Belize Maya Forest REDD+ Project

Document Prepared by Terra Global Capital, LLC.

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Project Title	Belize Maya Forest REDD+ Project
Version	v1-0
Date of Issue	To Be Determined
Project Location	Belize, Orange Walk District
Project Proponent(s)	The Nature Conservancy Roberto Pott, Carbon Specialist roberto.pott@tnc.org
Prepared By	Terra Global Capital LLC info@terraglobalcapital.com
Validation Body	To Be Determined
Project Lifetime	1 January 2021 – 31 December 2050
GHG Accounting Period	1 January 2021 – 31 December 2050
History of CCB Status	First submission of Validation under the CCB Standard.
Gold Level Criteria	This project seeks recognition for Gold Level Biodiversity benefits.
Expected Verification Schedule	Verification planned for 2023

1. Summary for Belize Maya Forest REDD+ Project Description

1.1 Project Description and Purpose

- The Belize Maya Forest REDD Project is focused on protecting the forest; there are no plans for deforestation.
- The Project covers 87,059 hectares and includes the areas known as Yalbac and Laguna Seca that were being offered for sale to agricultural interests when they were being liquidated from two timber funds.
- From the total Project Area size, 79,963 hectares are available and suitable for conversion to agricultural uses in the absence of finance from a carbon trade program.
- These parcels were purchased by The Nature Conservancy (TNC) under an agreement of the government of Belize to prevent their conversion to agricultural lands. Through a combination of agreements, the Belize Maya Forest Trust (BMFT) was created, and the parcels were transferred to the trust for long-term protection and conservation of the land. The terms of the trust are unchangeable and will ensure the conservation of the Project Area for an indefinite (unlimited) period of time.
- Therefore, the climate and ecosystem benefits will far outlive the crediting period. The Belize Maya Forest trust will manage the parcels under the Conservation Action Plan (CAP) for on-going protection, preservation of biodiversity and to implement programs with neighboring communities.
- Had TNC not purchased these parcels, they would have been sold to agricultural interests that would have converted and continue to convert land around the Project Area for agricultural crop production and grazing.
- The Project will generate an estimated 994,478 average annual Verified Carbon Credits (VCUs) for a total of 29,834,353 VCUs over the 30-year crediting period.
- The funds from the proposed project will be used to pay a portion of the BMF's acquisition (purchase) costs, as well as to create an endowment (grant) whose proceeds will be invested in the annual operations of BMFT, the BMF trustee, administrator and manager.

1.2 Project Target Outcomes

- 29,834,353 tonnes (t) of carbon dioxide (CO_2) equivalent (tCO_2e) estimated net emission (release) reductions in the Project Area. “Carbon dioxide equivalent” is a standard unit for counting greenhouse gas (GHG) emissions.
- 79,963 estimated hectares of reduced forest loss in the Project Area for REDD projects.
- 87,059 hectares estimated to undergo improved management for biodiversity conservation
- 4 globally Critically Endangered or Endangered species is expected to benefit from reduced threats
- Surrounding non-forest land will improve land management practices
- Develop community capacity, knowledge, and project management institutions
- Improve skills and knowledge of female community member
- Create accurate project monitoring systems and build capacity for participatory monitoring of carbon, biodiversity and social impacts
- Development and implementation of sustainable forest and land use management plans

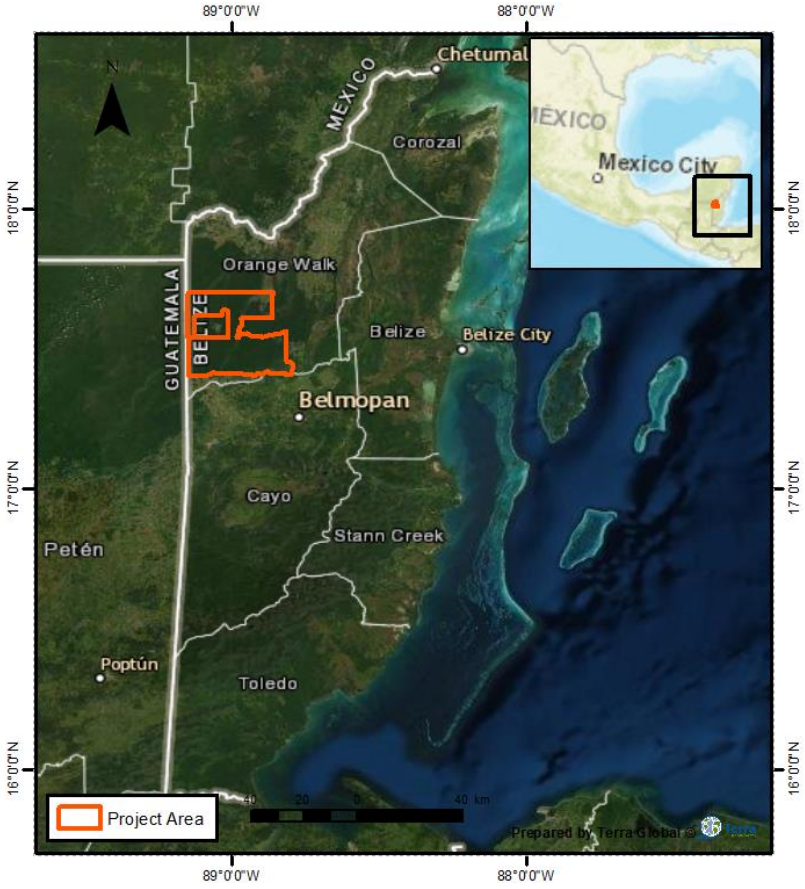
1.3 Location and Geographic Boundaries of Project Area

- The Project Area includes Yalbac and Laguna Seca properties. The Verified Carbon Standard (VCS) REDD+ project area (VCS #3126), which makes part of the Laguna Seca property, has been removed of the Project Area (*Table **1***)

The Project Area is located in the Orange District, Belize, 47.5 km northwest of Belmopan, at the vertex coordinates 17°41'57.0" N 89°08'57.1" W,17°42'07.6" N 88°51'40.8" W, 17°24'46.9" N 88°47'42.5" W and 17°24'12.4" N 89°08'59.5" W (*Map **1***).

Table 1. Project Area Size

	With 1326	Without 1326
Laguna Seca	42,147	33,715
Yalbac	53,344	53,344
Total	95,491	87,059



Map 1. Project Area Location

1.4 Unique Project Benefits

Outcome or Impact Estimated by the End of Project Lifetime	Section Reference
1) Jaguar populations within the Belize Maya Forest remain stable or improve	2.2.3
2) Protection of species of Global importance (Baird's tapir, spider monkey)	5.1.1
3) Protection of unique aquatic systems (25 Sacred Pools of Cara Blanca)	2.1.7
4) Protection of a portion of the watersheds of 3 major rivers in Belize	2.1.8
5) Protection of Historical and cultural sites (Maya Archaeological Sites)	4.2.4
6) Protection of Trinational Forest Connectivity	5.1.2

1.5 Standardized Benefit Metrics

Category	Metric	Estimated by the End of Project Lifetime	Section Reference
Reduction or absorption of Greenhouse gas (GHG) emissions	Estimated net removals of emissions in the project area, measured in relation to the without-project scenario	**N/A**	**3**
	Estimated net emission reductions in the project area, measured compared to the without-project scenario	**29,834,353 tCO2e**	**3**
Forest cover	Estimated number of hectares of reduced forest loss in the Project Area measured compared to the without-project scenario	**79,963 ha**	**3**
Improved land management	Number of hectares of non-forest land in which improved land management practices are expected to occur as a result of project activities, measured against the without-project scenario	**15**	**4**
Training	Total number of community members who are expected to have improved skills and/or knowledge resulting from training provided as part of project activities	**45**	**4**

2. Management Team and Structure

2.1 Project Governance Structure

The BMFT Board of Directors is BMFT's final decision-making and policy-making body, delegating certain responsibilities to its Chief Executive Officer to ensure efficient and effective operations. All BMFT operations are based on an approved annual budget to fund BMFT conservation action plan activities and other operational lines required with reserve maintenance. As the Project Proponent TNC, works with BMFT and implementing partners to develop the project and support BMFT in the administration for the implementation of the project onsite (*Figure **1***).

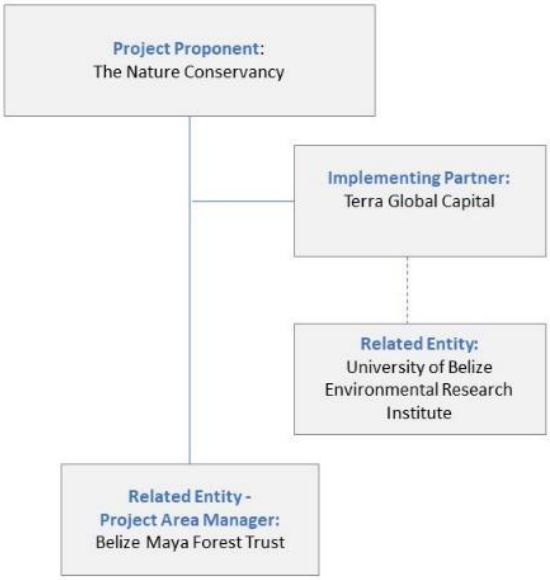


Figure 1. Project Governance Structure

2.2 The Nature Conservancy, USA.

The Nature Conservancy is a global conservation organization dedicated to conserving the lands and waters on which all life depends.

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  - roberto.pott@tnc.org

2.3 Belize Maya Forest Trust

The Belize Maya Forest Trust is a Belizean non-profit conservation organization that is responsible for the management of the Project Area.

- Point of Contact: Elma Kay
  - Managing Director
  - +501 610 3982

- ekay@bmft.org.bz

2.4 Terra Global Capital

Terra Global acts as an implementing partner for the development and on-going management of the emission reductions generated under the Project, supporting the registration, issuance and marketing of emission reductions.

- Point of Contact: Leslie Durschinger
  - Founder, CEO
  - +1 415 215 5941
  - info@terraglobalcapital.com
  - http://www.terraglobalcapital.com

2.5 University of Belize Environmental Research Institute – UB ERI

University of Belize Environmental Research Institute (UB ERI) provides specialized technical support for the field work to assess biodiversity, biomass, social and local administration support where needed for this validation.

- Point of Contact: Dr. Jake Snodden
  - Administrative Director
  - 501-822-2701
  - jsnaddon@ub.edu.bz

2.6 Complaints and Redress Procedure

It is important to note that BMF is privately owned; no community members live within the BMF boundaries, and members of stakeholder communities near the project do not have legal or customary rights to the land or resources within BMF. As such, BMFT's grievance response mechanism builds upon relationships with communities that were established through the conservation action plan development process and provides community members directly or through their community representative, an open-door option for friendly resolution of issues directly with BMFT staff.

The grievance procedure for the project will be managed by the BMF Community Outreach and Stewards Coordinator whose job is to liaise and work with Stakeholder communities and community groups. The complaint procedure and relevant contacts will be initially shared with communities/community groups and other stakeholders along with the project summary, and reminders and notes will be included in other relevant outreach communications.

3. Data Collected

3.1 Biomass

Biomass inventories are designed for measuring carbon pools and other properties related to forest conditions. The biomass inventories are carried out in forest areas inside the project area and data collected included:

- Aboveground live trees
- Aboveground saplings
- Standing deadwood
- Lying deadwood
- Litter and understory vegetation
- Soil carbon
- Canopy cover

3.2 Social

The objective of the community assessment developed by Terra Global is to determine the potential positive and negative effects that the project could produce over the communities in the Project Zone, as well as important community High Conservation Value (HCV) areas. The communities surveyed were Blue Creek, Spanish Lookout, San Felipe, Yalbac Village, La Gracia, Valley of Peace, Los Tambos and Buena Vistas.

The impacts expected in the communities are:

- **Climate Smart Farming Practices in BMF Communities**: In collaboration with national partners, farmers exchange and training programs would be developed to promote the use of climate-smart agriculture practices and regenerative agriculture. This will also include market identification and product development for the use of climate-smart agriculture practices.
- **Plan to maintain ecosystems and carbon stock of BMF**: The participation in joint patrols and trainings to support the improvement of surveillance and monitoring in BMF and by extension the Selva Maya Landscape in Belize. This will also promote information sharing on the illegal activities within the BMF with relevant national partners to support maintenance of predator and prey populations as well as their biological corridors.
- **Fire management system in BMF**: Belize Maya Forest rangers and local community members are to be engaged in collaborative fire management activities including dissemination of existing fire threat and weather monitoring tools to determine red flags; and development of map areas for tactical fire intervention and; opening of fire lines and controlled burns. Capacity building in fire management would reduce the instances of the damage to property and loss of resources in the forest areas. This addresses the forest health (ecological functions of connectivity, high biodiversity, productivity, nutrient cycling, and healthy reproduction) in BMF.

3.3 Biodiversity

The biodiversity assessment was carried out through observation points and camera traps. The project will generate net positive impacts on biodiversity within the project zone over the project lifetime. The project will maintain or enhances any high conservation values present in the project zone that are of importance in conserving biodiversity. The biodiversity indicators to be used are:

- **Habitat availability**: There is expected to be a complete preservation of existing mature forest habitat relative to the baseline scenario of converting the entire Project Area to sugarcane plantation.
- **Vertebrate species richness**: In the without-project scenario nearly a 100% loss in biodiversity would be expected. In the with-project scenario, nearly 100% of biodiversity is expected to be conserved.
- **Effectiveness of Anti-poaching Activities**: The presence of Baird's tapir (IUCN Endangered) and monkey species is used as a proxy for the effectiveness of anti-poaching activities. Patrols and arrests related to poaching and other illegal activities will occur in the Project Area.

4. Monitoring

4.1 Biomass

The following data is gathered each monitoring period: Biomass inventories measuring carbon pools and other properties related to forest conditions. The biomass inventories are carried out in forest areas inside the project area. Field biomass inventories measure:

1. Aboveground live trees
2. Aboveground saplings
3. Standing deadwood
4. Lying deadwood
5. Litter/understory vegetation
6. Soil carbon

Allometric equations are used to measure carbon in the following:

1. Aboveground and below tree biomass
2. Aboveground deadwood biomass

Samples are taken from the following to determine their carbon content:

1. Litter and understory vegetation
2. Soil

Other measurements include:

1. Canopy cover
2. Description of the plot

As so much data is gathered through the biomass inventories there are many QA/QC procedures that verify that quality data is gathered. Biomass inventories closely follow the Standard Operating Procedure (SOP) and measurements are conducted by the crews who conduct the inventory. The SOP is an official document that will be used to verify that the same measurement techniques will be conducted over time. If new techniques are more accurate than those listed in the SOP then new techniques will be adopted following adaptive management. The biomass plots will be revisited and remeasured in the future, so that carbon increases or decreases will be measured.

For the full Monitoring Plan see the *Belize Maya Forest REDD+ Project Impact Monitoring Plan Climate, Community & Biodiversity Standard* which is a separate document.

4.2 Social

The community monitoring variables are directly linked to the project's objectives for communities and targeted outcomes and impacts. This included monitoring effectiveness of measures taken to maintain or enhance all identified high conservation values (HCV) related to community well-being which for the Project relate to Cara Blanca Pools.

Monitoring the impacts on communities that are generated by the Project relies on a two-pronged approach to data collection using Impact Monitoring Data collection of Household Surveys (HHS) and Participatory Rural Appraisals (PRAs), and Operational Performance monitoring for collection of data to report on the CAP Indicators and project implementation work plan indicators.

4.2.1 Monitoring Community Indicators

The following Community Impact indicators have been defined for the Project and are directly linked to the project's objectives for communities. As the data for many indicators are from household surveys conducted at each monitoring period, they are often measured proportions of the total sample of the number households surveyed rather than the total for the whole Project.

- **Indicator C1. Increased awareness and knowledge the importance of conservation of the BMF forest:** The on-going protection and/or enhancement of the forest cover, wildlife, water and community HCV areas depend on the level of awareness and knowledge that the communities have regarding conversation benefits. This indicator is designed to measure the impact that the Project Areas have on neighboring communities that support of conservation and sustainability.
- **Indicator C2. Reduced contamination and destruction of Cara Blanca Pools:** The Cara Blanca pools are HCV areas for communities as they provide recreation and cultural significance given with the Mayan artifacts. This indicator will measure the conditions of the Pools for cultural and environmental value.
- **Indicator C3. Reduced impact of wildfires in the BMF and surrounding landscape:** Fires, while not common inside the Project Area, regularly affect the forest edges of the property. These fires are usually started by hunters and farmers from the surrounding community. An objective of the Project is to reduce the frequency and impact of fires near the Project Area. This is done through community engagement and education.
- **Indicator C4. Increased knowledge and adoption of new agriculture practices that do not include fire:** To meet the objective of reducing fires, particular from burning crop residual, it is necessary to provide support to farmers for adoption conservation agriculture practices that do not require burning. This indicator seeks to measure the impact on the communities for adoption of new agricultural practice to replace burning.

4.2.2 Monitoring Community HCV Areas

The BMF Project is a community-based project focusing on effectively maintaining, and if possible, enhancing all identified High Conservation Values (HVC) areas related to community well-being. At Project Start the following area were identified by communities and project partners as areas of High Conservation Value, that maybe effected by the BMF REDD+ Project:

- Cara Blanca Pools

The monitoring of this Area includes criteria for effective management include social parameters listed below. For the HCV areas listed above the following is asked in the Participatory Rural Appraisal:

1. Description of area
2. Is this area culturally significant?
3. If culturally important, list why
4. Is this area ecologically significant?
5. If ecologically important, list why.

These social parameters help identify the area and understand why it is important to the community. The communities' feedback and data about the Cara Blanca Pools and its importance, use, and conditions are documented in the PRAs and household surveys.

4.2.3 Monitoring Women and Vulnerable Groups

Vulnerable groups are people that are at a higher risk of slipping into poverty based on their socio-economic conditions. Therefore, vulnerable groups can include elderly, at-risk children and youth, mentally and physically disabled, displaced persons, religious and ethnic minorities and women. Determining poverty is based on the income level and whether that income allows members of a household to access goods and services. The Multidimensional Poverty Index determines poverty based on other indicators including access to health – child mortality and nutrition; education level – years of schooling and school attendance; and standard of living – cooking fuel, sanitation, drinking water, electricity, housing and household assets. In the context of this project the definition of vulnerable populations includes indicators of the multidimensional poverty index. The vulnerable include female headed households with a weekly income less than $150; male headed households with weekly income with a weekly income less than $150; head of household with less than six years of schooling; households that utilize solid fuel as the source and cooking and heating energy. To ensure that the project identifies the incidence of poverty in the stakeholder communities household surveys are conducted, the data collected will be utilized to report on the socio-economic conditions in the Monitoring Report. Data gathered includes:

1. % Women involved in income generation activities
2. The number of people that live in the household
3. Household weekly income ratio to number of people in the household
4. The source of cooking/heating energy
5. The source of light energy
6. The distance to the nearest health center
7. The number of schools in the community
8. Head of household level of educational attainment

Disadvantaged communities in the BMF Project were identified at Project Start and as:

1. Residents with limited diversity in income opportunities
2. Head of household not completing six years of schooling
3. Source of cooking/heating energy is a solid fuel (firewood, coal, etc)

4.3 Biodiversity

4.3.1 Monitoring Biodiversity Indicators

Project level biodiversity impact indicators were developed to measure improved biophysical conditions and biodiversity as a result of the Project. The biodiversity indicators to be used are

habitat preserved, species richness, mature forest habitat, effectiveness of anti-poaching. For species, primary biodiversity indicator to be used are vertebrate species richness.

Specific measurements for the Project-level indicators include are described in the indicators below:

- **Indicator B1. Improved habitat for wildlife:** For this indicator, performance is measured by number of hectares showing improved habitat availability, which at the project start is the entire Project Area since it was not converted to agriculture. Over time, the conditions of the Project area will be monitored and 'improved bio-physical conditions' means stabilization, improvement or slowing of the rate of in habitats which will include forest cover and any other habitat for wildlife. The data is gathered through remote sensing analysis and field data reports.
- **Indicator B2. Reduction of Fire in and around Project Area:** Fires have a significant impact on biodiversity, and if not contained they will threaten habitats and species in the Project Area. This indicator measured the impact on biodiversity of reduction in fire incidence and magnitude.
- **Indicator B3. Increased presence and health of Wildcats and other trigger species:** During the Monitoring Period, documented evidence of one or more trigger species must be present in the Project Area. For wildcats and each Trigger Species identified, it is determined if the number is increasing or decreasing.
- **Indicator B4. Effectiveness of Anti-poaching Activities:** This indicator measures the results of anti-poaching activities both inside and outside of the Protected Areas.
- **Indicator B5. Improve Quality of water:** This indicator is focused improving the aquatic ecosystems that have been largely affected due to the influence of anthropogenic activities in the surrounding communities, particularly in relation to the Black and Labouring creeks. Within the BMF, rivers, creeks, and other waterways are considered in good condition.

4.3.2 Monitoring Biodiversity HCV Areas and Exceptional Biodiversity Benefits

Given that the entire Project Area id defined at HCV as it supports regionally and nationally significant concentrations of biodiversity values of threatened species, the monitoring of the indicators for HCVs are conducted using biodiversity indicator 3.

Indicators of population trends for each HCV are considered a combination of habitat availability and presence as indicated by detections during biodiversity surveys. Maintenance of these species is considered achieved when the habitat is protected, and the species is still detected using the site. The three trigger species, all HCV species as well, are considered highly detectable by tracks/scat, calls, or visibility in the forest. The project is considered effective as these populations continue to be detected by monitoring

5. Processes of Dissemination

5.1 Dissemination of Summary Project Documents

- Summary project documentation in the form of simplified posters or fliers will also be placed in hard copy at strategic locations in each village and shared with village council chairperson but in addition will be shared with village councillors that have access to internet via smart phones through a WhatsApp group.
- Village councillors will then pass on summary documentation to other villagers.
- Summary documentation will be shared with all other stakeholders by providing links to summary documentation via email or WhatsApp groups.

- The summary project documentation will be available in Spanish and English.

5.2 Comments from Stakeholder Meetings and Formal CCB Public Comments on the Results

- BMFT will hold several community workshops as well as UBERI will be in communication with all relevant stakeholders to present the VCS/CCB Project Document, gather feedback and notify them of the 30-day comment period so that they could submit comments privately to the CCB via the website CCBstandards@v-c-s.org.
- All relevant Public Comments submitted to the CCB during the public comment period will be addressed.
- Continued communication and consultation between the project proponents and communities and other stakeholders will be ensured in two main ways: the hiring of a Community Outreach and Stewards Coordinator, whose responsibility will be to stay in touch and liaise with community stakeholders on the project and any other BMF matters and engaging in a new conservation action planning process every 5 years.
- During the review of the conservation action planning the results from the monitoring plan as well as the feedback from the stakeholder will be incorporated to adapt the work plan and achieve further conservation results.