



VALIDATION & VERIFICATION REPORT AFFORESTATION IN COOPERATION WITH LOCAL LANDOWNERS FOR FORESTAL SAN PEDRO S.A



Document Prepared by TÜV NORD CERT GmbH

Project Title	Afforestation in cooperation with local landowners for Forestal San Pedro S.A
Version	1.4
Report ID	8003018760 - 21/040

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Client	Forestal San Pedro S.A.
Date of Issue	11 March 2022

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Summary:

Description of validation and project: The projects activity consists of afforestation of agricultural land, mostly pastureland to establish quality timber plantations. This is achieved by operating under the Law 4890/13, which allows to legally decouple forest ownership from land ownership. Forestal San Pedro S.A. seeks to cooperate with local medium and large landowners to conduct tree planting on their properties. Plantations are established in silvopastoral systems on traditional cattle farms. Landowners lease their land to the company and get a share of the expected benefits while continuing using the land for cattle grazing in a manner compatible with forestry. The Project aims to establish and manage an area of 7,000 ha.

Purpose and scope: The validation and verification objective is an independent assessment by a Third Party of a proposed project activity against all defined criteria set for the registration under the VCS.

In order to confirm that the project activity, as documented, is sound reasonable and meets the identified criteria, the validation involves the assessment of project conformance to VCS rules, project conformance to the applied methodology, including the procedure for the demonstration of additionality specified in the methodology; and likelihood that methods a procedures set out in the project description will generate verifiable GHG data and information when implemented. Validation is a requirement and is seen as necessary to provide assurance to stakeholders of the quality of project and its intended generation of VCU. Validation is part of the VCS project cycle and will finally result in a conclusion by the executing VVB whether a project activity is valid to be submitted for registration to VCS registry. The ultimate decision on the registration of a proposed project activity rests with the VCS/Verra.

The Verification is based on the draft joint project description & monitoring Report^{/PDMR/}, emission reduction calculation spreadsheet^{/XLSep/}, the monitoring plan as set out in the validated joint project description & monitoring Report^{/PDMR/} and supporting documents made available to the TÜV NORD JI/CDM CP by the project participant.

Method and criteria: Validation is conducted using TÜV NORD CERT GmbH procedures in line with the requirements specified in the latest version of the VCS Validation and Verification Manual and applying auditing techniques. The validation team assessed the proposed project activity's compliance under the VCS Version 4.1, the selected methodology and the project description. The project activity is found to be appropriately eligible under Project Scope 14 "Agriculture, Forestry, and other Land Use (AFOLU)". The validation criteria followed the guidance documents provided by VCS including the following: VCS Standard Version 4.1, VCS Program Guide Version 4.0,

AFOLU Non-Permanence Risk Tool Version 4.1, Methodology AR-ACM0003 version 2.0.0 – “Afforestation and reforestation of lands except wetlands”.

Number of findings: In the course of the validation 10 Corrective Action Requests (CARs), 18 Clarification Request (CL) were raised and successfully closed. Two FARs were raised. The assessment is included in the report.

Uncertainties: There are no restrictions of uncertainty.

Validation conclusion: Forestal San Pedro S.A. has commissioned the TÜV NORD JI/CDM Certification Program to carry out the Verified Carbon Standard (VCS) validation and verification of the project: Forestal San Pedro S.A. (PL 2361) with regard to the relevant requirements of VCS standard Version 4.1. TÜV NORD confirms all validation activities including objectives, scope and criteria, level of assurance, monitoring and project documentation adhere to VCS Version 4.1. TÜV NORD concludes that the San Pedro S.A. joint project description & monitoring Report (PDMR) version 1.2 of 09-July-2021 meets the requirements of VCS and all associated updated. The GHG assertion provided by Forestal San Pedro S.A and validated by TÜV NORD will result in the expected GHG emission reductions or removal of 645,283 tCO₂e on 4,018 ha over the 20 years crediting period.

Verification conclusion: The project consists of 4,018 hectares of pasture-/agricultural land afforested through planting of Eucalyptus in a mostly silvopastoral system. Due to the Covid-19 pandemic and the fact that Law 4890/13 was previously only applied in Paraguay in the context of the present project, there were delays in the notarized transfer of rights to the trees. For that reason, the present verification exclusively refers to the following three FMUs out of in total 9 FMUs only:

- FMU 5 “Los Juanes”,
- FMU 6 “Isla Yobay”,
- FMU 8 “Ocampo Cue”

Thus the total area reflected in the verification consists of 1,518 ha only.

Verification Period: from 05/04/2015 to 31/12/2020 (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-ACM0003 – version 2.0.0;
- 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)
2015	381	13,410	0.00	13,029
2016	4	26,700	0.00	26,696
2017	199	50,674	0.00	50,475

2018	0.0	35,209	0.00	35,209
2019	10	37,394	0.00	37,385
2020	0.0	35,727	0.00	35,727
Total	594	199,114	0.00	198,520

- Total Emission reductions for this monitoring period: 198,520 t CO₂e

CONTENTS

1	INTRODUCTION Validation Report: VCS Version 4.0	6
1.1	Objective	6
1.2	Scope and Criteria	6
1.3	Level of Assurance	7
1.4	Summary Description of the Project	7
2	VALIDATION AND VERIFICATION PROCESS	8
2.1	Method and Criteria	8
2.2	Document Review	9
2.3	Interviews	10
2.4	Site Inspections	10
2.5	Resolution of Findings	11
3	VALIDATION FINDINGS	12
3.1	Project Details	12
3.2	Participation under Other GHG Programs	15
3.3	Safeguards	15
3.4	Application of Methodology	18
3.5	Non-Permanence Risk Analysis	26
4	VERIFICATION FINDINGS	12
4.1	Accuracy of GHG Emission Reduction and Removal Calculations	36
4.2	Quality of Evidence to Determine GHG Emission Reductions and Removals	38
5	VALIDATION AND VERIFICATION CONCLUSION	39
	APPENDIX 1: ABBREVIATIONS	41
	APPENDIX 2: REFERENCES	43
	APPENDIX 3: INTERVIEWS	48
	APPENDIX 4: LIST OF FINDINGS	52
	APPENDIX 5: STATEMENT OF COMPETENCE	90

1 INTRODUCTION

1.1 Objective

Validation Report: VCS Version 4.0

The purpose of a validation&verification is to have an independent third party assess the project design. In particular the project's baseline, the monitoring plan (MP), and the project's compliance with

- the requirements of the VCS Version 4.1;
- the requirements of the approved methodology;
- relevant rules, including the host country legislation;

are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is seen as necessary to provide assurance to stakeholders on the quality of the project and its intended generation of Verified Carbon Units (VCUs) / Emission reductions.

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 (Paraguay) 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 validation scope is given as a thorough independent and objective assessment of the project design including especially the correct application of the methodology, the project's baseline study, additionality justification, stakeholder involvement, environmental impacts and monitoring plan, which are included in the joined project design document & monitoring report/^{PDMR}/ and other relevant supporting documents, to ensure that the proposed VCS project activity meets all relevant and applicable VCS Version 4.1 criteria.

The information included in the the joined project design document & monitoring report/^{PDMR}/ and the supporting documents were reviewed and assessed against the requirements as set out by the VCS Version 4.1.

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

The verification of this project is based on the joined project design document & monitoring Report/^{PDMR}/, emission reduction calculation spread sheet/^{XLSea,XLSep}/, 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.

Validation Report: VCS Version 4.0

The validation&verification is based on the information made available to TÜV NORD JI/CDM CP and on the contract conditions. TÜV NORD JI/CDM CP cannot be held liable by any entities for making its validation opinion based on any false or misleading information supplied to it during validation/verification.

1.3 Level of Assurance

Indicate the level of assurance of the validation. The validation has been planned and organized to achieve a

- ☒ reasonable level of assurance
☐ limited level of assurance

1.4 Summary Description of the Project

The projects activity consists of afforestation of pastureland to establish quality timber plantations. This is achieved by operating under the Law 4890/13, which allows to legally decouple forest ownership from land ownership. Forestal San Pedro S.A. seeks to cooperate with local medium and large landowners to conduct tree planting on their properties. Plantations are established in silvopastoral systems on traditional cattle farms. Landowners lease their land to the company and get a share of the expected benefits while continuing using the land for cattle grazing in a manner compatible with forestry. The Project aims to establish and manage an area of 7,000 ha.

At the time of the validation/verification the project consisted of 4,018 hectares of pastureland afforested through planting of Eucalyptus in a silvopastoral system. Due to the Covid-19 pandemic and the fact that the above-mentioned Law 4890/13 was previously only applied in Paraguay in the context of the present project, there were delays in the notarized transfer of rights to the trees. For that reason, the present verification exclusively refers to the following three FMUs out of in total 9 FMUs only:

- FMU 5 “Los Juanes”,
- FMU 6 “Isla Yobay”,
- FMU 8 “Ocampo Cue”

The eligible project area of the three FMUs sums up to 1,518 ha.

The project further is certified against the FSC sustainable forest management standard/FSC/.

The 1st monitoring period is from April 05 2015 to December 31 2020. In this period a net carbon emission reduction of 198,520 tCO₂-equivalent has been determined, which results in 158,816 VCU_s deducting the 20 % buffer/XL_{Sep}/.

2 VALIDATION AND VERIFICATION PROCESS

Validation Report: VCS Version 4.0

2.1 Method and Criteria

The validation/verification of the project consisted of the following steps:

- Contract review
- Appointment of team members and technical reviewers
- Publication of the VCS project description & monitoring report/^{PDMR}
- A desk review of the VCS project description & monitoring report/^{PDMR} submitted by the client and additional supporting documents with the use of customised validation protocol
- Validation and verification planning
- On-Site assessment
- Background investigation and follow-up interviews with personnel of the project developer and its contractors
- Draft validation and verification reporting
- Resolution of corrective actions
- Final validation and verification reporting
- Technical review
- Final approval of the validation and verification.

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

Table 2.1: Validation sequence

Topic	Time
Assignment of validation	2021-03-09
On-site visit	2021-05-03 – 2021-05-07
Draft reporting finalised	2021-06-10
Technical review on draft reporting finalised	2021-07-11
Final reporting finalised	2021-07-16
Technical review on final reporting finalised	2021-07-20
Final corrections	2021-07-20
Final corrections after PRR by VERRA	2022-03-11

Sampling Plan: All FMUs have been visited and PSPs (permanent sample plots) of the client's monitoring system were re-measured on all FMUs. Based on the FSC Standard FSC-STD-20-007 out of the 824 PSPs 007 ($X = 0.8 * \sqrt{y}$) a sample of 24 plots was randomly selected, choosing those plots that allow to get an full overview of the FMUs while traveling to the PSPs.

Appointment of Validation Team: Based on a competence analysis and individual availabilities a validation 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.

Validation Report: VCS Version 4.0

Table 2-2 Validation team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/Doc review	On-site inspection	Interview(s)	Validation/Verification findings
1.	Team Leader (also verifier)	EI	Opitz	Martin	External Expert	☒	☐	☒	☒
2.	Team member	EI	Piz-zurno	Cecilia	External Expert	☒	☒	☒	☒

Table 2-3 Technical reviewer and approver

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer / Final Approver	IR	Nuske	Alexandra	TÜV NORD CERT GmbH

Refer to Appendix 4 for Competence of team members and technical reviewer.

2.2 Document Review

The VCS PDMR/^{PDMR/} and supporting background documents related to the project design and baseline were reviewed. Documents reviewed included data used to set baseline, carbon rights contracts, additionality analysis and carbon calculation spreadsheets.

Furthermore, the validation 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 validation are summarized in **Appendix 2**.

The validation/verification was performed based on the document check and site inspection. Refer to section 3 of this report for the validation process and section 4 for the verification process in detail and corresponding documents review.

Validation Report: VCS Version 4.0

2.3 Interviews

The validation/verification team has carried out interviews 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.

Representatives of the PP, consultant and other parties including the operational staff of the plantation and community members affected by the project activity have been interviewed.

The interviews served to confirm selected information and to resolve issues identified in the document review. The main topics of the interviews are summarized in Table 2-4.

Table 2-4: Interviewed groups of persons and interview topics

Interviewed Persons / Entities	Interview topics
Project proponent representatives	- Chronological description of the project activity with documents of key steps of the implementation.
Project consultant	- Technical details of the project realization, project feasibility, designing, operational life time, monitoring of the project
Field staff	- Monitoring and measurement equipment and system.
Community Members, Comunidad Y'apy Poty – Pai Tavytera	- Financial aspects
Land Owner	- Crediting period
	- Project activity starting date
	- Ownership
	- Baseline study assumptions
	- Additionality
	- Monitoring
	- Analysis of local stakeholder consultation
	- Roles & responsibilities of the project participants w.r.t. project management, monitoring and reporting
	- Editorial issues of the VCS PDMR
	- Environmental aspects
	- Social-economic aspects

A comprehensive list of all interviewed persons is part of **Appendix 3**.

2.4 Site Inspections

As most essential part of the validation/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. Furthermore, the on-site assessment is necessary to check the monitoring data with respect to accuracy to ensure the calculation of emission reductions. The main tasks covered during the site visit include, but are not limited to:

- All FMUs were visited, and 24 PSPs remeasured; the PSPs were chosen in a way that allowed an overview over the total project area
- the on-site assessment included an investigation of whether all relevant equipment is installed and works as anticipated.

- the operating staff was interviewed and observed in order to check the risks of inappropriate operation and data collection procedures as well as risk of accidents/health and safety
- Community members of indigenous community Y'apy Poty – Pai Tavytera were interviewed 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.
- 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. Ms. Cecilia Pizzurno 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.

2.5 Resolution of Findings

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

A Corrective Action Request (CAR) is established where:

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

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

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

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

In the course of the validation 10 Corrective Action Requests (CARs), 18 Clarification Request (CL) were raised and successfully closed. The assessment is included in the report.

2.5.1 Forward Action Requests

FAR 1 and FAR 2 have been opened that must be followed up during the 2nd Verification. See section 3.1 for details.

3 VALIDATION FINDINGS

3.1 Project Details

Validation Report: VCS Version 4.0

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

The Project belongs to the project type Afforestation Reforestation Revegetation (ARR), the sectoral scope is 14 AFOLU.

The proposed project consists of the afforestation of pastureland to establish quality timber plantations. This is achieved by operating under the Law 4890/13, which allows to legally decouple forest ownership from land ownership.

Different species from the genera of eucalypts are selected, among them: *Eucalyptus grandis*, *E. urophylla*, *E. saligna*, *Corymbia citriodora* and *Corymbia maculata*, as well as the hybrids *E. urograndis* (*urophylla* x *grandis*) and *E. grancam* (*grandis* x *camaldulensis*).

Eligibility:

No conversion of primary natural forest took place on the project area within the last 10 years. As the project area has been mainly pastureland it is ensured, that no conversion of natural forests took place^{/shp/}. All sites of the plantation where the PP identified minor clearings of degraded secondary forests less than 10 years ago have been classified as not eligible for the project activity, even though it could be demonstrated that the project owner was not involved in those latest clearings, as they were done for conversion into agriculture/pasture lands by the land owner some years before project start. The removal of these sites is a conservative measure to the project GHG accounting. All remaining lands included in the project activity fulfil the eligibility criteria of the standard, as could be demonstrated by verifying the shape files and satellite images of respective years 10 years before planting.

Project design, including eligibility criteria for grouped projects:

Plantations are mostly established in silvopastoral systems (on rd. 85% of the project area) allowing the continuation of the traditional animal husbandry (cattle). For the silvopastoral system a spacing of 7 x 2 or 5 x 5 x 9 x 2 is established. The maximum stocking rate is defined in the leasing contracts with property owners^{/LA,Inf/}. Damages on tree barks provoked by cattle are monitored through annual inventories. They are classified as light, medium, or severe^{/CIA/}.

Eligibility criteria for new instances are clearly defined in the project design document and monitoring plan^{/PDMR/}.

Ownership:

At present the PP has fully acquired the assets of the FMUs 5 (Los Juanes), 6 (Isla Yobay) and 8 (Ocampo cue). Respective notarized transfers of the “forestry surface rights” (DRSF = Derecho Real de Superficie Forestal) was verified^{/DRSF/}.

The three mentioned FMUs sum up to 2,127 ha of the project area out of which 1,518 ha are eligible. According to status report^{/AB/} of the notarial procedures, provided by the lawyers of the PP, the forestry surface rights and thus the right of the forest assets of the remaining 6 FMUs are expected to be

transferred until September 2021 (extendable up to June 2022). Conclusion: 35% of the total area is already notarized to the PP. The process of notarial transfer of the remaining 65% has already been initiated and is expected to be completed by June 2022.

FAR ID	1	Section no.	n.a.	Date : 20/07/2021
Description of CAR				
At the time of the 2nd verification evidence of the notarized transfers of the “forestry surface rights” of the remaining FMUs: • FMU1: Rancho ZS • FMU2: Rancho 068 • FMU3: Don Honorio • FMU4: Loma Vistosa • FMU7: Cerrito • FMU9: Cerro Verde have to be presented.				

Project start date:

Starting date of the proposed ARR project activity: 05-04-2015. Corresponding records/^{StD}/ were checked, and the appearance of the plantations found leaves no doubt as to the age of the trees.

Project crediting period:

The project lifetime is 20 years from 05.04.2015 until 04.04.2035. All Finca owners have been informed about an appropriate CO2 benefit sharing program, that implies, that a second rotation period will be conducted/^{BSH}/.

The owners of the fincas FMU1 (Rancho ZS), FMU2 (Rancho 68), FMU7 (Cerrito) and FMU9 (Cerro Verde) have signed letters/^{PLT}/ agreeing, that a carbon project will be implemented, knowing that this results in requirements regarding crediting period and project lifetime and thus in a project lifetime beyond the required 20 years crediting lifetime. The fincas represent 60% of the forest assets.

Since the owners of the fincas do not incur any losses through the project activity, on the contrary, there is added value both through the participation in the revenues of the wood sales and the sales of carbon credits, it can be concluded, that a second rotation will be conducted and thus the requirements in regard to crediting period and project lifetime will be met.

FAR ID	2	Section no.	n.a.	Date : 21/11/2021
Description of CAR				

At the time of the 2nd verification evidence the PP is requested to present the leasing contract extensions in order to ensure the required project crediting period of 20 years.

Validation Report: VCS Version 4.0

Project scale and estimated GHG emission reductions or removals:

Project scale is “Project”, the average tree GHG removals by sinks is 43,631 tCO₂-e/year.

Project location:

The first instance of the grouped project is located in the province of San Pedro and Canindeyú^{/sph/}. Project expansion (second instance) will most likely occur within a maximum radius of 100 km from existing FMU boundaries.

This could encompass the Departments of San Pedro, Canindeyu, Caaguazú, and/or Concepción. The political limits of these 4 contiguous Departments are considered the outer project boundary (64,204 km²).

Conditions prior to project initiation:

All 9 FMUs are established on pastureland where mainly extensive cattle husbandry was conducted, with the exception of Rancho 068 (FMU2). The Fincas are located ecoregions of the “Chaco Húmedo” and the “Bosque Atlántico”. The land uses on the different FMUs encountered previous to project initiation correspond to the most common land uses found in the region: mechanized soy on 631.5 ha and implanted pastures on 3,365 ha^{/shp/}.

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

The project is fully compliance with all applicable laws, which are:

- Superordinate framework Forestry Law 422/73

Approval and/or registration by the applicable regulatory agencies as follows:

- The National Forest Institute (INFONA), created by Law N° 3464/08, ➔ permits for the transport and commercialization of timber, approves forest management plans, and registers plantations.
- The Environmental Ministry (MADES) ➔ Implementation and Monitoring of environmental regulations; Environmental Impact Assessment Law (Law N° 294/93), Environmental licensing process (Decree N° 453/2013).

Environmental regulations such as:

- Maintenance of 25 % of original forest cover (Law N° 422/1973 and Decree N° 18,831/1986).
- Protection of Buffer zones of streams and rivers (Law N° 4,241/10 and Decree N° 9,824/12).
- Forest conversion ban since 2004 (Law N° 2,524/2004 and subsequently N° 3,139/ 2006, N° 3,663/2008, N° 5,045/2013, and N° 6,256/2018).
- Penalization of crimes against the environmental (Law N° 716/96).

Labor and social regulations, governed by Law N° 17,071/1943, N° 1,860/1950, N° 375/1956 and N° 213/93

The compliance with mentioned laws is confirmed via a Due Dilligence Assessment^{/DD/} as well as the annual FSC Audits^{/MA,1SA/}.

This was further confirmed via interviews held with field staff, technical staff, responsables for work safety, social affairs, and the leaders of the community Ya'guay Poty.

Validation Report: VCS Version 4.0

Participation under other GHG programs:

After consulting other carbon project registries^{/GS/CDM/ICAP/ACR/AOR/CAR/}, it can be confirmed that this project activity is not listed or has not been rejected by any other GHG program.

- This was further sustained by the local audit team member that is a nationally known carbon expert in Paraguay and in charge of the two Verra registered REDD projects ID 1403 and ID 953. There is also no active ETS in the host country^{/ICAP/}.

Other forms of credit:

Not applicable. See Section 3.2

Sustainable development contributions:

The project contributes to the national forest sector by providing proof of concept and implementation of models aligned to political goals, such as the national plan of reforestation (Decree N° 10,147 of 2012), governmental efforts to formalize the biomass sector (Decree N° 4056/2015), and the contribution to the National Determined Contributions of the country, where afforestation is highlighted as a prominent measure.

Additional information relevant to the project:

Not applicable.

Based on the documentation provided, the documentation reviewed during the onsite visit as well as the interviews conducted in the field, TÜV NORD JI/CDM CP confirms that the description in the project description is accurate, complete, and provides an understanding of the nature of the project.

Related Findings see CL 01, 03, 05, 06, 07, 08, 09, 10, 11 and CAR 02, 04, 25

3.2 Participation under Other GHG Programs

According to the Paraguayan national NDC^{/DC/}, forests are not inventoried and included in the national GHG balance to this point in time. Thus, a potential risk of double counting can be neglected for the crediting period of the first verification of the first project instance.

3.3 Safeguards

3.3.1 No Net Harm

The proposed project is an afforestation project of agricultural land, mostly pastureland. Plantations are established in silvopastoral systems on traditional cattle farms. Landowners lease their land to

the company and get a share of the expected benefits while continuing using the land for cattle grazing in a manner compatible with forestry. Landowners are required to have legal land titles^{/DD/}. The plantation activity is subject to an annual inspection by an independent third party^{/FSC,MA,1SA/}.

Thus, there are no negative environmental or socio-economic impacts due to the project activity. On the contrary, in terms of ecological aspects, the most important benefits are:

- Reduction of Erosion due to tree rows
- Contribution to improved water household
- Carbon sequestration
- Valid environmental licenses
- Improvement of fire prevention

In terms of socio-economic aspects, the most important benefits are:

- Continuation of cattle grazing due to the implementation of silvopastoral systems
- Increase of job opportunities compared to industrialized agriculture for which local entrepreneurs are hired.
- Strict adherence to international accepted health and safety requirements
- Elaboration and implementation of an outgrowers scheme

TÜV NORD JI/CDM CP confirms that the project activity does not lead to any net harm in regard to environmental and socio-economic impacts. The above mentioned was further confirmed by interviewing the field staff, technical staff, plantation managers, landowners, community leaders.

Related Findings see CL 12, 13

3.3.2 Local Stakeholder Consultation

The PP has conducted stakeholders' consultations with communities directly neighboring the plantation sites, and those that share the use of resources (water courses) and infrastructure (access roads), as "direct local stakeholders".

The communities are well known and described listing joint activities, dependencies and contact persons^{/LC,IC,CD,DRP/}. Official meetings have taken place before (November 2014) or in the course of project implementation, depending on the cooperation. However, since employees from all communities work in the project, an exchange was guaranteed. With two of the communities affected, Korōrō'í and San José, out grower schemes have been agreed upon. To coordinate and manage communication and grievance mechanism a Community Liaison Officer (CLO) is introduced.

Stakeholder consultations take/took place prior to the implementation of plantation activities as well as prior to listing the VCS-PD in the VCS registry. Any grievance expressed is recorded and addressed^{/RM,MS20/}. Main grievances expressed are related to road maintenance, dust from vehicles, provenance of workers and ant infestation in community land. The grievances and mitigation

measures conducted are documented and described and found to be adequate. More recent concerns revolve primarily around the decrease in job opportunities due to the stage of development of the plantation. The comments made are expected, especially in relation to the decrease of work opportunities as older the plantation gets. The PP has presented goal-oriented possible solutions. Overall however, the advantage for the neighbouring communities outweighs the fact that a forest plantation in principle opens up significantly more work opportunities than agriculture.

The consideration of grievances and their adequate processing is also controlled during the annual FSC Audits^{/MA,1SA/}.

TÜV NORD JI/CDM CP confirms that the PP takes adequately due account of all, and any input received. The above mentioned was further confirmed by interviewing the field staff, technical staff, plantation managers, landowners, community leaders.

Related Findings see CL 14

3.3.3 Environmental Impact

For all FMUs Environmental Impact Assessments and Analysis of HCVs^{/HCV/} respectively Assessments of the Biodiversity Baseline^{/BB/} have been conducted and integrated in the corresponding Management Plans^{/MP/}.

Main negative impacts in comparison to the pre-project landuse (pasture-/agricultural land) are to be found in:

- Invasive behaviour of exotic species
- Soil erosion
- Pesticides and inputs
- Forest fires

All potential impacts are adequately dealt with, corresponding SOPs^{/SOP/} are established and the impacts are constantly monitored^{/RM/}.

The consideration of environmental impacts and their adequate processing is also controlled during the annual FSC Audits^{/MA,1SA/}.

TÜV NORD JI/CDM CP confirms that the PP takes adequately due account of all, and any potential negative environmental impact. The above mentioned was further confirmed by interviewing the field staff, technical staff, plantation managers, landowners, community leaders.

Related Findings see CL 15

3.3.4 Public Comments

This project was open for public comment from February 13 February 2021 to 15 March 2021. No comments have been received.

Related Findings see CAR 16

3.3.5 AFOLU-Specific Safeguards

The PP has a stakeholder identification and consultation processes in place^{/CL/}. Stakeholder engagement includes environmental and forest authorities, NGOs and experts, local community members and associations, contractors, and workers. The management team keeps a complete list of stakeholders per FMU which are also contacted during the FSC Audits^{/MA,1SA/}.

The main impact to local stakeholders is positive as the project is providing more job opportunities than the pre-project land use : (pasture-/agricultural land).

Besides this positive effect some potentially negative impacts are to be found in:

- Risks of accidents / Health and safety
- Non-observation of minimum labor benefits
- Dust and noise / accidents on the road

All potential impacts are adequately dealt with, corresponding SOPs^{/SOP/} are established and the impacts are constantly monitored^{/RM/}.

The consideration of socio-economic impacts for local stakeholders and contractors and their adequate processing is also controlled during the annual FSC Audits^{/MA,1SA/}.

Further it must be mentioned, that an ongoing grievance process is established and publicly available as part of the Management Plan^{/MP/}. Grievances received are processed and documented^{/RM,MS20/}. During the field visit “buzones des sugerencia y quejas” (Grievance letterboxes) could be observed at all FMUs.

TÜV NORD JI/CDM CP confirms that the PP takes adequately due account of all, and any potential negative socio-economic impact. The above mentioned was further confirmed by interviewing the field staff, technical staff, plantation managers, landowners, community leaders.

Related Findings see CL 17, CAR 26

3.4 Application of Methodology

3.4.1 Title and Reference

Approved CDM methodology: AR-ACM0003 “ AR Large scale - Afforestation and reforestation of lands except wetlands”, version 2

The following CDM methodological tools have been used in combination with the methodology:

- “Combined tool to identify the baseline scenario and demonstrate additionality”, version 7
- “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities, version 4.2
- “Estimation of non-CO2 GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity”, version 4.0
- “Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities”, version 01.1.0
- “Demonstrating appropriateness of allometric equations for estimation of aboveground tree biomass in A/R CDM project activities”, version 01.1.0

Related Findings see CAR 25, 27

3.4.2 Applicability

Audit team has reviewed the explanation provided in the joined project design document & monitoring for demonstrating that the project activity meets the requirements of the applicability criteria of the methodology. The following table gives TÜV NORD JI/CDM CP’s assessment on the justification provided.

Applicability condition	Tuv Nord assessment and justification
The land subject to the project activity does not fall in wetland category	The plantations are established on former agricultural and pasture lands, this could be observed during the onsite visit^{INF/}. This was confirmed by interviewing the field staff, technical staff, plantation managers, land-owners, community leaders.
Soil disturbance attributable to the project activity does not cover more than 10 per cent of area in each of the following types of land, when these lands are included within the project boundary: - Land containing organic soils; - Land which, in the baseline, is subjected to land-use and management practices and receives inputs listed in appendices 1 and 2 to the methodology.	During the site visit it could be observed, that the project activity did not result in any kind of soil disturbances above 10% of the area. Ploughing occurred along the planting lines only. The in the project description mentioned ploughing width of maximum 50 cm and up to 50 cm depth appears realistic. For the maximum spacing of 5 X 2 (on 15% of the project area) this lead to an ploughed area of 1,000m²/ha (A line of trees every 5 m results in 20 lines/ha → 20 lines * 0,5 m of width * 100 m of length/ha = 1,000 m² of soil disturbance/ha)

This was confirmed by interviewing the field staff, technical staff, plantation managers, landowners, community leaders.

Validation Report: VCS Version 4.0

Methodological tools	Tuv Nord assessment and justification
Combined tool to identify the baseline scenario and demonstrate additionality	The applicability condition of this tool is assessed and explained in sections 3.3.4 and 3.3.5 of this report.
Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities" (version 04.2);	There are no applicability conditions contained in this tool.
Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities	There are no applicability conditions contained in this tool.
Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities a. The areas of land (i) do neither fall into the wetland category... b. The A/R CDM project acidity meets the following conditions: i. Litter remains on site and is not removed in the A/R CDM project activity and ii. Soil disturbance attributable to the A/R CDM project activity, if any, is: Limited to soil disturbance for site preparation before planting and such disturbance is not repeated in less than twenty years.	The plantations are established on former agricultural and pasture lands, ploughing occurred along the planting lines only, litter was not removed from the plots. This could be observed during the onsite visit^{/INF/} and was confirmed by interviewing the field staff, technical staff, plantation managers, landowners, community leaders.
Estimation of non-CO2 GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity", version 4.0	N.a. Fire is not applied for e.g. land preparation.
Estimation of the increase in GHG emissions attributable to displacement of pre-	N.a. Displacement of pre-project activities does not occur.

project agricultural activities in A/R CDM project activity	
Demonstrating appropriateness of volume equations for estimation of aboveground tree biomass in A/R CDM project activities	There are no applicability conditions contained in this tool.

TÜV NORD JI/CDM CP confirms that the methodology applied including all tools applied are applicable for the project activity.

3.4.3 Project Boundary

The proposed project the afforestation of 4,018 ha of mainly pastureland as first instance in the Departments of San Pedro and Canindeyu. The Project Boundary is defined as the Departments of San Pedro, Canindeyu, Caaguazú, and/or Concepción. The political limits of these 4 contiguous Departments are considered the outer project boundary (64,204 km²).

The PP has provided the details of the project area in the form of shape files/.shp/. The documents were thoroughly assessed by the audit team checking the eligibility assessment of the project area by using Google earth imagery and other GIS files.

In accordance with the methodology applied and its corresponding tools, the following GHG sources, sinks and reservoirs for the project and baseline scenarios:

	Source	Gas	In-cluded?	Explanation/Justification
Baseline	Above-ground and Below-ground Biomass	CO2	Yes	Major carbon pool subjected to the project.
	Dead wood and litter	CO2	Yes	Conservatively included using default values provided in the tool AR-TOOL12
	Soil Carbon	CO2	Yes	Carbon stock in these pools may increase due to implementation of the project activity
Project	Above-ground and Below-ground Biomass	CO2	Yes	Major carbon pool subjected to the project

	Dead wood and litter	CO2	Yes	Conservatively not accounted for
	Soil Carbon	CO2	Yes	Carbon stock in these pools may increase due to implementation of the project activity

TÜV NORD JI/CDM CP confirms that the project boundary and selected sources, sinks and reservoirs are justified for the project.

3.4.4 Baseline Scenario

As per the methodology CDM AR-ACM0003, the PP has demonstrated the baseline scenario through the application of the “Combined tool to identify the baseline scenario and demonstrate additionality in AR CDM project activities” (version 1).

The following steps have been followed:

STEP 0: Preliminary screening based on the starting date of the A/R project activity:

The plantations acquired by Forestal San Pedro were established between 2015 and 2019. This is before the registration date and after 31 December 1999.

The above could be confirmed by the physical appearance of the forest and corresponding records proving the planting start/^{StD}.

STEP 1: Identification of alternative land use scenarios to the proposed A/R VCS project activity:

Sub-step 1a. The following realistic and credible alternatives to the proposed project activity are identified:

The following alternative land use scenarios have been identified as the plausible land use scenarios:

1. Continuation of the pre-project land use which is cattle and soy/maize production (**Alternative 1**)
2. Forestation of the land within the project boundary without being registered as the A/R CDM project activity (**Alternative 2**)

The mentioned alternative land use scenarios were checked during the site visit and confirmed by interviewing stakeholders and the landowners and literature provided/^{AD1}. The continuation of the pre-project is by far the most likely land use scenario for the project area. The establishment of a silvopastoral system with the aim to produce quality wood is, although being a brown-field investment at first glance, rather to be seen as green-field investment, as the location is outside of the high potential areas (less than 100 km from ports or industries)/^{Ad3,Ad4} and as it is facing risk/^{Ad2}.

No other possible alternative scenarios have been identified and appear reasonable for the project area.

Sub-step 1b. The following realistic and credible alternatives to the proposed project activity are identified:

All mentioned land use alternatives comply with all mandatory regulations and laws as described above in section 3.1.

To underline the particular legal compliance of the project activity, the PP has provided additional information on weak legal enforcement/^{LE/} in regard to forest laws in Paraguay.

Validation Report: VCS Version 4.0

STEP 2: Barrier analysis:

Sub-step 2a. List of barriers:

The PP considers the following barriers:

- Investment barriers
- Barriers related to land tenure, ownership, inheritance and property rights
- Barriers due to local ecological conditions
- Technological barriers
- Barriers related to local tradition

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

Alternative 1 “Continuation of the pre-project land use which is cattle and soy/maize production” as current land use is not prevented by any of the listed barriers

Alternative 2 “Forestation of the land within the project boundary without being registered as the A/R CDM project activity” is prevented by a series of risks related to the before mentioned barriers.

Investment barriers

As discussed in the PD/MR, one of the biggest hurdles for investments into the forest sector are to be found in lack access to appropriate funding for forestry. The PP provides several evidence proving, that the national incentives to foster plantation business has not succeeded which has resulted in Paraguay not having a highly developed forestry sector compared to its neighbouring countries/^{Ad2}, ^{Ad5/} and in this context is lacking a stable market for quality timber/^{Ad7/}.

Another reason is to be found, that banks required property titles as collateral, what cannot be provided by the project, because it is based on the law N° 4890 “Derecho Real de Superficie Forestal” (forestry surface right) which entitles the project on the standing trees only but not the land.

The category of investment barriers also includes the risk of strong exchange rate fluctuations, since the product of the project is traded in the national currency, but the land leases are up to 50% in USD/^{Ad6/}.

The PP is complementing the conclusion that investments in forest plantations are facing significant barriers by providing a cost comparison analysis/^{Ad11/} comparing the cash flow of the baseline scenario agriculture and cattle ranching with the cashflow of a plantation investment under omission of the lease costs. Comparing the financial indicators i) IRR real, ii) Investment needed and iii) Payback period it is shown, that investment in agriculture is more attractive than that in forestry and that a

further source of income, such as revenues from the sale of carbon credits would allow a more favourable payback and thus increase the needed investment in Paraguay's forest sector^{/Ad2/}. Cattle ranching on the other hand turns only viable when land lease cost can be omitted. The reasons why it is still operated can be found in particular in the long tradition and the high identification with the cattle ranching. This could be confirmed via the local Team Member.

Barriers related to land tenure, ownership, inheritance, and property rights

This barrier is linked to the application of the before mentioned law N° 4890. The application of the law is not common practice in Paraguay and the present project is the first large scale project of its kind. This could be confirmed via the local Team Member.

Barriers due to local ecological conditions

Due to the change of rain patterns, longer dry periods are becoming more likely which leads to a higher risk for the health of the trees e.g. through pests and plagues. This could be observed during the onsite visit^{/Inf/}.

Technological barriers

For Paraguay only limited national data exists for the prediction on growth and yield. This increases the level of uncertainty which led at present to a higher quantity of low-quality timber during the first thinnings than originally expected. This could be confirmed during the field visit via interviews held with technical staff and plantation managers.

Barriers related to local tradition

Due to the before mentioned underdeveloped forestry sector and subsequently the lack of a stable timber market there is a lack of processing facilities^{/Ad7/} of high-quality timber as well as skilled and professionalized labour forces. This could be confirmed via the local Team Member.

Based on the information provided, information obtained during interviews, the team members' knowledge of the country, and cross-checking with publicly available studies, TÜV NORD JI/CDM CP confirms that the barriers listed are plausible and credible.

Sub-step 2c. List of land use scenarios that are not prevented by any barrier:

In view of the above TÜV NORD JI/CDM CP confirms that the continuation of pre-project activity has been identified as the most plausible scenario in the absence of the proposed project activity. I.e. the pre-project land use is the most plausible baseline scenario.

STEP 4: Common practice analyses:

Sub-step 2a. List of barriers:

The PD/MR listed official numbers^{/AD3/} and in-official numbers (that are confirmed by the local Team Member) regarding the extent of forest plantations within the country. As outlined the overwhelming majority of those plantations are planted for biomass only. Only one forest plantation operator is

known to produce quality timber/^{AD8/} and is located within the “high potential area” in regard to forest investments (Zone A/ less than 100 km from ports or industries/^{AD4/}).

Finally, the only AR project registered under the CDM in Paraguay is mentioned, but it is a small-scale project/^{AD10/}.

Validation Report: VCS Version 4.0

In view of the above TÜV NORD JI/CDM CP confirms that i) the project activity would not be a common practice in the geographical region of the assessment and ii) is not the baseline scenario. Thus, TÜV NORD JI/CDM CP confirms, that the proposed project activity is additional in compliance with the CDM Tool “Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities”.

TÜV NORD JI/CDM CP confirms that all data, rationales, assumptions, justifications, and documentation provided by the project participants to support demonstration of additionality are credible and reliable, which was checked and verified at the time of validation. TÜV NORD JI/CDM CP considers the reasoning for the proposed project additionality demonstration is credible and reasonable i.e. the proposed project has the ability to reduce anthropogenic emissions of greenhouse gases by sources below those that would have occurred in the absence of the registered VCS A/R project activity.

Related Findings see CL 18, 19

3.4.5 Additionality

Please refer to section 3.3.5 above.

TÜV NORD JI/CDM CP confirms that all data, rationales, assumptions, justifications, and documentation provided by the project participants to support demonstration of additionality are credible and reliable, which was checked and verified at the time of validation. TÜV NORD JI/CDM CP considers the reasoning for the proposed project additionality demonstration is credible and reasonable i.e. the proposed project has the ability to reduce anthropogenic emissions of greenhouse gases by sources below those that would have occurred in the absence of the registered VCS A/R project activity.

3.4.6 Quantification of GHG Emission Reductions and Removals

Quantification of baseline emissions:

Baseline net GHG removals by sinks are calculated using equation 1 of the applied methodology AR-ACM0003 as well as the several equations from the corresponding tools AR-Tool 14 (Version 04.2) and AR-Tool 12 (Version 03.1).

Three baseline strata are distinguished based on the land use and canopy cover: agricultural, pasture and bushland areas. The estimation of the baseline stocks and stock change of trees and shrubs was assessed applying the “proportionate crown cover” approach as outlined in section 6.3 of the AR-Tool 14. This was done using “Open Foris Collect” for the survey design and “Collect Earth” for the assessment to do a simple canopy cover ticking (“tree”, “shrub”, “grass” and “others”). To do so 45 randomly selected clusters of 0.5 ha size were selected which were then be assessed on basis of a survey using

a 5x5 sub-point grid ticking. In order to achieve a reliable result, aerial imagery not younger than 2011 (project start in 2015) or NDVI-images from Landsat 7 and 8 were applied.

The above described was demonstrated by the PP and thoroughly assessed by the Audit Team and found to comply with good practice. Validation Report: VCS Version 4.0

Based on the results the **Baseline shrub carbon stock** is accounted as 0 t C/ha in compliance with sections 8.3 and 11 of the AR-Tool 14 since the shrub coverage is <5%. The pre-existing tree C stock of the **Baseline tree carbon stock for agriculture and pasture** is calculated using the formulas 20 and 21 from the AR-Tool14 applying the default parameters provide by the tool (carbon fraction, root-to-shoot ratio), results of the above-described assessment (%-canopy cover) and scientific data/^{BE/} (Mean above-ground biomass in forest in the region or country).

Baseline tree and shrub carbon stock change are accounted as zero in compliance with section 5 of the AR-Tool 14 as all three conditions are met which could be confirmed during the onsite visit/^{Inf/}.

Baseline dead wood and litter carbon stock is calculated using the formulas 9 respectively 15 from the AR-Tool12 applying the default parameters according to mean project precipitation.

Related Findings see CL 20

Quantification of project emissions:

Ex-ante actual net GHG removals by sinks are calculated using Equation 2 and 3 of the applied methodology AR-ACM0003.

Change in carbon stock in tree biomass (and its long-term average) is estimated based on assumed mean annual increments (MAI) in compliance of section 8.2 of the tools AR-Tool 14 (Version 04.2). Input parameters are taken from internal assumptions (MAI), and scientific data/^{PE1,PE2,PE3/} (root-to-shoot ration, density), default parameters provide by the tool (carbon fraction) and from the IPCC2003 (biomass expansion factor).

Changes in carbon stock from shrubs, dead wood and litter is not accounted for.

Change in carbon stock in Soil Organic Carbon is calculated applying the “Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities”. The “rate of change in SOC stock” is derived applying the IPCC Spreadsheet.

Quantification of leakage:

Leakage emissions are accounted as zero in compliance with section 6 of the AR-Tool 15 as no displacement of animals took place This is due to the fact that extensive livestock farming is predominant and does not suffer any effective restriction in the silvipastoral system implemented. This could be confirmed in the course of the field visit via interviews held with technical staff, plantation managers and land owners/^{IM/}.

Related Findings see CAR 25

TÜV NORD JI/CDM CP assessed the calculations of baseline emissions and project emissions and the expected net GHG reductions and removals by sinks. Corresponding calculations were carried out

based on calculation spreadsheets/^{XL}Sep/ provided. Correctness of calculations can be confirmed as they were replicated by the audit team using the information provided. The values and estimates presented in the PDMR are considered reasonable based on the documentation reviewed, further references and the result of the interviews during the onsite visit.

Based on the information reviewed TÜV NORD JI/CDM CP can confirm that the sources used are correctly quoted and interpreted in the PDMR. All assumptions and data indicated in the PDMR, and all relevant sources were checked and confirmed.

In essence TÜV NORD JI/CDM CP can confirm that the methodology was correctly applied following the requirements. All values in the PDMR are considered reasonable in the context of the proposed VCS project activity. Data sources are quoted correctly. Hence, the calculation of baseline stocks and removals, leakage and the expected net anthropogenic GHG removals by sinks are considered correct.

3.4.7 Methodology Deviations

Not applicable.

3.4.8 Monitoring Plan

The monitoring plan presented in the PDMR complies with the requirement of the applied methodology. The audit team checked all parameters presented in the monitoring plan against the requirements of the methodology and corresponding tools.

Relevant parameters available at validation are listed in the PD. All relevant parameters that need to be monitored are listed in the PD as required by the methodology and corresponding tools.

The monitoring procedures as defined in the PDMR were reviewed by the audit team on paper and via interviews with technical staff as well as via observation during the re-measurements conducted. This information allows TÜV NORD JI/CDM CP to confirm that the proposed monitoring plan is feasible for the presented project activity. TÜV NORD JI/CDM CP concludes that the PP is able to implement the monitoring plan to report ex-post GHG net anthropogenic removals, which can also be verified.

Related Findings see CAR 28

3.5 Non-Permanence Risk Analysis

In the following chapter assessments on the non-permanence risk rating as determined by the project proponent have been made:

Internal Risks:

Project Management		
Risk Factor	DOE Assessment of justification and quality of documentation	Risk Rating
a)	The trees planted in this project comprise non-native species, mainly Eucalyptus spp. and Corymbia spp. Eucalypts have a track record in the region since around 50 years/ ^{AD2} /, and they haven't presented limitations in terms of affecting the water balance or invasion into native ecosystems.	0 is accepted

b)	The FMUs of the project are established in private Estancias of landowners. Most of the FMUs are continuously used for agricultural and cattle purposes, and therefore cattle or agricultural workers are continuously covering the private property. This was confirmed via interviews held with field staff, technical staff, responsables for social affairs, and land owners	0 is accepted
c)	The company UNIQUE Wood/^{PR1/}, with over 20 years of experience managing forests and over 9 years of experience with plantations, was contracted to manage the silvicultural aspects of the plantations, and they still this activities after the purchase of the areas by Forestal San Pedro. Two forest engineers with over 5 years of experience together with two forest technicians manage the plantations and work together to ensure the high quality of silvicultural system applied. UNIQUE/^{PR2/} (Unique Wood Paraguay S.A. supported by Unique forest investment GmbH) has been contracted for managing forest plantations. The management team has significant experience with managing forest plantations according to IFC and FSC standards. UNIQUE has over 20 years of experience managing natural forests and over 9 years of experience with plantations in Paraguay, both under FSC certification.	0 is accepted
d)	UNIQUE Wood Paraguay is a Paraguayan company established in the country in 2001/^{PR1/}. The forest engineer Jorge Galeano is located permanently in the FMU, supported by a team in Fernando de la Mora (Gran Asunción), located 250 km away.	0 is accepted
e)	Forestal San Pedro contracted UNIQUE forestry and land use GmbH to develop this AFOLU, project,account for carbon from trees and other GHG sources, report and participate in validation and verification under respective VCS methodology and standard requirements. UNIQUE forestry and land use GmbH has a long track record in developing AFOLU Projects/^{PR2/}	-2 is accepted
f)	The project has adaptive management/^{MP/} (operations plan, monitoring plan, roll out plan, feedback plan, supervisors, and internal control system) in place. The project is subject to regular reporting to investors, and its progress is supervised in quarterly Board Meetings by the investors, who monitor the project according to IFC Performance Standards. In addition, the project is FSC certified and subject to annual auditing by external third parties/^{FSC,MA,1SA/}.	-2 is accepted
Total Project Management (PM) [as applicable, (a + b + c + d + e + f)] Total may be less than zero.		-4 is accepted

Financial Viability		
Risk Factor	DOE Assessment of justification and quality of documentation	Risk Rating
a)	The audit team checked the project cash flow /^{PR3/} and can confirm the breakeven point is 9 years from the current risk assessment. The quality of the documentation is deemed to be sufficient to evaluate the risk correctly.	2 is accepted

b)	a) therefore not applicable	
c)	a) therefore not applicable	
d)	a) therefore not applicable	
e)	a) therefore not applicable	
f)	h) therefore not applicable	
g)	h) therefore not applicable	
h)	The verification team checked the project cash flow/ ^{PR3/} and can confirm the project has secured 40% to less than 80% of the funding needed to cover the total cash out required before the project breaks even. The quality of the documentation is deemed to be sufficient to evaluate the risk correctly.	0 is accepted
i)	The arbaro fund and its partners/ ^{PR4/} are guaranteeing the funding of the project. The partner organisation is supervised by the German financial sector regulator BaFin/ ^{PR5/}	-2 is accepted
Total Financial Viability (FV) [as applicable, ((a, b, c or d) + (e, f, g or h) + i)]		0 is accepted
Total may not be less than zero.		

Opportunity Cost		
Risk Factor	DOE Assessment of justification and quality of documentation	Risk Rating
a)	b) therefore not applicable	
b)	Agriculture presents an IRR of 96% and a investment needed of 4,000,000 USD (based on a rate of return of 7.2% estimated as cost of equity. Under the same conditions, forestry offers an IRR of 18% and a investment needed of 14.2 million USD, being agriculture NPV 70% higher than forestry/ ^{PR3,AD2,AD5/} . This could be confirmed in the course of the field visit via interviews held with technical staff, plantation managers and land owners/IM/.	6 is accepted
c)	b) therefore not applicable	
d)	b) therefore not applicable	
e)	b) therefore not applicable	
f)	b) therefore not applicable	
g)	Not applicable – no mitigation in place	
h)	Not applicable – no mitigation in place	
i)	Not applicable – no mitigation in place	

Total Opportunity Cost (OC) [as applicable, (a, b, c, d, e or f) + (g + h or i)]	6 is acceptable
Total may be less than 0.	

Validation Report: VCS Version 4.0

Project Longevity		
DOE Assessment of justification and quality of documentation		
a)	The PP assumes a project lifetime of 50 years. The assumed project longevity is based on the assumption that, as soon as the project is established and the first income from land lease, share of wood sales and CO2 certificates occurs, the reservations about the project turn into approval and the voluntary continuation of the project by the landowners in the form of a third, fourth rotation. Thus it is very likely, that the longevity exceeds the lifetime of 50 years. The owners of the fincas FMU1 (Rancho ZS), FMU2 (Rancho 68), FMU7 (Cerrito) and FMU9 (Cerro Verde) have signed letters^{/PLT/} agreeing, that a carbon project will be implemented, knowing that this results in requirements in regard to crediting period and project lifetime. The fincas represent 60% of the forest assets. In view of the fact that the owners of the finances do not incur any losses through the project activity, on the contrary, there is added value both through the participation in the revenues of the wood sales and the sales of carbon credits, it can be concluded, that a second rotation will be conducted and thus the requirements in regard to crediting period and project lifetime will be met. The proposed assumption could be sustained via direct interviews with owners of the fincas FMU2 (Rancho 68), FMU3 (Don Honorio), FMU4 (Loma Vistosa) and FMU9 (Cerro Verde).	14 is acceptable
b)	Not applicable – no legal requirement in place	
Total Project Longevity (PL)		14 is acceptable
May not be less than zero		

Internal Risk Outcome	
Total Internal Risk (PM + FV + OC + PL)	16
Total may not be less than zero.	

External Risks:

Land Tenure and Resource Access/Impacts		
Risk Factor	DOE Assessment of justification and quality of documentation	Risk Rating
a)	Not applicable	
b)	Landowners and Forestal San Pedro have a leasing agreement ^{/LA,Inf/} for 14 years (renewable) based on the Law 4890/13 of forestry area rights, where it was established the possibility of separating the owner of the land from the planted products in the area. Forestal San Pedro has legal documents confirming the legal right of the company of the use rights.	2 is acceptable
c)	Not applicable	
d)	Not applicable	
e)	Not applicable	
f)	Not applicable	
g)	Not applicable	
Total Land Tenure (LT) [as applicable, ((a or b) + c + d + e + f + g)]		2 is acceptable
Total may not be less than zero.		

Community Engagement		
Risk Factor	DOE Assessment of justification and quality of documentation	Risk Rating
a)	Not applicable	0 is acceptable
b)	Not applicable	0 is acceptable
c)	Although the most of the FMUs do not have communities nearby and none of the communities depend on the project's resources as set out by the standard, the project is maintaining good relations, as almost all operational staff working for San Pedro come from neighboring communities. The communities are well known and described listing joint activities, dependencies and contact persons^{/LC,IC,CD,DRP/}. With two of the communities affected, Korōrō'í and San José, out grower schemes have been agreed upon. The consideration of socio-economic impacts for local stakeholders and contractors and their adequate processing is also controlled during the annual FSC Audits^{/MA,1SA/}.	-5 is acceptable

	The above mentioned was further confirmed by interviewing the field staff, community leaders.	
Total Community Engagement (CE) [where applicable, (a + b + c)]		-5
Total may be less than zero.		

Political Risk		
Risk Factor	DOE Assessment of justification and quality of documentation	Risk Rating
a)	Not applicable	
b)	Based on the WGI data http://info.worldbank.org/governance/wgi/index.asp of the most recent 5 years Paraguay has a governance score of -039. Respective calculations have been provided and crosschecks with the World Bank Institute Worldwide Governance Indicators have been done. The source is provided by the VCS Standard and thus adequate. The calculation is correct.	4 is acceptable
c)	Not applicable	
d)	Not applicable	
e)	Not applicable	
f)	The country has an established Designated National Authority under the CDM and has at least one registered CDM Afforestation/Reforestation project ^{/AD10/}	-2 is acceptable
Total Political (PC) [as applicable ((a, b, c, d or e) + f)]		2 is acceptable
Total may not be less than zero.		

External Risk Outcome	
Total External Risk (LT + CE + PC)	0 is acceptable
Total may not be less than zero.	

Natural Risk:

Natural Risk: Fire	
DOE Assessment of justification and quality of documentation	
Significance	Fire is a high risk in Eucalyptus plantations, which it might lead to the loss of several hectares and the complete carbon stock of them.

	Rural communities often use fire to renew pastures, that spreads out and leads to forest fires during the dry period^{/PR6/}. The management team has extensive experience with fire prevention and control in other projects. Using mitigation measures such as firebreaks, training, and early warning during the dry season, fires can be successfully controlled. The total loss of a significant part of the asset by fire is considered very unlikely. The above mentioned was further confirmed by interviewing the field staff, technical staff, plantation managers, landowners, community leaders^{/IM/}. The fire risk significance is rated as 'minor' (5% to less than 25% loss of carbon stocks)." A minor significance rating is adequate and acceptable.
Likelihood	Fires are a common problem in Paraguay and it is expected to happen less than every 10 years ^{/RP6/} .
Score (LS)	5 is acceptable
Mitigation	The plantation area is always divided into compartments (smaller areas, 20-50 ha with similar characteristic, such as age and planted species), divided by roads or artificial firewalls which are established to minimize the risk of fire spread^{/shp/}. Annually before the dry season, trainings take place with the operative staff for fire prevention and firefighting. Further, the company cooperates with neighbors to ensure early warning and cooperation. The above mentioned was further confirmed by interviewing the field staff, technical staff, plantation managers, landowners, community leaders^{/IM/} as well es in the course of the inspection of infrastructure and equipment^{/Inf/}. The establishment of adequate mitigation measures regarding fire outbreaks is also controlled during the annual FSC Audits^{/MA,ISA/}. It can be concluded that appropriate tools and equipment for fire prevention and firefighting have been established. A mitigation rating of 0.25 is adequate and acceptable.

Natural Risk: Pest and Disease

DOE Assessment of justification and quality of documentation

Significance	Eucalyptus sp. are vulnerable to pests and diseases such as the gall wasp <i>Lecythybe invasa</i>, the beetle <i>Costalimaita ferruginea</i>, and a fungal disease caused by the canker <i>Teratosphaeria zuluensis</i>, also known as <i>Coniothyrium zuluensis</i>. These pests affect mostly the quality of the timber and sometimes, to a certain degree, tree development, however, to date a significant growth stagnation or loss has not been detected and is considered minor (5% to less than 25% loss of carbon stocks). In cases of significant pests and disease outbreaks, the management team reacts quickly and seeks control the infestation.
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	The above mentioned was further confirmed by interviewing the field staff, technical staff, plantation managers^{/IM/} as well as in the course of the inspection of the forest stands respectively the re-measurement of sample plots^{/Inf/}. A minor significance rating is adequate and acceptable.
Likelihood	For the same reason areal outbreaks of significant pests and diseases are assumed to be very unlikely (every 25 to less than 100 years).
Score (LS)	5 is acceptable
Mitigation	Plantations are established with high density of trees and thinning is strong during the whole production cycle^{/MP/}. This allows to select the most promising trees and reduce the risks of losing the expected biomass. Clones that have shown to be particularly vulnerable to certain pests are not employed anymore. Acute infestations are controlled chemically when such method is effective, respective management plans are in place^{/SOP/}. The establishment of an adequate pest management is also controlled during the annual FSC Audits^{/MA,1SA/}. A mitigation rating of 0.25 is adequate and acceptable.

Natural Risk: Extreme Weather

DOE Assessment of justification and quality of documentation

Significance	In the region droughts and floods might occur in different moments of the year. Floods are unlikely to affect the plantations, as lower areas prone to flooding are excluded from the production area. Droughts do affect the development of plantations, however mostly younger plantations during the first months of planting. Most plants that are affected by drought during the first months of planting still show an acceptable development after a few months. It can be conclude that the effect is unlikely to be very high. Trees included in carbon verifications are at least one year old, thus it is less likely that they are significantly affected by extreme weather events. The above mentioned was further confirmed by interviewing the field staff, technical staff, plantation managers^{/IM/} as well as in the course of the inspection of the forest stands respectively the re-measurement of sample plots^{/Inf/}. A minor significance rating is adequate and acceptable.
Likelihood	Droughts are expected relatively often, while floods are less likely to affect plantations (less than every 10 years).
Score (LS)	5 is acceptable
Mitigation	Areas affected by flooding are not planted ^{/shp/} .

	Clone selection is conducted carefully and adapted to the site. Clones with more resistance to extreme weather are introduced in the areas more likely to be affected. Trees included in the carbon monitoring are always at least 1 year old, and according to the experiences in the region, extreme weather does not affect to older management units. A mitigation rating of 0.5 is adequate and acceptable.
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Natural Risk: Geological Risks

DOE Assessment of justification and quality of documentation

Significance	Not applicable as geological risk such as earthquakes and volcanos do not exist in the region.
Likelihood	Not applicable
Score (LS)	0 is acceptable
Mitigation	Not applicable

Natural Risk: Other Risks

DOE Assessment of justification and quality of documentation

Significance	No other natural risks to the project activities and associated carbon removals are anticipated.
Likelihood	Not applicable
Score (LS)	0 is acceptable
Mitigation	Not applicable

Score for each natural risk applicable to the project

(Determined by $LS \times M$)

Fire (F)	1.25
Pest and Disease Outbreaks (PD)	1.25
Extreme Weather (W)	1
Geological Risk (G)	0
Other natural risk (ON)	0
Total Natural Risk (as applicable, $F + PD + W + G + ON$)	3.5

Overall Risk Rating:

Risk Category	Rating
Internal Risk	16
External Risk	0
Natural Risk	3.5
Overall Risk Rating (a + b + c)	20
Applied is a risk rate of	20

In total the project faces minor risks and if certain risks are there, mitigation measures are in place. This is validation and 1st verification and the overall impression of the plantation and management is very good and professional^{/Inf/}. This impression is confirmed by the annual FSC-Audits^{/MA,1SA/}. Thus, the audit team concludes that the applied risk score of 20% is adequate for the project activity.

Related Findings see CAR 23, 24

4 VERIFICATION FINDINGS

4.1 Accuracy of GHG Emission Reduction and Removal Calculations

Compliance of the Monitoring Plan with the Monitoring Methodology:

The monitoring plan provided in the joined project design document & monitoring report/^{PDMR/} is in accordance with the approved methodology AR-ACM0003 as well as all applicable tools, applied by the 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 joined project design document & monitoring report/^{PDMR/}. All parameters contained in the monitoring plan were reviewed by the audit team respectively and found to be monitored according to monitoring plan.

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:

Geographical delimitation of project boundary:

Each Forest Stand in each FMU is delineated according to a described step-wise approach combining physical GPS tracking as well as the working out of Forest Stand Boundaries with GIS and satellite imagery. The result are shapefiles/^{shp/} that have been provided and assessed in depth in the field by the audit team.

Stratification and update of effective areas:

According to the monitoring plan, the forest stands are stratified according to the growth performance (MAI) expected depending on species planted and soil conditions, etc. This classification is re-evaluated on a yearly basis.

For the calculation of the ex-post GHG emission reductions achieved the original approach was abandoned because the trees have adjusted their growth performance with age, i.e. the stands show a high homogeneity, so that for the inventory of the present verification, the forest stand were stratified according to their planting year. The homogeneity is confirmed via the result of the estimation of the precision level reached. The overall uncertainty of the inventory/average carbon stock per PSP for the present verification is 3.1% at a 90 per cent confidence level.

Sampling design, plots selection and location:

For the monitoring of the volume standing Permanent Sample Plots (PSPs) were established. The PSPs consist of 20 planted trees (regardless of whether they survived or not) and are established randomly. According to internal procedures, the minimum density is 1 PSP every 10 ha, corresponding to a minimum sampling size of 0.2 % in terms of area/^{SOP/}. Depending on the spacing of the forest stand two types of PSPs were designed with different sizes of 280m² and 200m². Each tree is numbered and thus re-measurable.

During the field out of the in total 824 PSPs 24 plots were remeasured based on formula provided by the FSC Standard FSC-STD-20-007 ($X = 0.8 * \sqrt{y}$).

Emissions due to changes in carbon stocks in deadwood, soil organic carbon are not monitored as they are estimated based on default values.

Assessment of Data and Calculation of Greenhouse Gas Emission Reductions

Validation Report: VCS Version 4.0

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

The data collection was conducted with a measuring tape (DBH; The diameter at breast height (1.3 m from the ground)) and a Vertex (Height of tree planted). The calibration of the Vertex could be confirmed during the field visit^{/Inf/}. A detailed description of the data generation, storing, processing and aggregating, collating and reporting is described in the MR and the corresponding SOP^{/SOP/}. During the verification the data collection, processing, collating and reporting was demonstrated and discussed in depth via skype calls.

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

Assessment of ex-post determined parameters

Parameter	Description	Value applied	Assessment
DBH	The diameter at breast height (1.3 m from the ground)	See: 2021-06-08-Inventary_2020_reduced_audit_SanPedro_RAW DATA	DBH is measured with measuring tape. 24 PSPs were measured. Exactly the same measuring method was used for this. The audit team observed the measurements and found them to be in accordance with the monitoring plan Values remeasured see: 2021-06-08 Planilla de remediación de parcelas-Forestal San Pedro S.A._FRO
H	Height of tree planted	See: 2021-06-08-Inventary_2020_reduced_audit_SanPedro_RAW DATA	Tree height is measured with a Vertex. 24 PSPs were measured. Exactly the same measuring method was used for this. The audit team observed the measurements and found them to be in accordance with the monitoring plan Values remeasured see: 2021-06-08 Planilla de remediación de parcelas-Forestal San Pedro S.A._FRO
FF	Form Factor for volume	0.4	Diameter and height were measured in 41 trees in different stem lengths to determine the tree volume according to sectional diameter method 12.b of the methodology AR Tool "Demonstrating appropriateness of allometric equations for estimation of aboveground tree biomass in A/R CDM project activities". The R² factor reached is 0.98 and thus above the minimum (0.85) required. The factor has been developed in accordance with the tool.

The data collected during the verification, replicating the exact same methodology as described in the MR and subsequent documents was subject to a data were the subject of an expert comparison. The differences in the measurement results can be plausibly explained by the tree growth.

Baseline emissions were quantified as described in section 3.4.6. / Quantification of baseline emissions.

Project emissions were quantified as described in section 3.4.6. / Quantification of project emissions, with one exception: Contrary to the above-mentioned use of MAI for the volume calculation of the aboveground biomass, the actual volume was determined using a project-specific form factor (basal area x tree height x form factor). This approach is good forest practice and therefore fully acceptable.

A project specific form factor for the volume calculation was derived applying the sectional diameter method from an assessment of 41 trees/FF,FFS/ to determine the tree volume according to sectional diameter method 12.b of the methodology AR Tool Demonstrating appropriateness of allometric equations for estimation of aboveground tree biomass in A/R CDM project activities. The R^2 factor reached is 0.98 and thus above the minimum (0.85) required.

The audit team confirms that the methods and formulae used to estimate the baseline and project emissions are appropriate. The calculations were done in accordance with the methods and formulae described in the monitoring plan and applicable methodology.

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.

Related Findings see CAR 22

4.2 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/
- Calculation spreadsheets (including raw data)/XLSep/
- QA/QC on Parcels/QAQC/
- Observations during the field visit by the audit team/Inf/

Sufficient evidence covering the full verification period in the required frequency is available to validate the figures stated in the final joined project design document & monitoring report/PDMR/. 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.

Related Findings see CAR 21

5 VALIDATION AND VERIFICATION CONCLUSION

Forestal San Pedro S.A. has commissioned the TÜV NORD JI / CDM Certification Program to carry out the joined validation and verification of the first instance of the grouped project Afforestation in co-operation with local landowners for Forestal San Pedro S.A in Paraguay. The validation and verification was performed based on VCS Version 4.1 requirements as well as criteria given to provide for consistent project operations, monitoring and reporting.

The review of the project joined project design document & monitoring report and the subsequent follow-up interviews have provided TÜV NORD with sufficient evidence to determine the fulfilment of stated criteria.

The proposed VCS project activity consists of the establishment of high-quality timber plantations, mostly established in silvopastoral systems (on rd. 85% of the project area) allowing the continuation of the traditional animal husbandry (cattle). The approved methodology AR-ACM0003 “AR Large scale - Afforestation and reforestation of lands except wetlands” (version 2.0) is applied to quantify the GHG reductions and/or removals achieved in this project.

In the course of the validation 10 Corrective Action Requests (CARs), 18 Clarification Request (CL) were raised and successfully closed. Two Forwarded Action Requests (FARs) were raised.

The review of the project design documentation and additional documents related to baseline and monitoring methodology and subsequent background investigation have provided the TÜV NORD JI/CDM CP with sufficient evidence to validate the fulfilment of the stated criteria.

In detail TÜV NORD CERT GmbH confirms:

- A reasonable level of assurance has been applied.
- All data and information used for ex-ante calculation of emission reductions is of projected and/or hypothetical nature.
- The project is in line with all relevant host country legislation incl. its GHG assertions, where applicable.
- The project additionality is sufficiently justified in the joined project design document & monitoring report.
- The monitoring plan is transparent and adequate.
- The calculation of the project emission reductions and/or removals is carried out in a transparent and conservative manner, so that the calculated emission removals of 663,196 tCO₂e are most likely to be achieved within the 20 years crediting period.
- 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-ACM0003 Version 2.0.
- The long-term-average carbon stock is reached, thus no further VCUs can be issued.

- 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.

Validation Report: VCS Version 4.0

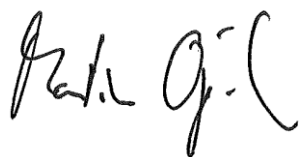
Verification period: From 05/04/2015 to 31/12/2020 (including both days)

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
2015	381	13,410	0.0	13,029	2,606	10,423
2016	4	26,700	0.0	26,696	5,339	21,357
2017	199	50,674	0.0	50,475	10,095	40,380
2018	0.0	35,209	0.0	35,209	7,042	28,167
2019	10	37,394	0.0	37,385	7,477	29,908
2020	0.0	35,727	0.0	35,727	7,145	28,581
Total	594	199,114	0.0	198,520	39,704	158,816

The conclusions of this report show, that the project, as it was described in the project description, is in line with all criteria applicable for the validation against the VCS standard Version 4.1 without any qualifications or limitations.

Munich, 11-March-2022

Hanover, 11-March-2022




Martin Opitz

Alexandra Nuske

TÜV NORD JI/CDM Certification Program
Validation Team Leader

TÜV NORD JI/CDM Certification Program
Final Approval

APPENDIX 1: ABBREVIATIONS

Abbreviations	Full texts
ARR	Afforestation, Reforestation and Revegetation
AFOLU	Agriculture, Forestry and Other Land Use
BAU	Business as usual
CAR	Corrective Action Request
CCB	Climate, Community & Biodiversity
CCBA	Climate, Community & Biodiversity Association
CDM	Clean Development Mechanism
CL	Clarification Request
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
CP	Certification Program // Crediting Period
DNA	Designated National Authority
EB	CDM Executive Board
ER	Emission Reductions
ETS	Emission Trading Scheme
FAR	Forward Action Request
GHG	Greenhouse gas(es)
GMO	Genetically modified organism
GS	Gold Standard
HCVs	High Conservation Values
IFM	Improved Forest Management
IPCC	Intergovernmental Panel on Climate Change
JNR	Jurisdictional and Nested REDD+
MP	Monitoring plan
MR	Monitoring Report

NDRC	National Development and Reform Commission
NPRA	Non-Permanence Risk Analysis
PD	Project Description
PP	Project Participant
PRA	Participatory Rural Appraisal
QC/QA	Quality control/Quality assurance
REDD	Reduced Emissions from Deforestation and Degradation
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Verified Carbon Standard
VCSA	Verified Carbon Standard Association
VCU	Verified Carbon Unit
VVB	Validation/Verification Body

APPENDIX 2: REFERENCES

Reference	Document
/PDMR/	Afforestation in cooperation with local landowners for Forestal San Pedro S.A, Version 1.3, 23-11-2021 Version 1.4, 24-01-2022 Version 1.5, 09-03-2022
/NPRR/	Afforestation in cooperation with local landowners for Forestal San Pedro S.A, Version 1.3, 21-11-2021
/XLSea/	Excel Spread Sheet; ex-ante calculations
/XLSep/	Excel Spread Sheet; ex-post calculations
/shp/	Shapefiles of the project boundary Satellite images (2005-2018)
/FSC/	https://info.fsc.org/details.php?id=a024000000Fr7ePAAR&type=certificate#result <i>Please note Forestal San Pedro is still in the process of purchasing the forest assets. Therefore, change of control is in process. The current FSC certification of the process (FSC® C117138) is still registered in the name of PAYCO.</i>
/MA/	REPORTE DE AUDITORÍA, Auditoría de Recertificación, 04.07.2019, GFA Cert
/1SA/	REPORTE DE AUDITORÍA, Auditoría de Vigilancia, 15.10.2022, GFA Cert
/LA/	Example Lease contract Don Honorio (Note: all lease contracts have been reviewed in original during the onsite visit, see also Informe de Auditoria – San Pedro Frostal S.A below

Reference	Document
/CIA/	2019 Cattle impact analysis
/DRSF/	Property deeds of plantations for the three assets acquired: FMUs 5 (Los Juanes), 6 (Isla Yobay) and 8 (Ocampo cue)
/AB/	Signed letter of the legal advisor informing about the transaction progress, 28 June 2021; https://www.ghp.com.py/nuestro-equipo-abogados-ghp
/StD/	2017-12 Monitoreo central – DATOS 2017 – Analisis; Record of all activities conduted
/PLT/	Signed letters of property owners: • 2021-04-07 Carta firmada_Rancho ZS • 2021-04-28 Carta firmada_Cerro Verde • 2021-05-07 Carta firmada_Rancho 068 • 2021-06-24 Carta firmada_Cerrito
/BSh/	presented to the property owners with the benefit sharing proposal
/DD/	Report on legal due diligence of real estates and DRSF, 16 March 2020; https://www.ghp.com.py/nuestro-equipo-abogados-ghp
/LC/	Comunidades San Pedro Forstal S.A; List of communities and types of projects realized
/IC/	Imagenes_comunidades; Localisation of communities
/CD/	Description of the communites with contact persons: • CD_Comunidad 1° de Mayo, Gral Resquin • CD_Comunidad Indigena Yápy Poty, Rancho ZS • CD_Comunidad Inmaculada Moreira, Cerrito, Isla Yobai y Los Juanes

Reference	Document
/DRP/	DIAGNOSTICO RURAL PARTICIPATIVO; Lic. Amb. Y Fta. SILVINO BENITEZ B. - Comunidad Korōrō'í; Noviembre 2014 - Comunidad San José; Noviembre 2014
/RM/	- Resultados de Monitoreo 2019-2020 - Resultados de Monitoreo 2020-2021
/MS20/	Monitoreo Social 2020 – Base de datos_RevABr
/HCV/	- Análisis de Bosques de Alto Valor de Conservación en el Bosque Atlántico, Paraguay Estancia Cerro Verde, Proyecto forestal de PAYCO - Evaluación de BAVC Unidades de manejo: Rancho 068 y Ocampo Kue
/BB/	- ESTUDIO DE LINEA DE BASE PRELIMINAR DE LA FAUNA DE RANCHO 68 – DEPARTAMENTO DE SAN PEDRO - ESTUDIO DE LINEA DE BASE PRELIMINAR DE LA FAUNA Y FLORA DE CERRO VERDE - Línea de Base de Biodiversidad para la Estancia Rancho ZS - LÍNEA DE BASE DE BIODIVERSIDAD Estancias: Isla Yobai – Cerrito – Los Juanes - Línea de Base de Biodiversidad en las estancias Don Honorio y Loma Vistosa
/MP/	- Plan de Manejo 2019-2020 - Resumen Publico Plan de Manejo 2020-2021 https://www.unique-wood.com/wp-content/uploads/2021/07/2020-2021-PAYCO_-Plantaciones_Resumen-Publico-PMF.pdf
/SOP/	2020 Plan de Manejo Integrado de Plagas y ERAS 2020-06-12 Procedimientos de SSO y emergencias_final 2020-09-09-Protocolo_inventario_Plantaciones

Reference	Document
	Grupo UNIQUE Procedimiento de control de hormigas
/CL/	Lista de chequeo al incorporar nuevas estancias
/INF/	Informe de Auditoria – San Pedro Frostal S.A
/AD1/	Paraguay Agricultural Sector Risk Assessment; Identification, prioritization, strategy and action plan; World Bank Group Report No. 93943-PY, June 2015
/AD2/	Forest plantations in Paraguay: Historical developments and a critical diagnosis in a SWOT-AHP framework; Szulecka et al, 12 November 2016
/AD3/	Mapa_Preliminar_Plantaciones_Forestales https://www.gatewaytosouthamerica-newsblog.com/forestry-development-in-paraguay/
/AD4/	Mapa_Preliminar_Zonas_Potencial_de Desarrollo_Forestal https://www.gatewaytosouthamerica-newsblog.com/forestry-development-in-paraguay/
/AD5/	AD5_FAO (2006). Tendencias y perspectivas del sector forestal en América Latina y el Caribe.
/AD6/	Land lease contract: Contrato Rancho 068 SA (E. Rancho 068)
/AD7/	Confidential market survey, arbaro fund, 2019
/AD8/	www.pomera.com.ar
/AD9/	https://www.globalforestwatch.org

Reference	Document
/AD10/	https://cdm.unfccc.int/Projects/DB/TUEV-SUED1245074838.6/view
/AD11/	Land use comparison Analysis; Excel “20200924 Land use comparison San Pedro”
/BE/	Land use patterns and related carbon losses following deforestation in South America (2015); De Sy et al,
/PE1/	Effect of spacing and water availability on root:shoot ratio in <i>Eucalyptus camaldulensis</i> (2006), Barton et al.
/PE2/	Development of root biomass in an <i>Eucalyptus globulus</i> plantation under different water and nutrient regimes (1995), Fabiao et al
/PE3/	Global Wood Database; https://datadryad.org/stash/dataset/doi:10.5061/dryad.234
/PR1/	https://www.unique-wood.com/en/home/
/PR2/	https://www.unique-landuse.de/
/PR3/	Cashflow Calculations, PR3_20200924 Land use comparison San Pedro
/PR4/	https://www.arbaro-advisors.com/arbaro-fund/ https://www.arbaro-advisors.com/news-press/news-detail/article/arbaro-announces-usd-110-million-closing/
/PR5/	GDF Documentation; FP128: Arbaro Fund – Sustainable Forestry Fund
/PR6/	https://www.ultimahora.com/paraguay-perdio-22-millones-hectareas-incendios-los-ultimos-19-anos-n2840027.html

Reference	Document
/DC/	Contribuciones Nacionales de la República del Paraguay Visión Paraguay 2030 Plan Nacional de Desarrollo. https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Paraguay%20First/Documento%20INDC%20Paraguay%2001-10-15.pdf
/LE/	AN ANALYSIS OF EXISTING LAWS ON FOREST PROTECTION IN THE MAIN SOY PRODUCING COUNTRIES IN LATIN AMERICA (2019); IUCN, Jinke van Dam et al.
/FFS/	2019-05-08-Volume equation analysis
/CC/	Verhaltenskodex_UNIQUE_UFL
/UW/	https://www.unique-wood.com/en/home/#team
/GS/	https://registry.goldstandard.org/projects?q=&page=1
/CDM/	https://cdm.unfccc.int/Projects/projsearch.html
/ICAP/	International Carbon Action Partnership (ICAP) - ETS Map (icapcarbonaction.com)
/ACR/	https://americancarbonregistry.org/
/AOR/	https://www.csaregistries.ca/albertacarbonregistries/home.cfm
/CAR/	http://www.climateactionreserve.org/

APPENDIX 3: INTERVIEWS

Reference	Mean		Name	Organisation / Function
/IM01/	Visit	☒ Mr. ☐ Ms.	Hugo Gómez	Gerente de producción, Estancia Cerro Verde
/IM02/	Visit	☒ Mr. ☐ Ms.	Luis Francisco Benítez	Personal de Campo
/IM03/	Visit	☒ Mr. ☐ Ms.	José Luis Benítez F.	Personal de Campo
/IM04/	Visit	☒ Mr. ☐ Ms.	Francisco Valdéz C.	Supervisor de producción
/IM05/	Visit	☒ Mr. ☐ Ms.	Juan Esteban Marecos	Personal de Campo
/IM06/	Visit	☒ Mr. ☐ Ms.	Moisés Fariña González	Personal de Campo
/IM07/	Visit	☒ Mr. ☐ Ms.	Carlo Cocco Cabañas	Personal de Poda
/IM08/	Visit	☒ Mr. ☐ Ms.	Emanuel David Mareco	Personal de Poda
/IM09/	Visit	☒ Mr. ☐ Ms.	Francisco O. Fernández González	Personal de Poda
/IM10/	Visit	☒ Mr. ☐ Ms.	Ramón Mareco B.	Personal de Poda
/IM11/	Visit	☒ Mr. ☐ Ms.	Edil A. Duarte Fariña	Personal de Campo
/IM12/	Visit	☐ Mr. ☒ Ms.	Diana Quiroz	Gerente de producción de Rancho ZS, Rancho 068, don Honorio y Loma Vistosa
/IM13/	Visit	☐ Mr. ☒ Ms.	Marlene González Barreto	Personal de Campo

Reference	Mean		Name	Organisation / Function
/IM14/	Visit	☒ Mr. ☐ Ms.	Héctor Ramírez Benítez	Personal de Campo
/IM15/	Visit	☒ Mr. ☐ Ms.	Eladio Ramírez A.	Personal de Campo
/IM16/	Visit	☒ Mr. ☐ Ms.	Anibal Báez González	Personal de Campo
/IM17/	Visit	☒ Mr. ☐ Ms.	Bernabé Villalba Ávalos	Personal de Campo
/IM18/	Visit	☒ Mr. ☐ Ms.	Eder Arnaldo Ocampos	Responsable Social – PAYCO
/IM19/	Visit	☒ Mr. ☐ Ms.	Ignacio Vargas Acevedo	Líder de la Comunidad Y'apy Poty
/IM20/	Visit	☒ Mr. ☐ Ms.	Álvaro Ramírez	Gerente de Producción de Los Juanes, Isla Yobay, Cerrito y Ocampo Cue
/IM21/	Visit	☒ Mr. ☐ Ms.	Ismael Rojas	Técnico de Campo
/IM22/	Visit	☒ Mr. ☐ Ms.	Alejandro Cardozo	Personal de Campo
/IM23/	Visit	☒ Mr. ☐ Ms.	Fabio Carmona	Personal de Campo
/IM24/	Visit	☒ Mr. ☐ Ms.	Jesús Alberto Duarte	Personal de Campo
/IM25/	Visit	☒ Mr. ☐ Ms.	Fernando Santacruz	Personal de Campo
/IM26/	Visit	☒ Mr. ☐ Ms.	Luis López	Personal de Campo
/IM27/	Visit	☒ Mr. ☐ Ms.	Daniel Ferreira Rotela	Personal de Campo

Reference	Mean		Name	Organisation / Function
/IM28/	Visit	☒ Mr. ☐ Ms.	Estiven Rafael Sanabria	Personal de Campo
/IM29/	Visit	☒ Mr. ☐ Ms.	Rufino Benítez	Personal de Campo
/IM30/	Call	☐ Mr. ☒ Ms.	Estela Dávalos	Propietaria Estancia Cerro Verde
/IM31/	Call	☐ Mr. ☒ Ms.	Ramiro Maluff	Propietario Rancho 068
/IM32/	Call	☐ Mr. ☒ Ms.	Martín Maluff	Propietario Rancho 068
/IM33/	Visit	☒ Mr. ☐ Ms.	Luis Francisco Benítez	Personal de Campo
/IM34/	Call	☐ Mr. ☒ Ms.	Andrea Braun	Consultant, Unique Forestry and land use GmbH
/IM35/	Call	☐ Mr. ☒ Ms.	Irene Calo	Consultant, Unique Forestry and land use GmbH
/IM36/	Call	☒ Mr. ☐ Ms.	Alexander Pinkwart	Consultant, Unique Forestry and land use GmbH
/IM37/	Call	☒ Mr. ☐ Ms.	Dr. Fernando Rossi	Consultant, Unique Forestry and land use GmbH

APPENDIX 4: LIST OF FINDINGS

CL ID	01	Section no.	1.3/1	Date : 10/06/2021
Description of CAR				
Please clarify what type of drainage had been conducted outside the plantations and why. Please explain whether there is any type of connection between the mentioned drainage and the project activity.				
Project participant response				Date : 04/07/2021
Drainage has only been conducted in the border of the plantations to reduce the superficial water accumulated in some parts of the management units. Canalization already existed prior project started due to the agricultural activities in the area, and the main practice conducted before are focused on cleaning the canals to ensure the superficial water can leave the surface of the planting area. The canals are approximately 80 cm deep. This practice is never conducted in wetlands since the Project is not conducted in these types of soils.				
				
In Appendix F1: more pictures regarding drainages are available.				
Documentation provided by project participant				
☐	Changes in the PD	Section(s):	New version No.:	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☒	Other:			
DOE assessment				Date: 08/07/2021
The drainage conducted is outside of the project area and serves to drain excess water. This could be sustained via interviews during the onsite visit.				
Conclusion		☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

CAR ID	02	Section no.	1.7/1	Date : 10/06/2021
Description of CAR				
According to the information provided, the plantations assets are not fully acquired by the PPs. Please updated the PDD accordingly and provide evidence of the signed contracts respectively the signed pre-sales contracts.				
Project participant response				Date : 04/07/2021
By June 2021, three of the nine properties have been legally acquired by Forestal San Pedro making up 2,127 ha. In addition, a Management Agreement has been signed between the new owner of the plantations (Forestal San Pedro) and UNIQUE for long-term plantation management. The PDD has been updated accordingly. See evidence: Appendix F2_A: Signed letter of the legal advisor informing about the transaction progress. Appendix F2_B 1+2+3: Property deeds of plantations for the three assets acquired. Appendix F2_C: Management Agreement signed between Forestal San Pedro and UNIQUE for long-term plantation management.				
Documentation provided by project participant				
☐	Changes in the PD	Section(s):	New version No.:	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☒	Other:			
DOE assessment				Date: 08/07/2021
At present the PP has fully acquired the assets of the FMUs 5 (Los Juanes), 6 (Isla Yobay) and 8 (Ocampo cue). Respective notarized transfers of the “forestry surface rights” (DRSF = Derecho Real de Superficie Forestal) are provided. The three mentioned FMUs sum up to 2127 ha of the project area. According to status report of the notarial procedures, provided by the lawyers of the PP, the forestry surface rights and thus the right of the forest assets of the remaining 6 FMUs are expected to be transferred between September 2021 and June 2022. Conclusion: 35% of the total area is already notarized to the PP. The process of notarial transfer of the remaining 65% has already been initiated and is expected to be completed by June 2022.				
Conclusion		☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

CL ID	03	Section no.	1.7/2	Date : 10/06/2021
Description of CAR				
Please clarify how the minimum crediting period of 20 years is ensured taking into account, that lease titles last for 13 to 14 years only.				
Project participant response				Date : 04/07/2021
Forestry cycles are expected to run between 12 and 14 years, while leasing contracts run for 14 years. The lease payment and participation in the profits of wood offered to property owners is currently more attractive than any opportunity costs. The profits of timber harvested during thinning and particularly the final cut is expected to encourage property owners to continue the business throughout a second rotation (also see Finding 11 for more explanations). Forestal San Pedro has also offered property owners a benefit sharing agreement of the carbon component (see Appendix F3_A). The additional profits expected from carbon will be shared through an annual payment. This payment was already offered for two full cycles, in case the property owners decide to continue for a second rotation, regardless of the profits of the carbon component during the first rotation. All property owners were approached with the offer, and all have shown interest. The details of the benefit sharing agreement, however, are still being negotiated. See evidence: Appendix F3_A: PPT presented to the property owners with the benefit sharing proposal. Appendix F3_B: Communication and exchange e-mails with property owners to attend the meeting. Appendix F3_C: Signed letters of property owners confirming the offer they have received, and their interest in the scheme.				
Documentation provided by project participant				
☐	Changes in the PD	Section(s):	New version No.:	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☒	Other:			
DOE assessment				Date: 08/07/2021
All Finca owners have been informed about an appropriate CO2 benefit sharing program, that implies, that a second rotation period will be conducted. The owners of the fincas FMU1 (Rancho ZS), FMU2 (Rancho 68), FMU7 (Cerrito) and FMU9 (Cerro Verde) have signed letters agreeing, that a carbon project will be implemented, knowing that this results in requirements in regard to crediting period and project lifetime and thus in a project lifetime beyond the required 20 years crediting lifetime. The fincas represent 60% of the forest assets.				

In view of the fact that the owners of the fincas do not incur any losses through the project activity, on the contrary, there is added value both through the participation in the revenues of the wood sales and the sales of carbon credits, it can be concluded, that a second rotation will be conducted and thus the requirements in regard to crediting period and project lifetime will be met.

Conclusion	☐ Additional action should be taken (finding remains open) ☒ The finding is closed
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CAR ID	04	Section no.	1.8	Date : 10/06/2021
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Description of CAR

Please provide information that explains the extension of the "normal" period of 5 years up to and including July 2021.

Project participant response	Date : 04/07/2021
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Verra has issued an extension letter by which plantations older than 5 years could be introduced into the carbon project.

Appendix F4: Extension letter by Verra

Documentation provided by project participant

☒	Changes in the PD	Section(s):1.8	New version No.: 1.1
☐	Changes in XLS	Worksheet(s):	New version No.:
☒	Other:		

DOE assessment	Date: 08/07/2021
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Respective information is provided and the PDD updated accordingly.

Conclusion	☐ Additional action should be taken (finding remains open) ☒ The finding is closed
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CL ID	05	Section no.	1.9	Date : 10/06/2021
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Description of CAR

Please clarify on what basis the start date was set for April 5th and sustain this with evidence.

Note: Start date is defined as follows (Program_Definitions_v4.0):

"The date on which the project began generating GHG emission reductions or removals. Also referred to as "Project Start Date"

Project participant response	Date : 04/07/2021
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The company has a monitoring system where activities are registered every month. In this excel, sheet "Actividades", is shown how the first plantations included in this project for 2015 are planted during month 4 (April) 2015.

Appendix F5: Production monitoring of San Pedro

Documentation provided by project participant

☐	Changes in the PD	Section(s):	New version No.: 1.1
☐	Changes in XLS	Worksheet(s):	New version No.:
☒	Other:		

DOE assessment Date: 08/07/2021

Clarification regarding the starting date was provided and sustained with evidence.

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

CL ID	06	Section no.	1.11/1	Date : 10/06/2021
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Description of CAR

Please clarify if the expansion to 6610 ha until 2024 are realistic and adopted the estimated GHG emission reductions in sec. 1.10 accordingly

Project participant response Date : 04/07/2021

The PDD has been updated with a rough number (7,000 ha) of expansion expectation but clarifying that these areas are not yet available and might not happen in the future. Therefore, the Ex-Ante estimations include only the areas that are clearly included in the project at this current state.

Documentation provided by project participant

☒	Changes in the PD	Section(s):1.11	New version No.: 1.1
☐	Changes in XLS	Worksheet(s):	New version No.:
☒	Other:		

DOE assessment Date: 08/07/2021

Clarification is provided that correspond with the information obtained via interviews during the field visit. The project will be enlarged in case suitable areas and fincas owners will be found. CL can be closed.

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

CL ID	07	Section no.	1.11/2	Date : 10/06/2021
Description of CAR				
Please clarify if the mentioned 509 ha of conservation forest planted in FMU 9 are taken into account of the project activity?				
Project participant response				Date : 04/07/2021
FMU 9 has 509 ha of natural forest. This area is not planted, and forests in Eastern Paraguay are protected by a ban on forest conversion. The project is committed to conserve and protect this forest, but protection areas are not part of this carbon project.				
Documentation provided by project participant				
☒	Changes in the PD	Section(s):1.11	New version No.: 1.1	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☒	Other:			
DOE assessment				Date: 08/07/2021
Clarification is provided that correspond with the information obtained via interviews during the field visit. The conservation area at FMU9 (Cerro Verde) is not part of the project area.				
Conclusion		☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

CL ID	08	Section no.	1.11/3	Date : 10/06/2021
Description of CAR				
- Please clarify the criteria on which the maximum cattle stocking rate is defined. - Please specify in this context how the total amount of livestock has decreased per hectare. - Please provide information on the monitoring criteria (SOPs?) of the browsing of tree bark. Please provide results of the monitoring conducted in this regard.				
Project participant response				Date : 04/07/2021
Stocking rate				
The maximum stocking rate is defined in the leasing contracts with property owners and reflect normal stocking rates in Paraguay, however introducing limitations to protect trees.				
Lease contracts include minimum conditions, as follows:				
- Property owners commit to introducing livestock into forest plots earliest 12 months after planting. - The weight of cattle that enter the plantations for the first time, when plantations are between 12 months to 24 months, must have between 250 and 300 kg of live weight and stocking rate cannot exceed 2.5 cattle / ha.				

- The owner is obliged to carry out an appropriate rotation to avoid damage to the plantation.

During an evaluation carried out in 2019, the average stocking rate did not exceed 300 kg / ha (1 animal per ha), except for Rancho 068, where cattle ranching on plantation compartments is more intensive.

Initially, the stocking rate in silvopastoral systems was expected to decrease significantly due to the shadow introduced by trees that limit fodder growth. On average, during a forestry cycle, the stocking rate was expected to be 60 % of a stocking rate without trees. In some years (particularly before thinning), stocking rate was expected to be close to zero, however to date this has not materialized. While this has not been systematically monitored, stocking rate seems to be higher than expected to date.

Appendix F8_A: Example of leasing contract Don Honorio

Appendix F8_B: 2019 Analysis of cattle impact

Results of Browsing of Tree Bark

To protect young trees from cattle harassment, cattle is excluded from silvopastoral production areas during the first year after planting. Despite of this measure, damages are sometimes detected, particularly due to cattle browsing on tree barks. This behavior flairs up on occasions among certain herd in particular times. The reasons for this phenomenon are unknown. It has been attributed to a compensation measure by cattle due to an unbalanced diet (lack of fiber), and sometimes even to social behavior.

Damages on tree barks provoked by cattle are monitored through annual inventories. They are classified as light, medium, or severe. Only severe damages are expected to affect timber quality, and these damages are not expected to negatively influence growth and yield (and consequently carbon stocks).

In the past, damages have been detected in Rancho 068, Cerrito and Ocampo Kue, particularly during the dry season, when fodder availability was low. However, these were rather punctual events, particularly during 2015 and 2016. Since 2017, cattle damages detected through inventories have been insignificant.

Light damage	Medium damage	Severe damage
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Figure: Illustration of the damage classification in the assessment of damaged trees by cattle in Rancho 068

The latest inventories conducted in 2019 and 2020 revealed little damages. In 2019, three management units revealed severe damages on 1 % of trees, while mild damages were significant in one management unit (Cerrito). In 2020, the inventory showed few cases of minor damages in Rancho ZS, affecting less than 1 % of the trees. In all other management units this was insignificant.

Table: Results of the analysis of cattle damage in 2019

Management unit	No damage	Mild damage	Medium damage	Severe damage
Cerrito	13%	82%	4%	1%
Cerro Verde	78%	18%	4%	1%
Isla Yovai	100%	0%	0%	0%
Los Juanes	99%	0%	0%	0%
LV_DH	100%	0%	0%	0%
Ocampo Cue	97%	2%	1%	0%
Rancho 068	98%	0%	1%	1%
Rancho ZS	99%	0%	0%	0%

Documentation provided by project participant



Changes in the PD

Section(s):1.11

New version No.: 1.1

☐	Changes in XLS	Worksheet(s):	New version No.:
☒	Other:		
DOE assessment			Date: 08/07/2021
The maximum stocking rate is defined in the leasing contracts with property owners and reflect normal stocking rates in Paraguay. According to the observations the expected decline of fodder growth did not occur. This could be sustained via interviews with owners of the fincas FMU2 (Rancho 68), FMU3 (Don Honorio), FMU4 (Loma Vistosa) and FMU9 (Cerro Verde). The interviewed owners declared that a land use changed was not necessary to move existing livestock. Criteria and results of the monitoring of herbivore browsing effects on tree bark was provided as requested. The results correspond with the observations made in the field.			
Conclusion		☐ Additional action should be taken (finding remains open) ☒ The finding is closed	

CL ID	09	Section no.	1.11/4	Date : 10/06/2021
Description of CAR				
Please clarify on which basis the Environmental and Biodiversity baseline studies have been conducted and prove those.				
Project participant response				Date : 04/07/2021
The environmental and biodiversity baselines have been conducted for reach management unit when project activities began. During the first years of the project (2014/2015), biodiversity baselines focused on: - Identifying fauna and flora on protection sites, and particularly point out species of particular conservation importance (internationally listed by IUCN, nationally listed by SEAM / MADES, CITES, etc.). - Identifying High Conservation Values (HCV) according to the international HCV approach used by FSC. - Proposing a biodiversity monitoring approach. Later, after 2016/2017 baselines would also be used to: - Also focus on production sites. - Evaluate potential impacts on biodiversity of forest plantations. Please note these studies focus particularly on biodiversity. In addition, the environmental impact assessment is conducted through the national EIA process, but also internally through management the management plan. Appendix F9: Baseline biodiversity studies of all management units				

Documentation provided by project participant			
☒	Changes in the PD	Section(s):	New version No.: 1.1
☐	Changes in XLS	Worksheet(s):	New version No.:
☒	Other:		
DOE assessment			Date: 08/07/2021
Clarification was provided in regard to the purpose of the biodiversity baseline studies. They are based amongst others on guidance to determine HCVs for the FSC certification process respectively to identify any red list species. The biodiversity baselines studies have been provided for further details.			
Conclusion		☐ Additional action should be taken (finding remains open) ☒ The finding is closed	

CL ID	10	Section no.	1.11/5	Date	10/06/2021
Description of CAR					
According to the PDD animal husbandry has been conducted in a range of “extensive” to “more intensive”. Please clarify if the grade of animal husbandry was assessed for each Finca upfront and provide respective evidence.					
Project participant response					Date : 04/07/2021
Animal husbandry on plantation sites was not assessed in detail as all property owners have committed themselves contractually to take out their cattle of the site for one-year after planting. While there is no specific baseline documentation regarding the quantity of cattle on plantation sites, the intensity of livestock management on each plantation site can be inferred by assessing the state of the pasture and livestock management by the same owners in the remaining sites of the property. In Paraguay, very extensive livestock is usually conducted on natural pastures, on average maintaining 0,5 cattle per ha. On more suitable soils, cattle ranchers usually sow nutritious pastures, on which they may graze on average 1,0-1,20 cattle per ha. More intensive regimes usually are based upon additional feeding through feedlots. In the case of the San Pedro project, all plantations that have been established on pastures were established on implanted pasture. In many cases, however, these paddocks were not used intensely anymore (which is the reason they were rented out to conduct Silvopastoral systems). Nevertheless, on average, a stocking rate of 1,0 cattle per ha may be assumed on all management units with pastures except for Rancho 068, where cattle is managed more intensely, where an average pf 1,5-3,0 animals per ha may be assumed.					

Documentation provided by project participant			
☐	Changes in the PD	Section(s):	New version No.: 1.1
☐	Changes in XLS	Worksheet(s):	New version No.:
☒	Other:		
DOE assessment			Date: 08/07/2021
Clarification is provided in regard to the extent of the animal husbandry conducted on the fincas. The information provided could be sustained via interviews with owners of the fincas FMU2 (Rancho 68), FMU3 (Don Honorio), FMU4 (Loma Vistosa) and FMU9 (Cerro Verde). The interviewed owners declared that a land use changed was not necessary to move existing livestock.			
Conclusion		☐ Additional action should be taken (finding remains open) ☒ The finding is closed	

CL ID	11	Section no.	1.17	Date :	10/06/2021
Description of CAR					
Please clarify and sustain in how far the project activity restricted the animal husbandry and how it was dealt with.					
Project participant response					Date : 04/07/2021
In 2019, an assessment was conducted to understand the cattle activities on the management units. According to the information provided by cattle managers, following stocking rate was applied: • Rancho 068: An intensive management regime is applied with additional feedlot in the winter and frequent animal rotation. Around 400 to 500 kg (1,5-2,5 cattle) per ha are maintained in summer and 320-400 kg (1 cattle) in winter on young silvopastoral areas. From year 5 onwards of plantations in Silvopastoral systems, 1 cattler per ha is maintained to date. • Rancho ZS: Average stocking rate of almost 300 kg/ha (< 1 cattle/ha) with rotation of 7-8 days. • Don Honorio and Loma Vistosa: Average stocking rate of around 0,5 cattle per ha with a rotation of 30-40 days. • Ocampo Cue/Cerrito: Average stocking rate of almost 300 kg/ha (< 1 cattle/ha) with rotation of 3-4 days. • Los Juanes: Average stocking rate of around 220 kg/ha (< 1 cattle/ha) with rotation of 3-5 days. From the information gathered, it may be reasonable to assume that the tree component reduces cattle stocking on average at about 20-30 %, but specific figures are not yet available. However, it should be noted that, with no exception, for all landowners, the economic benefit in terms of income per ha per year, and the benefit brought about by economic diversification are high when compared to pre-silvopastoral activities (only cattle).					

From previous modelling work UNIQUE has conducted, it is reasonable to assume that a normal cattle farm in eastern Paraguay when professionally managed results in a net benefit of 75-100 USD/ha/yr. Through the cooperation offered by San Pedro, cattle ranchers get 120-140 USD/ha/yr only for lease, in addition to a participation of 3-4 % in wood sales, in addition to the cattle activities they may still conduct on the area. From this perspective, the project activity does not create pressure to compensate the loss of stocking rate by opening up more cattle fields. It is rather the opposite, property owners receive a net gain that they would otherwise not have access to if continuing with pre-project activities.

Documentation provided by project participant

☐	Changes in the PD	Section(s):	New version No.: 1.1
☐	Changes in XLS	Worksheet(s):	New version No.:
☒	Other:		

DOE assessment

Date: 08/07/2021

The maximum stocking rate is defined in the leasing contracts with property owners and reflect normal stocking rates in Paraguay.

According to the observations the expected decline of fodder growth did not occur.

This could be sustained via interviews with owners of the fincas FMU2 (Rancho 68), FMU3 (Don Honorio), FMU4 (Loma Vistosa) and FMU9 (Cerro Verde). The interviewed owners declared that a land use changed was not necessary to move existing livestock.

Conclusion

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

CL ID	12	Section no.	2.1/1	Date : 10/06/2021
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Description of CAR

Please quantify the input of lime, fertilizer and pesticides for ant and weed control and sustain, that the input is "roughly" the same or "slightly higher" than for plain beef production.

Project participant response

Date : 04/07/2021

In general, the inputs used for forestry are:

- Ant control – Fipronil – between 4 gram of baits per ha and year with concentration of the active principle of 0,01 %. The exact dosage is difficult to assess at this moment, as the ant control method has recently changed.
- Weed control – Glyphosate – between 4-7 liters/ha for a whole forestry cycle (12 years), usually all in the first two years.

- Fertilizer – 100 gr/plant one time during planting.
- Lime – on acidic soils where needed (on about 20-30 % of the area), one time during soil preparation, around 200 kg/ha.
- Punctual uses of other products in cases of specific pests or diseases.

Lime and fertilizers are subject to a one-time use, which is comparable to cattle ranching, where these products are used only when sowing pasture (which might be used for 10-20 years before renewal). Other products are scarcely used for livestock management.

An assessment conducted in 2019 showed that cattle ranchers do not use pesticides (according to information provided by their managers), except for Rancho 068, where Fipronil is used to combat termites.

Documentation provided by project participant

☐	Changes in the PD	Section(s):	New version No.: 1.1
☐	Changes in XLS	Worksheet(s):	New version No.:
☒	Other:		

DOE assessment Date: 08/07/2021

Clarification is provided in regard to lime, fertilizer and pesticide use in the course of the project implementation. The amounts mentioned could be sustained via interviews during the onsite visit and correspond to good forestry practice.

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

CL ID	13	Section no.	2.1/2	Date : 10/06/2021
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Description of CAR

Please sustain that the plantation business is providing around 25 full time jobs compared to the pre-project land use of the project area.

Project participant response Date : 04/07/2021

Work input is monitored in the plantations since 2016. Before the plantation project, the areas were used for traditional soy production and livestock production, which on average provide 5 and 1 job per 1,000 ha, respectively.

According to the project labour monitoring sheets, the work related to forestry in the project has been oscillating between 19 and 26 Full Time Equivalents per year (without taking into account the wood processing and industry work associated).

		2020	2019	2018	2017	2016
TOTAL		170,5	202	200	142	141
Mil ha		8,2	8,2	7,7	7,3	5,8
FTE/1000 ha		21	25	26	19	24

Appendix F13: Labour monitoring records 2016-2020

Documentation provided by project participant

☐	Changes in the PD	Section(s):	New version No.: 1.1
☐	Changes in XLS	Worksheet(s):	New version No.:
☒	Other:		

DOE assessment Date: 08/07/2021

Labour and work records were provided to sustain the provision of rd. 25 full time jobs.

The explanation provided is rational and the amount a laborers monitored correspond to good frosty practice.

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

CL ID	14	Section no.	2.2	Date : 10/06/2021
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Description of CAR

- Please sustain the introduction of the social monitoring system (health and safety aspects / monthly assessment of labour relations / monitoring of sub-contractors)
- Please sustain the introduction of a Community Liaison Officer (CLO)
- Please provide proof of grievances received and its solvation/mitigation

Project participant response Date : 04/07/2021

The previous PAYCO project was functioning with three Social Liaison Officers, thereof only one working on the areas sold to Forestal San Pedro. Under Forestal San Pedro, for the same area, two Social Liaison Officers will be contracted (one will be absorbed from the old PAYCO project). The capacity planning for these Officers was presented in the Management Agreement signed between UNIQUE and Forestal San Pedro.

All aspects related to labour, health and safety, and grievances are monitored and can be verified through the monitoring records.

Appendix F2_C: Management Agreement signed between Forestal San Pedro and UNIQUE for long-term plantation management (see Page 19).

Appendix 14: 2020 Social monitoring records.

Documentation provided by project participant

☐	Changes in the PD	Section(s):	New version No.: 1.1
☐	Changes in XLS	Worksheet(s):	New version No.:
☒	Other:		

DOE assessment

Date: 08/07/2021

Evidence is provided to sustain the introduction of a social monitoring system, the Community Liaison Officer and the implementation of a grievances management procedures.

The information provided was crosschecked during the field visit as well as with reports of the FSC Main audit (2019) as well as the 1st surveillance audit (2020).

Conclusion

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

CL ID	15	Section no.	2.3	Date : 10/06/2021
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Description of CAR

- Please clarify if the listed environmental impacts actually existed (e.g. Displacement, Habitat destruction) Note: the fincas existed already for a long time
- Please sustain the engagement of environmental and social actors as described.

Project participant response

Date : 04/07/2021

The risk table has been re-formulated showing that impacts like displacement or habitat conversion have not taken place.

The engagement of environmental and social actors has been conducted usually through the following engagement methods:

- First meeting with communities to present project (in some cases a more intense Rural Appraisal study was conducted)
- Meetings with communities to resolve grievances or conduct social projects (as registered in the social monitoring records)
- Consultation with environmental and social stakeholders on the identification of HCV.

Appendix F15_A: Examples of consultations for HCV assessment.

Appendix F15_B: Examples of meetings and Rural Appraisals conducted with neighbouring communities.

Appendix F15_C: Social monitoring records 2018 under “meetings/ reuniones”

Documentation provided by project participant			
☐	Changes in the PD	Section(s):	New version No.: 1.1
☐	Changes in XLS	Worksheet(s):	New version No.:
☒	Other:		
DOE assessment			Date: 08/07/2021
Clarification was provided regarding actually existing environmental impact that correspond with the observations made during the field visit. Further Clarification regarding the extent of the engagement of environmental and social actors was provided and sustained. The information provided was crosschecked during the field visit as well as with reports of the FSC Main audit (2019) as well as the 1st surveillance audit (2020).			
Conclusion		☐ Additional action should be taken (finding remains open) ☒ The finding is closed	

CAR ID	16	Section no.	2.4	Date : 10/06/2021
Description of CAR				
Please update section 2.4 according to the responds received during the public comment period.				
Project participant response				Date : 04/07/2021
During the public comment period, no comments were received regarding the current project. Appendix 16: Email by Verra confirming that no comments were received during the PC Period.				
Documentation provided by project participant				
☐	Changes in the PD	Section(s):2.4	New version No.: 1.1	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☒	Other:			
DOE assessment				Date: 08/07/2021
The section 2.4 was updated as required by the standard.				
Conclusion		☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

CL ID	17	Section no.	2.5	Date : 10/06/2021
Description of CAR				

Please specify who the project complies with AFOLU-specific safeguards as outlined by the standard/PDD-template.

Project participant response

Date : 04/07/2021

Social impacts and measurements were included in the AFOLU-specific safeguards chapter of the PDD.

Documentation provided by project participant

☐	Changes in the PD	Section(s):2.4	New version No.: 1.1
☐	Changes in XLS	Worksheet(s):	New version No.:
☒	Other:		

DOE assessment

Date: 08/07/2021

The PDD was updated accordingly. Stakeholder identification and risks have been included.

Conclusion

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

CL ID	18	Section no.	3.4	Date : 10/06/2021
Description of CAR				
- Please clarify if the moratorium on forest conversion in Eastern Paraguay (Law N° 2524/2004) that ran out in December 2020 was extended - Please sustain “the absence of efficient markets and insurance mechanisms” for the project activity				
Project participant response				Date : 04/07/2021
The moratorium on forest conversion in Eastern Paraguay has been extended for 10 more years in December 2020. Appendix F18_A: Law 6676/2020 that extends the moratorium on deforestation Regarding the absence of market mechanisms, we assume the Finding is about our argument regarding the under-developed wood markets in the country. A study conducted in 2019 commissioned by Arbaro has documented the current wood market situation in Paraguay, and its challenges. Appendix F18_B: 2019 Arbaro market study				
Documentation provided by project participant				
☐	Changes in the PD	Section(s):3.4	New version No.: 1.1	
☐	Changes in XLS	Worksheet(s):	New version No.:	

☒ Other:	
DOE assessment	Date: 08/07/2021
Clarification in regard to the moratorium on forest conversion in Eastern Paraguay was provided as requested. The moratorium has been extended and the PDD adapted accordingly. In regard to the absence of efficient markets a market study was provided, describing the status of the wood market in Paraguay. This information could be crosschecked via Interviews in the course of the field visit respectively preaudit exploratory calls with plantation operators.	
Conclusion	☐ Additional action should be taken (finding remains open) ☒ The finding is closed

CL ID	19	Section no.	3.5	Date : 10/06/2021
Description of CAR				
- Please specify and sustain the assumed initial investment of 4,000,000 USD (Sub-step 3c) - The PDD mentions 53,000 ha of commercial plantations in 2015. Please clarify if more recent numbers of the national forest inventory are available (Step 4)				
Project participant response				Date : 04/07/2021
Interviews with the former owner of the plantations have been conducted regarding the initial investment number used to compare the agricultural and forestry business plan. The former owner is a well-known company in Paraguay for agricultural and cattle production. According to the obtained data, in investment in Soy in the region would need at least 2,000,000 USD only regarding infrastructure: - Grain dryer: 400,000 USD, - Silos: 1,400,000 USD (for 15,000 Tn grain) - Other: 200,000 USD In addition, if areas previously used for cattle are converted to agriculture, an initial investment of around 650 USD/ha is needed. Therefore, if we consider that 50 % (around 3,000 ha) of the total area is converted from cattle to agriculture, the total investments makes about 4,000,000 USD.				
DOE assessment				Date: 08/07/2021
Explanation is provided in regard to the input parameters for the cost comparison analysis. According to the assessment of the local expert, the values appear plausible. The PDD still mentions 53,000 ha of commercial plantations in 2015. Please clarify if more recent numbers of the national forest inventory are available (Step 4)				
Project participant response				Date : 09/07/2021

In both documents, the PDD as well as the NPRR the current figure regarding the total plantation area in Paraguay is discussed. While it is acknowledged that the official figure is 180,000, forestry experts assume the figure of currently actively managed plantations to be about 100,000 ha.

Documentation provided by project participant

☐	Changes in the PD	Section(s):3.4	New version No.: 1.1
☐	Changes in XLS	Worksheet(s):	New version No.:
☒	Other:		

DOE assessment

Date: 10/07/2021

Clarification in regard to the moratorium on forest conversion in Eastern Paraguay was provided as requested. The moratorium has been extended and the PDD adapted accordingly.

In regard to the absence of efficient markets a market study was provided, describing the status of the wood market in Paraguay. This information could be crosschecked via Interviews in the course of the field visit respectively preaudit exploratory calls with plantation operators.

Conclusion

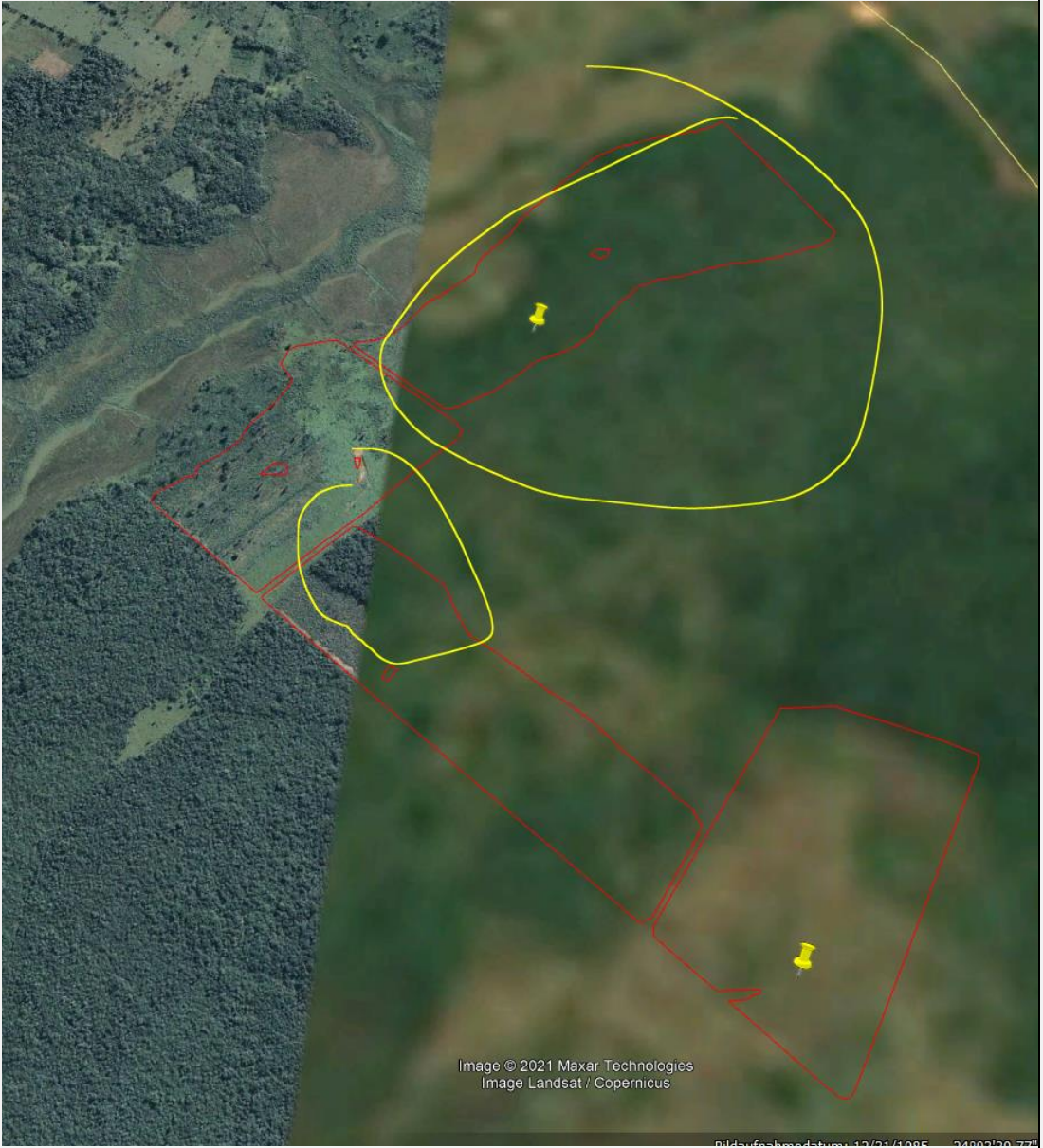
- ☐ Additional action should be taken (finding remains open)
☒ The finding is closed

CL ID	20	Section no.	4.1	Date : 10/06/2021
Description of CAR				
The shapefiles provided respectively publicly available satellite pictures seem to show that parts of the project area appear to be on former forest/bush areas. Please clarify and adjust accordingly				

FM U 1	Pro- vide proof	 An aerial photograph showing a landscape with a yellow boundary line and a red-outlined area. The word 'Estancia' is visible in the upper right. The landscape includes a body of water, a road, and various fields. The red-outlined area is a large, irregular polygon covering a significant portion of the lower half of the image. The yellow line is a curved boundary that follows the top and left sides of the red-outlined area.
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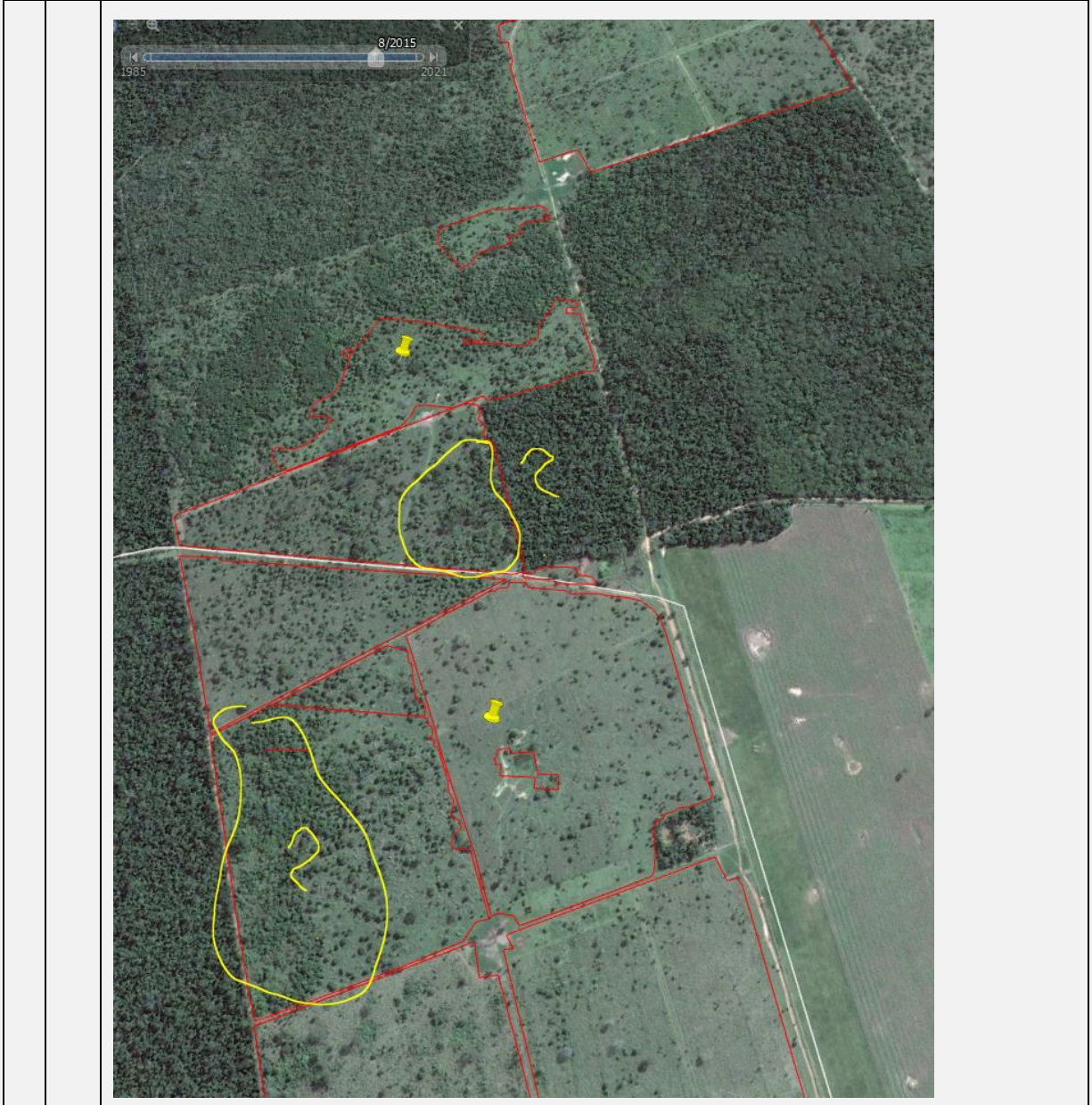
FM U 2	Pro- vide proof	 An aerial photograph of a rural landscape featuring a mix of green fields and brown patches. A red rectangular boundary is drawn over a central area, and three yellow pushpins are placed along its perimeter. A yellow oval is also drawn around the red rectangle. The entire image is framed within a table structure.
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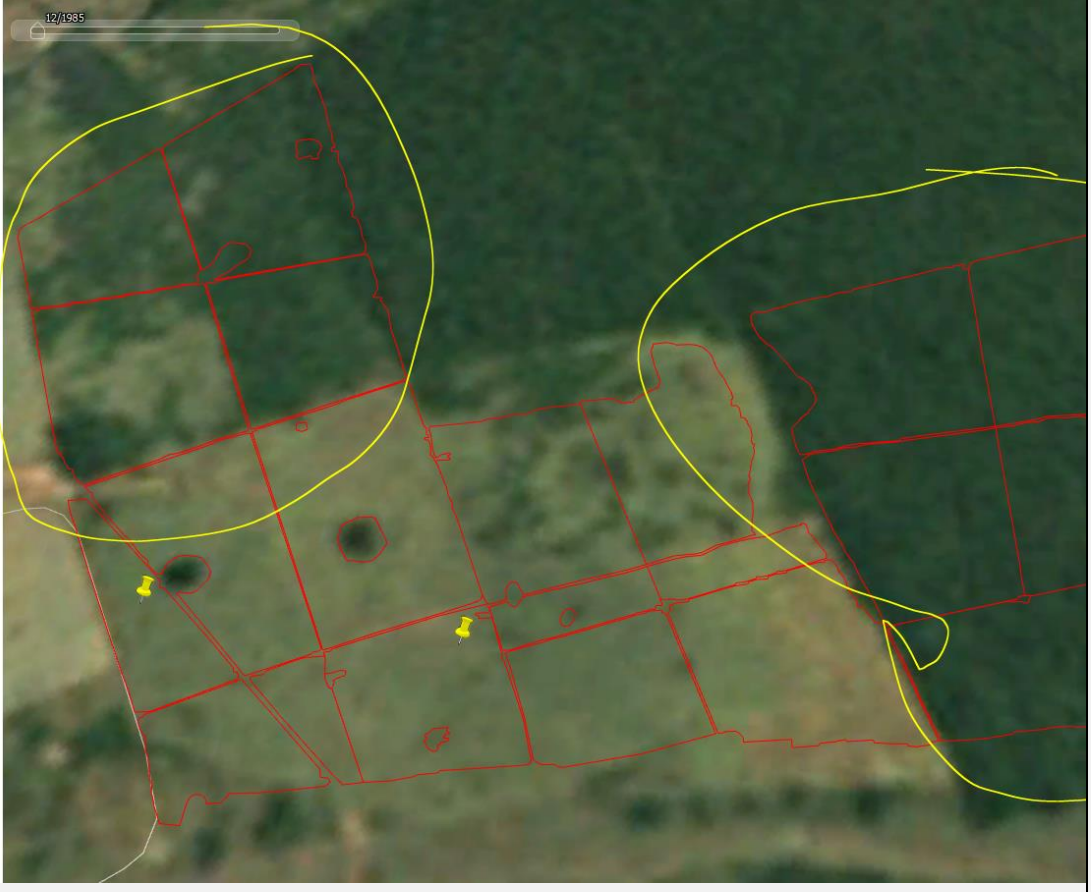
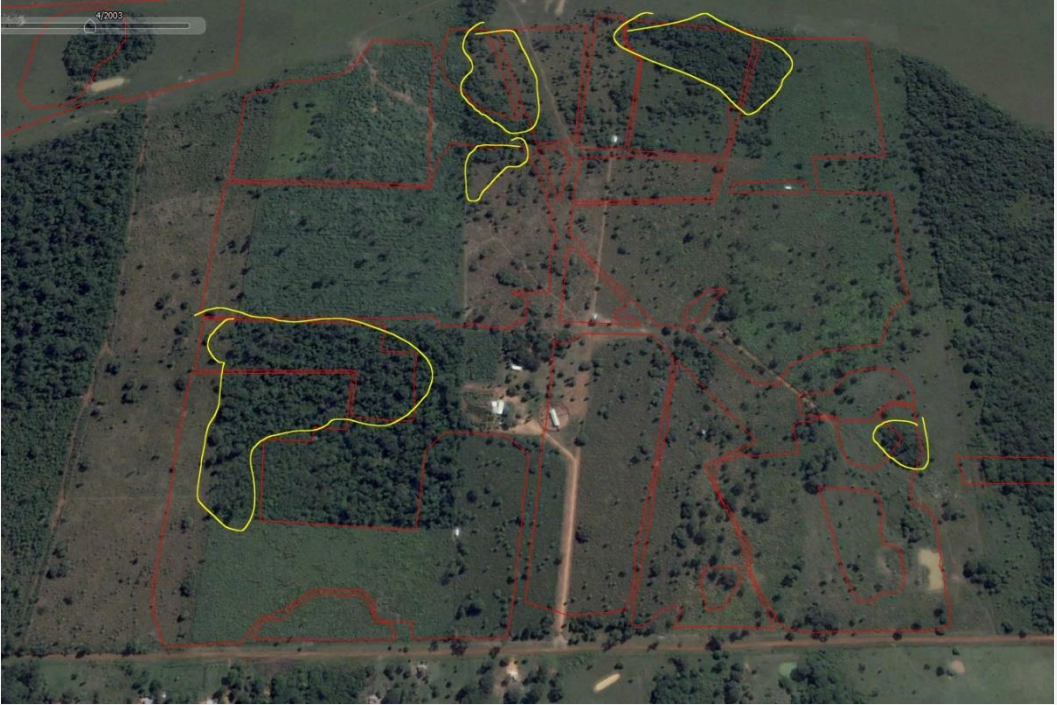
FM U 3	For- est in 2007 ? → clear ed less than 10 years be- fore plant ing start!	
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FM U 4	Pro- vide proof	 The image is an aerial satellite photograph showing a large area of dense forest. A yellow line outlines a large, irregular shape in the upper right quadrant. A red line outlines a large, irregular shape in the lower right quadrant. Two yellow pushpins are placed on the image: one in the upper right area and one in the lower right area. The image is watermarked with 'Image © 2021 Maxar Technologies' and 'Image Landsat / Copernicus'. At the bottom right, there is a small text string: 'Bildat/freshmodatum: 12/21/1995 24003120.77'.
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FM U 5	For- est in 2014 ? → clear ed less than 10 years be- fore plant ing start!	 The image is an aerial photograph of a forested area. It features several red lines that delineate irregular polygonal shapes, likely representing land parcels or management zones. Two large, irregular areas are highlighted with yellow outlines. A small yellow pushpin icon is located on the right side of the image, near a small red-outlined rectangular area. In the top left corner of the photograph, there is a date stamp that reads '10/2014'.
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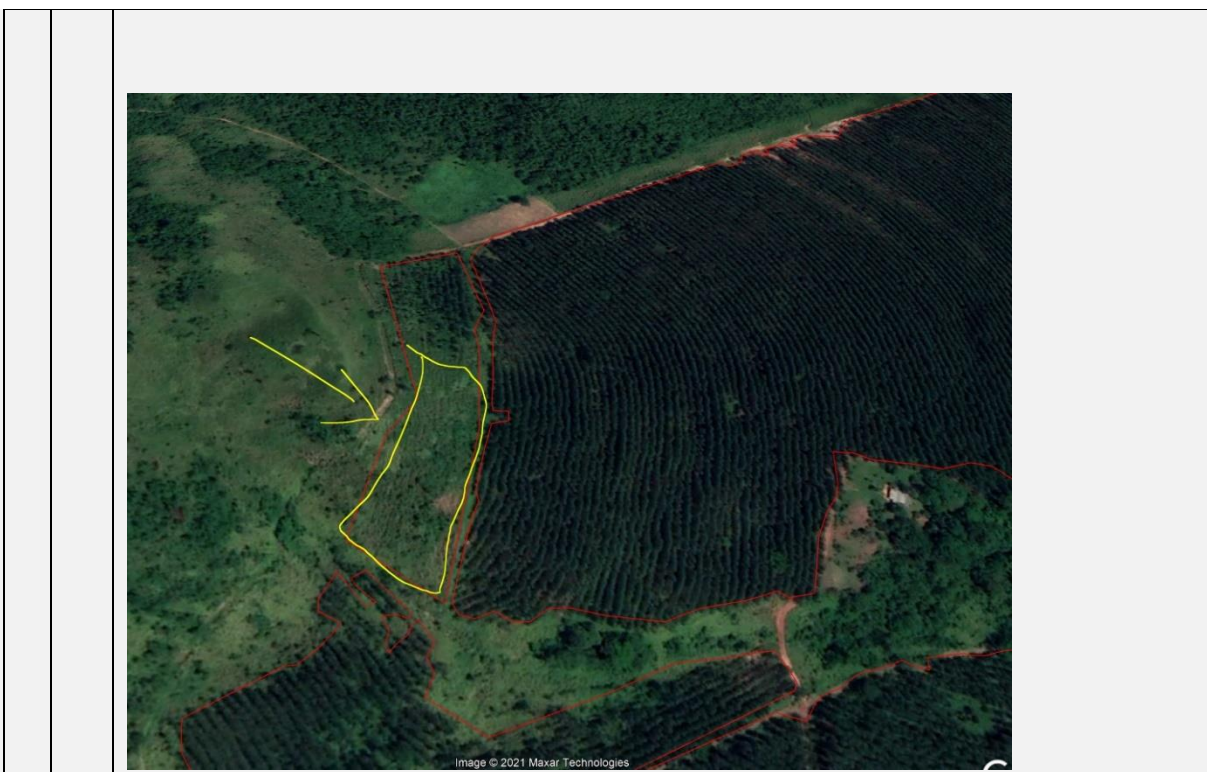


FM U 7	Pro- vide proof	 An aerial photograph of a forested area with several land parcels outlined in red. Two yellow lines trace paths or boundaries across the parcels. Two yellow pushpin markers are placed on the map. A date stamp '12/1985' is visible in the top left corner.
FM U 8	Proof re- quire d	 An aerial photograph of a forested area with several land parcels outlined in red. Several yellow lines trace paths or boundaries across the parcels. A date stamp '4/2003' is visible in the top left corner.



FM U 9	Patches with- out trees	 An aerial satellite image showing a dense forest. A red line outlines a large, irregular area that runs diagonally from the top left towards the bottom right. Within this red-outlined area, there are several yellow-outlined shapes: a small circle in the upper left, a larger irregular shape in the middle, and a small circle in the lower right. The forest appears as a dark green texture. At the bottom center of the image, there is a small text credit: "Image © 2021 Maxar Technologies".
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Project participant response

Date : 04/07/2021

The shapefiles have been correctly updated and are available in supporting documentation.

Documentation provided by project participant

☒	Changes in the PD	Section(s):serveral	New version No.: 1.1
☒	Changes in XLS	Worksheet(s):	New version No.:
☒	Other:		

DOE assessment

Date: 08/07/2021

The preliminary assessment of the audit team was based on publicly imagery. The PP provided more detailed imagery from 2005 Landsat in order to proof, that there has been no forest. Further the shapefiles provided by the PPs have not fully been assessed by the PPs so that areas where included, that actually needed to be excluded (FMU 9).

Together with updated Shapefiles and an explanation of the re-assessment conducted, the PP added a new baseline strata as well as corrected corresponding figures in the PDD and Calculations files accordingly.

Conclusion

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

CAR ID	21	Section no.	5.2	Date : 10/06/2021
Description of CAR				
Please clarify why QA/QC procedures in form of remeasurement of a certain amount of sample plots is not deemed necessary.				
Project participant response				Date : 04/07/2021
It is necessary and ensure the correct accounting of carbon sequestered in the project and the quality of the measurements. Therefore, the QA/QC have been improved, including a remeasurement of 5% of the Permanent Sample Plots every year that a verification will take place.				
Documentation provided by project participant				
☐	Changes in the PD	Section(s):3.4	New version No.: 1.1	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☒	Other:			
DOE assessment				Date: 08/07/2021
QA/QC procedures in form of remeasurements are deemed necessary. 5% of the PSPs will be re-measured in the future.				
Conclusion		☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

CAR ID	22	Section no.	6	Date :08/07/2021
Description of CAR				
As during the validation and verification process notarized forestry surface rights (DRSF = Derecho Real de Superficie Forestal) could only presented for following FMUs:				
FMU 5 (Los Juanes),				
FMU 6 (Isla Yobay)				
FMU 8 (Ocampo cue).				
GHG emission removals can only be verified for those FMUs.				
Please provide respective calculation files corresponding only with the mentioned FMUs and correct all values presented in the PDD/MR accordingly.				
Project participant response				Date : 09/07/2021
Ex-post has been updated to only cover the FMUs 5, 6, and 8.				

Documentation provided by project participant			
☒	Changes in the PD	Section(s):several	New version No.: 1.1
☒	Changes in XLS	Worksheet(s):	New version No.:
☒	Other:		
DOE assessment			Date: 10/07/2021
Ex post calculations have been revised accordingly and the PDD updated.			
Conclusion		☐ Additional action should be taken (finding remains open) ☒ The finding is closed	

CAR ID	23	Section no.	NPRR/1	Date : 10/06/2021
Description of CAR				
Ensure to apply the correct Rating for the Internal Risk, Project Management				
Project participant response				Date : 04/07/2021
The Rating for Internal Risk has been corrected in the NPRR				
Appendix F24_F25: NPRR				
Documentation provided by project participant				
☐	Changes in the PD	Section(s):	New version No.: 1.1	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☒	Other: NPRR			
DOE assessment				Date: 08/07/2021
The rating of the internal risk has been corrected as requested.				
Conclusion		☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

CL ID	24	Section no.	NPRR/2	Date : 10/06/2021
Description of CAR				
Explain and sustain the longevity of 50 years.				
Project participant response				Date : 04/07/2021

The chapter of project longevity has been updated in the NPRR with a better explanation regarding the 50 year longevity expectation.

Documentation provided by project participant

☐	Changes in the PD	Section(s):	New version No.: 1.1
☐	Changes in XLS	Worksheet(s):	New version No.:
☒	Other: NPRR		

DOE assessment

Date: 08/07/2021

The assumed project longevity is based on the assumption that, as soon as the project is established and the first income from land lease, share of wood sales and CO2 certificates occurs, the reservations about the project turn into approval and the voluntary continuation of the project by the landowners in the form of a third, fourth rotation. Thus it is very likely, that the longevity exceeds the lifetime of 50 years

The owners of the fincas FMU1 (Rancho ZS), FMU2 (Rancho 68), FMU7 (Cerrito) and FMU9 (Cerro Verde) have signed letters agreeing, that a carbon project will be implemented, knowing that this results in requirements in regard to crediting period and project lifetime. The fincas represent 60% of the forest assets.

In view of the fact that the owners of the finances do not incur any losses through the project activity, on the contrary, there is added value both through the participation in the revenues of the wood sales and the sales of carbon credits, it can be concluded, that a second rotation will be conducted and thus the requirements in regard to crediting period and project lifetime will be met.

The proposed assumption could be sustained via direct interviews with owners of the fincas FMU2 (Rancho 68), FMU3 (Don Honorio), FMU4 (Loma Vistosa) and FMU9 (Cerro Verde).

For this reason, Tuv Nord agrees with the assumption that the project is very likely to exceed the lifetime of 50 years.

Conclusion

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

CAR ID	25	Section no.	several	Date : 14/07/2021
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Description of CAR

The following are editorial errors or descriptions that are still inadequate and need to be completed:

1. Editorials:

- Delete “Fund” from Cover Page.
 - Check the PD/MR for FMU 10 (many parts where FMU 10 is still mentioned), also figure 12, map on page 35.
 - Table 35: Dj: decimal has wrong sign (dot).
 - Remove last blanc page.
2. Sec. 1.3: Eligibility: No description and justification is given that the land conversion in cases of less than 10 years before project start was not linked to the project owner (criterion 1).
 3. Sec 1.7: Ownership: It has not been described how the tree ownership will be secured after the lease agreement ends.
 4. Page 18: Soil Preparation: The description of the soil preparation is not inline with the description given under applicability criteria of the methodology (impact less 10%).
 5. Sec 3.2: Applicability criteria: Soil disturbance: A transparent calculation of the soil disturbance is not included in the PD.
 6. Page 20: Conservation: It is not clear from the description whether the 25% of natural forest are subject to carbon accounting or not.
 7. Sec 2.2: Stakeholder consultation: The date of the first stakeholder meeting shall be included.
 8. Table 32: Data for Leakage are included. Please clarify.
 9. Sec. 6.4: Describe shortly why leakage is still assumed with zero.
 10. Risk Assessment: Final External Risk has no score.

Project participant response

Date : 19/07/2021

- Point 1: The editorials under Point 1 have been adjusted in the final version of the PDD.
- Point 2: The areas that have been subject to deforestation less than 10 years prior to the project are removed from the carbon project and are not subject to GHG removal accounting. Nevertheless, as they are part of the overall plantation project and comprise 5.7 % of the total plantation area, they are described in the PDD. The conversion was undertaken by the landowner, however the project belongs to a different entity that acquires the right to the trees. The project owner and the landowner have not been connected at the time conversion took place. Also, immediately after deforestation these areas were first converted to pasture and agricultural used by the landowner.
- Point 3: Ownership is expected to be the most attractive economic alternative vis-à-vis other opportunity costs after the first rotation. Landowners receive land rental payments + participation in the timber business + participation in the carbon business. The expected income is above the income expected for cattle. After the first rotation, the main barriers for investments (which is the cashflow profile, meaning high initial investments followed by long periods without return) will be removed.
- Point 4: Soil preparation is conducted only on 50 cm wide lines on which plantations are established. Using the densest plantations in the project (5 x 2m), this would amount to 10 % of the area subject to disturbance. This was calculated considering that in 1 ha: a) 5 m in between plantation lines results in 20 lines; b) 20 lines * 0.50 m line width * 100 m length = 1,000 m².
- Point 5: See point 4.
- Point 6: Natural forests are NOT included in the carbon project for GHG removals.
- Point 7: The data on the first stakeholder meeting have been included.
- Point 8: Leakage does not take place. The numbers included in the PDD were mistaken and were corrected.

- Point 9: Leakage is assumed zero as plantations did not result in cattle removals to forested areas. This has been included in the PDD.
- Point 10: The RA has been updated accordingly.

Documentation provided by project participant

☐	Changes in the PD	Section(s): several	New version No.: 1.2
☐	Changes in XLS	Worksheet(s):	New version No.:
☐	Other:		

DOE assessment

Date: 19/07/2021

Additional information was added to the PDD to simplify and increase the overall understanding of the project proposal.

Conclusion

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

CAR ID	26	Section no.	2.5	Date : 14/07/2021
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Description of CAR

AFOLU Safeguards: Standard version 4.1 requires for AFOLU projects to comply with para 3.16.11-3.16-18 (especially gender issues, sexual harassment and discrimination have not been discussed)

Project participant response

Date : 19/07/2021

The management team of UNIQUE works according to a code of conduct that explicitly includes the organization anti-discrimination's stance regarding gender equality. In addition, it should be noted that 25 % of the management team (in Full Time Equivalent) involved in the project to date are women (according to the latest registry late 2020).

The Fund investing in Forestal San Pedro has high gender equality standards (using as a reference the GCF gender policy). The newly established company will seek to identify entry points to increase the project's impact in terms of gender equality. To date, the share of women in the operative workforce is very low (of about 0.5 %), particularly because the project does not involve operative work typically conducted by women (such as nurseries).

Documentation provided by project participant

☒	Changes in the PD	Section(s):2.5	New version No.: 1.2
☐	Changes in XLS	Worksheet(s):	New version No.:
☐	Other:		

DOE assessment		Date: 19/07/2021
The implementing company and its management have a Code of Conduct^{/CC/} to avoid discrimination of any kind. The management has a 25% share of women in leading positions^{/UW/}. The low percentage of women in field work is mainly due to the physical requirements and is comparable to other projects. At the present time, no signs of discrimination can be identified.		
Conclusion	☐ Additional action should be taken (finding remains open) ☒ The finding is closed	

CAR ID	27	Section no.	3.1	Date : 14/07/2021
Description of CAR				
Sec 3.1: The tool 18 <u>Demonstrating appropriateness of volume equations for estimation of above-ground tree biomass in A/R CDM project activities</u> has not been listed and applied. Information is to be provided that the form factors applied comply with the above-mentioned tool				
Project participant response				Date : 19/07/2021
The volume equation is based on a sample of 41 trees and R2 equals 0.98, which is above the minimum of 0.85. A calculation sheet is attached to prove this.				
Documentation provided by project participant				
☒	Changes in the PD	Section(s): .3.1	New version No.: 1.2	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☐	Other:			
DOE assessment				19/07/2021
Diameter and height were measured in 41 trees in different stem lengths to determine the tree volume according to sectional diameter method 12.b of the methodology AR Tool “Demonstrating appropriateness of allometric equations for estimation of aboveground tree biomass in A/R CDM project activities”. The R² factor reached is 0.98 and thus above the minimum (0.85) required.				
Conclusion	☐ Additional action should be taken (finding remains open) ☒ The finding is closed			

CAR ID	28	Section no.	5	Date : 14/07/2021
Description of CAR				
1. Sec 5.1: Parameter to estimate tree volume (MAI) and 44/12 to estimate form C to CO2 are not included. 2. Sec 5.2 and 6.1: Parameter to estimate tree volume (form factor) is not included. Further a demonstration that it has been developed in accordance with tool 18 is missing. 3. Sec 5.3: Monitoring Plan: Please clarify on the two applied stratification processes in this section (stratification based on growth performance monitoring for internal use vs. stratification based on planting year for carbon monitoring).				
Project participant response				Date : 19/07/2021
The parameters have been included in the updated PDD. A description has been included explaining, that due to the homogeneity of the forest stands, although on different soil quality and species varieties, the stratification according to the planting year is sufficient to reach the required level of precision for the carbon inventory.				
Documentation provided by project participant				
☒	Changes in the PD	Section(s): 5	New version No.: 1.2	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☐	Other:			
DOE assessment				Date: 19/07/2021
The parameters have been included in the updated PDD as requested.				
Conclusion		☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

APP. 5: STATEMENT OF COMPETENCE



Statement of Competence
Appointment and authorization according to the procedures
of the TUV NORD JI/CDM Certification Program

Ms. Cecilia Pizzurno

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
14.1	Afforestation and Reforestation

399 - Rev. 0, Date: 2021-03-02



Statement of Competence
Appointment and authorization according to the procedures
of the TUV NORD JI/CDM Certification Program

Mr. Martin Opitz

SCHEME	STATUS	VALID UNTIL
CDM	Lead Assessor (Validation, Verification)	2021-03-08
VCS	Lead Assessor (Validation, Verification)	2021-03-08

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
14.1	Afforestation and Reforestation

371 - Rev. 1, Date: 2018-04-12



Statement of Competence
Appointment and authorization according to the procedures
of the TUV NORD JI/CDM Certification Program

Ms. Alexandra Nuske

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification) Technical Reviewer	2022-03-03
Ji	Senior Assessor Technical Reviewer	2022-03-03
VCS / ISO 14064-2	Senior Assessor Technical Reviewer	2022-03-03

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewables
14.1	Afforestation and reforestation

095 - Rev. 9, Date: 2019-03-01