

Babatana Rainforest Conservation Programme

Sirebe Forest Carbon Project

Annual Report 2020-2022

Version 1.3

10/03/2026

A Nakau Forest Conservation Project in

Choiseul Province, Solomon Islands

NAKAU

Sirebe Tribal Association

BABATANA RAINFOREST CONSERVATION PROJECT

NRDF

Table of Contents

ISSUANCE REQUEST 02: 01/01/2020 – 31/12/2022 4
Summary 4
Document History 4

1. PROJECT DETAILS 7
1.1 Summary Description of the Implementation Status of the Project 7
1.2 Sectoral Scope and Project activity 7
1.3 Project Coordinator 8
1.4 Other Entities Involved in the Project 8
1.5 Project Start Date 9
1.6 Project Crediting Period 9
1.7 Project Location 10
1.8 Title and Reference of Methodology 11
1.9 Other Programmes 11
2.1 Implementation Status of the Project Activity 11
2.2 Deviations 12
2.2.1 Methodology Deviations 12
Deviations to carbon accounting 12
Deviations to Monitoring Methodology 12
Deviation to Group Project Design 13
2.2.2 Project Description Deviations 15

3. MONITORING PLAN 16
3.1 Carbon Monitoring 17
3.1.1 Monitored And Non-Monitored Parameters - Carbon 17
3.1.2 Monitored Parameters – Carbon 18
3.1.3 Monitoring Roles and Responsibilities - Carbon 23
3.1.4 Information Management Systems - Carbon 23
3.1.5 Simplified Project Monitoring Report Methodology - Carbon 24
3.1.6 Standard Operating Procedure: Project Monitoring – Carbon 24
3.1.7 Monitoring Resources and Capacity - Carbon 28
3.1.8 Community Monitoring - Carbon 28
3.2 Community Impact Monitoring 29
3.2.1 Monitored And Non-Monitored Parameters – Community 30
3.2.2 Monitored Parameters – Community 30
3.2.3 Monitoring Roles And Responsibilities - Community 33
3.2.4 Information Management Systems - Community 33
3.2.5 Simplified Project Monitoring Report Methodology - Community 33
3.2.6 Standard Operating Procedure: Project Monitoring – Community 33
3.3 Biodiversity Monitoring 34
3.3.1 Monitored And Non-Monitored Parameters – Biodiversity 35
3.3.2 Monitored Parameters – Biodiversity 35
3.3.3 Monitoring Roles and Responsibilities - Biodiversity 36

3.3.4 Information Management Systems - Biodiversity 36
3.3.5 Simplified Project Monitoring Report Methodology - Biodiversity 36
3.3.6 Standard Operating Procedure: Project Monitoring – Biodiversity.....36
3.4 Monitoring Resources 38
3.5 Community Monitoring 39
3.5.1 Community Participation In Monitoring.....39
3.5.2 Sharing Results of Community Monitoring.....40
3.5.3 Quality Controls for Community Monitoring.....40

4. QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS.....41
4.1 Monitoring of baseline emmissions 41
4.2 Baseline Emissions.....42
4.2.4 Changes to monitored and 'non-monitored parameters' 42
4.3 Project Emissions.....44
4.4 Leakage 44
4.5 Net GHG Emission Reductions and Removals 44

5. QUANTIFICATION OF HABITAT HECTARE UNITS.....45
5.1 Baseline Habitat Hectares.....45
5.2 Project Habitat Hectares.....45
5.3 Leakage 46
5.4 Net Habitat Hectare Units 46

6. QUANTIFICATION OF COMMUNITY IMPACTS 47
6.1 Baseline Community Impacts.....47
6.2 Project Community Impacts 47
6.3 Net Community Impact Enhancements 48
Community Social impact survey.....51

7. QUANTIFICATION OF BIODIVERSITY IMPACTS 57
7.1 Baseline Biodiversity Impacts 57
7.2 Project Biodiversity Impacts 57
7.2.1 Sirebe Project Biodiversity Monitoring 2020 - 2022 58
7.3 Net Biodiversity Impact Enhancements 61

APPENDICES.....62
Appendix 1. Sirebe Financial Results.....62
Appendix 2. Sirebe Carbon Accounting update 2023 62
Appendix 3. Babatana Remote Forest Change assessment 2022 62
Appendix 4. Sirebe Forest Monitoring 2022 62
Appendix 5. Sirebe Second Household Survey results.....62

Issuance Request 02: 01/01/2020 – 31/12/2022

Submitted by: The Nakau Programme Pty Ltd (Programme Operator)

SUMMARY

Project overview	
Annual Report Number	2
AR Version	1.3
Reporting period	01 January 2020 – 31 December 2022 (3 years)
Date of Project Validation	30/07/2021
Geographical areas	Sirebe Protected Area, Choiseul, Solomon Islands (project area within the Babatana Rainforest Conservation Project)
Technical specifications in use	Avoided forest degradation- Logged to protected forest (AFD-LtPF)

DOCUMENT HISTORY

Document Version	Version details	Date
AR 1.0	Initial submission	28/05/2024
AR 1.1	Desktop validation audit completed	11/10/2024
AR 1.2	Validation and verification audit completed	27/02/2026
AR 1.3	Approved AR	10/03/2026

Project indicators	Historical	Added/ Issued this period 2020 - 2022	Total
No. smallholder households with PES agreements	Not applicable	Not applicable	Not applicable
No. community groups with PES agreements (where applicable) by Dec 2020	1	0	1
Approximate number of households in these community groups (by rights holder families)	Primary: 27 Secondary: 46 Total: 73	Primary: 27 Secondary: 46 Total: 73	Primary: 27 Secondary: 46 Total: 73
Area under management (ha) where PES agreements are in place	806.2	0	806.2
Total PES payments made to participants (USD)	0	59,090.17	59,090.17
Total sum held in trust for future PES payments (USD)	0	225,117.41	225,117.41
Net PVCs issued[1]	87,115	0	87,115
Allocation to Plan Vivo buffer to date (tCO_2)	21,780	0	21,780
Saleable emissions reductions achieved (tCO_2)[2]	87,115	36,426	123,541
Unsold Stock at time of submission (PVC)	87,115	0	19,617
Net Plan Vivo Certificates (PVCs) issued to date			**87,115**
Net Plan Vivo Certificates requested for issuance			**0**
Verified Net Plan Vivo Certificates available for future issuance			**12,142 (2020)** **12,142 (2021)** **12,142 (2022)**
Total Net PVCs issued (including this report)			**87,115**

[1] Total PVC from the project that have been issued to the PVC registry

[2] Total saleable emission reductions generated from project inception to the end of the reporting period. This includes historical net issued vintages, net vintages verified and issued after the reporting period but prior to Annual Report submission, and net unverified emission reductions generated by the end of the reporting period.

BABATANA RAINFOREST CONSERVATION PROJECT

SIREBE FOREST CARBON PROJECT

Document Prepared by Natural Resources Development Foundation (NRDF) and Nakau Programme Pty Ltd

Project Title	Babatana Rainforest Conservation Project Sirebe Forest Carbon Project
Version	1.2
Report ID	Sirebe Annual Report 2020-2022
Date of Approval	07/02/2026
Project ID	N/A
Reporting Period	1 January 2020 to 31 December 2022
Prepared By	Natural Resources Development Foundation (Project Coordinator) and the Nakau Programme Pty Ltd (Programme Operator)
Contact	Robbie Henderson *robbie.henderson@nakau.org* Fred Tabepuda *nrdf@solomon.com.sb*

1. Project Details

1.1 SUMMARY DESCRIPTION OF THE IMPLEMENTATION STATUS OF THE PROJECT

Provide a summary description of the implementation status of the project, including the following (no more than one page):

- *A summary description of the implementation status of the technologies/ measures (e.g. plant, equipment, process, or management or conservation measure) included in the project.*
- *The relevant implementation dates (e.g. dates of construction, commissioning, and continued operation periods).*
- *The total GHG emission reductions or removals generated in this monitoring period.*

Project implementation began on 1 January 2015, when the Sirebe project was validated as the first project under the proposed Babatana Rainforest Conservation Project Grouped PDD, under Plan Vivo v.4. This monitoring report covers the second verification event for the Sirebe project. Nakau is in the process of establishing the Nakau Conservation Programme Solomon Islands, (NCP-SI) which is a national-level project methodology for carbon projects under Plan Vivo Climate. In the future, Sirebe and all other Nakau projects in the Solomon Islands will be established as standalone projects under the NCP-SI and no longer grouped under the Babatana Rainforest Conservation Project.

1.2 SECTORAL SCOPE AND PROJECT ACTIVITY

Indicate the sectoral scope(s) applicable to the project, the AFOLU project category and activity type (if applicable) and whether the project is a grouped project.

AFOLU Improved Forest Management – Logged to Protected Forest (AD-LtPF). First activity instance of a planned grouped project.

1.3 PROJECT COORDINATOR

Provide contact information for the project proponent(s). Copy and paste the table as needed.

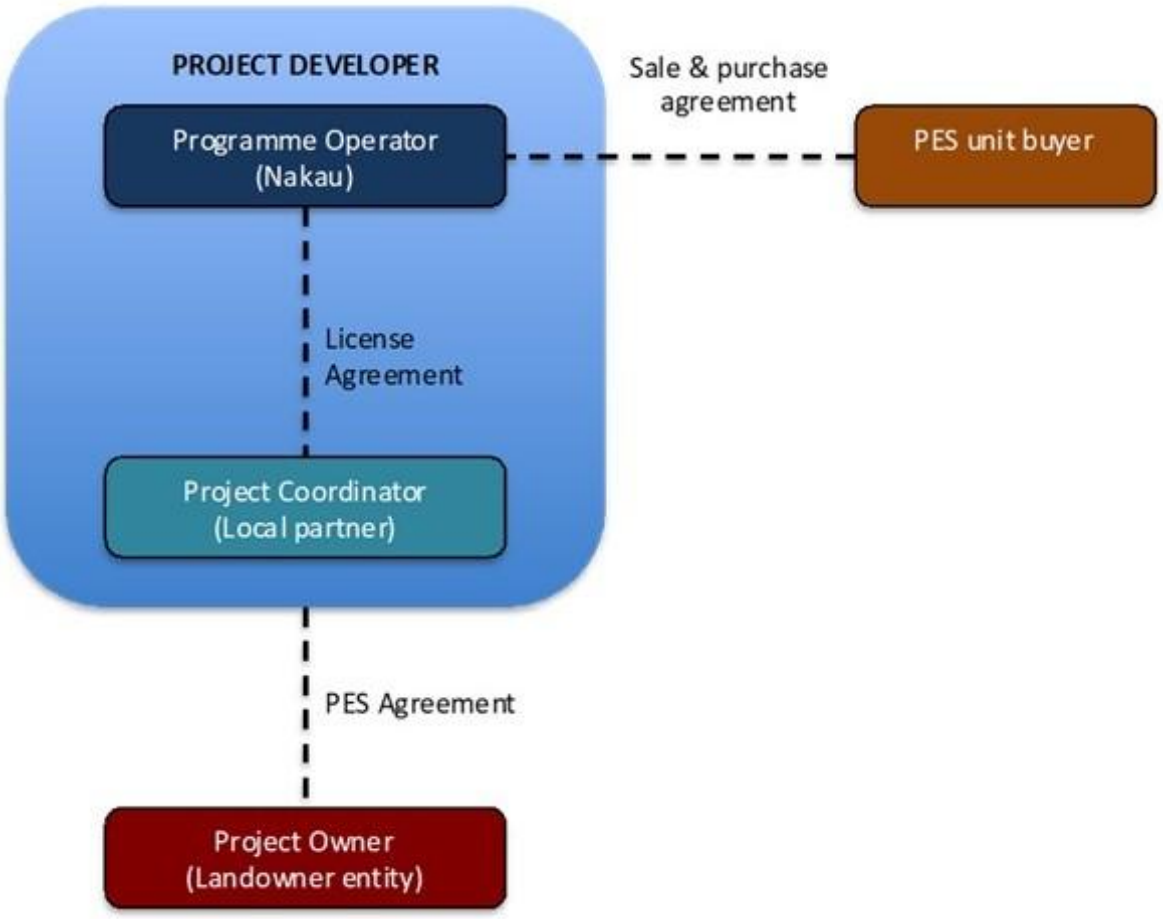
Organization name	Natural Resources Development Foundation (NRDF)
Contact person	Mr. Fred Tabepuda
Title	NRDF Manager
Address	XL building 2nd floor, PO Box 158, Gizo, Solomon Islands
Telephone	Tel: +677 60912
Email	nrdf@solomon.com.sb

1.4 OTHER ENTITIES INVOLVED IN THE PROJECT

Provide contact information and roles/responsibilities for any other project participant(s). Copy and paste the table as needed.

Organization name	Sirebe Tribal Association
Role in the project	Project Owner
Contact person	Mr. Linford Jahjo
Title	Director
Address	Tanabo residential area, Sasamungga Village, Choiseul Province, Solomon Islands.
Telephone	+677 7742188
Email	linfordpita79@gmail.com

Figure 1.4 Nakau Programme Legal Structure (from Section 2.13.2 of the Sirebe project PD Part A)



1.5 PROJECT START DATE

Indicate the project start date, specifying the day, month and year.

1st January 2015

1.6 PROJECT CREDITING PERIOD

Indicate the project crediting period, specifying the day, month and year for the start and end dates and the total number of years.

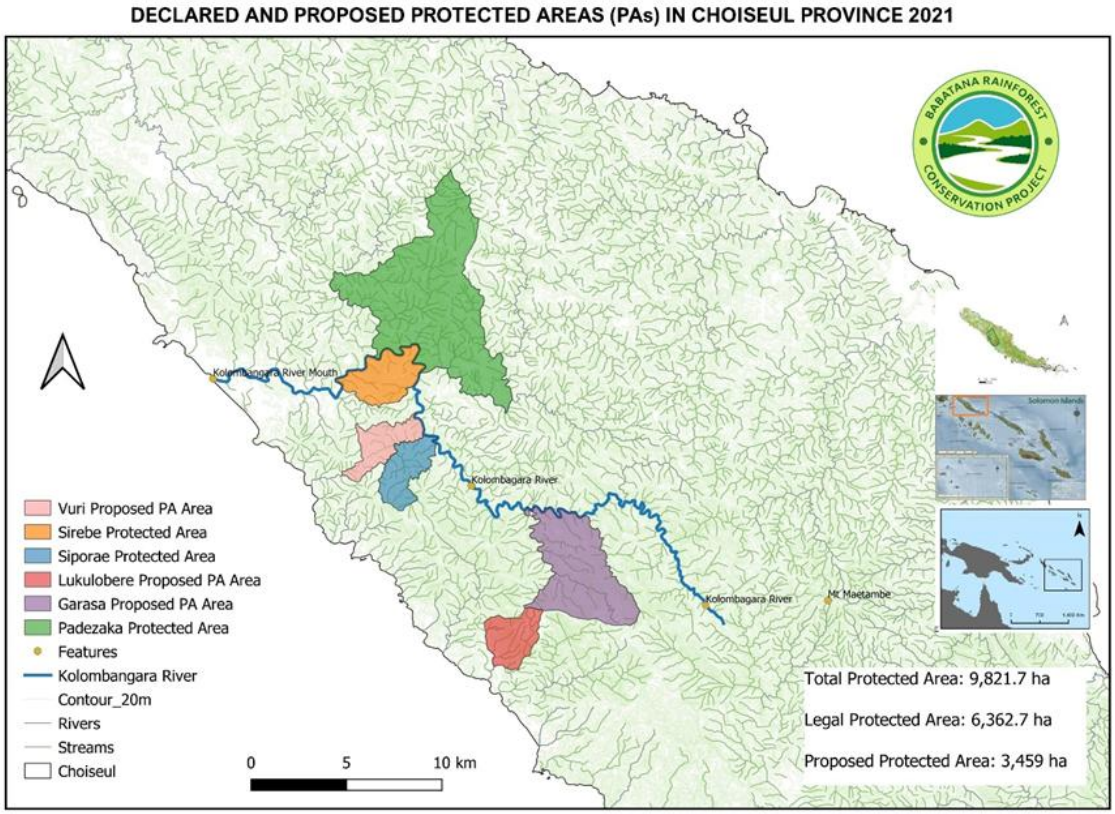
1st January 2015 to 1st January 2045 (30 years)

1.7 PROJECT LOCATION

Indicate the project location and geographic boundaries (if applicable) including geodetic coordinates. For grouped and AFOLU projects, coordinates may be submitted separately as a KML file.

Project Location: Babatana, Choiseul Province, Solomon Islands. Project boundaries: Depicted in Figure 1.7 below:

Figure 1.7 Geographic location of protected areas in the Babatana Rainforest Conservation Project.



Spatial data can be provided upon request.

1.8 TITLE AND REFERENCE OF METHODOLOGY

Provide the title, reference and version number of the methodology or methodologies applied to the project. Include also the title and version number of any tools applied by the project.

This project applies two Nakau Programme methodology elements:

1. Nakau Methodology Framework D2.1 v1.1 20150513
2. Technical Specifications Module (C) 1.1 (IFM- LtPF) D2.1.1 v2.0 01092020.

1.9 OTHER PROGRAMMES

Include the following information, as applicable:

- *Emission Trading Programmes and Other Binding Limits: Where the project reduces GHG emissions from activities that are included in an emissions trading program or any other mechanism that includes GHG allowance trading (as identified in the project description, or where such programs or mechanisms have subsequently emerged) demonstrate that net GHG emission reductions or removals generated during this monitoring period have not be used for compliance under such programs or mechanisms.*
- *Other Forms of Environmental Credit: Indicate whether the project has sought or received another form of GHG-related environmental credit, including renewable energy certificates, during this monitoring period. Include all relevant information about the GHG-related environmental credits and the related program. Additionally, provide a list of all and any other programs under which the project is eligible to create another form of GHG-related environment credit.*

Participation under Other GHG Programmes: Indicate whether the project is registered under any other GHG programs and, where this is the case, provide the registration number and details. Provide details of any GHG credits claimed under such programs.

No other programmes apply.

2.1 IMPLEMENTATION STATUS OF THE PROJECT ACTIVITY

Describe the implementation status of the project activity(s), include information on the following:

- *The operation of the project activity(s) during this monitoring period, including any information on events that may impact the GHG emission reductions or removals and monitoring.*
- *Where applicable, describe how leakage and non-permanence risk factors are being monitored and managed for AFOLU projects.*
- *Any other changes (e.g. to project proponent or other entities).*

The Sirebe-project began implementation on 1 January 2015. This monitoring report represents project implementation results for the second verification event for the project, representing 3 vintages (1 January 2020 to 31 December 2022 inclusive).

This is the second Project Monitoring Report for this project and is presented as a Project Monitoring Report as provided for in Section 8.1.5 of the PD and Section 8.1.5 of the Technical Specifications Module applied: Technical Specifications Module (C) 1.1 (IFM:LtPF) Improved Forest Management – Logged to Protected Forest V1.0. D2.1.1 v2.0, 01092020.

2.2 DEVIATIONS

2.2.1 Methodology Deviations

Describe and justify any methodology deviations applied during this monitoring period. Include evidence to demonstrate the following:

- *The deviation does not negatively impact the conservativeness of the quantification of GHG emission reductions or removals.*
- *The deviations relates only to the criteria and procedures for monitoring or measurement, and do not relate to any other part of the methodology*

Deviations to carbon accounting

The carbon accounting was recalculated using the methodology described in the most recent version of the avoided logging technical specification *NCP-SI Technical Specification AFD-LtPF v2.1* (***see NCP-SI PDD Annex 7***). Additionally, the carbon calculation are now based on more accurate forest inventory data collected from 100 sample plots installed in the Siporae, Padezaka and Vuri project areas in the Babatana region. In the carbon calculations, previously unreferenced carbon parameters were replaced with robust and referenced default values. The changes in carbon calculations represent an increase in the accuracy of the estimated carbon benefits. The updated carbon accounting results are presented in ***Appendix 2- Sirebe Carbon Accounting update 2023***.

Deviations to Monitoring Methodology

<u>Forest Cover Loss</u>

The Sirebe project outlined the Eligible Forest Area inspection design in section 8.1.7.3 of PD Part B. However, the rangers conducted a methodology deviation and complete a different transect design method for their annual EFA inspections.

The Sirebe Forest rangers experienced some occupational and safety risks while implementing the initial monitoring method, using the straight-line transects lay-out. The transects were too

dangerous to follow and in some instances, rangers encountered steep slopes, valleys and dangerous rock formations. Therefore, Nakau, the NRDF project coordinator field staff and the Sirebe rangers suggested the following recommendations and possible improvements in future monitoring work:

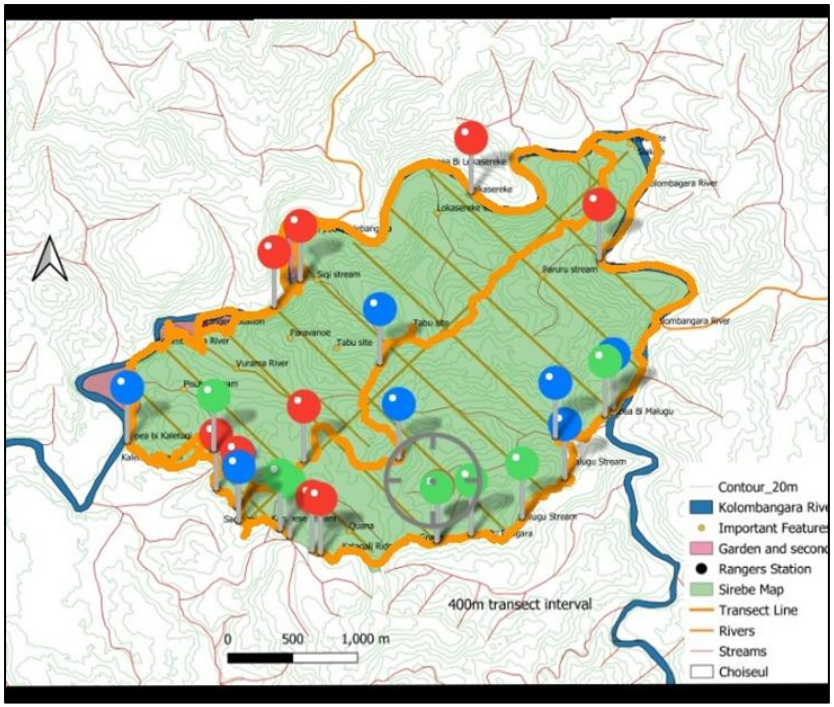
1. Review the transect method or monitoring method according to forest site features
2. Need to review the Project area inspection template and data collection
3. Investigate using a randomized approach, applying monitoring points in the project area for monitoring instead of the transect method.

From the above feedback the Project Coordinator and Nakau Programme suggested changing the approach, as displayed in the maps below, where the approach is to focus on the boundary monitoring and completing transects along ridgelines and accessible areas, which would be more prone to logging. The reviewed track design follow ridgelines and are more accessible for the rangers to walk along. In the likelihood that rangers come across an area that is too steep or danger to monitoring, they do not need monitor the area. After discussion with Nakau the new transect layout was successfully trailed by the rangers in 2022, walking all the new mapped tracks, see new design in the figures below.

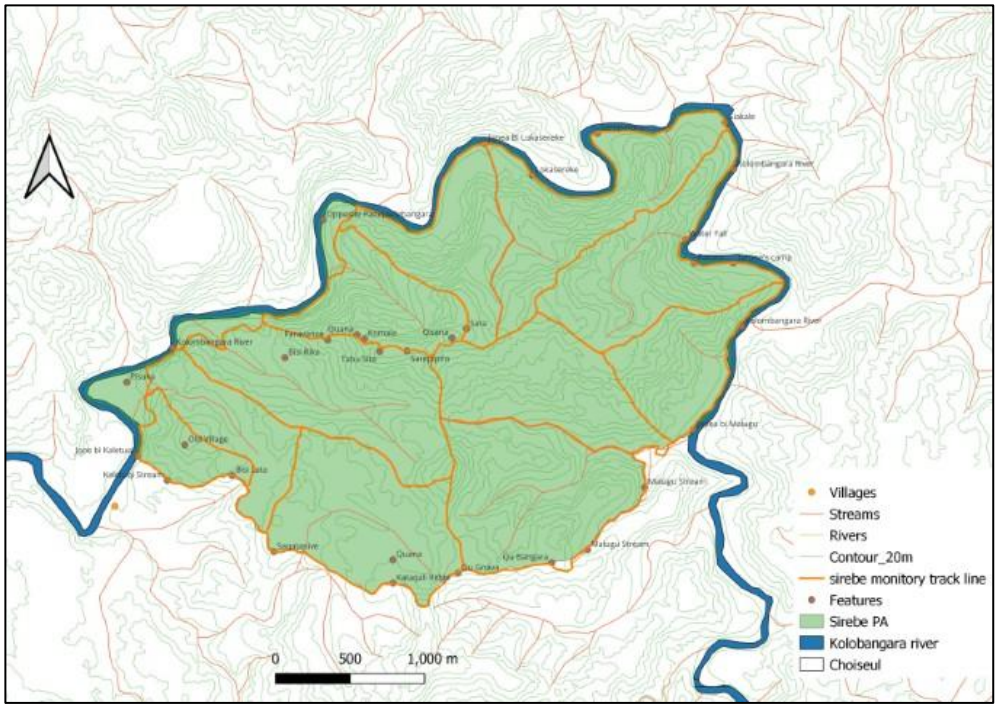
Deviation to Group Project Design

The Sirebe project was initially validated as the first project under the Babatana Rainforest Conservation Project Grouped Project. The grouped project approach has since been identified as unsuitable in the Solomon Islands context, due to potential challenges related to grouped liabilities in case of buffer claims. With this change, the Babatana Rainforest Conservation Project has been converted into to a regional protected areas network. In 2023, Nakau established the Nakau Conservation Programme Solomon Islands, (NCP-SI) which is a national-level project methodology for carbon projects under Plan Vivo Climate. Sirebe is a standalone project under the NCP-SI, and in the future, all Nakau projects in the Solomon Islands will be established as standalone projects.

Figure 2.2.1: Maps of previous (left) and new forest monitoring layout (right).



INITIAL TRANSECT MAP



REVISED TRANSECT MAP

Deviations to Leakage

no change

2.2.2 Project Description Deviations

Describe any project description deviations applied during this monitoring period and explain the reasons for the deviation. Identify whether the deviation impacts the applicability of the methodology, additionality or the appropriateness of the baseline scenario and provide an explanation of the outcome.

Describe and report on any project description deviations applied in previous monitoring reports.

Governance structure

Ownership (shareholders) have not been changed as per PDD and business plan. As stated in the PDD and Business and Benefit sharing plan the Sirebe Tribal Association would become the sole shareholder of Sirebe Community Company. Although attempts has been made to make those changes with the Solomon Islands Company House the changes have not happened. Conflicting advice is received from the Company House advising the Sirebe Association to make those changes on the online portal. However, the online registration portal does not provide a way to make those changes and so the shareholders of the company remain as the 4 family leaders.

Financial management

PD A section 4.3.4 contained a highly prescriptive 'business money' account balance target, which was proven impractical. In the Western Solomon Islands, there is only one Bank provider, Bank of the South Pacific and their only available teller is on Gizo Island, approximately a 6-hour boat road away from the Project Owners community on Choiseul. Due to the lack of services and travel required for signatories to regularly visit Gizo, the Sirebe project owners were only able to open one bank account. The application to open 4 bank accounts was submitted in April 2022 and has not seen any progress till now.

Project management and financial reports

The Sirebe Tribal Association did not submit their project management reports to NRDF and Nakau in a consistent and regular fashion, as described in 4.3.9 PDD Part A. Firstly, the progress reports were not submitted because the tribal association us unable to spend their money and complete each activity in the quarterly periods. Instead, the Sirebe tribe reported their activities to NRDF and Nakau when they completed the activities and then requested more disbursements for future budgeted activities.

Change in Eligible Forest Area

During the Sirebe project's first Validation and Verification, an action request was submitted to update the Sirebe Eligible Forest Area boundary, based on the forest area with the Sirebe project boundary. During the verification, the EFA boundary was updated and the subsequent area was changed to 806.2 hectares. The carbon accounting and maps are up-to-date in this report reflect the updated figure. The Sirebe Protected Area and Project Boundary did not change.

3. Monitoring Plan

Describe the process and schedule followed for monitoring the data and parameters, set out above, during this monitoring period, include details on the following:

- *The organizational structure, responsibilities and competencies of the personnel that carried out the monitoring activities.*
- *The methods used for generating/measuring, recording, storing, aggregating, collating and reporting the data on monitored parameters.*
- *The procedures used for handling any internal auditing performed and any non-conformities identified.*
- *The implementation of sampling approaches, including target precision levels, sample sizes, sample site locations, stratification, frequency of measurement and QA/QC procedures. Where applicable, demonstrate whether the required confidence level or precision has been met.*

Where appropriate, include line diagrams to display the GHG data collection and management system.

This section nearly replicates Section 8 in the Sirebe project PD Part B D3.2b v1.0 01092020. To compare this document to the PD, numbering in this section replaces 8.x with 3.x. We have made some small changes to the monitoring for the Sirebe project, namely, in carbon monitoring, we use AVENZA to monitor the area boundaries and EFA.

The purpose of the project monitoring was to measure, report, and verify ecosystem service outcomes delivered by the project. While the project generates multiple ecosystem services and social outcomes, the scope of project monitoring is restricted to the specific outcomes represented by PES units.

One PES unit type is produced by this project: Carbon Offsets. The core PES unit for purposes of project monitoring is carbon offsets. The particular type of carbon offset produced by this project is a Plan Vivo Certificate issued as a Verified Emission Reduction unit (VER) but imbued with biodiversity and community co-benefits as required by the Plan Vivo Standard. These co-benefits are integral attributes of the carbon offsets produced under this standard and for this reason, project monitoring requires measurement, reporting and verification of the following project outcome attributes:

- Carbon benefits
- Community benefits
- Biodiversity benefits

Project measurement requirements set out in the PD are broken down into these three categories. Similarly, the Sirebe project monitoring is broken down into the same three categories. The Project Monitoring Plan is the annual standard operating procedure for measuring project outcome delivery according to these three project benefit types.

3.1 CARBON MONITORING

Carbon offsets are issued to this project as a result of 3rd party verification of each Project Monitoring Report, which contains data sufficient to provide evidence to support a GHG assertion for the Project Monitoring Period in question.

Project Monitoring reports are produced at a maximum of 5-yearly intervals covering each Project Monitoring Period. The Project Monitoring Report was produced in the year following the final year of the Project Monitoring Period.

3.1.1 Monitored And Non-Monitored Parameters - Carbon

Some data parameters are derived from default values or are measured at one time only. These are non-monitored parameters. Other data parameters are monitored during each Monitoring Period.

Monitored and non-monitored data are listed in Table 3.1.1 below, and presented in the sequence in which measurement of GHG emissions and emission reductions are calculated.

Table 3.1.1 Monitored and Non-Monitored Parameters (monitored parameters in green)

Notation	Parameter	Unit	Equation	Origin	Monitored in Project
EFA	Eligible Forest Area	Ha	-	PD	Monitored
LF/ULF	Forest stratification (logged/unlogged forest)	Ha	-	PD	Area calculated in PD
HR	Harvest Rate	$m^3\ yr^{-1}$	4.1.1	Calculated from inventory	Not monitored Updated each Baseline Revision
TWH	Total Wood Harvested	$m^3\ yr^{-1}$	4.1.2	Default factor applied	Not monitored Updated each Baseline Revision
CD	Collateral Damage	$m^3\ yr^{-1}$	4.1.3	Root-shoot ratio (proportion of AGBE)	Not monitored Updated each Baseline Revision

Table 3.1.1 Monitored and Non-Monitored Parameters (monitored parameters in green)					
Notation	Parameter	Unit	Equation	Origin	Monitored in Project
AGBE	Above Ground Biomass Emitted	$m^3\ yr^{-1}$	4.1.4	Sum of TWH and CD	Not monitored Updated each Baseline Revision
BGBE	Below Ground Biomass Emitted	$m^3\ yr^{-1}$	4.1.5	Root-shoot ratio (proportion of AGBE)	Not monitored Updated each Baseline Revision
TM3	Total Emissions in m^3	$m^3\ yr^{-1}$	4.1.6	Sum of AGBE and BGBE	Not monitored Updated each Baseline Revision
GTCO2	Gross Total Emissions in tCO^2e	$tCO_2e\ yr^{-1}$	4.1.7	Conversion factors from wood volume to emissions	Not monitored Updated each Baseline Revision
GBER1	Gross Baseline Emissions Rotation 1	$tCO_2e\ yr^{-1}$	4.1.8	Conversion factors from wood products calculation	Not monitored Updated each Baseline Revision
ltWP	Long Term Wood Products	$tCO_2e\ yr^{-1}$	4.1.9	Calculated through conversion factors based on volume of wood harvested.	Not monitored
NBEARx	Net Baseline Emissions Avoided	$tCO_2e\ yr^{-1}$	4.1.10	Default factors based on GBE	Not monitored Updated each Baseline Revision
ER	Enhanced Removals	$tCO_2e\ yr^{-1}$	5.1.1	Default values derived from mean sequestration rates for relevant forest types and subsequently derived from project-specific data	Not Monitored Updated each Monitoring Period
TAL	Total Activity Shifting Leakage	$tCO_2e\ yr^{-1}$	5.2.1	Derived from Activity Shifting Leakage Analysis	Monitored Updated each Monitoring Period
MLF	Market Leakage Factor	Dimen-sionless	Box in Section 5.2.2	Derived from Activity Shifting Leakage Analysis	Monitored Updated each Monitoring Period
TML	Total Market Leakage	tCO2e yr-1	5.2.2	Derived from Market Leakage Analysis	Monitored Updated each Baseline Revision
ORR	Overall Risk Rating	Dimen-sionless	5.5.1	Derived from project risk assessment	Monitored Updated each Monitoring Period

3.1.2 Monitored Parameters – Carbon

Monitored data and parameters are summarized in the tables below.

Carbon Indicator	**Baseline scenario**
Description	The monitoring involves the periodic assessment of forest sector policy and regulatory changes that could affect the baseline assumptions and project additionality.
Rationale	Monitoring has the purpose to identify potential changes in the forest sector policy and regulatory environment and to re-assess the validity of baseline and project additionality assumptions.
Measured Value	n/a
Means of Verification	Re-assessment of baseline scenario using the CDM AR tool 02.
Source of data:	National Forest Policy, Forest legislation
Frequency of monitoring	Once per verification period
Monitoring equipment:	n/a
QA/QC procedures to be applied:	Third party verification
Calculation method:	n/a

Carbon Indicator	**Carbon baseline**
Description	The monitoring involves the periodic reassessment of the commercial stock and baseline emissions in the EFA.
Rationale	Monitoring has the purpose to detect potential changes in the commercial stock and that affect the baseline commercial yield and associated emissions and carbon benefits.
Measured Value	Commercial stock (m^3 ha^{-1}) Carbon emitted from commercial logging (t CO_2 ha^{-1})
Means of Verification	Re-measurement of permanent sample plots and reassessment of the commercial stock with updated forest inventory data
Source of data:	Forest Inventory data (dbh, height) Species-specific wood densities
Frequency of monitoring	The carbon baseline is updated at least every 10-years
Monitoring equipment:	GPS, diameter tape, hypsometer, compass, computer

Carbon Indicator	**Carbon baseline**
QA/QC procedures to be applied:	Third party verification of baseline revision every 10 years.
Calculation method:	Based on the reassessment of the commercial stock and yield, net baseline emissions and carbon benefit are updated in the carbon accounting system and TS in each project.

Carbon indicator	**Forest Cover loss (Reversals)**
Description	Identify and measure potential areas of forest cover loss caused by encroachment of agriculture or illegal logging in the EFA which would lead to an avoidable loss of forest carbon stocks and reversals of carbon credits.
Measured value	Area of forest cover loss (hectares) Logged timber volume (m3)
Monitoring procedures	1. Remote monitoring: Nakau has subscribed to Upstream Tech Lens, a web-based, remote sensing application to monitor forest cover loss in all projects (see https://app.upstream.tech). Through the app, forest cover can be monitored through an analysis of recent, high-resolution satellite images made available from Planet Lab through Norway's International Climate and Forests Initiative (NICFI). The app provides monthly image mosaics that allow for a timely and holistic detection of potential incidents leading to forest cover loss and reversals. Any incidents detected inside the EFA or near the EFA boundary will be inspected in the field by the forest rangers. 2. Field monitoring: Forest cover loss in the EFA is additionally monitored in the field by means of: a) Regular field patrols: Field patrolling is carried out along pre-planned transects and the EFA boundary with the aid of a field mapping application installed on smartphones. b) Targeted field inspections: Carried out in areas where human disturbance is happening or is at risk of happening, detected through remote sensing app. NRDF provides the forest rangers with spatial information (GPS coordinates) of actual or potential forest cover loss incidents. Where a human disturbance incident is detected, the forest rangers will enforce the PA rules to immediately stop the activity which is leading to forest cover loss and to prevent

Carbon indicator	**Forest Cover loss (Reversals)**
	further damage and reversals. Subsequently, the area of forest cover loss is measured in the field using the mapping app or with a GPS device. Where applicable, the logged volume is measured by recording all stump diameters and estimating the log length of all felled trees in the area. After the rangers have returned from the field, they will report and hand over the spatial data to the project coordinator teams for further processing. If necessary, the project coordinator and forest rangers will organize a second field inspection to carry out a more detailed assessment of the environmental damage. The project coordinator together with the tribal association will report the PA infringement to the authorities.
Calculation method	After field measurement, the actual project emissions per carbon pools are calculated according to section **Error! Reference source not found.** of the NCP-SI TS for avoided logging. The reversal areas are consequently excluded from the EFA after the year of disturbance, for the remainder of the project period. The reversal emissions and updated extent of the EFA iare reported in the relevant annual reports at verification.
Frequency of monitoring	Remote sensing analysis: flexible from monthly (in project areas with elevated risks of human disturbance) to annually in areas with low disturbance risks. Field monitoring: Annually and after disturbance incidents
Teams involved and responsibilities	The Vuri forest rangers are responsible to carry out the field monitoring and data collection/measurement. Nakau and NRDF provide technical support and training to facilitate the monitoring activity. Nakau and NRDF lead in the remote sensing forest monitoring and are responsible for regularly checking the project areas for disturbance threats and communicating any such threats to the project owner.
Monitoring equipment and resources	• Web-based, remote sensing monitoring app • Smartphones with mapping app installed • Handheld GPS units • GIS software • Computer • EFA boundary map

Carbon indicator	**Forest Cover loss (Reversals)**
	• Monitoring transects and transect map
Reporting	A forest monitoring activity report will be prepared annually. The report will combine the results of forest and ecosystem monitoring and report on forest monitoring progress indicators. The forest monitoring activity report will be attached as a supporting document to the annual reports submitted to Plan Vivo. Third party verification of project monitoring reports occurs every 3-5 years

Carbon Indicator	**Project Emissions from Market Leakage (PE_{ML})**
Description:	Market leakage occurs when forest conservation projects reduce logging and log exports to an extend that changes the timber supply and demand equilibrium and results in a shift of production elsewhere to make up for the lost supply.
Rationale	The monitoring of market leakage aims to periodically assess the significance of the impacts that forest conservation projects have on the Solomon Islands timber exports to international markets
Measured Value	Market Leakage Factor (dimensionless)
Means of Verification	The significance of potential market leakage from NCP-SI projects is assessed through a comparison of the foregone timber production due to forest conservation projects against the timber exported to international markets at the national scale. Log and timber exports to international markets make up the greatest share of the timber production in the Solomon Islands by far and the annual export figures are published and made publicly available. Therefore, the timber export volume is considered a suitable indicator to assess potential market leakage. Market leakage is assessed through evaluation the following criteria: • Actual annual timber exports to international markets • Estimated forgone log volumes across projects under the NCP-SI per annum • Percentage foregone log volumes of total timber exports

Carbon Indicator	**Project Emissions from Market Leakage (PE_{ML})**
Source of data:	SI log export volume data per annum SI sawn timber export volume per annum NCP-SI projects carbon accounting
Frequency of monitoring/recording:	5-yearly
Monitoring equipment:	Computer
QA/QC procedures to be applied:	Third party verification of project monitoring reports every 3 to 5 years (once per monitoring period).
Calculation method:	• Estimation of project emissions from market leakage as per section 8.9.2 of the NCP-SI technical specification • Potential deduction of reversals from market leakage across all projects under the NCP-SI

3.1.3 Monitoring Roles and Responsibilities - Carbon

Specific project monitoring roles for projects applying this Technical Specifications Module are summarised in Table 7.1.3. Project Owners and Project Coordinators are required to assign specific roles to specific stakeholders in the PD, and use this convention in the implementation and monitoring of the Project Activity.

Specific project monitoring roles for this project is presented in Table 3.1.3 below:

Table 3.1.3 Project Monitoring Roles/Responsibilities	
Task	Responsibility
Eligible Forest Area Boundary Inspections	Project Owner with assistance from the Project Coordinator where needed
Eligible Forest Area Inspections	Project Owner with assistance from the Project Coordinator where needed
Project Management Reporting	Project Owner with assistance from the Project Coordinator
Aerial imagery/mapping	Project Coordinator and Project operator
Project Monitoring data management	Project Coordinator and Project operator

3.1.4 Information Management Systems - Carbon

This project uses the information management system described in Section 7.1 of the Nakau Methodology Framework.

3.1.5 Simplified Project Monitoring Report Methodology - Carbon

Not applicable. A simplified monitoring report was provided for first issuance. However, a full monitoring report is provided for the second issuance in line with the PDD.

3.1.6 Standard Operating Procedure: Project Monitoring – Carbon

All projects applying this Technical Specifications Module are required to develop a Standard Operating Procedure (SOP) for Monitoring. Projects have the option to submit a simplified SOP for Monitoring when submitting the PD for validation and/or for first verification. Projects electing to supply a simplified SOP for Monitoring for PD and first verification are required to establish a simplified SOP for Monitoring for first verification and then follow the full monitoring SOP thereafter. The simplified SOP for Monitoring requires the Project Coordinator to prepare the first Project Monitoring Report based on the requirements of the Nakau Methodology Framework and this Technical Specifications Module.

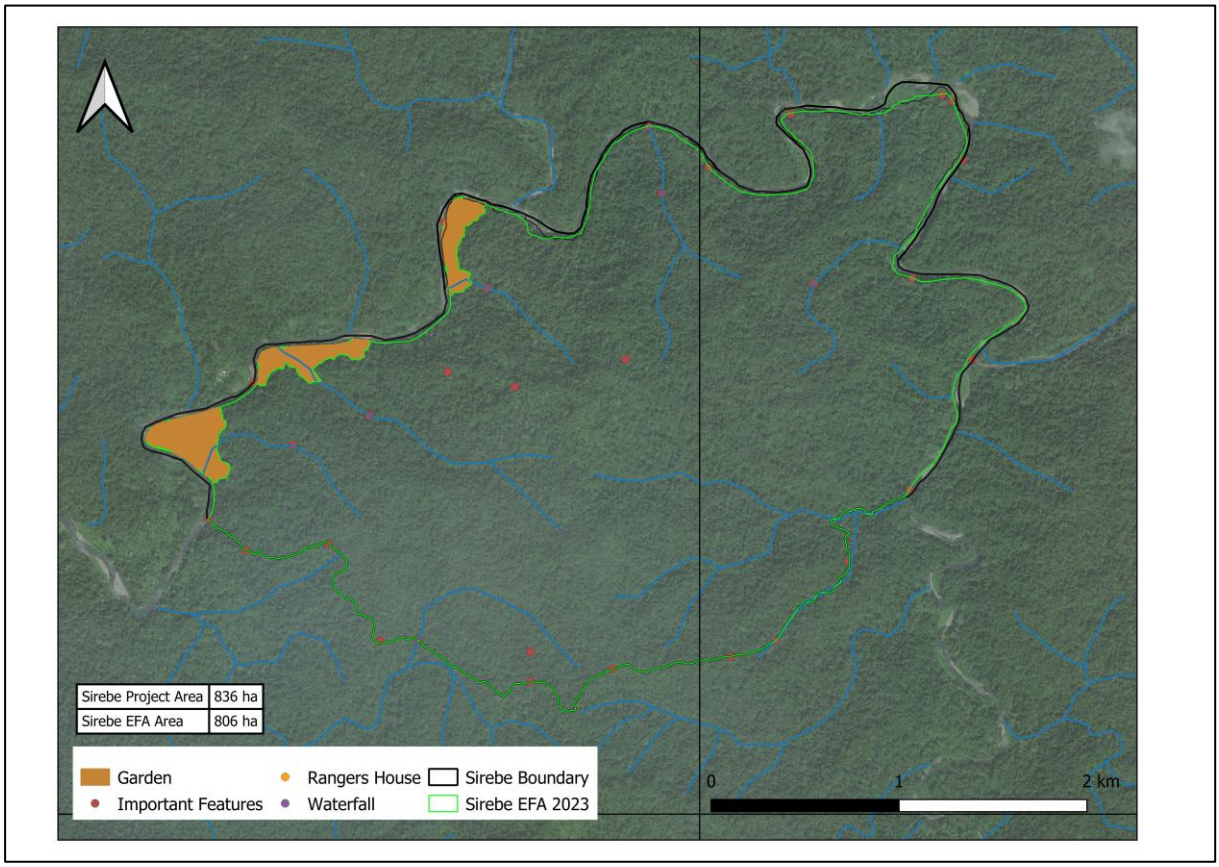
The Standard Operating Procedure (SOP) for Monitoring Carbon benefits is presented below.

Table 3.1.6 Monitoring Schedule - Carbon				
Carbon				
Activity	Frequency	Responsibility	Human Resources	Financial Resources
Eligible Forest Area	Annual inspection Aerial imagery once per monitoring cycle (3-5 yearly)	Landowner (rangers); Project Coordinator	Rangers employed by the project from the landowner community; Project Coordinator staff	PES unit price accounts for employment of rangers and Project Coordinator staff
Eligible Forest Boundary	Annual inspection Aerial imagery once per monitoring cycle (3-5 yearly)	Landowner (rangers); Project Coordinator	Rangers employed by the project from the landowner community; Project Coordinator staff	PES unit price accounts for employment of rangers and Project Coordinator staff
De minimis timber harvesting inspections	Annual inspection Aerial imagery once per monitoring cycle (3-5 yearly)	Landowner (rangers); Project Coordinator	Rangers employed by the project from the landowner community; Project Coordinator staff	PES unit price accounts for employment of rangers and Project Coordinator staff
Activity Shifting Leakage	Annual inspection 3-5 yearly calculation	Project Coordinator and Landowner	Rangers employed by the project from the landowner community; Project Coordinator staff	PES unit price accounts for employment of rangers and Project Coordinator staff

3.1.6.1 Forest Management Areas

The boundaries of the Eligible Forest Area for the Sirebe project is presented in the map below.

Figure 3.1.6.1 Sirebe project eligible and non-eligible forest area



3.1.6.2 Eligible Forest Boundary Inspections

Description: The Eligible Forest Area boundary is inspected annually to record the status of this boundary.

Purpose: Monitor and manage any reversals occurring at the boundary.

Method:

During this monitoring period the project owner conducted boundary inspections of the Eligible Forest Area once annually, due to the geographic size and complex terrain of the project area. In the future monitoring periods, the boundary inspection will be conducted annually (previously bi-annually). This is conducted during the walking of line transects from one side of an Eligible Forest Area boundary to another, and by viewing the Eligible Forest Area boundary in both directions along the boundary from the point on each transect line as it meets the Eligible Forest Area boundary. If reversals at the Eligible Forest Area boundary are observed at points along the boundary that do not coincide with the line transect then the

reversal is recorded using the Eligible Forest Boundary Inspection Template (Appendix 6 of Babatana PD Part B D3.2b v1.0 01092020). *Note that the AVENZA application has replaced use of the hard copy monitoring template.*

Recurrence: Annual inspections

Responsibility: Project Owner with supervision support from the Project Coordinator until such time as Project Coordinator supervision support not required (as determined by Project Owner and Project Coordinator by mutual agreement). Project Coordinator to supervise Eligible Forest Boundary Inspection at least once during each 3-yearly monitoring period.

3.1.6.3 Eligible Forest Area Inspections

Description: Descriptive survey of forest condition within Eligible Forest Area boundary.

Purpose: Monitor any reversals occurring within Eligible Forest Area, and ensure that any timber harvesting lies within the *de minimis* limit imposed by the Technical Specifications Module applied.

Method:

Large Area Transect Method: For each Forest Management Area, permanently mark a Transect Base Point with a boundary peg (this can be a boundary peg used for forest inventory and/or permanent sample plots). Define a Transect Datum Line using a compass bearing and orient the transect datum line along the long axis of the Forest Management Area (see Figure 8.1.6.3). Use the last two digits from random numbers and convert to meters, to select a transect starting point along the Transect Datum Line. Use a compass bearing to mark out parallel transect lines through the Forest Management Area, with transects located between 100m and 500m intervals and orientated perpendicular to the Transect Datum Line.

Medium Area Transect Method: For forest management areas that are too small to undertake two or more transects using the Large Area Transect Method, use the same method as the Large Area Transect Method but select the last single digit from the random numbers to locate the first transect line, and locate the transects between 20m and 100m intervals along the transect datum line.

Small Area Transect Method: For forest management areas less than 100m long, start with the Transect Base Point, then locate a single transect running through the longest axis of the forest patch (and curving the transect where necessary in order to keep the transect within the forest boundary).

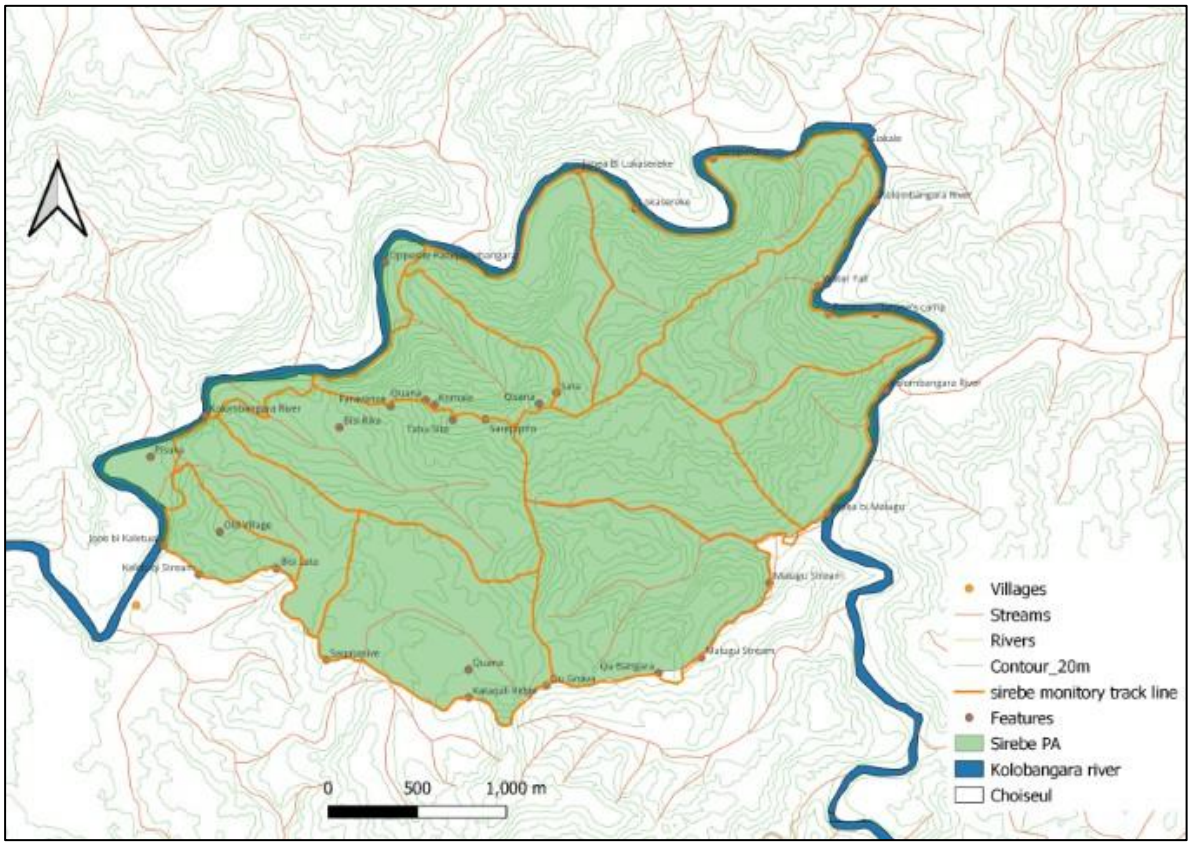
Transect Survey Procedure: Walk the full length of each transect line and on the Project Area Inspection and record the following Reversal Events: (*Note that the AVENZA application has replaced use of the hard copy monitoring template.)*

a. Evidence of timber harvesting
b. Evidence of fire

c. Evidence of detrimental changes in forest health (e.g. browsing, pest infestation, disease, snow-break, dieback)

For each Reversal Event record the location with a GPS unit and describe the event using the Eligible Forest Area Inspection Checklist. For each timber harvesting Reversal Event record the stump diameter, the species of harvested tree where possible, any evidence of on-site timber processing, log hauling, and collateral damage.

Figure 3.1.6.3 Eligible Forest Area Inspection Transect Location



Recurrence: Annually.

Responsibility: Project Owner with supervision support from the Project Coordinator until such time as Project Coordinator supervision support not required (as determined by Project Owner and Project Coordinator by mutual agreement). Project Coordinator to supervise Eligible Forest Boundary Inspection at least once during each 3-yearly monitoring period.

Note: Use a different random number to generate the transect starting point along the transect datum line for each subsequent annual monitoring cycle.

3.1.6.4 *De Minimis* Timber Harvest Inspection

De minimis timber harvesting inspections will be undertaken 6-monthly in conjunction with the annually Eligible Forest Area Inspections described in Section 3.1.6.3.

The de-minimis timber harvesting volume for the Sirebe Project is 398.22 m3 per year. This amounts to <5% of the total allowable annual commercial timber harvest in the Baseline Scenario in the Eligible Forest Area as provided for in the Technical Specifications Module applied.

There has been no *de minimis* timber harvesting in this monitoring period.

3.1.6.5 Activity Shifting Leakage Inspection

Activity Shifting Leakage Inspections will be undertaken annually following first verification. These inspections will be undertaken in conjunction with annual Eligible Forest Area Inspections described in Section 3.1.6.3.

The project will record Activity Shifting Leakage events using the template supplied in Appendix 9 Babatana PD Part B D3.2b v1.0 01092020. *Note that the AVENZA application has replaced use of the hard copy monitoring template.*

3.1.7 Monitoring Resources and Capacity - Carbon

According to Section 5 of the Plan Vivo Standard (2013, p17):

5.9. A monitoring plan must be developed for each project intervention which specifies:

5.9.6. Resources and capacity required

According to the Technical Specifications Module (C) 2.1 (AD-DtPF): D2.2.1 v1.0, 20150815:

The Project Monitoring Plan must identify (and provide evidence for) the resources available to undertake monitoring, including:

- *Financial resources and the source of such finance (e.g. unit pricing, grants, fees)*
- *Human resources and capability required.*

The financial and human resources allocated to project monitoring are presented in Table 3.1.6 above.

3.1.8 Community Monitoring - Carbon

According to Section 5 of the Plan Vivo Standard (2013, p17):

5.9. A monitoring plan must be developed for each project intervention which specifies:

5.9.7. How communities will participate in monitoring, e.g. by training community members and gradually delegating monitoring activities over the duration of the project

5.9.8. How results of monitoring will be shared and discussed with participants

5.10. Where participants are involved in monitoring, a system for checking the robustness of monitoring results must be in place, e.g. checking a random sample of monitoring results by the project coordinator.

According to the Technical Specifications Module (C) 2.1 (AD-DtPF): D2.2.1 v1.0, 20150815:

The Project Monitoring Plan must include:

- *A description of how the Project Owner and/or other local people will participate in monitoring in compliance with the Project Participation Protocol specified in Section 3.1 of the PD (applying Section 3.1 of the Nakau Methodology Framework).*
- *A description of how the results of monitoring will be shared and discussed with participants with reference to the Project Monitoring Workshops specified in Section 3.1.7 of the PD (applying Section 3.1.7 of the Nakau Methodology Framework).*
- *A description of the quality controls used to safeguard the integrity and accuracy of data gathered from monitoring activities involving Project Owners and/or other local people.*

Community involvement in monitoring is set out in Table 3.1.6 above.

3.1.8.1 Community Participation in Monitoring

The Project Owner will recruit rangers with responsibilities to undertake project monitoring tasks described in Table 3.1.6. The Project Owner will be responsible for recruitment and management of rangers for this project. The Project Coordinator will provide supervision and support for ranger activities with this role scaling downwards through time at a rate determined by mutual agreement between the Project Coordinator and the Project Owner.

3.1.8.2 Sharing Results of Community Monitoring

Community monitoring outputs are recorded in annual Project Management Reports prepared and approved by the Project Owner with the assistance of the Project Coordinator. Project Management Reports are submitted for approval to the Project Coordinator and the Programme Operator on an annual basis. The Project Coordinator collates the content of annual Project Management Reports into three-yearly Project Monitoring Reports. The Project Owner and the Project Coordinator approves each Project Monitoring Report before being submitted to the Programme Operator for approval. Once approved by the Programme Operator the Project Monitoring Report is submitted for a verification audit.

3.1.8.3 Quality Controls for Community Monitoring

Quality controls for community monitoring are described in Section 3.1.8.2.

3.2 COMMUNITY IMPACT MONITORING

Carbon offsets are issued to this project as a result of 3rd party verification of each Project Monitoring Report, which contains data sufficient to provide evidence to support a community impact assertion for the Project Monitoring Period in question. This is a requirement for the carbon offsets to be issued as Plan Vivo Certificates under the Plan Vivo Standard.

3.2.1 Monitored And Non-Monitored Parameters – Community

Monitored and non-monitored community impact data are listed in Table 3.2.1 below.

Table 3.2.1 Monitored and Non-Monitored Parameters – Community Impacts

Notation	Parameter	Unit	Origin	Monitored
FA	Food security	Various	Community Impact Survey	Monitored
W	Water security	%	Community Impact Survey	Monitored
H	Financial security and impact of money	SBD	Community Impact Survey	Monitored
P	Participation	Number & %	Community Impact Survey	Monitored

3.2.2 Monitored Parameters – Community

Monitored data and parameters are summarized in the tables below.

Data Unit / Parameter:	**Food & Agriculture**
Data unit:	Various
Description:	We want to know: • If the forest products continue to be used indicating the continuation of traditional practices • If access to land for gardens diminishes to a point that it affects access to food • If project owners begin to purchase food more often indicating increased income but also creating possible negative unintended impacts (i.e. health) • If income is still sought through the sale of food and how this income changes over time.
Source of data:	Community Impact Survey
Description of measurement methods and procedures to be applied:	Structured interviews pursuing the following questions: 1.1 How often do you buy food from the store or market? 1.2 What goods do you purchase at the store/market? 1.3 How big is your household garden? 1.4 What type of crops do you grow at your family garden? 1.5 How often do you eat good from your garden? 1.6 Do you ever run out of food? 1.7 How often do you harvest food from the forest? 1.8 What goods do you collect from the forest?

Data Unit / Parameter:	**Food & Agriculture**
Frequency of monitoring/recording:	3-5 yearly
Value monitored:	Various
Monitoring equipment:	Social survey equipment
QA/QC procedures to be applied:	3rd party verification of Project Monitoring Reports.
Calculation method:	Compare responses with previous survey

Data Unit / Parameter:	**Water Accessibility**
Data unit:	Various
Description:	Access to water is not a major problem at this time but could be due to climate change impacts. Given improved access to water is highly desired, any changes may indicate a positive impact resulting from the project. Sanitation was identified as a major concern for the Sirebe people. We want to see if the project helps to improve sanitation for the households and further improvements in clean water sources.
Source of data:	Community Impact Survey
Description of measurement methods and procedures to be applied:	Structured interviews pursuing the following questions: 2.1 Do you ever run out of water? 2.2 Which water sources does your household use and is it available all year round? 2.3 Do you feel you can use as much tap water as you like? (i.e through piped system)
Frequency of monitoring/recording:	3-5 yearly
Value monitored:	Various
Monitoring equipment:	Social survey equipment
QA/QC procedures to be applied:	3rd party verification of Project Monitoring Reports.
Calculation method:	Compare responses with previous survey

Data Unit / Parameter:	**Household Income**
Data unit:	Various
Description:	Increased income can demonstrate increased wellbeing although it can also be damaging. While we measure income over time, we also measure changes in livelihoods or time spent on activities every day such as housework, gardening etc. This will help us to see if project owners have more time to give to non-core activities and therefore, perhaps their lives are made easier by the project. We will also monitor if the money is causing social decay via its use for negative pursuits (i.e. alcohol). Education is also used to determine whether increased income is creating greater wellbeing.
Source of data:	Community Impact Survey
Description of measurement methods	Structured interviews pursuing the following questions:

Data Unit / Parameter:	**Household Income**
and procedures to be applied:	3.1 How many children/youths (under 20 years) in your household are currently in primary/secondary/tertiary school? 3.2 How many household members have graduated secondary/tertiary school? 3.3 What is your household average monthly income? 3.4 What are your main sources of income 3.5 What is your household average monthly expenditures? 3.6 What are your main expenditures? 3.7 Are you able to save money from your earnings in a typical month? 3.8 Which sources of electricity are used in your home? 3.9 What type of toilet is your household using? 3.10 Hours spent for daily activities? - Cooking (Female / Male) - Household chores - Gardening/ farming/fishing - Community church activities 3.11 Are you aware of anyone in the community using marijuana or other drugs (including homebrew).
Frequency of monitoring/recording:	3-5 yearly
Value monitored:	Various
Monitoring equipment:	Social survey equipment
QA/QC procedures to be applied:	3rd party verification of Project Monitoring Reports.
Calculation method:	Compare responses with previous survey

Data Unit / Parameter:	**Project Participation**
Data unit:	Various
Description:	We want to use this monitoring as a chance to assess how well the 'Carbon Project ' (i.e. Associations, management) is doing at engaging the project owners and earning local trust. This indicates overall wellbeing if the faith in this project and entity is high
Source of data:	Community Impact Survey
Description of measurement methods and procedures to be applied:	Structured interviews pursuing the following questions: 4.1 Can you access information about the REDD+ Enterprise finances and activities? 4.2 Do you generally trust the REDD+ Enterprise? 4.3 Is any of your household directly involved in PES activities (Employed, committee member etc) 4.4 Do you generally feel the PES enterprise contributes to the wellbeing of the tribe/community members?

Data Unit / Parameter:	**Project Participation**
Frequency of monitoring/recording:	3-5 yearly
Value monitored:	Various
Monitoring equipment:	Social survey equipment
QA/QC procedures to be applied:	3rd party verification of Project Monitoring Reports.
Calculation method:	Compare responses with previous survey

3.2.3 Monitoring Roles And Responsibilities - Community

Specific project monitoring roles for projects applying this Technical Specifications Module are summarised in Table 7.1.3. Project Owners and Project Coordinators are required to assign specific roles to specific stakeholders in the PD, and use this convention in the implementation and monitoring of the Project Activity.

Community Impact Monitoring surveys are the responsibility of the Project Coordinator. Surveys are to be conducted with the consent of the Project Owner community. The survey shall be replicated every 3years. Ideally, the same households' members surveyed during the baseline should be included in subsequent interviews. Furthermore, the number of respondents used for the baseline should be the minimum standard for further surveys, however the Project will aim to increase in the number of respondents.

3.2.4 Information Management Systems - Community

This project uses the information management system described in Section 7.1 of the Nakau Methodology Framework.

3.2.5 Simplified Project Monitoring Report Methodology - Community

This project submitted a simplified Project Monitoring Report for its first verification. This is not applicable for the second verification.

3.2.6 Standard Operating Procedure: Project Monitoring – Community

The Standard Operating Procedure (SOP) for Monitoring Community Impacts is presented below.

Table 3.2.6 Monitoring Schedule – Community Impacts				
Community				
Activity	Frequency	Responsibility	Human Resources	Financial Resources
Food, consumption, agriculture	3-5 yearly	Project Coordinator	Project Coordinator staff	PES unit price accounts for employment of Project Coordinator staff*
Water accessibility	3-5 yearly	Project Coordinator	Project Coordinator staff	PES unit price accounts for employment of Project Coordinator staff
Household income	3-5 yearly	Project Coordinator	Project Coordinator staff	PES unit price accounts for employment of Project Coordinator staff
Participation	3-5 yearly	Project Coordinator	Project Coordinator staff	PES unit price accounts for employment of Project Coordinator staff

3.2.6.1 Baseline Community Impacts

The community impact baseline was measured during project development and is presented in Section 5.2.2.2 of the Babatana Rainforest Conservation Project PD Part A D3.2a v1.0 01092020.

3.2.6.2 Project Community Impacts

Project community impacts will be measured once per verification period by means of community impact survey to quantify change in the community impact indicators described in Section 3.2.2 above.

The results of the community impacts in the reporting period are presented in section 6 of this report.

3.2.6.3 Net Community Impact Enhancements

Tabulation of baseline and project community impacts, and net community impact enhancements will be presented in summary using the following format.

	Baseline community impacts	Project community impacts	Net community impact enhancements
Impact 1			
Impact 2…			

3.3 BIODIVERSITY MONITORING

Carbon offsets are issued to this project as a result of 3rd party verification of each Project Monitoring Report, which contains data sufficient to provide evidence to support a biodiversity impact assertion for the Project Monitoring Period in question. This is a

requirement for the carbon offsets to be issued as Plan Vivo Certificates under the Plan Vivo Standard.

3.3.1 Monitored And Non-Monitored Parameters – Biodiversity

Monitored and non-monitored biodiversity parameters are listed in the table below.

Table 3.3.1a Monitored and Non-Monitored Parameters				
Notation	Parameter	Unit	Origin	Monitored
SSA	Key fauna species	Presence/absence	Biodiversity Survey	Monitored
SSP	Key flora species	Presence/absence	Biodiversity Survey	Monitored

The monitored key fauna and flora species and justifications for monitoring these species are provided in the table 7.2.1.

In addition to the abovementioned key species, rangers are encouraged to collect data on additional fauna and flora species, as well as natural features which they consider important.

3.3.2 Monitored Parameters – Biodiversity

Monitored data and parameters are summarized in the tables below.

Data Unit / Parameter:	**Key Species - Fauns**
Data unit:	Presence/absence
Description:	We want to know if the presence of key animal species is stable and not influenced by project activities or other factors
Source of data:	Biodiversity Survey
Description of measurement methods and procedures to be applied:	Record observation of key fauna and flora species during Eligible Forest Area Inspections. (see table 3.3.1.b)
Frequency of monitoring/recording:	During annual EFA and boundary survey & Ongoing / opportunistic
Value monitored:	Presence/absence
Monitoring equipment:	Animal identification table, binoculars, mobile phone, AVENZA software
QA/QC procedures to be applied:	3rd party verification of Project Monitoring Reports.
Calculation method:	Compare responses with previous survey
Data Unit / Parameter:	**Significant Species - Plants**
Data unit:	Presence/absence
Description:	We want to know if the presence of key animal species is stable and not influenced by project activities

Data Unit / Parameter:	**Key Species - Fauns**
Source of data:	Biodiversity Survey
Description of measurement methods and procedures to be applied:	Record significant species during Eligible Forest Area Inspections.
Frequency of monitoring/recording:	During annual EFA and boundary survey & Ongoing / opportunistic
Value monitored:	Presence/absence
Monitoring equipment:	Plant identification table, binoculars, mobile phone, AVENZA software
QA/QC procedures to be applied:	3rd party verification of Project Monitoring Reports.
Calculation method:	Compare responses with previous survey

3.3.3 Monitoring Roles and Responsibilities - Biodiversity

Specific project monitoring roles for projects applying this Technical Specifications Module are summarised in Table 7.1.3. Project Owners and Project Coordinators are required to assign specific roles to specific stakeholders in the PD, and use this convention in the implementation and monitoring of the Project Activity.

Biodiversity Monitoring surveys are the responsibility of the Project Owner with support and supervision of the Project Coordinator. Surveys are to be conducted with the consent of the Project Owner.

3.3.4 Information Management Systems - Biodiversity

This project uses the information management system described in Section 7.1 of the Nakau Methodology Framework.

3.3.5 Simplified Project Monitoring Report Methodology - Biodiversity

This project submitted a simplified Project Monitoring Report for first verification. This is not applicable to the second verification.

3.3.6 Standard Operating Procedure: Project Monitoring – Biodiversity

The Standard Operating Procedure (SOP) for Monitoring Biodiversity is presented below.

Table 3.3.6 Monitoring Schedule – Biodiversity				
Community				
Activity	Frequency	Responsibility	Human Resources	Financial Resources

Table 3.3.6 Monitoring Schedule – Biodiversity				
Community				
Biodiversity Survey - Animals	Ongoing / opportunistic & During annual EFA and boundary survey	Project Owner	Project Rangers	PES unit price accounts for employment of Project Coordinator staff*
Biodiversity Survey - Plants	Ongoing / opportunistic & & During annual EFA and boundary survey	Project Owner	Project Rangers	PES unit price accounts for employment of Project Coordinator staff

3.3.6.1 Baseline Biodiversity Impacts

Data of existing biodiversity and species counts in the area was obtained through two relevant biodiversity assessments done in 2009 (Appendix 6b) and 2014 (Appendix 6a) in Babatana Rainforest Conservation Project – PD Part A: D3.2a v1.0, 01092020.

The 2009 survey involved a rapid biodiversity assessment, covering a brief forest vegetation inventory and a species inventory in the main taxonomic groups of birds, mammals, frogs and reptiles. The survey was carried out in the Sirebe site.

The second survey in 2014 involved a 2-week research expedition over a larger area, covering main forest sites within the Babatana area. Sirebe was selected as one of the sites to do a comprehensive bird species count.

All the data from both surveys are representative for the Babatana rainforest landscape and reflects the flora and fauna species found in the Sirebe Tribal land. In addition, information was gained from a report on Fresh Water Fish (Appendix 6c, Babatana Rainforest Conservation Project – PD Part A: D3.2a v1.0, 01092020.).

A summary of significant species is provided in table 5.3.1 in Babatana Rainforest Conservation Project – PD Part A: D3.2a v1.0, 01092020. The selection of the specific species is mostly based on their IUCN status as VU, EN, NT or DD or their endemic status. Some least concern (LC) species have been selected as well, based on their cultural importance or because of their distinguished character in the forest (appearance, sound etc).

3.3.6.2 Project Biodiversity Impacts

Project biodiversity impacts will be measured by means of a yearly biodiversity impact survey, conducted in parallel with the Boundary and EFA inspection. The approach is semi-quantitative, as to determine any potential change and/or trends in site biodiversity. Given the challenging nature and resource intensive action of conducting biodiversity surveys and inventories, the method is simple and opportunistic. That being, it does not seek to investigate the presence and absence of all the significant species present in the project area, but rather

those that are opportunistically sighted, or the community owners can verify that they are present.

However, if an opportunity presents itself, additional biodiversity surveys may be conducted, to support the knowledge about the biodiversity impact and condition of the Project Area. However, such surveys will only be included when there is ample opportunity and collaboration with leading expertise with resources.

3.3.6.3 Net Biodiversity Impact Enhancements

Tabulation of baseline and project biodiversity impacts, and net biodiversity impact enhancements will be presented in summary using the following format. Systematic biodiversity monitoring will begin in 2023.

	Baseline biodiversity observations	Project biodiversity observations	Net biodiversity impact enhancements
	n/a	n/a	n/a

3.4 MONITORING RESOURCES

According to Section 5 of the Plan Vivo Standard (2013, p17):

5.9. A monitoring plan must be developed for each project intervention which specifies:

5.9.6. Resources and capacity required

The Project Monitoring Plan must identify (and provide evidence for) the resources available to undertake monitoring, including:

- *Financial resources and the source of such finance (e.g. unit pricing, grants, fees)*
- *Human resources and capability required.*

A summary of financial resources for project monitoring is presented in Tables 3.1.6, 3.2.6, and 3.3.6 above. Human resource and capability for monitoring is sourced from three key project stakeholder entities:

Project Monitoring Stakeholder	Capability
Project Owner	**Carbon and Biodiversity Monitoring** Project rangers have been trained by the Project Coordinator and the Programme Operator during project development and in particular, during the Project Owner participation in the carbon stock inventory. Rangers have supervision support from the Project Coordinator and the Programme Operator.
Project Coordinator	**Community Impact Monitoring** Community impact monitoring will be undertaken by the Project Coordinator. The capability of the Project Coordinator to undertake community impact monitoring has been demonstrated

Project Monitoring Stakeholder	Capability
	during project development and the completion of the community impact baseline survey with results presented in Section 5.2.2 of the PD Part A. The Project Coordinator has supervision support from the Programme Operator, whose supervision was applied during project development. Training of new Project Coordinator staff will be undertaken by both incumbent Project Coordinator staff and the Programme Operator. The capability of the Project Coordinator is summarized in Section 2.13.4 of the Babatana PD Part A D3.2a v1.0 01092020.
Programme Operator	The Programme Operator has demonstrated its capability in providing supervision and guidance to Project Coordinators during the course of programme design and project development.

3.5 COMMUNITY MONITORING

According to Section 5 of the Plan Vivo Standard (2013, p17):

5.9. A monitoring plan must be developed for each project intervention which specifies:

5.9.7. How communities will participate in monitoring, e.g. by training community members and gradually delegating monitoring activities over the duration of the project

5.9.8. How results of monitoring will be shared and discussed with participants

5.10. Where participants are involved in monitoring, a system for checking the robustness of monitoring results must be in place, e.g. checking a random sample of monitoring results by the project coordinator.

The Project Monitoring Plan must include:

- *A description of how the Project Owner and/or other local people will participate in monitoring in compliance with the Project Participation Protocol specified in Section 3.1 of the PD (applying Section 3.1 of the Nakau Methodology Framework).*
- *A description of how the results of monitoring will be shared and discussed with participants with reference to the Project Monitoring Workshops specified in Section 3.1.7 of the PD (applying Section 3.1.7 of the Nakau Methodology Framework).*
- *A description of the quality controls used to safeguard the integrity and accuracy of data gathered from monitoring activities involving Project Owners and/or other local people.*

The Sirebe Tribal Association (STA) will play a central role in project monitoring, including participating in annual eligible forest area inspections, continuous biodiversity survey, and annual activity shifting inspections jointly with the Project Coordinator.

3.5.1 Community Participation In Monitoring

The Project Owner has recruited rangers with responsibilities to undertake project monitoring tasks described in Table 3.1.6. The STA (the landowner community entity responsible for this project) is responsible for recruitment and management of rangers for this project. The Project Coordinator has provided supervision and support for ranger activities during project development and for this simplified version of the Project Monitoring Report. The Project Coordinator has already started delegating responsibilities to the Project Owner.

3.5.2 Sharing Results of Community Monitoring

Community monitoring outputs have been recorded in the PD and this document prepared and approved by the Project Owner with the assistance of the Project Coordinator. Project Management Reports are submitted for approval to the Project Coordinator and the Programme Operator on an annual basis. The Project Coordinator collates the content of annual Project Management Reports into 3-5 yearly Project Monitoring Reports. The Project Owner and the Project Coordinator approve each Project Monitoring Report before being submitted to the Programme Operator for approval. Once approved by the Programme Operator the Project Monitoring Report is submitted for a verification audit.

3.5.3 Quality Controls for Community Monitoring

Quality controls for community monitoring are described in Section 8.1.8.2 of the Babatana PD Part A D3.2a v1.0 01092020 and have been fulfilled for this Monitoring Report.

4. Quantification of GHG Emission Reductions and Removals

4.1 MONITORING OF BASELINE EMMISSIONS

The Sirebe EFA was monitored with boundary inspections and transects twice in 2022. The monitoring between 2019 and 2020 were only able to be completed once, due to the difficulties experienced while doing the monitoring. The Sirebe rangers monitoring report is provided in Appendix 4

Most importantly, the recent monitoring demonstrates the forest remained intact, and there was no forest cover loss and reversals. The EFA boundary and transects were carried out on the dates shown in the table (below).

In 2022 a remote sensing forest change assessment and classification for the Babatana region. Nakau needs to conduct a forest change assessment to show that the forest remains intact and protected from the baseline activity of commercial logging. Nakau is required to show that the forest remains intact to demonstrate the emissions reductions created through forest protection have not been reversed. In the circumstance where the baseline activity has occurred and the forest has been destroyed or lost on the tribal land committed to conservation, Nakau needs to determine the size of the area. Specifically, Nakau needs to assess if commercial logging has occurred inside each tribe's project area and demonstrate that the forest remains intact inside the Protected areas and the forest-eligible areas designated for emission reductions.

Secondly, Nakau needs to show that market leakage has not occurred, by showing that logging has not occurred in other areas owned by the tribal groups. These two pieces of work were completed by applying remote sensing classification and visual inspection techniques in ArcGIS and Google Earth Engine.

Besides serving for the second verification for Sirebe, the results of the forest change assessment will accompany project documents to complete the next verification event, for the Padezaka, Siporae and Vuri to join the NCP-SI and gain access to the voluntary carbon market.

The forest within the Protected Areas established by the Sirebe, Vuri, Siporae and Padezaka tribes is intact and has remained protected between the project start date and the monitoring period, 2019 to 2022 respectively. There has been no forest loss captured in this analysis that was previously unrecorded. The systematic classification techniques will allow the forest

change monitoring to be replicated at each of the tribes when they reach the next monitoring period. Evidently, the forest outside of the tribal areas that have established PAs remains threatened and commercial logging is continuing, surrounding the project sites in the Babatana region.

A full report on the assessment is provided in Appendix 3.

Year	Monitoring activities
2020	Simplified monitoring procedures (management monitoring without data collection)
2021	Simplified monitoring procedures and training of rangers
2022	Complete transect monitoring by rangers and remote forest change assessment.

Year	Location	Survey date	Boundary inspection	Transect
2022	Sirebe PA	19-22/04/2022	Completed	Completed
	Sirebe PA	26-28/10/2022	Completed	Completed

4.2 BASELINE EMISSIONS

4.2.4 Changes to monitored and 'non-monitored parameters'

During this monitoring period, no changes occurred to monitored or non-monitored parameters, as presented in the table below:

Table 8.1.1 Monitored and Non-Monitored Parameters (monitored parameters in green)						
Notation	Parameter	Unit	Equa-tion	Origin	Monitored in project	Second verification
EFA	Eligible Forest Area	ha	-	PD	Monitored	no changes to EFA area
LF/ULF	Forest stratification (logged/unlogged forest)	ha	-	PD	Area calculated in PD	Remained the same.

Table 8.1.1 Monitored and Non-Monitored Parameters (monitored parameters in green)						
Notation	Parameter	Unit	Equa-tion	Origin	Monitored in project	Second verification
HR	Harvest Rate	$m^3\ yr^{-1}$	4.1.1	Calculated from inventory	Not monitored Updated each Baseline Revision	Remained the same.
TWH	Total Wood Harvested	$m^3\ yr^{-1}$	4.1.2	Default factor applied	Not monitored Updated each Baseline Revision	Remained the same.
CD	Collateral Damage	$m^3\ yr^{-1}$	4.1.3	Root-shoot ratio (proportion of AGBE)	Not monitored Updated each Baseline Revision	Remained the same.
AGBE	Above Ground Biomass Emitted	$m^3\ yr^{-1}$	4.1.4	Sum of TWH and CD	Not monitored Updated each Baseline Revision	Remained the same.
BGBE	Below Ground Biomass Emitted	$m^3\ yr^{-1}$	4.1.5	Root-shoot ratio (proportion of AGBE)	Not monitored Updated each Baseline Revision	Remained the same.
TM3	Total Emissions in m^3	$m^3\ yr^{-1}$	4.1.6	Sum of AGBE and BGBE	Not monitored Updated each Baseline Revision	Remained the same.
GTCO2	Gross Total Emissions in tCO^2e	$tCO_2e\ yr^{-1}$	4.1.7	Conversion factors from wood volume to emissions	Not monitored Updated each Baseline Revision	Remained the same.
GBER1	Gross Baseline Emissions Rotation 1	$tCO_2e\ yr^{-1}$	4.1.8	Conversion factors from wood products calculation	Not monitored Updated each Baseline Revision	Remained the same.
ltWP	Long Term Wood Products	$tCO_2e\ yr^{-1}$	4.1.9	Calculated through conversion factors	Not monitored	Remained the same.

Table 8.1.1 Monitored and Non-Monitored Parameters (monitored parameters in green)						
Notation	Parameter	Unit	Equa-tion	Origin	Monitored in project	Second verification
				based on volume of wood harvested.		
NBEARx	Net Baseline Emissions Avoided	$tCO_2e\ yr^{-1}$	4.1.10	Default factors based on GBE	Not monitored Updated each Baseline Revision	Remained the same.
ER	Enhanced Removals	$tCO_2e\ yr^{-1}$	5.1.1	Default values derived from mean sequestration rates for relevant forest types and subsequently derived from project-specific data	Not Monitored Updated each Monitoring Period	Remained the same.
TAL	Total Activity Shifting Leakage	$tCO_2e\ yr^{-1}$	5.2.1	Derived from Activity Shifting Leakage Analysis	Monitored Updated each Monitoring Period	Updated. No leakage occurred.

4.3 PROJECT EMISSIONS

Note: Project emissions were recalculated with a methodological deviation. Please refer to section 2.2.1 Methodology Deviations in this report and to Annex 2: Sirebe Carbon Accounting update 2023.

4.4 LEAKAGE

Note: Leakage Emissions were recalculated with a methodological deviation. Please refer to section 2.2.1 Methodology Deviations in this report and to Annex 2: Sirebe Carbon Accounting update 2023.

4.5 NET GHG EMISSION REDUCTIONS AND REMOVALS

Note: The net GHG emission reductions and removals were recalculated with a methodological deviation. Please refer to section 2.2.1 Methodology Deviations in this report and to Annex 2: Sirebe Carbon Accounting update 2023.

Quantify the net GHG emission reductions and removals, summarizing the key results using the table below. Specify breakdown of GHG emission reductions and removals by vintages.

For AFOLU projects, include quantification of the net change in carbon stocks. Also, state the non-permanence risk rating (as determined in the AFOLU non-permanence risk report) and calculate the total number of buffer credits that need to be deposited into the AFOLU pooled buffer account. Attach the non-permanence risk report as either an appendix or a separate document.

Net Carbon Credits (vPVC) for the monitoring period have been calculated as follows:

Net Carbon Credits					
Year	Net Baseline Emissions (NBE) (tCO_2e)	Net Project Benefit (NPB) (tCO_2e)	Risk Buffer (tCO_2e)	Leakage emissions (tCO_2e)	Net Carbon Credits (tCO_2e)
2020	14,402	776	3,036	0	12,142
2021	14,402	776	3,036	0	12,142
2022	14,402	776	3,036	0	12,142
Total	**43,206**	**2,328**	**9,108**	**0**	**36,426**

For due diligence on the above calculations see Sirebe carbon accounting spreadsheet (Appendix 2). Note that the annual accounting periods for this Monitoring Report are:

- 1st of January 2020 to 31st of December 2020
- 1st of January 2021 to 31st of December 2021
- 1st of January 2022 to 31st of December 2022

5. Quantification of Habitat Hectare Units

Habitat Hectare units were not assessed or marketed in the monitoring period aforementioned in this report. In future monitoring periods, habitat hectares will not be monitored or assessed in the Sirebe Project.

5.1 BASELINE HABITAT HECTARES

Quantify the baseline hectares of protected rainforest. Attach electronic spreadsheets as an appendix or separate file to facilitate the verification of the results.

Not applicable.

5.2 PROJECT HABITAT HECTARES

Quantify the project hectares of protected rainforest. Attach electronic spreadsheets as an appendix or separate file to facilitate the verification of the results.

Not applicable.

5.3 LEAKAGE

Quantify hectare leakage.

Not applicable.

5.4 NET HABITAT HECTARE UNITS

Quantify the net Habitat Hectare units produced by vintages arising from the quantification of the net change in hectares protected. Also, state the non-permanence risk rating (as determined in the AFOLU non-permanence risk report) and calculate the total number of buffer credits that need to be deposited into the AFOLU pooled buffer account. Attach the non-permanence risk report as either an appendix or a separate document.

Not Applicable.

6. Quantification of Community Impacts

6.1 BASELINE COMMUNITY IMPACTS

Quantify the baseline community impacts, providing sufficient information to allow the reader to reproduce the calculation. Attach electronic spreadsheets as an appendix or separate file to facilitate the verification of the results. Present community impacts measured and for each quantify the baseline as modeled.

The Community Social Impact Survey, baseline data was collected in 2019, with the aim of evaluating the direct and indirect socio-economic impacts from the Sirebe project. During this monitoring period, the survey was repeated in the Sirebe Tribal Community. The aggregated result of the survey from this monitoring period and the comparison to the project baseline are available in table 6.1.1. The raw data and narrative from the survey conducted in Sirebe is available in Appendix 5– Sirebe 2nd Verification Socio Economic Survey. The results of the baseline community monitoring are presented in Section 5.2.2.2 of the Babatana Rainforest Conservation Project – Project Description Part A D3.2a v1.0 01092020. Survey participant data and sample size are provided in 6.2.1 (below).

6.2 PROJECT COMMUNITY IMPACTS

Quantify project community impacts providing sufficient information to allow the reader to reproduce the calculation. Attach electronic spreadsheets as an appendix or separate file to facilitate the verification of the results. Present community impacts measured and for each quantify project performance for that impact.

At the second verification event, the social impact survey has been compared and quantified from the baseline monitoring survey. Over the course of several days, the team from NRDF visited and interviewed the same 13 households from the Sirebe tribe involved in the project. All interviewees were aged above 18 and during the interviews, not all family members were present to remove bias. For the full socio-economic survey, see Appendix 5 – Sirebe 2nd verification Socio-Economic Survey. While the survey in 2019 was carried out using written questionnaires the second survey was conducted using mobile phones with the Kobo Tools application.

6.3 NET COMMUNITY IMPACT ENHANCEMENTS

Quantify the net community impact enhancements summarizing the key results using the table below. Specify breakdown of community impact enhancements.

Participants in the Sirebe project experienced minimal change across the four impact criteria over the second monitoring period. Some participants experienced a negative (or no) change against some criteria. For example, despite households having larger gardens and visiting stores (slightly) more often more household still run out of food. While it is useful to track the experience of participants it is difficult to attribute causality to the project, for example the decline in food security is likely associated with external environmental conditions (e.g. rainfall, wild pigs causing damage to gardens).

One considerable change was the drop in the average monthly income in households. While most households indicated to earn considerably more than SBD 500/Month the second survey showed that most household were in the 1-500 income category. This is something that the project needs to catch up on and find a possible reason of this decline in income.

The proportion of participants reporting trust in the project has increased, however there was a small decrease in the number of respondents reporting having access to project information.

Overall, the results suggest the net impact of the project is still limited at this stage. Impacts that need further follow-up are: Monthly incomes, purchase of alcohol and tobacco and the accessibility to information about the REDD+ Enterprise's finances and activities.

The table below summarizes the net impact of the project across the four criteria. Section 6.3.1 outlines and compares the social and economic livelihoods of the households in Sirebe in 2022 to the Baseline. For a full summary of the project positive impacts, see Appendix 5 – Sirebe 2nd verification Socio-economic report.

Criteria	Baseline community 2015	Project community impacts 2022	Net community impact enhancements
Criteria 1: Food security: Quality and quantity of food			
Food Security Impact 1.	Households purchased food from the store 3.4 days of the week, typically purchasing basic supplies.	Households purchased food from the store 2.2 days of the week, typically purchasing basic supplies.	Households in the community typically purchased less goods from the stores. There is no evidence that the protected area is causing people to switch diets from local produce to bought produce.

Criteria	Baseline community 2015	Project community impacts 2022	Net community impact enhancements
Food Security Impact 2.	The average size of the household garden was 0.21 hectares.	The average size of the household garden was 0.40 hectares.	The average size of household gardens is estimated, and has increased. Households typically grew the same vegetables but had more available for their household.
Food Security Impact 4	0% or no households indicated that they ran out of food.	21 % or 3 households indicated that they ran out of food.	A small increase of households running out of food. However, this is not attributed to impacts of the project.
Criteria 2: Water security			
Water Security Impact 1	31% of households run out of clean drinking, namely during the dry and wet seasons	29% of households run out of clean drinking water, namely during heavy rainfall events (blocking).	There has been a slight reduction in the number of households that reported running out of clean drinking water, mainly in the heavy rain events which causes a blockage in pipes.
Water Security Impact 2	100% of households feel they can use as much clean/tap water as they like.	93% of households feel like they can use as much tap water as they like.	Slightly less community members reported feeling like they can use as much tap water as they like.
Criteria 3: Financial Security: Household income and improved livelihoods			
Financial Security and Livelihood Impact 1	More than 62% earned more than 1000 SBD/Month	64% earned in the category 1-500 SBD	The household average income reported declined considerably having more household earn in between 1-500 SBD/ Month.
Financial Security and Livelihood Impact 2	100% of households are able to save money from their earnings.	79% of households are able to save money from their earnings. 21% sometimes.	There has been a slight decrease in the number of households who reported “always” being able to save their money

Criteria	Baseline community 2015	Project community impacts 2022	Net community impact enhancements
			from their household income.
Financial Security and Livelihood Impact 3	99% of households used solar. One household has generator	100% of households used solar. 2 house olds also have generator.	All households have access to solar electricity. Also access to generators has increased.
Financial Security and Livelihood Impact 4	72% of households used a flush toilet. 38% still use bush/seaside	79% of households reported using flush toilets. 21% of households use bush/seaside	There has been a slight increase in the number of households reporting using flush toilets and a decrease in the number of people using bush/seaside.
Financial Security and Livelihood Impact 5	31% observed "often used by a few people", 46 % observed "rarely used by few people" and two household (15%) felt that there was "continues use of drugs by many people" and one house (8%) felt no use was taking place.	None of the households has seen an increase of alcohol or drugs (marijuana) use in the community	There has been no rise in the number of people aware of others consuming marijuana or other drugs (Homebrew).
Criteria 4: Engagement with and trust of the PES project			
Positive perception and transparency of community REDD+	62% is involved in PES activities (Employed, committee member etc). 62% generally feel the PES Enterprise contributes to the wellbeing of the tribe/community members 92% generally trust the REDD+ Enterprise	93% is involved in PES activities (Employed, committee member etc). 86% generally feel the PES Enterprise contributes to the wellbeing of the tribe/community members 93% generally trust the REDD+ Enterprise	There has been a net increase in positive perception towards the community REDD+ project and the involvement of members in the project.

Community Social impact survey

The survey data was collected through formal standardised questionnaires (see ER 5.2.2.2) consisting of both, open-ended as well as close-ended questions. The interviews were conducted at 14 households.

Interviewees			
Baseline Survey		Second Survey (2022)	
Sirebe Tribe (clan)	Number interviewed (households)	Sirebe Tribe(clan)	Number interviewed (households)
Households	13	14	14
Total	13	Total	14

Criteria 1: Food Security

In criteria 1, food security, the Sirebe project has made a neutral impact. Households in the community purchased slightly more food and supplies from stores, with a small increase in visits to stores. However, it was indicated by the households that the increase in visits did not mean that more goods were purchased. Some store visits were just to buy a small number of items. The households typically purchase basic household supplies such as sugar, salt, rice, tin foods, noodles, soap etc. The average size of household gardens has increased by 0.5 of a hectare and the same type of vegetables are being grown in the baseline. Households eat food from their garden daily and still depend, although limited, on food and other products harvested from the forest. There has been an increase in the number of households that run out of food, from 0 to 21 % of the number of households.

Criteria 1: Food security: Quality and quantity of food			
Question	**Measure**	**Baseline Survey (2017)**	**Second Survey (2022)**
		Results	**Results**
1.1. How often do you buy food from the store/market?	Days per month	Average of 15 days Households buy mostly small number of products from stores. Sometimes they buy in bulk a few days of the month as they mostly rely on the food supply from their own garden or the forest.	Most Days 43% Once a week 36% Not often 21% Most days people go to stores but just to buy small number of products.
1.2. What goods do you purchase at the store/ market?	Type of good	Rice, Noodles, Tuna, Sugar, Salt, Soap, Biscuits, Fresh produce (fruits, root crops), clothes, flour, oil Basic supplies such as sugar, salt, flour, rice, noodles, canned tuna, and tea are being bought from local stores by most households. In addition some fresh produce such as vegetables and fruits are also purchased if available.	Rice, Noodles, Tuna, Sugar, Salt, Soap, Biscuits, flour, oil, other. Fresh goods were bought from the markets: fresh fish, root crops, vegetables, taro leaf, nuts fruits. Similar good were purchased.

Criteria 1: Food security: Quality and quantity of food			
Question	**Measure**	**Baseline Survey (2017)** **Results**	**Second Survey (2022)** **Results**
1.3. How big is your family (household) garden?	Hectares (1/4, ½ or bigger than soccer field (0.6 ha)	Average of 0.21 Ha Garden plot sizes are relatively small but allow food for consumption and sale.	Average of 0.40 Ha 8 HH 0.30 ha 5 HH larger than 0.6 ha 1 HH 0.15 ha An increase of garden size (double) compared to baseline.
1.4. What types of crops do you grow at your family garden?	Type of crop	Potato, Taro, Cassava, Yam, Pana, Cabbage, Banana, Bean Only few indicated cucumber, sugarcane and Calvera. The main crops that are sold for money are Potato, Cassava, Cabbage and Bananas	Potato, Taro, Cassava, Yam, Pana, Cabbage, Banana, Bean, Cucumber, Salad, Others
1.5. How often do you eat food from your garden?	Days/Wk	Average 5 days/wk People eat almost everyday food from the gardens	Average 6 days/wk 64% 7 days/wk 7% 4 days/wk 29% 3 days/wk
1.6. Do you ever run out of food?	Percentage "yes"	0% No one ever run out of food (if no garden food than store food available and visa versa)	21% 79% HH No 21% HH Yes An increase of households that run out of food from time to time.
1.7 How often do you harvest food from the forest?	Days per month	1 day (0.86)/Month Very limited due to distance and need. Garden areas also have some patches of secondary growth forest nearby with some forest products	36% Few times a year 21% Not often 21% Once a week 14% Most days 7% Once a Month Forest visit/use frequency remains low but maybe a slight increase is noticed. A reason could be the access to a tribal canoe (purchased after the baseline) to go up on the Kolombangara river to collect products from the forest.

Criteria 1: Food security: Quality and quantity of food			
Question	**Measure**	**Baseline Survey (2017)**	**Second Survey (2022)**
		Results	**Results**
1.8. What goods do you collect from the forest?		Fern, Rope/Loyar Cane, Sago Palm, Firewood, Wood for house, Leaves, Wild Pandanus, Wild Yam, Wild Pig, Tree bark, Bamboo Various items are being gathered from the forest by the communities but mostly near garden sites in secondary forest growth.	Fern, Rope/Loyar Cane, River shell, Sago Palm, Firewood, Timber for house, Leaves, Wild Pandanus, Wild Yam, Wild Pig, Op@ossum, Tree bark, Fish

Criteria 2: Water Security

During the monitoring period, no considerable changes were noticed in water security. The improved water system built in Tanabo village in 2023, is not reflected in this survey. The survey does indicate that every household is using rainwater tanks for drinking water.

Criteria 2: Water security: Access to clean water			
Question	**Measure**	**Baseline (2015)**	**Second verification (2022)**
		Results	**Results**
2.1. Do you ever run out of clean (tap) water?	Percentage 'yes'	31% Sometimes tap water not available due to blockage of pipes due to heavy rain (sediment). Alternative sources used are rainwater tanks (Private or Public) and small streams.	29% Yes During times of flooding, clean water sometimes is running out. They use share tanks or own water tanks during shortage of water.
2.2. Which water sources does your household use and is it available all year round?	Type of source	Tap/pipe water (from Reserve/Catchment), Rainwater from private and public installed rainwater tanks, small streams near settlements	Everyone (100%) uses water tanks And 71% also use tap water (supply). Only 29% said to use natural sources/streams
2.3. Do you feel you can use as much	Percentage 'yes'	100%	93%

Criteria 2: Water security: Access to clean water			
tap water as you like? (I.e. through piped system)			

Criteria 3: Financial Security and Livelihoods

The Financial Security and Livelihoods of the community members of participating in the Sirebe project have not changed much compared to the baseline. There was an increase in primary school students attending school, which were probably too young for school during the baseline survey. An increase in tertiary students was noticed from 2 to 4.

The decline in household monthly income from the baseline was likely due to a misunderstanding in the question or it reflects the income of the persons interviewed only. The level of expenditure each month remains consistent with the baseline. It was noted that alcohol and tobacco were now mentioned as expenditures. However, none of the households noticed an increase in the consumption of drugs and alcohol (homebrew) in the community. Slight improvements were noticed in sanitation facilities.

Overall, there have not been many changes observed in the financial and livelihood security of the households in the Sirebe community since the start of the project.

Criteria 3: Financial security: Household income and assets, and livelihood opportunities			
Question	**Measure**	**Baseline (2015)**	**Second verification (2022)**
		Results	**Results**
3.1. How many children/youth (under 20 years) in your household are currently in primary, secondary or tertiary?	No. of current student	From the 24 kids in the age of 7 to 20 yr: Primary 12 Secondary 12 Tertiary 2 (9 in Kindy)	18 primary students 11 Secondary students 4 Tertiary students
3.2. How many household members graduated secondary/tertiary school	No of graduated students	Secondary Male 2 Female 5 Tertiary: Male1 Female3	Secondary: 15 Tertiary: 8
3.3. What is your household's average monthly income?	SBD per Month	1$ - $500 23% $500 - $1000 15% $1000 - $2000 31% More than $2000 31%	$1-$500 64% $500-$1000 14% $1000-$2000 14% More than $2000 7%

Criteria 3: Financial security: Household income and assets, and livelihood opportunities			
Question	**Measure**	**Baseline (2015)**	**Second verification (2022)**
		Results	**Results**
3.4 What are your main sources of income	Sources of income	Cash crops, Informal employment, Formal employment	Ranked: 1. Market (Cash crops, foods, handcrafts, selling fish, copra, baskets) 2. Formal employment (Teacher, Church, Hospital, School) 3. Informal employment (casual work) 4. Financial support from family and relatives
3.5 What is your household's average Monthly expenditure	SBD per Month	$1-$500 70% $500-$1000 30% $1000-$2000 0%	$1-$500 79% $500-$1000 7% $1000-$2000 14%
3.6 What are your main expenditures.	Expenditure items	Food, Clothes, School fees, household goods	Food, Donation (Church), school fees, clothes, household goods, tobacco, alcohol
3.7. Are you able to save money from your earnings in a typical month?	Percentage 'yes'	100%	79% Yes 21% Sometimes
3.8. Which sources of electricity are used in your home?	Type of source	Solar, generator 99% of all households use solar power as their main source of electricity. One household uses a generator from time to time.	Solar 100% 2 HH use also generator as electricity source
3.9. What type of toilet is your household using?	Type of toilet	72% of households reporting using flush/pour flush toilet. 38% is toilet using open pit/bush/seaside.	79% use flush/pour flush toilet. 21% uses bush/seaside
3.10 Hours spent for daily activities:			

Criteria 3: Financial security: Household income and assets, and livelihood opportunities			
Question	**Measure**	**Baseline (2015)**	**Second verification (2022)**
		Results	**Results**
Cooking	No. of adults	Female adults: 3.5 Male adults: 1.8 Traditionally women take care of the family while men usually take care of the farm.	Not monitored
Household chores	No. of adults	Female adults: 2.5 Male adults: 1.2	Not monitored
Gardening/ farming	No. of adults	Female adults: 1.6 Male adults: 4.6	Not monitored
Resting	No. of adults	Female adults: 2 Male adults: 1.8	Not monitored
Leisurely activities	No. of adults	Female adults: 1.6 Male adults: 1.4	Not monitored
3.11. Are you aware of anyone in the community using marijuana or other drugs (incl homebrew)	Multiple choice	31% observed "often used by a few people", 46 % observed "rarely used by few people" and two household (15%) felt that there was "continues use of drugs by many people" and one house (8%) felt no use was taking place.	None of the households has seen an increase of alcohol or drugs (marijuana) use in the community

Criteria 4: Engagement with REDD+ and community perceptions.

The community perception towards the project remained relatively stable with some increase in trust and a general feeling that the project contributes to the wellbeing of the tribe/community members. Most households expressed the benefits the project provided to the households in means of house-building materials, projects, and school fees. Only one household expressed disappointment and is still waiting for any benefit. Access to information on activities and finance had a slight decrease with 2 households expressing that finance information sits with the project management and "people just wait for the benefits". There was an increase of household members directly Involved in project activities.

Criteria 4: Engagement with and trust of the PES project			
Question	**Measure**	**Baseline (2015)**	**Second verification (2020)**
		Results	**Results**
4.1 Can you access information about the REDD+ Enterprise's finances and activities?	Percentage "yes"	92%	86%
4.2 Do you generally trust the REDD+ Enterprise?	Percentage "yes"	92%	93%

Criteria 4: Engagement with and trust of the PES project			
Question	**Measure**	**Baseline (2015)**	**Second verification (2020)**
		Results	**Results**
4.3 Is any of your household directly Involve in PES activities (Employed, committee member etc).	Percentage "yes"	62%	93%
4.4 Do you generally feel the PES Enterprise contributes to the wellbeing of the tribe/community members?	Percentage "yes"	62%	86%

7. Quantification of Biodiversity Impacts

7.1 BASELINE BIODIVERSITY IMPACTS

Quantify the baseline biodiversity impacts, providing sufficient information to allow the reader to reproduce the calculation. Attach electronic spreadsheets as an appendix or separate file to facilitate the verification of the results. Present biodiversity impacts measured and for each quantify the baseline as modeled.

During the monitoring period for the second verification the Sirebe project undertook a biodiversity impact monitoring survey conducted by the local rangers. These results from this survey represent the biodiversity baseline.

At the third verification event, the Sirebe project:

a. Aspires to present the first results of the biodiversity Monitoring (changes).
b. Aspires to improve biodiversity monitoring, conducted by the forest rangers
c. Improve ecosystem indicators to meet the requirements of NCP-SI Plan Vivo 5

7.2 PROJECT BIODIVERSITY IMPACTS

Quantify project biodiversity impacts providing sufficient information to allow the reader to reproduce the calculation. Attach electronic spreadsheets as an appendix or separate file to facilitate the verification of the results. Present biodiversity impacts measured and for each quantify project performance for that impact.

The Sirebe Project has completed the biodiversity impact monitoring survey, recording significant species present inside the project boundary, in accordance with the second verification request. The results of the biodiversity monitoring of the project have been reproduced below:

7.2.1 Sirebe Project Biodiversity Monitoring 2020 - 2022

The following activities have contributed towards the biodiversity monitoring and assessment in the Sirebe EFA.

Activity	**Method**	**Dates**	**Details/outcomes**
EFA and boundary monitoring by rangers	Transect and boundary walks. Observation recorded	19-22/04/2022 26-28/10/2022	Observations on reversals, plants and animals
Visit media team and rangers	Mist netting birds & bats, night walks for frog and reptile spotting	November 2022	Observations on plants and animals. Landscape recording with drone.
Regular visits rangers to guide visitors and do ranger compound maintenance	Opportunistic observations plants and animals	Approx 4-6 times a year over 2020-2022	Observations on reversals, plant and animals species

Biodiversity survey – Forest Rangers

During the EFA and boundary inspection, the forest rangers recorded areas of biodiversity importance and began recording species of significance on an opportunistic basis during their boundary inspection. As this was the first time that the forest rangers had conducted the opportunistic survey, the number of observations was low. We anticipate that the inclusion of biodiversity monitoring in the EFA and boundary inspection will improve. Over the course of the monitoring (See Appendix 4 - Sirebe Ranger Forest Monitoring Activity Report 2022), the forest rangers recorded 7 locations of biodiversity importance, including birds, frogs and reptiles. It is the intention of the community to improve their biodiversity methods during the third verification event.

In addition to the EFA and boundary inspections, data on biodiversity was obtained during a one-week visit by media team to the area to photograph plant and animal life in the PA. Mist nest were used to catch birds and bats and night walks were conducted to observe frogs and reptiles. Some important key species were observed and recorded during this activity.

During the monitoring period many visitors have spent some time in the Sirebe PA, including a group of rangers from Malaita Province in 2020, conducting an exchange visit to protected areas in Western and Choiseul Provinces. The PA was also visited by NRDF staff, Solomon Islands Government (REDD+ team visit in 2020) and Nakau programme staff (2022). During those visits bush walks were organized, resulting in opportunistic observations of plants and animal life within the PA and EFA.

In the table 7.2.1 we present the presence of the significant flora and fauna species (Baseline) observed during the activities as per above.

IUCN Classification: VU = vulnerable; EN = endangered; CR = critically endangered, NT = near threatened, DD = data deficient, LC = least concern.

Table 7.2.1 Key fauna and flora species included in the biodiversity monitoring

Taxonomic group: Flora						
Common Name	**Scientific Name**	**IUCN Listed**	**Endemic Island/Country**	**Distribution**	**Cultural Significance**	**Monitoring 2020-2022**
Rosewood	*Pterocarpus indicus*	VU	Throughout Solomon Islands	Throughout Solomon Islands	Significant for timber	Present-observed
Macaranga	*Macaranga choiseuliana*	VU	Endemic to Choiseul	Choiseul		Present-observed
Taun, Gemma	*Pometia pinnata*	VU	Throughout Solomon Islands	Throughout Solomon Islands	Construction and commercial use	Present-observed
Vitex	*Vitex cofassus*	VU	Endemic Solomon Islands	Solomon Islands	Construction and commercial use	Present-observed
Taxonomic Group: Fauna						
Bougainville Giant Rat	*Solomys Salebrosus*	EN	Endemic to Choiseul & Bougainville	Bougainville and Choiseul	Sometimes hunted by the Local for food	
Poncelet's Giant Rat	*Solomys Ponceleti*	VU	Endemic to Choiseul & Bougainville	Bougainville and Choiseul	Sometimes hunted by the Local for food	
Solomon's Bare backed fruit bat	*Dobsonia inermis*	VU	Endemic to Choiseul & Bougainville	Endemic to Solomon Islands and Bougainville	Sometimes hunted by the Local for food	
Woodford 's Blossum Bat	*Melonycteris woodfordi*	VU	Endemic to Choiseul & Bougainville	Endemic to Solomon Islands, Bougainville and Buka	Sometimes hunted by the Local for food	Present-observed
Solomon Tubenose Bat	*Nyctimene Bougainville*	VU	Endemic to Choiseul & Bougainville	Solomon Islands and Bougainville. Normally found in Lowland forest	Sometimes hunted by the Local for food	
Solomon Flying Fox	*Pteropus rayneri*	NT	Endemic to Choiseul & Bougainville	Solomon Islands, Bougainville and Buka. Found in hollow fig trees and overhang beneath of pandanus palms.	Sometimes hunted by the Local for food	Present-observed
Admiralty Flying Fox	*Pteropus admiralitatum*	VU	Endemic to Solomon Islands	Solomon Islands. Individually in the forest canopy	Sometimes Hunted by the Local for food	

Table 7.2.1 Key fauna and flora species included in the biodiversity monitoring						
Giant Horseshoe Bat	*Hipposideros dinops*	DD	Endemic to Solomon Islands	Solomon Islands	Sometimes hunted for food	
Black and White Monarch	*Symposiachrus Barbatus*	NT	Endemic to Solomon Islands	Choiseul, Bougainville, Isabel, Florida and Guadalcanal	Distinguished forest bird	Present-Observed
Imitator Sparrow hawk	*Accipiter Imitator*	VU	Endemic to Solomon Islands	Choiseul, Bougainville and Isabel		
Sanfords Sea Eagle	*Haliaeetus sanfordi*	VU	Endemic to Solomon Islands	All major islands of the Solomon Islands		Present-observed
Blyth's Hornbill	*Aceros plicatus*	LC	Native (Resident Species in SI)	Solomon Islands and New Guinea	Sometimes hunted for food, distinguished forest bird (tourism)	Present – observed
Crested Cuckoo dove	*Reinwardtoena crassirostris*	NT	Native but not Endemic in Solomon Islands	Solomon Islands		Present-observed (call heard)
Dusky Myzomela	*Myzomela larfargei*	LC	Native but not Endemic in Solomon Islands	Endemic to the northern Solomon Islands and Bougainville,	Distinguished forest bird (tourism)	Present-observed
Solomon Islands Palm Frog	*Palmatorappia solomonis*	VU	Endemic to Solomon Island	All major islands of the Solomon Islands		Present-observed
Solomon islands eyelash frog	*Ceratobatrachu sguentheri*	LC	Endemic to Solomon Islands	All major islands of the Solomon Islands	distinguished forest frog (tourism). Threatened by and pet trade	Present - observed
Solomon Wrinkled ground frog	*Platymantis solomons*	LC	Endemic to Solomon Islands	All major islands of the Solomon Islands	distinguished forest frog (tourism)	Present-observed
Malukuna webbed frog	*Discodeles malukuna*	DD	Native but not Endemic in Solomon Islands	All major islands of the Solomon Islands		Present-observed
Solomon Islands Skink	*Corucia zebrata*	NT	Endemic to Solomon Islands and Bougainville	All major islands of the Solomon Islands	Hunted for food and pet trade	Present-observed

Figure 7.2.1: Some of the key and non-key species photographed during monitoring activities in Sirebe PA (2022)

Pometia pinnata seedling



Vitex



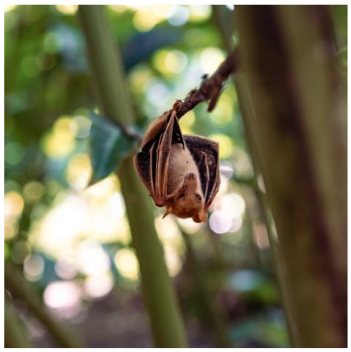
Solomon Sea eagle



Solomon Eyelash frog



Woodford Blossom Bat



Red-capped Myzomela



7.3 NET BIODIVERSITY IMPACT ENHANCEMENTS

Quantify the net biodiversity impact enhancements summarizing the key results using the table below. Specify breakdown of biodiversity impact enhancements.

During the monitoring period, no negative changes in biodiversity were detected but significant advancements in knowledge about the Babatana area have been achieved. There is now a greater depth and understanding of the project area's biodiversity and how the area is critical habitat for many species.

During the next monitoring period, the understanding of the biodiversity value is expected to increase, as more forest rangers are now proficient in the biodiversity monitoring methods and Nakau in partnership with the project coordinator and owner, is investigating ways to improve the monitoring systems in order to efficiently collect more representative biodiversity data.

APPENDICES

APPENDIX 1. SIREBE FINANCIAL RESULTS

Supplied as a separate folder

APPENDIX 2. SIREBE CARBON ACCOUNTING UPDATE 2023

Supplied as a separate folder.

APPENDIX 3. BABATANA REMOTE FOREST CHANGE ASSESSMENT 2022

Supplied as a separate file.

APPENDIX 4. SIREBE FOREST MONITORING 2022

Supplied as a separate folder.

APPENDIX 5. SIREBE SECOND HOUSEHOLD SURVEY RESULTS

Supplied as a separate file.