# MARUDI FOREST CONSERVATION AND RESTORATION PROJECT

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|---|---|
| Project Title | *Marudi Forest Conservation and Restoration Project - Draft* |
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# 1 PROJECT DETAILS

## 1.1 Summary Description of the Project

Samling Reforestation (Bintulu) Sdn Bhd (hereinafter referred to "Samling") is in possession of a License for Planted Forest (LPF) called Marudi LPF/0008. (Sarawak Malaysia).

The concession is approximately 55,818 ha in area. An estimated 26,321 ha of the area has peatland soils. To date, approximately 9,189 ha of the concession has been converted to plantation species as of March 2023.

Samling's management current plan for Marudi LPF/0008 is the development of fast-growing timber plantations mostly based on Acacia species as a future supply of raw materials for its existing and plywood plants, sawmills, and its fibre mills in Sarawak.

Samling has been following the growing global concern regarding Climate change and the need to address this global issue by avoidance and reduction of greenhouse gas emissions Samling has decided to implement a forest and wetland conservation project inside of Marudi LPF/0008. The Marudi Forest Conservation and Restoration Project (hereinafter called the "Project") aims to protect and restore the natural forest and peatland areas in the Marudi LPF/0008.

Samling has formed a new company called SaraCarbon SDN. BHD. This is the project company in who name the new Forest Carbon License will be granted and SaraCarbon will be the operator of the Forest Carbon Project for the lifetime of the project.

The Project will cease all future forest land clearing, and implement reforestation, and forest restoration as well as programs for forest monitoring and preservation, biodiversity protection and enhancement, community engagement and sustainable development.

The Project will implement a series of programs that will allow it to achieve its aims and emissions reduction activities, including:

1. **Forest preservation program**: The Project will establish a team and infrastructure for land use monitoring, security, and enforcement.
2. **Forest fire control program**: The Project will establish a team and infrastructure to provide fire protection.
3. **Reforestation of Degraded Forest Areas**. The project will replant degraded forest areas aiming to return the degraded areas to natural Forest.
4. **Preservation of Wetland Areas**: The Project will seek to protect existing wetland and will remove all drainage.
5. **Community Engagement and Community Sustainable Development Program (Community Program):** The Project will implement a community engagement program to manage all interactions with communities that will support good community relations, resolve claims and disputes, and coordinates community involvement with the project.

The successful implementation of the project over an estimated 60-year lifecycle shall result in total removals and reductions in CO2E of approximately 117,698,804 million tonnes and generate approximately 105,928,923 tonnes of Verified Carbon Units (VCUs).

## 1.2 Audit History

This is the first PDD submission and there are no audits to record.

## 1.3 Sectoral Scope and Project Type

This project will be developed under the VCS Scope 14 Agriculture, Forestry and Other Land Use (AFOLU).

The VCS project activities possible within Marudi LPF/0008 include:

- Avoided Planned Deforestation & Degradation (APDD) - Activities that reduce net GHG emissions by stopping or reducing deforestation or degradation on forest lands that are legally authorized and documented for conversion.
- Avoided Unplanned Deforestation & Degradation (AUDD) - Activities that reduce net GHG emissions by stopping deforestation and/or degradation on forest lands that are not legally authorized and documented for conversion.
- Afforestation, Reforestation and Revegetation (ARR) - Activities are those that increase carbon sequestration and/or reduce GHG emissions by establishing, increasing, or restoring vegetative cover (forest or non-forest) through the planting, sowing or human-assisted natural regeneration of woody vegetation.
- Conservation of Intact Wetlands (CIW) - Activities that reduce GHG emissions by avoiding degradation and/or the conversion of wetlands that are intact or partially altered while still maintaining their natural functions.

The project will be a single location and multiple activities but is not being developed as a grouped project.

## 1.4 Project Eligibility

### 1.4.1 General eligibility

The proposed Marudi Forest Conservation and Restoration Project (the "Project") is eligible under the scope of the VCS program The project conforms with the VCS Standard 4.4 and the AFOLU requirements of § 3.1 and § 3.2 . The project utilizes the following VCS methodologies and modules and their associated tools and guidance:

| No. | Doc ID | Version | Issue Date | Documents Name | Abbrev. |
|---|---|---|---|---|---|
| **METHODOLOGIES** | | | | | |
| 1 | VM0007 | 1.6 | 8-Sep-20 | REDD+ Methodology Framework | REDD+ MF |
| 2 | VMXXX | 0.1 | 17-Dec-21 | Methodology for Afforestation, Projects Reforestation and Revegetation | VCS-AAA |
| CARBON POOLS | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 3 | VMD0001 | 1.1 | 11-Oct-13 | Estimation of carbon stocks in the above- and belowground biomass in live tree and non-tree pools | CP-AB |
| BASELINE | | | | | |
| 4 | VMD0006 | 1.3 | 8-Sep-20 | Estimation of baseline carbon stock changes and greenhouse gas emissions from planned deforestation/forest degradation and planned wetland degradation | BL-PL |
| 5 | VMD0041 | 1.1 | 8-Sep-20 | Estimation of baseline carbon stock changes and greenhouse gas emissions<br>in ARR project activities | BL-ARR |
| 6 | VMD0042 | 1.1 | 8-Sep-20 | Estimation of baseline soil carbon stock changes and greenhouse gas emissions in peatland rewetting and conservation project activities | BL-PEAT |
| LEAKAGE | | | | | |
| 7 | VMD0009 | 1.3 | 8-Sep-20 | Estimation of emissions from activity shifting for avoiding planned deforestation/forest degradation and avoiding planned wetland degradation | LK-ASP |
| 8 | VMD0044 | 1.1 | 8-Sep-20 | Estimation of emissions from ecological leakage | LK-ECO |
| EMISSIONS | | | | | |
| 9 | VMD0013 | 1.2 | 8-Sep-20 | Estimation of greenhouse gas emissions from biomass and peat burning | E-BPB |
| MONITORING | | | | | |
| 10 | VMD0015 | 2.0 | 8-Sep-20 | Methods for monitoring of GHG emissions and removals in REDD and CIW projects | M-REDD |
| 11 | VMD0045 | 1.1 | 8-Sep-20 | Methods for monitoring greenhouse gas emissions and removals in ARR project activities | M-ARR |
| 12 | VMD0046 | 1.1 | 8-Sep-20 | Methods for monitoring of soil carbon stock changes and greenhouse gas emissions and removals in peatland rewetting and conservation project activities | M-PEAT |
| MISCELLANEOUS | | | | | |
| 13 | VMD0016 | 1.2 | 8-Sep-20 | Methods for Stratification of the Project Area | X-STR |

| | | | | | |
|---|---|---|---|---|---|
| 14 | VMD0017 | 2.2 | 8-Sep-20 | Estimation of Uncertainty for REDD+ Project Activities | X-UNC |
| 15 | VMD0019 | 1.0 | 16-Nov-12 | Methods to project future conditions | |

Table 1-1 VCS methodologies and modules used in the Project

### 1.4.2 AFOLU project eligibility

The project includes avoided planned deforestation (AFOLU REDD category) and avoided wetland degradation (AFOLU WRC category).

The activities qualify as AFOLU REDD with Avoided Planned Deforestation (APD). The project will permanently protect the remaining natural forest areas from planned conversion to plantations and reduce net GHG emissions by reducing deforestation of forests. The forest is classified according to the Malaysian Forest Definition, being areas greater than 0.5 hectares containing trees higher than 5 metres, with a canopy cover over 10%.

The activities also qualify as AFOLU WRC with Conservation of Intact Wetlands (CIW) under Avoiding Planned Wetland Degradation (APWD) activities. The project will permanently protect the peatland soil areas from planned development into plantations, and from the resultant peatland drainage implemented during plantation development. The project will retain the existing intact wetlands and maintain and improve the natural wetland functions of hydrology, sediment supply, salinity characteristics, water quality and native plant communities. The protected wetlands are classified as peatlands according to the Malaysian soil definition of having a high organic content (>65%) in a soil layer greater than 50cm.

No clearing or conversion has occurred within the last 10 years as shown in the diagrams and tables.

### 1.4.3 Transfer project eligibility

The project is not a transfer project or a CPA seeking registration. The SaraCarbon Project has not been registered under any emissions trading programs.

## 1.5 Project Design

The project includes multiple locations or project activity instances within a single licence but is not being developed as a grouped project.

## 1.6 Project Proponent

| | |
|---|---|
| .Organization name | SaraCarbon Sdn. Bhd |
| Contact person | Francois Blignaut |
| Title | Project Leader |
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| Email | blignautf@samling.com.my |

## 1.7 Other Entities Involved in the Project

| | |
|---|---|
| .Organization name | Ata Marie Group Ltd |
| Role in the project | Forestry Survey, Carbon Modelling and Project Document Preparation |
| Contact person | George Kuru |
| Title | Director |
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| | |
|---|---|
| Organization name | ECOSOL Consultancy Sdn Bhd |
| Role in the project | Environmental Impact Studies including HCV study |
| Dr. Tie Yu Liong | Dr. Tie Yu Liong |
| Title | Director |
| Address | No. 58, 1st Floor, (Suite 58.1), Kueh Hock Kui Commercial Centre,<br><br>Lorong 18, Jalan Tun Ahmad Zaidi Adruce,<br><br>93150 Kuching, Sarawak |
| Telephone | +60 82-248 919 |

| | |
|---|---|
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| | |
|---|---|
| Organization name | Universiti Malaysia Sarawak (UNIMAS) |
| Role in the project | Community Studies |
| Contact person | Dr Poline Bala |
| Title | Director |
| Address | UNIMAS Holdings Sdn. Bhd<br>Level 6, UNIMAS City Campus,<br>Lot 77, Section 22, KTLD<br>Jalan Tun Ahmad Zaidi Adruce<br>93150 Kuching, Sarawak, Malaysia |
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| Email | bpoline@unimas.my |

| | |
|---|---|
| Organization name | The Sarawak Tropical Peat Research Institute (STROPI) |
| Role in the project | Peat soil sampling and laboratory testing, and measurement |
| Contact person | Dr Lulie Melling |
| Title | Director |
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## 1.8 Ownership

The project is owned by SaraCarbon Sdn Bhd, who are the developers of the Carbon Project. SaraCarbon is subsidiary of the Samling Group of Companies. The Samling Group was granted the right to develop and operate a Licensed for Planted Forest (LPF) by the Sarawak Government. The LPF licence was issued to the Samling subsidiary Samling Reforestation (Bintulu) Sdn Bhd. The licence was issued on the 8th of December 1998 and is valid to the 7th of December 2058.The Samling Group is currently operating the concession as a Planted Forest however, following the management decision in 2021 that no new land clearance or planting is taking place while the Group is converting the planted forest into a Carbon Forest. On the 22nd of December 2022 the Sarawak State Government issued a new

regulation to govern the conversion of land use in Sarawak to Carbon Forest. (Forest Carbon Activity Rules). The Samling Group through its subsidiary SaraCarbon successfully completed the registration process and was awarded the first forest Carbon Study Permit under the new Forest carbon Activity Rules on March 14, 2023. The Carbon Study Permit is the first stage in the process to convert the Marudi LPF/0008 Licence into fully validated and verified Carbon sink.

## 1.9 Project Start Date

Project Start Date is 15th December 2021. Prior to this date Samling Group was actively clearing planting and harvesting timber from their Marudi LPF/0008 timber concession. Samling Management after due care and deliberation made the decision to cease land clearance and plantation activities on this date and recorded this in a CEO's written instruction.

## 1.10 Project Crediting Period

The Project Crediting Period is 15th December 2021 to 14th December 2081, a period of sixty (60) years. Under the new Forest Carbon Activity Rules, parts of Marudi LPF/0008 will be converted to a carbon forest. The initial License period will be for 30 years, which can be extended another 30 years.

## 1.11 Project Scale and Estimated GHG Emission Reductions or Removals

| Category | Metric | Estimated by the End of Project Lifetime |
|---|---|---|
| GHG emission reductions or removals | Net estimated emission removals in the Project Area, measured against the without-project scenario | 10,193,532 tonnes CO2E |
| | Net estimated emission reductions in the Project Area, measured against the without-project scenario. | 107,505,271 tonnes CO2E |
| | Net annual estimated emission reductions in the Project Area, measured against the without-project scenario. | 1,961,647 tonnes CO2E |

| Category | Metric | Estimated by the End of Project Lifetime |
|---|---|---|
| Forest[1] cover | For REDD[2] projects: Estimated number of hectares of reduced forest loss in the Project Area measured against the without-project scenario | 31,707 ha total REDD |
| | For ARR[3] projects: Estimated number of hectares of forest cover increased in the Project Area measured against the without-project scenario | Reforestation of 608 ha of bare land dispersed plots into forest. |

Table 1-2 Estimated Benefits from the Project

[2] Reduced emissions from deforestation and forest degradation (REDD) - Activities that reduce GHG emissions by slowing or stopping conversion of forests to non-forest land and/or reduce the degradation of forest land where forest biomass is lost (*VCS Program Definitions*)

[3] Afforestation, reforestation, and revegetation (ARR) - Activities that increase carbon stocks in woody biomass (and in some cases soils) by establishing, increasing and/or restoring vegetative cover through the planting, sowing and/or human-assisted natural regeneration of woody vegetation (*VCS Program Definitions*)

| Project Scale | |
|---|---|
| Project | |
| Large project | X |

Estimates of potential carbon emissions reductions based on the proposed Project have been prepared. These are shown in the table below:

| Year | Estimated baseline emissions or removals ($tCO_2e$) | Estimated project emissions or removals ($tCO_2e$) | Estimated leakage emissions ($tCO_2e$) | Estimated net GHG emission reductions or removals ($tCO_2e$) | Non-Permanence risk buffer (10%) | Annual Average VCUs |
|---|---|---|---|---|---|---|
| | 107,505,271 | 10,193,532 | | 117,698,804 | 11,769,880 | 105,928,923 |
| 2021 | 295,435 | 18,021 | 0 | 313,456 | 31,346 | 282,111 |
| 2022 | 527,571 | 52,597 | 0 | 580,168 | 58,017 | 522,151 |
| 2023 | 742,763 | 89,510 | 0 | 832,273 | 83,227 | 749,046 |
| 2024 | 843,960 | 106,524 | 0 | 950,484 | 95,048 | 855,436 |
| 2025 | 1,379,439 | 131,922 | 0 | 1,511,361 | 151,136 | 1,360,225 |
| 2026 | 2,218,430 | 178,090 | 0 | 2,396,520 | 239,652 | 2,156,868 |
| 2027 | 1,910,591 | 178,090 | 0 | 2,088,681 | 208,868 | 1,879,813 |
| 2028 | 1,910,591 | 178,090 | 0 | 2,088,681 | 208,868 | 1,879,813 |
| 2029 | 1,910,591 | 178,090 | 0 | 2,088,681 | 208,868 | 1,879,813 |
| 2030 | 1,910,591 | 178,090 | 0 | 2,088,681 | 208,868 | 1,879,813 |
| 2031 | 1,904,599 | 178,090 | 0 | 2,082,690 | 208,269 | 1,874,421 |
| 2032 | 1,894,022 | 178,090 | 0 | 2,072,112 | 207,211 | 1,864,901 |
| 2033 | 1,888,174 | 178,090 | 0 | 2,066,264 | 206,626 | 1,859,638 |
| 2034 | 1,885,634 | 178,090 | 0 | 2,063,724 | 206,372 | 1,857,352 |
| 2035 | 1,881,949 | 178,090 | 0 | 2,060,039 | 206,004 | 1,854,035 |
| 2036 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2037 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2038 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2039 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2040 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2041 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2042 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2043 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2044 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2045 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2046 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2047 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2048 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2049 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2050 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2051 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2052 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2053 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2054 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2055 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2056 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2057 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2058 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2059 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2060 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2061 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2062 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2063 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 2064 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2065 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2066 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2067 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2068 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2069 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2070 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2071 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2072 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2073 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2074 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2075 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2076 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2077 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2078 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2079 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |
| 2080 | 1,875,576 | 178,090 | 0 | 2,053,666 | 205,367 | 1,848,300 |

Table 1-3 GHG Emissions Reduction by Year for the Project

The successful implementation of the project over an estimated 60-year lifecycle shall result in total removals and reductions in CO2E of approximately 117,698,804 million tonnes and generate approximately 105,928,923 tonnes of Verified Carbon Units (VCUs). This will generate average annual reductions in CO2E of 1,961,647 tonnes CO2E per year and average annual production of 1,765,482 VCUs per year.

## 1.12 Description of the Project Activity

The Project will undertake the following activities with the projected results.

| Outcome or Impact Estimated by the End of Project Lifetime |
|---|
| 1. Preservation of existing forests, restoration degraded areas, and reforestations of non-forest areas, achieved through:<br>a. Avoidance of 31,707 ha of deforestation for plantations.<br>b. Restoration of 1,428 ha of mixed plantation/degraded natural forest to Kerangas forest.<br>c. Reforestation of 608 ha of bare land into forest. |
| 2. Preservation of wetland areas, achieved through:<br>a. Avoidance of 21,122 ha of plantation development on wetland forest areas.<br>b. Avoidance of 2,784 conservation areas in wetland areas that will be drained by plantation development on adjacent lands.<br>c. Note that there is potential reforestation of non-forest areas on peatland, but these areas have been classified as CIW for this project. |
| 3. Elimination of illegal logging and natural forest land clearing in the Project Area, achieved through:<br>a. Establishment of a forest preservation team responsible for detection of illegal logging, and natural forest land clearing, and enforcement of the rules.<br>b. Establishment of a community monitoring and preservation program to report the commencement of any illegal logging activities and natural forest land clearing to the forest preservation team.<br>c. Establishment of relationships with regulatory authorities to enforce forest protection program. |
| 4. Fire prevention and fire threat reduction, achieved through:<br>a. Reduction of human activity in the Project Area.<br>b. Establishment of fire detection capability in the Project Area<br>c. Community based program to improve agricultural practices (non-fire practices) to reduce fire risks.<br>d. Establishment of trained and equipped fire-fighting teams in the project as an extension of the company's plantation firefighting capability. |
| 5. Preservation of Biodiversity and rare terrestrial species through<br>a. the preservation of the wetlands & Biodiversity habitat<br>b. Increasing biodiversity habitats through the reforestation program<br>c. Increasing animal Numbers through improved access and specific programs.<br>d. Enhanced trans boundary biodiversity protection with neighbouring Brunei |

6. Increased economic welfare through
    a. Employment Opportunities directly in the project or through the improving economic climate related to project activities.
    b. Improved livelihoods through Improved Yields from Fishing hunting and Farming endeavours due to the program activities

Table 1-4 Project Activities

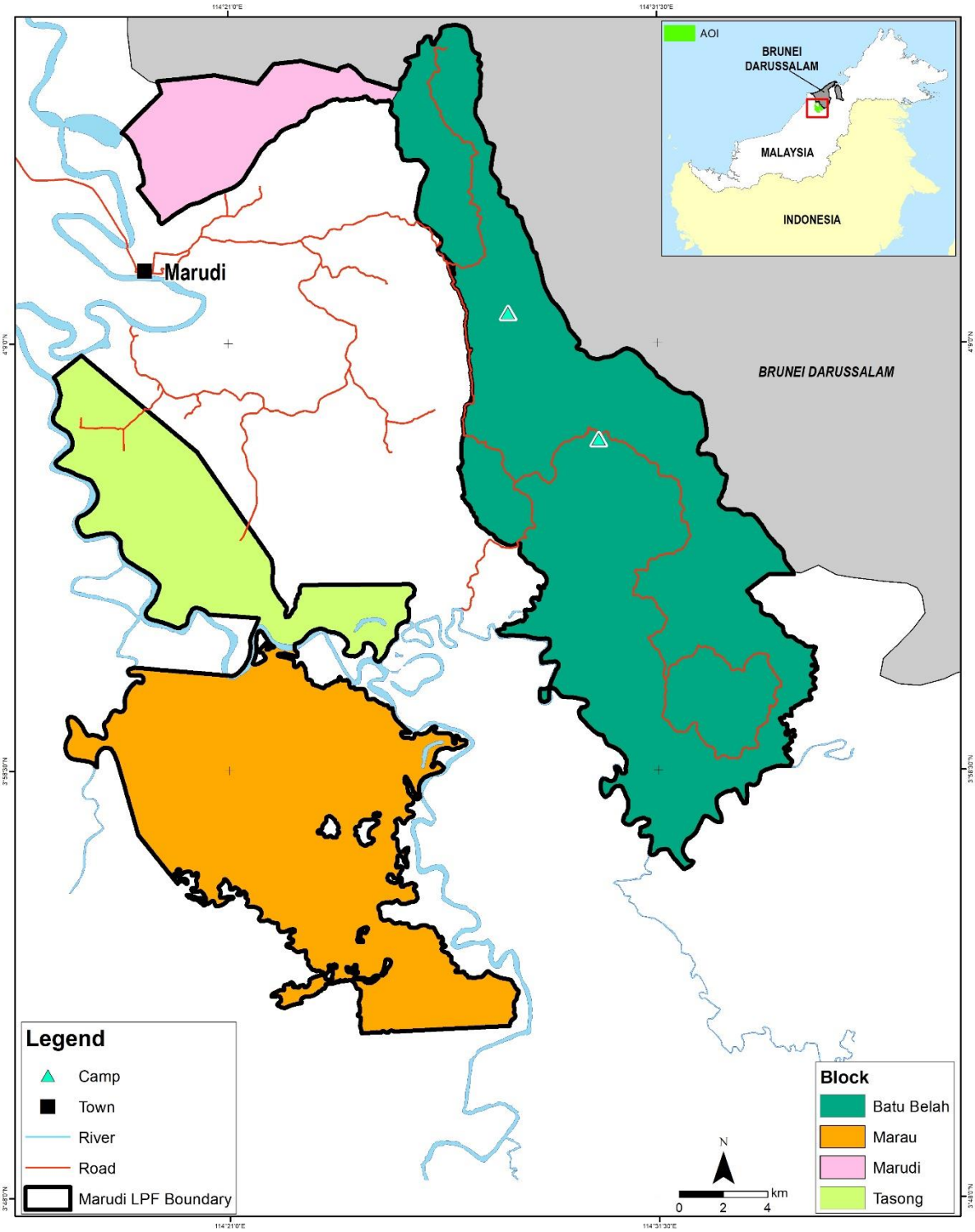
## 1.13 Project Location

The project is located within the boundaries of Marudi LPF/0008. The concession is in the Malaysian state of Sarawak and is within the division of Miri. The concession is bisected by the Baram River and the nearest large town is Marudi with a population of 90,100 (2010).

The total area of the Marudi LPF/0008 is 55,818 ha. It comprises of 4 blocks, Marudi, Batu Belah, Tasong, and Marau. It borders with Brunei Darussalam of northern and eastern boundaries of Marudi and Batu Belah blocks.

| Block | Area (ha) |
|---|---|
| Batu Belah | 27,265 |
| Marau | 16,790 |
| Marudi | 4,035 |
| Tasong | 7,728 |
| Total | 55,818 |

Table 1-5 Area of Marudi LPF/0008 by block




Map 1-1 Marudi LPF/0008

The Project Area is located within the boundaries of the Marudi LPF/0008. The Project Area boundary includes:

**The Project Area includes areas that will generate verified carbon units (VCUs):**

1. All areas with natural forest cover designated for plantation development.
2. All non-forest areas designated for plantation development on peatland soils.

**The Inside Project Area also includes activities that will generate positive climate, community and biodiversity impacts but from which no verified carbon units (VCUs) will be claimed:**

1. All other non-forest areas that may be restored through assisted natural forest regeneration and are not included in the peatland non-forest areas above.
2. Plantations located on Kerangas soils which are to be restored back into natural forest.

**Inside Non-Project Areas include:**

1. The International Buffer Zone (IBZ) on the boundary with Brunei.
2. Cut off areas where there are contested titles with neighbours.
3. Areas already designated for conservation prior to the commencement of the project.
4. Existing plantation areas (except those Kerangas areas above).
5. Areas that are classified as Native Customary Rights lands and which have pre-existing property rights.
6. Settlements
7. Water bodies

| Block | Area by project boundary status | | |
|---|---|---|---|
| | Inside Project | Outside Project | Total |
| Batu Belah | 12,402 | 14,862 | **27,265** |
| Marau | 16,790 | 0 | **16,790** |
| Marudi | 2,824 | 1,211 | **4,035** |
| Tasong | 7,150 | 577 | **7,728** |
| **Total** | **39,167** | **16,651** | **55,818** |

Table 1-6 Project Area by Status

Note that where communities have established crops and plantations on non- Native Customary Rights lands, these shall be included by default into the project but left in their current land use. These areas will then be subjected to the Lands Claims process to determine the legality of the land use by communities and resolution of its status. Where legitimate property rights are established, the areas will be removed from the project area.

The areas within the Project Area boundaries which are eligible for carbon crediting, and which are not eligible for carbon reduction activities, are described in the table below.

| Block | Project Status | | | | |
|---|---|---|---|---|---|
| | Inside Project Boundary | | | Outside Project | Total |
| | Carbon Activity | No Carbon Activity | Total | | |
| Batu Belah | 9,848 | 2,554 | 12,402 | 14,862 | **27,265** |
| Marau | 16,637 | 153 | 16,790 | 0 | **16,790** |
| Marudi | 2,824 | 0 | 2,824 | 1,211 | **4,035** |
| Tasong | 6,965 | 185 | 7,150 | 577 | **7,728** |
| Total | **36,274** | **2,893** | **39,167** | **16,651** | **55,818** |

**Table 1-7 Areas that are eligible and ineligible for carbon activities**

There are some areas within the Project Area boundaries, but which are ineligible for carbon crediting. There are described in the table below.

| Block | IBZ | Cut Off Area | Conservation | Water Body | Plantation | Total |
|---|---|---|---|---|---|---|
| Batu Belah | - | - | - | - | - | **19** |
| | - | - | - | | Planted | **1,298** |
| | - | - | - | Water Body | - | **75** |
| | - | - | Conservation | - | - | **1,158** |
| | - | - | Conservation | - | Planted | **0** |
| | IBZ | - | Conservation | - | - | **4** |
| Marau | - | - | - | Water Body | - | **153** |
| Marudi | IBZ | - | Conservation | | - | **0** |
| Tasong | - | - | - | Water Body | - | **185** |
| | - | Cut Off Area | - | - | - | **1** |
| Total | | | | | | **2,893** |

Table 1-8 Breakdown of areas outside project boundaries but within Marudi LPF/0008

## 1.14 Conditions Prior to Project Initiation

The conditions of the Project Area prior to the start of the project can be described as a natural forest ranging from degraded to heavily degraded in condition. The Marudi, Marau, Tasong blocks are predominantly peatlands and would have been converted to forest plantations under the Tree Planting Plan before the decision to implement carbon project. The condition of the project site was not a result of actions by the project or related parties to purposely create GHG emission potential for subsequent reduction.

We demonstrate that the project has not been implemented to generate GHG emissions for the purpose of their subsequent reduction, removal or destruction in Section 3.1.4 and the project's baseline scenario and additionality is justified by using "VT0001 – T-ADD - Tool for the demonstration and assessment of additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) project activities".

As described in Section 3.1.4 the most likely land-use in the absence of the project is the establishment of an industrial tree plantation. In fact, under the latest revised Tree Planting Plan, it was the only permitted land use up until the carbon study permit was issued. The Environmental Impact Assessment for tree planting development in the Marudi LPF/0008 was prepared by ECOSOL and approved by Natural Resources and Environment Board Sarawak on 13th December 2007.

The development activities started in 2009. Commencing with the Batu Belah Block, approximately 9,189 ha were cleared and planted with Acacia spp., *Eucalyptus pellita, Falcataria moluccana, Gmelina arborea, Melaleuca leucadendra, Neolamarckia cadamba, and Hevea brasiliensis* for the first cropping cycle.

In 2020/2021, the Licensee planned to replant the Batu Belah Block for the second cycle. An Environment Management Plan (EMP) for the entire Batu Belah Block (ECOSOL, 2021) with a total gross area of about 23,550 ha was submitted and approved by the NREB on 27th September 2021, Ref: (11)NREB/6-3/2H/53]. To date, the Licensee had harvested the first crop of *Acacia spp*. and *Eucalyptus pellita*, with yields of approximately 102.6 tonnes per hectare.

In the Project Area, the revised Tree Planting Plan identifies 34,503 ha that can be planted between 2022 and 2025. This would have resulted in the clearing of approximately 31,707 ha of natural forest with approximately 21,122 ha of the plantation development being located on peatlands. In addition, there was a maximum of 608 ha of non-forest area that the project could reforest[4].

The Marudi LPF/0008 is currently producing timber which is shipped as logs to the Groups mills in Sarawak. Samling management has an ongoing planting plan revised since 2021 to replace harvested logs and to develop the remaining natural forest and drain the wetlands to allow for planting. Given the possibility of converting the concession to Carbon project, Samling management has suspended new planting. The management of the Project Area as a forest protection and restoration project will now transfer to SaraCarbon.

## 1.15 Compliance with Laws, Statutes and Other Regulatory Frameworks

The SaraCarbon Project is designed and implemented in full compliance with both state (Sarawak), and Malaysian national laws. And the project complies with international law and relevant regulations on land use, forestry, REDD+, AFOLU, and climate agreements.

Sarawak State Laws:

- Forest Ordinance 2015 (Cap 71);
- Sarawak Land Code (Cap 81);
- Forests (Forest Carbon Activity) Rules 2022;
- Natural Resources and Environment Rules Ordinance (Cap 84);
- Wildlife Protection Ordinance 1998 (Cap 26);
- Sarawak Cultural Heritage Ordinance 1993 (Cap 6)
- Native Courts Ordinance, 1992 [Ord. No. 9/92]; and

- Labour Ordinance (Cap 76)

Malaysian National Laws:

- Employment act, 1955;
- Immigration act, 1959/63;
- Environmental Quality Act, 1974;
- Pesticides Act, 1974;
- Occupational Safety and Health Act 1994;
- Workmen's Compensation Act, 1952;
- Employees' Social Security Act 1969;
- Plant Quarantine act, 1976; and
- Renewable energy act, 2011.

International Agreements:

- Convention on Wetlands of International Importance, 1971;
- Convention on the International Trade in Endangered Species of Wild;
- Flora and Fauna, 1973;
- Cartagena Protocol on Biosafety to the Convention on Biological Diversity, 2000;
- International Tropical Timber Agreement, 1994;
- United Nations Convention on Biological Diversity, 1992;
- United Nations Framework Convention on Climate Change, 1992;
- United Nations Declaration of the Rights of Indigenous Peoples, 2007;
- The Kyoto Protocol to the Convention on Climate Change, 1997.
- Paris Agreement, 2015

SaraCarbon will operate in full compliance with Sarawak and Malaysia's laws and will also comply with all relevant international conventions, best practices, and agreements applicable to a REDD + project.

As part of the preparation of this Project Description Document (PDD) a legal opinion was sought to ensure full compliance with all the relevant Malaysian regulations. The project management has reviewed the existing Standard Operating Procedures (SOP) and is in the process of revising them to ensure their compliance with the objectives of the SaraCarbon project.

## 1.16 Double Counting and Participation under Other GHG Programs

### 1.16.1 No Double Issuance

Is the project receiving or seeking credit for reductions and removals from a project activity under another GHG program?

☐ Yes ☒ No

### 1.16.2 Registration in Other GHG Programs

Is the project registered or seeking registration under any other GHG programs?

☐ Yes ☒ No

### 1.16.3 Projects Rejected by Other GHG Programs

Has the project been rejected by any other GHG programs?

☐ Yes ☒ No

## 1.17 Double Claiming, Other Forms of Credit, and Scope 3 Emissions

### 1.17.1 No Double Claiming with Emissions Trading Programs or Binding Emission Limits

Are project reductions and removals or project activities also included in an emissions trading program or binding emission limit?

☐ Yes ☒ No

### 1.17.2 No Double Claiming with Other Forms of Environmental Credit

Has the project activity sought, received, or is planning to receive credit from another GHG-related environmental credit system?

☐ Yes ☒ No

### 1.17.3 Supply Chain (Scope 3) Emissions

Do the project activities specified in Section **Error! Reference source not found.** affect the emissions footprint of any product(s) (goods or services) that are part of a supply chain?

☐ Yes ☒ No

## 1.18 Sustainable Development Contributions

The project activity contributes to sustainable development multiple ways. The project activity aims at conserving and restoring 29,440 hectares of forest lands and preserve 24,244 hectares of wetlands through various combination of activities. Conserving the existing forests from deforestation and degradation will reduce the greenhouse gas emissions by avoiding the deforestation, avoiding degradation of peatlands and increase carbon stock through forest restoration. The project activity will keep the forests and wetland ecosystems intact and protect them from loss. Therefore, it will contribute to the states and country's forest cover. The project activity also aims at conserving existing floral and faunal diversity, principally through the protection of forests and wetlands, and secondarily through proactive ecosystem restoration programs which will be developed in coordination and cooperation with local communities. Specifically, under the project activity rare animal species can be conserved. For example, the project area is known to host at least 4 species of Hornbill all of whom are threatened to some extent in Sarawak. If the forests are conserved, the habitat of Hornbills will be protected and restored, and the survival and growth of these species will be higher. Species survival can be promoted through construction of bird's nests, Through the forest conservation, the local communities will be able generate additional income through involvement in the project activity. Moreover, they will be getting additional training and capacity building for smooth functioning of the project activity. Specifically, the project activity aims in achieving following UN SD Goals.

Nationally as well, the project activity is aligned with the sustainable development goals of Malaysia. The country's sustainable development priorities are now closely aligned with the UN Sustainable Development Goals (UN SDGs). Malaysia assisted in the creation of the UN SDGs and has expressed its strong commitment to the 2030 Agenda and the SDGs overall. The SaraCarbon Project supports the achievement of the SDGs as outlined in the table below. All project data is available to support monitoring efforts at the provincial and national levels.

Table 1-9 Sustainable Development Goals

| | SDG | Relevant project activity |
|---|---|---|
| 14 LIFE BELOW WATER | Life Below Water | GOAL: Conserve and sustainably use the oceans, seas, and marine resources for sustainable development<br><br>SaraCarbon Riparian tree Program has a direct impact on marine resources. The protection of wetlands and riparian areas is crucial to the overall health of watersheds, rivers, and lakes. (Project Area not close to seascape). The riparian areas restoration will support trapping sediment, storage of floodwater and energy, recharge groundwater, and promote biological diversity. |

| | | |
|---|---|---|
| 13 CLIMATE ACTION | Climate Action | GOAL: Take urgent action to combat climate change and its impacts by regulating emissions and promoting developments in renewable energy<br><br>The high rate of deforestation has had serious impact on the climate resulting in high temperatures, low and erratic rainfalls, floods, among others. Furthermore, increasing pressure for palm oil production expansion, timber extraction and other socio-economic factors have negatively impacted the biological resources in the SaraCarbon Project Area.<br><br>SaraCarbon works to combat climate change through the sequestering of carbon in a direct, quantifiable way. Sequestration is accomplished through the planting and growing of trees and sequestering carbon by peatland soil. In addition to sequestering carbon, forests reduce the temperature of the air by evaporating water through their leaves and reduce the soil temperature by shading the ground.<br><br>SaraCarbon aim also to work with local communities to create adaptation strategies and ways to combat the local ramifications of climate change. Climate change is often considered on the macro level with little thought to the day-to-day impacts on vulnerable populations. By working directly with communities, listening to their concerns, and helping to develop strategies, SaraCarbon approach will be local results oriented. |
| 15 LIFE ON LAND | Life on Land | GOAL: Protect, restore, and promote sustainable use of terrestrial ecosystems,<br><br>sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.<br><br>The planting of trees increases biodiversity while also providing the structural conditions for subsequent forest growth.<br><br>Tree growth not only restores degraded land but also allows for the return of various forms of life.<br><br>Practices such as agroforestry and conservation farming that will be introduce will revitalize the entire project region and create wildlife corridors between habitats. The trees planted will served as buffers to National Parks (The Mulu National Park), High Conservation Value Areas identified. |

# 3 APPLICATION OF METHODOLOGY

## 3.1 Title and Reference of Methodology

The Project applies the latest version of VCS Methodology VM0007 (version 1.6). Applicable modules are available in Section 1 of VM0007.

## 3.2 Applicability of Methodology

To carry out the process of quantifying reductions in emissions from the baseline, the steps established in the methodology were followed: VM0007 REDD + methodology framework (REDD-MF) Version: 1.6, September 8, 2020. The complete list of methodologies and modules associated with the project is shown below:

| No. | Doc ID | Version | Issue Date | Documents Name | Abbrev. |
|---|---|---|---|---|---|
| METHODOLOGIES | | | | | |
| 1 | VM0007 | 1.6 | 8-Sep-20 | REDD+ Methodology Framework | REDD+ MF |
| 2 | VMXXX | 0.1 | 17-Dec-21 | Methodology for Afforestation, Projects Reforestation and Revegetation | VCS-AAA |
| CARBON POOLS | | | | | |
| 3 | VMD0001 | 1.1 | 11-Oct-13 | Estimation of carbon stocks in the above- and belowground biomass in live tree and non-tree pools | CP-AB |
| BASELINE | | | | | |
| 4 | VMD0006 | 1.3 | 8-Sep-20 | Estimation of baseline carbon stock changes and greenhouse gas emissions from planned deforestation/forest degradation and planned wetland degradation | BL-PL |
| 5 | VMD0041 | 1.1 | 8-Sep-20 | Estimation of baseline carbon stock changes and greenhouse gas emissions in ARR project activities | BL-ARR |
| 6 | VMD0042 | 1.1 | 8-Sep-20 | Estimation of baseline soil carbon stock changes and greenhouse gas emissions in peatland rewetting and conservation project activities | BL-PEAT |
| LEAKAGE | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 7 | VMD0009 | 1.3 | 8-Sep-20 | Estimation of emissions from activity shifting for avoiding planned deforestation/forest degradation and avoiding planned wetland degradation | LK-ASP |
| 8 | VMD0044 | 1.1 | 8-Sep-20 | Estimation of emissions from ecological leakage | LK-ECO |
| EMISSIONS | | | | | |
| 9 | VMD0013 | 1.2 | 8-Sep-20 | Estimation of greenhouse gas emissions from biomass and peat burning | E-BPB |
| MONITORING | | | | | |
| 10 | VMD0015 | 2.0 | 8-Sep-20 | Methods for monitoring of GHG emissions and removals in REDD and CIW projects | M-REDD |
| 11 | VMD0045 | 1.1 | 8-Sep-20 | Methods for monitoring greenhouse gas emissions and removals in ARR project activities | M-ARR |
| 12 | VMD0046 | 1.1 | 8-Sep-20 | Methods for monitoring of soil carbon stock changes and greenhouse gas emissions and removals in peatland rewetting and conservation project activities | M-PEAT |
| MISCELLANEOUS | | | | | |
| 13 | VMD0016 | 1.2 | 8-Sep-20 | Methods for Stratification of the Project Area | X-STR |
| 14 | VMD0017 | 2.2 | 8-Sep-20 | Estimation of Uncertainty for REDD+ Project Activities | X-UNC |
| 15 | VMD0019 | 1.0 | 16-Nov-12 | Methods to project future conditions | |

Table 3-1 List of methodologies and modules in VM0007 applicable to the project

Some modules in VM0007 are not applicable to the project and these are listed in the table below:

Table 3-2 List of methodologies and modules in VM0007 not applicable to the project

| No. | Doc ID | Document name | Abbrev. | Rationale for non-applicability of the module |
|---|---|---|---|---|
| CARBON POOLS | | | | |
| 1 | VMD0002 | Estimation of carbon stocks in the dead-wood pool | (CP-D) | Deadwood is an excluded carbon pools as described in section 3.2. |
| 2 | VMD0003 | Estimation of carbon stocks in the litter pool | (CP-L) | Litter is an excluded carbon pools as described in section 3.2. |
| 3 | VMD0004 | Estimation of carbon stocks in the soil organic carbon pool (mineral soils) | (CPS) | Soil organic carbon in mineral soils is an excluded carbon pools as described in section 3.2. |
| 4 | VMD0005 | Estimation of carbon stocks in the long-term wood products pool | (CP-W) | Long term wood products are an excluded carbon pools as described in section 3.2. |
| BASELINE | | | | |
| 5 | VMD0007 | Estimation of baseline carbon stock changes and greenhouse gas emissions from unplanned deforestation and unplanned wetland degradation | (BL-UP) | The project only includes planned deforestation. All conservation and other areas not planned for deforestation are excluded from the Project Area. |
| 6 | VMD0008 | Estimation of baseline emission from forest degradation caused by extraction of wood for fuel | (BL-DFW) | The project only includes planned deforestation. All conservation and other areas not planned for deforestation, and where fuelwood harvesting might occur, are excluded from the Project Area. |
| 7 | VMD0050 | Estimation of baseline carbon stock changes and greenhouse gas emissions in tidal wetland restoration and conservation project activities | (BL-TW) | The wetland areas in the project are upstream and are influenced by tidal flows. |
| LEAKAGE | | | | |
| 8 | VMD0010 | Estimation of emissions from activity shifting for avoiding unplanned deforestation and avoiding unplanned wetland degradation | (LK-ASU) | The project only includes planned deforestation. All conservation and other areas not planned for deforestation are excluded from the Project Area. |
| 9 | VMD0011 | Estimation of emissions from market effects. | (LK-ME) | The project baseline does not include harvesting for commercial products such as sawn timber, nor does it |

| | | | | |
|---|---|---|---|---|
| | | | | include harvesting for fuel wood or charcoal. |
| 10 | VMD0012 | Estimation of emissions from displacement of fuelwood extraction | (LK-DFW) | The project only includes planned deforestation. All conservation and other areas not planned for deforestation, and where fuelwood harvesting might occur, are excluded from the Project Area. |
| 11 | VMD0043 | Estimation of emissions from displacement of pre-project agricultural activities | (LK-ARR) | There is no pre-project agriculture displaced by the project. |
| EMISSIONS | | | | |
| 12 | VMD0014 | Estimation of emissions from fossil fuel combustion | (E-FFC) | Combustion of fossil fuels is omitted. Fossil fuel is higher in the baseline scenario compared to the project scenario. Furthermore, emissions from fossil fuel are extremely small compared to other emissions sources and are considered de minimis. |
| 13 | EB 33<br>Annex 16 | Estimation of direct nitrous oxide emission from nitrogen fertilization | E-NA | This tool is not applicable because there is no intention to apply nitrogen fertilizer during project activities. |
| MONITORING | | | | |
| 14 | VMD0051 | Methods for monitoring of soil carbon stock changes and greenhouse gas emissions and removals in tidal wetland restoration and conservation project activities | (M-TW) | The wetland areas in the project are upstream and are influenced by tidal flows. |
| MISCELLANEOUS | | | | |
| 15 | VMD0052 | Demonstration of Additionality of Tidal Wetland Restoration and Conservation Project Activities | (ADD-AM) | The wetland areas in the project are upstream and are influenced by tidal flows. |

As detailed below, all applicability conditions of methodology VM0007 (REDD+ MF) and its associated modules are met.

| No. | Module | Applicability Condition | Comment |
|---|---|---|---|
| 1 | VM0007 REDD+ MF, 4.2 All Project Activities | All land areas registered under the Clean Development Mechanism (CDM) or under any other GHG program (both voluntary and compliance-oriented) must be transparently reported and excluded from the Project Area. The exclusion of land in the Project Area from any other GHG program must be monitored over time and reported in the monitoring reports. | Condition met, no part of the Project Area is under any CDM or any other GHG program (either voluntary or compliance-oriented). |
| 2 | VM0007 REDD+-MF, 4.3.1 - All REDD Activity Types | Land in the Project Area has qualified as forest (following the definition used by VCS; in addition, see Section 5.1.2) for at least the 10 years prior to the project start date. Mangrove forests are excluded from any tree height requirement in a forest definition, as they consist of (close to) 100% mangrove species, which often do not reach the same height as other tree species and occupy contiguous areas and their functioning as a forest is independent of tree height. | Condition met. Land-use records indicate that all land subject to REDD project activities in the Project Area is covered by tropical forest and has qualified as such under the applicable definition for at least 10 years.<br>There is no mangrove in the Project Area. |
| 3 | VM0007 REDD+ MF, 4.3.1 - All REDD Activity Types | If land within the Project Area is peatland or tidal wetlands and emissions from the SOC pool is deemed significant, the relevant WRC modules must be applied alongside other relevant modules. | Condition met. All relevant WRC modules have been applied to estimate emissions from peat soils. |
| 4 | VM0007 REDD+ MF, 4.3.1 - All REDD Activity Types | Baseline deforestation and forest degradation in the Project Area fall within one or more of the following categories:<br>• Unplanned deforestation (VCS category AUDD)<br>• Planned deforestation/degradation (VCS category APD)<br>• Degradation through extraction of wood for fuel (fuelwood and charcoal production) (VCS category AUDD) | Condition met. Baseline deforestation falls in the category of APD. See § 2.2.1.<br><br>The Project Area does not include any significant unplanned deforestation or forest degradation and is not modelled in either the baseline of the project scenario. |
| 5 | VM0007 REDD+ MF, 4.3.1 - All REDD Activity Types | Leakage avoidance activities must not include:<br>Agricultural lands that are flooded to increase production (e.g., rice paddy) | Condition met. The Project does not promote either establishment of agriculture on flooded land or intensification of livestock production. |

| | | | |
|---|---|---|---|
| | | Intensifying livestock production through use of feed-lots10 and/or manure lagoons. | |
| 6 | VM0007 REDD+ MF, 4.3.3 - Avoiding Planned Deforestation/ Degradation | Avoiding planned deforestation/degradation activities are applicable under the following condition:<br>Where conversion of forest lands to a deforested condition must be legally permitted. | Condition met. |
| 7 | VM0007 REDD+-MF, 4.4.1 - ARR | ARR activities are applicable under the following conditions:<br>• The Project Area is non-forest land or land with degraded forest.<br>• In strata with drained organic soil, ARR activities must be combined with rewetting. | Condition met. ARR is only in non-forest land and only on peatland that is not drained. |
| 8 | VM0007 REDD+-MF, 4.4.2 – ARR | ARR activities are not eligible under the following conditions:<br>• The project scenario involves the application of nitrogen fertilizers.<br>• If ARR activities enhance peat oxidation. Therefore, on peatland, the project must include at least some degree of rewetting. In a tidal system where the tidal regime is restored or continues to be in place, ARR activities are considered not to enhance peat oxidation. | Condition met. No nitrogen fertilizer will be used in the project. The project does not involve draining of peat and ARR will only occur on undrained peatland areas. |
| | VM0007 REDD+-MF, 4.5.1 - All WRC Activity Types | WRC activities are not eligible under the following conditions:<br>• Project activities lower the water table, unless the project converts open water to tidal wetlands, or improves the hydrological connection to impounded waters.<br>• Changes in hydrology do not result in the accumulation or maintenance of SOC stock, noting that a) this pertains to projects that intend to sequester carbon through sedimentation and/or vegetation development and b) this does not pertain to projects that increase salinity to reduce CH4 emissions. Projects that aim to decrease CH4 emissions through increased salinity must account for any changes in SOC stocks. | Condition met. The project activities do not lower the water table, hydrological connection of the peatland does not lead to increase of emissions outside of the Project Area and do not include burning of organic soil and does not include the use of fertilizers. |

| | | | |
|---|---|---|---|
| | | • Hydrological connectivity of the Project Area with adjacent areas leads to a significant increase in GHG emissions outside the Project Area.<br>• Project activities include the burning of organic soil.<br>• Nitrogen fertilizer(s), such as chemical fertilizer or manure, are applied in the Project Area during the project crediting period. | |
| 10 | VM0007 REDD+ MF, 4.5.3 CIW Project Activities | This methodology is applicable to conservation of undrained and partially drained peatland (CUPP) activities on Project Areas that meet the VCS definition for peatland (see VCS Program Definitions).<br><br>Project activities conserving tidal wetlands may include:<br>• Protecting at-risk wetlands (e.g., establishing conservation easements, establishing community supported management agreements, establishing protective government regulations, and preventing disruption of water and/ or sediment supply to wetland areas)<br>• Improving water management on drained wetlands<br>• Maintaining or improving water quality for seagrass meadows<br>• Recharging sediment to avoid drowning of coastal wetlands<br>• Creating accommodation space for wetlands migrating with sea-level rise | Condition met. The module is applicable because the Project has both undrained peatlands that meet the VCS definition.<br><br>Regarding conserving tidal wetlands, the Project has no tidal wetlands and so this portion of the applicability condition is not applicable. |
| 11 | VM0007 REDD+ MF, Avoiding Planned Wetland Degradation (APWD) | Avoiding planned wetland degradation activities are eligible under the following condition:<br>Conversion of intact or partially altered wetlands to a degraded condition must be legally permitted. | Condition Met: All the Project land is all designated LPF "License Plantation Forest" and as such is legally eligible for conversion to plantation forestry activity. |
| 12 | VMXXX | This methodology is applicable under the following conditions:<br>• The project activity qualifies as afforestation, reforestation, or revegetation. This may include direct (e.g., | The project plans to restore forest plantation to natural forest. This qualifies as revegetation. |

| | | | |
|---|---|---|---|
| | | manual planting, broadcast seeding) and indirect activities (e.g., activities that permit or facilitate natural regeneration, such as herbivory enclosures). | |
| 13 | VMXXX | This methodology is not applicable under the following conditions:<br>• Project activities take place on organic soils or wetlands and result in an intentional manipulation of the water table (i.e., the project activity must not involve manipulation of hydrology or otherwise affect hydrology). If species planted are other than those likely to have occurred under historic natural conditions in the Project Area, per best available knowledge (relevant literature and/or consultation with local experts), it is assumed that the project activity on organic soils or wetlands results in an intentional manipulation of the water table.<br>• Project activities take place in tidal wetlands (e.g., mangroves, salt marshes). | The project does not include reforestation of peatlands because the areas have not been drained – therefore are ineligible under BL-ARR. The revegetation occurs entirely on mineral soils.<br>The revegetation will only use species naturally occurring in the project locations and specific site conditions.<br>The Project Area is not subject to tidal flows. |
| 14 | VMXXX | The methodology allows for two quantification approaches: area-based and census-based. The area-based approach scales estimates of biomass per hectare to the project level using an area multiplier. The census-based approach scales estimate of biomass per planting to the project level using a census and can be appropriate where a full census of plantings is practical.<br>One or the other approach may be used, provided approach-specific applicability conditions are met. One approach must be selected at the project start date and used for the entire project crediting period. | The project will use the area-based approach for the duration of the project. |
| 15 | VMD0001<br>CP-AB | This module is applicable to all forest types and age classes. Inclusion of the above-ground tree biomass pool as part of the project boundary is mandatory as per the framework module REDD-MF. | Condition met. The Project Area includes a variety of forest types all of which are applicable to the module (i.e., all forest types and classes applicable). Further the Project includes above ground biomass as a carbon pool. |

| | | | |
|---|---|---|---|
| 16 | VMD0001<br>CP-AB | Non-tree aboveground biomass must be included as part of the project boundary if the following applicability criteria are met (per framework module REDD-MF):<br>• Stocks of non-tree aboveground biomass are greater in the baseline than in the project scenario, and<br>• Non-tree aboveground biomass is determined to be significant (using the T-SIG module).<br>Belowground (tree and non-tree) biomass is not required for inclusion in the project boundary because omission is conservative. | Condition met. Non-tree above-ground biomass is excluded because it is greater in the project scenario than in the baseline scenario, and<br>Non tree biomass was not determined to be significant he baseline scenario assumes that all-natural forest biomass will be cleared for the establishment of forest plantations, and this will logically reduce baseline biomass to zero including non-tree above-ground biomass to zero and significantly less than in the project scenario.<br>Furthermore, the tier 2 emission factors for understory is between 3.30% to 4.94% of AGB which is significantly less than the estimates of total tree biomass used in the baseline and project scenarios.<br>Belowground tree biomass (tree roots) is included because it is allowed.<br>Below ground non- tree biomass organic soil) is included as it is allowed. |
| 17 | VMD0006<br>BL-PL | The module is applicable for estimating the baseline emissions on forest lands (usually privately or government owned) that are legally authorized and documented to be converted to non-forest land. | Condition Met: The Project land is all designated as License for Planted Forest (LPF) (see The Forests Ordinance - Planted Forests Rules 1997) and as such is legally eligible for conversion to non-forest land such as would occur through clear felling for plantation forestry activity. |
| 18 | VMD0006<br>BL-PL | Where, pre-project, unsustainable fuelwood collection is occurring within the project boundaries Modules BL-DFW and LK-DFW must be used to determine potential leakage. | Condition not applicable. There is no history of fuelwood collection in the Project Area and this activity is excluded |

| | | | |
|---|---|---|---|
| | | | from the baseline and project scenarios. The Project does not avoid unsustainable fuelwood collection. |
| 19 | VMD0041 | The applicability conditions set out in *AR-ACM0003 Afforestation and reforestation of lands except wetlands* must be met. | Condition met. The project meets the requirements set out in *VCS-ARR Methodology for Afforestation, Projects Reforestation and Revegetation*. This has replaced AR-ACM0003. |
| 20 | VMD0041 | Applicability conditions included in AR-ACM0003 Afforestation and reforestation of lands except wetlands and corresponding tools that exclude project activities on wetlands can be disregarded for the purpose of their use in this module, as accounting procedures for the peat soil are provided in Modules BL-PEAT and BL-TW. | Conditions met. The project meets the requirements set out in *VCS-ARR Methodology for Afforestation, Projects Reforestation and Revegetation*. This has replaced AR-ACM0003. |
| 21 | VMD0041 | Where the ARR project activity is implemented on peatland, the peatland must be degraded in the baseline scenario as identified by the presence of drainage infrastructure (ditches, canals) and associated lowered water tables below the surface. In the case of forested peatland, degradation may be identified by the removal or degradation of the tree cover before the project start date. | Conditions met. The ARR activities do not include reforestation on peatlands because there are no canals in the peatland landscape. |
| 22 | VMD0041 | Where the ARR project activity is implemented on tidal wetlands, the wetland must be degraded, as defined in REDD+ MF. | The Project Area is not subject to tidal flows. |
| 23 | VMD0009 LK-ASP | The module is applicable for estimating the leakage emissions due to activity shifting from forest lands that are legally authorized and documented to be converted to non-forest land, including activity shifting to forested peatland that is drained because of project implementation. Under these situations, displacement of baseline activities can be controlled and measured directly by monitoring the baseline deforestation agents or class of agents. | Condition met. |
| 24 | VMD0009 LK-ASP | This tool must be used for projects in areas where planned deforestation happens on | Condition met– The tool is used because the Project includes |

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| | | forested peatlands, regardless of the absence of peatland within the project boundaries. | areas where planned deforestation is and has happened on forested peatlands directly adjacent to the Project Area. Additionally, the tool is justified because the Project activity avoids the baseline scenario of planned deforestation of 78,425 ha of planned deforestation of forested peatlands in the Project Area. |
| 25 | VMD0009 LK-ASP | The module is mandatory if module BL-PL has been used to define the baseline, and the applicability conditions in module BL-PL must be complied with in full. | Condition met. The Project has used module BL-PL and complied to BL-PL in full. |
| 26 | VMD0013 E-BPB | This module is applicable to REDD project activities with emissions from biomass burning and REDD-WRC project activities with emissions from biomass and/or peat burning. | Condition met. CP does not have any fire in its baseline because there is no significant anthropogenic burning occurring in the Project Area in the baseline.<br>Nature fire risk is virtually absent in the peat swamp, as it is too wet for lightning strikes, even in the “dry season”. |
| 27 | VMD0015 M-REDD | Strata as defined in the relevant baseline modules are fixed and may not be changed without baseline revision. | Condition met. Strata are fixed. Strata may be revised upon baseline adjustment at year 7. |
| 28 | VMD0015 M-REDD | The module is mandatory for REDD, REDD-CIW, and stand-alone CIW project activities. | Condition Met: The Project has applied all relevant aspects of VM0015 M-REDD in its monitoring approach as the Project falls under four categories of REDD, CIW-REDD, and stand-alone CIW project activities. RWE does not occur as a project activity in the Project Area. |
| 29 | VMD0015 M-REDD | Where selective logging is taking place in the project case:<br>Emissions from logging may be omitted if it can be demonstrated the emissions are de minimis using Tool T-SIG. | Condition not applicable. The Project does not involve selective logging or any timber harvesting because the current |

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| | | If emissions from logging are not omitted as de minimis, logging may only take place within forest management areas that possess and maintain a Forest Stewardship Council (FSC) certificate for the years when selective logging occurs.<br>Logging operations may only conduct selective logging that maintains a land cover that meets the definition of forest within the project boundary.<br>All trees cut for timber extraction during logging operations must have a DBH greater than 30 cm.<br>During logging operations, only the bole/log of the felled tree may be removed. The top/crown of the tree must remain within the forested area.<br>The logging practices cannot include the piling and/or burning of logging slash.<br>Volume of timber harvested must be measured and monitored. | legal licenses for forest plantation development only. |
| 30 | VMD0016 X-STR | In the case of REDD, above-ground biomass stratification is only used for pre-deforestation forest classes, and strata are the same in the baseline and the project scenario. Post-deforestation land use is not stratified. Instead, average post-deforestation stock values (e.g., simple, or historical area-weighted approaches are used, as per module BL-UP). | Condition met. Above-ground biomass stratification is only used for pre-deforestation forest classes, and strata are the same in the baseline and the project scenario. Post-deforestation areas are classified simply as "plantation ". |
| 31 | VMD0016 X-STR | For peatland rewetting and conservation project activities this module must be used to delineate non-peat versus peat and to stratify the peat according to peat depth and soil emission characteristics unless it can be demonstrated that the expected emissions from the soil organic carbon pool or change in the soil organic carbon pool in the project scenario are *de minimis* | Condition met. |
| 32 | VMD0016 X-STR | In the case of WRC project activities, the project boundary must be designed such that the negative effect of drainage activities that | Condition met. The Project is taking significant steps to maintain the intactness of hydrology in the Project Area. |

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| | | occur outside the Project Area on the project GHG benefits are minimized. | The Project is monitoring areas outside the Project area which could be under threat of disturbance to minimize potential impacts in terms of drainage. |
| 33 | VMD0017 X-UNC | The module is mandatory when using VCS methodology VM0007. It is applicable for estimating the uncertainty of estimates of emissions and removals of $CO_2$-e generated from REDD and WRC project activities. The module focuses on the following sources of uncertainty:<br>• Determination of rates of deforestation and degradation<br>• Uncertainty associated with estimation of stocks in carbon pools and changes in carbon stocks.<br>• Uncertainty associated with estimation of peat emissions.<br>• Uncertainty in assessment of project emissions | Condition met. X-UNC has been used throughout to estimate uncertainties associated with this Project. |
| 34 | VMD0017 X-UNC | Where an uncertainty value is not known or cannot be simply calculated, then a project must justify that it is using an indisputably conservative number and an uncertainty of 0% may be used for this component. | Condition met. In all cases where an uncertainty value is not known or cannot be simply calculated, the Project provides a justification that the value used is an indisputably conservative number (or an IPCC default value as instructed by VM0007. |
| 35 | VMD0017 X-UNC | Guidance on uncertainty – a precision target of a 95% confidence interval half-width equal to or less than 15% of the recorded value shall be targeted. This is especially important in terms of project planning for measurement of carbon stocks; enough measurement plots should be included to achieve this precision level across the measured stocks. | Condition met. Uncertainty requirements have been considered in project planning and carbon stock calculations. |
| 36 | VMD0042 BL-PEAT | This module is applicable to Rewetting of Drained Peatlands (RDP) and CUPP activities on Project Areas that meet the VCS definition for peatland. The scope of this module is | Condition met. RDP does not apply but CUPP applies. |

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| | | limited to domed peatlands in the tropical climate zone. | |
| 37 | VMD0042 BL-PEAT | It must be demonstrated by using the latest version of the CDM A/R methodological tool: "Tool for testing significance of GHG emissions in A/R CDM project activities" (T-SIG) that $N_2O$ emissions in the project scenario are not significant, or it must be demonstrated that $N_2O$ emissions will not increase in the project scenario compared to the baseline scenario, and therefore $N_2O$ emissions need not be accounted for. | Condition met. GHG emissions (specifically $N_2O$) are excluded from the baseline and project scenarios. The potential emissions sources are fire and nitrogenous fertilizer applications, which are both assumed to be absent in both the baseline and project scenarios.<br><br>Therefore, the net GHG emissions from both the baseline and project scenarios are estimated to be zero which is less than 5% of the total decreases in carbon pools and increases in emissions and less than 5% of net anthropogenic removals by sinks. |
| 38 | VMD0042 BL-PEAT | In the baseline scenario, the peatland must be (partially) drained. At project start, the peatland may still be undrained. | Condition met. The baseline scenario is of industrial pulpwood plantation in peat soil that requires substantial water table management (i.e., lowering). At the start of the project almost all the Project Area remained undrained. |
| 39 | VMD0044 LK-ECO | Leakage caused by hydrological connectivity is avoided by project design and site selection, as outlined in Chapter 5 (Procedures of VMD0044). | Condition met. Ecological Leakage does not occur in the Project. |
| 40 | VMD0045 M-ARR | This module is applicable under the following conditions:<br>• The applicability conditions are provided in AR-ACM0003.<br>• Applicability conditions included in AR-ACM0003 and corresponding tools that exclude project activities on wetlands can be neglected for the purpose of their use in this module, as accounting procedures | Condition met. The project meets the requirements set out in *VCS-ARR Methodology for Afforestation, Projects Reforestation and Revegetation*. This has replaced AR-ACM0003. |

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| | | for the peat soil are provided in Modules M-PEAT and M-TW. | |
| 41 | VMD0046 M-PEAT | This module is applicable to RDP and CUPP activities as defined in the VCS Standard. | Condition met: The Project is one where the undrained peatland is preserved i.e., Conservation of undrained and partially drained peatlands (CUPP) a.k.a. Conservation of Intact Wetlands (CIW) |
| 42 | VMD0046 M-PEAT | The Project Area must meet the VCS definition for peatland. This module is limited to domed peatlands in the tropical climate zone. | This Project Area is in an area with layering of naturally accumulating organic matter (peat). The Project is in a tropical climate zone and on a wetlands forest peat dome system. |
| 43 | VMD0046 M-PEAT | It must be demonstrated using tool T-SIG that $N_2O$ emissions in the project scenario are not significant, or it must be demonstrated that $N_2O$ emissions will not increase in the project scenario compared to the baseline scenario, and therefore $N_2O$ emissions need not be accounted for. | Conditions Met: The baseline and project scenarios exclude emissions from fire and so $N_2O$ emissions from fire are not calculated. Furthermore, $N_2O$ emissions in the baseline assessment are entirely the result of the application of fertilizers to plantations. The project scenario excluded all plantation development and resulted in the elimination of all $N_2O$ emissions from fertilizer, thus $N_2O$ emissions will not increase. |
| 44 | VMD0046 M-PEAT | In the baseline scenario the peatland must be drained or partially drained. | Condition Met: Under the baseline scenario, the peatland area would have been drained for Acacia plantation activity. |
| 45 | VMD0046 M-PEAT | At project start the peatland may still be undrained. | Condition met: At the project start date the peatland area was not drained for industrial plantation activity. |
| 46 | VMD0046 M-PEAT | It must be demonstrated using Module LK-ECO that ecological leakage must not occur | Condition Met: Ecological Leakage does not occur in this Project and all measures have |

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| | | | been taken to ensure Ecological Leakage remains = 0. [LK-ECO] |
| 47 | T-SIG<br>EB 31 | The tool shall be used in the application of an A/R CDM approved methodology to an A/R CDM project activity:<br>To determine which decreases in carbon pools and increases in emissions of the greenhouse gases measured in $CO_2$ equivalents that result from the implementation of the A/R project activity, are insignificant and can be neglected.<br>b) To ensure that it is valid to neglect decreases in carbon pools and increases in GHG emissions by sources stated as being insignificant in the applicability conditions of an A/R CDM methodology. | Condition met. T-Sig was used to guide the selection of GHG emissions and carbon pools. |
| 48 | T-ADD EB 35<br>Annex 19 | Forestation of the land within the proposed project boundary performed with or without being registered as the A/R CDM project activity shall not lead to violation of any applicable law even if the law is not enforced. | Condition Met – The Project included “Step 0” of the Tool as an additional procedure as part of the stepwise additionality analysis mandated by T-ADD. |
| 49 | T-ADD EB 35<br>Annex 19 | This tool is not applicable to small - scale afforestation and reforestation project activities. | Condition not applicable |

Table 3-3 Project Compliance with Methodologies