

# Project Reignite: Turning Farm Waste to Climate Action



## Verified Carbon Standard

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## Summary:

RINA Services S.p.A. (RINA) was contracted by M/s SRCNatura Sure Pvt. Ltd. to conduct verification of the registered project "Project Reignite: Turning Farm Waste to Climate Action", "VCS Project ID 4679 against VCS standard version 4.7/5/

The objective of the verification work is to comply with the requirements of the VCS standard Version 4.7 /04/ and GHG program applied, based on the registered VCS PD and validation report /01//02/. In particular, the project's baseline, monitoring plan, and the project's compliance with relevant VCS requirements/04/, GHG program requirements and host party criteria are validated to confirm that the project design/01/, as documented, is sound and reasonable and meets the identified criteria and ensure that the project activity has been implemented and operated as per the MR/3/, and that all physical features (technology, project equipment, and monitoring equipment of the project are in place. The monitoring methodology is used in accordance with the VCS methodology Biochar Utilization in Soil and Non-Soil Applications VM0044, Sectoral Scope 13 Version 1.1 Published on 5 July 2023 /4/. A site visit was performed to confirm the information provided by PP/9/.

The project is about involving the farmers to utilize agricultural waste to convert it into biochar by applying flame curtain pyrolysis method in steel-shield soil pits in India.

RINA Services S.p.A. (RINA) now has enough proof to confirm that the stated criteria have been met after reviewing the monitoring report/3/, emission reduction sheets/4/ and additional documents pertaining to monitoring methodology, as well as after conducting background research, conducting follow-up interviews, and speaking with stakeholders and no uncertainties are involved.

Reviewing the monitoring report/2/ for the monitoring results and confirming that the monitoring methodology/7/ was applied in accordance with the monitoring plan and monitoring parameters which are the main goals of the verification. After reviewing the ER sheet/4/, it was confirmed that the reductions due to the anthropogenic emissions by sources are sufficient, conclusive, and presented in a clear and understandable way. In order to establish that the project has been implemented in line with registered project design/1/ and as specified, in the registered monitoring plan, monitoring report/3/, ER sheet/4/, and the project's compliance with relevant VCS guidelines/6/, UNFCCC/8/, and host party criteria were specifically checked.

It is confirmed by the assessment team that the stated GHG emission data is appropriately supported by evidence.

This verification has been carried out using a risk-based methodology. 02 Corrective Action Requests (CARs) and 07 Clarification Requests (CRs) were raised during verification and successfully closed. FAR was not raised during this verification period.

The project has been successfully verified, and further certified for emission removals under VCS as it meets the criteria outlined by the VCS Verification Report template version v4.4, MR template version 4.4/38/, the VCS Standard version 4.7/39/, and the applied methodology VM0044, Version 1.1/7/.

Our view refers to the project's claimed GHG emissions, GHG emission removals as a result, and to the project's legitimate baseline, monitoring, and supporting documents. Based on the information viewed and assessed, VVB confirms that the project activity "Project Reignite: Turning Farm Waste to Climate Action", achieved emission removals by 115,103 tCO<sub>2</sub>e from 16th October 2023- 30th June 2024 (both days included).

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# 1 INTRODUCTION

## 1.1 Objective

RINA Services S.p.A. (RINA) has been commissioned by SRCNatura Sure Pvt. Ltd. to perform an independent verification assessment of the project titled – “Project Reignite: Turning Farm Waste to Climate Action” (VCS ID- 4679). The audit team reviewed the project description and monitoring plan, reviewed project documentation along with the database, and conducted a site visit to audit the implementation of project activity and monitoring processes.

The objective of the verification is to have an independent evaluation of a project activity by a VVB against the requirements of the VCS Standard Version 4.7/04/ and GHG program applied, based on the VCS project design (PD)/01/. In particular, the project's baseline, monitoring plan, and the project's compliance with relevant VCS requirements/04/, GHG program requirements and host Party criteria are verified to confirm that the project design, as documented, is sound and reasonable and meets the identified criteria. Verification is a requirement for all VCS projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of Verified Carbon Units (VCUs).

The objective of the verification work is to comply with the requirements of Verified Carbon Standards requirements. According to this assessment RINA shall:

- ensure that the project activity has been implemented and operated as per the registered VCS PD/01/, and that all physical features (technology, project equipment, monitoring and metering equipment) of the project are in place,
- the project's baseline and monitoring plan is assessed against VM 0044 “Methodology for Biochar Utilization in Soil and Non-Soil Applications v1.1., dated 05 July 2023, Sectoral scope 13/05/
- ensure that the VCS PD/01/ and other supporting documents provided are complete, verifiable and in accordance with applicable VCS methodology/requirements /04/
- ensure that the actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan and the approved VCS methodology /04/
- evaluate the data recorded and stored as per the applicable requirements /20/
- assessment of the sustainability monitoring parameters as per the VCS standard version 4.7 requirements /04/.

## 1.2 Scope and Criteria

The scope of any assessment is defined by the underlying legislation, regulation and guidance given by relevant entities or authorities. The verification scope is to review the VCS PD/01/ against the VCS criteria which refers to VCS Version 4.7 standard and all the GHG program requirements/06/. Verification assessment is not meant to provide any consultancy towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the VCS PD/01/.

In the case of VCS project activities, the scope is set by:

- VCS v4.7 standard/04/ requirements
- VCS Validation and Verification Manual v3.2
- Clean Development Mechanism Validation and Verification Standard (VVS) for project activities, v3.0/06/
- Baselines and monitoring methodologies (including GHG inventories)/05/
- Environmental issues relevant to the applicable sectoral scope
- Current technical and operational knowledge of the specific sectoral scope and information on best practice
- Stakeholder consultation and feedback

The assessment team has employed a risk-based approach to assess the completeness and accuracy of the claims and conservativeness of the assumptions in the VCS PD/01/. The focus of the assessment team is to identify the significant risks for the project implementation and the generation of VCUs.

## 1.3 Level of Assurance

All the revisions of the verification report before being submitted to the client were subjected to an independent internal technical review to confirm that all verification activities had been completed according to the pertinent to the VVB's instructions.

The technical review was performed by a technical reviewer(s) qualified in accordance with RINA's qualification scheme for VCS and CDM validation and verification. The level of assurance of the verification report is defined as reasonable. The VVB confirms that a reasonable level of assurance has been achieved during the verification process.

The verification team and technical reviewers consist of the following personnel:

Role	Last Name	First Name	Country
<b>Team Leader, Verifier &amp; Technical Expert TA 13</b>	Singh	Vinay	India
<b>Regional/Local Expert</b>	Sahoo	A.K.	Odisha, India
<b>Technical Reviewer</b>	Amalorpavanathan	Cyril A A	India
<b>Approver</b>	Severino	Laura	Italy

## 1.4 Summary Description of the Project

The implemented project activity involves farmers in villages to utilize agricultural waste/residue into biochar, applying flame curtain pyrolysis method in steel-shield soil pits in Odisha, India. The farmers practice traditional methods of waste disposal: open field burning and decomposition of biomass. Open field burning boosts carbon dioxide (CO<sub>2</sub>) emissions and decomposition of waste biomass results in methane (CH<sub>4</sub>) emissions, magnifying adverse environmental impacts locally and globally.

In Project Reignite, farmers are using the flame curtain pyrolysis method in steel-shield soil pits to process agricultural waste into biochar. The fire on top creates a 'flame curtain' that limits oxygen access to the biomass below. This initiates the pyrolysis process, producing high-quality biochar. Once the pit is full, the fire is extinguished using water, nutrient solutions, or soil. The dried biochar is then mixed with manure and applied in the agricultural field.

This is a grouped project in India. The first instance of the grouped project is being implemented with 5,000 farmers (defined as biochar producers in the project) in the state of Odisha, India.

The farmers in the villages are actively involved in biochar production during the post harvesting season. The biochar is being produced from agro-waste (Rice straw and roots, cotton stalks, wood trimmings), ipomea carnea,, bamboo pruning and water hyacinth in the local area. The produced biochar is collected and stored in the bag and later on it is mixed with cow dung manure and then applied to the agricultural fields of the farmers.

The project has a crediting period of 7 years, renewable twice. The first instance of this grouped project in this monitoring period from 16th October 2023 to 30th June 2024 is having removal of 115,103 tCO<sub>2</sub>eq.

## 2 VERIFICATION PROCESS

Describe the verification process. Where validation activities have also been performed as part of the verification (e.g., validation of a project description deviation or inclusion of new project activity instances into a grouped project), also include details relevant to the validation process.

### 2.1 Method and Criteria

Verification was conducted using RINA procedures in line with the requirements specified in the VCS Standard version 4.7/04/ and CDM VVS v3/06/. Verification process initiated by following the registered VCS PD and applicable methodology VM 0044 "Methodology for Biochar Utilization in Soil and Non-Soil Applications v1.1., dated 05 July 2023, Sectoral scope 13/07/.

On-site audit was conducted on 07<sup>th</sup> – 10<sup>th</sup> September 2024 to assess project activity implementation status, biochar production and stakeholders' consultation process. Verification was conducted using RINA procedures in line with the requirements specified in the VCS Standard version 4.7/04/ and CDM VVS v3/06(a)/. The sampling process under this verification has been done as described in the Validation Report for the registered project, which is in accordance with the clause 6 (c) (iii) Standard: Sampling and surveys for CDM project activities and programmes of activities, Version 09.0. To calculate the sample size, statistical sample size software (<http://www.raosoft.com/samplesize.html>) has been used. A confidence level of 90% and margin of error acceptance of 10% was selected for determining the sample size for the total population size of 5000 farmers. /40/

#### VVB Sampling

As per the registered VCS PD, the assigned sample size is sixty-seven (67). Thus, RINA took a random sample of sixty-seven (67) farmers for the assessment of biochar production and overall project implementation status. During the on-site audit, the RINA team had meetings with the farmers, local community people and villagers to discuss and interview regarding the biochar production and its soil application. During the on-site audit, due to the sufficient time availability, it was possible for RINA to interview and discuss with more than sixty-seven farmers, to have a better understanding and perspective of biochar production, its application and overall benefits to local stakeholders, and to the local ecoregion. In all, the verification team of RINA interviewed a total of ninety (90) farmers and had round of discussions and field visits to assess the biochar production, its application and overall benefits from the project activity.

The verification assessment consists of the following phases:

- o Document review (Review of biochar production records);
- o Follow-up actions;
- o Onsite audit and interviews
- o The resolution of outstanding issues and
- o Issuance of the final verification report.

The information provided by the project participants is assessed by applying the means of verification specified in the VCS v4.4, Toolkit/04/ and the CDM VVS V3/06(a)/.

#### Assessment of PP's sampling

PP did the sampling of the following parameters to assess its values:

- Moisture content of biochar
- H:Corg (Ratio of hydrogen to organic carbon)
- Fcp,tp (carbon content of biochar)

PP did the field sampling using the Sampling and Surveys Standard for CDM Project Activities and Program of Activities as a guideline. Laboratory tested 30 samples for each type of biochar and provided mean and standard deviation for the samples tested. Sample size was determined by the PP as 30 for each type of biochar for each parameter to ensure accuracy and representative results. Production of biochar only took place for Paddy Straw and Roots biomass, Tree Pruning biomass, Cotton Stalks biomass, Bamboo Trimmings biomass, and Ipomoea Carnea biomass. Production did not take place for Maize Cobs and Water Hyacinth, because of that their tests were not conducted for the production period.

PP considered the sample size as per section 5.3-point number 2 in registered VCS PD, the determined sample size is 30 for each type of biomass. VVB cross verified this with documentation (lab reports) and field visits. The VVB agrees with the chosen sample size of 30 for each type of biochar for the above 3 parameters. After reviewing the results from PP's pilot study, the VVB agrees to choose the sample size of 30 as the conservative measure. The results obtained from 30 samples come well within the confidence interval as well demonstrated in the PP's monitoring report in section 4.3 under "Results for the Project", is in accordance with the clause 14 of CDM Standard Sampling and surveys for CDM project activities and programmes of activities version 09.0. The VVB has cross checked all the results and found to be correct.

The audit team first performed the desk review, followed by on-site assessment and direct interview and discussion with the stakeholders, villagers and community people, which results in the formation of a draft report and a list of findings. The next step involves the evaluation of the findings through direct communication with the PPs and then finally the preparation of the verification report.

This verification report and other supporting documents then undergo an internal quality control by the VVB before submission to the VCS. The following sections outline each step in more detail.

## 2.2 Document Review

VVB audit team cross verified the documentation and discussed the same with PP during on-site audit. Also, the technical equipment and its details were cross verified with the documents provided by PP. The following additional documentation, provided by project personnel in support of the aforementioned documents, was also reviewed by the audit team is mentioned in *Appendix II* of this report.

## 2.3 Interviews

Audit team conducted the interview process, during its on-site verification of the project, site visit was conducted from 07<sup>th</sup> September – 10<sup>th</sup> September 2024. The key personnel interviewed, and the main topics interviewed are summarized in the table below and detailed list of interviewed farmers are attached in Annexure III:

Sr. No	Date	Name and Role	Organization	Topic
1	07 Sep. 2024	Rajesh Aggarwal, Director	SRCNatura Sure Pvt. Ltd.	Project implementation status, biochar production process and applications
2		SR Sahoo, Field Officer	SRCNatura Sure Pvt. Ltd.	Local stakeholders, villagers
3		Shurti Project Manager	SRCNatura Sure Pvt. Ltd.	Project details, implementation status, biochar production process
4	08 Sep. 2024	Prassana Behera, Villager	Kendrapada	Stakeholder consultation, benefits to village,
5		Saroj Pradhan Sahoo, Area Manager	Kendrapada, SRC Natura Sure Pvt. Ltd.	Biomass and involvement of villagers and local farmers, training part
6	09 Sep. 2024	Ashok Das, Biochar Producer	Kendrapada, SRCNatura Sure Pvt. Ltd.	Biochar production process
7	10 Sep. 2024	Ajay Kumar Jena	Kendrapada, SRCNatura Sure Pvt. Ltd.	Biochar production process

Detailed list of farmers/biochar producers is provided in Appendix IV

## 2.4 Site Visits

Audit team had conducted a site inspection by physical visit to the first project instance located in Odisha and discussed different topics as mentioned under section 2.3 of this report. The team has conducted the site visit from 07<sup>th</sup> – 10<sup>th</sup> September 2024. During the site visit, the

audit team visited the villages in Odisha to assess the biomass waste, stakeholders' consultation process, baseline scenario, biochar production process, safety requirements and involvement of villagers/farmers.

On 07<sup>th</sup> September 2024, audit team visited the village Pentha in Kendrapada district of Odisha state and met with the villagers/farmers participating in the program for biochar production. Audit team directly interviewed the farmers regarding the biochar applications, training programs imparted by the project proponent, environment impact and project benefits.

Audit team visited village Chandrakolla, District- Kendrapada met with local supervisors, farmers and villagers to discuss waste biomass and its collection, biochar production process, soil application and safety measure during the process of production of biochar.

On 08<sup>th</sup> and 09<sup>th</sup> September, audit team had conducted a site inspection by physical visit to seven villages (Hatina, Rangani, Chandra kolla, Pentha, Gartta, Sailendra sarai and Amara bati) in districts of Kendrapada, Rajnagar block. During the site visit, the audit team had visited the gram panchayat and the project site and assessed the biochar production process during the site audit. The biochar producers demonstrated the biochar production process using the steel shield soil pit installed. Further the application of biochar into the farmer's field. On 10<sup>th</sup> Sep. VVB checked the data collection process and its storage in the mobile app to confirm the quality check and data usage for emission removals calculations.

## 2.5 Resolution of Findings

The objective of this phase of the verification is to resolve any outstanding issues which need to be clarified for RINA' s positive conclusion on the project description. To guarantee transparency any findings raised regarding to the validation and verification of the project are incorporated in the Validation and Verification Protocol/Findings Table in Appendix II of this report.

CAR (Corrective Action Request) is raised if one of the following occurs:

- Non-compliance with the monitoring plan, the methodology or the standardized baseline are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient;
- Modifications to the implementation, operation and monitoring of the project activity has not been sufficiently documented by the project participants;
- Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions;
- Issues identified in a FAR during validation to be verified during subsequent verifications.

Clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable VCS requirements have been met. All CARs and CLs raised by RINA during verification shall be resolved prior to submitting a request for registration and issuance.

FAR (Forward Action Request) is raised during verification if the monitoring and reporting require attention and/or adjustment for the next verification period.

During the current verification, 07 Clarification requests and 02 corrective action requests were raised.

### 2.5.1 Forward Action Requests

No FAR has been raised during this verification.

## 2.6 Eligibility for Validation Activities

As per eligibility requirements set out in the VCS program guide, RINA Services S.p.A. is accredited for validation and verification of biochar projects under sectoral scope 13, and is accredited under CDM UNFCCC, the below weblink provides the details of accreditation with UNFCCC.

<https://cdm.unfccc.int/DOE/list/DOE.html?entityCode=E-0037>.

RINA has already audited and registered 41 projects with CDM UNFCCC under sectoral scope 13. The below web-link provides the details of all these projects.

<https://cdm.unfccc.int/Projects/projsearch.html>

# 3 VALIDATION FINDINGS

Use this section to provide details of all validation activities that took place during the verification, such as validation of methodology deviations and project description deviations, the inclusion of new project activity instances into grouped projects, and baseline reassessment.

## 3.1 Methodology Deviations

As per registered VCS PD, the approved and applied methodology deviations for the project activity are as follows:

Parameter	Requirement of the methodology	Proposed Deviation	VVB Conclusion

Moisture content for calculation of biochar on dry weight basis	Frequency of recording: Moisture content should be monitored for each batch of biochar type t.	Frequency of monitoring will be on a monthly basis for random samples of biochar produced of type t. The field sample size will be determined using the Standard for Sampling and Surveys for CDM project activities and programme of activities as a guideline.	Audit team reviewed the methodology and found that in page nos. 37 and 38 of methodology in comments section, it is mentioned that the "Moisture content should be monitored for each batch of biochar type t. The weighted average should be calculated for each monitoring period". Considering this PP has taken a deviation that for each batch of biochar the dry weight- moisture content assessment is not possible, and monitoring will be done for random samples on a monthly basis using Standard for Sampling and Surveys for CDM project activities and programme of activities as a guideline. The same is found to be appropriate, the VVB accepts the proposed deviation using the sample size.
H:Corg (Ratio of hydrogen to organic carbon) of biochar produced	Frequency of recording: Each batch of biochar produced at the production facility p.	Frequency of monitoring will be on an annual basis for random samples of biochar produced of type t. The field collection sample size will be determined using the Standard for Sampling and Surveys for CDM project activities and programme of activities as a guideline.	Audit team assessed the parameter and the proposed deviations in the methodology and found that the number of batches is too large and it is very scattered on the ground. Thus, monitoring of all the batches from all the villages will not be possible. During the site audit, it was assessed that the sample size will be determined using the Standard for Sampling and Surveys for CDM project activities and programme of activities as a guideline/06(b)/. The laboratory tested all 30 samples and provided the mean and standard deviation of the samples. The same was found to be appropriate and the VVB accepted the proposed deviation.

Therefore, these deviations from the methodology VM 0044, viz., in respect of the parameters "Moisture content of biochar" and "H:Corg ratio" in terms of the frequency of recording of these two parameters do not negatively impact the quantification of the emission removals by the project activity; therefore, these deviations are in line with paragraphs 3.20.1 to 3.20.3 of the VCS Standard v4.7.

**Paragraph 3.20.1**

As per paragraph 3.20.1, deviations from the methodology are permitted where they relate to data and parameters available at validation, data and parameters monitored, or the monitoring plan. Since the deviation relates to a change in the frequency of monitoring, it is therefore related to the aspect of "monitoring plan" and hence, permissible.

**Paragraph 3.20.2**

The requirement at paragraph 3.20.2 of the VCS Standard is that the deviations from the applied methodology are permissible if they do not negatively impact the conservativeness of quantification of GHG removals., except where they increase the accuracy of the quantification. The change in frequency of the monitoring plan is in respect of the two monitoring parameters moisture content and the H:Corg ratio. Also, the change is from 'batch-wise monitoring' to 'monthly monitoring' for the moisture content of biochar and from 'batch-wise' to 'annual'. For the H:Corg ratio, the change is from 'batch-wise monitoring' to 'annual' monitoring. In both cases, the sampling approach is based on the CDM

Standard for Sampling & Surveys of CDM project activities. Samples are drawn randomly, reducing the possibility of any bias or preference. The sampling is based on a defined confidence interval and is tested for reliability of results. Therefore, a change in the frequency of monitoring to an annual frequency has no adverse impact on the quantified GHG removals and whether or not the samples are tested batch-wise or annually makes no difference to the accuracy of quantified values of emission removals. The change in monitoring frequency does not impact the quantification of the GHG removals negatively and it meets the paragraph 3.20.2

**Paragraph 3.20.3**

Paragraph 3.20.3 accepts methodology deviations at the time of validation or verification. Since the current assessment is a verification activity, the requirements of this paragraph are met.

**H:Corg (Ratio of hydrogen to organic carbon) of biochar produced**

The validation team refers to the VM 0044 version 1.1 methodology document and observes that the section 9.1 of the methodology specifies parameters that would be available at the time of validation (i.e. parameters that remain fixed and do not need to be monitored), while section 9.2 of the methodology has specified those parameters that would need to be monitored during the implementation and operation of the project.

The team notes that the parameter "H:Corg" is listed in section 9.2, which implies that the value of this parameter is not fixed on an ex-ante basis and must be determined through monitoring. In the validation team's opinion, therefore, including this parameter as a monitored parameter fulfils the requirement of the methodology.

However, PP did conduct tests on a sample of biochar to determine expected values of H:Corg, as these values would also be needed in order to arrive at the sample size (the revised PDD section 5.3 provides details on how the PP would calculate the sample size). These test results were shown to the validation team, and it was found that values of this parameter are much lower than 0.7, which is the limit specified by the methodology under applicability conditions (Refer Section 4 of VM 0044 version 1.1 point no. 10). Thus, the validation team was able to confirm that the project has met this condition of the methodology for its applicability.

**VVB conclusion:**

The applied methodology deviations in the project activity are approved during the validation of project. The deviations do not have any negative impact on the conservativeness of the quantification of GHG emission reductions or removals as the deviations is based on sampling guidelines of CDM Standard. Also, during the site VVB cross verified the sample data and lab test report for moisture content and H:Corg ratio to assess the conservativeness of quantification.

**3.2 Project Description Deviations**

Cotton is a locally grown crop in Odisha, state of India. The cotton stalks are left as a waste biomass, which is generally burnt by the farmers. The project has introduced an additional biomass: cotton stalks, thus cotton stocks are addition to types of waste biomass description. As cotton stalks is of the same nature and carbon content as tree pruning, it can be classified under woody biomass. Cotton Stalks are woody stems of the cotton plant and are residues of the cotton crop.

The project description deviation does not impact the applicability of the methodology. The biomass matches all the applicability conditions of the methodology, additionality, and the baseline. In the baseline scenario, cotton stalks are also subjected to open field burning and in the project scenario it is subjected to the flame curtain pyrolysis to produce biochar, which is applied in the same farms where the biomass originates from.

VVB assessed the addition of cotton stock biomass and its overall conclusion is that the project description deviation is valid as it is not deviating from baseline and methodology. Also, there is no impact on additionality.

**Addition of Moisture Content of Biomass as a Monitoring Parameter**

PP has introduced a new parameter- (biomass moisture content) to have better control on the biochar quality and its production. This parameter ensures that only suitable biomass is used in the production process. The inclusion of this new parameter has no effect on the applicability of the methodology, validity of the baseline scenario and the project additionality. Therefore, adding this parameter is in line with the paragraph 3.21 of the VM 0044 v1.1 methodology. Inclusion of this parameter has a better approach for biochar production and quality.

**Paragraph 3.21.1**

Deviations from project description are allowed at verification. The current assessment is also a verification; therefore, the paragraph 3.21.1 requirement is met.

**Paragraph 3.21.2**

The requirements of this paragraph are applicable if the deviation in project description has any impact on the applicability of the methodology, the appropriateness of the baseline scenario or the additionality of the project itself. As the deviation in this case is regarding the use of cotton stalks as a waste biomass to produce biochar, it is related only to an operational aspect of the working of the project. At the time of the validation of the project activity, the use of cotton stalks had not been envisaged. As the project was getting implemented however, the use of cotton stalks as an additional feedstock to produce biochar was identified and therefore its use was started. The use of cotton stalks satisfies the applicability condition of VM 0044 at section 4, however, as explained below:

- 1) Cotton stalk is a purely biogenic waste from the cotton plant
- 2) In the baseline scenario, the cotton stalks would have met the same fate, just as the other biomass types used in the project activity, viz., they would have either been subject to open field burning or left to decay. This is because it would not have been possible to put them to any other practical use.
- 3) Cotton stalks are locally grown within the districts in which the project is implemented and are not imported from neighbouring areas /regions, let alone other countries or continents.
- 4) Cotton stalks do meet the sustainability conditions for eligible biomass feedstocks, as per Table 1 in VM 0044
- 4a) The PP has provided documentation and the verification team has validated that in the baseline, the cotton stalks were either burned or left to decay; also, that the use of cotton stalks does not lead to a decline in soil carbon or a reduction in crop productivity. The latter is due to the fact that whatever cotton stalks are used for making biochar have all been sourced from local fields where they are grown as a naturally cultivated crop and there is no purpose-oriented growing of cotton just to serve the needs of the biochar making project;
- 5) Since there is documentation available to establish the fact that the baseline use of cotton stalks could only have been its disposal through open field burning or being left to decay, the appropriateness of the baseline scenario remains the same as with the other biomass types that would be used in the project activity.
- 6) According to the VM 0044 methodology, the project is additional if it is implementing activities that are on a positive list. In the case of the PP's biochar project, the processing of waste biomass to biochar by itself places the project on a positive list, thereby making the project additional. The verification team has assessed, therefore, that the additionality of the project is due to its being on the positive list and remains unaffected by the use or non-use of a certain type/s of biomass waste (e.g. cotton stalks, in this case) by the project.

#### Paragraph 3.21.3

The requirement is relating to projects that have already had a previous verification period for which the benefits arising from the deviation cannot be claimed. However, the period 16/10/2023 to 30/06/2024 is the first monitoring period for the project activity and hence, this paragraph is not applicable in the present case

#### Paragraph 3.21.4

The project description deviation (i.e. the use of cotton stalks as an additional biomass waste type in the process) is under the verification body's assessment; therefore, the requirements in paragraph 3.21.4 are taken care of

#### Paragraph 3.21.5

The PP has not used the project description deviation to set a precedent. Hence, this paragraph does not apply in the present case

#### Paragraph 3.21.6

We confirm that RINA is accredited to conduct both validation as well as verification. We are eligible and qualified to conduct an assessment of the project description deviation, since we are an accredited body for Verra GHG project validations also.

The other project description deviation is about the addition of extra parameter "Moisture content of biomass stock" to the monitoring plan. This deviation is in the manner of adding an extra parameter to the monitoring plan. It has no effect on the other parameters that are already a part of the existing plan and will continue to be so. The addition of an extra parameter, will not have any negative impact on the emission removal quantification. If anything, it will improve process control and the quality of biochar output from the project; both of which are positive benefits that will accrue.

### 3.3 New Project Activity Instances in Grouped Projects

No new project instances are being added in this monitoring period for the grouped project.

### 3.4 Baseline Reassessment

Did the project undergo baseline reassessment during the monitoring period?

Yes  No

## 4 VERIFICATION FINDINGS

### 4.1 Project Details

Item	Evidence gathering activities, evidence checked, and assessment conclusion
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<b>Audit history</b>	<p>Audit type Period Validation/verification body name Number of years          Validation 16th October 2023 to 15th October 2030. RINA Services S.p.A 7 years          VCS Verification- 16-October-2023 to 30-June-2024 RINA Services S.p.A 8 months and 16 days</p> <p>The above audit history of the project has been verified and confirmed by the assessment team from the VERRA project portal/01/ and previous validation report/01/.</p>
<b>Double counting and participation under other GHG programs</b>	<p>The project is not receiving or seeking credit for reductions and removals from a project activity under another GHG program. The project proponent has submitted an undertaking/41/ to the verification team declaring that the project is not registered under any other carbon standard or rejected or under the process of registration or shall apply for registration in future in any other GHG program. The assessment team has checked the websites of other carbon registries like Clean Development Mechanism (CDM)/42/, Gold Standard (GS)/43/ and Global Carbon Council (GCC)/44/ etc. and found that the project is not registered or rejected under any other carbon standard.</p>
<b>No double claiming with emissions trading programs or binding emission limits</b>	<p>The project is not receiving or seeking credit for reductions and removals from a project activity under other emissions trading programs or binding emission limits. The project proponent has submitted an undertaking/41/ to the verification team declaring that the project is not claiming any credit under any other emissions trading programs or binding emission limits. This has also been confirmed by the assessment team by interview with the concerned person from the project proponent.</p>
<b>No double claiming with other forms of environmental credit</b>	<p>The project is not receiving or seeking any other forms of environmental credit for reductions and removals from a project activity. The project proponent has submitted an undertaking/41/ to the verification team declaring that the project is not claiming any other form of environmental credit under any other emissions trading programs or binding emission limits. This has also been confirmed by the assessment team by interview with the concerned person from the project proponent</p>
<b>Supply chain (Scope 3) emissions double claiming</b>	<p>The project proponent is an independent project developer and not involved in any other business activity where it can act as a buyer or seller of a product whose emission footprint is changed by the project activity. This has been confirmed by the assessment team by interview with the concerned person from the project proponent.</p>

**Sustainable development contributions**

As declared by the project proponent in section 1.12 of the monitoring report/3/, the project contributes to below sustainable development goals:

SDG SDG Target SDG Indicator VVB Assessment

1 1.1 1.1.1

Proportion of the population living below the international poverty line by sex, age, employment status and geographic location (urban/rural).

The project improves the livelihoods of the farmers engaged in implementing it, as incomes of farmers increase due to higher crop yields. Though increased incomes would reduce poverty, a quantified estimate is difficult to be provided for the short duration that the project has been implemented. The verification team agrees that data on poverty alleviation would be available over the course of time and may take a few years to be accurately quantified.

1.4.1 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance.

The PP has reported 3595 farmers to have benefited from the project by virtue of receiving income from the project and now have improved access to basic facilities. The verification team confirms that this number is correctly reported. It has verified it from the Project Reignite Mobile App Database. The project has enabled 3595 farmers to receive additional income which they could use to avail of basic facilities.

1.5 Project Parameter: Number of Farming Families building resilience and reducing vulnerability to climate related economic, environmental shocks

The verification team has reviewed the Project Reignite Mobile App Database to confirm the number of farmers who have applied biochar in their fields and also received monies disbursed by the PP. That number was confirmed as 3595. The applied biochar has had a beneficial effect on the soil in which it was applied, one of which would also be the increase in water retention capacity of the soil. Thus, it can be regarded that in respect of these 3595 farmers, the biochar from the project has been able to counter effects of climate change such as scanty rainfall and drought.

2.3.1.

Implemented activities to increase the volume of production per labour unit by classes of farming/pastoral/forestry enterprise size.

The verification team is of the opinion that crop yields increase as a result of biochar application in the fields where it is applied. It agrees that crop production per unit of land area would see an increase due to biochar use. This is known from research worldwide (Ref:/49/50/) However, to quantify accurately, the data on production per land unit, a much longer period of time would be required, in the opinion of the team.

2.4.1 Proportion of agricultural area under productive and sustainable agriculture

The verification team has verified and can confirm that a total of 23,008 hectares of land area was brought under biochar application by the project.

The team verified the number of farmers who have produced biochar to be 3595. Therefore, the approximate total area under biochar production is 23,008 hectares

3 3.9 3.9.1 Mortality rate attributed to household and ambient air pollution.

The verification team notes that use of biomass waste in fields for biochar making avoids open field burning of the biomass. This also avoids PM 2.5 and PM 10 particulate matter from polluting the air. Cleaner air can only have beneficial effects on health. However, to confirm a reduction in mortality rate, a time period that is much longer than the current monitoring period would be required. It would not be possible for the PP to report estimates of mortality rate reduction in an 8 – 9 month period. /51/

3.9.2 Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe Water, Sanitation and Hygiene for All (WASH) services)- The verification team notes that due to the water retention capacity of biochar, water needs of the agricultural area are reduced and there is more fresh water available, which leads to better water hygiene and sanitation. However, its effect on the mortality rate is difficult to establish until sufficient data points are available that could be analyzed. This can only be done over a time period of several years. The current monitoring period is too limited to arrive at any such estimate.

5.1 Project Indicator: Selection of women to be biochar producers to increase equality and reduce discrimination in access to work:

57% of 5,000 (i.e. 2850) biochar producers are women. This was checked by the verification team from the list of farmers maintained on the Project Reignite Database. Thus, a work opportunity has been created by the project that was not available earlier and it has contributed to gender equality. These women did not have access to any job/ work opportunity previously and were only involved in domestic duties. Participation of women before and after project implementation was verified during the on-site audit.

5.4.1 Proportion of time spent on unpaid domestic and care work, by sex, age and location: The verification team observes that the 2850 women who are offered employment by the project did not have any such occupation earlier. Though they would spend their time in domestic work and household duties, such work was unpaid for. Employment provided by the project has reduced the time spent on unpaid domestic work. To check this, the verification team spoke to several women members of the village community who confirmed the same. Due to disguised employment in the farm and unavailability of work, the families, especially women, were left with no choice but to do unpaid domestic work. This is a trend and common observation in rural India and the project area. Time spent on biomass collection, biochar production, and its application has decreased their proportion of time spent on unpaid domestic work.

5.5 5.5.2 Proportion of women in managerial positions - The verification team can confirm that the PP has a management team of 26 personnel, 13 of whom are women. This was checked and confirmed from the Project Reignite Database by the team.

5.b 5.b.1 Proportion of individuals who own a mobile telephone, by sex.

The monitoring procedures under the project call for the use of the internet enabled smartphone app "Reignite Mobile App" to record the quantity of biochar produced and its images.

Therefore, all 401 members of the monitoring team now make use of a smartphone with the Reignite Mobile App installed on it. Moreover, as already confirmed above in this table for SDG Indicator No. 5.1, 50% of the PP's monitoring team comprises women.

#### 6.3.2 Proportion of bodies of water with good ambient water quality:-

The verification team is aware that one of the positive benefits of biochar application is on water quality. In the water bodies that used to be invaded by water hyacinth vegetation that gets consumed for biochar production as waste biomass feed. The water bodies are thus kept free of the invasive vegetation and this improves the water quality. The exact estimation of a proportion value for this indicator can, however, be quantified only over a period of time. The length of the current monitoring period is not enough for that purpose.

6.4.1 Change in water-use efficiency over time: The biochar's water holding capacity and increase in moisture retention in the farm has led to an increase in water use efficiency, decrease in freshwater consumption for agricultural activities and reduction in leaching of nutrients. However, the team agrees that to confirm a change in the efficiency, there has to be sufficient data. This data can only be collected over a period of time. The current monitoring period duration is only 8.5 months; therefore, an exact estimation of this indicator cannot be provided by the PP.

6.4.2 Level of water stress: freshwater withdrawal as a proportion of available freshwater resources: Reduction in water stress levels has taken place due to reduction in water used for agriculture and increase in water purification capacity of local water bodies. The biochar's water holding capacity and increase in moisture retention in the farm has led to an increase in water use efficiency due to the decrease in freshwater consumption for agricultural activities and reduction in leaching of nutrients. An exact estimation of the increase is not feasible, however, for the short duration of the current monitoring period. In the verification team's opinion, there has been an increase in the water availability due to biochar application, since the biochar in soil aids water retention in soil, thus reducing the need for freshwater.

However, for the PP to monitor and report exact estimates of the same, sufficient data is needed, which can only be available for a longer period of time, of 5 to 10 years.

#### 6.6.1 Change in the extent of water-related ecosystems over time:-

As stated above for the SDG indicator 6.4.2 above, the verification team agrees that implementation of the project will result in positive impacts on the water related ecosystem. However, for the PP to monitor and report exact estimates of the same, sufficient data is needed, which can only be available for a longer period of time, of 5 to 10 years.

#### 8.3.1 Proportion of informal employment in total employment, by sector and sex:-

It was confirmed by the verification team from the monitoring records in the Project Reignite Electronic Database that the project has provided gainful employment opportunities to 401 members in the Reignite monitoring team, besides the 3595 farmers who could avail of the opportunity to produce and apply biochar in their fields.

10.1.1 Growth rates of household expenditure or income per capita among the bottom 40 per cent of the population and the total population: Additional income to the 3595 farmers who are biochar producers during this monitoring period has simultaneously enabled them to expand their household expenditures. However, the team accepts that given the short duration of the current monitoring period, sufficient data is not available to the PP to report exact estimates of expenditure growth.

#### 10.2 Project Parameter: Number of smallholder farming families connected with global value chain and included in voicing for climate action:-

5,000 families are now connected with the global carbon removal value chain, which they would not have been in the absence of the project. The stakeholders are continuously contributing to biochar carbon removal efforts, research, and shaping the presence of climate action. This has been verified with during site visit by direct interaction with farmers and agreement of PP with farmers. The verification team believes that the project provides an opportunity to the 5000 participating farmers to come together and avail of a common platform in the form of Project Reignite to get connected to a global programme such as Verra.

#### 11.6.2 Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted):-

Implemented activities to decrease the fine particulate matter (PM 2.5 and PM 10). Verification team accepts that prevention of open field burning of biomass waste in villages in the project has directly avoided presence of particulate matter in the air. However, the verification team also agrees that there are inherent limitations in tracking and quantifying PM 2.5 and PM 10 particle levels. This is because the project is spread far and wide and data on air pollution over a wide area is difficult to quantify and collect.

#### 12.2.2 Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP:-

The verification team notes that the implementation of the project has resulted in a reduction in the use of chemical fertilizer. An exact quantification of how much the fertilizer I consumption has decreased, would not be feasible for the PP to do at this stage of the project, with the limited amount of data at its disposal. Over time, more data on chemical fertilizer use would become available and it would be possible for reliable values of estimates to be prepared.

#### 12.5.1. National recycling rate, tons of material recycled:-

The PP has estimated that about 280,000 tons of waste biomass material is recycled in the project annually. The verification team has cross-checked this estimation against the quantity of biochar produced (69,860.10 tonnes), that is recorded in the Project Reignite App. As the ratio of biochar produced to biomass feedstock used as input to the process is 1:4, it implies that the quantity of waste biomass feed would be 280,000 tonnes. This is therefore the quantity of biomass recycled by the project activity.

	<p>13.0 Tonnes of greenhouse gas emissions avoided or removed:-</p> <p>Avoidance of baseline emission from open field burning of waste biomass and removal of 115,103 tCO<sub>2</sub>eq has taken place due to the project. This has been calculated in the ER sheet by the PP. The verification team has verified the correctness of the calculations presented in the ER spreadsheet and is satisfied with the same.</p>
	<p>15.3 Proportion of land that is degraded over total land area:-</p> <p>Biochar's ability to improve soil structure, water retention, and nutrient availability is well-supported by scientific literature.</p> <p>In the assessment of the verification team, the PP's claim that the project, when implemented by all of the 5000 farmers is preventing approximately 32,000 hectares of farmlands from further degradation can be accepted. In the current monitoring period, approximately 23,008 hectares have been subjected to biochar application. The number of farmers who have implemented the project during the monitoring period is 3595. The total area under the project implementation during the current monitoring period is 23,008 hectares.</p>
	<p>17.7 Project Indicator: Use of science and technologies invented and documented in developed countries being used in the project :-</p> <p>The project uses a smartphone app to keep track of biochar production and inventory details. The verification team agrees that this is an example of dMRV technology application.</p> <p>The team also observes the use of pit pyrolysis procedure to make biochar. This is a scientific method that was originally developed by the Ithaca Institute in Switzerland and is applied by the PP in their project. The process is also sustainable as it relies on manual methods and does not use any fossil fuels for biochar production.</p>
<b>Additional information relevant to the project</b>	<p>No commercially sensitive information has been mentioned in the monitoring report to have been excluded from the public version of the project documents. This has also been confirmed during an interview with the concerned person from the project proponent.</p>

## 4.2 Safeguards and Stakeholder Engagement

### 4.2.1 Stakeholder Identification

Item	Evidence gathering activities, evidence checked, and assessment conclusion
<b>Stakeholder Identification</b>	<p>There has not been any change to the stakeholder profile within the project boundary has not changed since the validation of the project. The project had identified farmers, villagers, and their representatives as stakeholders. This selection is based on their significant positive impact resulting from the project activities. The verification team concludes that composition of stakeholder category for the project activity has remained unchanged.</p>
<b>Legal or customary tenure/access rights</b>	<p>The project proponent holds the right of the project and the carbon credits to be generated from the project. The declarations from the farmers and villagers/10/ and the agreements with farmers/18/ executed by the project proponent with the villagers/farmers demonstrated the ownership right of the project proponent with the projects. The documents are reviewed by the verification team as found appropriate.</p> <p>The production of biochar by farmers and its applications is under guidance and monitoring by the project proponent. PP has the agreement with the farmers for production of biochar and claiming the carbon credit.</p>
<b>Stakeholder diversity and changes over time</b>	<p>The project's impacts on stakeholder diversity over time are as follows.</p> <p>Social Diversity: The project promotes social inclusivity through community engagement for biochar production. The production of biochar and its application enhances the soil productivity over period of time and reduces the application of fertilizer. No negative impacts on social diversity have been identified.</p> <p>Cultural Diversity: The project encourages participation from individuals of diverse cultural backgrounds, fostering cultural harmony within the project location. No adverse effects on cultural diversity have been observed.</p> <p>Economic Diversity: The project contributes to the local economy by providing employment opportunities for both skilled and unskilled labour. No detrimental effects on economic diversity have been recorded.</p>
<b>Expected changes in well-being</b>	<p>Biochar has a porous structure and high surface area, which enhances soil's physical and chemical properties. It increases nutrient retention, thereby reducing leaching into water bodies and improving the efficiency of nutrient uptake by plants. This further leads to reduction in the use of synthetic fertilizers by farmers, reducing chemical leakage to local water bodies, and improving quality of freshwater.</p> <p>Also, this includes prevention of inhaling harmful pollutants released during open field burning, which is wholly prevented as the biomass is being used to produce biochar now. In addition, increase in income from positive effects of biochar on agriculture will help in increased spending in healthcare and thereby access to it.</p> <p>Moreover, biochar's stability in soil makes it an effective tool in capturing and storing atmospheric CO<sub>2</sub>. Its application also increases long-term biomass growth and soil carbon sequestration. The project activity directly contributes to mitigating climate change by reducing the net flux of greenhouse gases into the atmosphere.</p>
<b>Location of stakeholders</b>	<p>In the context of the project activity instance situated within the geographical boundaries of India, specifically in the districts of Odisha state.</p>
<b>Location of resources</b>	<p>In terms of the location of territories and resources owned or accessed by stakeholders, it can be stated that the biochar producers (farmers/villagers) possess ownership of their respective land where biochar is produced from agricultural waste, Water Hyacinth and Ipomoea Carnea.</p>

### 4.2.2 Stakeholder Consultation and Ongoing Communication

Item	Evidence gathering activities, evidence checked, and assessment conclusion
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<b>Ongoing consultation</b>	<p>As a part of on-going communication with local stakeholders, biochar producers (farmers/villagers) were informed about</p> <ul style="list-style-type: none"> <li>- Helpline number: All local stakeholders have been made aware about the project helpline number, which they can call and raise their concerns, ask questions, or provide feedback</li> <li>- Regular project updates delivered to biochar producers: Project Reignite monitoring team is updated on the project status regularly</li> <li>- Regular meetings organized by management: Project proponent's management team visits all villages of project area regularly to meet with local stakeholders, hear their concerns, deliver updates, and gather feedback</li> <li>- Village chiefs as a point of contact: In case the PP is not reachable, the farmers can contact locally, and the village chief updates the same to the general manager of the project.</li> <li>- Anonymous reporting: VVB interacted with the village Sarpanch and farmers and found that the local stakeholders can write their concerns and drop the letter at the village chief's office anonymously to report their concerns if there is any or feedback.</li> </ul> <p>Thus, ongoing communication of stakeholders was followed through a grievance mechanism. If any concerns received during operation of project activity, the same were to be addressed if relevant to the project.</p>
<b>Date(s) of stakeholder consultation</b>	15-01-2023 – 30-04-2023 (initial consultation period) and ongoing communication since 1-05-2023
<b>Communication of monitored results</b>	<p>During on-site audit and verification process, VVB assessed and cross checked the stakeholder's consultation process and monitoring of data and its record. The monitoring is as follows:</p> <ul style="list-style-type: none"> <li>- The Project Reignite monitoring team views all monitoring records on their app. They have all records available at all points in time and they are further responsible to communicate them with biochar producers.</li> <li>- In addition, all biochar producers are made aware of the monitoring records once internal verification is successfully completed for those records.</li> </ul> <p>The Reignite monitoring team acts as a continuous communication channel for the biochar producers. Any biochar producer can also call on the helpline number and ask questions about the results.</p>
<b>Consultation records</b>	<p>During the local stakeholder consultation process, the queries were recorded and analyzed by monitoring team. Feedback from consultations has been incorporated in the project.</p> <p>All feedback/ questions/ concerns are recorded, analyzed, incorporated, and stored in the project data room. As a crosscheck purpose, the verification team also checked the grievance redressal mechanism by directly interviewing the biochar producers/villagers regarding any grievance and issues related to the project activity. The verification team found the consultation process and its mechanism in place and found to be satisfactory.</p>
<b>Stakeholder input</b>	There has been no grievance received for the current monitoring period. The beneficiary households interviewed during the onsite audit were found to be satisfied with the production of biochar and its soil application and no adverse opinion was shared by any of them.

#### 4.2.3 Free, Prior, and Informed Consent

Item	Evidence gathering activities, evidence checked, and assessment conclusion
<b>Consent</b>	<p>Following clause 3.18.8 of VCS standard v.4.7/6/, the project proponent has disclosed</p> <ol style="list-style-type: none"> <li>1. The minimum information, including the nature, size, pace, reversibility, and scope of biochar production and its soil application is project activity;</li> <li>2. The reason/purpose of the project, which is to produce biochar from agri waste and weed growing in the local area and its application to agricultural field, which will enhance soil, water, and air health, mitigate climate change impacts, and foster socio-economic development.</li> <li>3. The duration of the project activity, is 15 years, crediting period is 7 years renewable twice;</li> <li>4. The locations that will be affected, primarily the villages in project location;</li> <li>5. A preliminary assessment of the likely economic, social, cultural, and environmental impact, including potential risks and fair and equitable benefit sharing in a context that respects the precautionary principle. Stakeholders were briefed that the project would bring solely positive effects on economic, social, cultural, or environmental aspects, and including increased employment opportunities.</li> <li>6. Moreover, information regarding personnel likely to be involved in the execution of the proposed project, including Indigenous Peoples, private sector staff, research institutions, government employees, and others, was shared with stakeholders, clarifying that they would be the end-users/beneficiaries of the project activity.</li> </ol> <p>Hence, it is evident that the affected community was informed prior to the operational date of the project activity.</p>
<b>Outcome of FPIC discussion</b>	<p>PP followed the Free, Prior, and Informed Consent (FPIC) process to ensure a clear agreement with local farmers. Before starting, the project activity PP shared detailed information about how biochar can improve soil health and crop yields. The agreement confirmed that project respects the farmers' rights and doesn't force anyone to participate or change their farming practices without consent. For the same, written consent was taken from each farmer registered. By involving the farmers in every step, it is ensured that the project benefits farmers lands and livelihoods without causing any harm or displacement.</p> <p>Thus, the verification team concluded that that the project has not encroached on land, relocated people without consent, and forced physical or economic displacement.</p>

#### 4.2.4 Grievance Redress Procedure

Item	Evidence gathering activities, evidence checked, and assessment conclusion
<b>Grievance received and steps taken to resolve the grievance including the outcomes of the resolution</b>	No grievance received from the farmers/villagers. However, the grievance redressal procedure is in place.

<b>Grievance redress procedure</b>	Project Reignite places a strong emphasis on the openness and availability of grievance reporting mechanisms, ensuring all stakeholders have accessible and varied means to voice concerns. Project proponent has established a culture of transparency where feedback is not only encouraged but also seen as vital for project improvement and stakeholder satisfaction. Despite the comprehensive measures in place for continuous communication and ongoing consultation, till date no grievance is received. PP's is using a proactive approach in addressing potential concerns and be committed to maintaining an open dialogue with all involved parties. PP aims to create a supportive environment for grievance reporting for the well-being of the communities and the success of the project.
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#### 4.2.5 Public Comments

Comments received	Actions taken by the project proponent	Evidence gathering activities, evidence checked, and assessment conclusion
No data available		

#### 4.2.6 Risks to Local Stakeholders and the Environment

##### 4.2.6.1 Management Experience

PP involved the local people and villagers as field supervisor and local experts for the project activity implementation and supervision and possesses sufficient management experience to implement and lead the project activity. No new entity was involved in either project design or its implementation.

##### 4.2.6.2 Risk Assessment

Item	Evidence gathering activities, evidence checked, and assessment conclusion
<b>Natural and human induced risks to stakeholders' wellbeing</b>	There is no risk involved to stakeholder's wellbeing. As the project is having positive impact through benefit sharing mechanism and production of biochar and its soil application to farmer's field.
<b>Risks to stakeholder participation</b>	The stakeholder participation is voluntary and the local farmers are willingly taking part in the project activity. There is no risk involved in the stakeholder participation.
<b>Working conditions</b>	No risk identified during the production of biochar. Even the fire safety measures are in place, if any mishappening occurs during the process of production of biochar then it will be taken care.
<b>Safety of women and girls</b>	Safety of women and girls are considered and no risks are involved as the local people and farmers family are involved.
<b>Safety of minority and marginalized groups, including children</b>	No children are involved in the biochar production process. The project is involving farmers irrespective minority and marginalized status.
<b>Pollutants (air, noise, discharges to water, generation of waste, release of hazardous materials)</b>	During the production of biochar, no such air noise, discharges of water and release of hazardous materials occur.

#### 4.2.7 Respect for Human Rights and Equity

##### 4.2.7.1 Labor and Work

Item	Evidence gathering activities, evidence checked, and assessment conclusion
<b>Discrimination</b>	During this monitoring period, there have been zero reports of discrimination or sexual harassment. Project proponent has a strict anti-harassment policy in place for the project and there is zero tolerance for the same. This has been cross verified during site audit with direct interview with stakeholders and found that there is no discrimination. There has been no sexual harassment case. The project adheres to a policy of gender equality, offering equal pay for equal work and ensuring representation of all genders in leadership roles. Mostly the stakeholders are women and the project activities are carried by women.
<b>Sexual harassment</b>	There has been no sexual harassment case.
<b>Gender equity in labor and work</b>	The project adheres to a policy of gender equality, offering equal pay for equal work and ensuring representation of all genders in leadership roles. Mostly the stakeholders are women and the project activities are carried by women.
<b>Forced labor</b>	There is no forced labor involved, the stakeholders, villagers are involved voluntarily in the project activity.
<b>Child labor</b>	Strict verification of labor sources is conducted to ensure no involvement of human trafficking, forced labor, or child labor. Regular inspections by the monitoring team validate compliance with labor laws and ethical standards.
<b>Human trafficking</b>	Strict verification of labor sources is conducted to ensure no involvement of human trafficking. There is no forced labor involved, the stakeholders, villagers are involved voluntarily in the project activity. Strict verification of labor sources is conducted to ensure no involvement of human trafficking, forced labor, or child labor. Regular inspections by the monitoring team validate compliance with labor laws and ethical standards. VVB team cross checked that no forced labor, child labor and human trafficking is involved by direct interviews and visiting the project locations to confirm the same. Also, there is stringent labor laws (regional and national) are in place.

#### 4.2.7.2 Human Rights

Risks identified	Evidence gathering activities, evidence checked, and assessment conclusion
Human rights	Strict verification of labor sources is conducted to ensure no involvement of human trafficking, VVB team cross checked that no forced labor, child labor and human trafficking is involved by direct interviews and visiting the project locations to confirm the same. Also, there is stringent labor laws (regional and national) are in place.

#### 4.2.7.3 Indigenous Peoples and Cultural Heritage

Risks identified	Evidence gathering activities, evidence checked, and assessment conclusion
Preservation and protection of cultural heritage	The biochar project is designed to have a neutral impact on cultural heritage. It neither involves activities that alter cultural sites nor requires changes in cultural practices. By integrating biochar production into existing agricultural practices, the project supports sustainable farming without encroaching on or modifying cultural heritage. This approach ensures that the project's activities are in harmony with the preservation and protection of local cultural traditions and landmarks. During on-site audit, VVB assessed the rights of IPs, LCs and customary rights by direct interview and discussion with villagers and local stakeholders and found that the project is having positive impact and the villagers are voluntarily involved in the project activity.

#### 4.2.7.4 Property Rights

Risks identified	Evidence gathering activities, evidence checked, and assessment conclusion
Rights to territories and resources	Project Reignite operates with a strict adherence to the property rights of IPs, LCs, and customary rights holders. Project proponent is engaged in regular consultations with community leaders to ensure that project activities align with farmers land use practices and property rights. A responsive grievance mechanism is in place to immediately address any concerns related to property rights in case they arise.
Respect for property rights	Local people and farmers are taking care of the farm field and proper usage of waste biomass for the production of biochar. This has been verified during the on-site audit process.

#### 4.2.7.5 Benefit Sharing

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Summary of the benefit sharing plan	PP has benefit sharing mechanism with the local stakeholders. Farmers are paid for the production of biochar on regular basis.
Benefit sharing during the monitoring period	During on-site audit, the VVB team had a direct discussion and interview regarding the benefit sharing mechanism. It was found that stakeholders receive direct benefit for producing the biochar, as per the effort and time they put for it. Benefit sharing mechanism is in place. The farmers and local stakeholders who are involved in production of biochar are being paid by the PP. During on-site audit, this has been directly verified with the farmers and local stakeholders by interviewing them personally.

#### 4.2.8 Ecosystem Health

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Impacts on biodiversity and ecosystems	No risks identified, as the project will contribute towards enhancement in biodiversity and ecosystems, because there is no open burning of waste biomass.
Soil degradation and soil erosion	Project will enhance the soil quality and reduce degradation and erosion because of application of biochar in the farm field.
Water consumption and stress	Project will reduce the water consumption and stress on water bodies by removing water weed (hyacinth) and taking it for biochar production.

#### 4.2.8.1 Rare, threatened, and endangered species

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Species or habitat	The biochar production under Project Reignite has had no negative impact on habitats for rare, threatened, or endangered species. Instead, it has only contributed positively to the ecosystem by improving soil health, enhancing carbon sequestration, and supporting greater biodiversity.
Areas needed for habitat connectivity	Not applicable as there is not habitat connectivity is involved.
	Evidence gathering activities, evidence checked, and assessment conclusion

<b>Habitats for Rare, threatened, and endangered species</b>	As the project is production of biochar and its soil application and no habitats for rare, threatened and endangered species are in the area.
<b>Areas for habitat connectivity</b>	Execution of project, it does not include any activity that can have risk to areas needed for habitat connectivity.

#### 4.2.8.2 Introduction of species

Species introduced	Evidence gathering activities, evidence checked, and assessment conclusion
N/a	No new species have been introduced. Thus, not applicable

Existing invasive species	Evidence gathering activities, evidence checked, and assessment conclusion
Water Hyacinth Ipomoea Carnea	These species is being eradicated as a part of the project

	Evidence gathering activities, evidence checked, and assessment conclusion
<b>Invasive species</b>	Existing invasive species is being eradicated as a part of the project.

#### 4.2.8.3 Ecosystem conversion

Item	Evidence gathering activities and evidence checked
N/A	There is no ecosystem conversion.

### 4.3 Accuracy of Reduction and Removal Calculations

The verification team has conducted onsite audit and interviews with concerned onsite persons, farmers, physically verified the biochar production sites and has reviewed documents; assessment team concluded that the project activity is implemented and operated in-line with the registered VCS PD/1/. 3595 nos. of active biochar production sites by 3595 farmers from 5000 registered farmers from state of Odisha are included in the 1st monitoring period at the time of registration. The VVB team conducted the interview and had discussion with 90 biochar producers/farmers. The details regarding sample selection for the interview is mentioned in section 2.4 of this report. There is no change in the project design or operation and monitoring practices at site which can alter the applicability or design of the project activity. In addition to the interviews with rural farmers, representatives of project proponent and physical inspection of the biochar production sites, the assessment team has checked all the documentation and found that the project activity is implemented as per the registered VCS PD/1/ submitted by the project proponent for the current monitoring period.

#### Parameters fixed ex ante:

<b>Means of verification</b>	<p>The data and parameters fixed ex ante have been checked from the registered VCS PD/1/, the applied methodology VM0044, ver. 1.1/7/ and IPCC guidelines. <math>FC_{p,t,p}</math> - Organic carbon content of biochar for each biochar type t produced in production facility p per tonne of biochar, on a dry weight basis (%). Default values are taken from Table 4AP.1 of IPCC (2019) Appendix 4/28/:</p> <table border="1" data-bbox="499 398 983 907"> <thead> <tr> <th>Feedstock Type</th> <th>Feedstock</th> <th>Organic Carbon Content</th> </tr> </thead> <tbody> <tr> <td>Rice husks and rice straw</td> <td>Paddy Straw</td> <td>0.49</td> </tr> <tr> <td>Wood</td> <td>Tree Pruning, Bamboo Pruning (Only taken from mature bamboo with woody stems)</td> <td>0.77</td> </tr> <tr> <td>Herbaceous</td> <td>Maize Cobs, Ipomoea Carnea, Water Hyacinth</td> <td>0.65</td> </tr> </tbody> </table> <p>The default values applied for the organic carbon content is from IPCC and the same is found to be appropriate by the audit team.</p> <p>The verification team has checked the ex-ante fixed values from the registered VCS PD/01/. During this monitoring/verification period the actual values from the lab report are being used and confirmed that the values are used correctly in the monitoring report/2/ and emission reduction calculation sheet/4/.</p>	Feedstock Type	Feedstock	Organic Carbon Content	Rice husks and rice straw	Paddy Straw	0.49	Wood	Tree Pruning, Bamboo Pruning (Only taken from mature bamboo with woody stems)	0.77	Herbaceous	Maize Cobs, Ipomoea Carnea, Water Hyacinth	0.65
Feedstock Type	Feedstock	Organic Carbon Content											
Rice husks and rice straw	Paddy Straw	0.49											
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Herbaceous	Maize Cobs, Ipomoea Carnea, Water Hyacinth	0.65											
<b>Findings</b>	No finding was raised												
<b>Conclusion</b>	The verification team concludes that the values of ex-ante parameters are correctly sourced from the registered documents/1/ to be used for emission reduction calculation.												

<b>Means of verification</b>	<p>Permanence adjustment factor due to decay of biochar (dimensionless) defined for application type k - As pyrolysis temperature for flame curtain pyrolysis method is known to be <math>&gt;600^{\circ}\text{C}</math> and as observed in practice, permanence adjustment factor is 0.89 taken from IPCC (2019) Appendix 4 AP.2 /28/. Also, the pyrolysis temperature has been tested by a laboratory and PP has provided the lab test report/48/. During the on-site audit, VVB used industrial infrared thermometers to cross check the temperature of biomass burning and found that the temperature is well above <math>600^{\circ}\text{C}</math>.</p>
<b>Findings</b>	No finding was raised
<b>Conclusion</b>	The project activity has been process tested for the average production temperature by a laboratory and it was found that the temperature was higher than $600^{\circ}\text{C}$ degrees Celsius. In addition, $T_{\text{prod}}$ is measured on a continuous basis for each batch of biochar and is a monitoring parameter.

<b>Means of verification</b>	Global warming potential of methane as 28, taken from IPCC Fifth Assessment Report
<b>Findings</b>	No finding was raised
<b>Conclusion</b>	As per registered VCS PD, the GWP value has been considered for emission calculation, the same is found to be correct.

<b>Means of verification</b>	The parameter Fe - tonnes CH <sub>4</sub> per tonne biochar (t CH <sub>4</sub> /t) produced in a steel-shield soil pit (low-technology production facility) has been taken from Table 3 in Cornelissen et al. (2016)/25/ as 14kg CH <sub>4</sub> / tonne of biochar for steel-shield soil pit, the same has been found to be appropriate by the audit team.
<b>Findings</b>	No finding was raised
<b>Conclusion</b>	The value of methane emissions per tonne of biochar produced in a steel-shield soil pit (low-technology production facility) has been taken from Table 3 in Cornelissen et al. (2016) and this is in accordance with the registered VCS PD.

<b>Means of verification</b>	Biomass Categories and Quantities (tonnes t on dry basis) at each production facility has been determined by the baseline survey.
<b>Findings</b>	No finding was raised
<b>Conclusion</b>	The audit team discussed with PP and visited the sites and cross checked the biomass produced and found it to be appropriate.

Parameters monitored:

**Means of verification**

The verification of the parameters required by the monitoring plan is provided as follows:

<b>Data/ Parameter:</b>	$M_{p,y}$
<b>Data Unit:</b>	tonnes (t)
<b>Value</b>	69,860.10
<b>Description:</b>	Total weight of biochar produced at each production facility p in year y has been measured using a weighing scale. Moisture content has been monitored for the project using laboratory analysis of representative sampling of biochar produced every month from the beginning of the crediting period.
<b>Source of data used:</b>	On-site measurements
<b>Means of verification/Comments:</b>	The number of biochar production sites have been verified from the database, which provides the complete list of farmers and biochar production sites with village and location details. PP does the complete monitoring of all sites and data is recorded in the app. During on-site audit, VVB physically verified the production sites and had interview with the farmers. Also, the data in app was cross checked to confirm the production of biochar.
<b>Cross-check</b>	The registered VCS validation report/2/ of the project and monitoring report are cross-checked by the verification team to confirm the correctness of the value of the parameter. The PP uses standardized PP gunny bags with a fix volume.

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<b>Data/ Parameter:</b>	$T_{prod}$
<b>Data Unit:</b>	Degrees Celsius (C)
<b>Value</b>	Average temperature ranging from 691 to 704 degree C
<b>Description:</b>	Average annual production temperature during pyrolysis, Handheld high temperature industrial infrared thermometer is used to measure and record the temperature.
<b>Source of data used:</b>	On-site measurements
<b>Means of verification/Comments:</b>	The temperature was cross checked using a thermometer on site. The number of biochar production sites have been verified from the database, which provides the complete list of farmers and biochar production sites with villages and location details. PP does the complete monitoring of all sites and data is recorded in the app. During the on-site audit, VVB team physically verified the production sites and had interviews with the farmers. Also, the data in the app was cross checked with biochar produced records to confirm the temperature of production of biochar. The VVB also performed the process and found the temperature to be always exceeding 650 degrees Celsius.
<b>Cross-check</b>	The VCS validation report/2/ of the project and monitoring report are cross-checked by the verification team to confirm the correctness of the value of the parameter.

<b>Data/ Parameter:</b>	F <sub>Cp,t,p</sub>																
<b>Data Unit:</b>	Percent (%)																
<b>Value</b>	<table border="1"> <thead> <tr> <th>Feedstock Type</th> <th>Organic Carbon Content</th> </tr> </thead> <tbody> <tr> <td>Paddy Base (Roots) and Straw</td> <td>53.92%, i.e.0.5392</td> </tr> <tr> <td>Maize Cobs</td> <td>N/A</td> </tr> <tr> <td>Tree Pruning</td> <td>80.84%, i.e.0.8084</td> </tr> <tr> <td>Cotton Stalks</td> <td>78.93%, i.e. 0.7893</td> </tr> <tr> <td>Bamboo Pruning</td> <td>79.37%, i.e. 0.7937</td> </tr> <tr> <td>Water Hyacinth</td> <td>N/A</td> </tr> <tr> <td>Ipomoea Carnea</td> <td>58.03%, i.e. 0.5803</td> </tr> </tbody> </table>	Feedstock Type	Organic Carbon Content	Paddy Base (Roots) and Straw	53.92%, i.e.0.5392	Maize Cobs	N/A	Tree Pruning	80.84%, i.e.0.8084	Cotton Stalks	78.93%, i.e. 0.7893	Bamboo Pruning	79.37%, i.e. 0.7937	Water Hyacinth	N/A	Ipomoea Carnea	58.03%, i.e. 0.5803
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<b>Description:</b>	Organic carbon content of biochar for each biochar type t produced in production facility p per tonne of biochar, taken on a dry weight basis																
<b>Source of data used:</b>	Laboratory material analysis																
<b>Means of verification/Comments:</b>	Field sampling has been done using the Sampling and Surveys for CDM Project Activities and Program of Activities Standard as a guideline. The lab has tested 30 samples for each type of biochar and provided the mean value and standard deviation for the samples tested. The VVB cross checked the lab reports provided by an NABL accredited laboratory.																
<b>Cross-check</b>	The VCS validation report/2/ of the project, monitoring report and lab test reports are cross-checked by the verification team to confirm the correctness of the value of the parameter.																

<b>Data/ Parameter:</b>	H:C <sub>org</sub>																		
<b>Data Unit:</b>	Dimensionless																		
<b>Value</b>	<table border="1"> <thead> <tr> <th>Type of Biomass</th> <th>Mean</th> <th>Standard Deviation</th> </tr> </thead> <tbody> <tr> <td>Paddy Straw and Roots</td> <td>0.34</td> <td>0.06</td> </tr> <tr> <td>Tree Pruning</td> <td>0.28</td> <td>0.07</td> </tr> <tr> <td>Cotton Stalks</td> <td>0.33</td> <td>0.04</td> </tr> <tr> <td>Bamboo Pruning</td> <td>0.32</td> <td>0.05</td> </tr> <tr> <td>Ipomoea Carnea</td> <td>0.40</td> <td>0.07</td> </tr> </tbody> </table>	Type of Biomass	Mean	Standard Deviation	Paddy Straw and Roots	0.34	0.06	Tree Pruning	0.28	0.07	Cotton Stalks	0.33	0.04	Bamboo Pruning	0.32	0.05	Ipomoea Carnea	0.40	0.07
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Ipomoea Carnea	0.40	0.07																	
<b>Description:</b>	Used to demonstrate eligibility for use in soil applications. As per applicability condition 10, biochar used in soils must have an H:C <sub>org</sub> of less than 0.7.																		

<b>Source of data used:</b>	Nationally Accredited Laboratory analysis following EBC Production Guidelines.
<b>Means of verification/Comments:</b>	Annually field samples were collected using the Sampling and Surveys Standard for CDM Project Activities and Program of Activities as a guideline. The lab tested 30 samples for each type of biochar and provided the mean and standard deviation of the samples to the PP. The VVB cross checked the lab reports provided by an NABL accredited laboratory.
<b>Cross-check</b>	The VCS validation report/2/ of the project and monitoring report are cross-checked by the verification team to confirm the correctness of the value of the parameter. Field sampling has been done using the Sampling and Surveys Standard for CDM Project Activities and Program of Activities as a guideline. Lab tested 30 random samples from the batches and provided the mean and standard deviation of the tests

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<b>Data/ Parameter:</b>	Moisture Content of Biomass (Additional Project Parameter)												
<b>Data Unit:</b>	%												
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Tree Pruning	7.1-12.2%												
Cotton Stalks	6.5-8.9%												
Bamboo Pruning	8.2-12.6%												
Ipomoea Carnea	7.9-10.3%												
<b>Description:</b>	Moisture content of biomass being used for biochar production												
<b>Source of data used:</b>	Handheld moisture meter												
<b>Means of verification/Comments:</b>	A random sample of biomass is extracted and used for each batch of biochar production to check the moisture content of the biomass. VVB witnessed the process during the audit and found it to be appropriate.												

	<table border="1"> <tr> <td data-bbox="497 132 783 797"><b>Cross-check</b></td> <td data-bbox="783 132 1142 797">                     PP has introduced this additional parameter to improve the quality of biochar production in the project. This demonstrates the proactiveness of the PP to go beyond the methodology. VVB has reviewed the process and the results obtained. The parameter is not used in quantification and does not change the emission removal results directly; however, it is a good practice and ensures quality production. VVB also observed that farmers ensure that feedstock is thoroughly dry before it is used for production of biochar; this measure prevents any kind of wet feedstock being used for production that exceeds 15% moisture content. The PP's mobile app does not allow production if the moisture content is above 15%.                 </td> </tr> </table>	<b>Cross-check</b>	PP has introduced this additional parameter to improve the quality of biochar production in the project. This demonstrates the proactiveness of the PP to go beyond the methodology. VVB has reviewed the process and the results obtained. The parameter is not used in quantification and does not change the emission removal results directly; however, it is a good practice and ensures quality production. VVB also observed that farmers ensure that feedstock is thoroughly dry before it is used for production of biochar; this measure prevents any kind of wet feedstock being used for production that exceeds 15% moisture content. The PP's mobile app does not allow production if the moisture content is above 15%.
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<b>Findings</b>	CL 02, CL 04, CL 05 and CL 06 was raised		
<b>Conclusion</b>	<p>The monitoring has been carried out in accordance with the monitoring plan contained in the registered VCS PD /2/. All parameters were monitored and determined as per the registered PD/1/. The monitoring surveys are found to have been conducted at the desired frequency and in the appropriate manner as defined in the registered PD/1/. The user data collected at the time of monitoring survey are verified from the monitoring survey result and data sheet/9/ which are found to be appropriate and in line with the registered PD/1/. The substantiation of this conformity on information flow for these parameters including the values in the monitoring reports is reported in the above during the verification, all relevant monitoring parameters of the registered monitoring plan have been verified with regard to the appropriateness of the verification method, the correctness of the values applied for ER calculation, the accuracy and applied QA/QC measures. After appropriate corrections, carried out by the project participant, it is confirmed that all monitoring parameters have been measured/ determined without material misstatements and are in line with all applicable standards and relevant requirements. All parameters required to be monitored are recorded at the intervals required by the registered monitoring plan and the applied methodology. On the basis of review of source and nature of available evidences and records, the verification team confirms the quality of evidence for emission reduction provided is sufficient as per the VCS standard, version 4.7/6/.</p>		

Accuracy of GHG reduction calculation:

Means of verification

The verification team assessed whether the data and calculations of GHG emission removal achieved are presented appropriately in the monitoring report/3/ and emission removal calculation sheet/4/. The verification team has checked whether calculations of baseline GHG emissions, project GHG emissions and leakage GHG emissions have been carried out in accordance with the formulae and methods described in the monitoring plan of the registered VCS PD/1/.

Actual ER calculations for the project activity instances for the current first monitoring period of 16<sup>th</sup> October 2023- 30<sup>th</sup> June 2024 are carried out as per emission removal calculated, and the monitoring is on sampling basis for all sites in the state of Odisha.

Date of installation- 16th of October 2023

Location: Odisha

No. of days for vintage 1: 258 (16<sup>th</sup> October 2023- 30<sup>th</sup> June 2024) (inclusive of both the dates)

#### Estimation of organic carbon content (CC<sub>t,k,y</sub>) of biochar

$$CC_{t,k,y} = \sum_p (M_{t,k,p,y} \times F_{Cp,t,p} \times PR_{de,k})$$

CC<sub>t,k,y</sub> = Organic carbon content on a dry weight basis for biochar type *t* used for application type *k* in year *y* (tonnes). Biochar type is based on the feedstock used to produce the biochar  
 M<sub>t,k,p,y</sub> = Mass on a dry weight basis of biochar type *t* for application type *k* produced at production facility *p* in year *y* (tonnes)

It was measured for each batch of biochar produced using handheld weighing scales and monitored on the Reignite monitoring app. Below are the sums for each year for the application type "soil application" for each biomass type.

**Total Biochar Production for all facilities *p* per biochar type *t* 2023 and 2024 combined**  
**The PP has arrived at these values by deducting the moisture content of the biochar.**

Feedstock (biochar type t)	Total Mass of biochar on a dry weight basis for all production facilities p (tonnes) for this monitoring period
Paddy Straw	41,566.7
Tree Pruning	4,519.89
Cotton Stalks	11,338.33
Bamboo Pruning	6,706.56
Maize Cobs	0
Ipomoea Carnea	5,728.62
Water Hyacinth	0
<b>Total</b>	<b>69,860.10</b>

F<sub>Cp,t,p</sub> = Organic carbon content of biochar type *t* produced in production facility per tonne of biochar, taken on a dry weight basis (percent).

These values have been determined through laboratory material analysis of biochar for this annum and has been provided by PP. It has been assessed by VVB and found to be correct.

At the validation stage, values provided in Table 4AP.1 taken from IPCC (2019) Appendix 4: Method for Estimating the Change in Mineral Soil Organic Carbon Stocks from Biochar Amendments: Basis for Future Methodological Development have been used.

Feedstock Type	Organic Carbon Content
Paddy Base (Roots) and Straw	53.92%, i.e. 0.5392
Maize Cobs	N/A
Tree Pruning	80.84%, i.e. 0.8084
Cotton Stalks	78.93%, i.e. 0.7893
Bamboo Pruning	79.37%, i.e. 0.7937
Water Hyacinth	N/A
Ipomoea Carnea	58.03%, i.e. 0.5803

PR<sub>de,k</sub> = Permanence adjustment factor due to decay of biochar to be defined for application type *k* (dimensionless). Biochar is subject to natural decay rate when used in soil applications such as in agriculture, forests, croplands, or grasslands.

Temperature is monitored continuously, for each batch produced, aggregated to annual averages.

Year	Temperature Average	Permanence Applied	Factor
2023	691 Degrees Celsius	0.89	
2024	704 Degrees Celsius	0.89	

**Determination of emission removals 2023:**  
Calculation of carbon content

for each biochar type t, application type k (soil application), year 2023:

1. Paddy Straw

$$CC_{paddystraw,k,y} = 12,885.68 \times 0.5392 \times 0.89$$

$$CC_{paddystraw,k,y} = 6183.68$$

1. Tree Pruning

$$CC_{woodprunings,k,y} = 2,923.00 \times 0.8084 \times 0.89$$

$$CC_{woodprunings,k,y} = 2,103.03$$

1. Cotton Stalks

$$CC_{cottonstalks,k,y} = 3,103.13 \times 0.7893 \times 0.89$$

$$CC_{cottonstalks,k,y} = 2,179.88$$

1. Bamboo Pruning

$$CC_{bambooprunings,k,y} = 2,816.76 \times 0.7937 \times 0.89$$

$$CC_{bambooprunings,k,y} = 1989.74$$

1. Maize Cobs (Not measured because of 0 production)

$$CC_{maizecobs,k,y} = 0 \times 0 \times 0.89$$

$$CC_{maizecobs,k,y} = 0$$

1. Ipomoea Carnea

$$CC_{ipomoeacarnea,k,y} = 1,833.23 \times 0.5803 \times 0.89$$

$$CC_{ipomoeacarnea,k,y} = 946.80$$

1. Water Hyacinth (Not measured because of 0 production)

$$CC_{waterhyacinth,k,y} = (0 \times 0 \times 0.89)$$

$$CC_{waterhyacinth,k,y} = 0$$

$$ER_{PS,y} = \sum_t \left( \left( \sum_k CC_{t,k,y} \times \frac{44}{12} \right) - \left( \sum_p PE_{PS,t,p,y} \right) \right)$$

$$CC_{t,k,y} = (6183.68) + (2103.30) + (2179.88) + (1989.74) + (0) + (946.80) + (0)$$

$$\sum_k CC_{t,k,y} = 13,403.1$$

$$P_{EP,p,y} = \sum_k \sum_t (F_e \times GWP_{CH4} \times M_{t,k,p,y})$$

$$P_{EP,p,y} = (0.014 \times 28 \times 23,561.8) / 3595$$

$$P_{EP,p,y} = \frac{9236.2256}{3595}$$

$$P_{EP,p,y} = 2.569$$

$$PE_{PS,p,y} = 2.569 \times \frac{23,561.8}{23,561.8}$$

$$\sum_p PE_{PS,t,p,y} = 9236.2256$$

$$ER_{PS,y} = \left( 13,403.1 \times \frac{44}{12} \right) - (9236.23)$$

$$ER_{PS,y} = 39,908.58935 \sim 39,909$$

#### Determination of emission removals 2024:

Calculation of carbon content for each biochar type t, application type k (soil application), year 2024

##### 1. Paddy Straw

$$CC_{paddystraw,k,y} = 28,681.02 \times 0.5392 \times 0.89$$

$$CC_{paddystraw,k,y} = 13,763.68$$

##### 1. Tree Pruning

$$CC_{woodprunings,k,y} = 1,596.89 \times 0.8084 \times 0.89$$

$$CC_{woodprunings,k,y} = 1,148.90$$

##### 1. Cotton Stalks

$$CC_{cottonstalks,k,y} = 8,235.20 \times 0.7893 \times 0.89$$

$$CC_{cottonstalks,k,y} = 5,785.04$$

##### 1. Bamboo Pruning

$$CC_{bambooprunings,k,y} = 3,889.80 \times 0.7937 \times 0.89$$

$$CC_{bambooprunings,k,y} = 2,747.73$$

1. Maize Cobs (Not measured because of 0 production)

$$CC_{maizecobs,k,y} = 0 \times 0 \times 0.89$$

$$CC_{maizecobs,k,y} = 0$$

1. Ipomoea Carnea

$$CC_{ipomoeacarnea,k,y} = 3895.39 \times 0.5803 \times 0.89$$

$$CC_{ipomoeacarnea,k,y} = 2,011.84$$

1. Water Hyacinth (Not measured because of 0 production)

$$CC_{waterhyacinth,k,y} = (0 \times 0 \times 0.89)$$

$$CC_{waterhyacinth,k,y} = 0$$

**Estimate project emissions  $PE_{PS,p,y}$  for low technology production facilities**

$$PE_{PS,p,y} = (P_{ED,p,y} + P_{EP,p,y} + P_{EC,p,y}) \times \frac{\sum_t \sum_k M_{t,k,p,y}}{M_{p,y}}$$

Calculation of emissions during production for each production facility p in year 2024:

$$P_{EP,p,y} = (0.014 \times 28 \times 46,298.30) / 3595$$

$$P_{EP,p,y} = \frac{18,148.9336}{3595}$$

$$P_{EP,p,y} = 5.048$$

**i. Determining  $P_{EC,p,y}$ : Emissions due to the utilization of auxiliary energy for the purpose of pyrolysis**

$$P_{EC,p,y} = 0$$

As no external energy is required to initiate and maintain the pyrolysis, the emissions were 0.

$$PE_{PS,p,y} = 3.62978672 \times \frac{46,298.30}{46,298.30}$$

**Calculation for Emission Reductions:**

$$ER_{PS,y} = \sum_t \left( \left( \sum_k CC_{t,k,y} \times \frac{44}{12} \right) - \left( \sum_p PE_{PS,t,p,y} \right) \right)$$

$$CC_{t,k,y} = (13,763.68) + (1,148.90) + (5,785.04) + (2,747.73) + (0) + (2,011.84) + (0)$$

$$\sum_k CC_{t,k,y} = 25,457.19$$

$$\sum_p PE_{PS,t,p,y} = 18,148.93$$

$$ER_{PS,y} = \left( 25,457.19 \times \frac{44}{12} \right) - (18,148.93)$$

$$ER_{PS,y} = 75,194.10 \sim 75,194$$

**Findings** No finding was raised.

**Conclusion** The summary for project activity instances is as below:

Vintage period	Baseline emissions (tCO <sub>2</sub> e)	Project emissions (tCO <sub>2</sub> e)	Leakage emissions (tCO <sub>2</sub> e)	Reduction VCUs (tCO <sub>2</sub> e)	Removal VCUs (tCO <sub>2</sub> e)	Total VCUs (tCO <sub>2</sub> e)
2023 (16-10-2023--31-12-2023)	0	39,909	0	0	39,909	39,909
2024 (1-1-2024 – 30-6-2024)	0	75,194	0	0	75,194	75,194
<b>Total</b>	<b>0</b>	<b>115,103</b>	<b>0</b>	<b>0</b>	<b>115,103</b>	<b>115,103</b>

VVB confirmed that achieved emission reductions have been quantified correctly and in line with the methodology mentioned in the registered VCS PD & MR/1//3/

#### 4.4 Quality of Evidence to Determine Reductions and Removals

Following steps were taken to verify the quality of evidences:

- Records were submitted by the project proponent as evidences to determine emission removals;
- The records, data and information provided were found valid for the current verification period.

The documents were verified before on-site audit and also after the site audit to confirm its validity and were checked directly from its source;

- Interviews were performed during on-site audit with involved personnel and PP's representatives;
- The GHG emission removal calculations were checked step by step with PP's representatives; - the quality of evidence was found of adequate level by the verification team to ensure an accurate quantification of the emission removals.

The project proponent applied measures to ensure the required confidence/precision (if required) for each sampled parameter is met, allowing for non-response and the possible removal of outliers from the sample, as part of a Quality Control/Quality Assurance system. The choice of measure applied to each parameter depends on the cost of each data collection approach and logistics required. The project proponent determined the most effective measure for each parameter from the following list:

- As the biochar producing farms in the project are located within a single region (i.e. the state of Odisha in India), as similar in area and crop, there is homogeneity between the facilities and hence, a "Simple Random Sampling (SRS)" is appropriate for the sampling scheme.
- For the purpose of the sampling exercise, a confidence interval of 90/10 has been applied. The values determined by the sampling would have a level of precision of +/-10% relative to the parameter's true value, with a 90% level of confidence in the result.
- if precision required is not achieved by reliability check, use the lower bound or upper bound of estimates of the parameter.

The sampling plan had the following procedures in place to ensure good quality data. The project proponent ensured that field personnel have reviewed, understood and agreed to follow the monitoring plan procedures, including provisions for maximizing response rates, documenting out-of-population cases, refusals and other sources of non-response. A quality control and assurance strategy has been documented. Quality control and assurance strategies include addressing non-sampling errors, such as non-response or bias from the interviewer.

The project proponent trained the monitoring personnel on how to properly survey biochar production by farmers and taking record (photos of biochar bags and uploading in the mobile app) of biochar produced.

#### Monitoring Plan and its implementation assessment:

During on-site audit, VVB team assessed the monitoring plan of the project activity and its implementation on the ground, by direct interviews with the villagers, farmers, local stakeholders and project proponent team members for the management and monitoring of biochar production.

- VVB verified the biomass generation after post-harvest by visiting in villages
- verified the biomass type and did the direct measurement of biomass weight and moisture content of biomass by moisture meter
- and the biomass moisture content is less than 15%, then the farmers go ahead with biochar production
- Biochar production in the farmers field and its soil application in the same farms

- Discussion with the organization team General Manager, Managers, and Field Officers
- VVB cross verified the weight of biochar production and its application in farm with the mobile app that is keeping the record of the biochar produced in the field
- the biochar production data are stored by field officers in mobile app, following data are recorded in the mobile app:
  - a) biomass generated from the field,
  - b) biochar produced and its storage in standardized 50 kg Rice PP gunny bags
  - c) biochar application in the field/farms

Flame curtain pyrolysis technology in steel-shield soil pits was used to produce biochar. As the majority of farmers are located in remote areas without access to smartphones, internet, or the ability to use a mobile app, field officers regularly inspect and report the data using the Project Reignite mobile app. The mobile app works offline as well to collect data even when internet connection is not present.

Application tasks involved field officers supervising the application of biochar to the soil and collecting relevant data points. This hands-on approach to monitoring tasks will continue to ensure accurate and timely data collection and reporting.

As a part of internal audit, to check data integrity and monitoring (QA/QC):

- Managers regularly conduct internal audits of biochar producers to validate the data submitted by field officers through the app.
- The multi-layered verification approach reviewed digital records and corroborated them with physical evidence, producer statements, and other forms of verification.
- All field data, data analyses, models, calculations of carbon stocks, and copies of the monitoring reports are stored in a dedicated cloud database with a backup facility.

The PP uses Reignite Monitoring Mobile App to monitor and report the entire process from biomass sourcing to biochar application in the project. All field officers were equipped with smartphones on which they run the mobile app which consists of advanced measures by the PP like secure login method, automatic date and time stamping, GPS tagging, offline data storage. Each field officer was registered individually using their mobile number meaning that only approved devices linked to field officer IDs could submit official data.

The audit team reviewed field officer registration logs and observed one device per field officer policy. If a field officer were to log in on another device, they will get logged out from the previous one automatically with its logs in the project database. The PP has put this measure in place to prevent any kind of mobile app misuse or unauthorized access. Data fields within the mobile app such as biomass type selection, number of standardized bags of biochar, biochar weight input, temperature recording etc. are placed as mandatory fields with restricted ranges and validation logics preventing any kind of wrong data entries at the point of submission. Only batches of biochar that have complete details are accounted for in the project. Incomplete batches are discarded.

During the audit, the verification team found the mobile app robustness for operations of this project. In the monitoring period, the field officers verified each biochar producer in the project before beginning production to collect the amount of biomass available in the year, assess the readiness of the biochar producer through a test and ensure readiness of the production facility. Upon signature verification of the farmer as well as the field officer, they are able to monitor batches under the farmer. Field inspections during the audit confirmed that the amount of waste biomass available to each biochar producer matches the recorded types of biomass and approximate quantities.

Field officers were required to be physically present at the production site during each batch of pyrolysis. They collect data points on each step of the process including type of biomass being used, moisture content of the biomass, temperature of pyrolysis after achieving a stable flame curtain. Once the biochar is produced, it is subjected to sun/air drying after it cools down in the field. The biochar producers then fill standardised PP gunny bags with the biochar produced. Each bag is filled to the top. The field officer counts the number of bags as well as weighs them using handheld and digital weighing scales. After completing the process, the field officer seals the bags. The mobile app collects date and time stamps as well as coordinates at each step. The app's backend automatically flags outlier data entries for manual review by Managers. Upon field verification by the Manager, the batch is either approved or rejected.

The verification team witnessed the biochar production and identified the average weight of a standardized bag of biochar for each type of biomass and cross checked with the number of batches as well as total and average number of bags reported. The audit team also checked the bulk densities of biochar using lab reports for each type of biomass to cross check the same and it was found that the dry weight of biochar taken by the PP is conservative and reflects the field reality. In the monitoring process, the next step for the field officer is to visit the farmer once they are ready for biochar application. The field officer ensures the number of bags produced in the batch are present for application and the farmer proceeds to open them and mix manure/compost/natural amendment with the biochar. The farmers apply the biochar in the field which is witnessed by the field officer. Coordinates and dates and times are automatically collected in that process and recorded in the app. Both the farmer and the field officer attest that they have applied the said amount of biochar in the farmer's/ family/ neighbour's farm. This marks the completion of the batch and it is then accounted for in the crediting period. The handheld infrared thermometers were found to be factory-calibrated models with recalibration done at the district offices as per manufacturer's instructions. Field officers were trained to record only stable temperatures after flame curtain establishment and ensuring that surface readings reflected effective pyrolysis conditions.

Audit inspections compared all batches for the farmers audited during site visit and found full correspondence. During the application phase, control processes were found to be equally stringent. Bags could not be emptied without the physical presence and supervision of a field officer. Biochar producers and field officers jointly confirmed the bag integrity visually before application. For broken-seal cases, second weighing protocols were enforced. If any discrepancy between initial and second weights was detected, the lower weight reading was automatically applied in the app's calculation logic for that batch, this ensured conservativeness. The PP has conservatively calculated the weight of biochar produced. During application, the mobile app not only automatically collected the date and GPS coordinates of application but also signatures of the biochar producer and themselves as witness.

Internal audits by Managers followed protocol set by the PP. Managers reviewed their respective field officers monthly to ensure appropriateness of the monitoring. Their internal inspection procedures involved cross-checking app-submitted data against physical verification of producers. The PP has enforced a process for corrective actions and timeline-based resolution requirements within the mobile app. Issues categorized as 'High Risk' mandated decision making of the General Manager and disciplinary actions using the project manual.

All data collected through the Reignite Monitoring App are synced to a primary secure cloud server housed with ISO27001 certified providers. Access to the database was strictly role-based. Field officers had 'Write-Only' permissions limited to their assigned farmers, Managers had district-level 'Read' access for the batch level data and 'Write' access only for their inspection report.

Interviews indicated that personnel were regularly trained not just in technical procedures but also in ethics and integrity. A confidential reporting line (operated independently from local management) was available for field officers or producers wishing to report anomalies.

Finally, project emissions accounting was verified. The use of conservative emissions factors for flame curtain pyrolysis was confirmed by cross-checking against current peer-reviewed literature and IPCC guidelines. Calculations integrated full life-cycle considerations: biomass sourcing, production, and transport emissions as none, biomass was farm-sourced).

The above monitoring procedures have been reviewed by the VVB and cross checked the data collection and its storage in the app .

Additional Note on the parameter added: A random sample of biomass is extracted and used for each batch of biochar production to check the moisture content of the biomass. If the moisture content is beyond 15%, the biomass is not eligible for biochar production and is subject to additional drying in the air and under the sun. If the moisture content is below 15%, the farmer proceeds to make the biochar. The parameter is not required for the quantification; however, it is used to ensure production of high-quality biochar and ensuring the integrity of the process

#### 4.5 Non-Permanence Risk Analysis

Not applicable as this is not an AFOLU project. However, in this methodology there is a permanence factor and the same has been derived from the IPCC /19//20/34//48/ In this project the PRde,k = Permanence adjustment factor due to decay of biochar to be defined for application type k (dimensionless). Biochar is subject to natural decay rate when used in soil applications such as in agriculture, forests, croplands, or grasslands. "The temperature in the main pyrolysis zone just below the flame curtain is 680°C to 750°C. Depending on the duration of batch before final quenching" (Cornelissen et al. 2016)/25/. It matches with average values collected from a sample of production facilities during process testing as described in Section 5 of the MR. Due to high temperature pyrolysis, the fraction of biochar remaining after hundred years is 0.89 (Table 4AP.2 of IPCC (2019)/28/

## 5 VERIFICATION OPINION

### 5.1 Verification Summary

RINA Services S.p.A. (RINA) has been engaged by SRCNatura Sure Pvt. Ltd. to perform the verification of the "Project Reignite: Turning Farm Waste to Climate Action".

The management of the project participant/owner is responsible for the preparation of the GHG emissions data and the reported/estimated GHG emissions reductions on the basis set out within the project's Monitoring Plan in the registered VCS PD and the approved methodologies.

Our Verification approach was based on the requirements as defined under the Kyoto Protocol, Marrakesh accord, as well as those defined by the CDM Executive Board and VCS Standard version 4.7. Our approach is risk-based, drawing on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. The verification team can confirm that:

- the project is operated as planned and described in the registered VCS PD;
- the monitoring plan is as per the applied methodology;
- the monitoring process in the Monitoring Report is as per the registered VCS PD.
- the development and maintenance of records and reporting procedures are in accordance with the monitoring plan
- The monitoring system is in place and generates GHG emission removals data;
- The GHG emission removals are calculated without material misstatements.
- A Reasonable Level of assurance was achieved as planned, during the verification process.

RINA Services issues the declaration that the verification of the GHG statement was conducted in accordance with ISO 14064-3.

### 5.2 Verification Conclusion

**Verification period:** 16-October-2023 to 30-June-2024

**Verified GHG emission removals in the above verification period:**

Vintage period	Baseline emissions (tCO <sub>2</sub> e)	Project emissions (tCO <sub>2</sub> e)	Leakage emissions (tCO <sub>2</sub> e)	Reduction VCUs (tCO <sub>2</sub> e)	Removal VCUs (tCO <sub>2</sub> e)	Total VCUs (tCO <sub>2</sub> e)
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<b>2023 16-10- 2023-- 31-12- 2023</b>	0	39,909	0	0	39,909	39,909
<b>2024 (1-1- 2024 – 30-6- 2024)</b>	0	75,194	0	0	75,194	75,194
<b>Total</b>	0	115,103	0	0	115,103	115,103

#### Verification Period

The project crediting period is from 16-Oct-2023 to 30-Jun-2024

#### Verified GHG emission reductions and carbon dioxide removals in the above verification period:

Vintage period	Baseline emissions (tCO <sub>2</sub> e)	Project emissions (tCO <sub>2</sub> e)	Leakage emissions (tCO <sub>2</sub> e)	Reduction VCU (tCO <sub>2</sub> e)	Removal VCU (tCO <sub>2</sub> e)	Total VCU (tCO <sub>2</sub> e)
No data available						

#### i) Provide a conclusion on the following information:

The non-permanence risk rating (%)	NA
If applicable, the Long-term Average (LTA), whether it has been properly updated, and if it has been reached.	NA
Whether a loss has been appropriately accounted for, in accordance with the VCS Program rules, if applicable.	NA
The non-permanence risk rating (%)	NA
If applicable, the Long-term Average (LTA), whether it has been properly updated, and if it has been reached.	NA
Whether a loss has been appropriately accounted for, in accordance with the VCS Program rules, if applicable.	NA

#### ii) Complete the table below:

Vintage period	Baseline emissions (tCO <sub>2</sub> e)	Project emissions (tCO <sub>2</sub> e)	Leakage emissions (tCO <sub>2</sub> e)	Buffer pool allocation (tCO <sub>2</sub> e)	Reductions VCU (tCO <sub>2</sub> e)	Removals VCU (tCO <sub>2</sub> e)	Total VCU issuance (tCO <sub>2</sub> e)
No data available							

### 5.3 Ex-ante vs Ex-post ERR Comparison

Vintage period	Ex-ante estimated reductions/removals	Achieved reductions/removals	Percent difference	Explanation for the difference
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Year 2023 (16-10-2023- 31-12-2023)	33,056	39,909	20.73%	Ex-ante estimates were based on IPCC results. The lab results were available only after the production of biochar began. The lab results, reflecting the actual values of the biochar produced, were higher than the IPCC estimates, leading to a difference. The biochar production does not occur evenly across the 9 productive months, which was assumed in the ex-ante calculations. Because of this uneven distribution of production was not accounted for in the ex-ante estimates and the achieved removals are based on actual production data. This trend is expected to continue in future years of the project.
Year 2024 (1-1-2024 – 30-06-2024)	77,704	75,194	-3.2%	The achieved removals are similar to ex-ante estimated removals.
<b>Total</b>	<b>110,760</b>	<b>115,103</b>	<b>3.92%</b>	

Vintage period	Ex-ante estimated reductions/removals	Achieved reductions/removals	Percent difference	Explanation for the difference
No data available				

## 6 APPENDIX

N/A

### 6.1 Appendix 1: COMMERCIALY SENSITIVE INFORMATION

Section	Information	Justification	Assessment method and conclusion
N/A	N/A	N/A	N/A

#### Appendix - 2

COMMERCIALY SENSITIVE INFORMATION

*There is no commercially sensitive information.*

#### Appendix - 3

RESOLUTION OF CARS/CLS

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

FAR ID	Xx	Section no.	xx	Date :	DD/MM/YYYY
Description of FAR					
<i>No remaining FAR to be addressed.</i>					
Project participant response				Date:	DD/MM/YYYY
NA					
Documentation provided by project participant					

<b>DOE assessment</b>	<b>Date:</b> DD/MM/YYYY
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**Table 2. CL from this verification**

CL ID	01	Section no.	1.1	Date: 25/09/2024
<b>Description of CL</b>				
PP is requested to elaborate and provide the following documents: -				
<ul style="list-style-type: none"> <li>• Kml of districts and villages as per the registered VCS PD</li> <li>• Details of all SDGs in section 1.11 of the MR as per registered VCS PD</li> <li>• Annual Comprehensive Stakeholder Surveys record</li> <li>• Lab test report of soil and water samples from the project area</li> <li>• reference source for the peer reviewed research</li> <li>• training records of biochar producers, field officers and managers in the project planning</li> </ul>				
<b>Project participant response</b>				<b>Date: 26/11/2024</b>
<ul style="list-style-type: none"> <li>• We have attached the KML that includes the districts and the blocks where the project is located.</li> <li>• Monitoring report has been revised with details of each SDG. The monitoring of SDGs will be available in the next verification once the co-benefits from biochar application are quantifiable.</li> <li>• We have attached a comprehensive list of all stakeholders in the project for reference. The list includes details of each biochar producer along with their demographic details.</li> <li>• Soil and water samples will be tested after a three-year period to check results from application of biochar. The benefits will be observed after an adequate amount of application in each farm and area, which is expected to be 3 years.</li> <li>• Here is the link to the peer reviewed research that has been referenced in the monitoring report: <a href="https://www.sciencedirect.com/science/article/pii/S2095311922000508">https://www.sciencedirect.com/science/article/pii/S2095311922000508</a></li> <li>• Training records of biochar producers and the monitoring team (consisting of field officers, managers, and a general manager) have been attached. This includes a detailed report of training sessions, a copy of written and practical tests performed, training manual, images of trainings conducted, and certificates of training of each member.</li> </ul>				
<b>Documentation provided by project participant</b>				
<ul style="list-style-type: none"> <li>• KML file of the project</li> <li>• Stakeholder records</li> <li>• A copy of research paper referenced</li> </ul> Training Records consisting of report, copy of written and practical test taken, training manual, images of trainings, and certificates of biochar producers and members of the monitoring team				
<b>DOE assessment</b>				<b>Date: 22/12/2024</b>
PP has provided the kml file of the project, stakeholders records, training records and lab test report. The documents have been verified by the VVB team and found to be correct. Thus, the CL is closed.				

CL ID	02	Section no.	1.1	Date: 25/09/2024
<b>Description of CL</b>				
PP is requested to elaborate and provide the following documents: -				
<ul style="list-style-type: none"> <li>• 57% of 5,000 biochar producers are women.</li> <li>• Reference documents for 188 field officers out of 375 and 13 managers out of 25 managers in the project Reignite monitoring team are women</li> <li>• Record for Annual water quality sampling and tracking of water hyacinth removal</li> <li>• Annual biochar producer survey record</li> </ul>				
<b>Project participant response</b>				<b>Date: 26/11/2024</b>

<ul style="list-style-type: none"> <li>• A baseline survey was conducted among all 5000 biochar producers in the project. The above stated are the results from the survey. A copy of the survey with the questions asked has been attached along with a report on the results attained in the survey.</li> <li>• We have attached the list of members of the monitoring team along with their genders as reported.</li> <li>• In the project, due to unsurity about results from water hyacinth biochar, no production from water hyacinth has taken place. Hence, no water hyacinth removal has taken place. Once safety is ensured from water hyacinth removal and biochar production, the biochar producers will proceed to make biochar from the same. Till then, water hyacinth has not been included in any activity and has not been reported in any SDG or carbon removal.</li> <li>• The results from baseline records have been attached. The annual survey is in progress and results will be available in next verification.</li> <li>•</li> </ul>
<b>Documentation provided by project participant</b> <ul style="list-style-type: none"> <li>• Copy of survey with questions asked and a report on results received</li> <li>• List of members of monitoring team</li> <li>• Baseline record of Year 0 Survey</li> </ul>
<b>DOE assessment</b> <span style="float: right;"><b>Date:</b> 22/12/2024</span>
PP provided the survey records, list of members of monitoring team which shows that the participation is mostly by women for biochar production. Also, during on-site audit, VVB visited the villages and found that mostly the women are doing the biochar production and subsequently the PP has corrected the MR. Thus, the CL is closed.

<b>CL ID</b>	03	<b>Section no.</b>	2.0	<b>Date:</b> 25/09/2024
<b>Description of CL</b>				
PP is requested to elaborate and provide the following documents:- <ul style="list-style-type: none"> <li>• Record of stakeholder consultation</li> <li>• Agreement with farmers/villagers</li> <li>• Grievance mechanism redressal procedure record</li> </ul>				
<b>Project participant response</b>				<b>Date:</b> 26/11/2024
<ul style="list-style-type: none"> <li>• All records of local stakeholder consultation have been attached. This includes guidelines, script of local meetings, extract from attendance register, images, questions asked in the local stakeholder consultations etc.</li> <li>• A sample agreement with the biochar producers have been attached</li> <li>• Process detailing grievance mechanism</li> </ul>				
<b>Documentation provided by project participant</b>				
<ul style="list-style-type: none"> <li>• Local stakeholder consultation guidelines, script of local meetings, extract from attendance register, images, questions asked in the local stakeholder consultations</li> <li>• A sample agreement with the biochar producers have been attached</li> <li>• Process detailing grievance mechanism</li> </ul>				
<b>DOE assessment</b>				<b>Date:</b> 22/12/2024
PP provided the record of stakeholder consultation, agreement with farmers/villagers and grievance mechanism redressal procedure details. Thus, the CL is closed.				

<b>CL ID</b>	04	<b>Section no.</b>	3	<b>Date:</b> 25/09/2024
<b>Description of CL</b>				
PP is requested to elaborate and provide the Registration record of farmers producing the biochar				
<b>Project participant response</b>				<b>Date:</b> 26/11/2024
In the registration process of each biochar producer, once they are trained, tested, and certified by the monitoring team, the biochar producer signs a contract to join the project by signing the contract on the project mobile app and providing their identity. A sample contract that represents the registration record of farmers who are producing biochar have been attached. An extract of all registration records has been attached.				
<b>Documentation provided by project participant</b>				

<ul style="list-style-type: none"> <li>• Sample contract representing registration of the farmer in the project</li> <li>• Extract of all registration records of farmers</li> </ul>
<b>DOE assessment</b> <span style="float: right;"><b>Date: 22/12/2024</b></span>
PP provided the registration records of the farmers. Thus, the CL is closed.

<b>CL ID</b>	05	<b>Section no.</b>	3.2.1	<b>Date</b> : 25/09/2024
<b>Description of CL</b>				
PP is requested to provide the following documents: -				
<ul style="list-style-type: none"> <li>• Data record/test report for Moisture content monitoring of biochar batch</li> <li>• Sample test report for H:Corg (ratio of hydrogen to organic carbon)</li> <li>• Laboratory test report for pyrolysis temperature of biochar production</li> </ul>				
<b>Project participant response</b>				<b>Date: 26/11/2024</b>
<ul style="list-style-type: none"> <li>• Data record for moisture content monitoring of biomass used for biochar production are included in the biochar production records.</li> <li>• Test report for H:Corg ratio has been attached</li> <li>• Lab test for pyrolysis temperature of biochar production has been attached</li> </ul>				
<b>Documentation provided by project participant</b>				
<ul style="list-style-type: none"> <li>• Monthly test records for moisture content</li> <li>• Test report for H:Corg ratio for each biochar type</li> <li>• Lab tests for biochar production temperature</li> </ul>				
<b>DOE assessment</b>				<b>Date: 22/12/2024</b>
PP provide the lab test record of H:Corg ratio, biochar production temperature and moisture content records. VVB verified the records and cross verified the parameter during on-site audit and found to be correct. Thus, the CL is closed.				

<b>CL ID</b>	06	<b>Section no.</b>	4.1, 4.2	<b>Date: 25/09/2024</b>
<b>Description of CL</b>				
PP is requested to provide the following documents:-				
<ul style="list-style-type: none"> <li>• Lab report for organic carbon content of biochar for each biochar type on a dry weight basis</li> <li>• Estimated Quantities of biomass amount (each categories) available at baseline and at all production facilities</li> <li>• Calibration report/details of weighing scale</li> <li>• Data record on a dry weight basis of biochar produced in production facility</li> <li>• Lab test for moisture content as per ASTM D1762-84 standard test method</li> </ul>				
<b>Project participant response</b>				<b>Date: 26/11/2024</b>
<ul style="list-style-type: none"> <li>• We have attached lab reports for organic carbon content tested by an NABL accredited laboratory for each type of biochar.</li> <li>• We have attached a comprehensive report detailing the amounts of biomass available at baseline at production facilities.</li> <li>• We have attached a report on specifications of calibration of weighing scale, thermometer, and moisture meter</li> <li>• We have attached a complete record of biochar production produced at all production facilities.</li> <li>• All test records of moisture content tested from an NABL accredited laboratory have been attached. The sample size taken was 30 as a conservative measure and moisture content was tested monthly during the production period.</li> </ul>				
<b>Documentation provided by project participant</b>				
<ul style="list-style-type: none"> <li>• Lab reports for organic carbon content of biochar for each biochar type</li> <li>• Comprehensive report on availability of biomass</li> <li>• Report on calibration of equipment used in the project which are weighing scale, thermometer, moisture meter</li> <li>• Monitoring records of biochar production</li> </ul>				
<b>DOE assessment</b>				<b>Date: 22/12/2024</b>
PP provided the lab reports, calibration records and monitoring records of biochar production. VVB cross verified with actual documentation and field visits. Thus, the CL is closed.				

<b>CL ID</b>	07	<b>Section no.</b>	4.3	<b>Date:</b> 25/09/2024
<b>Description of CL</b>				
PP is requested to provide the following documents: -				
<ul style="list-style-type: none"> <li>• App data record for the monitoring of biochar production</li> <li>• Internal audit report of biochar producers</li> </ul>				
<b>Project participant response</b>				<b>Date:</b> 26/11/2024
<ul style="list-style-type: none"> <li>• We have attached app data record for monitoring of biochar production collected by field officers using the Reignite mobile app.</li> <li>• We have attached internal audit reports conducted by Managers in the monitoring team</li> </ul>				
<b>Documentation provided by project participant</b>				
<ul style="list-style-type: none"> <li>• App Data Records</li> <li>• Internal Audit Reports</li> </ul>				
<b>DOE assessment</b>				<b>Date:</b> 22/12/2024
PP provided the app data record and internal audit report which provides the detailed record of biochar production and its application. Internal audit report provides the details regarding, monitoring aspects of biochar production and it is found to be correct. Thus, CL is closed.				

Table 3. CAR from this verification

<b>CAR ID</b>	01	<b>Section no.</b>	1.11.	<b>Date:</b> 25/09/2024
<b>Description of CAR</b>				
PP is requested to complete the net impact on SDG indicator in Table 1 of section 1.11 of MR				
<b>Project participant response</b>				<b>Date:</b> 26/11/2024
As the monitoring period is a short period of time i.e., from October 16th 2023 to June 30th 2024, it is difficult to quantify the impact as of yet in a period of 8.5 months. The quantified impact will be available over a period of time. However, we have completed the table to the best of our knowledge so far in the monitoring.				
<b>Documentation provided by project participant</b>				
Updated MR				
<b>DOE assessment</b>				<b>Date:</b> 22/12/2024
PP provide the updated MR and regarding net impact of SDGs indicator, quantification impact of few SDGs will take time and it can be quantified over a period of time. Thus, CAR is closed.				

<b>CAR ID</b>	02	<b>Section no.</b>	2.1.5	<b>Date:</b> 25/09/2024
<b>Description of CAR</b>				
PP is requested to clarify regarding the public comments. As the MR is not webhosted for public consultation.				
<b>Project participant response</b>				<b>Date:</b> 26/11/2024
The public comments received during the validation stage were resolved. Hence, no public comments are left to be clarified.				
<b>Documentation provided by project participant</b>				
Revised MR				
<b>DOE assessment</b>				<b>Date:</b> 22/12/2024
PP provide the revised MR. As there were no comments received for monitoring and verification period. Thus, CAR is closed.				

Ref No.	Document
/01/	Registered VCS Project Description (PD) of the project titled, "Project Reignite: Turning Farm Waste to Climate Action", version 1.3, dated 10-March-2024 <a href="https://registry.verra.org/app/projectDetail/VCS/4679">https://registry.verra.org/app/projectDetail/VCS/4679</a>
/02/	Registered VCS Validation Report, version 1.1Aa, dated 04-November-2023
/03/	Monitoring Report- version 01 dated 02-September-2024, version 02 dated 26-Nov-2024
/04/	Emission Reduction (ER) estimation sheet, version 01 dated 02-September-2024, version 02 dated 26-Nov-2024
/05/	Extract from baseline Survey Data sheet, dated 30-October-2023
/06/	VCS: VCS Standard, Version 4.7, dated 16-April-2024 VCS: VCS Program Guide, VCS Version 4.4, dated 29 August 2023
/07/	Methodology for Biochar Utilization in Soil and Non-Soil Applications VM0044, Sectoral Scope 13 Version 1.1 Published on 05 July 2023, <a href="https://verra.org/methodologies/vm0044-methodology-for-biochar-utilization-in-soil-and-non-soil-applications/">https://verra.org/methodologies/vm0044-methodology-for-biochar-utilization-in-soil-and-non-soil-applications/</a>
/08/	a. UNFCCC CDM validation and verification standard for programmes of activities, version 03.0 dated 09-September-2021 a. UNFCCC Standard: Sampling and surveys for CDM project activities and programmes of activities, Version 09.0 dated 27-May-2021
/09/	Baseline and Monitoring survey results
/10/	Extract from Attendance Register maintained for LSC Meetings
/11/	Sample invitation card sent to local stakeholders
/12/	Sample poster put in villages prior to LSC
/13/	Sample hand out provided at the end of meetings
/14/	Transcript of LSC Meetings, dated 1-January-2023
/15/	Summary of LSC Meetings with photographic evidence, dated 5-October-2023
/16/	Training Manual
/17/	Extract from Training Images
/18/	Training records of monitoring team
/19/	Test report of heavy metals presence in Biochar, dated 20-September-2023
/20/	Test report of yield rates for each feedstock type, dated 05-September-2023
/21/	Screenshots of Reignite Mobile app
/22/	Record of first batch of biochar production on 16 <sup>th</sup> October 2023 (ID: eJZ.dBG2RG25cX.OXgnCeQ), dated 18-October-2023
/23/	Expert judgement on expected biomass availability and biochar production
/24/	Agreement between SRC-Natura Sure Pvt. Ltd. and Farmers
/25/	Emissions and Char Quality of Flame-Curtain "Kon Tiki" Kilns for Farmer-Scale Charcoal/Biochar Production, <a href="https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0154617&amp;type=printable">https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0154617&amp;type=printable</a> Retrieved on 25 <sup>th</sup> November 2024, Language: English
/26/	<a href="https://www.tandfonline.com/doi/epdf/10.4155/cmt.10.32?needAccess=true">https://www.tandfonline.com/doi/epdf/10.4155/cmt.10.32?needAccess=true</a> Retrieved on 25 <sup>th</sup> November, 2024, Language: English
/27/	<a href="https://link.springer.com/article/10.1007/s42773-020-00067-x">https://link.springer.com/article/10.1007/s42773-020-00067-x</a> , Retrieved on 25 <sup>th</sup> November 2024, Language: English
/28/	<a href="https://www.ipcc-nggip.iges.or.jp/public/2019rf/pdf/4_Volume4/19R_V4_Ch02_Ap4_Biochar.pdf">https://www.ipcc-nggip.iges.or.jp/public/2019rf/pdf/4_Volume4/19R_V4_Ch02_Ap4_Biochar.pdf</a> , Retrieved on 25 <sup>th</sup> November, 2024, Language: English
/29/	<a href="https://www.researchgate.net/publication/315917487_Water_hyacinth_Eichhornia_crassipes_-_management_of_an_invasive_weed_the_Indian_scenario/link/58eceb1e458515316aac2308/download">https://www.researchgate.net/publication/315917487_Water_hyacinth_Eichhornia_crassipes_-_management_of_an_invasive_weed_the_Indian_scenario/link/58eceb1e458515316aac2308/download</a> Retrieved on 25 <sup>th</sup> November, 2024, Language: English
/30/	<a href="http://archives.biharvidhanmandal.in/jspui/handle/123456789/121330">http://archives.biharvidhanmandal.in/jspui/handle/123456789/121330</a> , Retrieved on 25 <sup>th</sup> November 2024, Language: English
/31/	<a href="https://www.sciencedirect.com/science/article/pii/S0929139316304954?via%3Dihub">https://www.sciencedirect.com/science/article/pii/S0929139316304954?via%3Dihub</a> , Retrieved on 25 <sup>th</sup> November, 2024, Language: English
/32/	<a href="#">State Pollution Control Board, Odisha</a> , Retrieved on 25 <sup>th</sup> November, 2024, Language: English

/33/	<a href="https://www.european-biochar.org/media/doc/2/version_en_10_3.pdf">https://www.european-biochar.org/media/doc/2/version_en_10_3.pdf</a> , Retrieved on 25 <sup>th</sup> November, 2024, Language: English
/34/	IPCC Fifth Assessment Report
/35/	Blanco-Canqui, H., Laird, D. A., Heaton, E. A., Rathke, S., & Acharya, B. S. (2020). Soil carbon increased by twice the amount of biochar carbon applied after 6 years: Field evidence of negative priming. <i>GCB Bioenergy</i> , 12(4), 240–251. <a href="https://doi.org/10.1111/gcbb.12665">https://doi.org/10.1111/gcbb.12665</a> , retrieved on 25 <sup>th</sup> November 2024, Language: English
/36/	Ippolito, J. A., Cui, L., Kammann, C., Wrage-Mönnig, N., Estavillo, J. M., Fuertes-Mendizabal, T., Cayuela, M. L., Sigua, G., Novak, J., Spokas, K., & Borchard, N. (2020). Feedstock choice, pyrolysis temperature and type influence biochar characteristics: A comprehensive meta-data analysis review. <i>Biochar</i> , 2(4), 421–438. <a href="https://doi.org/10.1007/s42773-020-00067-x">https://doi.org/10.1007/s42773-020-00067-x</a> , retrieved on 25 <sup>th</sup> November 2024, Language: English
/37/	Spokas, K. A. (2010). Review of the stability of biochar in soils: Predictability of O:C molar ratios. <i>Carbon Management</i> , 1(2), 289–303. <a href="https://doi.org/10.4155/cmt.10.32">https://doi.org/10.4155/cmt.10.32</a> , retrieved on 25 <sup>th</sup> November 2024, Language: English
/38/	VCS MR template version 4.4
/39/	VCS Standard version 4.7
/40/	<a href="http://www.raosoft.com/samplesize.html">http://www.raosoft.com/samplesize.html</a>
/41/	Self-Declaration Undertaking Letter by SRCNatura Sure Pvt. Ltd
/42/	<a href="https://cdm.unfccc.int/Projects/projsearch.html">https://cdm.unfccc.int/Projects/projsearch.html</a>
/43/	<a href="https://registry.goldstandard.org/projects?q=&amp;page=1">https://registry.goldstandard.org/projects?q=&amp;page=1</a>
/44/	<a href="https://projects.globalcarboncouncil.com/pages/gcc_home">https://projects.globalcarboncouncil.com/pages/gcc_home</a>
/45/	Employment records
/48/	Lab Test Reports/record of pyrolysis temperature
/49/	<a href="https://www.sciencedirect.com/science/article/abs/pii/S0378429024002715">https://www.sciencedirect.com/science/article/abs/pii/S0378429024002715</a>
/50	<a href="https://www.sciencedirect.com/science/article/abs/pii/S0959652623025830">https://www.sciencedirect.com/science/article/abs/pii/S0959652623025830</a>
/51/	<a href="#">Stubble burning: Effects on health &amp; environment, regulations and management practices - ScienceDirect</a>

## Appendix - 5

### LIST OF INTERVIEWED FARMERS/BIOCHAR PRODUCERS

#### APPENDIX IV: LIST OF INTERVIEWED FARMERS/BIOCHAR PRODUCERS

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SL.No.	Farmers Name	Farmer's Village	Block
1	Ashok das	Hatina	Rajnagar
2	Ajay kumar jena	Hatina	Rajnagar
3	Kunjalata rout	Hatina	Rajnagar
4	Satyabhama jena	Hatina	Rajnagar
5	Sitakarna rout	Hatina	Rajnagar
6	Sridhar samal	Hatina	Rajnagar
7	Baula rout	Hatina	Rajnagar
8	Saraswati pradhan	Hatina	Rajnagar
9	Charan pradhan	Hatina	Rajnagar
10	Pratima swain	Hatina	Rajnagar
11	Uchhab swain	Hatina	Rajnagar
12	Kadamini rout	Hatina	Rajnagar

13	Malli pradhan	Hatina	Rajnagar
14	Minaketan rout	Hatina	Rajnagar
15	Ranjan rout	Hatina	Rajnagar
16	Gitarani Dalai	Rangani	Rajnagar
17	Draupati Dalai	Rangani	Rajnagar
18	Sanju Dalai	Rangani	Rajnagar
19	Puspa Lata Dalai	Rangani	Rajnagar
20	Amari Dalai	Rangani	Rajnagar
21	Sima Dalai	Rangani	Rajnagar
22	Tula Dalai	Rangani	Rajnagar
23	Minati Dalai	Rangani	Rajnagar
24	KhadikaDalai	Rangani	Rajnagar
25	Puja Dalai	Rangani	Rajnagar
26	Pramila Dalai	Rangani	Rajnagar
27	Bidulata Dalai	Rangani	Rajnagar
28	Bhagabati Dalai	Rangani	Rajnagar
29	Pakei Dalai	Rangani	Rajnagar
30	Chani Dalai	Rangani	Rajnagar
31	Sanju Dalai	Rangani	Rajnagar
32	Saraswati Dalai	Rangani	Rajnagar
33	Jhunu Dalai	Rangani	Rajnagar
34	Pratima Dalai	Rangani	Rajnagar
35	Santilata Dalai	Rangani	Rajnagar
36	Mamata samal	Pentha	Rajnagar
37	Sabitri sing	Chandra kolla	Rajnagar
38	Kuntirani Jena	Chandra kolla	Rajnagar
39	Kaikeyi rout	Pentha	Rajnagar
40	Puspaalara samal	Pentha	Rajnagar
41	Sumati behera	Pentha	Rajnagar
42	Tulasi behera	Pentha	Rajnagar
43	Jhunarani behera	Pentha	Rajnagar
44	Durga bati jena	Chandra kolla	Rajnagar
45	Sabitri maity	Chandra kolla	Rajnagar
46	Sunita pradhan	Pentha	Rajnagar
47	Susama Khanda	Chanara kolla	Rajnagar

48	Angurubala Maity	Chanara kolla	Rajnagar
49	Manjula Maity	Chanara kolla	Rajnagar
50	Mani Maity	Chanara kolla	Rajnagar
51	Anupama das	Pentha	Rajnagar
52	Anjan pradhan	Penth	Rajnagar
53	Pramod kumar das	Pentha	Rajnagar
54	Asalata Mohanty	Pentha	Rajnagar
55	Basudev tripathy	Pentha	Rajnagar
56	Malati giri	Chanara kolla	Rajnagar
57	Sanali jena	Chanara kolla	Rajnagar
58	Sankari Jena	Chanara kolla	Rajnagar
59	Bhadri Jena	Chanara kolla	Rajnagar
60	Babaji nayak	Pentha	Rajnagar
61	Paribala Jena	Chanara kolla	Rajnagar
62	Parbati bala patra	Chanara kolla	Rajnagar
63	Namita Giri	Chanara kolla	Rajnagar
64	Sandya Rani patra	Chanara kolla	Rajnagar
65	Kalpna Jena	Chanara kolla	Rajnagar
66	Namita Patra	Chanara kolla	Rajnagar
67	Manasi Patra	Chanara kolla	Rajnagar
68	Mani Maity	Chanara kolla	Rajnagar
69	Josada Maity	Gartta	Rajnagar
70	Mili Maity	Gartta	Rajnagar
71	Kabita giri	Chanara kolla	Rajnagar
72	Rahini Bhuyan	Amara bati	Rajnagar
73	Tukumani pal case m	Chanara kolla	Rajnagar
74	Bnuaity	Chanara kolla	Rajnagar
75	Sujata pal	Chanara kolla	Rajnagar
76	Pinki Bera	Chanara kolla	Rajnagar
77	Namita Rani Bera	Chanara kolla	Rajnagar
78	Gitarani pal	Sailendra sarai	Rajnagar
79	Kajal Samanta	Sailendra sarai	Rajnagar
80	Gouri Majhi	Sailendra sarai	Rajnagar
81	Gita pradhan	Sailendra sarai	Rajnagar

82	Santibala Pradhan	Sailendra sarai	Rajnagar
83	Sumitra Das	Sailendra sarai	Rajnagar
84	Surendra Das	Sailendra sarai	Rajnagar
85	Mani bala jena	Sailendra sarai	Rajnagar
86	Sandya Rani Jena	Chanara kolla	Rajnagar
87	Sarathi Giri	Chanara kolla	Rajnagar
88	Khukumani Giri	Chanara kolla	Rajnagar
89	Sarathi Giri	Chanara kolla	Rajnagar
90	Pratima Giri	Chanara kolla	Rajnagar

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The verification team interviewed the above 90 farmers who reside in villages mentioned in section 2.4 of this report. During these interviews, the farmers were asked the following questions and their responses to these questions were noted.

The VVB's inspection of the biochar producers focused on the following key areas:

1. Whether a signed contract exists between the Project Proponent (PP) and the biochar producers/farmers.
2. Whether documented evidence confirms that all biochar producers received appropriate training and production is conducted in accordance with this training.
3. Does geolocation data and a unique identification number for the biochar producer matches with PP's dMRV data.
4. Whether biomass is sourced sustainably from agricultural residues as described in the registered PD.
5. No environmental degradation or ecosystem exploitation has occurred during biochar production.
6. Whether biomass is properly dried to prevent decay during storage of biomass.
7. Is pyrolysis is conducted carefully to minimize methane (CH<sub>4</sub>) emissions.
8. Does each batch of biochar have a complete production record as described in the monitoring plan in the registered PD and does it match with the biochar producer's statements and records.
9. Does the amount of Biochar produced and applied by the biochar producer match with PP's dMRV records.
10. Whether fire safety equipments and training is available and used as needed.
11. Are records of the biochar quantity, application date and coordinates of the application fields are complete and credible.
12. Are sanctions for rule violations provided by the PP properly documented and implemented.
13. Do all biochar producers have access to a written biochar production guide in the local language.
14. How this biochar application will support in achieving SDGs goals.
15. Is the training to the monitoring team implemented and described in the monitoring plan.
16. Whether farmer supervision is conducted in accordance with the monitoring plan.
17. Are the farmers aware about the benefits of application of biochar in their farms.
18. Is the monitoring plan consistently applied to all biochar producers.
19. Is the digital MRV mobile application used in the project and evidence of training and proficiency with the app available during the on-site audit.
20. Are measures being in place to ensure the quality of internal reports prepared by monitoring team managers.
21. Whether procedures are followed for evaluation by General Manager of audit reports completed by managers in the monitoring team
22. Whether procedures are followed for identification of non-compliances during inspections by managers
23. Whether corrective actions taken by General Manager for identified non-compliances by Managers
24. Were complaints by local stakeholders, if any, addressed appropriately.
25. What are the benefits farmers and local stakeholders deriving from this biochar production.
26. How this project is helping in betterment of local ecosystem and biodiversity.
27. Self-involvement of farmers/villagers in the project activity
28. What are the overall benefits being observed by the local stakeholders, farmers and villagers.

## Appendix - 6

### ON-SITE AUDIT PICS





Pyrolysis process