



**Verified Carbon
Standard**

VERIFICATION REPORT

INDIA SUNDARBANS MANGROVE RESTORATION



Document Prepared By TÜV NORD CERT GmbH

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Summary:

Livelihoods Fund has commissioned the TÜV NORD JI / CDM Certification Program to carry out the 3rd Verification of the project “India Sundarbans Mangrove Restoration” with regard to the requirements of VCS Version 4.0.

The project aims to restore mangrove ecosystems in the Indian Sundarbans. At the time of the 3rd verification the project achieved the restoration of in total 4,404 hectares.

The CDM-approved methodology AR-AM0014 Version 3 “Afforestation and reforestation of degraded mangrove habitats” is applied by the project to quantify the GHG emissions reductions and/or removals.

In the course of the VCS Verification 6 Correction Action Requests (CAR) were raised and successfully closed as well as 1 Forward Action Request (FAR).

The VCS Verification was based on the draft monitoring report^{/MR/}, emission reduction calculation spreadsheet^{/XLS/}, the monitoring plan as set out in the validated PD^{/PD/} and supporting documents made available to the TÜV NORD JI/CDM CP by the project participant.

Verification Period: from 01/04/2018 to 30/04/2021 (including both days)

As a result of this verification, the verifier confirms that:

- all operations of the project are implemented and installed as planned and described in the validated project design document;
- the monitoring plan is in accordance with the applied approved CDM methodology, i.e., AR-AM0014 – version 3.0;
- the installed equipment essential for measuring parameters required for calculating emission reductions are properly maintained;
- the monitoring system is in place and functional. The project has generated GHG emission reductions.

In addition, the verifier confirms that the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner. TÜV NORD JI/CDM CP herewith confirms that the project has achieved emission reductions in the above-mentioned reporting period as follows:

Year (vintage)	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
2018	0.00	97,242	0.00	97,242
2019	0.00	129,656	0.00	129,656
2020	0.00	129,656	0.00	129,656
2021	0.00	43,219	0.00	43,219
Total	0.00	399,773	0.00	399,773

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1.1

1. INTRODUCTION

Livelihoods Fund has commissioned the TÜV NORD JI / CDM Certification Program to carry out the 3rd Verification of the project:

“India Sundarbans Mangrove Restoration”

with regard to the relevant requirements of the Verified Carbon Standard Version 4/^{VCS}/. The verifier has reviewed the implementation of the monitoring plan (MP) in the VCS project for the monitoring period from 01/04/2018 to 30/04/2021 (including both days).

The project applies the CDM approved methodology AR-AM0014 Version 3 “Afforestation and reforestation of degraded mangrove habitats”.

1.1 Objective

The purpose of this verification, by independent checking of objective evidence, is as follows:

- to verify that the project is implemented as described in the project design document;
- to assess the implementation of the monitoring plan (MP) content in the VCS-PD;
- to assess the project’s compliance with other relevant rules, including the host country (Indonesia) legislation;
- to confirm that the monitoring system is implemented and fully functional to generate voluntary emission reductions (VERs/VCUs) or ERs without any double counting; and
- to establish that the data reported are accurate, complete, consistent, transparent and free of material error or omission by checking the monitoring records and the emissions reduction calculation.

1.2 Scope and Criteria

The verification of this project is based on the validated project design document/^{PD}/, the monitoring report/^{MR}/, emission reduction calculation spread sheet/^{XLS}/, supporting documents made available to the verifier and information collected through performing interviews and during the on-site assessment. Furthermore, publicly available information was considered as far as available and required.

The TÜV NORD JI/CDM CP has employed a risk-based approach in the verification, focusing on the identification of significant risks and reliability of project monitoring and generation of emission reductions.

1.3 Level of Assurance

The verification has been planned and organized to achieve a

- reasonable level of assurance (see section 2.4 for assessment)
- limited level of assurance

1.4 Summary Description of the Project

The project activity started in 2010 with the aim to restore mangrove ecosystems in the Indian Sundarbans by planting and enhancing natural regeneration and restoration. The areas subject to this verification have been planted and restored within a 5-year period from 2010 to 2014. All of the project activities have been implemented as described in the PD and the area under implementation has stabilized at 4,675 ha compared to 4,588 ha after the second verification. This enlargement is due to the natural stabilization of the existing validated mudflats (not representing new instances) throughout the different monitoring periods.

The 3rd monitoring period is from April 1st 2018 to April 30st 2021. In this period a net carbon emission reduction of 420,360 tCO₂-equivalent has been determined, which results in 378,324 VCU's deducting the 10 % buffer^{/XLS/}.

VERIFICATION PROCESS

1.5 Method and Criteria

The verification of the project consisted of the following steps:

- contract review;
- appointment of team members and technical reviewers;
- desk review of the Monitoring Report^{/MR/} submitted by the client and additional supporting documents;
- verification planning;
- remote audit techniques;
- background investigation and follow-up interviews with personnel of the project developer and its contractors;
- draft verification reporting;
- resolution of corrective actions (if any);
- final verification reporting;
- technical review;
- final approval of the verification.

Verification is based on the criteria laid down by VCS.

The sequence of the verification is given in the table 2.1 below:

Table 2.1: Validation/Verification sequence

Topic	Date
Assignment of verification	04/6/2021
Remote audit	04/09/2021 till 09/09/2021 (general possibilities and requirements for remote auditing have been discussed before the actual assignment took place)

On-site stakeholder consultation with community members	28/09/2021 till 29/09/2021
Draft reporting finalized	21/12/2021
Final reporting finalized	28/12/2021
Final reporting after PRR	18/05/2022
Final reporting after PRR	21/10/2022
Final reporting after PRR	11/01/2023

1.5.1 Appointment of team members and technical reviewer

Based on a competence analysis and individual availabilities, a verification team was appointed. Furthermore, also the personnel for the technical review and the final approval were determined.

The list of involved personnel, the tasks assigned, and the qualification status are summarized in the table 2.2 below.

Table 2.2: Involved Personnel

	Name	Company	Function ¹⁾	Qualification Status ²⁾	Scheme Competence ³⁾	Technical Competence ⁴⁾	Verification Competence ⁵⁾	Host country Competence	On-site visit (remote)
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Martin Opitz	External Expert	TL ^{A)}	LA	<input checked="" type="checkbox"/>	14.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Tamal Sen	TN India	TM ^{A)}	A	<input checked="" type="checkbox"/>	-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms.	Alexandra Nuske	TN CERT GmbH	FA/TR ^{A)}	SA	<input checked="" type="checkbox"/>	14.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	-
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Martin Seitz	External Expert	TR ^{A)}	TE	<input checked="" type="checkbox"/>	14.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	-

¹⁾ TL: Team Leader; TM: Team Member^{A)}, TR: Technical review^{B)}; OT: Observer-Team^{B)}, OR: Observer-TR^{B)}; FA: Final approval^{B)}

^{A)} Team Member: GHG auditor (at least Assessor status), Technical Expert (incl. Host Country Expert or Verification Expert), not ETE

^{B)} No team member: OT, TR, OR, FA

²⁾ GHG Auditor Status: A: Assessor; LA: Lead Assessor; SA: Senior Assessor; T: Trainee; TE: Technical Expert

³⁾ GHG auditor status (at least Assessor)

⁴⁾ Technical Area / TR Subcategory as per S01-VA000-F02 or S01-VA070-F01 (such as 1.1, 1.2, ...)

5) In case of verification projects

1.6 Document Review

The VCS-PD/^{PD}/ and supporting background documents related to the project design and baseline were reviewed.

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

The references used in the course of this verification are summarized in Appendix I.

1.7 Interviews

The verification team has carried out interviews in order to assess the information included in the project documentation and to gain additional information regarding the compliance of the project with the relevant criteria applicable for the VCS.

Before and during the remote audit verification team performed interviews with the representative of project proponent to confirm selected information and to solve issues identified in the document review.

Representatives of the PP, consultant and other parties including the operational staff of the plant and community members affected by the project activity have been interviewed. Details of the interviewed persons are included in Table 4 of Appendix I of this Report. The main topics of the interviews are summarized in Table 2.3.

Table 2.3: Interviewed persons and interview topics

Interviewed Persons / Entities	Interview topics
project proponent project manager consultants and field staff as well as Panchayat members, stewards and community members in the Madhusudanopur GP, the Lakshmipur village, the Jogindrapur village, the Ramnagarabad Village and the Digambarpur GP	<ul style="list-style-type: none"> • General aspects of the project • Technical equipment and operation • Changes since implementation • Monitoring and measurement equipment • Calibration procedures • Remaining issues from last verification • Quality management system • Involved personnel and responsibilities • Training and practice of the operational personnel • Implementation of the monitoring plan • Monitoring data management • Data uncertainty and residual risks • GHG calculation • Procedural aspects of the verification • Maintenance • Environmental aspects • Social-economic aspects, topics: <ul style="list-style-type: none"> ○ Co-operation with NEWs (implementing NGO)

	<ul style="list-style-type: none"> ○ Election of community stewards ○ Benefits due to the Project activity ○ Women participation ● Editorial issues of the Monitoring Report
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1.8 Site Inspections

As most essential part of the verification exercise, it is indispensable to carry out an inspection on site in order to verify that the project is implemented in accordance with the applicable criteria and that AFOLU specific safeguards are fulfilled.

Due to the Covid-19 Pandemic and India's and Germany's imposed travel restrictions TÜV NORD JI/CDM CP decided to follow a tow-part audit approach on the basis of the information note issued by the VERRA secretariat on 24/03/2020 titled "Verra guidance on site visits" in combination with Section 4.1.2 of the VCS Standard, v4.0.

The approach included a remote audit for the re-measurement of PSPs as well as a physical site inspection to consulate of affected communities/villages as well as to have a look at the project area from the boat that was used to get to the communities/villages. TÜV NORD JI/CDM CP assumes that this approach of a remote re-measurement ensures sufficient assurance, as the Team Leader has been conducting a physical site visit during the previous inspection (on behalf of another VVB / July 29 and August 3, 2018). The consultation of affected stakeholders was conducted by a technical expert with origin in West-Bengal from TÜV NORD India, a subsidiary of TÜV NORD JI/CDM CP.

The main tasks covered during the site visit include, but are not limited to:

- 9 PSPs (out of 48 = 18,75%) remeasured^{/RM/}; the PSPs were chosen in a way that allowed an overview over the total project area
- the remote observation included an investigation of whether all relevant equipment is installed and works as anticipated^{/RM/}.
- the operating staff was observed in order to check the risks of inappropriate operation and data collection procedures as well es risk of accidents/health and safety^{/RM/}
- Panchayat members, stewards and community members in the Madhusudanopur GP, the Lakshmipur village, the Jogindrapur village, the Ramnagarabad Village and the Digambarpur GP were interviewed^{/IM03/} in order to check the risks of displacement/livelihoods/access to ecosystem services.
- information processes for generating, aggregating, and reporting the selected monitored parameters were reviewed^{/IM01,02/}.
- the monitoring processes, routines and documentations were audited to check their proper application.
- the monitoring data were checked completely.
- the data aggregation trails were checked via spot sample down to the level of the meter recordings.

An onsite visit has been carried out on the date as indicated in table 2.1 above. Mr. Tamal Sen led the visit on site and was constantly in the process of exchanging information with the team leader Martin Opitz and debriefing in the afternoon.

1.9 Resolution of Findings

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

A **Corrective Action Request (CAR)** is established where:

- mistakes have been made in assumptions, application of the methodology or the project documentation which will have a direct influence on the project results,
- the requirements deemed relevant for verification of the project with certain characteristics have not been met, or
- there is a risk that the project would not be registered or that emission reductions would not be able to be verified and certified.

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

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

In the course of the VCS Verification 6 Correction Action Requests (CAR) were raised and successfully closed.

1.9.1 Forward Action Requests

One FAR has been raised during the 3rd verification. The outstanding FAR from 2nd verification was met by providing respective Trainings to the field team^{/INV/}.

FAR ID	01	Section no.	5.1&General	Date	:11/01/2023
Description of FAR					
Ensure to provide data of the last five years to calculate the WGI for the assessment of the Political Risk					
Project participant response				Date : dd/mm/yyyy	
<p><i>According to 3.2.7 of the VCS Standard 4.1 (applicable at the time of the assessment) the baseline needs to be reassessed every 10 years. As the monitoring period ended 30th of April 2021 and the project started 28th September 2010, out of the 1125 days of the current monitoring period, 215 days (19%) have exceeded the 10-year period. Thus, the baseline has to be reassessed during next verification.</i></p>					
Documentation provided by project participant					
<input type="checkbox"/>	Changes in the PD	Section(s):several		New version No.:	
<input type="checkbox"/>	Changes in XLS	Worksheet(s):		New version No.:	
<input type="checkbox"/>	Other:				
DOE assessment				Date: dd/mm/yyyy	

Conclusion

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

1.10 Eligibility for Validation Activities

TÜV NORD CERT GmbH holds accreditation for validation for the relevant sectoral scopes/unfccc/.

VALIDATION FINDINGS

Not applicable, as the project is the third regular verification of the registered project.

No gap validation is required; no methodology deviations were needed in the verification activity.

1.11 Participation under Other GHG Programs

This section is not applicable as the project does not seek registration under another approved GHG program. No changes since 1st and 2nd verification/VR,TS/.

1.12 Methodology Deviations

Not applicable.

1.13 Project Description Deviations

For the 3rd monitoring period a deviation regarding the inventory is applied and respectively described in the MR. Due to the different growth conditions and thus different growth performance a re-stratification, delineation, and division of existing plots into different plot IDs took place. Further the project proponents switched from permanent to temporary sampling points. This makes sense against the backdrop of a rapidly changing habitat, such as mangrove forests. The described deviation does neither affect the additionality, nor the scale of project activity, nor the applicability/application of the methodology applied and is as such in compliance with the CDM Guidelines on assessment of different types of changes from the project activity as described in the registered PDD EB 67, Annex 48 and thus in compliance with the VCS Standard, section 3.18.1. Further the described changes are in full compliance with the CDM Guideline on accounting of specified types of changes in A/R CDM project activities from the description in registered project design documents EB 66, Annex 24.

1.14 Grouped Project

The project activity and thus the project area remains at 4,404 ha as validated and verified during the first verification.

NEWS has actually already planted and restored (including natural regeneration) a total of 4,675 ha. It is planned to add these additional 271.1 ha to the validated project area as 2nd instances during the next (4th) verification.

VERIFICATION FINDINGS

1.15 Project Implementation Status

The project activity is completely operational and the same has been confirmed on-site^{/IM/} as well as via interviews with Project Owner & Operations Personnel, Consultant^{/IM02,03/}.

The project is implemented according to the description presented in the registered PD. Different growth performances due to different growth conditions have led to the deviations mentioned in the previous sections (3.3) of this report.

The verifier confirms, through the visual inspection of provided videos^{/RM/} of the remeasurement, assessment of publicly available satellite pictures as well as a travel through the project area that all physical features of the proposed VCS project activity including data collecting, analyzing and storage systems have been implemented in accordance with the registered PD and the above described and accepted deviations.

The verifier confirms, to the best of his knowledge, that the GHG emission reductions generated by the project have not become included in an emissions trading program or any other mechanism that includes GHG allowance trading. Furthermore, confirms that the project has not received or sought any other form of environmental credit, or has become eligible to do so since validation or previous verification. The project started validation process under A/R CDM and is listed as 'unvalidated' project on the UNFCCC website since the validation was not completed. The project proponent decided to switch from the CDM process to the validation and verification process under the VCS, thus the verifier confirms that the project has not participated or been rejected under any other GHG programs since validation or previous verification.

The project proponent decided to switch from the CDM process to the validation and verification process under the VCS.

The implementation status of the project is described in detail in the MR and was confirmed in the course of the on-site inspection^{/IM,IM02,03/}.

The project is contributing to a sustainable development in the affected communities. This is achieved by the establishing a steward team that helps to arise awareness and support to sustainably utilize the natural resources to elevate their lifestyle and income. Activities that are support are amongst others are the establishment of organic seed banks, encouragement for vermicomposting, organic farming, pisciculture, livestock rearing etc. ^{/IM03/}. Further the brand Badabon Harvest^{/BH/} was created that helps marginalized farmers to improve their revenues by structures market accesss. This was confirmed through stakeholder consultations.

The verifier concludes that the project has been implemented as described in the corresponding project description.

Related finding see CAR 01

1.16 Safeguards

1.16.1 No Net Harm

The project activity does not lead to any environmental and/or socio-economic impacts. The former is evident from the fact that an ecosystem that is elementary in many respects is being restored^{/NNH/}, and the latter from the fact that the restoration opens up numerous opportunities for sustainable land use activities^{/IM03/}. Concerns that were expressed during validation that there would be too little feed for livestock feeding could not be confirmed during the on-site stakeholder consultation.

Related finding CAR 02

1.16.2 Local Stakeholder Consultation

The project is in constant exchange with local stakeholders, as it relies on a strong economic inclusion of those living adjacent to and from the mangroves and mudflats. The project is designed with the local communities and adapted to their local needs. This is basically achieved by following a Community Stewardship Approach which is the heart of the whole program working with the communities. This could be confirmed during the on-site stakeholder consultation^{/IM03/}.

Activities that support local stakeholders/communities are amongst others the establishment of organic seed banks, encouragement for vermicomposting, organic farming, pisciculture, livestock rearing etc. Further, due to ongoing communication, the brand Badabon Harvest^{/BH/} was created during the 3rd monitoring period, meeting the needs of marginalized farmers by helping to improve their revenues by creating a structured market access. This could be confirmed during the on-site stakeholder consultation^{/IM03/}.

Related finding CAR 03

1.17 AFOLU-Specific Safeguards

In accordance with standard requirements sections 3.16.11– 3.16.18, the project proponent is in constant exchange with the communities affected by the project activity.

The project is designed to meet the needs of the communities. Thus no negative impacts due to the project activity could be identified.

Nonetheless to ensure, that there is no negative impact to the adjacent communities, the verification team conducted a stakeholder consultation on site by visiting Panchayat members, stewards and community members in the Madhusudanapur GP, the Lakshmipur village, the Jogindrapur village, the Ramnagarabad Village and the Digambarpur GP^{/IM,IM03/}.

On basis of the stakeholder consultation the verification team concludes/confirms:

There are no potential risks for the local communities due to the project activities.

No disputes in regard to land tenure, ownership and land-use have been report.

No discrimination or sexual harassment could be identified.

The PPs have a broad track record in managing carbon projects with community engagement.

There are no changes since 2nd verification regarding carbon rights.

In the course of the review process by VERRA a detailed risk assessment was included. No substantial risks have been identified which was fully confirmed during the onsite visit via interviews held

Related finding see CAR 04

1.18 Accuracy of GHG Emission Reduction and Removal Calculations

Compliance of the Monitoring Plan with the Monitoring Methodology

The monitoring plan is in accordance with the approved methodology, AR-AM0014 Version 3, applied by the proposed VCS project activity.

Compliance of the Monitoring with the Monitoring Plan

The monitoring has been carried out in accordance with the monitoring plan presented in the registered PD. All parameters contained in the monitoring plan were reviewed by the audit team respectively and found to be monitored according to the registered PD.

The monitoring plan is provided consisting of different processes that as a conjunction represent the monitoring system of the project. The following processes/monitoring are mentioned:

- I. Establishment of survival counts and replanting
 - ⇒ Assessment of survival rate
- II. Livelihoods Standard Monitoring
 - ⇒ Standard monitoring of all livelihood's projects
- III. Geographic coordinates of the project boundary
 - ⇒ Monitoring of boundaries
- IV. Identification and monitoring of strata
 - ⇒ Stratification of project area dependent on growth and survival performance
- V. Mangrove carbon inventory (Actual carbon monitoring)
 - ⇒ Plot selection & location
 - ⇒ Data collection
 - ⇒ Quality Assurance/Quality Control
 - Procedures to ensure reliable field measurements
 - Procedures to verify field data collection
 - Maintenance and storage

During the onsite visit the audit team assessed the result of the procedures I, II, IV and V, mainly focusing on the last one, the actual carbon monitoring^{RM,INV/}.

Assessment of Data and Calculation of Greenhouse Gas Emission Reductions

The required data for the monitoring was available, and the parameters were monitored in accordance with the registered monitoring plan, considering the deviations described above.

The data collection was conducted by manual measurements in the field. The dbh as well as the height as is measured using measuring tapes and measurement poles for the project trees as well as pre-project trees. Besides the trees the number of saplings were counted. The data was collected manually as well as via a monitoring app and smartphones. A detailed description of the data generation, storing, processing and aggregating, collating and reporting is described in the MR and the corresponding SOP^{/INV/}. During the onsite visit of the team leader in the 2nd verification^{/TS/} the data collection, processing, collating and reporting was demonstrated and discussed in depth. There are no changes since 1st and 2nd verification^{/VR,TS/}.

In the following table the assessment of the actively monitored parameters are assessed.

Assessment of ex-post determined parameters

Parameter	Description	Value applied	Assessment
Xi	Variables measured per tree for the calculation of above-ground biomass applying an allometric equation: DBH, height, D30,	See 2021-12-21 NEWS_ex-post carbon calculations	<p>DBH and D30 readings are taken from a caliper/ diameter tape at 1.3 m along the stem (for DBH) or at 30 cm from the ground for D30.</p> <p>Height – readings are taken on calibrated pole placed along the longitudinal axis of the tree.</p> <p><i>Note: The value measured for the height is not required by the allometric equations applied to estimate the aboveground tree biomass.</i></p> <p>For the 9 selected PSP, the NEWs inventory team filmed themselves getting to the PSP, allocating the corresponding subplots and their centres and the actual measuring of all trees. The films have been transmitted to the Audit Team via DropBox and reviewed entirely^{/RM/}.</p>

In total the measurement of 20% of all sample plots was filmed and reviewed by the Audit Team.

The data collected during the site visit, replicating the exact same methodology as described in the MR and subsequent documents was subject to a statistical analysis. An F-test of equality of variances was conducted for the two sets of dbh mean values of each sub sample plot obtained during the actual monitoring and the field visit. As the test value was smaller than the F-value both variances origin from the same population. Thus, there is no significant difference between the differences of the two separate measurements^{/CON/}.

Baseline emissions were quantified in line with Equation (1) of the applied methodology (AR-AM0014).

Strata 1 – 3 (“Zero Baseline Biomass”)

Carbon stock and carbon stock changes in baseline tree and non-tree biomass within the strata 1 – 3 (“Zero Baseline Biomass”) were accounted for as zero in line with A/R Methodological Tool “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities” (Version 04.2.) as all conditions described in section 5 of the respective tool are met. Thus, no changes since 2nd verification.

Strata 4 (“Dwarf mangrove baseline biomass”)

Carbon stock in baseline tree and non-tree biomass within strata 4 (“Dwarf mangrove baseline biomass”) was estimated according to the A/R Methodological Tool “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities” (Version 04.2.) following the crown cover approach. Details of the estimation of the determination of the pre-existing tree crown cover respectively the existing shrub crown cover is described in the PD respectively the 1st verification. The quantifications applied are in line with equation (26) respectively equation (20) and subsequent equations. Thus, no changes since 2nd verification.

Baseline carbon in dead wood is estimated according to the A/R Methodological Tool “Conservative default-factor debased method for estimation of carbon stock in dead wood” (Version 3.1) applying the conservative default-factor based method described in section 6.2. The quantification applied is in line with equation (9) and subsequent equations. Thus, no changes since 2nd verification.

Changes in the carbon stocks in baseline trees and shrub biomass including dead wood were accounted for as zero in line with A/R Methodological Tool “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities” (Version 04.2.) as all conditions described in section 5 of the respective tool are met. Thus, no changes since 2nd verification.

Related findings see FAR 01

The project emissions were quantified in line with Equation (2) of the applied methodology (AR-AM0014).

Changes in carbon stock in tree biomass is quantified in line with methodological tool Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities (AR-TOOL14) following equation (12) and subsequent equations. For the quantification of the change in carbon stock in tree biomass the PP applied two allometric equations for I) trees and II) saplings. To demonstrate appropriateness of allometric equations for estimation of aboveground tree biomass in A/R CDM project activities applying the homonymous methodology (EB 65, Annex 28). Thus, no changes since 2nd verification.

Change in carbon stock in shrub biomass have not been accounted for at this second verification as they haven’t been actively introduced into the project area. This is considered a conservative approach as potentially shrub vegetation will be growing in the project area. Thus, no changes since 2nd verification.

Change in carbon stock in dead wood is calculated in line with equation (9) and subsequent equations using the conservative default-factor based method included in section 6.2. of estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities (AR-TOOL12). Thus, no changes since 2nd verification.

Change in carbon stock in the soil organic carbon is quantified in line with equation (4) of the applied methodology (AR-AM0014). Thus, no changes since 2nd verification.

The uncertainty of the estimation of the GHG removals is calculated in line with equations (1) and (2) of AR-TOOL14. Due to an uncertainty of >20% a discount rate of 75% of the uncertainty is applied in line with Appendix 2 of AR-TOOL14.

The audit team confirms that the methods and formulae used to estimate the baseline and project emissions are appropriate. The calculation was done in accordance with the methods and formulae described in the registered monitoring plan and applicable methodology/PD,VR,TS,CON,QAQC/.

The audit team confirms that the monitoring report includes all required and relevant parameters. The parameters have been measured at the intervals required by the applied methodology and monitoring plan.

The audit team confirms that all the assumptions, emission factors and default values have been correctly justified. All the emission factors and default values are explicitly mentioned in the monitoring report.

In all cases, the audit team assessed the procedures followed by the PP in order to acquire, collate, transpose and process the data sets. The audit team found that the GHG emission reductions were quantified correctly in accordance with the project description and the applied methodology as well as all the applicable modules and tools^{/XLS,CON/}.

Related finding see CAR 05.

1.19 Quality of Evidence to Determine GHG Emission Reductions and Removals

Among several evidence items submitted, the following relevant and reliable evidence material was used by the audit team during the verification process:

- GIS files^{/SHP/}
The GIS files have been cross-checked with publicly available satellite imagery.
- Calculation spreadsheets (including raw data)^{/XLS/}
Calculation spreadsheets have been discussed in depth with the project consultant^{/IM2/}.
- QA/QC on Parcels^{/XLS/}
People doing the data collection have been trained on the job, this could be confirmed by interviews with the team^{/IM1,IM2/}.
- Movies of measurement of selected plots^{/RM/}
The remeasurement of all selected plots was self-recorded by the field team. The films were screened, the measurement practices observed were found to comply with good inventory practice. The field team entered the results directly electronically into a project specific App. From there they could be copied directly into the ER calculation sheets. Manual data transfer errors could be avoided by this procedure.

Sufficient evidence covering the full verification period in the required frequency is available to validate the figures stated in the final MR. The source of the evidence was discussed in chapter 2 of this report. Specific cross-checks have been done in cases that further sources were available.

The monitoring report's figures were checked by the audit team against the raw data^{/XLS,CON/}.

The data collection, transcription and processing system met the requirements of the monitoring plan as per the methodology in terms of sufficiency of the quantity and appropriateness of quality of the evidence used to determine the GHG emission reductions.

1.20 Non-Permanence Risk Analysis

The risk assessment for this monitoring period was conducted according to the "AFOLU Non Permanence Risk Tool". Each risk category was calculated based on the VCS guidance and the input provided by the PPs. The information was validated and cross-checked through document and literature review and interviews conducted. Following the VCS guidance, a buffer of 10% is determined.

Risk Factor	COMMENTS	Risk Rating
Internal Risk		
<u>Project Management</u>		
a.	<p>The species being planted are dominated at approximately 80–90% by Avicennia species. Other species include: Rhizophora, Bruguiera, Ceriops, Xylocarpus, Excoecaria, Aegiceras and Aegialitis species. All of these are native species.</p> <p>This could be observed during the onsite visit, no changes since 2nd verification.</p>	0
b.	<p>NEWS is a community and stakeholder wise very active NGO. Focus of its work but also for this project is the empowerment of communities and collaboration with all relevant stakeholders to replant/restore and maintain the mangrove ecosystem based on a good understanding and appreciation of the importance of the ecosystem in order to i) re-establish but also i) ease the pressure on the mangrove forest in the Sundarbans.</p> <p>This could be sustained during the onsite visit via interviews as well via a visit of the Ramganga Training Center, no changes since 2nd verification.</p>	0
c.	<p>NEWS has a track record of restoration work of habitats and wildlife of more than 20 years in the Sundarbans.</p> <p>This could be sustained during the onsite visit via interviews, no changes since 2nd verification.</p>	0
d.	<p>NEWS has their main office in Kolkata, less than 4 hours by car from the start of the Sundarbans.</p> <p>All project areas are located about 4-5 hours' journey from the office of the management team.</p> <p>Zonal project coordinators are permanently based in each of the project zones responsible for all project activities including community sensitization, plantation campaigns and monitoring (with continuous support from the management team in Kolkata).</p> <p>This could be sustained during the onsite visit via interviews as well as observations, no changes since 2nd verification.</p>	0
e.	<p>The project developer (NEWS) and the project proponent (Livelihoods Fund) both have developed the capacity to design this AFOLU project, account for carbon removals, and report and participate in validation and verification under respective VCS methodology and standard requirements.</p> <p>This could be sustained during the onsite visit via observations and interviews, no changes since 2nd verification.</p>	-2
f.	<p>The project has adaptive operational, monitoring, roll out, feedback, supervisory, and internal control systems in place.</p> <p>NEWS is periodically physically monitoring the projects sites, in a constant consultations process with communities, governance institutions, via PRAs, etc. and involved in scientific collaborations with local scientist as well as international mangrove think tanks such as IUCN.</p> <p>Risk are analysed and when needed mitigation measures conducted.</p> <p>Further Livelihoods is regularly monitoring all its carbon projects in order to assess progress and identify bottlenecks to successful project implementation.</p>	-2

Risk Factor	COMMENTS	Risk Rating
<i>Total Score Project Management</i>		-4
<u>Financial Viability</u>		
a.	n.a.	0
b.	n.a.	0
c.	Breakeven point has been calculated to be reached in 6 years from the current risk assessment, as indicated in the cash flow supporting document	1
d.	n.a.	0
e.	n.a.	0
f.	n.a.	0
g.	n.a.	0
h.	The project is fully funded by the Livelihoods Fund including establishment as well as validation and verification.	0
i.	Livelihoods Fund has 100% of needed funding secured for this VCS project. This was confirmed in the last Livelihoods board of investors meeting in Dec 2014.	-2
<i>Total Score Financial Viability</i>		-2
<u>Opportunity Cost</u>		
a.	n.a.	n.a.
b.	n.a.	n.a.
c.	n.a.	n.a.
d.	<p>Based on the recently published World Bank Report ‘Building Resilience for Sustainable Development of the Sundarbans’ (2014), the population of the Sundarbans blocks is primarily engaged in subsistence agriculture, and the great majority of farmers are classified as “small” and “marginal,” with typical landholdings of less than 1 ha per family.</p> <p>NEWS with its livelihoods and community approach is in-tended to bring about net positive community impacts both in the short run and on a long-term basis via: trainings on improved animal husbandry, introduction of improved cook stoves, the restoration of the mangrove forests (cost protection/ Cyclone Aila/^{NNH}), etc.</p> <p>This could be sustained during the onsite visit via interviews and observations, no changes since 2nd verification.</p>	0
e.	n.a.	n.a.
f.	n.a.	n.a.
g.	Livelihoods Fund SICAV SIF is a carbon fund, who does not market, sell or make any profit with the carbon offsets. It merely distributes them to its investors.	-2
h.	NEWS is an environmental charity (NGO) registered with the government of India	-2
i.	n.a.	n.a.
<i>Total Score Opportunity Cost</i>		-4

Risk Factor	COMMENTS	Risk Rating
<u>Project Longevity</u>		
a.	n.a.	n.a.
b.	The project area is legally designated as a protected area. Harvesting is prohibited. It is a legal requirement to protect and maintain the planted/naturally regenerated trees. The land use is also legally defined by the Land and Forest Protection Committee (Bhumi Raksha Committee) and local Panchayats.	5
<i>Total Score Project Longevity</i>		5
Summary Internal risk		
Project Management		-4
Financial Viability		0
Opportunity Cost		-4
Project Longevity		5
TOTAL		0
External risk		
<u>Land Tenure</u>		
a.	n.a.	n.a.
b.	As described in section 1.12.1 of the Project Description, NEWS selected suitable planting areas which are owned by the government, and land use is defined by the Land and Forest Protection Committee (Bhumi Raksha Committee) and local Panchayats. The communities have also embraced the mangrove resto-ration project. No changes have occurred since 2 nd verification.	2
c.	Access/use rights are clearly defined. Disputes over land tenure or ownership do not exist., No changes since 2 nd verification.	0
d.	Access/use rights are clearly defined. Disputes over land tenure or ownership do not exist., No changes since 2 nd verification.	0
e.	Potential impacts undermining issued credits in the next 10 years will be irrelevant and/or mitigated. 1. The project area is located in Ganges-Brahmaputra-Megha system is the second largest hydrological system after the Amazon. It is unlikely that the flow will be significantly affected by any large derivation or dam further upstreams. Further the areas are located in coastal wetland that are legally protected. 2. NEWS has selected the plantations areas in low risk areas in order to avoid loss due to erosion, details are explained in the PD. 3. The areas are widely distributed, so that a significant loss of the total area is very unlikely. No changes have occurred since 2 nd verification.	0

Risk Factor	COMMENTS	Risk Rating
f.	<p>The project area is designated as a protected area. Once restored, the trees will not be harvested or removed as they are legally protected from such actions.</p> <p>No changes since 2nd verification</p>	-2
g.	n.a.	0
<i>Total Score Land Tenure</i>		0
<u>Community Engagement</u>		
a.	<p>There are no households living inside the project area. This could be sustained during the onsite visit via interviews and observations.</p> <p>No changes since 2nd verification.</p>	0
b.	<p>NEWS is conduction consultations via the village governing institutions (Panchayats). These consultations involve all villages in and around the project area and are organized through the Panchayats. When selecting sites/plots for the project, a systematic process of consultation is also undertaken in the area. As a result, households are voluntarily participating in the project activities, e.g., in collection of seeds, nursery raising, plantation and livelihood activities.</p> <p>This could be sustained during the onsite visit via interviews and observations.</p> <p>No changes since 2nd verification.</p>	0
c.	<p>The project generates net positive impacts on the social and economic well-being of the local communities who derive livelihoods from the project area as explained in section 1 (Opportunity cost) of this document. Further a due diligence review was presented during the onsite visit (Dr Jack Ruitenbeek (Consultant to IUCN), Somenath Bhattacharyya (Senior Wetlands Advisor, Institute of Environmental Studies and Wetland Management, Kolkata), and Dr Lalit Banerjee (Mangrove Wetland Specialist, Joint Director (retired) Botanical Survey of India), concluding that the project activities and that ‘the project would qualify for 9 of 9 required criteria and 2 of 3 optional “Gold Level” criteria under the Climate, Community and Biodiversity Alliance Standard</p> <p>No changes since 2nd verification.</p>	-5
<i>Total Score Community Engagement</i>		-5
<u>Political Risk</u>		
Governance score	Governance score is -0.136	2
f. Mitigation:	<p>India has an established Designated National Authority under the CDM and has at least 14 registered CDM Afforestation/Reforestation project. This project has received a Letter of Approval from the DNA.</p> <p>No changes since 2nd verification.</p>	-2
<i>Total Score Political Risk</i>		0
Summary External risk		
Land Tenure		0
Community Engagement		-5

Risk Factor	COMMENTS	Risk Rating
Political Risk		2
8 Natural risk		
8.1 Fire Risk		
N.a. Mangroves		0
8.2 Pest and diseases outbreaks		
<p>93% of the plantation areas were rated as either no insect attack or very insignificant insect attack for the years 2014 and 2015. To mitigate the risk, the project is applying a mixed multi-species approach and is periodically monitoring the planted areas.</p> <p>Significance = Minor (5) Likelihood = Less than every 10 years Mitigation = 0.5</p>		2.5
8.3 Extreme weather		
<p>The Sundarbans are under risk of cyclones. Nonetheless the mangrove habitat is very well adapted on cyclones</p> <p>Significance = Insignificant (2) Likelihood = Less than every 10 years Mitigation = n.a.</p>		2
8.4 Geological risks		
<p>Erosion that occur in large-scale hydrological systems is one of the most severe risks the project activity is facing. The mangroves cannot prevent the erosion but contribute to the long-term system stability.</p> <p>NEWS is applying a criteria-based site-selection procedures to avoid areas under high risk for the project activity.</p> <p>The past 10 years of project implementation showed that the areas of the project instances always slightly increased as a result of soil stabilization and natural regeneration of mangroves.</p> <p>Significance = Minor (5) Likelihood = Less than every 10 years Mitigation = 0.5</p>		2.5
8.5 Windthrow		
n.a.		0
Summary Natural risk Determined by (LS × M)		
Fire (F)		0
Pest and Disease Outbreaks (PD)		2.5
Extreme Weather (W)		2
Geological Risk (G)		2.5
Windthrow (ON)		0
	Total	7

Overall Risk Rating

Risk Category	Rating
a) Internal Risk	0
b) External Risk	0
c) Natural Risk	7
Overall risk rating (a + b + c)	10

The verifier concludes based on the information gained during the onsite visit as well as the supporting information provided, that the risk rating is appropriate.

Related finding see CAR 06

VERIFICATION CONCLUSION

Livelihoods Fund has commissioned the TÜV NORD JI / CDM Certification Program to carry out the 3rd Verification of the project “India Sundarbans Mangrove Restoration” with regard to the requirements of VCS Version 4.0.

In the course of the verification six (6) Corrective Action Requests were raised and successfully closed.

The verification is based on the draft monitoring report^{/MR1/} revised monitoring report^{/MR2/}, the monitoring plan as set out in the validated PD^{/PD/}, the validation report^{/VR/}, emission reduction calculation spreadsheet^{/XLS/} and supporting documents made available to the TÜV NORD JI/CDM CP by the project participant.

In detail the conclusions can be summarised as follows:

- All operations of the project are implemented and installed as planned and described in the validated project description.
- The monitoring plan is in accordance with the applied approved methodology i.e AR-AM0014 Version 3.
- The instruments essential for measuring parameters required for calculating removals is calibrated appropriately.
- The monitoring system is in place and functional. The project has generated GHG removals.

Verification period: From 01/04/2018 to 30/04/2021 (including both days)

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)	Buffer pool allocation	VCUs eligible for issuance
2018	0.00	97,242	0.00	97,242	9,724	87,518
2019	0.00	129,656	0.00	129,656	12,966	116,690
2020	0.00	129,656	0.00	129,656	12,966	116,690
2021	0.00	43,219	0.00	43,219	4,322	38,897
Total	0.00	399,773	0.00	399,773	39,977	359,796

Munich, 11. January 2023



Martin Opitz

Team Leader

JI/CDM Certification Program

Hannover, 11. January 2023



Alexandra Nuske

Final Approver

JI/CDM Certification Program

APPENDIX I: REFERENCES

Table 1: Documents provided by the project proponent

Reference	Document
/MR/	MR 3 rd Verification; INDIA SUNDARBANS MANGROVE RESTORATION, ver 3.0, 21-December-2021
/NPRR/	Non-Permanence Risk Report; India Sundarbans Mangrove Restoration, ver 2.0, 21-December-2021
/XLS/	2021-12-21 NEWS_ex-post carbon calculations; XSL; Unique Landuse
/CON/	Tree_Final-Verification; XLS; (data of remeasurement); Tuv Nord
/SHP/	Shapefiles
/RM/	Films of the measurement of the following PSPs respectively their sub plots: 4-ST21-1_1 S16_1 S7_6_9 4-ST21-1_1 4-M22-2_11 4-M34-1_1 M30_1 M17_2_1 M22_13
/INV/	Inventory Training; Unique Land use; 2021-03-08
/PD/	Project Description for the Voluntary Carbon Standard ARR project activity: India Sundarbans Mangrove Restoration; 10-06-2015
/VR/	Validation/Verification Report: India Sundarbans Mangrove Restoration; 08-09-2015; SCS Global Services (SCS)
/TS/	Verification Report: India Sundarbans Mangrove Restoration; 26-11-2018; Tüv Süd South Asia PVT. Ltd

Reference	Document
/IM/	Interview Memo S01-F010 28 th – 29 th September 2021; Tuv Nord, Mr. Tamal Sen
/IM1/	Supplement to interview Memo S01-F010 28 th – 29 th September 2021; Tuv Nord, Mr. Tamal Sen
/ALL/	Attendance Register; 28 th – 29 th September 2021; Tuv Nord, Mr. Tamal Sen
/BH/	Badabon Harvest; https://www.facebook.com/badabon.harvest.1
/NNH/	https://www.youtube.com/watch?v=NyLitrvMFno
/QAQC/	QA/QC Protocol

Table 2: List of interviewed persons

Reference	Mol ¹		Name	Organization / Function
/ IM1 /	V	<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms.	Ajanta Dey	Project coordinator / NEWS
/ IM2 /	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Matthias Seebauer	Consultant / Unique Land use
/ IM3/	L	<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms.	Laymi Panuya	Pradhan / Madhusudanpur GP
/ IM3/	L	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Prabir Mondal	Supervisor / NEWS volunteer
/ IM3/	L	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Kalipada Debnath	Stewart / NEWS volunteer
/ IM3/	L	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Bhaskar Mistri	Stewart / NEWS volunteer
/ IM3/	L	<input type="checkbox"/> Mr.	Rama Baidya	Secretary / SHG Larshmisree

Reference	Mol ¹		Name	Organization / Function
		<input checked="" type="checkbox"/> Ms.		
/ IM3/	L	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Srimonta Dinda	Stewart / NEWS volunteer
/ IM3/	L	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Tapan Giri	Stewart / Pragati BFLG
/ IM3/	L	<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms.	Dipak Maiti	Stewart / Pragati BFLG
/ IM3/	L	<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms.	Karana Routh	Stewart / Matangini BFLG
/ IM3/	L	<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms.	Nilima Jana Bera	Stewart / Matangini BFLG
/ IM3/	L	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Radhashyam Pandit	Panchayat / Patharz Pzatima
/ IM3/	L	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Prankrishna Maiti	Pradhan / Digambarpur GP
/ IM3/	L	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Gour Maiti	Stewart / NEWS volunteer
/ IM3/	L	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Somnath Bera	Stewart / NEWS volunteer
/ IM3/	L	<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms.	Noorjahan Khatun Begam	Pradhan / Digambarpur GP
/ IM3/	L	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Tanushyam Kar	G.R.S / Digambarpur GP

1) Means of Interview: (Telephone, E-Mail, Video, Live Interview)

APPENDIX II: FINDINGS

CAR ID	01	Section no.	1.11	Date	:08/07/2021
Description of CAR					
As required by the MR template:					
Please clarify if in regard to the project activity (restoration of mangrove forests in the Sunderbans) there are any nationally stated sustainable development priorities, including any provisions for monitoring and reporting same.					
If so, please add respective information, respectively sustain, why this is not the case.					
Project participant response					Date : 01/12/2021
In India, there are as such no sustainable development provisions based on mangrove separately but the Government of India has instrumented some specific laws for overall mangrove ecosystem protection.					
The Ministry of Environment & Forests, Govt. of India adopted the National MAB (Man and Biosphere) program and declared the Sundarban as the Sundarban Biosphere Reserve in 1989 which is very much correlated with the SDGs 13 (climate action), 14 (Life below water), 15 (Life on land).					
The Environment (Protection) Act, 1986 has had a crucial role in the conservation and management of mangrove ecosystems. It declares a Coastal Regulation Zone in which industrial and other activities such as discharge of untreated water and effluents, dumping of waste, land reclamation and bunding are restricted in order to protect the coastal environment.					
The Forest Survey of India, comes out with a report every two years, on behalf of Ministry of Environment , Forests and Climate Change , Government of India, where all the protected, non - protected forest covers are mapped and documented.					
See the respective PD section how the project contributes to these sustainable development goals. PD section updated accordingly.					
Documentation provided by project participant					
<input checked="" type="checkbox"/>	Changes in the PD	Section(s):several		New version No.: 2	
<input type="checkbox"/>	Changes in XLS	Worksheet(s):		New version No.:	
<input type="checkbox"/>	Other:				
DOE assessment					Date: 07/12/2021

Requested clarification is provided. The information was sustained by the national team member of the verification team. CAR can be closed.

Conclusion Additional action should be taken (finding remains open)
 The finding is closed

CAR ID	02	Section no.	2.1	Date	:08/07/2021
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Description of CAR

As required by the MR template:

Please clarify if there are any negative environmental and socio-economic impacts in regard to the project activity.

In case not, clearly state, that no negative impacts are expected/reported.

Project participant response Date : 01/12/2021

The project has significant environmental benefit leading to a countable benefit in socio-economic status of the local communities. It provides a bio-shield against storms and cyclones, dissuades wind and wave energy and thus protect the embankment which is the lifeline of the people of Sundarban. Besides, it provides shrimp, crabs to the system, produces honey, promotes tourism etc augmenting livelihood activities among the local communities dependent on the natural resources.

Therefore, there are no negative environmental and socio-economic impact in regard to the project activity.

PD section updated accordingly

Documentation provided by project participant

<input checked="" type="checkbox"/>	Changes in the PD	Section(s):several	New version No.: 2
<input type="checkbox"/>	Changes in XLS	Worksheet(s):	New version No.:
<input type="checkbox"/>	Other:		

DOE assessment Date: 07/12/2021

Clarification is provided. The information could be sustained during the onsite visit. CAR can be closed.

Conclusion Additional action should be taken (finding remains open)
 The finding is closed

CAR ID	03	Section no.	2.2	Date	:08/07/2021
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Description of CAR

As required by the MR template, please provide the following information:

Describe the process for, and the outcomes from, ongoing communication with local stakeholders conducted prior to verification. Include details on the following:

- *The procedures or methods used for engaging local stakeholders (e.g., dates of announcements or meetings, periods during which input was sought).*
- *The procedures or methods used for documenting the outcomes of the local stakeholder communication.*
- *The mechanism for on-going communication with local stakeholders.*
- *How due account of all and any input received during ongoing communication has been taken. Include details on any updates to the project design or justify why updates are not appropriate.*

For AFOLU projects, also demonstrate how the project has communicated the following with local stakeholders:

- *The results of project implementation, including the results of monitoring.*
- *Any changes, where relevant, to risks, costs and benefits the project may bring to local stakeholders.*
- *Any changes, where relevant, to relevant laws and regulations covering workers' right in the host country.*
- *The process of VCS Program verification and the validation/verification body's site visit.*

Project participant response

Date : 01/12/2021

Now as part of the ongoing communication and consultation the following procedures are conducted with local stakeholders prior to verification:

- ✓ Consultation with the local communities, Meeting in person with the local government representatives, formal and informal invitation to the related local stakeholders to get engaged in the verification process. Particularly the Mangrove stewards are mobilized in each of the targeted areas to physically support during surveillance, plot measurements etc.
- ✓ Preparation of meeting resolution during communication with the stakeholders and photographic documentation of the conducted meetings are generally kept as documentation for stakeholder consultation and interaction.
- ✓ Phone interaction with the stakeholders and face to face formal and informal meetings on update of activities during the verification process
- ✓ The discussions are conducted at various levels - local communities esp. women, Mangrove Stewards, Panchayat representatives, Zonal Managers (NEWS), Mangrove Officers and Program Director. It must be stressed that this is not a stand-alone process only for verification, but a

standard approach maintained in the project through WhatsApp, Conference calls, zoom calls etc. over smart phones.

- ✓ Sharing of the photographs and published articles in local language for outreach. The increasing number of storms and cyclones represent a real threat to the livelihoods in the project and the Sundarbans as a whole and NEWS represents in most cases the first 'lifeline' for the communities in the project in terms of communication, first aid and long-term support, in particular the massive importance of mangroves to protect the embankments against catastrophic cyclone events (see the short documentary done in the aftermath of storm Aila by NEWS – [LINK](#) (warning video contains disturbing scenes))
- ✓ The following information is shared with local communities specifically with regards to the verification process:
 - The purpose of the mangrove forest inventory
 - The design of the measurement system, i.e. layout of sample plots, design of the sample plots, the equipment and technologies used to locate the sample plots and perform the mangrove tree measurement, the data collection during the sample plot assessment, the process of recording the data during the mangrove measurement
 - Purpose and preparation of the field audit of the VVB to ensure interaction with local community members at the selected VVB sites.

PD section updated accordingly

Documentation provided by project participant

<input checked="" type="checkbox"/>	Changes in the PD	Section(s):several	New version No.: 2
<input type="checkbox"/>	Changes in XLS	Worksheet(s):	New version No.:
<input type="checkbox"/>	Other:		

DOE assessment Date: 07/12/2021

Clarification is provided. The information could be sustained during the onsite visit. CAR can be closed.

Conclusion Additional action should be taken (finding remains open)
 The finding is closed

CAR ID	04	Section no.	2.3	Date :08/07/2021
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Description of CAR

As required by the MR template, please provide the following information:

For AFOLU projects, provide details on the following:

- Activities implemented to mitigate risks local stakeholders due to project implementation.
- Any updates, where relevant, to the property and land use rights of the local stakeholders and a demonstration that the project has not negatively impacted such rights without first obtaining the free, prior and informed consent of the affected parties, and provided just and fair compensation if done so.
- The processes used to communicate and consult with local stakeholders during the monitoring period, including any information about any conflicts that arose between the project proponent and local stakeholders and whether any such conflicts were resolved via the established grievance redress procedure.

For AFOLU projects with no impacts on local stakeholders, provide evidence of such.

Project participant response

Date : 01/12/2021

This project represents an exceptional community based, pro-poor project with significant biodiversity and socio-economic impacts. It was entirely built with the local communities and adapted to their local needs. Communication with local communities almost on a daily basis is vital for the success of the project , therefore maintaining transparency, sharing information on the progress of the project and conflict resolution through discussion with the communities, local Government and other stakeholders are always part of this standard community communication and consultation process. Necessary permissions were taken from Panchayat Pradhan to avoid violation of land use rights prior to the plantation. The Panchayat Pradhan acts as custodian of the land use rights esp. related to social forestry. During this monitoring period no conflicts or dispute situations occurred.

PD section updated accordingly

Documentation provided by project participant

<input checked="" type="checkbox"/>	Changes in the PD	Section(s):several	New version No.: 2
<input type="checkbox"/>	Changes in XLS	Worksheet(s):	New version No.:
<input type="checkbox"/>	Other:		

DOE assessment

Date: DD/MM/2021

Clarification is provided. The information could be sustained during the onsite visit. CAR can be closed.

Conclusion Additional action should be taken (finding remains open)
 The finding is closed

CAR ID	05	Section no.	5.4	Date :20/12/2021
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Description of CAR

When subtracting the value of the 2nd verification in order to calculate the emission reductions and removals achieved during the crediting period for the 3rd verification the sum of $C_{TREE_PROJ_DISCOUNT;t2}$ and $C_{DW_PROJ;t2}$ was used only without subtracting $C_{TREE_BSL;t}$, $C_{DW_BSL;t1}$ and $C_{SHRUB_BSL;t1}$. This leads to an underestimation of the achieved emission reductions and removals of the 3rd monitoring period/verification.

Project participant response	Date : 20/12/2021
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The excel calculations have been corrected. All corresponding values in the MR have been updated accordingly.

Documentation provided by project participant

<input checked="" type="checkbox"/>	Changes in the PD	Section(s):several	New version No.: 3
<input checked="" type="checkbox"/>	Changes in XLS	Worksheet(s):	New version No.: 2
<input type="checkbox"/>	Other:		

DOE assessment	Date: 21/12/2021
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The calculation mistake was corrected in the Excel-Spreadsheet and all corresponding values in the MR updated, CAR can be closed.

Conclusion	<input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed
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CAR ID	06	Section no.	NPRR	Date	:20/12/2021
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Description of CAR

Ensure to provide data of the last five years to calculate the WGI for the assessment of the Political Risk

Project participant response	Date : 20/12/2021
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The NPRR report has been updated accordingly

Documentation provided by project participant

<input type="checkbox"/>	Changes in the PD	Section(s):several	New version No.:
<input type="checkbox"/>	Changes in XLS	Worksheet(s):	New version No.:
<input checked="" type="checkbox"/>	Other:		

DOE assessment	Date: 21/12/2021
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Data from 2015 to 2020 was provided to calculate the WGI, CAR can be closed.

Conclusion	<input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed
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FAR ID	01	Section no.	5.1&General	Date :11/01/2023
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Description of FAR

Ensure to provide data of the last five years to calculate the WGI for the assessment of the Political Risk

Project participant response

Date : dd/mm/yyyy

According to 3.2.7 of the VCS Standard 4.1 (applicable at the time of the assessment) the baseline needs to be reassessed every 10 years. As the monitoring period ended 30th of April 2021 and the project started 28th September 2010, out of the 1125 days of the current monitoring period, 215 days (19%) have exceeded the 10-year period. Thus, the baseline has to be reassessed during next verification.

Documentation provided by project participant

<input type="checkbox"/>	Changes in the PD	Section(s):several	New version No.:
<input type="checkbox"/>	Changes in XLS	Worksheet(s):	New version No.:
<input type="checkbox"/>	Other:		

DOE assessment

Date: dd/mm/yyyy

Conclusion	<input checked="" type="checkbox"/> Additional action should be taken (finding remains open) <input type="checkbox"/> The finding is closed
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