Gold Standard for the Global Goals

TEMPLATE

KEY PROJECT INFORMATION & PROJECT DESIGN DOCUMENT (PDD)

PUBLICATION DATE **29.06.2023**

VERSION **v.1.5**

RELATED SUPPORT

- TEMPLATE GUIDE Key Project Information & Project Design Document

This document contains the following sections

This template has been revised to aid a consistent interpretation and to better support project developers submitting documentation for certification. Please read the accompanying guide to understand how to complete this template accurately.
TEMPLATE GUIDE Key Project Information & Project Design Document

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KEY PROJECT INFORMATION

GS ID of Project	2940
Title of Project	CO2OL Tropical Mix
Time of First Submission Date	12/07/2016
Date of Design Certification	07/10/2013
Version number of the PDD	5.1
Completion date of version	28/06/2024
Project Developer	FORLIANCE GmbH
Project Representative	Mr. Julian Ekelhof / Mr. German Rodriguez
Project Participants and any communities involved	Eco Cebaco S.A. (EC) Forest Finance S.A. (FF) Sustainable Timbers S.A. (ST) Quetzal Blue S.A. (QB) - *new* Pan Boca del Monte S.A. (PB) - *new*
Host Country (ies)	Panama
Activity Requirements applied	☐ Community Service Activity ☐ Renewable Energy ☒ Land-Use and Forests Activity Requirements/Risks & Capacities ☐ N/A
Scale of the project activity	☐ Micro scale ☐ Small Scale ☒ Large Scale
Other Requirements applied	
Methodology (ies) applied and version number	Gold Standard Afforestation/Reforestation (A/R) GHG Emissions Reduction & Sequestration Methodology Version 2.1

	A/R Soil Carbon Tool V.1.1.0
Product Requirements applied	☒ GHG Emissions Reduction & Sequestration ☐ Renewable Energy Label ☐ N/A
Project Cycle:	☒ Regular ☐ Retroactive

Land-use & Forest Key Project Information[1]

(delete below table if N/A)

Scope:	☒ Forestry ☐ Agriculture
Silvicultural system:	☐ Conservation (no use of timber) ☒ Selective Harvesting ☐ Rotation Forestry
Project Area (ha):	

Company	Area (ha)
FF	3,146.88
EC	1,763.3
ST	7,262.3
QB	670.48
PB	398.96
Total	**13,242**

Eligible Area (ha):	

Company	Area (ha)
FF	2,087.5
EC	1080.8

[1] Please refer to Appendix 3 for detailed information on LUF projects

	ST 4661.1 QB 379.7 PB 330.3 **Total** 8,539.4
10% Set Aside Conservation area (ha):	**Company** / **Area (ha)** / **Source** FF / 860.03 / Shapefiles EC / ca. 939.0 / Shapefiles ST & QB / 2,809.6 / Shapefiles PB / 61.11 / Shapefiles **Total** / **ca. 4,669.75 = 35.26 % of the project area**
Evidence that Project Area Boundary is clearly distinguishable in the field:	Areas indicating indigenous, administrative limits, road and poblados (local communities) have been included. Most of the farms are fenced. The Isla Cebaco area is not fenced but as these farms are based on an island, the difference between reforested and managed areas and other areas is obvious.
Planting Area	8,539.4 ha
How many Modelling Units (MUs) are included in the eligible area:	60 (see Carbon Model 2024): FF: 38 ST & QB: 11 EC: 3 PB: 8
Summary of New Areas added (copy and insert as needed):	
Size (ha):	N/A
Date Added	N/A

Table 1 – Estimated Sustainable Development Contributions

SUSTAINABLE DEVELOPMENT GOALS TARGETED	SDG IMPACT (DEFINED IN B.6)	ESTIMATED ANNUAL AVERAGE	UNITS OR PRODUCTS
13 Climate Action (mandatory)	Emissions Removals	140,800	VERs
SDG1: No Poverty	Number of local communities benefitting from the project´s investments	5	communities
SDG8: Decent Work and Economic Growth	Nr. of persons on Payroll (full-time & part-time employees)	> 150	Persons on payroll
	Nr. of working hours per week (m/w), including overtime	40	Working hours/week
	Nr. of training or workshops provided to the employees	1	capacity building workshop
SDG12: Responsible Consumption and Production	Share (%) of timber volume verified and certified by FSC, and percentage of cocoa volume certified by UTZ in selected areas of the project	100	%

SDG 15: Life on Land	Areas (ha) of degraded land and soils restored in comparison with the baseline scenario	8,539.4	Ha
	Share (%) of conservation areas of the project area	30	%
13 Climate Action (mandatory)	Emissions Removals	140,800	VERs
SDG1: No Poverty	Number of local communities benefitting from the project´s investments	5	communities
SDG8: Decent Work and Economic Growth	Nr. of persons on Payroll (full-time & part-time employees)	> 150	Persons on payroll
	Nr. of working hours per week (m/w), including overtime	40	Working hours/week
	Nr. of training or workshops provided to the employees	1	capacity building workshop
SDG12: Responsible Consumption and Production	Share (%) of timber volume verified and certified by FSC, and percentage of cocoa volume certified by UTZ in selected areas of the project	100	%

SDG 15: Life on Land	Areas (ha) of degraded land and soils restored in comparison with the baseline scenario	8,539.4	Ha
	Share (%) of conservation areas of the project area	30	%

SECTION A. DESCRIPTION OF PROJECT

A.1 Purpose and general description of project

>> Represented by FORLIANCE GmbH, CO2OL Tropical Mix Project is part of the implementation and forest management of a carbon reforestation project with the aim of contributing to the mitigation of climate change and social risks in developing countries.

The project consists of several properties spread over four regions of Panama: Veraguas, Darién, Chiriquí, Bocas del Toro and Panamá. Degraded land, last used for extensive cattle ranching, is reforested with mostly native tree species and gradually converted into mixed forests. The project provides for sustainable timber production and cocoa cultivation; it protects biodiversity and restores a healthy forest ecosystem.

Sustainable forest management and cocoa production offer employment opportunities, therefore, improve the economic and social situation of rural communities and families in the project areas. Moreover, the project helps to promote mutual learning and knowledge transfer.
CO2OL Tropical Mix has been one of the first in line to be successfully certified under the renowned Gold Standard for land use and forestry projects; the cocoa production areas have been the first agroforestry systems to be certified under the Gold Standard. The CO2OL Tropical Mix Project together with local forest plantations companies promotes rural and productive development through reforestation activities with mixed,

mainly native tree species, sustainable forestry plantation management and the provision of environmental services. Specific silvicultural and forest management tasks are defined between the participants. The application of a poly-cyclic harvesting system aims to ensure a relatively high average carbon storing capacity in the plantations.

The plantations are owned by the following companies and project participants:

- Eco Cebaco S.A. (EC)
- Forest Finance S.A. (FF)
- Sustainable Timbers S.A. (ST)
- Quetzal Blue S.A. (QB)
- Panama Boca del Monte (PB)

EcoCebaco and Sustainable Timbers are in practice represented by Panama Reforestation Services (PRS), who manage the areas on-site (see Figure 1). Since 2019, PRS also manages Quetzal Blue S.A. (QB), an additional company originating from Sustainable Timbers and owning some of ST's former project areas.

Furthermore, ForestFinance has sold the land "Boca del Monte" ("BMO") previously included in the project to Panama Boca del Monte. This land is administered by the companies 12tree and RRG Nature Based Solutions (RRG NBS).

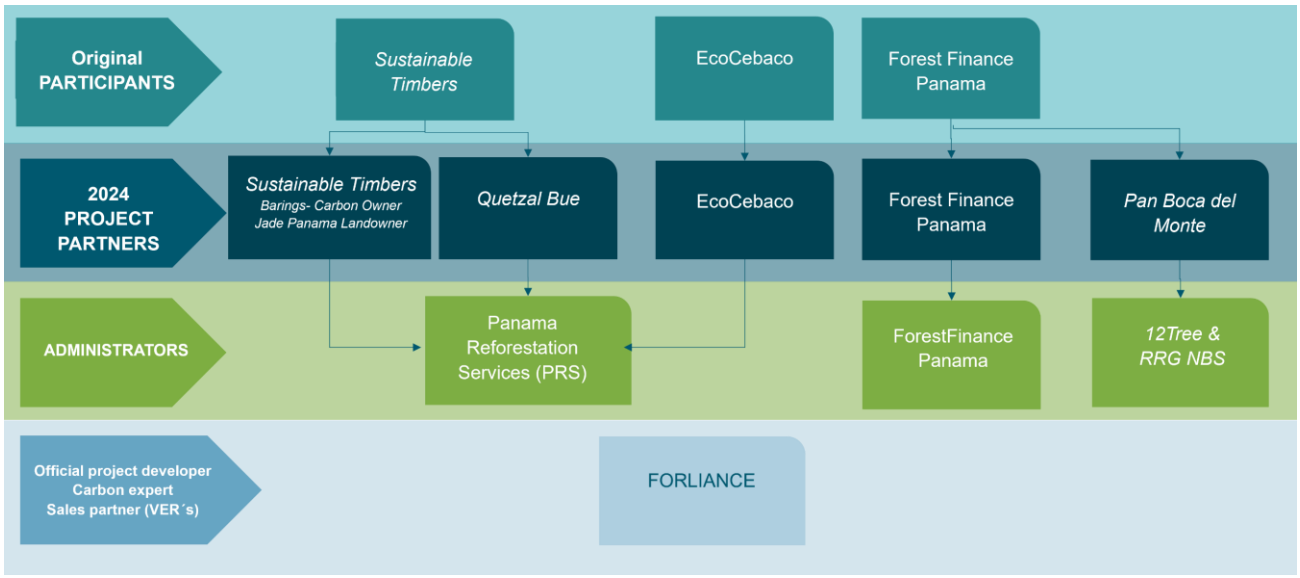

Figure 1: Overview of project management structure

The objective of the project is producing high-quality hardwoods in the long-term at the same time as sequestering a high amount of carbon while stabilizing and restoring fragile and degraded areas in an economically, socially, and ecologically viable way.

In contrast to common reforestation schemes, the project concept also makes use of native tree species in a mix with a round of non-native species, mostly Teak (*Tectona grandis*) of approximately 50-60%, to create sustainable and species-rich forests with the use of high-quality hardwoods and the creation of an additional income from carbon credits. These carbon offset credits can be traded on international carbon markets and are certified according to high-quality carbon standards. Overall, the project-specific objectives are the following:

1. Establishment of profitable production- and conservation systems, enabling the enterprises to work in a beneficial way through the creation of investment opportunities, which are economically, ecologically and socially sound.
2. Creating year-round work opportunities in the areas of activity that allow the development of a stable work environment for women and men, helps the development of these regions. This is especially reflected by the large share of workers stemming from several of the nine indigenous groups in Panama, where unemployment rates are especially high. Furthermore, the project excels in regards of the share of women especially in the higher management positions (see folder TMIX22_FOFI_Employees).

A.1.1. Eligibility of the project under Gold Standard

>> >> i.&ii. Predefinition of eligibility:

Since the project has transitioned to GS from a previous version, the Transition requirements (3.1.5.) apply: "Transition of a project to GS4GG during the ongoing crediting period will not affect its eligibility under the standard, applicability of applied methodology and additionality already demonstrated."

iii. General Eligibility criteria of LAND USE & FORESTS ACTIVITY REQUIREMENTS Version 1.2.1, 2.1.1:

(a) *Eligible project types are Afforestation & Reforestation Projects (A/R) and Agriculture Projects (AGR).*

The project is reforesting degraded grasslands with native and exotic tree species and is therefore an A/R project.

(b) *No Deforestation: The eligible area shall not meet the definition of forest 10 years before project start date and at project start date.*

A.1.2. Before the project activity started, the baseline of the project area was a mix of grassland and pioneer shrubs. All these areas were evaluated and classified as applicable planting areas for reforestation and agroforestry activities. Other small patches of forest left were classified and nowadays managed as conservation areas[2]. The eligible area was already validated using historical satellite imagery that proves that no deforestation has occurred in the project area. In addition, the implementation of forest plantation in Panama requires an environmental impact study that needs to be meet the requirements of "DECRETO LEY No.1" that prohibits the deforestation (see also A.1.1.. vii) The remote sensing analysis and the supporting documentation confirmed that all the planted area is eligible.

(c) *In the case when the eligible area has been deforested during the last 10 years prior to project start date, the eligibility of the project shall be determined by Gold Standard as part of the Preliminary Review. The Project Developer shall provide evidence that the deforestation activity has not taken place with an intention to implement project activities that generate Gold Standard Certified SDG Impact Statements and/or Products, such as GSVERs*.

No deforestation has taken place in the last 10 years before the project start date.

[2] See TMIX16-APP1-Analisis historial uso de tierras

(d) *Projects can be implemented in any country. If projects are located in a country or state that has an operational mandatory national or pan-national cap-and-trade scheme to reduce greenhouse-gas (GHG) emissions, and hereby accounts for its own land-based activities under its national or subnational accounting, then projects seeking GSVERs shall conform to the GHG Emissions Reduction and Sequestration Product Requirements - Annex A Double Counting Requirements.*

Regarding voluntary carbon projects, Panama allows the development of voluntary carbon offset projects. These projects enable organizations or individuals to voluntarily reduce their carbon footprint by investing in emission reduction or removal activities. While there is not specific legislation or regulation solely dedicated to voluntary carbon projects, the general legal framework for environmental management and climate change is the National Strategy for Climate Change 2050 (Decree No. 34 of 2019)[3], This law establishes the legal framework for addressing climate change in Panama. It includes provisions related to the reduction of greenhouse gas emissions, adaptation to climate change impacts, and the promotion of sustainable development. Thus, The National Climate Change Law provides the context and allowance for voluntary carbon initiatives in Panama, while further regulation is developed

iv. The project is not registered with any other voluntary or compliance scheme.

v. Panama has no enforced emission reduction cap.

vi. There is no overlap with any other voluntary or compliance carbon project.

vii. The project is in compliance with Panama's legal, environmental, ecological and social regulations.

[3] https://www.undp.org/es/panama/publicaciones/estrategia-nacional-de-cambio-climatico-2050

Main regulation	Description	Compliance
	Environmental Law	
Law No. 24 of 1995 (Environmental Framework Law)	This law establishes the legal framework for environmental management and protection in Panama, including provisions related to environmental impact assessments, environmental permits, and sanctions for environmental violations.	Project is in compliance
Executive Decree No. 34 of 2019 (National Strategy for Climate Change 2050)	This law establishes the legal framework for addressing climate change in Panama. It includes provisions related to adaptation, mitigation, and monitoring of greenhouse gas emissions.	Project is in compliance
	Forestry Law	
Law No. 1 from 1994 (Forestry Law)	The purpose of this Act is the protection, conservation, improvement, enhancement, education, research, management and rational use of the forest resources of the Republic.	Project is in compliance
Law No. 41 of 1998 (Forestry Law)	This law regulates forest resources and promotes their sustainable use, conservation, and restoration. It establishes procedures for forest management plans, reforestation, and protection of forest ecosystems.	Project is in compliance
Executive Decree No. 86 of 2002 (Forest Management Regulations)	This decree provides detailed guidelines for the preparation and implementation of forest management plans. It outlines the requirements for sustainable forest management practices, including the establishment of forest inventories, timber harvesting techniques, and the	Project is in compliance

Main regulation	Description	Compliance
	protection of biodiversity and water resources.	
Executive Decree No. 50 of 2012 (Forest Inventory and Monitoring System):	This decree establishes the Forest Inventory and Monitoring System in Panama. It defines the procedures and guidelines for conducting forest inventories, monitoring forest resources, and collecting data on forest cover, biodiversity, and ecosystem services.	Project is in compliance and the Forestry Management Plans address all national requirements
Executive Decree No. 367 of 2015 (Forest Fire Prevention and Control):	This decree establishes guidelines for preventing and controlling forest fires in Panama. It outlines measures for fire prevention, early detection, response, and the establishment of fire management plans	Project is in compliance and the Forestry Management Plans address all national requirements
	Occupational Health & Safety	
Occupational Health and Safety Law, which is part of the Labor Code (Law No. 1 of 1972).	This law establishes requirements for employers to provide a safe and healthy work environment for employees. It covers areas such as risk assessments, accident prevention, training, protective equipment, and reporting of workplace accidents and incidents.	Project is in compliance
	Labor regulation	
Panamanian Labor Code is contained in Law No. 2 of 2017	The Panama Labor Code is a comprehensive compilation of the labor regulations governing employer-employee relations in the country.	Project is in compliance

A.1.3. Legal ownership of products generated by the project and legal rights to alter use of resources required to service the project

>> The project participants have full and uncontested legal ownership of the carbon credits generated by this project.

The project participants have full legal land tenure of the project sites and thereby all rights attached to it.

Supporting documents:

- Credit-rights_example_VER_Sales_Framework_EcoCebaco

A.1.4. Land_tenure_Procedimiento compra de fincas

A.1.5. Folder "Proof-of-Land-Tenure"

A.2 Location of project

>> The project areas are spread over the Panamanian Departments Chiriquí, Veraguas, Panamá and Darién (see Figure 2). More detailed information can be derived from the supporting maps and shapefiles in the folder "Project Area".

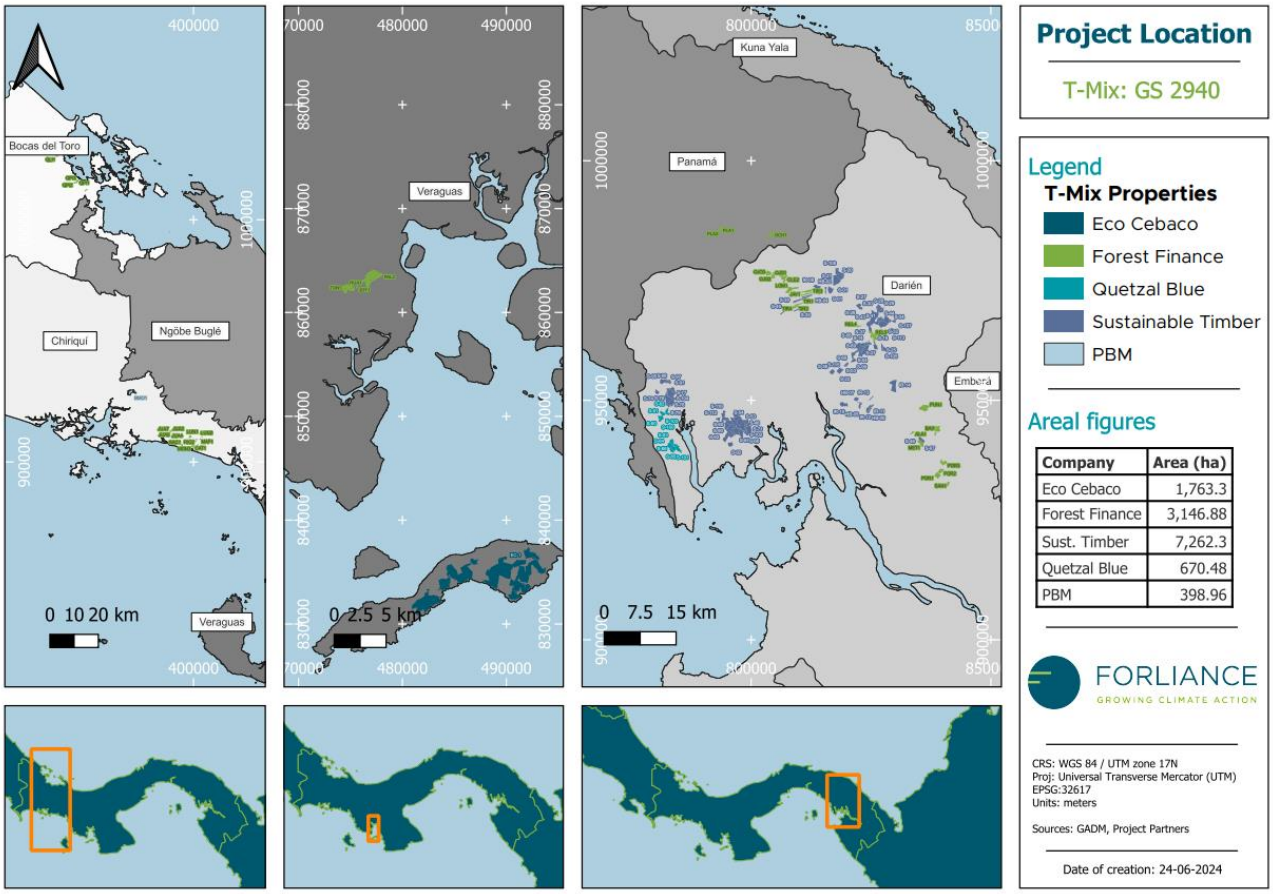

Figure 2: Project Location

Land Owner	Offices (of representative)	Location of Project Areas (Province)
Forest Finance Panama S.A.	Clayton, Ciudad Del Saber, Edificio 146 A y B Calle Gustavo Lara, Panamá, Panama	Darién, Panamá, Veraguas, Chiriquí, Bocas del Toro
Sustainable Timbers	PH Global Plaza 22nd Floor, Office A 50th Street Panamá, Panama	Darién
Quetzal Blue	PH Global Plaza	Darién

	22nd Floor, Office A 50th Street Panamá, Panama	
EcoCebaco	PH Global Plaza 22nd Floor, Office A 50th Street Panamá, Panama	Veraguas
Pan Boca del Monte	Comunidad el Maria Boca del Monte Provincia de Chiriquí Panama	Chiriquí

A.3 Technologies and/or measures

>> >> i. The project installed a selective harvesting forestry system. The following species are planted:

1. *Anacardium excelsum*
2. *Astronium graveolens*
3. *Acacia mangium*
4. *Bombacopsis quinata*
5. *Cordia alliodora*
6. *Cedrela odorata*
7. *Dipteryx panamensis*
8. *Dalbergia retusa*
9. *Hieronyma alchorneoides*
10. *Inga* sp.
11. *Khaya senegalensi*
12. *Ormosia* sp.
13. *Sterculia apetala*
14. *Swietenia macrophylla*

15. *Terminalia amazonia*
16. *Tectona grandis*
17. *Tabebuia guayacan*
18. *Tabebuia rosea*
19. *Theobroma cacao*
20. *Vochysia guatemalensis*
21. *Paulownia imperial*
22. *Paulownia trifolia*
23. *Platymiscium* sp.
24. *Terminalia* sp.

Additionally, remaining natural forest patches are put under conservation to enhance ecological connectivity and avoid further emissions from ecosystem conversion. The spatial distribution of species planted, and conserved areas can be seen in the folder "Project_Pluse"[4].

ii. Once planted, the trees continue growing and accumulating C until reaching the age of 25, from which point onwards they are harvested when deemed profitable. Afterwards, wood is used for in the timber industry (construction, furniture, etc.). Thus, CO_2 continues to be stored in long-lived products. The project is considered to follow a selective harvesting system due to the long rotation period and the fact that only a few lands will have reached harvesting age by the end of the crediting period. Thus, carbon calculations are based on a selective harvesting/conservation model.
Routine inspection of the tools and machines used for site preparation and harvesting are conducted on a regular basis by the person responsible for maximizing their lifespan.

iii.

[4] In the case of Ecocebaco, no spatial information of the exact boundaries of the Monitoring Units is available. The information on the hectarage of planted areas per species comes directly from the project participant and the spatial land use information provided as supporting documentation should be seen as a proxy.

The project's main goal is to create mixed forests. This goal has already been accomplished on the majority of farms due to the project's advanced age. Before the project activity started, the baseline of the project area was a mix of grassland and pioneer shrubs. Small patches of forest left were classified and nowadays managed as conservation areas. Other areas (previously planted or due to the project activity) located on the border of a river or other watersheds are also classified as conservation areas.

Most of the remaining areas (areas belonging to the participants ForestFinance, Pan Boca del Monte and EcoCebaco were reforested using an innovative design that mixes the planted species by alternating stripes. With this approach, large monocultures were avoided, and a near-natural ecosystem was built up. The stripes are planted with different tree species. The width of each stripe should not exceed 70 m to avoid the effects of large monocultures. For rational management, we recommend a minimal width of 30 m to provide rational care. The intervals and width of each stripe indirectly regulate the percentage of species on the farms.

In the following table the relation between the width and the length of the stripes is demonstrated.

Width [m]	70	80	90	100	110	120	130	140	150	160	170	173,21
Length [m]	~	375	333	300	273	250	231	214	200	188	176	173,21

Within these stripes, trees are planted in rows, at a 4x4 meter distance resulting in a total number of 1111 planted trees per hectare. The saplings must have a minimum size of at least 8 cm (Teak) and 15 cm (native species) at the time of planting, to be able to out-compete surrounding vegetation.
The stripes concept is not applied to areas belonging to Sustainable Timbers and Quetzal Blue. Here, we find plantations consisting solely of Tectona Grandis. Nevertheless, these plantations protect existing forest patches (conservation areas) and are integrated into a mosaic landscape.

After planting, the additional use of fertilizer is not intended; only on very poor soils, soil melioration activities to influence the soil chemical properties are applied.

Project participants apply a selective harvesting system. Therefore, thinning is done four times during the first 25 years of a planted parcel. The main objectives of thinning are:

- increased light penetration to develop bigger crowns to accelerate diameter growth
- increased percentage of trees reaching maturity
- improved wood quality
- encouraged root development
- control of ground cover vegetation for erosion control

The trees selected for thinning shall be selected to maximize the volume and value of the trees left for later thinning or felling, when larger piece size prices will be higher. A sanitary thinning will be executed followed by a selective thinning and roughly 50% of the original trees removed in these thinning by year five. Non-commercial trees will be left on the ground for nutrient release to the soil, support fauna and flora, thus increasing total biodiversity.
Weeds are generally controlled by mechanical means and only in exceptional cases the use of herbicides that comply with national-/ international laws, the regulations of the FSC as well as the selected carbon standard that will be used. Only herbaceous plants and grasses are removed but no woody vegetation will be removed even if competition with planted trees exists. All trees that remain on the site after the planting preparation are part of the natural vegetation. If herbicides are applied, it´s use is documented precisely, and the workers will receive sufficient training and proper equipment to minimize environmental and health impacts.

- Folder "Forest Management" for management practices

A.4 Scale of the project

>> Large scale. Emission reduction is above 16,000 tCO_2e/yr[5], which is the cap for small-scale forestry projects.

[5] https://globalgoals.goldstandard.org/ru-2021-smallholder-small-scale-and-microscale-definitions-and-requirements-for-land-use-and-forestry-luf-projects/

A.5 Funding sources of project

i. >> >> The project receives no public funding. All income stems from the revenues of the sale of carbon credits, timber and cocoa.

ii. Official Development Assistance (ODA): Not needed.

SECTION B. APPLICATION OF APPROVED GOLD STANDARD METHODOLOGY (IES) AND/OR DEMONSTRATION OF SDG CONTRIBUTIONS

B.1. Reference of approved methodology (ies)

>> Gold Standard Afforestation/Reforestation (A/R) GHG Emissions Reduction & Sequestration Methodology Version 2.1.

B.2. Applicability of methodology (ies)

>> 1. Areas shall not be on wetlands.

As verified before, the project is not located on wetlands[6].

2. Areas with organic soil shall not be drained or irrigated (except for irrigation for planting):

The plantations are located in a climate zone with average year precipitations of 2,000 mm. Therefore, no artificial irrigation systems are needed.

3. Soil disturbance (through ploughing, digging of pits, stump removals, infrastructure, etc.) on organic soils shall be in less than 10% of the area that is submitted to certification (not 10% of the entire project area).

All MUs are managed in an economic, but at the same time ecological way. Negative impacts of silvicultural operations will be minimized through the following actions:

- The accumulation of dead wood and coarse woody debris will be encouraged.
- Trees from sanitary thinning will remain in the stand to support nutrient recycling.
- Cutter branches from pruning operations stay on the site.
- Dead trees won´t be logged if they don´t interact with future crop trees.

[6] See folder „FAR_hydrology"

Ploughing is not common in the operations. However, traditional ploughing techniques were used mainly for preparing the field before tree planting. Manual ploughing with shovels was applied. The mentioned technique prevented soil compaction. Manual ploughing protected the deeper soil layers and improve soil conditions for better tree growth. Since the planting period is over, no more ploughing will be necessary and it will be possible to guarantee that no soil carbon emissions will occur in the long-term.

4. The most likely scenario without the project (baseline scenario) shall be defined for the project area. This scenario shall not show any significant increase of the Baseline biomass ('tree' and 'non-tree').

The land cover at the starting project is dominated by pastures and shrubs and will stay like that without intervention of the project. Most of it is abandoned rural land or land used for cattle herding as a subsistence activity. Therefore, it is not a forest at the project start.

Supporting document: TMIX16-5.1 - Template - Applicability

B.3. Project boundary

>>

Source		GHGs	Included?	Justification/Explanation
Baseline scenario	Above Ground Biomass	CO_2	Yes	The AGB of all woody and non-woody biomass present is pastures has been accounted for.
		CH_4	No	Minor emission source
		N_2O	No	Minor emission source
	Below Ground Biomass	CO_2	Yes	The BGB of all woody and non-woody biomass present is pastures has been accounted for.
		CH_4	No	Minor emission source
		N_2O	No	Minor emission source
	Soils	CO_2	No	The project does not include disturbance of organic soils. Emissions are not expected in this compartment.
		CH_4	No	The project does not include disturbance of organic soils.

				Emissions are not expected in this compartment.
		N_2O	No	The project does not include disturbance of organic soils. Emissions are not expected in this compartment.
	Harvested Wood	CO_2	No	Not required
		CH_4	No	Not required
		N_2O	No	Not required
	Litter & lying dead-wood	CO_2	No	Not required
		CH_4	No	Not required
		N_2O	No	Not required
Project scenario	Above Ground Biomass	CO_2	Yes	During project cycle, trees will grow, sequester, and stock carbon on their trunk, branches and leaves.
		CH_4	No	Minor emission source
		N_2O	No	Minor emission source
	Below Ground Biomass	CO_2	Yes	While trees are growing, they will be capturing and storing carbon through their roots. Those roots will not be removed; as a result, the carbon will remain stored.
		CH_4	No	Minor emission source
		N_2O	No	Minor emission source
	Soils	CO_2	Yes	Soil carbon was included because removals from soil carbon were considered significant. The GS AR Soil Carbon tool was used.
		CH_4	No	Minor emission source
		N_2O	No	Minor emission source
	Harvested Wood	CO_2	Yes	Not required
		CH_4	No	Not required
		N_2O	No	Not required
	Litter & lying dead-wood	CO_2	Yes	Not required
		CH_4	No	Not required
		N_2O	No	Not required

B.4. Establishment and description of baseline scenario

>> The tool used for the definition of baseline was the CDM additionality tool for the demonstration of additionality. Before the project activity started, the baseline of the project area was a mix of grassland and shrubs. All these areas were evaluated and classified as applicable planting areas for reforestation activities. Other small patches of forest left were classified and since the beginning managed as conservation areas. Other areas (previously planted or due to the project activity) located on the border of a river or other watershed are also classified as conservation areas.
The applicable planting area used were grasslands which were used in the past as pasture. The project does nott remove existing forests to plant new trees. The Environmental Ministry (previously the "Autoridad Nacional del Ambiente"(ANAM), now Ministerio de Ambiente) also does not allow removing shrubland which is older than 5 years. For previous MUs, the results of the pilot studies of the Panama National Inventory (2013-2015)[7] was used to determine the existing baseline biomass. To complement the work, a survey was conducted that allowed a better classification of the MUs with a lower or higher baseline biomass. The survey determined the existence of two different scenarios:

(i) grassland pasture and

(ii) shrubland.

The values and sources for the calculations are presented the Carbon Model calculator The project use the highest baseline from scenarios, which corresponds to shrubland, with a value of 20.17 tCO2 (5.5 tC)

Aboveground biomass= 5.437 t ha-1

Necromass= 6.308 t ha-1

[7] Source: INVENTARIO NACIONAL FORESTAL Y DE CARBONO DE PANAMÁ - Resultados de la Fase Piloto 2013-2015. https://www.un-redd.org/sites/default/files/2021-10/INFC%20-%20Resultados-FasePiloto.pdf

Supporting Documents[8]:

- Carbon Model Calculator. Tabs 1 and 1.1 Data& Sources
- Pilot Panama National Forest Pilot forestry results Source: INVENTARIO NACIONAL FORESTAL Y DE CARBONO DE PANAMÁ https://www.un-redd.org/sites/default/files/2021-10/INFC%20-%20Resultados-FasePiloto.pdf
- TMIX16-5.5 - Template – Baseline
- TMIX16-APP1-Analisis historial uso de tierras
- TMIX16-APP1.2-IC-Uso de tierras Isla Cebaco
- TMIX16-APP1.1-ST-Uso de tierras Sustainable Timbers

B.5. Demonstration of additionality

Use this table for Automatic Additionality Only – delete if N/A

Panama has great potential for forestry and agriculture production. Banana and rice are two land-use scenarios that also present important barriers to implementation. Different agriculture commodities with robust incentives and benefits are evident and distributed in the Darién province, where the new area is located. Forestry activities are not part of the mainstream, and one of the main reasons is related to lower profitability and some activities are categorized as marginal. The carbon market is an important monetary supplement that can guarantee the financial stability of the project. The opportunity cost analysis demonstrates how forestry systems are less profitable activities compared with other activities such as maize, rice and banana plantations. However, the study also reveals that a forestry system is the second-best opportunity of investment if the sale of carbon credits is taken into consideration. The IRR analysis tested the variation of an initial investment in a climate reforestation project with an IRR of 5.5% against two benchmarks:

(i) government bond with 6.25% and
(ii) a bank investment with 6%. A sensitive analysis shows how the price of the carbon market has a positive influence on the IRR of the proposed project and therefore it is possible to prove the additionality of the project.

[8] Folder route: 08_Performance Review 2022/PR2022_TMIX_Supporting_Documents/Carbon Model

The new reforestation area has a greater cost-benefit potential when the sale of carbon credits is taken into account; therefore, it is the most suitable additional option compared to the others. In consequence, the new areas system has the best opportunity cost compared to the other activities only when the carbon credits are considered.

Supporting Documents:

- TMIX19-ADD1-Additionality analysis

Methodology applied: United Nations Framework Convention on Climate Change; UNFCC, 2005. Tool for the demonstration and assessment of the additionality in a A/R CDM.
https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-02-v1.pdf

B.5.1 Prior Consideration

>> Only relevant for retroactive projects.

B.5.2 Ongoing Financial Need

>> Only has to be included at Design Certification Renewal.

B.6. Sustainable Development Goals (SDG) outcomes

Relevant Target/Indicator for each of the three SDGs

SUSTAINABLE DEVELOPMENT GOALS TARGETED	MOST RELEVANT SDG TARGET	SDG IMPACT **INDICATOR (PROPOSED OR SDG INDICATOR)**
13 Climate Action (mandatory)	N/A	Emissions Removals

1 No poverty	1.4: By 2030, ensure that all men and women, in particular, the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance	Number of local communities benefitting from the project´s investments
8 Economic Growth	8.5: By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	- Nr. of persons on Payroll (full-time & part-time employees) - Nr. of working hours per week (m/w), including overtime - Number of training or workshops provided to the employees
12 Sustainable Consumption and Production	12.2: By 2030, achieve the sustainable management and efficient use of natural resources	12.2: Share (%) of timber volume verified and certified by FSC, and percentage of cocoa volume certified by UTZ in selected areas of the project
15 Biodiversity, Forests, Desertification	Target 15.3: By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world. Target 15.5: Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	15.3 - Areas (ha) of degraded land and soils restored in comparison with the baseline scenario 15.5: - Share (%) of conservation areas of the project area

B.6.1 Explanation of methodological choices/approaches for estimating the SDG Impact

>> Existing Projects that transition to GS4GG may retain their existing sustainable development monitoring plan, including indicators chosen. To do so the Project shall provide a brief and simple explanation that links the parameter already monitored to the closest, most relevant SDG Target. Therefore, and based on the Sustainability Monitoring Plan and supported by the Sustainable Development Assessment, our methodological choice/approach for estimating the SDG outcomes was to establish a linkage with the closest chosen parameters and use supporting documentation as proof of compliance.

SDG1: No Poverty - End poverty in all its forms everywhere

Target: 1.4: By 2030, ensure that all men and women, in particular, the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance

Indicator: Number of local communities benefiting from the project´s investments

Monitoring frequency: Once (Certification period).

Approach: The local stakeholder consultation information was used as a proxy of how the project has improved local conditions, income and revenue among the local community members, and how many stakeholders are positively impacted.

Project records and reports about socio-economic impacts and benefits are used to support and confirm the information obtained through the local stakeholder consultation.

SDG 8: Decent Work and Economic Growth - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Target: 8.5: By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value.

Indicator: Nr. of persons on Payroll (full-time & part-time employees)

Monitoring frequency: Annually

Approach: Project participants provide a list of employees and bank excerpts showing salary payments.

Indicator: Nr. of working hours per week (m/w), including overtime

Monitoring frequency: Annually

Approach: Copies of sample contracts are provided.

Indicator: Nr. of training or workshops provided to the employees

Monitoring frequency: Annually

Approach: Numbers of training/workshops provided are monitored using training records, staff register, contractor statements and employment details.

SDG 12: Responsible Consumption and Production – Ensure sustainable consumption and production patterns

Target: 12.2: By 2030, achieve the sustainable management and efficient use of natural resources

Indicator: Share (%) of timber volume verified and certified by FSC, and percentage of cocoa volume certified by UTZ in selected areas of the project

Monitoring Frequency: Annually

Approach: Review of annual volume of FSC-certified wood produced as well as UTZ certified cocoa. Inventories sheets, invoices, and supporting materials of how these materials are handled, placed and applied will be also taken into account.

SDG 13: Climate Action – Take urgent action to combat climate change and its impacts

Target: Not applicable

Indicator: Emission removals

Monitoring Frequency: Annually

Approach:

Gold Standard Afforestation/Reforestation (A/R) GHG Emissions Reduction & Sequestration Methodology (Version 2.1)

a. Permanent field plots were established using a random systematic grid over the project area.
b. Field plots are delineated by site quality strata, species and planting year.
c. Plot (tree/shrub) measurements converted to dry weight biomass through allometric formulas.
d. Plot data amalgamated at MU level.
e. Above-ground dry weight converted to CO2-e as follows:
    - Dry weight to Carbon = multiply by 50%
    - Carbon to CO2-e = multiply by 3.6667 (=:44/12)
f. Above-ground biomass converted to above- and below-ground CO2-e = multiply by 1.42 (i.e. use 42% and the below-ground factor for the project area).
g. Multiply CO2-e/ha by area (ha) for each MU.
h. Calculations incorporate reductions due to Baseline and Other Emissions or special reductions due to area variations.
i. Net result is the current CO2-e Fixation over the project area.

SDG15: Life on Land - Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss

Target: 15.3: By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world.
Indicator: Areas (ha) of degraded land and soils restored in comparison with the baseline scenario
Monitoring Frequency: Annually
Approach: Reforested areas, degraded land and soils restored as reported by the project participants.

Target: 15.5: Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species
Indicator: Share (%) of conservation areas of the project area
Monitoring Frequency: Annually
Approach: Protected natural ecosystems as reported by project participants via spatial data and/or management plans.

B.6.2 Data and parameters fixed ex ante

Copy the table for each piece of data and parameter; use headings to group parameter tables by SDG

B.6.3 Ex ante estimation of SDG Impact

>>

SDG 13

Data/parameter	Emission reductions in tCO2-equivalents fixed ex-ante: – Baseline
Unit	Tonnes of CO2-equivalents/hectare
Description	The Baseline is the estimated carbon stock that would occur in the baseline scenario. The baseline scenario describes the activities that would occur in the absence of the proposed project.
Source of data	Scientific literature was used to determinate the existing baseline biomass. To complement the work, we executed a survey that allowed us to classify better the MUs with a lower or higher baseline biomass. The survey found out the existence of two different scenarios: (i) grassland pasture and (ii) shrubland. The values for both scenarios were extracted from the Inventario Nacional Forestal y de Carbono de Panamá. Resultados de la Fase Piloto 2013-2015. Page 28, Table 12. Pasto value.
Value(s) applied	Baseline: 20.17 tCO2/ha
Choice of data or Measurement methods and procedures	Gold Standard Afforestation/Reforestation (A/R) GHG Emissions Reduction & Sequestration Methodology, Version 2.1.
Purpose of data	Calculation of baseline scenario

Additional comment	As stated in the Gold Standard Afforestation/Reforestation (A/R) GHG Emissions Reduction & Sequestration Methodology, the baseline is not subjected to monitoring.

Data/parameter	Emission reductions in tCO2-equivalents fixed ex-ante: – Belowground tree biomass
Unit	tonnes of CO2-equivalents/hectare
Description	The belowground tree biomass is not sampled during inventory activities
Source of data	Belowground biomass was calculated from the aboveground tree biomass using a root-to-Shoot ratio, using Gold Standard Afforestation/Reforestation (A/R) GHG Emissions Reduction & Sequestration Methodology, Version 2.1. Source data is based on several scientific studies from the trees species used in the project (Baseline)
Value(s) applied	Please refer to the carbon model for more details.
Choice of data or Measurement methods and procedures	Sample plot above-ground (dry) biomass is determined through the measurement of stem diameter and crown dimensions applied to researched-established allometrics. These calculations are then extended into broad areas (MU's). Gold Standard Afforestation/Reforestation (A/R) GHG Emissions Reduction & Sequestration Methodology, Version 2.1.
Purpose of data	Calculation of project scenario
Additional comment	-

Data/parameter	Emission reductions in tCO2-equivalents fixed ex-ante: – Biomass Expansion Factor (BEF)
Unit	Dimensionless quantity

Description	The values were obtained using different scientific sources (see section sources from the carbon model). The values come from other forestry models and are based on trees planted in tropical regions across Latin America with similar characteristics and features as the project.
Source of data	BEF was calculated using Gold Standard Afforestation/Reforestation (A/R) GHG Emissions Reduction & Sequestration Methodology, Version 2.1. Source data is based on several scientific studies from the trees species used in the project (Baseline) as well as different forestry models across Latin America. See carbon model for more details.
Value(s) applied	Biomass Expansion Factor (BEF): 1.5
Choice of data or Measurement methods and procedures	Gold Standard Afforestation/Reforestation (A/R) GHG Emissions Reduction & Sequestration Methodology, Version 2.1.
Purpose of data	Calculation of project scenario
Additional comment	-

Data/parameter	Emission reductions in tCO2-equivalents fixed ex-ante: – Soil Carbon
Unit	tonnes of CO2-equivalents/hectare
Description	Projects complying with all A/R Requirements sufficient to certify their project activities with the Gold Standard may use the A/R Soil Carbon Tool in order to earn soil carbon credits with no additional monitoring required. This tool estimates the change in soil organic carbon stocks due to the planting of forests and applies to soils on planting areas only. Once a project has undergone a successful Initial Certification, VERs generated using this tool may be issued for previous vintages following a successful performance certification.
Source of data	A/R Soil Carbon Tool. Please refer to the carbon model for more information.
Value(s) applied	Soil Carbon: 0.81 tCO2/ha/year

Choice of data or Measurement methods and procedures	A/R Soil Carbon Tool (Soil Carbon) and carbon model.
Purpose of data	Calculation of project scenario
Additional comment	-

Data/parameter	Emission reductions in tCO2-equivalents fixed ex-ante: – Biomass burn
Unit	tonnes of CO2-equivalents/hectare
Description	No slash and burn techniques for soil preparation are part of the Sustainable Management Plan. Exceptions are only made in case of dangerous situations for the workers.
Source of data	10% of the baseline was deducted based on the Gold Standard Afforestation/Reforestation (A/R) GHG Emissions Reduction & Sequestration Methodology, Version 2.1 and A/R Soil Carbon Tool. See carbon model
Value(s) applied	Biomass burn: 2.01 [tCO2 eq/ha]
Choice of data or Measurement methods and procedures	Gold Standard Afforestation/Reforestation (A/R) GHG Emissions Reduction & Sequestration Methodology, Version 2.1. A/R Soil Carbon Tool
Purpose of data	Calculation of project scenario
Additional comment	-

Data/parameter	Emission reductions in tCO2-equivalents fixed ex-ante: – Leakage
Unit	tonnes of CO2-equivalents/hectare
Description	Leakage are emissions that occur due to a shift of activities from the inside of the project area to the outside of a project area. These shifts of activities can cause four different categories by: (a) Collection of wood (for firewood, charcoal, etc.) (b) Timber harvesting (c)

	Agriculture (crop cultivation, shrimp cultivation, etc.) (d) Livestock Only tree biomass affected by these activities shift shall be considered as mentioned in the Gold Standard Afforestation/Reforestation (A/R) GHG Emissions Reduction & Sequestration Methodology, Version 2.1. No leakage considered
Source of data	See references TMIX16-APP1, TMIX16-APP2 and Leakage document template 401.13-AR-T-Leakage_TMIX_2940.docx
Value(s) applied	Leakage: 0 tCO2/ha
Choice of data or Measurement methods and procedures	Gold Standard Afforestation/Reforestation (A/R) GHG Emissions Reduction & Sequestration Methodology, Version 2.1
Purpose of data	Calculation of leakage
Additional comment	Leakage is not subject to monitoring

Data/parameter	Emission reductions in tCO2-equivalents fixed ex-ante: – Wood density
Unit	g / cm3
Description	The wood density is the ratio between the mass of dry wood divided by its volume. The values were selected and considered as the most appropriate for the different Modelling Units that compose the project from scientific sources.
Source of data	The values were obtained using different scientific sources (see section sources from the carbon model). The values came from different forestry models and were based on trees planted in tropical regions across Latin America with similar characteristics and features as the project. See carbon model.
Value(s) applied	**Species** / **Wood density (g/cm³)** *Anacardium excelsum* 0.480

	Astronium graveolens	0.860
	Acacia mangium	0.530
	Bombacopsis quinata	0.470
	Cordia alliodora	0.500
	Cedrela odorata	0.440
	Dipteryx panamensis	0.790
	Dalbergia retusa	1.020
	Hieronyma alchorneoides	0.723
	Inga sp.	0.580
	Khaya senegalensi	0.710
	Mix of species	0.590
	Ormosia sp.	0.610
	Sterculia apetala	0.370
	Swietenia macrophylla	0.600
	Terminalia amazonia	0.780
	Tectona grandis	0.688
	Tabebuia guayacan	1.020
	Tabebuia rosea	0.540
	Theobroma cacao	0.420
	Vochysia guatemalensis	0.390
	Paulownia imperial	0.260
	Paulownia trifolia	0.260
	Platymiscium sp.	0.810
	Terminalia sp.	0.780
Choice of data or Measurement methods and procedures	See carbon model for reference data. Gold Standard Afforestation/Reforestation (A/R) GHG Emissions Reduction & Sequestration Methodology, Version 2.1	
Purpose of data	Calculation of project scenario	
Additional comment	-	

B.6.4 Summary of ex ante estimates of each SDG Impact

SDG 1, 8, 12 and 15

Since the expected outcomes for these SDGs are not based on calculations-numerical, no equations were applied. Instead, the ex-ante estimations were done based on the planned project activities and effects already observed in the past monitoring periods. Based on this approach, the following ex-ante estimations were fixed in the Transition Annex from 2019:

- SDG 1: 5 local communities or 1,000 people benefited directly and indirectly
- SDG 8: More than 150 people employed, working on average 40 hours per week, and at least 1 training per year conducted (training 150 employees)
- SDG 12: Around 8.32 m3 /year/ha volume of sustainable timber with timber sales up to 1,025 m3, and 34 tones cocoa verified and certified by GS, FSC and UTZ
- SDG 15: 8,478 ha of degraded lands restored and planted through A/R and Sustainable Forest Management activities. Around 5,000 ha of conservation areas

The baseline is assumed to be 0 for all four SDGs.

SDG 13

Based on the carbon calculations, ex-ante carbon projections are made for the full certification period. The growth model utilizes the Mean Annual Increment (MAI) of the corrected total volume (VT corrected) to estimate yearly changes in tCO2e at the species and MU level. Baseline emissions and leakage are subtracted from the carbon balance in the MU establishment year, while Soil Emission Reductions (Soil ER) are included for the first 20 years after establishment. The input data for these calculations is sourced from the "4. Precision caluclations" sheet. The ex-ante carbon growth projections are performed in sheet “6. Growth model MU”.

The MAI VT corrected is calculated based on the VT corrected at the time of monitoring and the plantation age:

MAI VT corrected = VT corrected / plantation age

The MAI VT corrected is then used to calculate the MAI in carbon stored in living tree biomass using the same equation and factors outlined in step 3:

*tCO2e/ha/year = MAI VT corrected * Wood density * BEF * R-t-s * Carbon fraction * (44/12)*

In the year of MU establishment, the total tCO2e is calculated based on the area-specific tCO2e/ha/year, MU area, baseline emissions, leakage, and Soil ER:

*Total tCO2e in year 1 = (tCO2e/ha/year - Baseline emissions - Leakage - Other emissions + Soil emission reductions) * MU area*

In the years after MU establishment, the total tCO2e for each year (t) is calculated by adding the yearly increase in tCO2e to the total tCO2e of the previous year (t-1). For the first 20 years, Soil ER is further added:

*Total tCO2e in year t = Total tCO2e in year t-1 + (tCO2e/ha/year + Annual soil emission reductions) * MU area*

Where:

Annual soil emission reductions = 0 if t > 20 years

B.6.4 Summary of ex ante estimates of each SDG Impact

SDG 13

Detailed information can be found in the carbon models 2019, 2023 and 2024 as well as the Issuance Control Tools 2019 and 2023.

YEAR	Baseline estimate (tCO2/ha)	PROJECT ESTIMATE	NET BENEFIT (cumulative)
1 (1995)	20.17	See carbon model 2019/ Issuance Contol Tool for MU level data (project estimate and baseline are not accumulated to project level in the calculations)	-60

2	20.17	481
3	20.17	943
4	20.17	1,903
5	20.17	3,474
6	20.17	5,567
7	20.17	7,716
8	20.17	11,046
9	20.17	14,640
10	20.17	18,646
11 (2005)	20.17	27,472
12	20.17	44,000
13	20.17	76,000
14	20.17	158,209
15	20.17	293,770
16	20.17	491,185
17	20.17	726,563
18	20.17	979,842
19	20.17	1,245,136
20	20.17	1,516,318
21 (2015)	20.17	1,792,811
22	20.17	2,074,634
23	20.17	2,357,020
24 (2018, end of previous monitoring period)	20.17	2,639,385
25	20.17	2,846,038
26	20.17	3,121,636

27	20.17	3,397,233
28	20.17	3,672,830
29 (2022, last verification)	20.17	3,948,427
30 (2024, current verification)	20.17	4,224,025
Total		4,224,025
Total number of crediting years	30	
Annual average over the crediting period	20.17 tCO_2e/h in year 1	140,800

SDG 1

For the additional SDGs, a yearly split cannot be reconstructed due to the age of the project. Therefore, only the yearly average is given.

Year	Baseline estimate	Project estimate	Net benefit
Annual average	0	5 local communities benefitting directly and indirectly	5 local communities benefitting directly and indirectly

SDG 8

Year	Baseline estimate	Project estimate	Net benefit
Annual average	0	- More than 150 people on payroll - working on average 40 hours per week, and - at least 1 training per year conducted (training 150 employees)	- More than 150 people on payroll - working on average 40 hours per week, and - at least 1 training per year conducted (training 150 employees)

SDG 12

Year	Baseline estimate	Project estimate	Net benefit
Annual average	0	100 % certified products (Around 8.32 m^3 /year/ha volume of sustainable timber with timber sales up to 1025 m^3, and 34 t cocoa verified and certified by GS, FSC and UTZ)	100 % certified products (Around 8.32 m^3 /year/ha volume of sustainable timber with timber sales up to 1025 m^3, and 34 t cocoa verified and certified by GS, FSC and UTZ)

SDG 15

Year	Baseline estimate	Project estimate	Net benefit
Annual average	0	- 8,478 ha of degraded lands restored and planted through A/R and Sustainable Forest Management activities. - 30 % (around 5,000 ha) of conservation areas	- 8,478 ha of degraded lands restored and planted through A/R and Sustainable Forest Management activities. - 30 % (around 5,000 ha) of conservation areas

B.7. Monitoring plan

B.7.1 Data and parameters to be monitored

(Copy the table for each piece of data and parameter; use headings to group parameter tables by SDG)

The following Monitoring items are as presented in Project Developer's 2014 Certification Audit (i.e. Sustainability Monitoring Plan template)[9]. The SDG monitoring tables were modified to meet the more structured approach of the present PDD

[9] "gs2940_GS2940 - Sustainability Monitoring Plan 2019"

template.

SDG 1

Data/parameter	Number of local communities benefiting from the project´s investments
Unit	Number
Description	Local communities positively impacted by the project activities; i.e. by increasing employment opportunities, investments in infrastructure and education, etc.
Source of data	Initial stakeholder consultation
Value(s) applied	5 communities
Measurement methods and procedures	Initial stakeholder consultation
Monitoring frequency	Crediting period
QA/QC procedures	Stakeholder consultation guidelines
Purpose of data	Calculation of project scenario
Additional comment	-

SDG 8

Data / Parameter	Nr. of persons on Payroll (full-time & part-time employees)
Unit	Number
Description	Monitor employment generated by project, divided according to company, type of contract and gender of employee
Source of data	List of employees provided by participants and payroll
Value(s) applied	See Monitoring Report
Measurement methods and procedures	See source of data. No further procedures.
Monitoring frequency	Annual basis
QA/QC procedures	Employment contracts checked
Purpose of data	Calculation of project scenario
Additional comment	-

Data / Parameter	Nr. of working hours per week (m/w), including overtime

Unit	Number
Description	Monitor employment generated by project
Source of data	Sample contracts
Value(s) applied	48 hours
Measurement methods and procedures	See source of data. No further procedures.
Monitoring frequency	Annual basis
QA/QC procedures	Employment contracts checked
Purpose of data	Calculation of project scenario
Additional comment	-

Data / Parameter	Nr. of training or workshops provided to the employees
Unit	Number
Description	Assess opportunities for professional development of workers
Source of data	List of workshops provided by participants
Value(s) applied	See Monitoring Report
Measurement methods and procedures	See source of data. No further procedures.
Monitoring frequency	Annual basis
QA/QC procedures	-
Purpose of data	Calculation of project scenario
Additional comment	-

SDG 12

Data / Parameter	Share of timber volume verified and certified by FSC, and percentage of cocoa volume certified by UTZ in selected areas of the project
Unit	%
Description	Show type and number of sustainability certification schemes that act as a catalyst bringing economic

	benefits by opening new markets and customer base diversification
Source of data	- Project Developer´s records and customer records - ANARAP Membership from Forest Finance and Sustainable Timber: https://anarap.com/miembros/ - Certification documentation
Value(s) applied	Status Quo 2022: 100%
Measurement methods and procedures	Project participants' documentation
Monitoring frequency	Annual basis.
QA/QC procedures	FSC and UTZ standard certifications principles and criteria (Guidelines)
Purpose of data	Calculation of project scenario
Additional comment	-

SDG 13

Data / Parameter	Associated chosen parameters: - Compensation of project emissions- Emission reductions in tCO2 eq - Aboveground tree biomass
Unit	Tonnes of CO2-equivalents/hectare, [tCO2eq/ha]
Description	Aboveground tree biomass is calculated using the stem volume, the Biomass Expansion Factor (BEF), carbon fraction and C to CO2 factor. Data was collected from different scientific studies for each tree species existing inside the project eligible area. The Mean Annual Increment (MAI) and Total Steam Volume (m^3) for each species was used to estimate the amount of tCO2eq according to the project activities.
Source of data	Gold Standard Afforestation/Reforestation (A/R) GHG Emissions Reduction & Sequestration Methodology, Version 2.1. Source data is based on several scientific studies from the trees species used in the project (Baseline). MRV specific data is provided from each MU, and it is

	compared to the original scientific data basis. See the carbon model for more information.
Value(s) applied	Please refer to the carbon model for more details.
Measurement methods and procedures	Sample plot above-ground (dry) biomass is determined through the measurement of stem diameter and crown dimensions applied to researched-established allometrics. These calculations are then extended into broad areas (MU's). Gold Standard Afforestation/Reforestation (A/R) GHG Emissions Reduction & Sequestration Methodology, Version 2.1.
Monitoring frequency	Annual basis. Crediting period
QA/QC procedures	Monitoring, Verification and Reporting (MRV) system from all Management Units (MUs) older than 3 years, Mirasilv software, GIS database from the project, Gold Standard Afforestation/Reforestation (A/R) GHG Emissions Reduction & Sequestration Methodology, Version 2.1
Purpose of data	Calculation of project scenario
Additional comment	-

Data / Parameter	Associated chosen parameters: - Compensation of project emissions- Emission reductions in tCO2 eq - Other emissions
Unit	Tonnes of CO2-equivalents/hectare, [tCO2/ha]
Description	Emissions that result from the use of fertilizers during project activities. Fertilizer 0.005 tCO2 per kg of nitrogen (N) fertilizer shall be deducted. No differentiation is made between synthetic and organic fertilizer. An average of 240kg is used per hectare for any fertilization taking place in the first 5 years. A conservative approach was used. This value was applied to all the MUs. Additionally, 10% of the baseline is assumed to be lost due to site preparation.
Source of data	Gold Standard Afforestation/Reforestation (A/R) GHG Emissions Reduction & Sequestration Methodology, Version 2.1. Source data is based on several scientific studies from the trees species used in the project (Baseline).

	See Carbon model for more information.
Value(s) applied	Other emissions: 3.3 [tCO2/ha] (2.1 from baseline + 1.2 from fertilizer)
Measurement methods and procedures	These calculations are then extended into broad areas (MU's). Gold Standard Afforestation/Reforestation (A/R) GHG Emissions Reduction & Sequestration Methodology, Version 2.1. A/R Soil Carbon Calculation Tool
Monitoring frequency	Annual basis. Crediting period
QA/QC procedures	FSC and UTZ standard certifications principles and criteria. For other MUs, the annual amount of fertilizer used submitted in annual reports or records.
Purpose of data	Calculation of project scenario
Additional comment	---

Data / Parameter	Associated chosen parameters: - Compensation of project emissions- Emission reductions in tCO2 eq - Productive area
Unit	Hectares, (ha)
Description	Productive area is considered as the eligible area where tree planting (or related actions) activities takes place and that meets the applicability conditions of the applied Gold Standard Methodology.
Source of data	- Gold Standard Afforestation/Reforestation (A/R) GHG Emissions Reduction & Sequestration Methodology, Version 2.1. - Company mapping of properties.
Value(s) applied	8,539.4 ha
Measurement methods and procedures	- Gold Standard Afforestation/Reforestation (A/R) GHG Emissions Reduction & Sequestration Methodology, Version 2.1. - Gold Standard Land-use & Forests Activity Requirements as applicable to A/R Projects in addition to the requirements stipulated in the Principles and Requirements

Monitoring frequency	Annual basis. Crediting period
QA/QC procedures	Remote sensing (mapping location accuracy, GIS files), establishment of land tenure arrangements (legal contracts), cadastral mapping and land consolidation procedures.
Purpose of data	Calculation of project scenario
Additional comment	Also relevant for SDG 15

SDG 15

Data / Parameter	Share of conservation areas of the project area
Unit	%
Description	Conservation areas (also called "protected" areas)
Source of data	Mapping
Value(s) applied	26 % of the project area
Measurement methods and procedures	GIS database and remote sensing assessment.
Monitoring frequency	Annual
QA/QC procedures	Verification of shapefiles with project participants and recent satellite imagery
Purpose of data	Calculation of project scenario
Additional comment	-

B.7.2 Sampling plan

>>

SDG 1, 8, 12 and 15

No sampling approach, but complete observations.

SDG 13

Sampling and basic tree measurements

In the CO2OL Tropical MIX project sampling is usually done by measuring trees (or plots of trees) situated systematically throughout the plantation, covering the various site factors (e.g. lower slopes, mid slopes and upper slopes) and the different species planted. The easiest method is to take transects (lines) at regular intervals throughout the stand, with plots situated at a pre-determined distance along each transect. Each transect is normally done on a compass bearing. This takes away the bias factor, where there is often a tendency to measure only the best trees or areas in a stand and ignores the areas of poor growth or low stocking (TMIX22-SFM1-Sustainable Forest Management Plan). The basic tree measurements to be considered include:

Tree Diameter: Are measured at breast height (dbh), which should always be 1.3m above ground level (always ensure your measuring crew measure where 1.3m is on themselves as people differ in height).

Tree height: To calculate tree (and stand volumes) accurately, tree height must also be measured. Tree height at a given age is also an important indication of site quality for a species. There are two main measurements of individual tree height, namely total height which is the vertical distance from the base to the tip of the tree, and secondly, timber height, which is the height from the base to a specified minimum stem diameter (often around 7cm). Mean height refers to the mean total height of a stand and is assessed by taking the heights of trees randomly selected, irrespective of diameter, throughout the stand. The commercial height is the height measured until the crown starts. It is the length of the stem which can be used for commercial sawn wood.

Tree Volume:

- Basal Area: The basal area (BA) of an individual tree is the cross-sectional area of a tree at 1.3m. BA is calculated from:

$$BA \text{ (in } m^2) = \pi \times (dbh/100)^2$$

  Where dbh is measured in cm. and π = 0.7854. The BA of a stand is the sum of the BAs of all the trees in the stand. The usual way of estimating stand BA, however, is to measure the dbh of trees in sample plots throughout the stand and then scale this up.

- Total tree volume: Tree volume is a function of total tree height and basal area. A rough estimate of tree volume can be obtained from the following formula:

$$\text{Total Tree vol. (in } m^3\text{)} = \text{Total ht. x BA x FF}$$

Where FF = Form Factor.

- Commercial Volume: Instead of the total tree height, the commercial height will be used to calculate the volume of the timber which can be used for sawn wood.

$$\text{Commercial Volume (in } m^3\text{)} = \text{Commercial ht x BA x FF}$$

Where FF = Form Factor.

- Stand Volume: The value that is of utmost interest to the forest owner (or investor) is stand volume. The maximum volume for a given species on a given site is determined not only by silviculture but also by age. To calculate stand volume, an average tree volume is calculated which is then converted into an average volume per hectare by multiplying by the mean number of trees in each sample plot. The standing volume of the stand is estimated by multiplying the average volume per hectare by the stand's area.

Forest Inventory

Forest inventories within the project area were designed to address the following:

- To provide information for long-term planning.
- To provide data for immediate decisions on felling and thinning programs.
- For valuation purposes.

For the CO2OL Tropical Mix project the most common form of continuous forest inventory is used, which are Permanent Sample Plots (PSPs). These are located throughout the plantations and re-measured at regular intervals. The objectives of this approach are the following:

- To provide information on stand growth for the efficient management of the forest.
- To estimate the potential productivity of the site.

- To quantify the effects of silvicultural treatment on growth and yield.
- To monitor changes in site productivity over successive rotations of tree crops.

Sample plots are normally circular with a radius: 12.6m (= 0.05 ha) for monitoring the project area and for their establishment a team of 4 people are usually needed, including the 'Booker' who oversees the operation. EcoCebaco and Sustainable Timbers use only circular plots, while ForestFinance has a mix of circular and rectangular sample plots. In the specific case of Quetzal Blue, from 2020 on top of the circular plots, rectangular plots that include the already existing circular plots were added. These new plots had an area of 0.1237 ha and were included to ensure enough space to contain 20 remaining trees at the end of the rotation, which means a goal of approximately 200 trees per hectare at the time of clear cutting.

Each plot should be big enough to include 15-25 trees and their exact location must be recorded with a GPS device and clearly marked on a large-scale map. All trees within the plot boundary should be marked with permanent enamel paint at 1.3m height. All trees must be carefully checked from the center post, to ensure that they are within the plot. The trees should be counted (and marked) in a sweep from the North in a clockwise direction. As soon as the trees in the PSP are large enough, numbers should be painted onto their stems, with tree number 1 being the one closest to the center (for circular parcels). Numbered, metal tags are sometimes used instead of paint (though the disadvantage of such tags is that they must be nailed onto the trees and are often stolen).

Trees should be measured in order – sweeping from the North. The Booker must stand behind the center-post and direct which order the trees are measured in. When two trees are in line, the closer one is measured first. All DBHs are measured preferably with non-rounded-down DBH tapes.

If a PSP is being re-measured, it is advisable to have the data on hand from the previous measurement. In this way, problems can be picked up immediately (e.g. if more trees than before are recorded or if a tree has appeared to have reduced in dbh). Any other observations on tree conditions should be recorded at the time of measuring PSPs, for example, relating to tree health.

B.7.3 Other elements of monitoring plan

>>

Quality Assurance for data archiving

Due to the long-term nature of PSPs, it is essential that the data is stored both in physical (i.e., paper) and digital formats. PSPs should be re-measured at least every two years. The measurement data must be recorded on paper or digitally. The final results must be presented digitally on sheets containing all the farms and PSPs without spacing between the lines but numbered by their continuous ID (see folder "Inventories" for reference). Dead or harvested trees will be presented by their Tree ID but without values for diameter and height. Copies of all data analyses and models, any GIS files, maps and copies of all measuring and monitoring reports should be stored in a dedicated and safe place both by the project participants and the project developer.

Before further processing, the forest developer checks the delivered forestry inventories for logical errors and unrealistic numbers to avoid any under- or overestimations in the carbon model.

SECTION C. DURATION AND CREDITING PERIOD

C.1. Duration of project

C.1.1 Start date of project

>> Planting started on 01/09/1995, which is the official start date of the project.

C.1.2 Expected operational lifetime of project

>> The crediting period of the carbon project consisting of selective harvesting is 30 years. However, the different project participants have their own plans with the planted areas after the end of the crediting period. Generally, for all project participants, the project was the basis for the creation of a long-term rotation forestry project, with rotations of 25 to 50 years (depending on the timber market conditions) and no envisioned end-date.

C.2. Crediting period of project

C.2.1 Start date of crediting period

>> 01/09/1995

C.2.2 Total length of crediting period

>> 29 years and 4 months, until 31/12/2024

These dates were defined in the frame of a CAR raised by SustainCERT during Transition Review in 2019.

SECTION D. SUMMARY OF SAFEGUARDING PRINCIPLES AND GENDER SENSITIVE ASSESSMENT

D.1 Safeguarding Principles that will be monitored

A completed Safeguarding Principles Assessment is in Appendix 1, ongoing monitoring is summarised below.

PRINCIPLES	MITIGATION MEASURES ADDED TO THE MONITORING PLAN
7.2 Energy Supply	Energy usage
9.1 Landscape Modification	Management guidelines; Impact assessments
9.6 Pesticides & Fertilizers	Management guidelines; Reports of Agrochemical use
9.7 Harvesting of Forests	Management guidelines; Forest Management Plans and Harvesting Reports

D.2. Assessment that project complies with GS4GG Gender Sensitive requirements

Question 1 - Explain how the project reflects the key issues and requirements of Gender Sensitive design and implementation as outlined in the Gender Policy?	See safeguarding principles, principle 2: Women and men have equal access and rights in the project. Marital status is not relevant for employment. Women take over leading roles in the project. The number of field workers that are male is clearly higher than female due to the physical work, but on the other hand, more women are employed in the tree nursery and administrational entities.

Question 2 - Explain how the project aligns with existing country policies, strategies and best practices	"Panama is a country where women have been protagonists and propellers of the development of a plural and diverse nation, loving and respectful of peace and human rights." Further, the country committed to eradicate violence against women. This is in line with the project, where zero violence is tolerated. https://www.unwomen.org/en/get-involved/step-it-up/commitments/panama
Question 3 - Is an Expert required for the Gender Safeguarding Principles & Requirements?	No, since gender equality is not an issue in the project
Question 4 - Is an Expert required to assist with Gender issues at the Stakeholder Consultation?	No, there is and were never issues with women's participation in stakeholder consultations

SECTION E. SUMMARY OF LOCAL STAKEHOLDER CONSULTATION

Below is a summary of the 2 step GS4GG Consultation for monitoring purposes.
Please refer to the separate Stakeholder Consultation Report for a complete report on the initial consultation and stakeholder feedback round.

The project has a historical tracking of more than 20 years, therefore the number of existing stakeholders involved in this successful project is extensive and diverse. There are regional, national and international stakeholders and NGOs, private, governmental stakeholders that had actively participate in the project implementation.
No records of the original Stakeholder consultation exist, but at a renewed consultation for the transition of the project to the Gold Standard Version 0.9 in 2016 the consensus was that the project is still in the stakeholder's interest and all concerns are well addressed by safeguards and mitigation measures.

In 2019, students from the McGill University from Canada conducted an additional stakeholder consultation around the areas of Forest Finance to explore the perception of local stakeholders of the project and its impacts.
PB, ST and QB continue to actively invite stakeholders to share they inputs and views as can be seen in the more recent reports.

Supporting documents in folder Stakeholder-Consultation:

- Stakeholder consultation report 2016 "TMIX16-3.2 - Template - Local Stakeholder Consultation".pdf
- TMIX19_Resumen de comentarios de los Stakeholders 2019.pdf
- Informe Socio-economico 2020 QB FINAL.pdf
- Informe Socio-economico 2020 ST FINAL.pdf
- ST-QB_Informe Socio-economico 2022.pdf
- PB_2022_diagnostico social.pdf

E.1 Summary of stakeholder mitigation measures

>> No concerns were raised by stakeholders and no mitigation measures agreed to be monitored.

Any doubts regarding the social impact of the project are covered in Appendix 1.

E.2 Final continuous input / grievance mechanism

METHOD	INCLUDE ALL DETAILS OF CHOSEN METHOD (S) SO THAT THEY MAY BE UNDERSTOOD AND, WHERE RELEVANT, USED BY READERS.
Continuous Input / Grievance Expression Process Book (mandatory)	Suggestion boxes are put up in the different workers' camps
GS Contact (mandatory)	help@goldstandard.org
Other	The different project participants can be reached via the administrators - FF: danelys_noriega@forestfinance.com - EC, QB and ST: miguel_vallarino@hotmail.com - PB: errick.bicalho@rrgnbs.com

APPENDIX 1 - SAFEGUARDING PRINCIPLES ASSESSMENT

Complete the Assessment below and copy all Mitigation Measures for each Principle into SECTION D above. Please refer to the instructions in the Guide to Completing this Form.

SOCIAL SAFEGUARDING PRINCIPLES		
Reference requirement	Question	Response
P.1 |Human Rights		
P.1.1.1 |	Does the project developer, its representatives and the Project disrespect internationally proclaimed human rights?	☐ YES ☒ NO
P.1.1.1 |	Is the project involved or complicit in violence or human rights abuses of any kind as defined in the Universal Declaration of Human Rights?	☐ YES ☒ NO
P.1.1.2 |	Have local communities or individuals raised human rights concerns regarding the project (e.g., during the stakeholder engagement process, grievance processes, public statements)?	☐ YES ☒ NO
P.1.1.3 |	Is there a risk that rights-holders (e.g., Project-affected stakeholders) do not have the capacity to claim their rights?	☐ YES ☒ NO
P.1.1.3 |	Does this project undermine national or regional measures for the realisation of the right to development?	☐ YES ☒ NO
If the answer to any of the questions above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.		
Please add text here…		
Would the project potentially involve or lead to:		
P.1.1.1 |	adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalised groups?	☐ YES ☐ POTENTIALLY ☒ NO
P.1.1.2 |	inequitable or discriminatory impacts on affected populations, particularly people living in poverty or marginalised or excluded individuals or groups, including persons with disabilities?	☐ YES ☐ POTENTIALLY ☒ NO
P.1.1.3 |	restrictions in availability, quality of and/or access to resources or basic services, in particular to marginalised individuals or groups, including persons with disabilities?	☐ YES ☐ POTENTIALLY ☒ NO

P.1.1.3 |	exacerbation of conflicts among and/or the risk of violence to project-affected communities and individuals?	☐ YES ☐ POTENTIALLY ☒ NO

Briefly describe below how the project incorporates a human rights-based approach.
For example, by describing how the project design:

- is informed by human rights analysis, including from UN human rights mechanisms (human rights treaty bodies, universal periodic review, special procedures)
- includes measures to assist the government to ensure (respect, protect and fulfil) human rights under international law and to implement human rights-related standards in national law (whichever is higher)
- enhances the availability, accessibility and quality of benefits and services for potentially marginalised individuals and groups, and to increase their inclusion in decision-making processes that may impact them (consistent with the non-discrimination and equality human rights principle)
- provides reasonable accommodations to strengthen inclusivity and accessibility of project benefits and services to persons with disabilities.

Please add text here….

During the construction and operation of the project, the project proponent has always respected all human rights. The project is not in any kind of conflict with the livelihood of local people. Project proponent had conducted stakeholder's consultation and sought their opinion. The project adheres to the host country´s commitment and ratification to The Universal Declaration of Human Rights (UDHR), the International Covenant on Economic, Social and Cultural Rights (accession 08.03.77), International Covenant on Civil and Political Rights (Accession 08.03.77). The project will not employ any personnel based on gender, race, religion, sexual orientation or any other basis. As the Constitution of the host country prohibits discrimination on the basis of a person's race, sex, religion, place of birth, disability, political affiliation or social status. The host country has also ratified the eight fundamental Conventions of the Not required 101.5 Transition Annex Page 23 of 56 International Labour Organization and has set up an ILO declaration[10]

P.2 |GENDER EQUALITY AND WOMEN'S EMPOWERMENT

P.2.1.1 |	Have women's groups/leaders raised gender equality concerns regarding the project, (e.g., during the stakeholder engagement process, grievance processes, public statements)?	☐ YES ☒ NO
P.2.1.2 |	Does the project undermine the principles of non-discrimination, equal treatment, and equal pay for equal work?	☐ YES ☒ NO
P.2.1.2 |	Does the project prevent men and women from having equal opportunities to participate in identified tasks and activities, whether through paid work, volunteer work, or community contributions, as appropriate?	☐ YES ☒ NO

P.2.1.2 |	Does the project limit the participation of women or men based on pregnancy, maternity/paternity leave, or marital status?	☐ YES ☒ NO
P.2.1.2 |	Is information about project objectives being communicated in a way that is inappropriate for the local context and not tailored to the methods of understanding of both women and men, which could hinder their participation?	☐ YES ☒ NO
P.2.1.3 |	Has the project assessed gender risks without referencing the country's gender strategy or equivalent national commitment?	☐ YES ☒ NO
P.2.1.4 |	Has expert stakeholder(s) been involved, and has their input been requested for the project design on gender equality and women's empowerment?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.

Please add text here….

Would the project potentially involve or lead to:		
P.2.1.1 |	adverse impacts on gender equality and/or the situation of women and girls?	☐ YES ☐ POTENTIALLY ☒ NO
P.2.1.1 |	exacerbation of risks of gender-based violence? For example, through the influx of workers to a community, changes in community and household power dynamics, increased exposure to unsafe public places and/or transport, etc.	☐ YES ☐ POTENTIALLY ☒ NO
P.2.1.2 |	reproducing discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	☐ YES ☐ POTENTIALLY ☒ NO
P.2.1.2 |	limitations on women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services? For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well-being.	☐ YES ☐ POTENTIALLY ☒ NO

Briefly describe below how the project is addressing any identified risk to gender equality and women's empowerment.

Please add text here….

P.3 |COMMUNITY HEALTH AND SAFETY

P.3.1.1 |	Does the project involve potential risks to the health and safety of affected communities during its life cycle?	☐ YES ☒ NO

P.3.1.2 |	Does the project involve any potential risks to the workers' safety and health?	☒ YES ☐ NO

If the answer to any of the questions above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.

Forestry operations include health hazards such as the use of chain saws and falling trees. These risks are prevented by ensuring proper training of personnel and by requiring personal protection equipment.

Would the project potentially involve or lead to:

P.3.1.1 |	construction and/or infrastructure development (e.g., roads, buildings, dams)?	☒ YES ☐ NO
P.3.1.2 |	air pollution, noise, vibration, traffic, injuries, physical hazards, poor surface water quality due to runoff, erosion, sanitation?	☐ YES ☐ POTENTIALLY ☒ NO
P.3.1.2 |	harm or losses due to failure of structural elements of the project (e.g., collapse of buildings or infrastructure)?	☐ YES ☐ POTENTIALLY ☒ NO
P.3.1.2 |	risks of water-borne or other vector-borne diseases (e.g., temporary breeding habitats), communicable and noncommunicable diseases, nutritional disorders, mental health?	☐ YES ☐ POTENTIALLY ☒ NO
P.3.1.2 |	transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g., explosives, fuel and other chemicals during construction and operation)?	☐ YES ☐ POTENTIALLY ☒ NO
P.3.1.2 |	adverse impacts on ecosystems and ecosystem services relevant to communities' health (e.g., food, surface water purification, natural buffers from flooding)?	☐ YES ☐ POTENTIALLY ☒ NO

Briefly describe below how the project is addressing any identified risk related to community health and safety.

To a limited extent, the project included the construction of roads and buildings dedicated for project management and accommodation of workers.

These constructions have been finalized and no harm was done to communities.

P.4 |CULTURAL HERITAGE, INDIGENOUS PEOPLE, DISPLACEMENT AND RESETTLEMENT

P.4.1 |Sites of Cultural and Historical Heritage

P.4.1.1 |	Does the project involve altering, damaging, or removing sites, objects, or structures of significant cultural heritage?	☐ YES ☒ NO

If the answer to question above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.

Please add text here….

Would the project potentially involve or lead to:		
P.4.1.1 |	activities adjacent to or within a cultural heritage site?	☐ YES ☐ POTENTIALLY ☐ NO
P.4.1.1 |	significant excavations, demolitions, movement of earth, flooding or other environmental changes?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.1.1 |	alterations to landscapes and natural features with cultural significance?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.1.1 |	adverse impacts to sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g., knowledge, innovations, practices)? (Note: projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)	☐ YES ☐ POTENTIALLY ☒ NO
P.4.1.2 |	utilisation of tangible and/or intangible forms (e.g., practices, traditional knowledge) of Cultural Heritage for commercial or other purposes?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.1.2 |	If answer to question above is "YES" or "POTENTIALLY" - are the communities made aware of their right under the law, scope and nature of proposed development and its potential consequences?	☐ YES ☐ NO ☒ NA
P.4.1.3 |	If answer to question above is "YES" - does the project provide equitable sharing of benefits from commercialisation of such knowledge, innovation, or practice, consistent with their customs and traditions?	☐ YES ☐ NO ☒ NA
P.4.1.4 |	If answer to question above is "YES" - are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☐ NO ☒ NA
P.4.1.4 |	If answer to question above is "YES", has project design been changed, modified, updated considering opinions and recommendations of an Expert Stakeholder?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

The project does not change, damage or remove any cultural heritage. Compliance with Panama´s commitment to International Covenant on Economic, Social and Cultural Rights (08.03.77) ensures no damage to critical cultural heritage.
As per the list of cultural heritage sites in Panama[12] by UNESCO, it is clear that the project site is not a cultural heritage site.

P.4.2 |*Forced Eviction and Displacement*

P.4.2.1 |	Does the project involve any risks related to involuntary relocation of people?	☐ YES ☒ NO

If the answer to question above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.

Please add text here….

Would the project potentially involve or lead to:

P.4.2.1 |	risk of forced evictions or involuntary relocation of people?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.2.2 |	temporary or permanent and full or partial physical displacement (including people without legally recognisable claims to land)?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.2.2 |	economic displacement (e.g., loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.2.2 |	If answer to question above is "YES" or "POTENTIALLY", - has the project developed Resettlement Action Plan or Livelihood Action Plan in consultation and agreement with affected individual, group or community? - has the project integrated Resettlement Action Plan or Livelihood Action Plan into the Project design?	☐ YES ☐ NO ☒ NA
P.4.2.3 |	If answer to question above is "YES" - are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☐ NO ☒ NA
P.4.2.3 |	If answer to question above is "YES", have project design been changed, modified, updated considering opinions and recommendations of an Expert Stakeholder?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here….

P.4.3 |LAND TENURE AND OTHER RIGHTS

P.4.3.1 |	Does the project involve any risks related to identifying and managing legitimate tenure rights that may be affected by the project?	☐ YES ☒ NO

If the answer to question above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.

The project is not involved and is not complicit in involuntary resettlement or relocation of peoples in any way. The Project Developer has also obtained all necessary land titles and legal documentation approval. The project is located on private land and nd bought from another private owner.

Would the project potentially involve or lead to:		
P.4.3.1 |	impacts on or changes to land tenure arrangements and/or community-based property rights/customary rights to land, territories and/or resources?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.3.1 |	uncertainties with regards to land tenure, access rights, usage rights or land ownership? Examples include, but are not limited to water access rights, community-based property rights and customary rights.	☐ YES ☐ POTENTIALLY ☒ NO
P.4.3.2 |	Changes in legal arrangements, if yes, are the changes made in line with relevant laws and regulations?	☐ YES ☐ NO ☒ NA
P.4.3.2 |	Changes in legal arrangements, if yes, are these changes agree with free, prior and informed consent of the involved stakeholders?	☐ YES ☐ NO ☒ NA
P.4.3.3 |	Does some other entity (other than the project developer) hold uncontested land title for the entire Project Boundary?	☒ YES ☐ NO ☐ NA
P.4.3.4 |	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☒ YES ☐ NO ☐ NA
P.4.3.4 |	If answer to question above is "YES", have project design been changed, modified, updated considering opinions and recommendations of an Expert Stakeholder?	☐ YES ☒ NO ☐ NA
P.4.3.5 |	Have project developer in consultation with stakeholders established a functioning mechanism to receive, process, resolve, communicate and record grievances?	☒ YES ☐ NO ☐ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

The project has all the legal, customary rights on the land and does not require any change to land tenure arrangements. Please see:
-TMIX19_SustainableTimber_Informe FSC 2018.pdf
"La empresa es dueña de todas las UMFs, se pudieron evidenciar los títulos de tierra de las UMFs que están comprometida a largo plazo con los P&C del FSC como indicado en los planes de manejo".
-TMIX19_Copia de ES-UTZ-Code-of-Conduct-Checklist-Individuals-v1 (version 1) nn.xlsx, Section I.A.2
- TMIX14-SFM8-Report_COI_FSC.pdf. Section C2.1
- TMIX16-APP1-Analisis historial uso de tierras.pdf

P.4.4 |INDIGENOUS PEOPLES

P.4.4.1 |	Does the project involve Indigenous People within the Project area of influence who may be affected directly or indirectly by the Project?	☐ YES ☒ NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
Please add text here….		
Would the project potentially involve or lead to:		
P.4.4.1 |	affect areas where indigenous peoples are present (including project area of influence)	☐ YES ☐ POTENTIALLY ☒ NO
P.4.4.1 |	affect areas, land and territory claimed by indigenous peoples?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.4.1 |	impacts (positive or negative) to the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.4.7 |	If answer to above questions is ''YES'' or "POTENTIALLY", - Is it determined that the proposed project may affect the rights, lands, resources, or territories of indigenous people? - Has an "Indigenous People Plan" (IPP) or "Indigenous People Plan Framework" been elaborated and included in the project documentation? - Was the plan developed in accordance with the effective and meaningful participation of indigenous peoples and in accordance with UNDP Guidelines?	☐ YES ☐ NO ☒ NA
P.4.4.3 |	risk of forcibly removing indigenous people from their lands and territories?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.4.4 |	utilisation and/or commercial development of natural resources on lands and territories claimed by indigenous peoples? Consider, and where appropriate ensure, consistency with the answers under Principle 4.1 above	☐ YES ☐ POTENTIALLY ☒ NO
P.4.4.5 | P.4.4.6 |	If answer to question above is "YES" or "POTENTIALLY" - Did the project obtain free, prior and informed consent from indigenous people before taking their cultural, intellectual, religious, and/or spiritual property? - Does the project ensure that the indigenous people receive an equitable sharing of benefits resulting from the use of their traditional knowledge and practices? ?	☐ YES ☐ NO ☒ NA

	- Does the project ensure that the sharing of benefits resulting from the use of indigenous peoples' traditional knowledge and practices is culturally appropriate and inclusive? - Does the project ensure that the provision of equitable sharing of benefits does not impede land rights or equal access to basic services including health services, clean water, energy, education, safe and decent working conditions, and housing?	
P.4.4.8 |	Does the project lack appropriate feedback and grievance channels for Indigenous Peoples and their representatives?	☐ YES ☒ NO ☐ NA
P.4.4.8 |	Has a grievance mechanism not been established at the beginning of programme or project implementation with due consideration given to customary dispute settlement mechanisms among the Indigenous Peoples concerned and will it remain operational throughout the project cycle?	☐ YES ☐ NO ☒ NA
P.4.4.9 |	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☐ NO ☒ NA
P.4.4.9 |	If answer to question above is "YES", have project design been changed, modified, updated considering opinions and recommendations of an Expert Stakeholder?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here….

P.5 |CORRUPTION

P.5.1.1 |	Does the project involve, or is it complicit in, contributing to or reinforcing corruption or corrupt projects?	☐ YES ☒ NO
P.5.1.1 |	Does the project have a risk of encouraging bribery, kickbacks, or other unethical behavior?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here….

ECONOMIC SAFEGUARDING PRINCIPLES

P.6 |ECONOMIC IMPACTS

P.6.1 |LABOUR RIGHTS AND WORKING CONDITIONS		
P.6.1.1 |	Does the project involve, facilitate, or condone forced labor, or pose a potential risk of forced labor?	☐ YES ☒ NO
P.6.1.1 |	Does the project violate any labor or health and safety laws, international obligations, or ILO conventions?	☐ YES ☒ NO
P.6.1.2 |	Does the project violate the principles of equal opportunity and fair treatment in its employment decisions?	☐ YES ☒ NO
P.6.1.3 |	Does the project violate national laws, if available regarding non-discrimination in employment?	☐ YES ☒ NO
P.6.1.4 | P.6.1.5 |	Does the project allow child labor?	☐ YES ☒ NO
P.6.1.7 | P.6.1.8 |	Does the project have insufficient processes and measures in place to ensure the safety and health of project workers?	☐ YES ☒ NO
P.6.1.9 |	Does the project have insufficient measures to safeguard and support vulnerable project workers, such as women, people with disabilities, migrant workers, and young workers, and to prevent any kind of harassment, abuse, bullying, or exploitation, including gender-based violence (GBV)?	☐ YES ☒ NO
P.6.1.10 |	Does the project have no grievance mechanism available for workers to voice workplace concerns? Is information about this mechanism not provided to workers at the time of recruitment, or is it not easily accessible?	☐ YES ☒ NO
If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
Please add text here….		
Would the project potentially involve or lead to: (NOTE: APPLIES TO BOTH PROJECT AND CONTRACTOR WORKERS)		
P.6.1.1 |	use of forced labour?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.1 |	working conditions that do not meet national labour laws and international commitments?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.1 |	working conditions that may deny freedom of association and collective bargaining?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.1 |	absence of documented working agreements with all individual workers *if such agreements do not exist, or do not address working conditions and terms of employment, the project developer*	☐ YES ☐ POTENTIALLY ☒ NO

	shall provide reasonable working conditions and terms of employment.	
P.6.1.1 |	use of migrant workers? *if engaged, the developer shall ensure that they are engaged substantially equivalent terms and conditions to non-migrant workers carrying out similar work.*	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.1 |	having no arrangements for basic services[10] for workers? *the project developer shall put in place and implement policies on the quality and management of the accommodation and provision of basic services in a manner consistent with the principles of non-discrimination and equal opportunity. Workers' accommodation arrangements should not restrict workers' freedom of movement or of association*	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.2 |	any form of discrimination or harassment based on factors unrelated to job requirements, such as gender, race, nationality, ethnicity, social or indigenous origin, religion or belief, disability, age, or sexual orientation?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.2 |	any form of discrimination in any aspect of employment, such as recruitment, compensation, working conditions, training, job assignment, promotion, termination, or discipline?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.2 |	harassment, intimidation, and/or exploitation, especially in regard to women?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.3 |	discriminatory working conditions and/or lack of equal opportunity where national law provides provision to address non-discrimination in employment?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.4 |	use of child labour? (including third-party engaged workers)	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.4 |	inadequate and verifiable mechanisms for age verification?	☐ YES ☒ NO
P.6.1.7 |	no processes and measures in place for the safety and health of project workers?	☐ YES ☒ NO
P.6.1.7 |	No provision of safety and health training provisions, including on the proper use and maintenance of personal	☐ YES

[10] Basic services requirements refer to minimum space, supply of water, adequate sewage and garbage disposal system, appropriate protection against heat, cold, damp, noise, fire, and disease-carrying animals, adequate sanitary and washing facilities, ventilation, cooking and storage facilities and natural and artificial lighting, and in some cases basic medical services.

	protective equipment conducted by competent persons and the maintenance of training records?	☒ NO
P.6.1.7 |	No provision to record and document accidents, diseases, incidents, and any resulting injuries, illnesses, or deaths?	☐ YES ☒ NO
P.6.1.8 |	occupational health and safety risks due to physical, chemical, biological and psychosocial hazards (including violence and harassment) throughout the project life-cycle?	☒ YES ☐ NO
P.6.1.9 |	No measures to protect vulnerable project workers from harassment, exploitation, and gender-based violence (GBV)? This includes women, people with disabilities, migrant workers, and young workers.	☐ YES ☒ NO
P.6.1.10 |	No grievance mechanism available for workers to voice workplace concerns.	☐ YES ☒ NO
P.6.1.11 |	No measures for due diligence and the establishment of policies and procedures to manage and monitor the performance of third-party employees in the project?	☐ YES ☒ NO

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

See P. 3.1.2, workers receive annual training to guarantee quality and security during operations. Wearing personal protection equipment is obligatory.
See documents:
-TMIX19_H. postural.pdf
-TMIX19_Induccion de Seguridad.docqqq.pdf
-TMIX19_Lijado y Acabado.pdf
-TMIX19_Protección Respiratoria.pdf
-TMIX19_Seguridad Personal.pdf

P.6.2 |NEGATIVE ECONOMIC CONSEQUENCES

P.6.2.1 |	Is there a risk of project failure during implementation or after project certification due to a lack of financial resources?	☐ YES ☒ NO
P.6.2.2 |	Does the project have potential negative impacts or pose a risk to the local economy?	☐ YES ☒ NO
P.6.2.2 |	Are there any potential risks or negative impacts this project may have on vulnerable or marginalised social groups, despite the benefits it may bring?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here…

Would the project involve or lead to:

P.6.2.2 |	economic impacts (negative/detrimental) to the local economy?	☐ YES ☐ POTENTIALLY ☒ NO

P.6.2.2 |	negative economic consequences during and after project implementation, e.g., for vulnerable and marginalised social groups in targeted communities?	☐ YES ☐ POTENTIALLY ☒ NO

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here….

P.7 |**CLIMATE AND ENERGY**

P.7.1 |GHG EMISSIONS

P.7.1.1 |	Does the project have a risk of increasing greenhouse gas emissions over the Baseline Scenario?	☐ YES ☒ NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here….

Would the project involve or lead to:

P.7.1.1 |	increase greenhouse gas emissions over the Baseline Scenario?	☐ YES ☐ POTENTIALLY ☒ NO

If the answer is "yes" or "potentially" to the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here….

P.7.2 |ENERGY SUPPLY

P.7.2.1 |	Does the project pose a risk to the availability and reliability of energy supply to other users?	☐ YES ☒ NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here….

Would the project involve or lead to:

P.7.2.1 |	negative impact on the availability and reliability of energy supply to other users?	☐ YES ☐ POTENTIALLY ☒ NO

If the answer is "yes" or "potentially" to the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here….

P.8 |WATER

P.8.1 |IMPACT ON NATURAL WATER PATTERNS/FLOWS

P.8.1.1 |	Does the project increase water usage to a level that will not allow for the maintenance of environmental flows?	☐ YES ☒ NO
P.8.1.1 |	Does the project result in the discharge of wastewater that does not meet the required standard for beneficial reuse and could therefore negatively impact the environmental flow?	☐ YES ☒ NO
P.8.1.1 |	Does the project have the potential risk to exceed the rate of recharge for the groundwater source?	☐ YES ☒ NO
P.8.1.1 |	Does the project involve any processes or activities that could contaminate the groundwater and render it unsuitable for use?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here….

Would the project involve or lead to:

P.8.1.1 |	affect the natural or pre-existing pattern of watercourses, groundwater and/or the watershed(s) such as high seasonal flow variability, flooding potential, lack of aquatic connectivity or water scarcity?	☐ YES ☒ POTENTIALLY ☐ NO
P.8.1.1 |	Wastewater discharge of quality that does not meet the required standard for beneficial reuse?	☐ YES ☒ POTENTIALLY ☐ NO
P.8.1.1 |	significant extraction, diversion of ground water? For example, construction of dams, reservoirs, river basin developments, groundwater extraction	☐ YES ☐ POTENTIALLY ☒ NO
P.8.1.2 |	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☒ YES ☐ NO ☐ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

The project will use groundwater in a natural way (root system of the mixed plantations) but will not affect negative natural or pre-existing pattern of watercourses, groundwater and/or watersheds. Harvesting rainwater is promoted and implemented for different operations such as irrigation.

Project locations areas were assessed using the Aqueduct 3.0 Country Rankings[20] datasets to examine the water stress or scarcity as suggested by the standard. At the country level, Panama is ranked in position 136. Here, water stress scores ranked from 1 (highest water stress score) to 165 (lowest water stress score). The analysis also shows the baseline water stress that measures the ratio of total water withdrawals to available renewable surface and groundwater supplies. All of the provinces such as Veraguas, Bocas del Toro
Chiriquí and Darien are categorized as Low (<10%).
As stated in the management plans, "Under no circumstances, soils that exhibit surface waterlogging will be planted". "As well, no measures will be taken to increase the planting area artificially through for example drainage or other measures where the water level is influenced, or soil is moved to level the planting area". Other mitigation/adaptation actions and capacity buildings have been deployed addressing water usage and its efficiency under climate change scenarios. In addition, staff and forest service providers received profound training in case of flooding or any extreme natural events. Several risk assessments considered flooding and water shortages within their analysis and the respective countermeasures.

See documents:

- TMIX19_Managementplan ForestFinance_28082012[1].pdf
- TMIX19_Guía sobre uso del agua.zip\Guía sobre uso del agua
- TMIX19_Uso de agua vivero riego
- TMIX19_medidas de mitigacion cambio climatico.docx
- TMIX19_control de capacitaciones y donaciones
- TMIX19_ lista de capacitaciones 2018-actualizado.xlsx
- TMIX19_ Análisis de riesgo-UTZ-2018.xlsx

P.8.2 |EROSION AND/OR WATER BODY INSTABILITY

P.8.2.1 |	Does the project have a risk of negatively impacting the catchment and has it been assessed and addressed?	☐ YES ☒ NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here….

Would the project involve or lead to:

P.8.2.2 | - P.8.2.5 |	negatively impact on the catchment area? *If yes, Erosion prevention measures, including soil and slope protection measures, must be implemented before project commencement. These measures should involve natural terracing, infiltration strips, permanent ground cover, hedge and tree rows, and effective slope length assessment. Regular reassessment of these measures is necessary.*	☐ YES ☐ POTENTIALLY ☒ NO
P.8.2.6 |	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☒ NO ☐ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.
Please add text here….

P.9 |ENVIRONMENT, ECOLOGY AND LAND USE

P.9.1 |LANDSCAPE MODIFICATION AND SOIL

P.9.1.1	Is there any risk of soil resource degradation or loss of ecosystem services provided by soils in the project? *If yes, the project shall maintain healthy soils by minimising negative impacts on soil health, productivity, structure, and water retention. Steps to minimise soil degradation include crop rotation, composting, using N-fixing plants, and reducing tillage and ecologically harmful substances.*	☐ YES ☒ NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.
Please add text here….

Would the project involve or lead to:		
P.9.1.4 |	production, harvesting, and/or management of living natural resources by small-scale landholders and/or local communities?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.1.4 |	if answer to above question "yes" or "potentially", does project adopt appropriate and culturally sensitive sustainable resource management practices?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.
Please add text here….

P.9.2 |VULNERABILITY TO NATURAL DISASTER

P.9.2.1 |	Does the project have any risks associated with natural or man-made hazards that could result from land use changes due to the project?	☐ YES ☒ NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.
Please add text here….

Would the project involve or lead to:		
P.9.2.2 |	any potential risks that require emergency preparedness and response planning?	☐ YES ☒ POTENTIALLY ☐ NO
P.9.2.2 |	if answer to above question "yes" or "potentially", did the project developer disclose appropriate information about emergency preparedness and response to affected communities?	☒ YES ☐ NO ☐ NA
If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.		
FSC and UTZ certificates, as well as all management plans, have a component about how to address and respond to natural disasters or the most common ones in the local area. Mitigation actions, monitoring plans and capacity building compose the whole Action Plan of each company. See: • TMIX19_1. tarjeta de emergencia • TMIX19_INFORME EVENTO ESPECIAL BOCA DEL MONTE.pdf • TMIX19_nálisis de riesgo-UTZ-2018.xlsx • TMIX19_prevencion y control incendios Meteti 2019.docx		
P.9.3 |BIOSAFETY AND GENETIC RESOURCES		
P.9.3.1 |	Does the project involve the transfer, handling, and use of genetically modified organisms/living modified organisms that may result in adverse effects on biological diversity?	☐ YES ☒ NO
If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
Please add text here….		
Would the project involve or lead to:		
P.9.3.1 |	the transfer, handling and use of genetically modified organisms/living modified organisms (GMOs/LMOs) that result from modern biotechnology	☐ YES ☐ POTENTIALLY ☒ NO
P.9.3.1 |	If answer to above question is "yes" has a risk assessment by a competent Expert stakeholder been carried out in accordance with Annex iii of the Cartagena protocol on biosafety to the convention on biological diversity?	☐ YES ☐ NO ☒ NA
P.9.3.2 |	If answer to above question is "yes" has any risks identified in the risk assessment?	☐ YES ☐ NO ☒ NA
P.9.3.3 |	Forestry (for example Afforestation/Reforestation) involving GMO planting? *Note - Forestry projects (for example Afforestation/ Reforestation) involving GMO planting are not eligible for Certification under Gold Standard for the Global Goals.*	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.
Please add text here….

P.9.4 |RELEASE OF POLLUTANTS

P.9.4.1 |	Does the project have a risk of releasing pollutants to air, water, and land in routine, non-routine, or accidental circumstances?	☐ YES ☒ NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.
Please add text here….

Would the project involve or lead to:

P.9.4.1 |	any potential risk of pollutant release that cannot be avoided?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.4.3 |	If answer to above question is "Yes" or "potentially", has the project identified all potential pollution sources that may degrade the quality of soil, air, surface, and groundwater in the project area?	☐ YES ☐ NO ☒ NA
P.9.4.2 |	If answer to above question is "Yes" or "potentially", do the pollution prevention and control technologies and practices applied during the project life cycle align with national regulations or international best practices?	☐ YES ☐ NO ☒ NA
P.9.4.3 |	If answer to above question is "Yes", is there a monitoring plan to ensure that mitigation measures are implemented, and resources are protected?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.
Please add text here….

P.9.5 |HAZARDOUS AND NON-HAZARDOUS WASTE

P.9.5.1 |	Does the project involve the generation of waste materials (both hazardous and non-hazardous)?	☒ YES ☐ NO
P.9.5.3 |	Does the project involve risk of release of hazardous materials resulting from their production, transportation, handling, storage, or use?	☐ YES ☒ NO
P.9.5.5 |	Does the project involve the use of any chemicals or materials subject to international bans or phase-outs?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.
Standard procedure is followed at the site during operation and maintenance, as well as FSC, UTZ guidelines and regulations. See: • TMIX19_AGROQUÍMICOS QUE SE UTILIZAN EN EL MANEJO DE LAS PLANTACIONES FORESTALES • TMIX19_Protocolo para la aplicación de productos Quimicos • TMIX19_SustainableTimber_Informe FSC 2018 • TMIX19_FM_PUB_ForestFinancePanama_061219_SPA.pdf • TMIX19_PM_Q.Pitti_Finca7428.docx • TMIX19_PM_R.Uyama.docx

Would the project involve or lead to:		
P.9.5.1 |	the generation and management of waste materials?	☒ YES ☐ POTENTIALLY ☐ NO
P.9.5.1 |	treatment, destruction, or disposal of waste material?	☒ YES ☐ NO ☐ NA
P.9.5.1 |	If answer to above question is "Yes", does the project involve an environmentally friendly method that includes appropriate control of emissions and residues resulting from the handling and processing of waste material?	☒ YES ☐ NO ☐ NA
P.9.5.3 |	risk of release of hazardous materials resulting from their production, transportation, handling, storage, or use?	☐ YES ☒ NO ☐ NA
P.9.5.3 |	If answer to above question is "yes", does project has measures in place to address health risks?	☐ YES ☐ NO ☒ NA
P.9.5.4 |	Involve manufacture, trade, and use of chemicals and hazardous materials subject to international bans or phase-outs due to their high toxicity to living organisms, environmental persistence, potential for bioaccumulation, or potential for depletion of the ozone layer	☐ YES ☐ POTENTIALLY ☒ NO

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.
See above

P.9.6 |PESTICIDES & FERTILISERS		
P.9.6.1 |	Does the project involve the use of chemical pesticides?	☒ YES ☐ NO

P.9.6.5 |	Does the project involve purchase, store, manufacture, trade or use products that fall in Classes IA (extremely hazardous) and IB (highly hazardous)	☐ YES ☒ NO
P.9.6.6 |	Does the project use fertilisers, and if so, are measures being taken to minimise their use and nutrient losses to the environment?	☒ YES ☐ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Pesticides are minimized, justified and used only selectively in areas with specific problems. The project follows the national legislation[21] on pesticides and FSC Pesticides Policy. Also, a specific fertilization plan is set up for the agroforestry (cocoa) areas.
In the forest areas, fertilizers are used during planting and during the first 5 years. Mix-species planting is expected to maintain soil fertility, increase soil carbon and nitrogen pools, producing more ecological and economic benefits[22]. Pesticides and fertilizers were cross-checked according to the Management Plans and supporting documentation such as FSC and UZ certification schemes against the World Health Organization Recommended Classification of Pesticides by Hazard and Guidelines to Classification: 2009[23].

See:

- TMIX22_FSC_Report_ST_QB16Fertilización_ver2
- TMIX22_P-4 Uso de agroquimico_ver 7
- TMIX22_ERAS FOFI_2022
- TMIX19_AGROQUÍMICOS QUE SE UTILIZAN EN EL MANEJO DE LAS PLANTACIONES FORESTALES-
- TMIX19_protocolo fert-corregido al 27 de sep 2015
- TMIX19_FM_PUB_ForestFinancePanama_061219_SPA.pdf

Would the project involve or lead to:

P.9.6.1 |	chemical pesticides use for pest management?	☒ YES ☐ POTENTIALLY ☐ NO
P.9.6.4 |	If answer to question above is "yes" or "potentially", does project has documented Chemical Pesticides Policy in place?	☒ YES ☐ NO ☐ NA
P.9.6.5 |	purchase, store, use, manufacture, or trade in Class II (moderately hazardous) pesticides?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.6.5 |	If answer to question above is "yes" or "potentially", does project has appropriate controls on manufacture, procurement, or distribution and/or use of these chemicals?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

See above

P.9.7 |HARVESTING OF FORESTS		
P.9.7.1 |	Does the project have a risk of unsustainable forest management, including timber harvesting?	☐ YES ☒ NO
P.9.7.1 |	Does the project pose a risk of depleting biodiversity and ecosystem functionality in areas where improved forest management is undertaken?	☐ YES ☒ NO
P.9.7.1 |	Does the project risk not meeting requirements for environment-friendly, socially beneficial, and economically viable plantations using native species whenever possible?	☐ YES ☒ NO
If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
Please add text here….		

P.9.8 |FOOD SECURITY		
P.9.8.1 |	Does the project involve the risk of negatively influencing access to and availability of food for people affected?	☐ YES ☒ NO
If the answer to the question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
Please add text here….		
Would the project involve or lead to:		
P.9.8.1 |	modification of the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives?	☐ YES ☐ POTENTIALLY ☒ NO
If the answer is "yes" or "potentially" to the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.		
Please add text here….		

P.9.9 | ANIMAL WELFARE		
P.9.9.1 |	Does the project involve any risks to animal welfare? Animal welfare shall be ensured by providing access to water and food, appropriate environment, humane treatment, and staff training. Evidence of mistreatment will be treated as an immediate non-conformity.	☐ YES ☒ NO
P.9.9.2 |	Does the project involve any potential risk of excessive or inadequate use of veterinary medicines?	☐ YES ☒ NO
P.9.9.4 |	Does the project involve the risk of administering synthetic growth promoters, including hormones?	☐ YES ☒ NO
If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
Please add text here….		

Would the project involve or lead to:		
P.9.9.1 |	animal husbandry or harvesting of fish populations or other aquatic species?[11]	☐ YES ☐ NO ☒ NA
P.9.9.1 |	limiting access for animals to basic needs like drinking water, adequate food, daylight, appropriate shelter etc.?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.9.3 |	inadequate measures to isolate sick animals and control the spread of disease, especially zoonotic diseases?	☐ YES ☐ NO ☒ NA
P.9.9.5 |	inadequate low-stress methods, equipment, and facilities that facilitate calm animal movement.	☐ YES ☐ NO ☒ NA
P.9.9.6 |	inadequate measures to ensure that animals are exposed to the least stress possible during transportation and slaughtering?	☐ YES ☐ NO ☒ NA
P.9.9.7 |	inappropriate spacing per animal and stocking rates per land unit?	☐ YES ☐ NO ☒ NA
P.9.9.8 |	inadequate measures to address the specific needs of aquatic animals?	☐ YES ☐ NO ☒ NA
P.9.9.9 | P.9.9.10 |	primary production of living natural resources such as animal husbandry, aquaculture, and fisheries? If the answer is yes, implement industry-standard sustainable management practices in line with to one or more relevant and credible standards and utilise available technologies.	☐ YES ☐ NO ☒ NA
If the answer is "yes" or "potentially" to any of the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.		
Please add text here….		

[11] 'Involve' means if the project mechanism and/or impact(s) are achieved via changing animal husbandry practices in some way.

P.9.10 |HIGH CONSERVATION VALUE AREAS AND CRITICAL HABITATS		
P.9.10.1 |	Does the project have the risk of negatively impacting HCV areas and/or critical habitats?	☐ YES ☒ NO
P.9.10.2 |	Does the project in the project area or area of downstream impacts have risks to the following: native tree patches, individual native trees, freshwater resources (including rivers, lakes, swamps, temporary water bodies, and wells), habitats of rare, threatened, and endangered species, and biodiversity-enhancing areas?	☐ YES ☒ NO
If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
Please add text here….		
Would the project involve or lead to:		
P.9.10.1 |	identified habitats as HCV areas and or Critical habitats?	☒ YES ☐ POTENTIALLY ☐ NO
P.9.10.1 |	If answer to above question is "yes", does the project have any risks that could negatively impact the catchment, project success, and surrounding HCV and ecological assets, as well as any measurable adverse impacts on the criteria or biodiversity values for which the critical habitat was designated, and on the ecological processes supporting that biodiversity?	☐ YES ☒ NO ☐ NA
P.9.10.1 |	If answer to above question is "yes", is a robust, appropriately designed, and long-term Habitats and Biodiversity Action Plan absent which will make the project unable to achieve net gains of those biodiversity values for which the critical habitat was designated?	☐ YES ☐ NO ☒ N/A
P.9.10.2 |	Does the project area or area of downstream impacts have native tree patches, individual native trees, freshwater resources (including rivers, lakes, swamps, temporary water bodies, and wells), habitats of rare, threatened, and endangered species, and biodiversity-enhancing areas?	☒ YES ☐ POTENTIALLY ☐ NO
P.9.10.2 |	If the answer to the above question is "yes", will the project have any adverse effects on these areas?	☐ YES ☒ No ☐ NA
P.9.10.3 |	If the answer to above question is "yes", does the project has opportunities to minimise unwarranted conversion or degradation of the habitat and to enhance the habitat as part of its development?	☐ YES ☐ No ☒ NA
P.9.10.4 |	Is the project applying Land Use & Forest Activity Requirements and managing a minimum 10% of the project area to protect or enhance the biological diversity of native ecosystems following HCV approach as per the given requirements?	☒ YES ☐ No ☐ NA
P.9.10.5 |	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☐ NO

		☒ NA

If the answer is "yes" or "potentially" to any of the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

The Project does not affect or alter largely intact or HCV ecosystems, critical habitats, landscapes, key biodiversity areas or sites identified. Already existing forests remain. All protection areas are clearly identified and mapped.

The project within its boundaries has an approximate area of 761.58 hectares of natural vegetation at the national level, distributed among the plantations with some gallery forest redoubts, small patches of secondary forest, in all of them have been conducting biodiversity studies to determine whether they have attributes of High Conservation Value (HCV). At Los Monos, San Juan, Santa Cruz 2 and Boca del Monte, all located in the province of Chiriquí, finca Mamoní 1 in the province of Panama and the project Buenos Aires in the province of Darién have attributes that merit HCV status. The Los Monos project was classified in two categories of HCV: category 1 and 2, therefore the focus has been on establishing cooperation between the community and collaborators to join efforts to monitor these attributes and thus quantify whether the measures identified and adopted are sufficient to conserve this type of forest.
Flora species such as Bogomaní (*Virola* spp), María (*Calophyllum longifolium*), Cedro amargo (*Cedrela odorata*), Amarillo (*Terminalia amazonia*), Roble (*Tabebuia rosea*) have been identified, with some degree of threat or critical danger that deserves to be conserved. Among the fauna observed are the iguana (*Iguana iguana*), white-faced monkey (*Cebus capucinus*), woodpecker (*Melanerpes ribricapillus*), boa (*Boa constrictor*), toucan (*Ramphatos sulfuratus*), torcazas (*Columba fasciata*) and more than 50 bird species classified as migratory, endemic and coastline.
See documents:

- TMIX19_RESUMEN PÚBLICO_2019 ver. final_16.04.2019.pdf
- TMIX19_Resultados del Monitoreo Ambiental_Sitio BAVC_Los Monos 2019(1).pdf
- TMIX19_Proyecto BAVC S.C 2.pdf

P.9.11 |ENDANGERED SPECIES

P.9.11.1 |	Does the project lead to the reduction or negative impact on any recognised Endangered, Vulnerable or Critically Endangered species?	☐ YES ☒ NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here….

Would the project involve or lead to:

P.9.11.2 |	distortion of habitats of endangered species?	☐ YES ☒ POTENTIALLY ☐ NA
P.9.11.2 |	If answer to the above question is "yes", does the project plan to protect and enhance them?	☒ YES ☐ POTENTIALLY ☐ NO ☐ N/A

P.9.11.2 |	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☒ NO ☐ NA

If the answer is "yes" or "potentially" to any of the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

There are some endangered species identified as potentially being present within the Project boundary. These are mainly tree species, birds and reptiles living in the project region. All were mainly found in remaining forest patches in the area, and deforestation is the main reason they are threatened. Protection of remaining forest patches and reforestation are the main measures named to protect the threatened species.
See folders:
EC_Biological_Analysis_2014
FOFI_HCV_Biodiversity

Areas for conservation purposes are managed under a forest enrichment approach and mapped. The HCV approach is taken into account to restore and protect degraded areas of ecological, religious or historical relevance.
Native and threatened tree species were selected for reforestation next to commercially more attractive species.

P.9.12 |INVASIVE ALIEN SPECIES

P.9.12.1 |	Does project introduce any alien species (not currently established in the country or region of the project) into new environments?	☐ YES ☒ NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here….

Would the project involve or lead to:

P.9.12.1 |	risk of introducing any alien species with a high risk of invasive behaviour regardless of whether such introductions are permitted under the existing regulatory framework?	☒ YES ☐ POTENTIALLY ☐ NO
P.9.12.1 |	risk of potential accidental or unintended introductions including the transportation of substrates and vectors (such as soil, ballast, and plant materials) that may harbour alien species.	☐ YES ☐ POTENTIALLY ☒ NO
P.9.12.2 |	risk of spreading alien species into areas in which they have not already been established?	☐ YES ☐ POTENTIALLY ☒ NO

If the answer is "yes" or "potentially" to any of the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Acacia has a risk to be invasive and is therefore controlled.

See “FICHA TECNICA 3 2023 CONTROL DE REGENERACIÓN DE ACACIA EN LAS FINCAS DE SAN JUAN”

APPENDIX 2 - CONTACT INFORMATION OF PROJECT DEVELOPER(S)

Organization name	FORLIANCE GmbH	
Registration number with relevant authority		
Street/P.O. Box	Eifelstr. 20	
Building	/	
City	Bonn	
State/Region	North Rhine-Westphalia	
Postcode	53225	
Country	Germany	
Telephone		
E-mail	info@forliance.com	
Website	www.forliance.com	
Contact person	German Rodriguez	
Title		
Salutation	Mr.	
Last name	Rodriguez	
Middle name	-	
First name	German	
Department	Nature Based Solutions	
Mobile		
Direct tel.	+507 6237-1389	
Personal e-mail	german.rodriguez@forliance.com	

APPENDIX 3 - LUF ADDITIONAL INFORMATION

Risk of change to the Project Area during Project Certification Period:	Low risk due to a previous analysis before acquiring and including the area to the project. An efficient sustainable management combined with the active participation of important national and international stakeholders. Project participants are informed that in case of the sale of areas, new owners must agree to leave the area under selective harvest management until the end of the crediting period.
Risk of change to the Project activities during Project Certification Period:	Low risk due to elaborated forest management plans and dedication of project participants to re-establish permanent forest cover.
Land-use history and current status of Project Area:	Current situation: Before the project activity started, the baseline of the project area was a mix of grassland and pioneer shrubs. All these areas were evaluated and classified as applicable planting areas for reforestation and agroforestry activities. Other small patches of forest left were classified and nowadays managed as conservation areas. Other areas (previously planted or due to the project activity) located on the border of a river or other watershed are also classified as conservation areas. Land use history: http://countrystudies.us/panama/46.htm
Socio-Economic history:	Current situation: It is quite common that the areas that were bought for the project were not managed efficiently by the previous owner due to investment and know-how barriers. A part of the previous owners decided to sell the land and migrate to the cities, start a new business in the region, or invest in education, among others. Our experience during more than 15 years had revealed how reforestation and agroforestry activities, that are established in different rural areas can be an effective support to alleviate regional poverty, promote regional know how, enhance capacity

	building and be a key element for an improved socio-economic condition, by providing direct and indirect jobs. Socio-economic history: http://countrystudies.us/panama/41.htm http://countrystudies.us/panama/44.htm
Forest management applied (past and future)	The objective of the project is producing high quality hardwoods at the same time as sequestering a high amount of carbon, while stabilizing and restoring fragile and degraded areas in an economically, socially, and ecologically viable way. In contrast to common reforestation schemes, the project concept is a concept that also makes use of native tree species mixed with non-native species, mostly Teak (*Tectona grandis*), to create sustainable and species-rich forests with the use of high quality hardwoods and the creation of an additional income from carbon credits. These carbon offset credits can be traded on international carbon markets and will be certified according high quality carbon standards. Overall, the project specific objectives are the establishment of profitable production-and conservation systems, enabling the enterprise to work in a beneficial way through the creation of investment opportunities, which are economically, ecologically and socially sound. Creating year round work opportunities in the project areas that allow the development of a stable work environment for men and women, that ultimately support the development of these regions.
Forest characteristics (including main tree species planted)	According to the management plan the project is stratified in three main activities: **Reforestation with native and exotic tree species (teak) for commercial purposes:** the following species are planted: *Anacardium excelsium, Astronium graveolens, Bombacopsis quinata, Cedrela odorata, Dalbergia retusa, Dipterix panamensis, Hyeronima alchorneoides, Swetenia macrophylla, Tabebuia guayacan, Khaya senegalensis*, *Tabebuia rosea*, *Terminalia amazonia* and *Tectona grandis*.

	Reforestation with native species for conservation purposes: some specific areas and MU are only planted with native species (see species mentioned above) to accomplish this activity. **Agroforestry with cacao mixed with shadow native tree species**: *Theobroma cacao* and *Inga* sp. are the main species that can be found in the respective Mus.
Main social impacts (risks and benefits)	The main social benefits of the project are: - Poverty alleviation: many people in rural areas are obligated to migrate to the cities due to the lack of regional job opportunities. - Equal rights: the company has a multicultural team and a mix of people with equal rights without gender and race discrimination. - Capacity building: the employees and neighbors are continuously learning about the importance of and significance of sustainable activities and the importance of climate change mitigation. Some low risks of the project are: - Poverty alleviation: the increase of income in rural areas might lead to the use of unsustainable resources, therefore the company is investing also in capacity building including topics to encourage a sustainable live style. Equal rights: a multicultural team requires also the need of having a comprehensive and tolerant perception. The companies encourage the team work of the employees investing in yearly external activities; like the participation of a football tournament. Social outreach focuses on involvement with local schools, like organizing excursions to project areas.
Main environmental impacts (risks and benefits)	The main environmental benefits of the project are: - Building new forests: reforestation with a mix of native tree species is a key element to obtain an important

	synergy between the different natural resources existing in the area, and increase the protection of those basic elements: retaining water in the trees and soil to prevent flooding, prevent soil erosion protecting the nutrients and soil microelements, provide shelter to migratory and native animals and insects. - Forest Conservation: through this activity the project ensures forest connectivity creating small corridors that impact positively the interconnectivity of different regional natural ecosystems. - Climate change: it is a climate project focused in mitigation strategies with the aim of fighting global warming. Some low risks of the project are: - Climate impact: due to climate change, strong winds, fires and/ or flooding can occur. Even though the project is aware of these situations and is prepared to react, different animals and insect species that form part of this ecosystem can be affected. - Project implementation: during the planting year, soil has to be prepared manually and with small machinery. In this sense the previous soil habitat can be affected. However, after this activity the soil is protected during the rotation period and the creation and conservation of organic soil compensates for such impact. - Thinning: there is a risk of disturbing the existing understory vegetation. However, the main impact is in small bushes that recover really fast. http://www.forestfinance.de/en/our-forests/ecological-aspects/
Financial structure	The project has more than 13,000 private investors with a legal contract allowing them to clearly identify the part and percentage of their share inside the project. This includes a transparent process to provide land tenure titles, specify the owners of the resources inside the project (wood, CO2 and other resources). Further, the Forest Finance Group cooperates directly with different organization for the certification management and

	sale of carbon credits: FORLIANCE GmbH. The management expertise of this cooperation is a must to administer the funds effectively, choose wisely the technical team for operational management and guaranty the permanence of the project and therefore guaranty the predicted revenue from the project activity to all the persons that are part of a successful international cooperation http://www.forestfinance.de/en/returns/calculation-of-returns/
Infrastructure (roads/houses etc):	Folder "Roads and Infrastructure"
Water bodies:	Folder "Hydrology"
Sites with special significance for indigenous people and local communities - resulting from the Stakeholder Consultation:	Panama does have several "comarcas" owned and administered by indigenous peoples. These lands do not overlap with the project areas. See map "Indigenous_people"
Where indigenous people and local communities are situated:	See map "Indigenous_people"
Where indigenous people and local communities have legal rights, customary rights or sites with special cultural, ecological, economic, religious or	See map "Indigenous_people"

spiritual significance:	

APPENDIX 4 - DESIGN CHANGES

The project does currently not apply for any permanent design change.

A4.1. Details of proposed or actual design change

>>

A4.2. Describe the impacts of design change on the following

a. Additionality

>>

b. Applicability of methodology and other methodological regulatory documents with which the project activity has been certified

>>

c. Compliance with the monitoring plan of the applied methodology

>>

d. Level of accuracy and completeness in the monitoring of the project activity compared with the requirements contained in the registered monitoring plan

>>

e. Scale of the project activity

>>

f. Stakeholder consultation

>>

g. Sustainable development criteria

>>

h. Safeguarding assessment

>>

i. Compliance with applicable legislation

>>

j. <u>Only for LUF Projects</u>: Transparent summary of all approved changes in Project Area, Eligible Area and accompanying changes in ex-ante emissions removals.

DATE OF APPROVED DESIGN CHANGE (MM/DD/YYYY)	PROJECT AREA (HA)		ELIGIBLE AREA (HA)		EX-ANTE ESTIMATE (TCO2E)	
	INCREASE OR DECREASE ?	VALUE (HA)	INCREASE OR DECREASE ?	VALUE (HA)	INCREASE OR DECREASE ?	PERCENTAGE (%)

DOCUMENT HISTORY

Version	Date	Remarks
1.5	29 June 2023	Editorial changes to match V2.1 of the Safeguarding Principles Requirements
1.4	21 June 2023	Editorial changes to match V2.0 of the Safeguarding Principles Requirements
1.3	14 April 2023	Integrated the design change memo as annex of the document. Editorial changes
1.2	14 October 2020	Hyperlinked section summary to enable quick access to key sections Improved clarity on Key Project Information Inclusion criteria table added Gender sensitive requirements added Prior consideration (1 yr rule) and Ongoing Financial Need added Safeguard Principles Assessment as annex and a new section to include applicable safeguards for clarity Improved Clarity on SDG contribution/SDG Impact term used throughout Clarity on Stakeholder Consultation information required Provision of an accompanying Guide to help the user understand detailed rules and requirements
1.1	24 August 2017	Updated to include section A.8 on 'gender sensitive' requirements
1.0	10 July 2017	Initial adoption