate chambers per plot	Minimum requirement: Three replicate chambers per plot	Via checking the Report of Measuring Methane Emission Rate by Closed Chamber in Huangmei County in 2017 conducted by Huazhong Agricultural University/17/ and on-site checked the Chambers, CTI confirmed that the three replicate chambers were placed in every plot that is fulfill with the request listed in the applied methodology.
Number of air samples per exposure / data points per measurement	Minimum requirement: Three samples per exposure	Via checking the Report of Measuring Methane Emission Rate by Closed Chamber in Huangmei County in 2017 conducted by Huazhong Agricultural University/17/, CTI confirmed that there were three samples for every exposure analyzed that is fulfill with the minimum request listed in the applied methodology.
Exposure time	30 minutes	Via checking the Report of Measuring Methane Emission Rate by Closed Chamber in Huangmei County in 2017 conducted by Huazhong Agricultural University/17/, CTI confirmed that exposure time is 30 minutes that is fulfill with the request listed in the applied methodology.
Daytime of measurement	Morning	Via checking the Report of Measuring Methane Emission Rate by Closed Chamber in Huangmei County in 2017 conducted by Huazhong Agricultural University/17/, CTI confirmed that measuring time was at morning in daytime is 30 minutes from 9.30 – 10.00 a.m. that is fulfill with the request listed in the applied methodology.
Measurement interval	Minimum requirement: once per week	Via checking the Report of Measuring Methane Emission Rate by Closed Chamber in Huangmei County in 2017 conducted by Huazhong Agricultural University/17/ and checking the plan/20/, CTI confirmed that measurement interval period is once per week that is fulfill with the minimum request listed in the applied methodology.

Syringe	Suitability test (leak proof) before measurement Preferably equipped with a lock for ease of handling	Via checking the Report of Measuring Methane Emission Rate by Closed Chamber in Huangmei County in 2017 conducted by Huazhong Agricultural University/17/ and on-site checked the Chambers, CTI confirmed that the syringe with a lock was used in chamber and it is checked for leak proof before every measurement that is fulfill with the request listed in the applied methodology.
Sample storage until analysis	Storage < 24 h: air samples can remain in syringe; Storage > 24 h: transfer air samples into evacuated vial, store with slight overpressure	Via checking the Report of Measuring Methane Emission Rate by Closed Chamber in Huangmei County in 2017 conducted by Huazhong Agricultural University/17/, CTI confirmed that the three samples were taken before a laboratory analysis was performed, so the samples were stored in the evacuated vials that is fulfill with the request listed in the applied methodology.

Table 3-5. Laboratory analysis

Feature	Conditions	Justification
Method	Gas Chromatograph with flame ionization detector (FID)	Via checking the Report of Measuring Methane Emission Rate by Closed Chamber in Huangmei County in 2017 conducted by Huazhong Agricultural University/17/, CTI confirmed that the FID is used in laboratory analysis
Injection	Direct injection or with multi-port valve and sample loop	Via checking the Report of Measuring Methane Emission Rate by Closed Chamber in Huangmei County in 2017 conducted by Huazhong Agricultural University/17/, CTI confirmed that the direct injection method is used in laboratory analysis
Column	Packed (e.g. molecular sieve) or capillary column	Via checking the Report of Measuring Methane Emission Rate by Closed Chamber in Huangmei County in 2017 conducted by Huazhong Agricultural University/17/, CTI confirmed that the packed column is used in laboratory analysis
Calibration	With certified standard gas each day of analysis before and after the analyses are done	Via checking the Report of Measuring Methane Emission Rate by Closed Chamber in Huangmei County in 2017 conducted by Huazhong Agricultural University/17/, CTI confirmed that the calibration is conducted as per request of the methodology in laboratory analysis.

Thus via checking the Report of Measuring Methane Emission Rate by Closed Chamber in Huangmei County in 2017 conducted by Huazhong Agricultural University/17/, CTI verified that the measurement methane results are correct, and based on the "Calculation of the emission rate for a plot (reference

field)" in the Appendix. Guidelines for measuring methane emissions from rice fields in the applied methodology (AMS-III.AU ver. 04.0),

The mass of CH_4 emissions for a plot (reference field) is calculated by formular

$$m_{CH_{4,t}} = c_{CH_{4,t}} \times V_{chamber} \times M_{CH_4} \times \frac{1atm}{R \times T_t \times 1000} \quad (10)$$

Where:

m_{CH_4}	=	Mass of CH_4 in chamber at time t (mg)
t	=	Point of time of sample (e.g. 0,15,30 in case of three samples within 30 minutes)
$c_{CH_{4,t}}$	=	CH_4 concentration in chamber at time t, from gas analysis (ppm)
$V_{Chamber}$	=	Chamber volume (L)
M_{CH_4}	=	Molar mass of CH_4: 16g/mol
$1atm$	=	Assume constant pressure of 1atm, unless pressure measurement is installed
R	=	Universal gas constant: 0.08206 L atm/K^{-1} x mol^{-1}
T_t	=	Temperature at time t (K)

(1) Determine the slope of the line of best fit for the values of over time with the help of Excel:

$$s = \frac{\Delta m_{CH_4}}{\Delta t} \quad (11)$$

Where:

s	=	Slope of line of best fit (mg/min)

(2) Calculate the emission rate per hour for one chamber measurement:

$$RE_{ch} = s \times \frac{60min}{A_{chamber}} \quad (12)$$

Where:

RE_{ch}	=	Emission rate of chamber ch (mg/h x m^2)
ch	=	Index for replicate chamber on a plot
$A_{chamber}$	=	Chamber area (m^2)

(3) Calculate the average emission rate of a chamber measurement per plot:

$$RE_{plot} = \frac{\sum_{ch=1}^{Ch} RE_{ch}}{Ch} \quad (13)$$

Where:

RE_{plot} = Average emission rate of a plot (mg/h x m²)

ch = Number of replicate chambers per plot

(4) Further procedure: from the average emission rates per plot of each chamber measurement, derive the seasonally integrated emission factor by integration of the measurement results over the season length. The simplest way of integration is multiplying the emission rate with the number of hours of the measurement interval (e.g. one week) and accumulating the results of every measurement interval over the season. Convert from mg/m² to kg/ha by multiplying with 0.01. So, the final integrated results of RE_{plot} with the unit of (kg/day/ha) in the three reference fields is equal to $EF_{BL,c}$ (kgCH4/day/ha) which are summarized in Table 3-6 below.

Table 3-6 RE_{plot} (kg/day/ha) in reference fields

Plots	RE_{plot} (mg/h x m²)	Hours a day	RE_{plot} (kg/day/ha)
Plot 1	15.7948	24	3.7908
Plot 2	15.7158		3.7718
Plot 3	15.7994		3.7919
Average	15.7700		3.7848

Hence, based on above calculation process, and via checking the Report of Measuring Methane Emission Rate by Closed Chamber in Huangmei County in 2017 conducted by Huazhong Agricultural University/17/, CTI verified that the baseline emission factor for continuously flooded fields without organic amendments ($EF_{BL,c}$) is 3.7848 kg CH4/ha/day as used in the Joint-PD-MR is correct and actual.

Determine the value of parameter *$SF_{BL,w}$ or $SF_{P,w}$*

Via the methodology, the IPCC default values for *$SF_{BL,w}$ or $SF_{P,w}$* are as following table

Table 3-7. IPCC default values for *$SF_{BL,w}$ or $SF_{P,w}$*

Water regime during the cultivation period		$SF_{BL,w}$ or $SF_{P,w}$
Irrigated	Continuously flooded	1
	Intermittently flooded - single aeration	0.60
	Intermittently flooded - multiple aeration	0.52

Via Ex-ante investigation report/13/ and interview with farmer/I5/, CTI verified that the water regime is continuously flooded in baseline scenario, and via site inspection and checking the Inspection and Acceptance Report of the project/7/, CTI confirmed that the water regime of this project activity is intermittently flooded with multiple aeration as defined in the methodology, hence *$SF_{BL,w}$* is 1 and *$SF_{P,w}$* is 0.52.

Determine the value of parameter $SF_{BL,p}$ or $SF_{P,p}$

Via the methodology, the IPCC default values for $SF_{BL,p}$ or $SF_{P,p}$ are as following table

Table 3-8. IPCC default values for $SF_{BL,p}$ or $SF_{P,p}$

Water regime during the cultivation period	$SF_{BL,p}$ or $SF_{P,p}$
Non flooded pre-season < 180 days (indicating single-cropping)	1
Non flooded pre-season > 180 days (indicating single cropping)	0.68

Via checking the Ex-ante investigation report/13/, CTI verified that all the rice cultivation is single-cropping in project area, hence $SF_{BL,p}$ and $SF_{P,p}$ are 0.68.

Determine the value of parameter $SF_{BL,o}$ or $SF_{P,o}$

Via the methodology, the IPCC default for $SF_{BL,o}$ or $SF_{P,o}$ is calculated as follows,

$$SF_o = \left(1 + \sum_i ROA_i \times CFOA_i\right)^{0.59} \quad (14)$$

Where:

ROA_i = Application rate of organic amendment type *i*, in dry weight for straw and fresh weight for others, tonne ha^{-1}.

5 tonne/ha of straw is assumed as the baseline quantity of organic amendment, because the value of leftover straw after harvest is in the range of 3 tonne/ha (when harvested manually to the ground level, leaving very little stubble and the root residues) to 7 tonne/ha (harvested mechanically leaving behind large amount of crop residues on the field)

$CFOA_i$ = Conversion factor for organic amendment type i (in terms of its relative effect with respect to straw applied shortly before cultivation.

0.29 is used for a single crop and 1.0 for a double crop

Via the Ex-ante investigation report/13/, Inspection and Acceptance Report of the project/7/ and interview with farmer/I5/, CTI verified that no organic amendments are applied under both baseline and project scenario, so ROA_i is 0 and thus based on above formular, $SF_{BL,o}$ and $SF_{P,o}$ are 1.

In conclusion, based on above values for each parameter for determine the ex-ante of emission reduction calculation, the CTI verified that results in Joint-PD-MR are correct for the ex-ante ER values during the first 7 years crediting period.

The estimated amount of GHG emission reductions of the project is 419,307 tCO_2e during the 1st crediting period (7 years) from 10-May-2018 to 09-May-2025, resulting in estimated average annual emission reductions of 59,901 tCO_2e.

The ER calculation sheet/2/ has been duly checked. Further it has been checked whether the results have been correctly calculated in Joint-PD-MR for determination of ex-ante ER. The VVB has further checked the Joint-PD-MR against the latest version of the applicable methodology for consistency.

3.4.7 Methodology Deviations

There are no any methodology deviations applied to the project.

3.4.8 Monitoring Plan

1. Data and parameters available at validation

Please refer to the following tables for assessment of each parameter determined ex-ante only used to calculate the ex-ante emission reduction:

A_y	Area of project fields in year y
Title in line with Methodology?	Yes
Data unit correctly expressed?	Yes
Appropriate description?	Yes
Source clearly referenced? (appropriate?)	The source is field measurement, determined by collecting the project field sizes in a project database. The size of project fields are determined by GPS or satellite data.
Correct value provided?	Yes – 13,120 ha Derived from GPS results measured by Agricultural Bureau of Huangmei County/5/
Has this value been verified?	Yes. The value has been verified against the data source. And the areas for sampled farmers have been verified by site interview with farmers and measuring by GPS device during site inspection.
Choice of data correctly justified?	Yes
Measurement method correctly described?	N/A

GWP_{CH4}	Global warming potential of CH_4
Title in line with Methodology?	Yes
Data unit correctly expressed?	Yes
Appropriate description?	Yes
Source clearly referenced? (appropriate?)	The source is IPCC's *Fifth Assessment report, GHG Protocol* which are appropriate/32/
Correct value provided?	Yes – 28 tCO_2e/ tCH_4
Has this value been verified?	Yes. It is a default value from IPCC/32/. The value has been verified against the data source and in line with the VCS Standard, version 4.2

Choice of data correctly justified?	Yes
Measurement method correctly described?	Yes, any future revision of the IPCC's assessment report and VERRA's decision to the Global warming potential of GHG should be taken account.

$EF_{BL,c}$	Baseline emission factor for continuously flooded fields without organic amendments
Title in line with Methodology?	Yes
Data unit correctly expressed?	Yes
Appropriate description?	Yes
Source clearly referenced? (appropriate?)	The source is Report of Measuring Methane Emission Rate by Closed Chamber in Huangmei County in 2017/17/ which is verified as appropriate. Refer to above section "Determine the value of parameter $EF_{BL,c}$" for assessment details.
Correct value provided?	Yes –3.7848 kg CH_4/ha/day
Has this value been verified?	Yes. The values are verified as correct and calculated as per the applied methodology. Refer to above section "Determine the value of parameter $EF_{BL,c}$" for assessment details.
Choice of data correctly justified?	Yes. The justification of choice has been clearly stated in the Joint-PD-MR by PP which is verified as in line with the applied methodology.
Measurement method correctly described?	N/A

L_y	Rice cultivation period in day(s) of one season
Title in line with Methodology?	Yes
Data unit correctly expressed?	Yes
Appropriate description?	Yes
Source clearly referenced? (appropriate?)	The source is derived from local agricultural department as an empirical value for the days of single-cropping rice cultivation which has been confirmed by site interview with local officers and farmers.
Correct value provided?	Yes –132 days
Has this value been verified?	Yes. There are no farmers' logbooks as the value is used for ex-ante emission reduction calculation. This is an empirical value
Choice of data correctly justified?	Yes
Measurement method correctly described?	N/A

$SF_{BL,w}$	Baseline scaling factors to account for the differences in water regime during the cultivation period
Title in line with Methodology?	Yes
Data unit correctly expressed?	Yes
Appropriate description?	Yes
Source clearly referenced? (appropriate?)	The source is 2006 IPCC Guidelines for National Greenhouse Gas Inventories/33/ as listed in the applied methodology which is appropriate

Correct value provided?	Yes –1 is adopted due to the rice is cultivated under continuously flooded condition in baseline scenario Refer to above section "Determine the value of parameter $SF_{BL,w}$ or $SF_{P,w}$" for assessment details.
Has this value been verified?	Yes. It is a default value from IPCC/33/. The value has been verified against the data source.
Choice of data correctly justified?	Yes
Measurement method correctly described?	N/A

$SF_{P,w}$	Project scaling factors to account for the differences in water regime during the cultivation period
Title in line with Methodology?	Yes
Data unit correctly expressed?	Yes
Appropriate description?	Yes
Source clearly referenced? (appropriate?)	The source is 2006 IPCC Guidelines for National Greenhouse Gas Inventories/33/ as listed in the applied methodology which is appropriate
Correct value provided?	Yes –0.52 is adopted due to the rice is cultivated under intermittently flooded condition in baseline scenario Refer to above section "Determine the value of parameter $SF_{BL,w}$ or $SF_{P,w}$" for assessment details.
Has this value been verified?	Yes. It is a default value from IPCC/33/. The value has been verified against the data source.
Choice of data correctly justified?	Yes
Measurement method correctly described?	N/A

$SF_{BL,p}$	Baseline scaling factors to account for the differences in water regime in the pre-season before the cultivation period.
Title in line with Methodology?	Yes
Data unit correctly expressed?	Yes
Appropriate description?	Yes
Source clearly referenced? (appropriate?)	The source is 2006 IPCC Guidelines for National Greenhouse Gas Inventories/33/ as listed in the applied methodology which is appropriate
Correct value provided?	Yes –0.68 is adopted due to cultivation mechanism in rice filed is single-cropping in baseline scenario Refer to above section "Determine the value of parameter $SF_{BL,p}$ or $SF_{P,p}$" for assessment details.
Has this value been verified?	Yes. It is a default value from IPCC/33/. The value has been verified against the data source.
Choice of data correctly justified?	Yes
Measurement method correctly described?	N/A

$SF_{P,p}$	Project scaling factors to account for the differences in water regime in the pre-season before the cultivation period.
Title in line with Methodology?	Yes
Data unit correctly expressed?	Yes
Appropriate description?	Yes

Source clearly referenced? (appropriate?)	The source is 2006 IPCC Guidelines for National Greenhouse Gas Inventories/33/ as listed in the applied methodology which is appropriate
Correct value provided?	Yes –0.68 is adopted due to cultivation mechanism in rice filed is single-cropping in project scenario Refer to above section "Determine the value of parameter $SF_{BL,p}$ or $SF_{P,p}$" for assessment details.
Has this value been verified?	Yes. It is a default value from IPCC/33/. The value has been verified against the data source.
Choice of data correctly justified?	Yes
Measurement method correctly described?	N/A

$SF_{BL,o}$	Baseline scaling factors should vary for both type and amount of organic amendment applied
Title in line with Methodology?	Yes
Data unit correctly expressed?	Yes
Appropriate description?	Yes
Source clearly referenced? (appropriate?)	The source is 2006 IPCC Guidelines for National Greenhouse Gas Inventories/33/ as listed in the applied methodology which is appropriate
Correct value provided?	Yes –1 is adopted due to no organic amendments are applied under baseline scenario, so ROA_i is 0 and thus based on calculation formular, $SF_{BL,o}$ is 1. Refer to above section "Determine the value of parameter $SF_{BL,o}$ or $SF_{P,o}$" for assessment details.
Has this value been verified?	Yes. It is a default value from IPCC/33/. The value has been verified against the data source.
Choice of data correctly justified?	Yes
Measurement method correctly described?	N/A

$SF_{P,o}$	Project scaling factors should vary for both type and amount of organic amendment applied
Title in line with Methodology?	Yes
Data unit correctly expressed?	Yes
Appropriate description?	Yes
Source clearly referenced? (appropriate?)	The source is 2006 IPCC Guidelines for National Greenhouse Gas Inventories/33/ as listed in the applied methodology which is appropriate
Correct value provided?	Yes –1 is adopted due to no organic amendments are applied under project scenario, so ROA_i is 0 and thus based on calculation formular, $SF_{p,o}$ is 1. Refer to above section "Determine the value of parameter $SF_{BL,o}$ or $SF_{P,o}$" for assessment details.
Has this value been verified?	Yes. It is a default value from IPCC/33/. The value has been verified against the data source.
Choice of data correctly justified?	Yes
Measurement method correctly described?	N/A

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

2. Data and Parameters Monitored

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

$A_{s,g}$	Aggregated project area in given season s
Title in line with Methodology?	Yes
Ex-ante Value	Not used for ex ante ER calculation
Data unit correctly expressed?	Yes
Appropriate description?	Yes
Source clearly referenced? (appropriate?)	Yes–to determine by collecting the project field sizes in a project database
Correct value provided?	N/A
Has this value been verified?	N/A
Choice of data correctly justified?	Yes –to determine by collecting the project field sizes in a project database which is in line with the applied methodology and only compliant farms are considered
Measurement method correctly described?	Yes – Field measurement. The size of project fields shall be determined by GPS or satellite data. Should such technologies not be available, established field size measurement approaches shall be used provided that uncertainties are taken into account in a conservative manner which is in line with the applied methodology.
Monitoring frequency correctly described?	Every season - verified as per the applied methodology
Monitoring equipment correctly described?	GPS or satellite data - verified as per the applied methodology
QA/QC procedure correctly described?	Yes General guidelines for SSC CDM methodologies/35/ will be referred
Purpose of data?	BE_s calculation

$EF_{BL,s,g}$	Baseline emission factor of group g in a given season s
Title in line with Methodology?	Yes
Ex-ante Value	Not used for ex ante ER calculation
Data unit correctly expressed?	Yes
Appropriate description?	Yes
Source clearly referenced? (appropriate?)	Yes - Field measurements in baseline reference fields
Correct value provided?	N/A
Has this value been verified?	N/A
Choice of data correctly justified?	Yes –Field measurements in baseline reference fields as per the applied methodology
Measurement method correctly described?	Yes –Field measurements in baseline reference fields as per instructions in the appendix (Guidelines for measuring methane emissions from rice fields) and IPCC 2006, volume 4, chapter 5.5/33/ as per the applied methodology
Monitoring frequency correctly described?	Obtained from the calculation of the emission rate for baseline reference fields according to the requirements in the Appendix of methodology, and the $C_{CH4,t}$ (CH_4 concentration in chamber at

	time t) of weekly gas samplings is derived from the laboratory analysis. Regular measurements as per closed chamber method guidance, seasonally integrated - verified as per the applied methodology
Monitoring equipment correctly described?	Closed chamber and also devices in laboratory - verified as per the applied methodology
QA/QC procedure correctly described?	Yes The implementation of methane measurement in rice fields shall be conducted by technicians trained by experts and the laboratory should get ISO/IEC 17025/28/ certificate. All the data should be cross-checked by technicians and experts. The QA/QC procedure is verified as appropriate and in line with the requirement of Appendix in methodology.
Purpose of data?	BE_s calculation

$EF_{P,s,g}$	Project emission factor of group g in given season s
Title in line with Methodology?	Yes
Ex-ante Value	Not used for ex ante ER calculation
Data unit correctly expressed?	Yes
Appropriate description?	Yes
Source clearly referenced? (appropriate?)	Yes - Field measurements in project reference fields
Correct value provided?	N/A
Has this value been verified?	N/A
Choice of data correctly justified?	Yes –Field measurements in project reference fields as per the applied methodology
Measurement method correctly described?	Yes –Field measurements in project reference fields as per instructions in the appendix (Guidelines for measuring methane emissions from rice fields) and IPCC 2006, volume 4, chapter 5.5/33/ as per the applied methodology
Monitoring frequency correctly described?	Obtained from the calculation of the emission rate for baseline reference fields according to the requirements in the Appendix of methodology, and the $C_{CH4,t}$ (CH_4 concentration in chamber at time t) of weekly gas samplings is derived from the laboratory analysis. Regular measurements as per closed chamber method guidance, seasonally integrated - verified as per the applied methodology
Monitoring equipment correctly described?	Closed chamber and also devices in laboratory - verified as per the applied methodology
QA/QC procedure correctly described?	Yes The implementation of methane measurement in rice fields shall be conducted by technicians trained by experts and the laboratory should get ISO/IEC 17025/28/ certificate. All the data should be cross-checked by technicians and experts. The QA/QC procedure is verified as appropriate and in line with the requirement of Appendix in methodology.
Purpose of data?	PE_s calculation

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

3. Monitoring plan

The VVB has checked the monitoring plan of the Joint-PD-MR against the applied methodology.

The monitoring plan in the Joint-PD-MR has been designed to comply with the latest applicable version of the methodology (AMS-III.AU version 04.0).

Data and parameters to be monitored as above tables are confirmed in line with the methodology, also corresponding to the formula used for ER calculation.

Monitoring process

1) Monitoring of farmers' compliance with project cultivation practice (determination of $A_{s,g}$)

The monitoring plan designed in the Joint-PD-MR for monitoring of farmers' compliance with project cultivation practice is checked by VVB, CTI confirmed that the description is in line with the applied methodology.

The project database with all 4,859 participated rice farmer households' identification/12/ including name and address of the rice farmer, size of the field and additional farm specific information have been provided to the VVB, CTI confirmed that the PP has set up a database that allow an unambiguous identification of participating rice farm, and this database will be used as the basis for PP to conduct the sampling method as stated below.

As per the requirement in the applied methodology, a cultivation logbook shall be maintained for all project fields, hence all the 4,859 participated rice farmer households will fill the logbooks as per the requirement in the methodology.

As per the request from the applied methodology, the reporting and verification shall be done on the basis of samples of the log-books from the farmers, according to the latest version of the "Standard for sampling and surveys for CDM project activities and programme of activities" (version 09.0), hence PP has established a sampling method following this standard and the sampling size is verified as correct and PP has used 90/10 confidence/precision as the criteria for the reliability of sampling efforts for small-scale project activity is deemed as in line with the requirement of the sampling standard/36/.

315 samples will be selected according to stratified sampling method in 6 towns based on the numbers determined for each town calculated by the weight of total farmers numbers of each town in project area.

And then for sample selection of each town, a random sampling method will be used for determine the famers sample in each town and finally the randomly selected 315 samples will be defined.

Then during cultivation season, the selected farmers' logbooks including all parameters that are part of the project cultivation practice at least covering as follow

(a) Sowing (date),

(b) Fertilizer, organic amendments, and crop protection application (date and amount);

(c) Water regime on the field (e.g. "dry/moist/flooded") and dates where the water regime is changed from one status to another,

(d) Yield

(e) Whether they have followed fertilization recommendations provided with the introduction of the adjusted water management practice

For this monitoring period, during the site visit, CTI applied acceptance sampling approach to verify the results of farmer's logbooks as per the Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities, V9.0/36/. Refer to section 2.1 for details of the VVB sampling approach.

Via checking the results listed in sampled farmers' logbooks/21/, CTI verified that the monitoring of farmers' compliance with project cultivation practice is in line with the monitoring plan and applied methodology, and CTI confirmed that all the project reference fields are cultivated in a way that they represent the ranges of cultivation practice elements on the project fields in a conservative manner with respect to methane emissions. There were no farmers relevantly deviate from the defined project cultivation practice and thus all the farmer's fields can be deemed to be represented by the reference fields, and all the farmer's fields shall be taken into account for the determination of the aggregated project area of that season $A_{s,g}$, that means that the final monitoring result of $A_{s,g}$ during this monitoring period is verified as correct.

In addition, via checking the selected sampled farmers' logbooks/21/, CTI confirmed that the rice yield was increased by an average of 9.49% due to the implementation of the project in this monitoring period comparing with the yield of rice in baseline scenario as surveyed in the Ex-ante investigation report/13/.

2) Monitoring of baseline and project emissions (determination of $EF_{BL,s,g}$ and $EF_{p,s,g}$)

Via checking the monitoring plan for the two monitoring parameters listed in the Joint-PD-MR, CTI confirmed that the plan is in line with the requirement of the Appendix (Guidelines for measuring methane emissions from rice fields) of the applied methodology. All the requirements in Appendix have been considered by PP in the monitoring plan and CTI confirmed that the monitored parameters of $EF_{BL,s,g}$ and $EF_{p,s,g}$ will be measured correctly and conservatively.

For this monitoring period, the two monitoring parameters are monitored and assessed as below,

a. Requirement

For ex post emission reduction calculation, as per the Joint-PD-MR/1/ and applied methodology AMS-III.AU Version 04.0, the monitored parameters of $EF_{BL,s,g}$ and $EF_{p,s,g}$ need to be measured as per the instructions in the Appendix (Guidelines for measuring methane emissions from rice fields) of the applied methodology and IPCC 2006, volume 4, chapter 5.5.

b. Plan

As per the methodology, the PP has prepared a detailed plan for the seasonal methane measurements before the start of each season, via checking the plan/19/, CTI confirmed that the plan included the schedule for the field and laboratory measurements, the logistics that are necessary to get the gas samples to the laboratory and a cropping calendar, all reference field specific information regarding location and climate, soil, water management, plant characteristics, fertilizer treatment and organic amendments, CTI verified that the plan was prepared in compliance with the requirements in the applied methodology.

c. Reference fields

Besides, via checking the description of determination of the reference fields in Joint-PD-MR/1/, CTI confirmed that the project proponents have made sure that the measurements on project and baseline reference fields are carried out in an equal manner and simultaneously.

The details information of baseline and project reference fields have been listed in the MR clearly which is verified as actual by checking the methane measurement and calculation reports/18/ and site inspection by checking the fields identification, location, area size, geological coordinates, type of rice, climate etc. CTI concluded that the both the baseline and project reference fields have been set up in a way that represent baseline and project emissions in the project rice fields. For the only one group with the same cultivation pattern for this project during this monitoring period, there were three reference fields with the same pattern have been determined in the project area for baseline and project reference fields respectively which is confirmed as in line with the applied methodology.

Due to all fields within project area have the same cultivation pattern which has been verified in the farmer's logbooks/21/ and CTI confirmed that only one group in this project for this monitoring period. In line with the applied methodology, 3 baseline reference fields and 3 project reference fields were set in the project area with the coordinates of the location verified within the project area by site inspection, respectively, which are fixed rice paddies with area of around 0.4 ha. The determination of the reference fields is confirmed as reasonable by site interview with the expert/I3/.

d. Measurements on the fields

For the actual implementation of methane measurement in rice fields during this monitoring period, via checking the methane measurement and calculation reports in both baseline and project reference fields for 4 seasons from 2018 to 2021 (one cultivation season each year)/18/, CTI confirmed that the measurements have been conducted by technicians trained by expert from Huazhong Agricultural University in these fields using the closed chamber method in both baseline and project rice fields. Based on local expertise from VVB, CTI confirmed that Huazhong Agricultural University is an institution owned the certificate to do the laboratory analysis, CTI confirmed that the experts work in the university and their fields of study is rice. Thus the requirement for implementation of methane measurement in rice fields of the methodology is satisfied.

During the site visit, the expert showed how to take gas samples on the field, also the closed chambers have been checked, CTI verified that the installation of chambers and gas exposure process is in line with the plan/19/ and applied methodology. In conclusion, CTI confirmed that the chambers were installed correctly and air samplings were taken correctly. After the gas samples sent to the laboratory, the analysis was conducted by the qualified expert with calibrated devices. Refer to below tables for detail assessment of the Laboratory analysis methods.

Refer to above tables 3-3, 3-4 and 3-5 for detail assessment of the monitoring methods.

For the certificate of laboratory and calibration information of equipment, refer to below section 4.4.4 for detail assessment.

Via checking the methane measurement and calculation reports/18/ for this monitoring period, CTI confirmed that the measurements in fields and analysis in laboratory were all carried out in line with the requirement in applied methodology. And after this step, the concentration of methane in the gas samples $C_{CH4,t}$ were obtained.

e. Calculations

Based on the "Calculation of the emission rate for a plot (reference field)" in the Appendix. Guidelines for measuring methane emissions from rice fields in the applied methodology AMS-III.AU ver. 04.0, the mass of CH_4 emissions for a plot (reference field) is calculated by above formulars (10)-(13).

So, the final integrated results of with the $EF_{BL,s,g}$ and $EF_{p,s,g}$ ($kgCH_4$/season/ha) in the three reference fields for both baseline and project is calculated based on above formulars for this monitoring period.

Via checking the methane measurement and calculation reports/18/ for this monitoring period, CTI confirmed that the calculation results of $EF_{BL,s,g}$ and $EF_{p,s,g}$ ($kgCH_4$/season/ha) listed in the MR is consistent with the methane measurement and calculation reports listed in the methane measurements and calculation reports for 4 different seasons in this monitoring period/18/.

Monitoring team

The monitoring team will take the overall monitoring responsibility in the whole monitoring process which has been confirmed during the site interview with the representatives from monitoring team which consists of the project proponent/I1/, Search Co2 Investment Management Co., Ltd /I6/, technicians/I4/ and experts from the Agricultural Bureau/I2/. Also the Search Co2 Investment Management Co., Ltd will establish cultivation logbooks template for the farmers to be monitored within the project boundary to collect and record monitoring data which has been confirmed by interview with the monitoring team members. And the final monitoring results will be double-checked by experts of the Agricultural Bureau. The roles and responsibilities of the project owner and monitoring team has been defined in the monitoring plan and verified as reasonable and achievable.

Furthermore, for the analysis of emission rate of gas sampling on field, a laboratory with relevant certificate conducted test and the measurement team was leaded by an expert. Therefore, CTI verified that the monitoring system was well implemented by monitoring team to ensure the monitoring results are correct and accurate.

Monitoring frequency

The monitoring frequency for three monitored parameters $A_{s,g}$, $EF_{BL,s,g}$ and $EF_{p,s,g}$ are confirmed as all in line with the requirement in the applied methodology and Joint-PD-MR/1/.

Data management

All the data collected for this monitoring period were archived electronically which has been confirmed by checking the electronical evidence and will be archived at least two years after the end of the last crediting period of the project activity.

QA/QC

The QA/QC procedure for this monitoring period is checked and verified by CTI as correct and reasonable, the monitoring results have been conducted or cross-checked by agricultural bureau experts. The monitoring equipment will be updated if there are new versions or more efficient monitoring tools available to keep the data more accurate. Via site inspection, CTI verified that the monitoring equipment used are the efficient monitoring tools.

Emergency procedure

Monitoring team will take actions to deal with missing data due to negligence and improper operation and maintain or will displace the broken chamber if any malfunction, also pay close attention to weather forecasts during rice planting, and the monitoring data will be calculated conservatively for emission calculations during the troubleshooting period.

By site interview with monitoring staff and experts and checking the related evidence for data/21/,/18/, CTI verified that no emergency situations have been occurred. Thus no emergency procedure was used for this monitoring period.

Based on above assessment, CTI verified that the monitoring system complies with the applied methodology and the monitoring plan and all applied procedures are completely in compliance to the methodology AMS-III.AU. (version 04.0) and Joint-PD-MR/1/.

Based on interview with site personnel and VVB's local and sectoral knowledge, the measurement methods, recording procedures, equipment installation and maintenance and QA/QC procedures described in the monitoring plan are feasible in China and can fully meet the requirements of the methodology. No difficulties are anticipated in implementing the operational and management structure nor the monitoring plan as a whole.

CAR 08 and CL 07 were raised and successfully closed. Refer to Appendix 4 for detail assessment

3.5 Non-Permanence Risk Analysis

N/A

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

Through the onsite visit, interviewing the project developer and reviewing the project description/1/, it was confirmed that the project was implemented to change the water regime during the rice cultivation period. It changes continuously flooded to intermittent flooded condition during rice cultivation so that to result in reduced anaerobic decomposition of organic matter in rice cropping soils and thus reduced generation of methane. The Project involves a total acreage of 13,120 ha for single-cropping rice.

Via site inspection with rice lands/38/ and interview with farmer representatives/I5/, CTI confirmed that before the project implementation, the paddy fields are regarded as an isolate unit and the rice was continuously flooded, and with the project, the cement ditches and reservoirs were constructed and pumps and valves were installed to conduct the intermittent flooded water regime during rice cultivation. With the replacing of the continuously flooded method by intermittent flooded method, the project solves the problems of excessive water used during rice cultivation and expected to decrease 48% of the CH_4 emission/54/.

Via checking the Joint-PD-MR/1/, CTI confirmed that the project activity generates CH_4 emission reductions by build ditches for applying intermittently flooded method in project area, that otherwise continuously flooded method was used in rice paddies, which means fields have standing water throughout the rice growing season and may only dry out for harvest and in this condition, the organic matter in rice soil under flooded condition would emit a large amount of methane (CH_4) because of anaerobic decomposition. Due to the CH_4 in rice paddies is produced by the anaerobic decomposition of organic matter after the flooding, hence through the project that allows the field to drain halts CH_4 production, which happens in anaerobic condition, reducing the total quantity of CH_4 released during the cropping season.

On the basis of site visit and the reviewed project monitoring report and other supporting docs, it can be confirmed that w.r.t. the realized technology, the project cement ditches and reservoirs, pumps and valves, as well as the monitoring and metering equipment, the project has been implemented and operated as applied methodology and monitoring plan described in the Joint-PD-MR/1/.

This verification covers the period from 10-May-2018 to 31-December-2021 (including both days). The Project involves a total acreage of 13,120 ha for single-cropping rice, the GHG emission reductions from the project during the monitoring period from 10-May-2018 to 31-December-2021 were generated as 241,198 tCO_2e, by considering the net GHG emission reductions generated during this monitoring period have exceeded the threshold required in the small-scale methodology applied, which is the 60,000 tCO_2e per year, the GHG emission reductions are amount to 240,000 tCO_2e can be claimed as VCUs.

The construction of high standard rice fields commenced on 12-October-2017/11/ and project start date was 10-May-2018, which has been confirmed in the project database with all 4,859 participated rice farmer households' identification/12/.

VVB confirmed that the activities commenced before the monitoring period and during this monitoring period have been stated in the Joint-PD-MR/1/. Via site inspection of the project site and interview with the sampled farmers, VVB confirmed that the main activities commenced before the monitoring period including built high-standard rice paddies, provided trainings to technicians and farmers and the rice

cultivation used continuously flooded water regime, while after the project implementation, the construction of high-standard farmland would no longer to be continued and with the completion of the project, the rice cultivation apply intermittent flooded water regime and the trainings were provided to technicians and farmers continuously during this monitoring period. Hence, VVB confirmed that whether activities commenced before the monitoring period continue to be implemented have been demonstrated clearly in the Joint-PD-MR/1/.

As part of the site visit the Verification Team was able to confirm that the project implementation is in accordance with the project description contained in the Joint-PD-MR/1/. There are no any material discrepancies between project implementation and the project description.

In conclusion, the verification Team was able to confirm that the project implementation is in accordance with the project description contained in the Joint-PD-MR/1/.

4.2 Accuracy of GHG Emission Reduction and Removal Calculations

1. Assessment of Data and parameters available at validation

Via checking the Joint-PD-MR/1/, CTI confirmed that all the ex-ante data and parameters are same to the Joint-PD-MR which is verified as correct. Refer to section 3.4.8 for the detail assessment of ex-ante parameters.

2. Assessment of Data and parameters monitored

During the verification all relevant monitoring parameters (as listed in chapter 3.4.8 of this report) have been verified with regard to the

(i) appropriateness of the applied measurement / determination method,

(ii) the correctness of the values applied for ER calculation,

(iii) the accuracy, and applied QA/QC measures.

The monitoring results as well as the verification procedure are described parameter-wise in the below tables,

$A_{s,g}$	Aggregated project area in given season s
Title in line with Methodology?	Yes
Data unit correctly expressed?	Yes – ha
Appropriate description?	Yes
Monitored Value?	13,120 for each year from 2018 to 2021 in the project area during this monitoring period
Correct value provided?	Yes
Source clearly referenced? (appropriate?)	Yes–it is monitored by collecting the project field sizes in a project database with farmers information/12/, and the size of each household's rice field in the database is determined by using GPS by Agricultural Bureau of Huangmei County which has been confirmed by interview with officers from Agricultural Bureau of Huangmei County.
Choice of data correctly justified?	Yes –to determine by collecting the project field sizes in a project database which is in line with the applied methodology and only compliant farms are considered. The compliant farms are determined by checking the farmers' log-books/21/.

Measurement method and procedures correctly described?	Yes – Field measurement and by checking the farmers' log-books/21/. The size of project fields has been determined by GPS data during field measurement. And every week, the technicians are required to check whether the project fields recorded in the database are cultivated by intermittent flooded method with the help of the logbooks/10/. At the end of each cropping season, the technicians submitted the Fact Sheets on Rice Cultivation/22/ in terms of the information got from sampled logbooks.
Calculation method?	Yes – Sum of area of each compliant household's rice fields
Monitoring frequency correctly described?	Every season - verified as per Joint-PD-MR and the applied methodology
Monitoring equipment correctly described?	GPS measuring equipment - verified as per Joint-PD-MR and the applied methodology The model, precision and calibration information of the equipment used has been provided, the compass was calibrated by placing the equipment horizontally and vertically before use, and the automatic calibration of the barometer was turned on before use, which has been verified as actual by checking the Instruction of GPS Measuring Equipment/27/, thus CTI confirmed that the calibration for this equipment was valid for this monitoring period.
QA/QC procedure correctly described?	Yes-General guidelines for SSC CDM methodologies/35/ has been referred. The project field sizes derived from the project database with farmers information/12/ was cross-checked with the farmers' log-books/21/ and Fact Sheets on Rice Cultivation/22/ to determine the final compliant household's rice fields for this monitoring period.
Purpose of data?	BE_s and PE_s calculation
Comments?	Via checking the farmers' log-books/21/ and Fact Sheets on Rice Cultivation/22/, CTI confirmed that all the farmers cultivated single-cropping rice with intermittent flooded water regime in this monitoring period are involved, and only these farmers' farm were compliant.

$EF_{BL,s,g}$	Baseline emission factor of group g in given season s
Title in line with Methodology?	Yes
Data unit correctly expressed?	Yes –kg CH_4/ha per season
Appropriate description?	Yes
Monitored Value?	

Year	$EF_{BL,s,g}$ (kg CH_4/ha)
2018	503.94
2019	506.52
2020	510.62
2021	511.59

Correct value provided?	Yes
Source clearly referenced? (appropriate?)	Yes–it is monitored by field measurements in baseline reference fields and analyzed in the laboratory. During the field measurements in baseline reference fields, the gas samples were taken from closed chambers, then all gas samples were stored in evacuated vial and sent to laboratory for analysis. And the final result of $EF_{BL,s,g}$ for each season is calculated by the analysis results as per the method in Joint-PD-MR/1/ and applied methodology/34/.

Choice of data correctly justified?	Yes –field measurements in baseline reference fields and analyzed in the laboratory as per Joint-PD-MR and applied methodology
Measurement method and procedures correctly described?	Yes – field measurements in baseline reference fields as per instructions in the appendix (Guidelines for measuring methane emissions from rice fields) and IPCC 2006, volume 4, chapter 5.5/33/ as per Joint-PD-MR/1/ and applied methodology/34/.
Calculation method?	Yes - Refer to equations in below section 4.4.3 for calculation process which is verified in line with Joint-PD-MR/1/ and applied methodology/34/.
Monitoring frequency correctly described?	Regular measurements in three baseline reference fields, three closed chambers were placed in each field and samples were measured three times a week from each closed chamber, all gas samples taken from closed chambers were stored in evacuated vial and sent to laboratory for analysis - verified as per the Joint-PD-MR and applied methodology. Obtained from the calculation of the emission rate for baseline reference fields according to the requirements in the Appendix of methodology, and the $C_{CH4,t}$ (CH_4 concentration in chamber at time t) of weekly gas samplings is derived from the laboratory analysis. Refer to section 4.4.3 for detail assessment.
Monitoring equipment correctly described?	Closed chambers in fields and FID (gas chromatography with flame ionization detector) in laboratory- verified as per Joint-PD-MR/1/ and applied methodology/34/. For the closed chambers installed in the three baseline reference fields, via site inspection and checking the devices, CTI confirmed that the chambers are installed in line with the requirement in methodology as assessed in table 4-1, and by considering this type of the equipment, there is no accuracy and calibration requested. For the FID, the model, column and calibration information of the equipment used has been provided, the FID was calibrated with certified standard gas each day of analysis before and after the analyses, via checking the methane measurement and calculation reports/18/ for this monitoring period and site interview with expert/I3/, CTI confirmed that the calibration is conducted in line with certified standard gas each day of analysis before and after the analyses as per request of the methodology in laboratory analysis.
QA/QC procedure correctly described?	The implementation of methane measurement in rice fields was conducted by technicians trained by experts and the laboratory was checked getting valid ISO/IEC 17025 certificate/16/. All the data were cross-checked by technicians and experts. The QA/QC procedure is verified as appropriate and in line with the requirement of Appendix in methodology.
Purpose of data?	BE_s calculation
Comments?	-

$EF_{P,s,g}$	Project emission factor of group g in given season s		
Title in line with Methodology?	Yes		
Data unit correctly expressed?	Yes –kg CH_4/ha per season		
Appropriate description?	Yes		
Monitored Value?		Year	$EF_{P,s,g}$ (kg CH_4/ha)
		2018	339.61
		2019	343.14

		2020	347.00
		2021	346.35
Correct value provided?	Yes		
Source clearly referenced? (appropriate?)	Yes–it is monitored by field measurements in project reference fields and analyzed in the laboratory. During the field measurements in project reference fields, the gas samples were taken from closed chambers, then all gas samples were stored in evacuated vial and sent to laboratory for analysis. And the final result of $EF_{P,s,g}$ for each season is calculated by the analysis results as per the method in Joint-PD-MR/1/ and applied methodology/34/.		
Choice of data correctly justified?	Yes –field measurements in project reference fields and analyzed in the laboratory as per Joint-PD-MR/1/ and applied methodology/34/.		
Measurement method and procedures correctly described?	Yes – field measurements in project reference fields as per instructions in the appendix (Guidelines for measuring methane emissions from rice fields) and IPCC 2006, volume 4, chapter 5.5/33/ as per Joint-PD-MR/1/ and applied methodology/34/.		
Calculation method?	Yes- Refer to equations in below section 4.4.3 for calculation process which is verified in line with Joint-PD-MR/1/ and applied methodology/34/.		
Monitoring frequency correctly described?	Regular measurements in three project reference fields, three closed chambers were placed in each field and samples were measured three times a week from each closed chamber, all gas samples taken from closed chambers were stored in evacuated vial and sent to laboratory for analysis - verified as per the Joint-PD-MR/1/ and applied methodology/34/. Obtained from the calculation of the emission rate for project reference fields according to the requirements in the Appendix of methodology, and the $C_{CH4,t}$ (CH_4 concentration in chamber at time t) of weekly gas samplings is derived from the laboratory analysis. Refer to section 4.4.3 for detail assessment.		
Monitoring equipment correctly described?	Closed chambers in fields and FID (gas chromatography with flame ionization detector) in laboratory- verified as per Joint-PD-MR/1/ and applied methodology/34/. For the closed chambers installed in the three project reference fields, via site inspection and checking the devices, CTI confirmed that the chambers are installed in line with the requirement in methodology as assessed in table 4-1, and by considering this type of the equipment, there is no accuracy and calibration requested. For the FID, the model, column and calibration information of the equipment used has been provided, the FID was calibrated with certified standard gas each day of analysis before and after the analyses, via checking the methane measurement and calculation reports/18/ for this monitoring period and site interview with expert/I3/, CTI confirmed that the calibration is conducted in line with certified standard gas each day of analysis before and after the analyses as per request of the methodology in laboratory analysis.		
QA/QC procedure correctly described?	The implementation of methane measurement in rice fields was conducted by technicians trained by experts and the laboratory was checked getting valid ISO/IEC 17025 certificate/16/. All the data were cross-checked by technicians and experts. The QA/QC procedure is verified as appropriate and in line with the requirement of Appendix in methodology.		

Purpose of data?	PE_s calculation
Comments?	-

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

3. Assessment of GHG emission reductions Quantity

Calculation of baseline GHG emissions or removals

According to the methodology, the baseline scenario is the continuation of the current practice e.g. continuously flooded rice cultivation in the project fields.

Hence baseline emissions are calculated on a seasonal basis using the following formula:

$$BE_y = \sum_s BE_s \quad (1)$$

$$BE_s = \sum_{g=1}^{G} EF_{BL,s,g} \times A_{s,g} \times 10^{-3} \times GWP_{CH_4} \quad (2)$$

During this monitoring period covered 4 years from 2018 to 2021, there are total 4 cultivation seasons, and based on the assessment of the farmers' logbooks/21/, CTI confirmed that there was only one group defined. And based on the above assessment in section 4.1, CTI verified that the parameters $A_{s,g}$ and $EF_{BL,s,g}$ were monitored in line with the Joint-PD-MR/1/ and applied methodology/34/.

Via checking the results in the methane measurement and calculation reports/18/ issued by laboratory of Huazhong Agricultural University, CTI confirmed that via the measurement results of C_{CH4}, based on the formulars of (10) to (13) listed in this report, the Average emission rate of a plot RE_{plot} was calculated and final integrated results of RE_{plot} with the unit of (kg/season/ha) in the three reference fields is equal to $EF_{BL,s,g}$ (kgCH_4/season/ha) which are summarized in Table 4-1 below,

Table 4-1 RE_{plot} (mg/h × m²) in baseline reference fields during this monitoring period from 2018 to 2021

Year	Category	RE_{plot} (mg/h × m²)	Hours over the season	RE_{plot} (kg/season/ha)
2018	Plot 1	15.95	3,216	512.95
	Plot 2	15.25		490.44
	Plot 3	15.81		508.45
	Average	15.67		503.94
2019	Plot 1	15.91	3,216	511.67
	Plot 2	15.07		484.65
	Plot 3	16.27		523.25
	Average	15.75		506.52
2020	Plot 1	15.53	3,240	503.17
	Plot 2	15.90		515.16
	Plot 3	15.85		513.54
	Average	15.76		510.62
2021	Plot 1	15.60	3,240	505.44

	Plot 2	15.92		515.81
	Plot 3	15.85		513.54
	Average	15.79		511.59

Therefore, the baseline emission factors of group g in season s $EF_{BL,s,g}$ are summarized as follow table:

Table 4-2 $EF_{BL,s,g}$ (kg CH_4/season/ha) in baseline reference fields during this monitoring period from 2018 to 2021

Year	2018	2019	2020	2021
$EF_{BL,s,g}$ (kgCH_4/season/ha)	503.94	506.52	510.62	511.59

Finally, based on the above values of $EF_{BL,s,g}$ and formular (1) and (2), the baseline emissions BE_y (tCO_2e) during the period from 2018 to 2021 is calculated in below table,

Table 4-3 BE_y calculation during this monitoring period from 2018 to 2021

Year	2018	2019	2020	2021
$EF_{BL,s,g}$ (kgCH_4/season/ha)	503.94	506.52	510.62	511.59
GWP_{CH4} (t CO_2e/t CH_4)	28	28	28	28
$A_{s,g}$ (ha)	13,120	13,120	13,120	13,120
BE_s (tCO_2e)	185,127	186,075	187,581	187,937
Annual Total BE_y (tCO_2e)	**185,127**	**186,075**	**187,581**	**187,937**

In conclusion, the calculations of baseline GHG emissions have been carried out in accordance with the formulae and methods described in the registered monitoring plan, the applied methodology and, where applicable, the applied standardized baseline. Any assumptions used in emission calculations have been justified. Appropriate emission factors, GWPs and other reference values have been correctly applied. No errors, miscalculations, omissions, misstatements or incomplete information has been identified. It can be confirmed that the baseline calculation is overall correct.

Calculation of project GHG emissions or actual net GHG removals by sinks

According to the methodology, the project emissions within the project boundary is calculated on a seasonal basis using the following formula:

$$PE_y = \sum_s PE_s \tag{3}$$

$$PE_s = \sum_{g=1}^{G} EF_{P,s,g} \times A_{s,g} \times 10^{-3} \times GWP_{CH_4} \tag{4}$$

During this monitoring period covered 4 years from 2018 to 2021, there are total 4 seasons, and based on the assessment of the farmers' logbooks/21/, CTI confirmed that there was only one group defined. And based on the above assessment in section 4.1, CTI verified that the parameters $A_{s,g}$ and $EF_{P,s,g}$ were monitored in line with the Joint-PD-MR/1/ and applied methodology/34/.

Via checking the results in the methane measurement and calculation reports/18/ issued by laboratory of Huazhong Agricultural University, CTI confirmed that via the measurement results of C_{CH4}, based on the formulars of (10) to (13) listed in this report, the Average emission rate of a plot RE_{plot} was calculated and final integrated results of RE_{plot} with the unit of (kg/season/ha) in the three reference fields is equal to $EF_{P,s,g}$ ($kgCH_4$/season/ha) which are summarized in Table 4-4 below,

Table 4-4 RE_{plot} (mg/h × m²) in project reference fields during this monitoring period from 2018 to 2021

Year	Category	RE_{plot} (mg/h × m²)	Hours over the season	RE_{plot} (kg/season/ha)
2018	Plot 1	10.72	3,216	344.76
	Plot 2	10.20		328.03
	Plot 3	10.76		346.04
	Average	10.56		339.61
2019	Plot 1	10.22	3,216	328.68
	Plot 2	11.53		370.80
	Plot 3	10.26		329.96
	Average	10.67		343.14
2020	Plot 1	10.41	3,240	337.29
	Plot 2	10.75		348.30
	Plot 3	10.97		355.43
	Average	10.71		347.00
2021	Plot 1	10.80	3,240	349.92
	Plot 2	10.50		340.20
	Plot 3	10.77		348.95
	Average	10.69		346.35

Therefore, the project emission factors of group g in season s $EF_{P,s,g}$ are summarized as follow table:

Table 4-5 $EF_{P,s,g}$ (kg CH_4/season/ha) in project reference fields during this monitoring period from 2018 to 2021

Year	2018	2019	2020	2021
$EF_{P,s,g}$ ($kgCH_4$/season/ha)	339.61	343.14	347.00	346.35

Finally, based on the above values of $EF_{P,s,g}$ and formular (3) and (4), the project emissions PE_y (tCO_2e) during the period from 2018 to 2021 is calculated in below table,

Table 4-6 PE_y calculation during this monitoring period from 2018 to 2021

Year	2018	2019	2020	2021
$EF_{P,s,g}$ ($kgCH_4$/season/ha)	339.61	343.14	347.00	346.35
GWP_{CH4} (t CO_2e/t CH_4)	28	28	28	28
$A_{s,g}$ (ha)	13,120	13,120	13,120	13,120
PE_s (tCO_2e)	124,759	126,055	127,473	127,235

Annual Total PE_y (tCO_2e)	124,759	126,055	127,473	127,235

In conclusion, the calculations of project GHG emissions have been carried out in accordance with the formulae and methods described in the registered monitoring plan, the applied methodology and, where applicable, the applied standardized project. Any assumptions used in emission calculations have been justified. Appropriate emission factors, GWPs and other reference values have been correctly applied. No errors, miscalculations, omissions, misstatements or incomplete information has been identified. It can be confirmed that the project calculation is overall correct.

Calculation of leakage GHG emissions

In accordance with AMS-III.AU. ver. 04.0, registered Joint-PD-MR, any effects of the project activity on GHG emissions outside the project boundary are deemed to be negligible and do not considered under this methodology, hence leakage does not need to be considered in this project.

CTI confirmed that the no leakage emissions for this monitoring period (LE_y = 0).

Summary of calculation of GHG emission reductions or net anthropogenic GHG removals by sinks

The VVB has checked the MR includes a summary table of the emission reductions calculation.

Summary of emission reductions during the monitoring period,

$$ER_s = BE_s - PE_s \quad (9)$$

Where:

ER_s	=	Emission reductions in season s (t CO_2e)
BE_s	=	Baseline emissions from baseline fields in season s (tCO_2e)
PE_s	=	Project emissions from project fields in season s (tCO_2e)

Hence, the emission reduction during this monitoring period from 2018 to 2021 are summarized in the table below

Table 4-7 Emission Reductions Calculation during this monitoring period from 2018 to 2021

Year	2018	2019	2020	2021
BE_s (tCO_2e)	185,127	186,075	187,581	187,937
PE_s (tCO_2e)	124,759	126,055	127,473	127,235
ER_s (tCO_2e)	60,368	60,020	60,108	60,702
Annual Total ER (tCO_2e)	**60,368**	**60,020**	**60,108**	**60,702**

Parameters / Period	Baseline Emissions BE_y	Project Emissions PE_y	Leakage Emissions LE_y	Net GHG emission reductions or removals ER
	(tCO_2e)	(tCO_2e)	(tCO_2e)	(tCO_2e)

10-May-2018~31-December-2018	185,127	124,759	0	60,368
01-January-2019~ 31-December-2019	186,075	126,055	0	60,020
01-January-2020~ 31-December-2020	187,581	127,473	0	60,108
01-January-2021~ 31-December-2021	187,937	127,235	0	60,702
Total	**746,720**	**505,522**	**0**	**241,198**

All the figures as per the monitoring report were cross-checked by the VVB against basic monitored data. Refer to section 4.4.1 and 4.4.2 of this report for assessment details.

Note that for the ER value year in 2018, which is similar to the ER value of 2019, 2020 and 2021 with started date of 2018 is 10-May-2018, CTI assessed as below,

Via checking the famers' logs/21/ and based on the local expertise of VVB, CTI confirmed that for this kind of project which reduce ER due to adjusted water regime during rice cultivation, the ER occurred during the rice growing season which is not a whole year time. Via checking the Joint-PD-MR, CTI confirmed that for year 2018, the start time of field preparation which is the start date of project that started to generate the ER is 10-May-2018, hence the whole rice growing season has been considered in year 2018 which is same to other years.

Furthermore, based on the assessment of applicability conditions in applied methodology, CTI confirmed that the aggregate annual emission reductions of all fields included under this project activity shall be less than or equal to 60 kt CO_2 equivalent that should not exceed the threshold required in the small-scale methodology. Hence, as per the request of the applied small-scale methodology, the PP shall only claim the ER value equal to 60 kt CO_2 equivalent at most which has been listed as below table,

Parameters / Period	Net GHG emission reductions or removals *ER* claimed as VCUs (tCO_2e)
10-May-2018 ~ 31-December-2018	60,000
01-January-2019~ 31-December-2019	60,000
01-January-2020~ 31-December-2020	60,000
01-January-2021 ~ 31-December-2021	60,000
Total	**240,000**

Therefore, for the total 1st Monitoring period from 10-May-2018 to 31-December-2021, 240,000 tCO_2e equivalent of credits eligible for issuance as VCUs.

Via checking the values in Joint-PD-MR/1/ against the ER calculation sheet/2/, CTI confirmed that the emission reductions calculation is overall correct.

4.3 Quality of Evidence to Determine GHG Emission Reductions and Removals

Refer to section 4.1 above for the detail assessment of each monitoring parameters and Appendix 3 for the supporting evidence used to determine the GHG emission reductions.

For each reported data, the evidence is provided and verified as sufficient and quality is appropriate. Also, the cross-checks have been performed on the reported data with different source of evidence. The information flow from data generation and aggregation, to recording, calculation and final transposition into the monitoring report has been assessed by VVB in section 4.1 for each parameter and also the calibration have been conducted as per the frequency of monitoring equipment defined in the Joint-PD-MR.

Therefore, it is concluded that the evidence provided are verified as sufficient and quality is appropriate and thus the evidence can be used to determine the GHG emission reductions and removals for this monitoring period.

5 VALIDATION AND VERIFICATION CONCLUSION

Search CO2 (Shanghai) Environmental Science & Technology Co. Ltd. has commissioned the CTI to carry out the Verified Carbon Standard (VCS) joint validation and 1st periodic verification of the project activity Adjusted Water Management in Rice Cultivation In Huangmei County (VCS ID 2902), for the monitoring period from 10-May-2018 to 31-December-2021, with regard to the relevant requirements for VCS Standard Version 4.2.

Based on the reviewing the documented evidence and by an on-site assessment, CTI can confirm that:

- the baseline scenario is correctly defined as per the applied methodology and relate tools;
- the project is additional;
- all data and information used for ex-ante calculation of emission reductions is of projected and/or hypothetical nature;
- the monitoring plan in the validated Joint-PD-MR is as per the applied baseline and monitoring methodology.
- the project has been implemented and operated as per the VCS Joint-PD-MR;
- the project complies with the validation and verification criteria for projects set out in VCS Standard Version 4.2;
- the monitoring report and other supporting documents provided are complete and verifiable and in accordance with the applicable VCS requirement and AMS-III.AU. (version 4.0);
- the monitoring is in place as per the applied baseline and monitoring methodology AMS-III.AU. (version 4.0);
- the monitoring complies with the monitoring plan in the Joint-PD-MR;

It is certified that the GHG emission reductions from the project during the monitoring period amount as follows:

Verification period: From 10-May-2018 to 31-December-2021

Verified GHG emission reductions and removals in the above verification period by vintage is

Year	Baseline emissions or removals (tCO_2e)	Project emissions or removals (tCO_2e)	Leakage emissions (tCO_2e)	Net GHG emission reductions or removals (tCO_2e)
10-May-2018~31-December-2018	185,127	124,759	0	60,368
01-January-2019~31-December-2019	186,075	126,055	0	60,020
01-January-2020~31-December-2020	187,581	127,473	0	60,108
01-January-2021~31-December-2021	187,937	127,235	0	60,702
Total	**746,720**	**505,522**	**0**	**241,198**

Based on the assessment of applicability conditions in applied methodology, CTI confirmed that the aggregate annual emission reductions of all fields included under this project activity shall be less than

or equal to 60 kt CO_2 equivalent that should not exceed the threshold required in the small-scale methodology. Hence, as per the request of the applied small-scale methodology, the PP shall only claim the annual ER value equal to 60 kt CO_2 equivalent at most.
Therefore, for the total 1st Monitoring period from 10-May-2018 to 31-December-2021, 240,000 tCO_2e equivalent of credits eligible for issuance as VCUs.

Lin Shunrong	Zhou Lu
CTI	CTI
Verification Team Leader	Final Approval
28-July-2022	28-July-2022

APPENDIX 1: ABBREVIATIONS

Abbreviations	Full texts
AFOLU	Agriculture, Forestry and Other Land Use
ALM	Agricultural Land Management
CA	Corrective Action / Clarification Action
CAR	Corrective Action Request
CCER	China Certified Emission Reduction
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CH_4	Methane
CL	Clarification Request
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
CP	Certification Program // Crediting Period
DverR	Draft Verification Report
EIA	Environmental Impact Assessement
ER	Emission Reduction
ETS	Emission Trading Scheme
FAR	Forward Action Request
FID	Gas chromatography with flame ionization detector
FverR	Final Verification Report
GHG	Greenhouse gas(es)
GS	Gold Standard
ICM	Improved Cropland Management
IPCC	Intergovernmental Panel on Climate Change
JPM	Joint-PD-MR
MP	Monitoring Plan
MR	Monitoring Report
PA	Project Activity
PD	Project Description
PP	Project Participant
QA/QC	Quality Assurance / Quality Control
REDD	Reduced Emissions from Deforestation and Degradation
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard
VCS	Verified Carbon Standard
VCSA	Verified Carbon Standard Association
VCU	Verified Carbon Unit
VVB	Validation/Verification Body

APPENDIX 2: COMPETENCE OF TEAM MEMBERS AND TECHNICAL REVIEWERS

Ms. Shunrong LIN

Satisfies the requirements of competence management system of CTI Certification, and is hereby appointed as:

Qualification						
Status	GHG Auditor	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date	√	√	√	√	√	√

Scope	Technical Area
SS 1: Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources
SS 14: Afforestation and reforestation	TA 14.1: Afforestation and reforestation
SS 15: Agriculture	TA 15.1: Agriculture

This appointment is valid for 3 years from its date of approval below and is bound by internal requirements of management system of the Certification Body of CTI.

Approved by: Wu Lin

Wu LIN

Technical Competent Manager

Shenzhen, 01/01/2021

Mr. Wu LIN

Satisfies the requirements of competence management system of CTI Certification, and is hereby appointed as:

Qualification						
Status	GHG Auditor	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date	√	√	√	√	√	√

Scope	Technical Area
SS 1: Energy industries (renewable/non-renewable sources)	TA 1.1: Thermal energy generation
	TA 1.2: Energy generation from renewable energy sources
SS 2: Energy distribution	TA 2.1: Electricity distribution
SS 3: Energy demand	TA 3.1: Energy demand
SS 4: Manufacturing industries	TA 4.1: Cement and lime production
SS 5: Chemical industry	TA 5.1: Chemical industry
	TA 5.2: Caprolactam, nitric and adipic acid
SS 10: Fugitive emissions from fuels (solid, oil and gas)	TA 10.1: Fugitive emissions from oil and gas
SS 11: Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride	TA 11.1: Emissions of fluorinated gases
	TA 11.2: Refrigerant gas production
SS 12: Solvents use	TA 12.1: Chemical industry
SS 13: Waste handling and disposal	TA 13.1: Solid waste and wastewater
	TA 13.2: Manure

This appointment is valid for 3 years from its date of approval below and is bound by internal requirements of management system of the Certification Body of CTI.

Approved by:
Lu ZHOU
General Manager
Shenzhen, 01/01/2021

Mr. Shun YAN

Satisfies the requirements of competence management system of CTI Certification, and is hereby appointed as:

Qualification						
Status	GHG Auditor	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date	-	-	-	-	-	√

Scope	Technical Area
SS 14: Afforestation and reforestation	TA 14.1: Afforestation and reforestation

This appointment is valid for 3 years from its date of approval below and is bound by internal requirements of management system of the Certification Body of CTI.

Approved by: Wu Lin

Wu LIN

Technical Competent Manager

Shenzhen, 01/01/2021

APPENDIX 3: DOCUMENTS REVIEWED OR REFERENCED

No	Author	Title	References to the document	Provider
1.	Search CO2 (Shanghai) Environmental Science & Technology Co. Ltd.	Joint-PD-MR	Joint-PD-MR of Adjusted Water Management in Rice Cultivation In Huangmei County • Draft Version 1.0, dated 16-March-2022 • Version 2.0, dated 16-June-2022 • Final Version 3.0, dated 25-July-2022	Search CO2 (Shanghai) Environmental Science & Technology Co. Ltd.
2.	Search CO2 (Shanghai) Environmental Science & Technology Co. Ltd.	Emission Reduction Calculation Sheets	Emission Reduction Calculation sheet (related to ex-ante) • Draft Version 1.0, dated 16-March-2022 Emission Reduction Calculation sheet (related to this monitoring period) • Draft Version 1.0, dated 16-March-2022 • Final Version 2.0, dated 05-June-2022	Search CO2 (Shanghai) Environmental Science & Technology Co. Ltd.
3.	VERRA	Email confirmation of scope	Email confirmation from VERRA dated on 19-November-2020 for the project scope is determined as AFOLU	Project Owner
4.	Project Owner	KML file	KML file with project boundary	Project Owner
5.	Agriculture Bureau of Huangmei County	GPS results	GPS results measured by Agriculture Bureau of Huangmei County for project field sizes	Project Owner
6.	Hubei Guoyuan Survey, Planning and Design Co., Ltd.	Project implementation program	Project implementation program of Huangmei County dated in June 2017	Project Owner
7.	Huanggang Agriculture Bureau	Inspection and Acceptance Report	Inspection and Acceptance Report of Huanggang City dated 20-April-2018	Project Owner
8.	PP and households	Cooperation agreements	Cooperation agreements signed between the project proponents and the sampled 100 households which ensure the proper development of the project	Project Owner
9.	Municipal Market Supervision and Administration Bureau	Business License	Business License of Wuhan Haimingsen Environmental Protection Technology Co., Ltd. and Search CO2 (Shanghai) Environmental Science & Technology Co. Ltd.	Project Owner

No	Author	Title	References to the document	Provider
10.	Project Owner	Board meeting minute	Board meeting minute for project to be developed as VCS project on 13-April-2017	Project Owner
11.	Huangmei County Agricultural Bureau and Hubei Zude Water Conservancy and Hydropower Engineering Co., Ltd.	Construction Contract	Construction Contract for Huangmei County signed on 09-October-2017	Project Owner
12.	Project Owner	Households database	Information of all the 4,859 households included in the project	Project Owner
13.	Hubei Academy of Social Sciences	Ex-ante investigation report	Ex-ante investigation report with investigation project area, baseline scenario, cultivation practices, including 100 samples in baseline scenario period issued in July 2017	Project Owner
14.	Project Owner and households	Funds allocation receipts	Funds allocation receipts to households	Project Owner
15.	Wuhan Haimingsen Environmental Protection Technology Co., Ltd. and Search CO2 (Shanghai) Environmental Science & Technology Co. Ltd.	Emission reduction purchase agreement	Emission reduction purchase agreement signed on 29-June-2018	Project Owner
16.	China National Accreditation Service (CNAS)	Certificate of laboratory	Certificate of laboratory named Institution of Central Laboratory, School of Plant Science and Technology, Huazhong Agricultural University with ISO/IEC 17025 certificate dated on 03-January-2017 valid to 02-January -2025	Project Owner
17.	Institute of Central Laboratory, School of Plant Science and Technology, Huazhong Agricultural University	Report of Measuring Methane	Report of Measuring Methane Emission Rate by Closed Chamber in Huangmei County in 2017 dated in December 2017	Project Owner
18.	Institution of Central Laboratory, School of Plant Science and Technology, Huazhong Agricultural University	Methane measurement and calculation reports	4 seasons' measurement and calculation reports during year 2018 to 2021 1. 2018 season issued in December 2018 2. 2019 season issued in December 2019 3. 2020 season issued in December 2020 4. 2021 season issued in December 2021	Project Owner

No	Author	Title	References to the document	Provider
19.	PP and Institution of Central Laboratory, School of Plant Science and Technology, Huazhong Agricultural University	Plan for methane measurements	Detailed plan prepared by PP for methane measurements in Hubei Province in January 2017	Project Owner
20.	Hubei Provincial Department of Agriculture	Technical Guidelines	Technical Guidelines for Intermittently Flooded Rice Cultivation Method in Hubei Province issued on 31-May-2017	Project Owner
21.	Farmers	Farmers' log-books	Farmers' log-books from 1,260 sampled farmers selected for monitoring $A_{s,g}$ during this monitoring period.	Project Owner
22.	Technicians	Fact Sheets	Fact Sheets on Rice Cultivation in Huangmei County from 2018 to 2021	Project Owner
23.	Project Owner and employments	Technician Recruitment Appointment Contracts	Technician Recruitment Appointment Contracts signed between Project Owner and technician	Project Owner
24.	Hubei Academy of Social Sciences	Local stakeholder consultation records	Meeting record of the stakeholder meeting held on 07-July-2017 100 filled questionnaires distributed to relevant personnel of village representatives, relevant governmental officials, local farmers in July 2017	Project Owner
25.	Project Owner	Suggestion Note	Suggestion Note published on the notice board of villages	Project Owner
26.	Wuhan Haimingsen Environmental Protection Technology Co., Ltd.	Technical Training Records	Technical Training Records to Technicians and Farmers from 2018 to 2021	Project Owner
27.	Unistrong	Instruction of GPS	Instruction of GPS Measuring Equipment	Project Owner
28.	ISO	ISO/IEC 17025	ISO/IEC 17025 certificate for laboratory	Public website
29.	Huanggang Agricultural Bureau	Certificate of Eligibility for Land	Certificate of Eligibility for Land issued on 10-December-2020	Project Owner
30.	Project Owner	Declaration	Declaration of no double counting and not involved in other GHG schemes issued on 11-April-2022	Project Owner
31.	Huangmei County Land and Resources Bureau	Land rights certificate	Land rights certificate issued on 07-August-2017	Project Owner
32.	Intergovernmental Panel on Climate Change	AR5	IPCC's Fifth Assessment report, GHG Protocol	www.ipcc-nggip.iges.or.jp

No	Author	Title	References to the document	Provider
33.	IPCC	IPCC publications	2006 IPCC Guidelines for National Greenhouse Gas Inventories: work book www.ipcc-nggip.iges.or.jp	Website
34.	UNFCCC	Applied methodology	Approved CDM methodology AMS-III.AU: "Methane Emission Reduction by Adjusted Water Management Practice in Rice Cultivation" (version 04.0)	UNFCCC Website
35.	UNFCCC	General guidelines	General guidelines for SSC CDM methodologies, version 23.1	UNFCCC Website
36.	UNFCCC	Standard for Sampling and Surveys	CDM Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities, V09.0	UNFCCC Website
37.	UNFCCC	Guideline for Sampling and Surveys	CDM Guideline for Sampling and Surveys for CDM Project Activities and Programme of Activities, V04.0	UNFCCC Website
38.	UNFCCC	CDM Methodological Tool	CDM methodological tool Demonstration of Additionality of Small-scale Project Activities (version 13.1)	UNFCCC Website
39.	VERRA	Joint-PD-MR Template	VCS-Joint-Project-Description-Monitoring-Report-Template-v4.1	VERRA
40.	VERRA	Registration and Issuance Process	Registration and Issuance Process version 4.1	VCS website
41.	VERRA	VCS Program Definitions	VCS Program Definitions, v4.1	VCS website
42.	VERRA	VCS Program Guide	VCS Program Guide, v4.1	VCS website
43.	VERRA	VCS Standard	VCS Standard version 4.2	VCS website
44.	Google	Google Earth Map	earth.google.com	Website
45.	Ministry of Ecology and Environment of China	China cap & trade scheme	http://www.mee.gov.cn/xxgk2018/xxgk/xxgk02/202101/t20210105_816131.html	Public Website
46.	Ministry of Ecology and Environment of China	Enforced company list	http://mee.gov.cn/xxgk2018/xxgk/xxgk03/202012/W020201231536907682380.pdf	Public Website
47.	China CER Exchange Info-platform	China CER	http://cdm.ccchina.org.cn/ccer.aspx	Website
48.	GS	Gold Standard	http://www.goldstandard.org/	Website
49.	UNFCCC	UNFCCC	http://cdm.unfccc.int	Website
50.	VCS	VCS	https://verra.org/project/vcs-program/	Website
51.	VCS	VCS Methodology Requirement v4.1	https://verra.org/wp-content/uploads/2022/01/VCS-Methodology-Requirements_v4.1.pdf	Website

No	Author	Title	References to the document	Provider
52.	National or local Government	National Laws and Regulations	PRC Constitution, PRC Agricultural Law, Law of the PRC on Land Administration, Implementing Regulations of the Law of the PRC on Land Administration, Law of the PRC on Rural Land Contracting, PRC Production Safety Law, and PRC Labour Law. National Master Plan for High Standard Farmland Construction National Plan for the Construction of High Standard Farmland for Comprehensive Agricultural Development Guidance on the National Demonstration Project of High Standard Farmland Construction Comprehensive Agricultural Development Construction Standard of National Agricultural Comprehensive Development of High Standard Farmland Construction Demonstration Project (Trial) Design Specification for Irrigation and Drainage Engineering (GB50288-1999) Technical Specification for Water-saving Irrigation Engineering (GB/T50363-2006)	Public Website
53.	Huanggang City Government	Waste Management Measure	Huanggang City Construction Waste Management Measures https://www.ehs.cn/law/93712.html	Public website
54.	Dr. Reiner Wassmann	Research	Dr. Reiner Wassmann (2016). Coordinator, Climate Change Research. International Rice Research Institute. Available from: r.wassmann@irri.org	Public source
55.	On-site audit team	Photographs of Project Site	Photographs of project area, ditches, reservoirs, pumps, valves, chambers, posted notice etc. taken by audit team during the on-site validation&verification	On-site Validation team
56.	Hubei Provincial People's Government	Hubei Regulation	https://www.hubei.gov.cn/zfwj/ezf/202111/t20211118_3869632.shtml The Implementation Opinions of Hubei Provincial People's Government on Speeding Up the Establishment and Improvement of Green and Low-carbon Circular Development Economic System	Website

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

Table 1.Remaining FAR from validation and/or previous verification

FAR ID	N/A	Section no.		Date:
Description of FAR				
Project participant response				Date:
Documentation provided by project participant				
VVB assessment				Date:

Table 2.CL from this verification

CL ID	01	Section no.	1.11	Date : 07/04/2022
Description of CL				
It is observed that the stakeholder meeting is not listed in milestone table in section 1.11.				
Project participant response				Date : 05/06/2022
It has been updated in the Section 1.11 of the JPM as follows				

Date	Milestone (s) in the project's development and implementation
07-July-2017	Hubei Academy of Social Sciences held the stakeholder meeting.

Documentation provided by project participant	
/1/- version 2.0 /24/	
VVB assessment	Date: 10/06/2022
The revised Joint-PD-MR is checked, CTI confirmed that the stakeholder meeting held on 07-July-2017 has been added accordingly which is verified as actual by checking the meeting record/24/. CL 01 is closed.	

CL ID	02	Section no.	2.1	Date : 07/04/2022
Description of CL				
There is no analysis of the potential negative environmental and socio-economic impacts and steps to mitigate them for the operation period. Clarification is requested.				
Project participant response				Date : 05/06/2022

It has been updated in the Section 2.1 of the JPM, as follows

Environmental		Socio-Economic	
Potential Negative Impacts	Actions	Potential Negative Impacts	Actions
During the operation, excessive use of fertilizer and pesticide could cause pollution to soil and surface water if farmers do not control the amount of fertilizer and pesticide well during cultivation.	During this monitoring period, technicians patrolled the rice paddies every week and instructed the farmers how to use the optimal amount of fertilizer according to the technical guidelines. Therefore, there was no excessive use of fertilizer and pesticide during this monitoring period.	During the operation, if the cement ditches, reservoirs, pumps or valves were badly damaged without long-term maintenance, the damaged parts could risk the life safety of farmers. In addition, if damaged ditches and reservoirs were not repaired in time, intermittently flooded water regime cannot be implemented, resulting in reduced rice production, and thus reduced farmers' income.	Since each technician oversees several villages, farmers could immediately call the technician if a ditch pump or valve fails in their field. If it is a minor problem, including a blocked water outlet, the technician shall be on site within an hour to solve it. If the technician cannot solve the problem, they should immediately inform Search Co2 and contact the local Agricultural and Rural Committee to activate the emergency mechanism and take corresponding measures. For example, if the ditch is broken or leaking, the repair shall be arranged within 24 hours. There was no damage to the ditches and reservoirs during this monitoring period.

Documentation provided by project participant	
/1/- version 2.0	
VVB assessment	**Date:** 10/06/2022
The revised Joint-PD-MR is checked, CTI confirmed that the analysis has been clarified. Refer to section 3.3.1 of this report for detail assessment. CL 02 is closed.	

CL ID	03	**Section no.**	2.2	**Date :** 07/04/2022
Description of CL				
In section 2.2, 1. The detail information of the stakeholder meeting is not clarified. 2. The time for questionnaires survey is not clarified.				
Project participant response				**Date :** 05/06/2022

It has been updated in the Section 2.2 of the JPM, as follows: 1. Before the project started, on 07-July-2017, Hubei Academy of Social Sciences held a stakeholder meeting, participants included farmer representatives in the project area, local agricultural bureaus, village committee representatives, project proponent, a total of 47 people. This meeting includes the content of the consultation, and asked residents about their willingness to participate. All participants supported the project and were willing to participate in the project. There were no objections at this meeting. About a week before the meeting, the project proponent posted the meeting notice on the notice board in each village, including the meeting time and main topics. 2. After the meeting, from 12-July to 16-July in 2017, Hubei Academy of Social Science organized a team of people to interview the village representatives, relevant government officials and distribute the questionnaires to gather local farmers' opinions.
Documentation provided by project participant
/1/- version 2.0 /24/
VVB assessment **Date:** 10/06/2022
1. The revised Joint-PD-MR is checked, CTI confirmed that the information of the stakeholder meeting is clarified accordingly. 2. The revised Joint-PD-MR is checked, CTI confirmed that the time period for distributed questionnaires has been provided. Refer to section 3.3.2 of this report for detail assessment. CL 03 is closed.

CL ID	04	**Section no.**	2.2	**Date :** 07/04/2022
Description of CL				
For the demonstration to AFOLU projects, the description is not provided in line with the requirement of the template.				
Project participant response				**Date :** 05/06/2022
It has been updated in the Section 2.2 of the JPM, as follows: Due to the project belongs to AFOLU type, below information has been provided according to the template of Joint-PD-MR. • The project design, implementation, and the results of monitoring. 1) During the stakeholder's meeting before the implementation of this project, the project proponent and Huangmei Agriculture Bureau has explained all the designs of the High-standard farmland construction and carbon development project. During the operation phase, all the stakeholders have been and will be communicated about the results of monitoring through villagers' meetings. 2) During this monitoring period since the project has been running for four years, 13,120 ha rice paddies have been equipped with reservoirs and cement ditches to conduct controllable drainage and irrigation, where the water regime applied during rice cultivation has been changed from a continuously flooded method to intermittently flooded method. In this case, 241,198 tCO_2e emissions have been reduced. All the ditches and reservoirs were operating well without damages and farmers were familiar with the intermittently flooded water regime gradually because of the project. • The risks, costs and benefits the project may bring to local stakeholders. In the stakeholder's meeting before the project started, the project proponent once explained the potential costs, risks, and benefits the project may bring to local stakeholders. The potential risks of this project mainly include falls and injuries during rice cultivation; the potential costs include the purchase of seeds, fertilizers and other production materials; the benefits include increased income from increased grain production, free training, and income from mechanic work and carbon benefits, etc. During the monitoring period, all the risks, costs, and benefits that the project proponent has communicated with the stakeholders remain unchanged. Moreover, through the daily visits of technicians, the potential costs, risks, and benefits of this project were conveyed and explained to relevant villagers and stakeholders again for further feedback. • All relevant laws and regulations covering workers' rights in the host country				

This project strictly abides by the Labor Law of the People's Republic of China and the Land Administration Law of the People's Republic of China, so as to protect the rights of all stakeholders in the project. In this monitoring period, the representative of Haimingsen has informed stakeholders that the relevant laws and regulations remain unchanged, covering the rights of workers in China (Host Country). • The process of VCS Program validation and verification and the validation/verification body's site visit. After this Joint Project Description and Monitoring Report was submitted to the VVB, the monitoring plan and manual in Chinese were also posted on notice boards of these villages. Moreover, the on-site verification was from 21-March-2022 to 22-March-2022, and when the project proponent and Search Co2 confirmed the specific on-site visit time, the technicians started to inform the farmers to participate in the on-site stakeholder's interview through door-to-door announcements and posting meeting notices. The phone number of the project contact person was also attached to the meeting notice, so the villagers can directly submit the problem about the project. No comments from the villagers were received during this monitoring period.
Documentation provided by project participant
/1/- version 2.0
VVB assessment **Date:** 10/06/2022
The revised Joint-PD-MR is checked, CTI confirmed that the demonstration to AFOLU project has been provided in line with the requirement of the template. Refer to section 3.3.2 of this report for detail assessment. CL 04 is closed.

CL ID	05	**Section no.**	3.2	**Date :** 07/04/2022
Description of CL				
For the applicability analysis, for 3 c), it is not clear whether the farms are required to switch to the cultivar or not. Clarification is requested.				
Project participant response				**Date :** 05/06/2022
It has been updated in the Section 3.2 of the JPM, as follows: The type of rice planted in this project is very common, so it does not require the farmers to switch to a cultivar that has not been grown before.				
Documentation provided by project participant				
/1/- version 2.0 /7/				
VVB assessment				**Date:** 10/06/2022
The revised Joint-PD-MR is checked, CTI confirmed that the clarification has been added. The project only involved in change the water regime during the rice cultivation period that will not lead to a decrease in rice yield and the type of rice planted in this project is very common and no requirement from the project to lead the farm to switch to a cultivar that has not been grown before. This is verified by site visit and interview with farmers representative/I5/ and checking the Inspection and Acceptance Report of the project/7/. CL 05 is closed.				

CL ID	06	**Section no.**	3.5	**Date :** 07/04/2022
Description of CL				
Section 3.5 of the *VCS Joint Project Description Monitoring Report Template, v4.0* instructs the project proponent to "Provide sufficient information (including all relevant data and parameters, with sources) so that a reader can reproduce the additionality analysis and obtain the same results.", however, related clarification is missing.				
Project participant response				**Date :** 05/06/2022
It has been updated in the Section 3.5 of the JPM, as follows: Investment barrier				

The construction cost of high-standard farmland (mainly including the construction of ditches, ponds, pumps and other facilities) includes material costs and labor costs. The material cost is funded by the government, and the farmers need to pay the labor cost. The total costs of high-standard farmland construction are CNY 25,584,000. The government provided CNY 22,960,000 for the material costs (i.e. cement and aggregate). Farmers need to pay the labor costs. For this project, the labor costs for the construction of irrigation and drainage facilities such as ditches and ponds that farmers need to pay is CNY 3,936,000, which is CNY 200/ha. According to the findings of the ex-survey report, in Huangmei County, the living balance of local farmers is only CNY 300 a year, many households would be facing difficulties to afford their livings, so they don't have enough capacity to pay these costs. In addition, before the stakeholder meeting, many farmers believed that high-standard farmland construction can't bring direct benefit, they are not willing to cover expenses. It also means that the intermittently flooded method cannot be adopted so that the areas would still remain the baseline scenario resulting in higher emissions. To complete the construction of the project, also considering that the only revenues that can be brought in this project is the sale of GHG credits, the project proponent paid CNY 200/ha to local farmers to reduce the pressure on farmers' cost of build and maintain high-standard farmland. Meanwhile, the emission reduction benefits brought by the project can also make up for the operation and maintenance costs of local farmers' irrigation and drainage facilities. So, above description prove that the project has no additional earnings other than carbon revenue, thus faces capital or investment return constraints that can be overcome by the additional revenues associated with the sale of GHG credits. Thus, the continuously flooded method is a financially more viable alternative to project activities but would have led to higher emissions. Technological barrier The original water regime used during rice cultivation in baseline scenario, continuously flooded method, which is less technologically advanced, because it only requires that the fields should be flooded throughout the whole season and there is no need to pay close attention to the growth status of rice for appropriate drainage and irrigation. Therefore, in the baseline scenario, local farmers only need to ensure that there is enough water in the paddy fields, and no additional technical support is required. Without knowing the intermittently flooded method, 100% of farmers within the project zone practiced the continuously flooded method during rice cultivation, which means the new technology, the intermittently flooded water method, has a low market share. After the implementation of the project, the agricultural experts trained local farmers to popularize the intermittently continuously flooded method to replace the traditional continuously flooded method. At the same time, the project proponent, and the local agricultural bureau will also provide technical support constantly. Thus, as a baseline scenario, the continuously flooded method is a technologically more viable alternative to project activities but results in higher emissions. In general, this project has both investment and technological barriers, so it is additional.
Documentation provided by project participant
/1/- version 2.0
VVB assessment — **Date:** 10/06/2022
The revised Joint-PD-MR is checked, CTI confirmed that the clarification has been added. Refer to section 3.4.5 of this report for detail assessment. CL 06 is closed.

CL ID	07	**Section no.**	5.3	**Date :** 07/04/2022
Description of CL				
If any emergency occurred during this monitoring period is not clarified.				
Project participant response				**Date :** 05/06/2022
It has been updated in the Section 5.3 of the JPM, as follows: No emergency occurred during the monitoring period.				
Documentation provided by project participant				

/1/- version 2.0 /18/ /21/	
VVB assessment	**Date:** 10/06/2022
The revised Joint-PD-MR is checked, CTI confirmed that the clarification has been added. By site interview with monitoring staff and experts and checking the related evidence for data/21/,/18/, CTI verified that no emergency situations have been occurred. Thus no emergency procedure was used for this monitoring period. CL 07 is closed.	

CL ID	08	**Section no.**	6.1	**Date :** 07/04/2022
Description of CL				
For the monitored parameter $A_{s,g}$, how to conduct the sampling and how to determine the value from sampling of logbooks form 2018 to 2021 is not clarified.				
Project participant response				**Date :** 05/06/2022
It has been updated in the Section5.3 of the JPM, as follows: Sampling results during the 1st monitoring period for determination of $A_{s,g}$ Every January from 2018 to 2021, the technicians gave out the blank cultivation logbooks to all the households. During the entire cropping season, farmers recorded the information required in the logbooks, including the date of transplanting, date of fertilization, the amount of fertilizer applied, water regime and yield. The technicians patrolled the fields every week and checked every household's logbook. If the water management was inappropriate, the technician would instruct the farmer how to practice intermittently flooded water regime correctly and ask him to adjust. At the same time, if the records in logbooks were incorrect, the technicians would also ask the farmer to correct them immediately. At the end of each year, Search Co2 used Excel sheet to select 315 households from 4,859 households for inspection randomly. After the 315 households are selected, Search Co2 informed the technicians to collect the corresponding logbooks. A total of 1,260 cultivation logbooks of different households were extracted for two years. All cultivation logbooks collected have been reviewed by expert and the results were compiled into an excel sheet (which has been submitted to VVB for verification). According to the excel sheet, all the households have applied intermittently flooded water regime as required during this monitoring period. During this monitoring period from 2018 to 2021, the planting area of rice in the project area ($A_{s,g}$) is 13,120 ha.				
Documentation provided by project participant				
/1/- version 2.0 /12/ /21/ /22/				
VVB assessment				**Date:** 10/06/2022
The revised Joint-PD-MR is checked, CTI confirmed that the clarification has been added. Due to this monitoring period covered nearly 4 years, project proponents randomly selected 315 samples at the beginning of each year during this monitoring period, that means total 1,260 samples were selected for this monitoring period to determine whether the project fields were cultivated according to the project cultivation practice as defined by the project activity. The selected sampled farmers' logbooks/21/ including all parameters that are part of the project cultivation practice during cultivation season have been checked, CTI confirmed that 1,260 samples are randomly selected from the 4,859 households list by the simple random sampling (SRS) method. The excel function "randbetween" is employed to choose the farmers sample group. It is able to confirm that the sampling approach was consistent with the related requirements. The project field sizes derived from the project database with farmers information/12/ was cross-checked with the farmers' log-books/21/ and Fact Sheets on Rice Cultivation/22/ to determine the final compliant household's rice fields for this monitoring period. Via checking the farmers' log-books/21/ and Fact Sheets on Rice Cultivation/22/, CTI confirmed that all the farmers cultivated single-cropping rice with intermittent flooded water regime in this monitoring				

period are involved, and only these farmers' farm were compliant. CL 08 is closed.

Table 3.CAR from this verification

CAR ID	01	Section no.	1.2	Date : 07/04/2022
Description of CAR				
The analysis of eligible AFOLU project categories need to be removed to the section 1.3.				
Project participant response				Date : 05/06/2022
It has been removed to the section 1.3 in the updated JPM.				
Documentation provided by project participant				
/1/- version 2.0				
VVB assessment				Date: 10/06/2022
The revised Joint-PD-MR is checked, CTI confirmed that the related eligibility analysis has been listed in section 1.3 which is applicable as per the title of each section. CAR 01 is closed.				

CAR ID	02	Section no.	1.12	Date : 07/04/2022
Description of CAR				
The map of project area is missing.				
Project participant response				Date : 05/06/2022
The map of project area has been added in the section of 1.12 as shown in figure 1-3.				
Documentation provided by project participant				
/1/- version 2.0 /4/ /44/				
VVB assessment				Date: 10/06/2022
The revised Joint-PD-MR is checked, CTI confirmed that the map of project area has been added. The location of the project site is verified with on-site investigation by GPS devices and checking the google earth map/44/. KML file with project boundary is checked as provided/4/, and is verified as consistent with the Joint-PD-MR and on-site investigation by GPS devices and checking the google earth map/44/. CAR 02 is closed.				

CAR ID	03	Section no.	1.17.2	Date : 07/04/2022
Description of CAR				
The Sustainable Development Contributions listed in section 1.17.2 are not complete showing the actual figure of this monitoring period and the whole project lifetime.				
Project participant response				Date : 05/06/2022
It has been updated in the Section1.17.2 of the JPM, as follows:				

Row number	SDG Target	SDG Indicator	Net Impact on SDG Indicator	Current Project Contributions	Contributions Over Project Lifetime

1)	2.4	The percentage of increase in rice yield compared to the baseline scenario level.	Implemented activities to increase	During this monitoring period, by building and maintaining high-standard farmland, rice cultivation in the project area can be irrigated and drained, which improves the conditions for rice cultivation. In addition, the continuously flooded regime is replaced by the intermittently flooded regime, the rice yield increased from 530kg/mu in the baseline scenario to 580kg/mu in the project scenario, with an increase of 9.49%.	Improve the rice production conditions in the project area and increase the rice yield.
2)	4.4	Participation stakeholder villages in formal and non-formal education and training	Implemented activities to increase	During this monitoring period, 100% of population in stakeholder villages attend trainings and improve their capacity due to diversified education opportunities.	Increase the skills of 17,347 farmers in the project area to cultivate rice scientifically through training.
3)	8.5	Number of jobs and salaries offered by the project	Implemented activities to increase	During the monitoring period, the project provided a total of 35 technician positions, with a monthly salary of CNY 200.	During the project lifetime, the project owner will provide 35 long-term technician positions and pay a monthly salary of CNY 200.
4)	13.0	Tons of greenhouse gas emissions reduced compared to the baseline scenario level.	Implemented activities to decrease	During this monitoring period, the project actually generates a total of 241,198 tCO_2e emission reductions in rice paddies by practicing intermittent flooded method.	It is expected to reduce 59,901 t CO_2 per year and a total of 1,257,921tCO_2e emissions during the 21-year crediting period over the project lifetime.
5)	13.3	Number of farmers who have received sensitization and awareness events on climate change mitigation, adaption, impact reduction and early warning.	Implemented activities to increase	The project reaches 17,347 farmers involved with sensitization and awareness events, providing environmental education and education on sustainable development.	Strengthen the capacity and awareness of 17,347 farmers in the project area about climate change.
Documentation provided by project participant					
/1/- version 2.0					
VVB assessment					**Date:** 10/06/2022

The revised Joint-PD-MR is checked, CTI confirmed that the Sustainable Development Contributions have been supplemented completely. Refer to section 3.1 of this report for detail assessment of Sustainable Development Contributions. CAR 03 is closed.

CAR ID	04	Section no.	2.4	Date : 07/04/2022
Description of CAR				
The public information on VCS website is missing.				
Project participant response				Date : 05/06/2022
It has been updated in the Section2.4 of the JPM as follows: The project documents have been open on VCS websites for public comments from 15-March-2022 to 15-April-2022 **Adjusted Water Management in Rice Cultivation in Huangmei County** **ID:** 2902 **Program:** VCS **Public Comment Period Type:** Validation **Location:** China **Project Activity:** ALM **Sectoral Scope:** 14. AFOLU **Methodology:** AMS-III.AU **Estimated Annual ERRs:** 59,901 tCO2e Public Comment Period: 15 March 2022 – 15 April 2022				
Documentation provided by project participant				
/1/- version 2.0				
VVB assessment				Date: 10/06/2022
The revised Joint-PD-MR is checked, CTI confirmed that the information has been provided. The project sought the registration with the VCS Program, according to VCS requirements the Project Description was submitted for public comment period. The project was allocated with VCS ID 2902. The public comment period started on 15-March-2022 and ended on 15-April-2022 (https://registry.verra.org/app/projectDetail/VCS/2902). No comments were received during this period which has been verified by checking the dedicated website as above. CAR 04 is closed.				

CAR ID	05	Section no.	1.12	Date : 07/04/2022
Description of CAR				
The project proponent is requested to update Section 3.4 of the Joint-PD-MR to demonstrate the current practice that is the baseline scenario using relevant references.				
Project participant response				Date : 05/06/2022
It has been updated in the Section 3.4 of the JPM as follows: Section 5.2 of the Small-scale Methodology AMS-III. AU defined the baseline scenario is the continuation of the current practice e.g., transplanted and continuously flooded rice cultivation in the project fields. According to the "Ex-ante Survey Report of Huangmei" issued by the Hubei Academy of Social Sciences, 100% of farmers within the project zone used to practice the continuously flooded method during rice cultivation with no organic amendment. So the baseline scenario of the project is to implement a continuously flooded water regime to plant single-cropping rice without any organic amendment during rice cultivation in the project fields, which meets the definition of the methodology.				
Documentation provided by project participant				

/1/- version 2.0 /13/	
VVB assessment	**Date:** 10/06/2022
The revised Joint-PD-MR is checked, CTI confirmed that baseline scenario has been demonstrated with current practice. Baseline scenario is the continuation of the current practice e.g. continuously flooded rice cultivation in the project fields without any organic amendment during rice cultivation in the project fields. Via checking the Ex-ante investigation report/13/, CTI confirmed that the continuously flooded method during rice cultivation with no organic amendment is the current practice without project, which is in line with the baseline scenario identified in the applied methodology that is the continuation of the current practice of continuously flooded rice cultivation in the project fields without any organic amendment during rice cultivation in the project fields. Thus CTI verified that identified baseline scenario is justified. Refer to below section for assessment of the project additionality. CAR 05 is closed.	

CAR ID	06	**Section no.**	5.1	**Date :** 07/04/2022
Description of CAR				
For ex-ante determined parameter GWP_{CH4}, the decision from VERRA is not mentioned as choice of data.				
Project participant response				**Date :** 05/06/2022
It has been updated in the Section 5.1 of the JPM as follows: Any future revision of the IPCC's assessment report and VERRA's decision should be taken account				
Documentation provided by project participant				
/1/- version 2.0				
VVB assessment				**Date:** 10/06/2022
The revised Joint-PD-MR is checked, CTI confirmed that related information has been added. Any future revision of the IPCC's assessment report and VERRA's decision to the Global warming potential of GHG should be taken account has been stated accordingly. CAR 06 is closed.				

CAR ID	07	**Section no.**	5.2	**Date :** 07/04/2022
Description of CAR				
For the parameter $EF_{BL,s,g}$ and $EF_{P,s,g}$, the monitoring equipment is not complete.				
Project participant response				**Date :** 05/06/2022
It has been updated in the Section 5.2 of the JPM as follows: Closed chamber and also devices in laboratory with FID				
Documentation provided by project participant				
/1/- version 2.0				
VVB assessment				**Date:** 10/06/2022
The revised Joint-PD-MR is checked, CTI confirmed that the gas samples gathering devices and monitoring equipment used in lab have been added accordingly which is verified as correct and actual by site inspection of these devices. CAR 07 is closed.				

CAR ID	08	**Section no.**	5.3	**Date :** 07/04/2022
Description of CAR				
The detail information of both baseline and project reference fields for measuring $EF_{BL,s,g}$ and $EF_{P,s,g}$ is missing.				
Project participant response				**Date :** 05/06/2022
It has been updated in the Section 5.3 of the JPM. 1) Determine the reference fields				

In this project, all the dynamic and statistic parameters of rice paddies within the project area are the same, according to the ex-ante investigation report. Therefore, all fields within project area have the same cultivation pattern and there is only one group in this project. Then, in January 2018, before the cropping season started, 3 baseline reference fields and 3 project reference fields were set in Zhuogang Town, Huangmei County, respectively, which are fixed rice paddies with area of around 0.4 ha as shown in JPM. The reason of choosing these reference fields is that the expert from Huahzhong Agricultural University believed that these fields were representative of the baseline scenario and project scenario in all the parameters. The measurements on project and baseline reference fields were carried out in an equal manner and simultaneously. The baseline reference fields were selected that they are representative of baseline scenario where single-cropping rice was planted by continuously flooded method without any organic amendments, while the project reference fields were selected that they are representative of project scenario where single-cropping rice was planted by intermittently flooded method without any organic amendments. During this monitoring period, these fields have been used as baseline and project reference fields and have not been changed.	
Documentation provided by project participant	
/1/- version 2.0	
VVB assessment	**Date:** 10/06/2022
The revised Joint-PD-MR is checked, CTI confirmed that the detail information of both baseline and project reference fields for measuring $EF_{BL,s,g}$ and $EF_{P,s,g}$ is supplemented which is verified as correct and actual by site inspection of these fields. CAR 08 is closed.	

Table 4.FAR from this verification

FAR ID	N/A	**Section No.**	-	**Date:** -
Description of FAR				
Project participant response				**Date:** -
Documentation provided by project participant				
VVB assessment				**Date:**