



International
Carbon
Registry

Bright Future Africa – Vol. 2 (Uganda)

AR-ACM0003: Afforestation and reforestation of lands except wetlands – v2.0

Abstract

This project is designed to plant 255 million indigenous trees on deforested public and institutional land provided by the Ministry of Water and Environment, the Inter Religious Council of Uganda and the Kingdoms of Buganda, Bunyoro, Busoga and Tooro.

We use CDM-methodology AR-ACM0003: Afforestation and reforestation of lands except wetlands - Version 2.0 with a 45-year crediting period, 5-year monitoring cycle and renewal every 15 years. GRO Foundation uses a census-based accounting method and exclusively measures the species-specific sequestration of newly planted trees for a higher level of accuracy and transparency of the project's carbon sequestration. We estimate an offset of 225 million tCO₂e during the monitoring period.

Logo: 
GRO Foundation

Project design description (PDD)

Basic Information	
ID of project	93
Project name	Bright Future Africa – Vol.2 (Uganda)
Project proponent	GRO Foundation
Representative	Paul Flynn Executive Chairman and Founder Seestrasse 87, 6052 Hergiswil am See, Switzerland +49 89 444 373 - 22 office@grofoundation.io
Representative	Emanuela Shopova Director of Carbon Integrity and Compliance Seestrasse 87, 6052 Hergiswil, Switzerland +359 88 209 4799 emanuela@grofoundation.io
Statement by the project proponent	The GRO Foundation states that he is responsible for the preparation and fair presentation of this Project Design Document (PDD) and all accompanying documentation provided
Pre-registration date	20.09.2023
Version number of the PDD	14
Date of version	24 th January 2025
Methodology(ies) applied and version number	☐ No ☒ Yes, AR-ACM0003: Afforestation and reforestation of lands except wetlands - v2.0
Criteria for validation	☐ ICR requirement document v.4 ☒ ICR requirement document v.5 ☒ ISO 14064-2 ☒ Applied methodology, AR-ACM0003: Afforestation and reforestation of lands except wetlands - v2.0 ☐ Other, please specify.
Host country(ies)	Uganda
Host country approval	☐ Yes ☒ No
Sectoral scope of project activity	14
Multiple project activities	☒ Yes ☐ No
Methodology(ies) applied and version number	AR-ACM0003: Afforestation and reforestation of lands except wetlands - v2.0
Type (CDR, avoidance, hybrid)	☒ CDR

	☐ Avoidance ☐ Hybrid
MRV cycle:	5 years
Estimated annual average GHG emission mitigation (t CO ₂ -e)	3,079,370 tCO ₂ e

Table of Contents

Project design description (PDD).....	1
1. Project description	5
1.1 Purpose, objectives, and general description of the project.....	5
1.2 Project type and sectoral scope	8
1.3 Project	8
1.3.1 Eligibility criteria for grouped project.....	9
1.4 Location	10
1.5 Conditions prior to implementation.....	16
1.6 Technology applied	16
1.7 Roles and responsibilities	17
1.7.1 Project proponent(s)	17
1.7.2 Others involved in the project.....	17
1.8 Chronological plan/implementation	17
1.9 Eligibility	18
1.10 Funding.....	19
1.11 Ownership	19
1.12 Other certifications.....	20
1.13 Double counting, issuance and claiming	20
1.13.1 Other registration and double issuance	20
1.13.2 Double claiming and other instruments.....	21
1.14 Other benefits	0
1.15 Host country attestation	0
1.16 Additional information	0
1.16.1 Confidential/sensitive information.....	0
2. Crediting	2
2.1 Project start date.....	2
2.2 Expected operational lifetime or termination date.....	2
2.3 Crediting period.....	2
2.4 Calander year of crediting	2
3. Safeguards	5
3.1 Statutory requirements	5
3.2 Potential negative environmental and socio-economic impacts	6
3.3 Consultation with interested parties and communications	7
3.3.1 Stakeholders and consultation	9
3.3.1 Public comments	13
3.4 Environmental impact assessment.....	14
3.5 Risk assessment.....	14
3.5.1 Additional information on risk management	15
4. Methodology	16
4.1 Reference to applied methodology and applied tools	16
4.2 Applicability of methodology	16

4.3	Deviation from applied methodology	19
4.4	Other Information relating to methodology application.....	22
5.	Additionality	23
5.1	Level 1 - ISO 14064-2 GHG emissions additionality.....	23
5.2	Level 2a – Statutory additionality.....	23
5.3	Level 2b – Non-enforcement additionality.....	23
5.4	Level 3 – Technology, institutional, common practice additionality	23
5.5	Level 4a – Financial additionality I.....	24
5.6	Level 4b – Financial additionality II	24
5.7	Level 5 – Policy additionality	24
6.	Baseline scenario.....	26
7.	Project boundary.....	33
8.	Quantification of GHG emission mitigations	39
8.1	Criteria and procedures for quantification.....	39
8.1.1	Baseline emissions.....	40
8.1.2	Project emissions.....	41
8.1.3	Leakage.....	54
8.2	Quantification of Net-GHG emissions and/or removals.....	56
8.3	Risk assessment for permanence	61
9.	Management of data quality	66
10.	Monitoring.....	67
10.1	Monitoring plan.....	67
10.2	Data and parameters remaining constant.....	68
10.3	Data and parameters monitored.....	70
	Appendix I	83

1. Project description

1.1 Purpose, objectives, and general description of the project

- **Project title**

Bright Future Africa – Vol.2 (Uganda)

- **Objectives:**

- Permanent reforestation
- Restoring the natural biodiversity on deforested public and institutional land
- Carbon certificates issuance
- Empowering the local communities with social impact and livelihood projects; sustainability

- **Conditions prior to initiation of the project**

The project is strategically planned for implementation on deforested public and institutional land, provided by key stakeholders including the Ministry of Water and the Environment, the Inter Religious Council of Uganda (IRCU), and the Kingdoms of Buganda, Bunyoro, Busoga, and Toro. Prior to the initiation of the project, the condition of the designated land is characterized by extensive deforestation.

It is imperative to note that the existing trees currently occupying the designated land before the project's implementation will not be subjected to cutting, harvesting, or accounting within the scope of our quantification efforts. Our focus is exclusively directed towards the meticulous quantification of newly planted trees, ensuring a dedicated approach to afforestation and carbon sequestration without impacting the standing trees on the ground before the commencement of our initiative. Additionally, we monitor the mortality of pre-project trees to ensure their continuous existence aligns with the baseline scenario throughout the crediting period.

- **Technologies/measures to be utilized and/or implemented**

GRO adheres to the applied methodology AR-ACM0003: Afforestation and reforestation of lands except wetlands --- Version 2.0, the referred methodological tools, and International Carbon Registry (ICR) Requirement document version 5.0 for accurate accounting of planted trees, survival rates, growth rates, and sequestration estimates. By following standardized protocols and guidelines, the initiative ensures consistency and reliability in carbon sequestration reporting.

GRO uses GIS and remote sensing technologies to document the plots of land. Furthermore, the project deploys a tree mapping app published by Plant for the Planet to track plots, planted trees by species, monitoring data tracking.

- **Planting methodology and measures**

Beyond that, the project is delivered by manual labour. The GRO Foundation relies on trees sourced from tree nurseries and planted by hand.

Planting, weeding and long-term caretaking of trees is conducted by the resident Community-Based Organizations (CBOs) in exchange for livelihood and social impact project funding. With all agreements

in place, the Initiative provides seedlings and saplings, with an average age of 3-6 months, acquired from wholly owned or third-party tree nurseries.

To ensure accurate accounting of newly planted trees the GRO Foundation records the number of tree nursery saplings bought and acknowledge this number by collecting invoices for each purchase, planting reports from our implementation partners and photo/videographic evidence of the planting locations. Survival and growth rates are reported in our internal annual report and the non-survived trees are replaced with seedlings from the same tree species. The project has 5-years monitoring and reporting cycle, aligned with the applied methodology requirements.

Based on the monitoring and reporting of data points, all surviving GRO's trees, their growth, and sequestration rate will be counted towards carbon sequestration results.

- **Stakeholder management/The GRO A, B, C zoning model**

The GRO A, B, C zoning model and methodology provides community incentives, capacity building, and mobilization as a key to assuring permanent reforestation and higher GHG emissions removal.

Our model increases permanent forest cover, while also introducing technology and tools to local communities that create more productivity with less land use. The model also provides alternatives to illegal logging, which removes pressure of permanent forest.

Zone A is dedicated to permanent afforestation. Here GRO funds 100% of all re/afforestation costs and creates local employment through the GRO subscriber fund. Subscribers are paid on a weekly basis, based on the number of trees planted. This provides an immediate short-term source of income to participants.

Zone B is dedicated on the sustainability of the project. Here, GRO focuses on food security water security and improving farming best practices and access to equipment and technology. The goal is to remove the need for illegal logging by providing better infrastructure and alternatives. We start with a local demonstration farm which acts as a local source of employment, and doubles as a skill center for best practices and accessing grants to deploy best practices. The demonstration farm also provides access to dedicated trees for firewood, charcoal and building materials. Trees dedicated for use are not part of the GRO GHG emissions accounting.

Zone C is dedicated to all communities surrounding the forest. It directly impacts the local community in the mid-term and long term. For the mid-term we fund industrialization such as tractors, and irrigation systems as well as farm tools and equipment. This provides a higher level of technology to increase farm yields and higher income per family. For the long term we focus on funding education and skill-center facilities as well as providing grants and micro-finance for community members to start local businesses. Provided the forest are maintained, micro-finance is considered paid.

The GRO A, B, C zoning model aims to uplift communities at a grassroots level. By maintaining the forest, they earn the opportunity to leave poverty behind.

- **Project boundary**

The project boundary is Uganda. The chosen project locations are exclusively public and institutional land provided to the GRO Foundation for the purpose of implementation the Bright future Africa - Vol.2 (Uganda) project.

Sources included within the project boundary comprise above and below woody biomass, specifically trees and shrubs.

Dead wood, litter, and soil organic carbon are intentionally excluded from our quantification process, aligning with the directives outlined in Section 1. Introduction of the applied methodology. This decision is driven by our commitment to measure and account for the distinct impact attributed solely to the newly planted trees within the scope of our project.

Planting locations are exclusively selected on deforested public and institutional deforested land provided by respective authorities. Planting locations range in size from a minimum of 8 hectares of community land to hundreds of hectares owned by heritage institutions to thousands of hectares managed by government authorities for i.e. forest-, national park-, national reservation, river lands and road authorities etc.

This allows for a decentralized plantation. Specific locations and their respective census will be published in our monitoring reports.

The first project instance is a 1,385 ha plot in Mayuge district within the Busoga Kingdom.

Maps and more details available in section 7. Project boundary of this PDD.

- **Baseline scenario**

To establish the project Baseline scenario, we adhere to the requirements of the ICR Requirement document version 5.0 and the applied methodology - AR-ACM0003: Afforestation and reforestation of lands except wetlands - V.2.0.

We identified realistic and credible land-use scenarios that would have occurred on the land within the proposed project boundary in the absence of the Bright Future Africa - Vol.2 (Uganda) project afforestation or reforestation activity under the clean development mechanism (CDM).

Baseline scenario details available in section 6. Baseline scenario of this PDD.

- **Estimate of annual average and total GHG emission mitigation**

GRO uses census-based accounting and exclusively measures the species-specific carbon sequestration of newly planted trees. Using data from internal research conducted in partnership with the Makerere University, Kampala, we estimate an offset of 33,392,201 tCO₂e for the initial 15-year period and 138,571,686 tCO₂e offset during the 45-year crediting period. Based on the methodological AR-TOOL14 "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities" we quantify our estimations by implementing the "Estimation by modelling of tree growth and

stand development" method. Using area-based data from previous years from research conducted in collaboration with Makerere University. Our method for estimating carbon sequestration in trees relies on individual tree growth rates, heights, diameters, and other relevant parameters.

Within this framework, the GRO Foundation excludes the three additional carbon sinks – deadwood, litter, and soil organic carbon, and focuses exclusively on the above and below-ground biomass of shrubs and trees. Throughout the 45-year crediting period, we conduct continuous monitoring of project locations on a 5-year cycle, and internal annual reports to capture evolving dynamics.

Validation and verification procedures align with this 5-year monitoring cycle. These processes involve the systematic measurement of individual tree growth, ensuring understanding of the project's impact on carbon sequestration over time.

Annual average carbon sequestration (45 years)	3,079,370 tCO ₂ e
TOTAL GHG emission mitigation (45 years)	138,571,687 tCO ₂ e

1.2 Project type and sectoral scope

This Project is a grouped CDR and carbon sequestration project that implements the United Nations framework convention for climate change (UNFCCC) approved methodologies, methodological tools, handbooks, and supportive publications. The sectoral scope is 14 (Afforestation and Reforestation).

Sectoral scope	14 Afforestation and Reforestation
Project type	CDR – Carbon Sequestration

1.3 Project

- ☐ Single location/area or installation
- ☐ Bundled project (multiple locations/areas or installations)
- ☒ Grouped project (locations/areas or installations added post validation)
- ☐ Bundled and grouped project.

GRO Foundation Office Uganda
P.O box 162075 Kampala
Plot 4 - 6
Ridgeway Drive, Kololo
Kampala, Uganda

1.3.1 Eligibility criteria for grouped project

The design of this project requires a grouped approach. Grouped projects such as ours incorporate multiple project activities.

As stated previously, we operate across Uganda in zones following kingdom boundaries and using the structures of the Inter Religious Council of Uganda (IRCU).

We primarily source land for reforestation from three authorities. Land under the authority of the Ministry of Water and the Environment and its local beneficiaries, kingdom councils and Inter Religious Council of Uganda (IRCU).

This approach is key to mobilizing communities for planting and creating sustainable impact following UN-SDG goals. To achieve this however, the project must be designed to accommodate multiple locations that are grouped for the purpose of creating carbon certificates within this project.

As per methodology requirements, the criteria for site selection including baseline, additionality criteria and subsequent project activities remain standardized across all locations.

Key activities across all project zones include:

- Identify specific plot of land and secure local agreement referencing umbrella agreement
- Register intent of reforestation with district forest authority
- Survey of land incl. GIS mapping, soil, hydrology, list of indigenous tree species
- KML map
- Identification and appointment of dedicated project & stakeholder manager
- Formulation of location specific reforestation plan incl. timeline, stakeholder engagement, required resources, logistics, equipment etc
- Stakeholder engagement process incl. local community mobilisation, active reforestation groups, neighbouring communities, and businesses
- Identification of social impact investment opportunities
- Establishment of tree-nursery or securing of supply from local tree nurseries
- Community mobilisation for weeding and planting
- Community stewardship for long-term care of location
- Monitoring, Quality Assurance, and reporting cycle

Inclusion of project activities post registration

In accordance with the eligibility criteria of the ISO 14064-2, the ICR Requirement Document v5.0, and the applied methodology AR-ACM0003: Afforestation and reforestation of lands except wetlands - v2.0. for adding new project activities post-registration, a detailed description of proposed project activities will be incorporated into the monitoring report, serving as an attachment. This monitoring report will be published on a 5-year monitoring cycle.

Each project instance will be uniquely identified within a KML file.. The same will be incorporated into the PDD and uploaded to the ICR platform after validation, several months before the planned planting date. The descriptive document will encompass site selection data and an overview of key activities, ensuring alignment with the already registered group project's eligibility criteria.

Furthermore, the project instance will undergo validation renewal twice every 15 years to ensure conformity to the ICR requirements. The start date will coincide with or follow the original grouped start date.

In cases where a new project instance involves a new proponent, the project design description will be updated accordingly.

1.4 Location

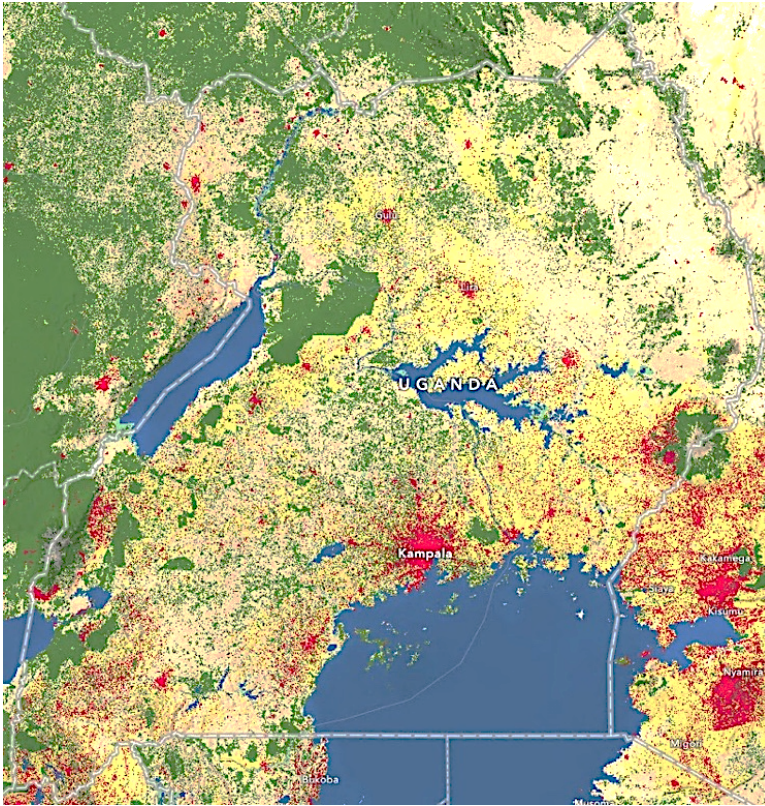
The project location is Uganda.

The Project Area is the geographic area in reforestation activities are implemented. Multiple areas can occur within a planting zone. Areas are also grouped by each project activity instance. This means that several project activity instances on multiple areas can occur within the same zone over time.

The Project is designed as a grouped project with multiple project instances. The project utilises a census-based accounting method, whereby the project boundary is defined by the tree itself. The project considers deforested public or institutional land with individual plots of a minimum 8-hectare area and space for 10,000 trees.



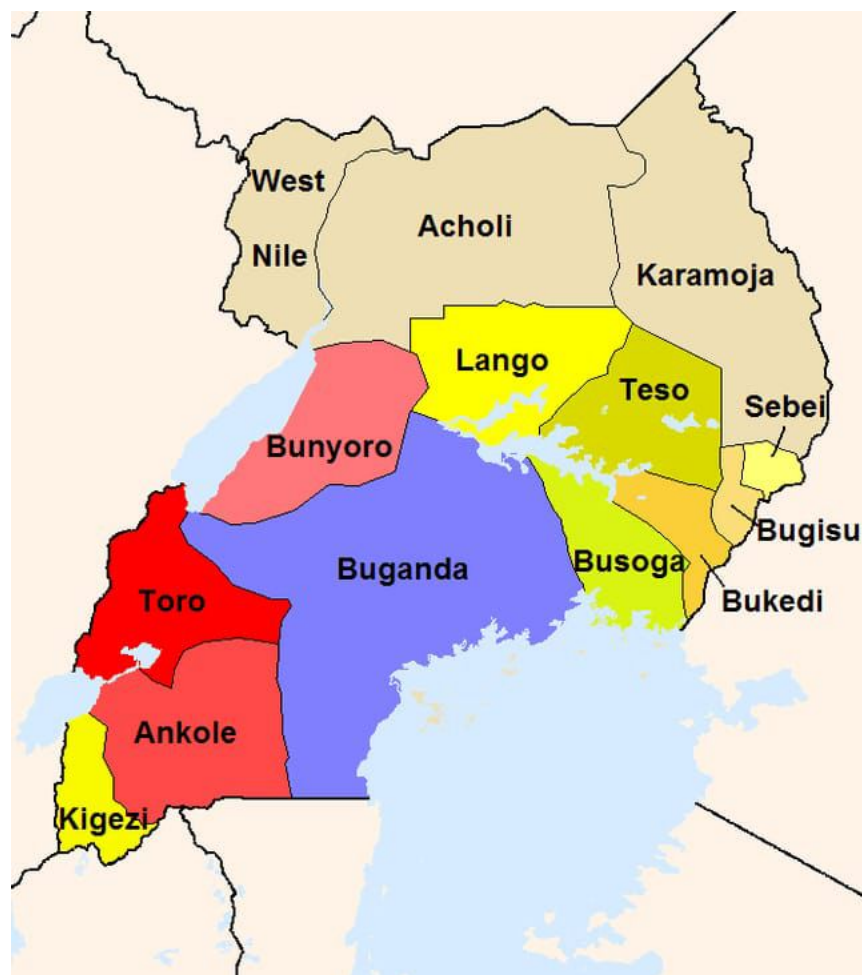
Map 1: Project location – Uganda



Map 2: Forest/Non-Forest Analysis Map for 2023 of the project location – Uganda (Source: <https://livingatlas.arcgis.com/landcoverexplorer/#mapCenter=33.54280%2C0.25100%2C12.307385411495364&mode=step&timeExtent=2017%2C2023&year=2023&downloadMode=true>)

Legend: Red – Built Area; Green – Trees; Yellow – Crops; Light Yellow – Bare ground; Blue – Water

The project will be grouped by project zones with multiple project areas within them. Project zones will be primarily kingdom territory i.e. Buganda kingdom, Busoga Kingdom etc or protected forest areas i.e. Mabira Forest, Bugoma Forest, Rwizi River, Rwenzori Mountain range etc.



Map 3: Kingdoms and Regions in Uganda

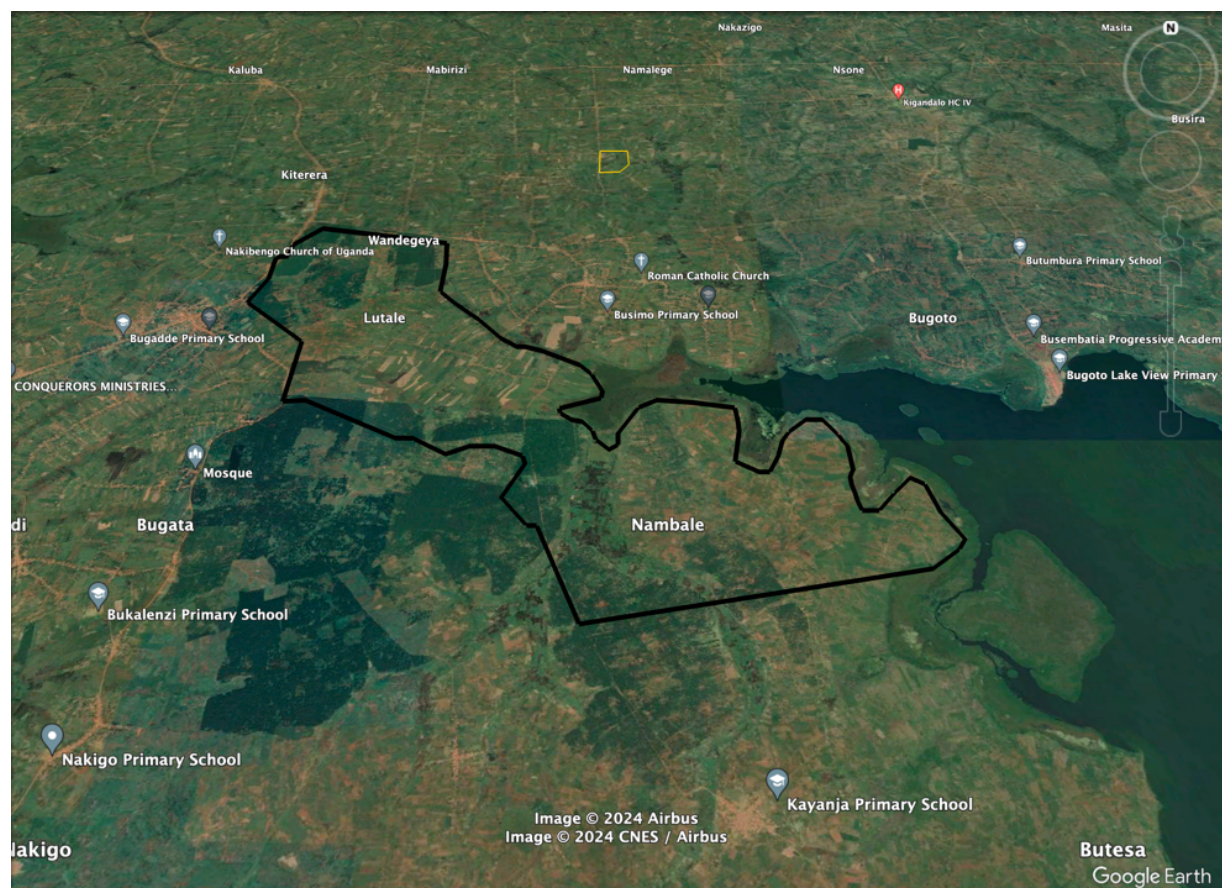
First Project Instance(s)

With two exceptions, the first project Zone and respective instances are within the Busoga Kingdom. The Busoga Kingdom is situated between Lake Victoria in the South, Lake Kyoga in the north, the river Nile in the west and the Mpologoa river in the east.



Map 4: Planting sites in Busoga Kingdom

The First Project Instance (Instance 1) is a 2 314 haplot in Mayuge district, Busoga Kingdom. The proposed eligibility area is decreased to a net area of 1 427 ha. The planting site is provided through GRO's partner – the Inter Religious Council of Uganda by the Saudi Marble Company Uganda Ltd. The plot is confirmed as marked for re/afforestation by the Uganda Muslim Supreme Council (UMSC).



Map 5: Instance 1 Mayuge district, Busoga Kingdom 2,314 ha planting site 2024 (Eligibility Area)



Map 6: Instance 1 Mayuge district, Busoga Kingdom 1 385 ha planting site 2024 (Net Area) in white

Further maps can be found on this link: <https://grofoundation.io/mapEarth.php>

KML files for each project instance will be attached to the 5-years Validation and Verification Report.

Address	Multiple locations around Uganda
County/province	Uganda
Country	Uganda
Region	Multiple locations around Uganda
Geographic location	

Latitude	1.3733° N	
Longitude	32.2903° E	
Map link	https://grofoundation.io/mapEarth.php	

1.5 Conditions prior to implementation

All project instances, including initial and post-validation additions, adhere strictly to ISO 14064-2, the ICR Requirement Document v5.0, and the applied methodology AR-ACM0003: Afforestation and reforestation of lands except wetlands - v2.0.

Planting sites are carefully selected on deforested public and institutional lands to restore and expand forest reserves, pocket forests, and river lands. This selection process prioritizes the restoration of natural biodiversity, aligning with conservation goals.

At the time of site selection, the land is exclusively deforested institutional land, devoid of any active long-term land use. Environmental conditions are characterized by two rainy seasons annually, occurring from March to May and September to November. To optimize tree survival rates amidst changing climatic conditions, planting activities are coordinated in consultation with the National Forest Authority of Uganda. This ensures adaptation to local environmental dynamics.

Prior to planting, we secure an evidence statement confirming with the respective local authorities and/or landowners that the designated site is deforested or suitable for forest planting. This ensures compliance with regulatory requirements and safeguards against unintended land use conflicts.

1.6 Technology applied

The GRO Foundation primarily relies on labor provided by Community-Based Organizations (CBO) volunteers to raise saplings in tree nurseries and plant trees on suitable land. The use of drones for planting is being explored.

Relevant documentation of stakeholder and land agreements is stored in a database alongside planting, monitoring and verification reports. As evidence, the GRO Foundation also records photo and video evidence of facilities before and after planting as well as during the growth phase of trees.

Finally, the GRO Foundation also deploys Tree Mapping software provided by Plant-for-the-Planet, which documents planting locations, tree species and other relevant data.

In addition to our existing practices, the GRO Foundation considers the implementation of remote sensing techniques on selected larger sites for statistical purposes.

1.7 Roles and responsibilities

1.7.1 Project proponent(s)

Organization Name	Cormac Associates Ltd. (acting on behalf of GRO Foundation until ongoing registration being finalized)
Role in the project	Project Owner
Contact person	Paul Flynn
Title	Executive Chairman & Founder
Address	Varna Business Park 9009 Varna, Bulgaria
Email	office@grofoundation.io

1.7.2 Others involved in the project

Organization name	Inter Religious Council of Uganda (IRCU)
Role in the project	Project Implementor
Contact person	Dr. Hussein Muhammad Bowa
Title	IRCU Secretariat
Address	Busoga Muslim Region
Telephone	+256 7724 41948
Email	Drbowa@gmail.com

1.8 Chronological plan/implementation

- Start date 15/05/2024 - Baseline period Doesn't apply as we account only for the newly planted trees. Please check section 8.1.1 Baseline Emissions - Termination of the project 14/05/2069 - Frequency of monitoring, reporting, crediting period Monitoring and reports – 5 years
--

Crediting period – 45 years (15 years with twice renewable)

Renewal – twice every 15 years

- **Validation and verification activities**

5 years

1.9 Eligibility

The project is designed to meet with the ICR and UNFCCC eligibility criteria for carbon certification, ensuring its contribution to climate change mitigation. It fulfills the eligibility criteria outlined in the ICR Requirement Document Version 5.0 and the applied methodology AR-ACM0003: Afforestation and reforestation of lands except wetlands --- Version 2.0. By focusing on reforestation and sustainable land use practices, the project aligns with the principles of sustainability and supports the long-term health and productivity of the land.

ICR eligibility is attained by registering the project on or after January 1st, 2021, in accordance with the ICR requirements v5.0. Additionally, the project meets ICR prerequisites by:

- a) Being structured as a reforestation initiative, accounting for newly planted trees to ensure additionality.
- b) Adhering to an approved CDM-Methodology for robust project implementation.

Project activities concentrate on afforestation and reforestation efforts on deforested land, with no intentions of commercial harvesting throughout the project's lifespan.

The project is purposefully designed to establish new forest cover on deforested or otherwise suitable land, with strict prohibitions against planting on wetlands, tidal wetlands, and organic soils.

For each project instance, verifiable information will be provided through:

- a) Aerial photographs or satellite imagery complemented by ground reference data
- b) Land use or land cover information derived from maps or digital spatial datasets
- c) Ground-based surveys, including information from permits, plans, or local registers such as cadaster, owners' registers, or other land registers
- d) In the absence of options (a), (b), and (c), a written testimony produced through a Participatory Rural Appraisal (PRA) methodology.

In line with the ICR Requirement Document v5.0, section 3.4.2 Crediting Period, the project opts for a crediting period of 45 years, comprising 15 years with the option for two renewals every 15 years, ensuring sustained carbon sequestration benefits over time.

Furthermore, the project commits not to issue instruments for the same greenhouse gas emission mitigations under ICR and another GHG program, ensuring transparency and avoiding double counting of emission reductions.

1.10 Funding

The project receives no external funding. The project is funded exclusively via the sale of carbon certificates and relies on the issuance of preliminary carbon certificates.

1.11 Ownership

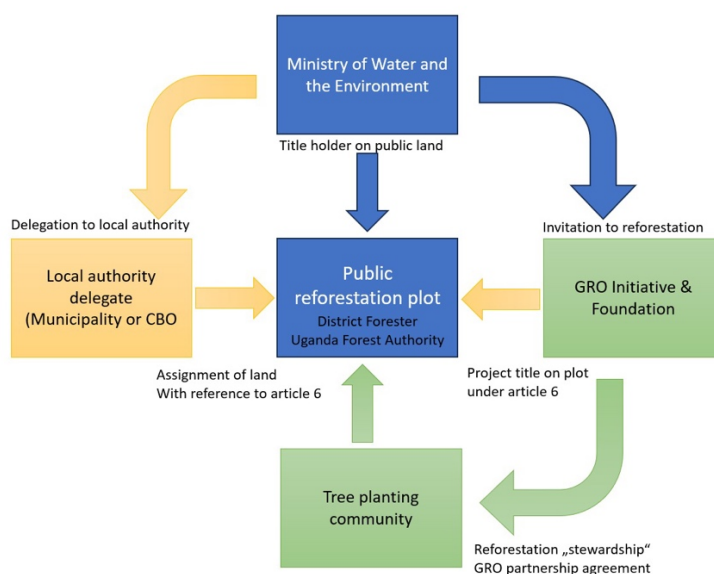
GRO is planting trees on public land, institutional and heritage land exclusively.

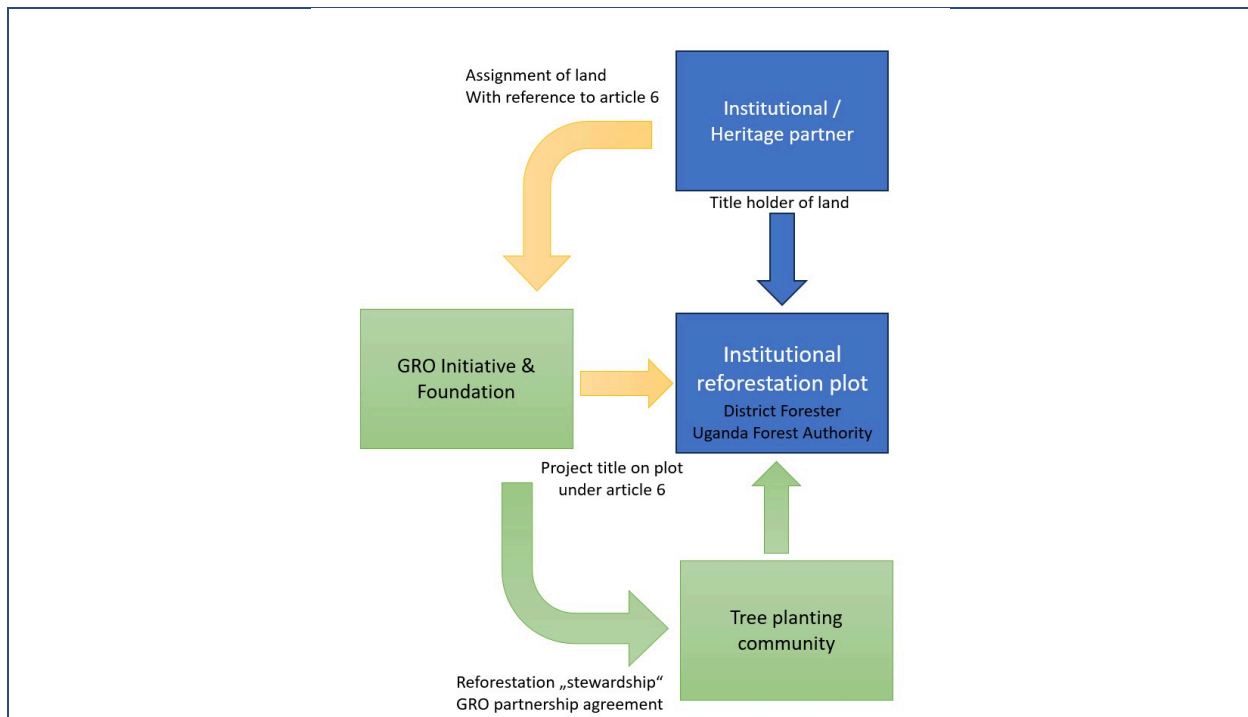
Public reforestation is managed by the Uganda Forest Authority, which operates under the Ministry of Water and the environment. Institutional land related to this PDD is managed by the Inter Religious Council of Uganda and various kingdoms and chiefdoms.

Individual agreements, that regulate the ownership of Ex-ante carbon credits, were signed with above stakeholders and/or their local delegate authorities. These are not made public but available to auditors for review as part of our Project Database.

Ownership Structure

- 1) Public partnership
- 2) Institutional partnership





1.12 Other certifications

The project does not have any other relevant certification, e.g. ISO 9001, ISO 14001, FSC, etc. A self-declaration confirming the above is included in the ICR platform.

1.13 Double counting, issuance and claiming

The project has not been registered or is not seeking registration under other GHG programs.

The project is keenly aware of the challenges of double accounting and remains exclusive to registration with the International Carbon Registry, with Carbon Credits being recorded on the blockchain for added transparency.

1.13.1 Other registration and double issuance

Is the project registered or intends to be registered with another GHG program?

☐ Yes

☒ No

Has the project been rejected by another GHG program

☐ Yes

☒ No

GHG program	Doesn't apply as we are not seeking to be registered with another GHG program and had never been rejected by one.
Project ID	NA
Link	NA
Status	NA

1.13.2 Double claiming and other instruments

Are the project activities also included in a GHG emissions trading program or subject to binding emission limit?

☐ Yes

☒ No

Has the project activity applied for, received, or is planning to receive instruments from another GHG-related environmental crediting system, e.g. IREC or Guarantees of Origin.

☐ Yes

☒ No

GHG program	Doesn't apply as we don't intent be registered with another GHG program and had never been rejected by one.
Project ID	NA
Link	NA
Status	NA

Do project activities affect GHG emissions accounted for within a value chain (goods/service, i.e. scope 3 emissions and the project proponent or Authorized representative a buyer or a seller of such goods/services?

☐ Yes

☒ No

1.14 Other benefits

Reference Material & Sources

Global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development

<https://documents.un.org/doc/undoc/gen/n17/207/63/pdf/n1720763.pdf?token=qHYzh3Qj7Bj0SNbeZb&fe=true>

Identification of SDG contributions

Please provide information on SDGs the projects impact and how the project achieves them.

SDG target	Indicator (text from the SDG indicator)	Net impact (activities to increase or decrease)	Contributions
1. No poverty			
1.1	1.1.1 Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural)	Create working places for local community-based organizations, empower them and fund micro-finance projects to decrease this proportion	To address the goal of reducing the proportion of the population below the international poverty line, our project adopts a multi-faceted approach. We create employment opportunities for the local community-based organizations, engaging them into our seedling nurseries, planting activities and maintenance of the planted trees as part of our community stewardship program. As part of our social impact and livelihood project, we allocate funds towards microfinance initiatives. These projects aim to support entrepreneurship and small-scale enterprises within the community, contributing to economic growth and poverty alleviation efforts. By implementing our approach, we actively work towards decreasing the proportion of the population below the international poverty line, promoting development and sustainable livelihoods.

1.2	1.2.1 Proportion of population living below the national poverty line, by sex and age	Create working places for local community-based organizations, empower them and fund micro-finance projects to decrease this proportion	To address the goal 1.2.1 Proportion of population living below the national poverty line, by sex and age, we prioritize the creation of employment opportunities for local community-based organizations, thereby empowering them to uplift their economic status. In addition to job creation, we allocate resources to fund skill centers tailored specifically for women and farmers. These skill centers equip individuals with the necessary knowledge and expertise to enhance their earning potential and improve their livelihoods. Moreover, we invest in educational institutions such as schools and orphanages, providing access to quality education and support services for vulnerable populations within the community. By empowering individuals through education and skill development, we aim to foster self-sufficiency and resilience, ultimately reducing the proportion of the population living below the national poverty line.
1.3	1.3.1 Proportion of population covered by social protection floors/systems, by sex, distinguishing children, unemployed persons, older persons, persons with disabilities, pregnant women, newborns, work-injury victims and the poor and the vulnerable	Create working places for local community-based organizations, empower them and fund micro-finance projects to increase this proportion	To address the goal 1.3.1 we prioritize funding of skill centers tailored specifically for women and farmers. These skill centers equip individuals with the necessary knowledge and the expertise to enhance their earning potential and improve their livelihoods. In addition, we creation of employment opportunities for local community-based organizations, thereby empowering them to uplift their economic status. Moreover, we invest in educational institutions such as schools and orphanages, providing access to quality education and

			support services for vulnerable populations within the community. By empowering individuals through education and skill development, we aim to foster self-sufficiency and resilience, ultimately increasing the proportion of the population covered by different social protection floors/systems.
1.4	1.4.1 Proportion of population living in households with access to basic services	Fund water and food security projects as part of our social impact projects campaign to increase this proportion	To address the 1.4.1 goal of increasing the proportion of the population living in households with access to basic services we dedicate a portion of the profits generated from carbon certificate sales to fund social impact projects, aimed at improving water and food security within communities lacking access to these essential services. Through our social impact initiatives, we prioritize funding for water and food security projects, which include initiatives such as the construction of clean water sources, implementation of sustainable agricultural practices, and establishment of fruit plantations based on community needs, providing sustainable solutions to enhance nutrition within the community. The carbon sequestration estimation does not account for these fruit tree planting projects. By allocating resources to address these critical needs we strive to increase the proportion of the population living in households with access to basic services.
2. Zero hunger			
2.1	2.1.1 Prevalence of undernourishment	Fund social impact projects for water and food security – build wells, plant fruit forests and fund livelihood projects to decrease this present	To address the prevalence of undernourishment, our project funds impactful initiatives aimed at enhancing food security and access to clean water. This includes the construction of wells to provide communities with safe and reliable water

			sources. Additionally, we invest in planting fruit forests, aligning with community needs and promoting sustainable agricultural practices to improve nutrition and dietary diversity. Furthermore, our commitment extends to funding livelihood projects that empower individuals and communities to build resilient and self-sustaining futures. With our approach we aim to combat undernourishment and promote well-being within the communities.
3. Good health and well-being	Not applicable		
4. Quality education			
4.1	4.1.1 Proportion of children and young people (a) in grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex	Fund schools and orphanages as part of our social impact campaign to increase this proportion	To address the 4.1.1 goal to enhance educational outcomes for children and young people, our project directs funding towards schools and orphanages as part of our social impact campaign. By investing in educational institutions, we aim to increase the proportion of children and young people achieving not only the minimum proficiency level in reading and mathematics, but to fund the children finish at least high school. Through our support, we provide resources and infrastructure to schools and orphanages, ensuring access to quality education for all students regardless of their background. We fund educational institutions to promote development and academic success of children and young people.
4.6	4.6.1 Proportion of population in a given age group achieving at least a fixed level of	Fund schools to increase this proportion	To address the 4.6.1 goal to bolster proficiency in functional literacy and numeracy skills among the population, our project

	proficiency in functional (a) literacy and (b) numeracy skills, by sex		allocates funding to schools. By supporting educational institutions, we aim to increase the proportion of individuals in a given age group achieving at least a fixed level of proficiency in both literacy and numeracy skills, with a focus on ensuring equitable access for all, regardless of gender. By strengthening educational systems, we empower individuals to develop essential literacy and numeracy skills crucial for personal and professional success.	
4.a	4.a.1 Proportion of schools with access to (a) electricity; (b) the Internet for pedagogical purposes; (c) computers for pedagogical purposes; (d) adapted infrastructure and materials for students with disabilities; (e) basic drinking water; (f) single-sex basic sanitation facilities; and (g) basic handwashing facilities (as per the WASH indicator definitions)	All schools and orphanages we fund, and build are/ are to be equipped with single-sex basic sanitation facilities and basic handwashing facilities as well as access to drinking water. Electricity installations, internet and computers for pedagogical purposes will be provided when possible. (depending on the location's access to this services)	To address the 4.a.1 goal for improvement of the school's environment, we prioritized the access to clean drinking water by building water wells, aiming to enhance the health and well-being of students and staff. To ensure the provision of essential facilities in schools and orphanages, our project mandates that all institutions we fund or build are equipped with basic handwashing facilities and single-sex basic sanitation facilities. Furthermore, our project endeavors to provide access to electricity installations, internet connectivity, and computers for pedagogical purposes wherever feasible. However, the availability of these resources may vary depending on the location's access to such services and infrastructure. By prioritizing the provision of essential facilities and resources in educational institutions, we strive to create safe and conducive learning environments that promote the holistic development and well-being of students, including those with disabilities.	
5. Gender equality				

5.1	5.1.1 Whether or not legal frameworks are in place to promote, enforce and monitor equality and non-discrimination on the basis of sex	Promote gender equality, and we are partners with the United Nation Women	To promote gender equality, our project actively supports initiatives aimed at fostering legal frameworks to promote, enforce, and monitor equality and non-discrimination based on sex. As partners with United Nations Women, we collaborate on programs and advocacy efforts to advance gender equality and empower women and girls. Through our partnership, we contribute to the development and implementation of legal frameworks that promote gender equality and protect against discrimination based on sex. We advocate for the enforcement of these laws and support monitoring mechanisms to ensure their effectiveness in addressing gender disparities.
6. Clean water and sanitation			
6.1	6.1.1 Proportion of population using safely managed drinking water services	Fund building of water wells to increase this proportion	To increase the proportion of the population using safely managed drinking water services, our project directs funding towards the construction of water wells. By investing in the building of water wells, we aim to expand access to safe and reliable drinking water sources for communities in need. Through our support, we facilitate the implementation of infrastructure projects that provide communities with access to safely managed drinking water services. By focusing on the construction of water wells, we contribute to improving public health, reducing waterborne diseases, and enhancing overall quality of life for individuals and families.
6.2	6.2.1 Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water		To increase the proportion of the population using safely managed sanitation services, including hand-washing facilities

		Build basic sanitation and hand-washing facilities in the schools and orphanages we fund to increase this proportion	with soap and water, our project prioritizes the construction of basic sanitation and hand-washing facilities in schools and orphanages that we fund. By investing in the construction of these facilities, we aim to improve sanitation standards and promote hygiene practices within educational institutions. Our efforts contribute to ensuring that students, staff, and residents have access to safe sanitation services, which is essential for maintaining public health and preventing the spread of diseases.
7. Affordable and clean energy			
7.1	7.1.1 Proportion of population with access to electricity	We will donate 100,000\$ worth of solar panels to communities in need to increase this proportion	To increase the proportion of the population with access to electricity, our project is dedicated to providing communities in need with solar panels. We allocate \$100,000 worth of solar panels to underserved areas, increasing access to electricity for households and communities. Moving forward, our project will continue to prioritize rural electrification as part of our infrastructure funding efforts. By integrating electricity provision into our initiatives for food and water security, education, and skill center facilities, we strive to further advance access to electricity and foster sustainable development in the communities. Our commitment to expanding access to electricity underscores our dedication to promoting equitable access to essential services and enhancing the well-being of communities.

8. Decent work and economic growth			
	8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities	All of our employees are paid equally for work of equal value	To ensure gender equality and fair treatment of all employees, our project maintains a policy where all employees, regardless of gender or disability status, receive equal pay for work of equal value. This commitment extends across all occupations, age groups, and levels of ability within our workforce. By upholding this principle, we promote fairness and equity in the workplace.
	8.6.1 Proportion of youth (aged 15–24 years) not in education, employment, or training	Fund schools, orphanages, and skill centers; create workspaces to decrease this proportion	To decrease the proportion of youth aged 15–24 years who are not in education, employment, or training, our project directs funding towards various initiatives. We prioritize funding for schools, orphanages, and skill centers, providing opportunities for education and training to empower young people. Additionally, we create workspaces to offer employment opportunities for youth, enabling them to gain valuable skills and experience.
9. Industry, innovation, and infrastructure	Not applicable		
10. Reduced inequalities			
10.2	10.2.1 Proportion of people living below 50 per cent of median income, by sex, age and persons with disabilities	Fund schools, orphanages, and skill centers; create workspaces to decrease this proportion	To decrease the proportion of people living below 50 percent of median income, by gender, age, and persons with disabilities, we allocate funding to support schools,

			orphanages, and skill centers, aiming to provide education, training, and opportunities for skill development. We create workspaces to generate employment opportunities, particularly targeting vulnerable groups such as women, youth, and persons with disabilities. By investing in education, training, and employment initiatives, we aim to empower individuals to improve their earning potential and financial stability, reducing the proportion of people living below the 50 percent median income threshold.
11. Sustainable cities and communities	Not applicable		
12. Responsible consumption and production	Not applicable		
13. Climate action			
13.b	13.b.1 Number of least developed countries and small island developing States that are receiving specialized support, and amount of support, including finance, technology and capacity-building, for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities	Bright Future Africa – Vol.2 (Uganda) is designed to support Uganda - one of the least developed countries by restoring its nature, creating job opportunities, funding social impact and livelihood projects, and sharing profits from carbon certificate sales with local communities. By emphasizing the importance of nurturing the newly planted trees, we instill a sense of ownership and responsibility among community members. This approach not only promotes environmental conservation but also empowers communities by providing them with	Bright Future Africa – Vol.2 (Uganda) is actively engaged in providing support to Uganda - one of the least developed countries. We allocate significant resources, including finance, technology, and capacity-building initiatives, to enhance their capacities for effective climate change-related planning and management. Our support focuses on empowering women, youth, and local marginalized communities by funding social impact and livelihood projects. We prioritize funding schools, orphanages, and skill centers specifically for women and smallholder

		sustainable livelihood opportunities to decrease the number of least developed countries.	farmers, aiming to equip them with the necessary tools and skills. As part of our approach, we emphasize the importance of nurturing newly planted trees, as they serve as the foundation for funding all afore mentioned initiatives. Through education and community involvement, we strive to instill a sense of ownership and responsibility among individuals and communities, ensuring their active participation in sustainable development efforts.
13.2	13.2.2 Total greenhouse gas emissions per year	The Bright Future Africa – Vol.2 (Uganda) project is designed to plant 255 million indigenous trees in Uganda. The implementation of the project activity is expected to generate 138M ExAnte Carbon Certificates over its 45-years crediting period.	Carbon Sequestration: Average Annual Sequestration: 3,079,370 tCO₂e Total Sequestration (45 years): 138,571,686 tCO₂e
14. Life below water	Not applicable		
15. Life on land			
15.3	15.3.1 Proportion of land that is degraded over total land area	The project is designed to plant 255M indigenous local trees on deforested institutional land in Uganda by 2034 to decrease this proportion	Our project is designed to plant 255 million indigenous local trees on deforested institutional land in Uganda by 2028. By undertaking this initiative, we aim to significantly decrease the proportion of land that is degraded over the total land area. Through afforestation efforts, we mitigate soil erosion, improve soil fertility, and enhance ecosystem resilience, thereby reversing the degradation process. By restoring degraded land with indigenous trees, we contribute to the conservation of biodiversity and the sustainable management of natural resources.

16. Peace, justice, and strong institutions	Not applicable		
17. Partnership for the goals			
17.17	17.17.1 Amount of United States dollars committed to public-private and civil society partnerships	We deploy capital for reforestation in a developing country – Uganda, fund social impact and livelihood projects through partnering with local organizations to increase the amount of US dollars committed to public-private and civil society partnerships	Our project commits significant financial resources to initiatives aimed at reforestation and community development in Uganda. As for the implementation of the project, we exclusively collaborate with local public-private and civil society groups in Uganda. All the funding allocated for social impact and livelihood projects is deployed into civil society groups (community-based organizations) in need. Through collaborative efforts with local organizations, we leverage our resources to maximize our impact and promote sustainable development in the region, aiming for a lasting positive change and well-being of communities.
17.19	17.19.1 Dollar value of all resources made available to strengthen statistical capacity in developing countries	We deploy capital into social impact and livelihood projects to increase the dollar value of all resources made available to strengthen statistical capacity in developing countries	Through our investment in social impact and livelihood projects, we contribute to strengthening statistical capacity in Uganda, a developing country. By deploying capital into these initiatives, we enhance the dollar value of resources available for this purpose. Working closely with local organizations, we prioritize projects that not only address environmental and social challenges but also support the development of robust statistical systems in these regions.

Creating Sustainable Social Impact

1 NO POVERTY	2 ZERO HUNGER	3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION	5 GENDER EQUALITY	6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY	8 DECENT WORK AND ECONOMIC GROWTH	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES	11 SUSTAINABLE CITIES AND COMMUNITIES	12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION	14 LIFE BELOW WATER	15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS	17 PARTNERSHIPS FOR THE GOALS	SUSTAINABLE DEVELOPMENT GOALS



Restoring Nature



Securing Foodsupply



Training Skills



Protecting Wildlife



Building Wells



Providing Microfinance



Creating Employers



Electrifying Villages



Connecting Communities

1.15 Host country attestation

☐ Host country attestation

☒ No host country attestation

The GRO project intends to obtain a letter of attestation. As of March 1st, 2024, Uganda has no national policy for Host Country Approval. Currently, the GRO Foundation operates with official endorsement from the Ministry of Water and the Environment. This endorsement grants us the authority to engage with local stakeholders, and reach an agreement with them directly, that meets Article 6 of the Paris Agreement requirements and execute large-scale reforestation projects with the aim of generating carbon certificates for international sale. The ministry requires annual updates regarding the project sequestration until a national policy and national registry is established.

To implement the project, the GRO Foundation collaborates with the Inter-Religious Council of Uganda (IRCU) and its already existing well-established community structures, the National Forest Authority of Uganda (NFA) and the respective institutional landowners through individual MoUs.

The project avoids double accounting by exclusively focusing on reforestation of newly planted trees. This strategy provides an inward investment opportunity into the country by providing funding, where none was available as well as creating sustainable for-profit livelihood projects and non-profit social impact projects. The goal of the GRO Foundation is ultimately to reduce poverty and increase community well-being at a grassroots level by enabling local communities to benefit from the global carbon markets.

1.16 Additional information



Image: GRO-Founder Paul Flynn with Ugandan government delegation during UN Climate Week in New York

1.16.1 Confidential/sensitive information

We are excluding the following data from the public version of the PDD:

- Commercial and financial documents including the invoices
- Sensitive operational data including MoUs and Minutes of Meetings
- Information provided to us through NDAs
- Information subject to private and commercial data protection

The exclusion of specific data from the public version of the PDD is essential to safeguard commercially sensitive, proprietary, and strategically important information.

Commercial and financial documents, such as invoices, contain sensitive pricing and contractual information that, if disclosed, could compromise our competitive advantage and negotiating power.

Similarly, operational documents like Memorandums of Understanding (MoUs) and Minutes of Meetings include internal strategies and project-specific details that, if publicly available, may expose operational methods and jeopardize stakeholder trust.

Information provided under Non-Disclosure Agreements (NDAs) is legally protected and shared with us on the understanding that it will remain confidential. Disclosing this data could result in legal repercussions and erode trust with partners who expect us to uphold stringent data protection standards.

Information subject to private and commercial data protection policies includes data governed by privacy laws and commercial confidentiality agreements. Protecting this information helps us maintain compliance with data protection regulations, such as GDPR, and supports our commitment to ethical data handling and the protection of stakeholders' sensitive information.

This information is not otherwise publicly available, as its disclosure could undermine our competitive position, violate legal agreements, and compromise stakeholder trust, data protection, and operational security.

2. Crediting

2.1 Project start date

Project start date	15/05/2024
---------------------------	------------

2.2 Expected operational lifetime or termination date

45 years ending 14/05/2069

2.3 Crediting period

45 years	
Start date of crediting	15/05/2024
Crediting period	☐ Five years, renewable twice. ☐ Ten years, fixed. ☒ Fifteen years, renewable twice (CDR only). ☐ Other, provide information on how that conforms with ICR requirement document.

2.4 Calendar year of crediting

<i>Estimated GHG emission mitigations (t CO₂-e) for 255M trees</i>	
Calendar year of crediting	Estimated GHG emission mitigations (t CO ₂ -e)
15/05/2024 to 31. December 2024 r	10,173
1. January 2025 to 31. December 2025	51,471
1. January 2026 to 31. December 2026	108,288
1. January 2027 to 31. December 2027	186,484
1. January 2028 to 31. December 2028	358,227
1. January 2029 to 31. December 2029	641,428
1. January 2030 to 31. December 2030	1,028,303
1. January 2031 to 31. December 2031	1,514,352

1. January 2032 to 31. December 2032	2,068,187
1. January 2033 to 31. December 2033	2,816,372
1. January 2034 to 31. December 2034	3,744,838
1. January 2035 to 31. December 2035	4,539,897
1. January 2036 to 31. December 2036	5,120,731
1. January 2037 to 31. December 2037	5,476,365
1. January 2038 to 31. December 2038	5,727,084
1. January 2039 to 31. December 2039	5,862,184
1. January 2040 to 31. December 2040	5,834,534
1. January 2041 to 31. December 2041	5,689,444
1. January 2042 to 31. December 2042	5,461,448
1. January 2043 to 31. December 2043	5,199,036
1. January 2044 to 31. December 2044	4,907,665
1. January 2045 to 31. December 2045	4,605,820
1. January 2046 to 31. December 2046	4,298,475
1. January 2047 to 31. December 2047	4,011,309
1. January 2048 to 31. December 2048	3,739,164
1. January 2049 to 31. December 2049	3,523,956
1. January 2050 to 31. December 2050	3,319,912
1. January 2051 to 31. December 2051	3,158,359
1. January 2052 to 31. December 2052	3,029,734
1. January 2053 to 31. December 2053	2,929,587
1. January 2054 to 31. December 2054	2,849,576
1. January 2055 to 31. December 2055	2,779,264
1. January 2056 to 31. December 2056	2,710,736

1. January 2057 to 31. December 2057	2,654,008
1. January 2058 to 31. December 2058	2,589,149
1. January 2059 to 31. December 2059	2,533,867
1. January 2060 to 31. December 2060	2,481,474
1. January 2061 to 31. December 2061	2,437,767
1. January 2062 to 31. December 2062	2,400,280
1. January 2063 to 31. December 2063	2,371,946
1. January 2064 to 31. December 2064	2,350,024
1. January 2065 to 31. December 2065	2,333,174
1. January 2066 to 31. December 2066	2,312,549
1. January 2067 to 31. December 2067	2,293,939
1. January 2068 to 31/12/2068	2,266,170
1. January 2069 to 14/05/2069	2,244,936
Total estimated GHG emission mitigations during the crediting period (t CO₂-e)	138,571,687
Total number of years (yrs)	45
Annual average (t CO₂-e)	3,079,370

3. Safeguards

3.1 Statutory requirements

The GRO Foundation engages with relevant ministries and authorities in order to assure strict adherence to regulations, requirements and even traditions regarding reforestation and conservation. The GRO Foundation approaches projects as a stakeholder wanting to serve the community. For this reason, we “ask” what needs to be done and what can be scaled, rather than deciding on a proposal as a donor.

Policy and Regulations for reforestation, conservation and employment that GRO Foundation adheres to are listed below:

The GRO Foundation is committed to ensuring full compliance with all statutory requirements related to reforestation, conservation, and employment. Our approach integrates adherence to all relevant policies, plans, acts, and guidelines, ensuring that our projects align with national laws and best practices. Below is a summary of how the GRO Foundation complies with these statutory requirements:

1. **Uganda Forestry Policy** 2001: <https://www.nfa.go.ug/images/UgandaForestryPolicy2001.pdf>
The GRO Foundation aligns its activities with the Uganda Forestry Policy 2001 by promoting sustainable forest management practices and prioritizing community involvement. Our project is focused the restoration of degraded forests, the establishment of community-based forestry initiatives, and adherence to the principles of conservation and biodiversity enhancement.
2. **National Forestry Plan** 2002: https://www.nfa.go.ug/images/National_Forestry_Plan_2002.pdf
In line with the National Forestry Plan 2002, our reforestation initiatives contribute to the restoration of critical forest cover, the enhancement of carbon sequestration, and the improvement of forest-based livelihoods. We also focus on research, monitoring, and scaling solutions that align with national forestry goals.
3. **National Forestry and Tree Planting Act** 2003: https://ugandatrades.go.ug/media/National_Forestry_and_Tree_Planting_Act_2003.pdf
The GRO Foundation ensures compliance with the National Forestry and Tree Planting Act 2003 by obtaining all necessary permissions for tree planting and reforestation projects on public land. Our activities adhere to the Act’s requirements for sustainable forestry management and the rights of local communities.
4. **National Environment Act** 2019: <https://faolex.fao.org/docs/pdf/uga192395.pdf>
Our projects meet the National Environment Act 2019 requirements by conducting Environmental and Social Impact Assessments (ESIAs) before implementation. These assessments ensure that our activities minimize negative environmental impacts and enhance ecosystem services.
5. **National Environment Policy** (2004, Revised 2014): https://climate-laws.org/documents/national-environment-policy-nep-and-national-environmental-management-strategy-2004-revised-2014_4682?id=national-environment-policy-nep-and-national-environmental-management-strategy-2004-revised-2014_a72f
We follow the National Environment Policy’s guiding principles by integrating environmental

considerations into all stages of project planning and execution. We also work to enhance community resilience to climate change through sustainable forestry practices.

6. **National Guidelines for Biodiversity and Social Offsets (2022):** [https://www.nema.go.ug/sites/default/files/Final National Biodiversity and Social Offset Guidelines - Approved by NEMA Board March 2022.pdf](https://www.nema.go.ug/sites/default/files/Final%20National%20Biodiversity%20and%20Social%20Offset%20Guidelines%20-%20Approved%20by%20NEMA%20Board%20March%202022.pdf)
The GRO Foundation adheres to the guidelines by designing biodiversity offsets for impacted areas and implementing projects that promote ecological integrity and social well-being.
7. **The Seeds and Plant Act (2007):** [https://ugandatrades.go.ug/media/Seeds and Plant Act, 2006.pdf](https://ugandatrades.go.ug/media/Seeds%20and%20Plant%20Act,%202006.pdf)
All seeds and planting materials used in our projects are certified and comply with the Seeds and Plant Act. This ensures the genetic quality and suitability of planting materials for reforestation purposes.
8. **The Land Act (1998):** [https://ugandatrades.go.ug/media/Seeds and Plant Act, 2006.pdf](https://ugandatrades.go.ug/media/Seeds%20and%20Plant%20Act,%202006.pdf)
The GRO Foundation works in collaboration with relevant government authorities to ensure that the use of public land for reforestation adheres to the Land Act. Our project is designed to respect land ownership rights and benefit local communities.
9. **Plant Protection and Health Act (2015):** [https://ugandatrades.go.ug/media/Plant protection and Health Act.compressed.pdf](https://ugandatrades.go.ug/media/Plant%20protection%20and%20Health%20Act.compressed.pdf)
We engage with agricultural and forestry experts from NFA to maintain plant health.
10. **Agricultural Chemicals (Control) Act, 2006:** <https://faolex.fao.org/docs/pdf/uga138015.pdf>
The GRO Foundation avoids the use of harmful chemicals in our projects. Where chemicals are necessary, they are used responsibly and in accordance with the Act, ensuring minimal environmental impact.
11. **The Employment Act, 2006:** [https://bills.parliament.ug/attachments/Laws of Uganda \(Acts\) - THE EMPLOYMENT ACT, 2006.pdf](https://bills.parliament.ug/attachments/Laws%20of%20Uganda%20(Acts)%20-%20THE%20EMPLOYMENT%20ACT,%202006.pdf)
Our employment practices comply with the Employment Act, ensuring fair wages, safe working conditions, and equal opportunities. We prioritize hiring from local communities to maximize socio-economic benefits.

By adhering to these statutory requirements, the GRO Foundation ensures that its project is legally compliant and serve as a model for sustainable development. Our commitment to collaboration with authorities and communities further reinforces our role as a responsible and proactive stakeholder.

3.2 Potential negative environmental and socio-economic impacts

GRO Foundation adheres strictly to the **Uganda Forestry and Tree Planting Act 2003**, which provides clear guidelines and regulatory measures for reforestation projects. This compliance ensures that all

activities are conducted within the framework of national legislation, further removing the necessity for public comment, as all procedures align with established legal and policy directives.

The GRO Foundation ensures that there are no significant negative environmental or socio-economic impacts associated with the implementation of the project. In line with Section 4.2.1 of the ICR requirements v.5.0, the project design incorporates a range of strategies to safeguard ecosystems and promote sustainable practices while minimizing risks.

All project activities prioritize the preservation of local biodiversity. Native species are exclusively used for reforestation efforts to avoid potential adverse effects associated with non-native species, such as ecological imbalances or displacement of indigenous flora. Similarly, the project strictly avoids introducing invasive species or creating conditions that could allow them to thrive. This ensures the ecological integrity of the reforestation sites and the surrounding areas.

No chemical fertilizers, pesticides, or biological control agents are used in any phase of the project, thereby eliminating the risk of adverse effects on soil quality, water resources, or non-target organisms. Where necessary, only organic or environmentally friendly methods are considered for enhancing soil fertility, maintaining alignment with ecological safety standards.

The approach to land preparation and planting further demonstrates our commitment to environmental stewardship. Manual labor is employed for all clearing and planting activities, avoiding the use of heavy machinery that could compact soil or disrupt local habitats. Importantly, no pre-project trees are cut, ensuring the protection of existing vegetation and habitats.

Transportation-related emissions associated with the project are minimal and have been assessed as negligible under paragraph 14 of the applied methodology. These emissions are deemed insignificant and accounted for as zero, further reinforcing the project's alignment with sustainability standards.

The project not only prioritizes environmental conservation but also emphasizes socio-economic benefits. Employment opportunities are created for local community members, providing fair wages and promoting inclusive development without causing socio-economic disruptions. Additionally, a comprehensive risk assessment framework, as outlined in Section 3.5, ensures that all potential environmental and socio-economic risks are continuously monitored and mitigated.

Because the project strictly avoids all the identified risks, there was no need for public discussions to address potential environmental or socio-economic concerns. Instead, stakeholders are introduced to the project model and its sustainability measures. Their commitments are formalized through Memorandums of Understanding (MoUs), ensuring alignment and shared responsibility in achieving project goals.

3.3 Consultation with interested parties and communications

The GRO Foundation has identified and engaged with key stakeholders through a consultation process, adhering to the established criteria in the applied methodology "AR-ACM0003: Afforestation and

Reforestation of Lands Except Wetlands — Version 2.0" and ensuring compliance with relevant statutory requirements.

Local communities implementing the project in the first instance were consulted prior to validation through our implementing partner, the Inter-Religious Council of Uganda (IRCU). These consultations ensured that the communities understood the project objectives and their role in its implementation. The specific dates of these meetings are detailed in the PDD under Section 3.3.1, Stakeholders and Consultation, in the final table. For future project instances, ongoing consultations with local communities will occur prior to planting, and all documentation of these engagements will be provided in subsequent updates to the PDD.

A partnership was forged with the Million Trees International Organization on the 9th of March 2023. This collaboration was marked by a preliminary test planting during the 2023 planting season, demonstrating the project's commitment to its objectives. However, trees planted during this test phase will not be included in the project's carbon accounting.

Additionally, the GRO Foundation established a significant partnership with the Inter-Religious Council of Uganda (IRCU) and officially launched the project on the 19th of December 2023. This collaboration leverages IRCU's extensive community structures to implement the project effectively at the grassroots level. The launch was publicly announced and widely covered.

<https://www.spyuganda.com/climate-finance-ircugro-foundation-officially-launch-250m-tree-planting-project-in-uganda-signs-usd75m-deal/>

<https://busogatoday.com/kyabazingas-greening-busoga-initiative-gets-30m-tree-boost-from-gro-foundation/>

Public consultation included workshops, discussions, and direct engagement with communities to introduce the project concept and its requirements. On-site visits were conducted to build awareness, provide guidance, and gather input from stakeholders. Weekly meetings have been established to maintain continuous communication, transparency, and stakeholder involvement. These meetings allow stakeholders to review activities undertaken during the week and discuss future plans, fostering an open and inclusive consultation process.

The consultation process included a designated public comment period from 07/10/2022 to 29/01/2024, during which feedback was proactively solicited from stakeholders. All suggestions and concerns raised were thoroughly documented, and necessary actions were implemented to address these inputs. This approach ensured that the project adhered to statutory requirements while remaining responsive to community needs.

All formalized agreements resulting from the consultation process and partnerships, including Memorandums of Understanding (MoUs) with key stakeholders, are provided in our Database. By integrating ongoing consultation, transparent communication, and compliance with statutory requirements, the GRO Foundation ensures that stakeholder engagement remains a cornerstone of the project's success.

3.3.1 Stakeholders and consultation

Stakeholder	Youth Coalition of SDGs
Legal rights	The identified stakeholder does not possess any legal rights to territories or resources.
Diversity	The Youth Coalition of Uganda operates within the UN SDG Secretariat within the Office of the Prime Minister. They have access. To all government and non-government authorities related to UN SDG goals.
Location	Kampala, Uganda – stakeholder partnership to engage with local communities
Effects	Introductions and engagement with multiple stakeholders, identification of pilot sites and signing of key MoUs including: - Ministry of Water and Environment - National Forest Authority - UN Women - Million Trees International Organization - Inter Religious Council of Uganda
Date of consultation	07/10/2022
Stakeholder engagement	Physical meetings, Minutes of meetings and other correspondence.
Consultation	GRO agreed to create GRO Uganda in collaboration with the Youth Coalition. Youth Coalition acting as GRO Uganda is the first point of contact for stakeholder engagement.
Stakeholder input	GRO and the stakeholders jointly created implementation plan and community participation model.
Free prior informed consent	Not applicable.
Conclusion	The engagement was reached, and stakeholders agreed to start initial pilot planting in 2023.
Ongoing consultation	Ongoing consultations with our partners from the Youth Coalition acting as GRO Uganda through daily communication via WhatsApp channels and emails.

Stakeholder	Office of the Prime Minister of Uganda
Legal rights	The identified stakeholder does not possess any legal rights to territories or resources.
Diversity	The office of the prime minister was engaged through the relevant desk to develop a national high-level strategy, to implement the project. Goals

	included in a strategic partnership introduction to relevant authorities and consultation on UN SDG impact projects to maximize benefits at a grassroots level.
Location	Kampala, Uganda – stakeholder partnership to engage with local communities
Effects	Introductions and engagement with multiple stakeholders, identification of pilot sites and signing of key MoUs including: - Ministry of Water and Environment - National Forest Authority - UN Women - Million Trees International Organization - Inter Religious Council of Uganda
Date of consultation	23/10/2022
Stakeholder engagement	Physical meetings, Minutes of meetings and other correspondence.
Consultation	The consultation included discussions about the project and its implementation, risks, costs and benefits of the project, and the VCS validation and verification process.
Stakeholder input	GRO and the stakeholders jointly created implementation plan and community participation model.
Free prior informed consent	Not applicable.
Conclusion	The engagement was reached, and stakeholders agreed to start initial pilot planting in 2023 followed by the first large scale reforestation instances inside the Busoga Kingdom as of May 2024.
Ongoing consultation	Consultations ongoing and includes an involvement in Steering Committee. GRO Uganda is managing the ongoing consultation process with the Office of the Prime Minister of Uganda through regular personal meetings and email communication.

Stakeholder	Million Trees International Organization
Legal rights	The identified stakeholder does not possess any legal rights to territories or resources.
Diversity	This stakeholder was engaged to implement pilot reforestation activities
Location	Kampala, Uganda – stakeholder partnership to engage with local communities
Effects	Successful pilot planting in pocket forest – Kasese and Kozongo
Date of consultation	12/11/2023

Stakeholder engagement	Physical meetings, Minutes of meetings and other correspondence.
Consultation	The consultation included discussions about the project and its implementation, risks, costs, and benefits of the project, and the ICR validation and verification process.
Stakeholder input	GRO and the stakeholders jointly created implementation plan and community participation model.
Free prior informed consent	Not applicable.
Conclusion	The engagement was reached, and stakeholders agreed to start initial pilot planting in 2023.
Ongoing consultation	We continue engagement with Million Trees Organizationon to convert pilot sites into future project instances through continuous WhatsApp communication, emails and personal meetings.

Stakeholder	Ministry of Water and Environment Million Trees International Organization
Legal rights	The identified stakeholder does not possess any legal rights to territories or resources.
Diversity	This stakeholder was engaged to implement pilot reforestation activities
Location	Kampala, Uganda – stakeholder partnership to engage with local communities
Effects	Successful pilot planting in pocket forest – Kasese and Kozongo
Date of consultation	18/01/2023
Stakeholder engagement	Physical meetings, Minutes of meetings and other correspondence.
Consultation	The consultation included discussions about the project location, stakeholder concerns, project logistics, implementation and community benefits.
Stakeholder input	Stakeholder feedback based on their previous experience
Free prior informed consent	Not applicable.
Conclusion	The engagement was reached, and stakeholders agreed to start initial pilot planting in March 2023.
Ongoing consultation	We continue engagement with the Ministry of Water and Environment to convert pilot sites into future project instances through emails and personal meetings.

Stakeholder	UN Women
Legal rights	The identified stakeholder does not possess any legal rights to territories or resources.
Diversity	This stakeholder was engaged to discuss community mobilization and UN SDG impact projects with a focus on female empowerment.
Location	Kampala, Uganda – stakeholder partnership to engage with local communities
Effects	Identification of Skill center opportunities and capacity building of community mobilization
Date of consultation	11/07/2023
Stakeholder engagement	Physical meetings, Minutes of meetings and other correspondence.
Consultation	The consultation included discussions about community mobilization and proposals for impact projects with focus on female empowerment.
Stakeholder input	Introduction to UN networks and structure
Free prior informed consent	Not applicable.
Conclusion	The engagement was reached, and stakeholders agreed to partner in developing youth and female empowerment projects.
Ongoing consultation	GRO Uganda remains in frequent contact with United Nations Women through emails and personal meetings.

Stakeholder	Inter Religious Council of Uganda
Legal rights	The identified stakeholder does not possess any legal rights to territories or resources.
Diversity	The stakeholder was engaged as a strategic implementation partner focused on local stakeholder engagement, identification and validation of planting sites as well as community mobilization for planting. Furthermore, this partner is a member of the Executive Steering Committee responsible for identification and selection of SDG impact projects.
Location	Kampala, Uganda – stakeholder partnership to engage with local communities
Effects	Successful engagement with the local communities.
Date of consultation	12/09/2023; 25/10/2023; 05/11/2023; 22/11/2023; 18/12/2023; 10/01/2024; 17/01/2024; 29/01/2024
Stakeholder engagement	Physical meetings, Minutes of meetings and other correspondence.

Consultation	The consultation included discussions about the project and its implementation, risks, costs, and benefits of the project, and the ICR validation and verification process.
Stakeholder input	GRO and the stakeholders jointly created implementation plan and community participation model.
Free prior informed consent	Not applicable.
Conclusion	The engagement was reached, and stakeholders agreed the first large scale reforestation instances to be inside the Busoga Kingdom as of May 2024 followed by an expansion across all of Uganda as of 2025.
Ongoing consultation	Inter Religious Council of Uganda (IRCU) is a key strategic partner of GRO and member of the Executive Steering Committee. We continue consultation through WhatsApp communication channels, emails and personal meetings to identify and secure future project instances and use their already existing community structures to implement the project.

To ensure continuous and effective engagement with local stakeholders, the project implements an ongoing consultation framework characterized by regular communication and structured weekly meetings. These meetings serve as a platform for stakeholders to provide feedback, raise concerns, and discuss project developments.

Key measures in place include:

- **Uninterrupted Communication:** A dedicated Whatsapp communication channel is established to facilitate real-time updates and exchanges between stakeholders and the project team.
- **Weekly Meetings:** Regular meetings are conducted to foster dialogue, address issues proactively, and maintain transparency. These meetings allow for the discussion of project progress and any arising challenges.
- **Minutes and Comment Records:** Detailed minutes of all stakeholder meetings (all comments, suggestions, and concerns received from stakeholders) are documented.

This approach ensures that stakeholders remain actively involved throughout the project's lifecycle and that their contributions are integrated into the decision-making process. The project's commitment to open dialogue reflects its dedication to building trust and maintaining strong relationships with local communities and other involved parties.

3.3.1 Public comments

Comments received	Action taken
None.	

3.4 Environmental impact assessment

The environmental impact assessment for our project is based on our Carbon Ex-Ante Estimation. As the only environmental impact associated with the project is positive, resulting from the planting of 255 million trees, no negative impacts were identified. The results of our ex-ante estimations are derived from research on indigenous tree species in each of the four kingdoms in Uganda, conducted by Makerere University, Uganda.

Our Carbon Ex-Ante Estimation indicates an expected carbon sequestration of 138,571,687 tCO₂ over the 45-year crediting period.

Carbon Sequestration Sheet Bright Future Africa- Vol.2 (Uganda) will be uploaded in the ICR platform for reference.

3.5 Risk assessment

	Risks identified	Mitigation measures
Risk 1	Natural Disasters - including fire, animals, and drought	We are actively exploring the implementation of fire management strategies, such as establishing firebreaks, utilizing controlled burns, and enhancing water availability. Employing physical barriers, such as fencing, is under consideration to safeguard trees from animal-related threats, while the potential adoption of irrigation systems is being explored to counteract the risk of drought.
Risk 2	Absence of proper stakeholder engagement	We engage with local communities and stakeholders to ensure that the project is aligned with their needs and values, and to address any concerns they may have. Failure to do so can lead to resistance, conflicts, and encroachment of settlements, which can negatively impact the project's success. To prevent such challenges, we proactively organize weekly meetings, conduct numerous workshops, and provide educational sessions. Our team undertakes regular on-site visits to directly

		engage with local communities. These initiatives are aimed at gaining a deeper understanding of their needs, fostering transparent communication, and ensuring alignment of project objectives with the expectations of stakeholders.
Risk 3	Financial and Market Risks	Our project fully relies on the financial proceeds from the sale of ex-ante carbon certificates for the implementation of the project. However, we assess the probability of occurrence for financial and market risks as insignificantly low. The growing demand for carbon certificates observed in recent years suggests a sustained trend that will mitigate potential financial and market risks.
Risk 4	Community-Induced risks	As an afforestation project, we acknowledge the risk of people cutting down or harming trees. However, our continuous community education initiatives, coupled with incentivized agreements rewarding local communities for tree maintenance funded by a share of carbon certificate profits, significantly mitigate this risk. The probability of occurrence is considered insignificant due to the proactive engagement and mutually beneficial agreements in place.
Risk 5	Project Management Risks	Recognizing the importance of reporting and monitoring for project accuracy and transparency, we include project management as a risk factor. However, the probability of occurrence for this risk is deemed insignificant. Our organizational structure incorporates location managers, guided by established procedures, who undergo rigorous checks by the Project Country Manager and Quality Insurance Manager. This hierarchical system ensures adherence to monitoring procedures, with documented submissions progressing to the Compliance Manager for further validation.

3.5.1 Additional information on risk management

There is no further relevant additional information on risk management.

4. Methodology

4.1 Reference to applied methodology and applied tools

Type (methodology, tool, module)	Reference ID	Version	Title
Methodology	AR-ACM0003	02.0	Afforestation and reforestation of lands except wetlands
Tool	AR-TOOL14	04.2	Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities
Tool	AR-TOOL15	02.0	Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity
Tool	AR-TOOL08	04.0	Estimation of non-CO2 GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity
Tool	AR-TOOL02	01.0	Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities
Tool	AR-TOOL16	01.1.0	Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities
Tool	AR-TOOL12	03.1	Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities

4.2 Applicability of methodology

Methodology ID	Applicability condition	Justification
AR-ACM0003	The land subject to the project activity does not fall in wetland category	Confirmed by the Forest/Non-Forest Analysis Report for project instance 1, Landowner declarations attached in the Database
AR-ACM0003	Soil disturbance attributable to the project activity does not cover more than 10 per cent of area in each of the following types of land, when these lands are included within the project boundary: (i) Land containing organic soils (ii) Land which, in the baseline, is subjected to land-use and management practices and receives inputs listed in appendices 1 and 2 of the applied methodology.	The disturbance attributable to the project activity is in accordance with appropriate soil conservation practices and does not cover more than 10 per cent of project boundary area. It follows the land contours and its limited to disturbance as a result from site preparation (done by hand) before planting and such disturbance is not repeated during the project duration. Our project area in the baseline does not fall in the land-use and management practices and

		receives inputs listed in appendices 1 and 2 of the applied methodology.
AR-TOOL14: Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities	This tool has no internal applicability conditions.	n.A.
AR-TOOL15: Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity	This tool is not applicable if the displacement of agricultural activities is expected to cause, directly or indirectly, any drainage of wetlands or peat lands.	There is no displacement of agricultural activities caused by the implementation of the project at all and there are not wetlands (or peat lands) included in the proposed project area. As a result, there is no displacement of agricultural activities which is expected to cause, directly or indirectly, any drainage of wetlands or peat lands.
AR-TOOL08: Estimation of non-CO2 GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity	- The tool is applicable to all occurrence of fire within the project boundary. - Non-CO2 GHG emissions resulting from any occurrence of fire within the project boundary shall be accounted for each incidence of fire which affects an area greater than the minimum threshold area reported by the host Party for the purpose of defining forest, provided that the accumulated area affected by such fires in a given year is $\geq 5\%$ of the project area.	There is no occurrence of fire within the project boundary as defined by the tool. As a result, we do not expect any non-CO2 GHG emissions resulting from the burning of biomass attributable to the implementation of the project. However, in compliance with the AR-TOOL08 applicability conditions, if any fire occurs within the project boundary that affects an area greater than the minimum threshold area reported by the host Party and the accumulated area affected by such fires in a given year is $\geq 5\%$ of the project area, we will account for the non-CO2 GHG emissions resulting from these occurrences.
AR-TOOL02: Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities	The tool is applicable under the following conditions: Forestation of the land within the proposed project boundary performed with or without being registered as the A/R CDM project activity shall not lead to violation of any applicable law even if the law is not enforced.	The forestation of the land within the proposed project boundary performed with being registered as the A/R CDM project activity does not lead to violation of any applicable law even if the law is not enforced. The project is designed as a large - scale afforestation and reforestation project activities.

	This tool is not applicable to small - scale afforestation and reforestation project activities.	
AR-TOOL16: Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities	This tool is applicable when the areas of land, the baseline scenario, and the project activity meet the following conditions: - The areas of land to which this tool is applied: - Do not fall into wetland category; or - Do not contain organic soils as defined in Annex A: glossary of the IPCC GPG LULUCF 2003; - Are not subject to any of the land management practices and application of inputs as listed in the Tables 1 and 2; - The A/R CDM project activity meets the following conditions: - Litter remains on site and is not removed in the A/R CDM project activity; and - Soil disturbance attributable to the A/R CDM project activity, if any, is: - In accordance with appropriate soil conservation practices, e.g. follows the land contours; Limited to soil disturbance for site preparation before planting and such disturbance is not repeated in less than twenty years.	The areas of land proposed for the implementation of project activities do not fall into wetland category. Confirmed by the Forest/Non-Forest Analysis Report. Litter remains on site and is not removed in the A/R project activity. Soil disturbance attributable to the implementation of project activity is in accordance with appropriate soil conservation practices, e.g. follows the land contours. The soil disturbance attributable to the project activity is limited to the one for site preparation before planting and such disturbance is not repeated in during the crediting period.
AR-TOOL12: Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R	This tool has no internal applicability conditions.	n.A.

CDM project activities	
------------------------	--

4.3 Deviation from applied methodology

The "Bright Future Africa - Vol.2" project chooses to deviate from the applied methodology - AR-ACM0003 "Afforestation and reforestation of lands except wetlands" V2.0.

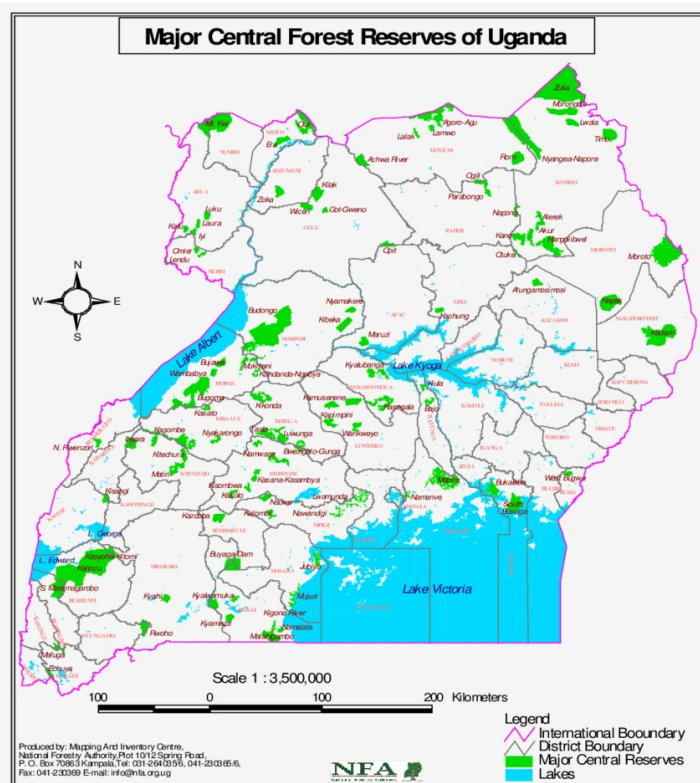
Deviation:

GRO intends to use the IPCC endorsed activity-based accounting model to generate ex-ante certificates based on the sum of all committed project instances, rather than the available instances at the point of validation.

Situation:

The Inter-Religious Council Uganda (IRCU) confirms the provision of land for the reforestation of 255 million trees (Project Planning Note attached in the Database). This is in alignment with the National Forestry and Tree Planting Act 8/2003 and the Memorandum of Understanding signed by the parties.

Working with the National Forest Authority, the parties have identified 506 Central Forest Reserves (CFRs), encompassing a total of 1,262,090 hectares, available for project activities.



In 2023 alone, Uganda experienced a loss of 200,000 hectares of total tree cover of which 68,700 hectares were natural forest. Between 2010 and 2020, Uganda lost more than 4.5 million hectares of natural forest cover.

The "Bright Future Africa - Vol.2" project is designed to restore approx. 250,000 hectares in 11-years during which 2 million hectares of tree cover will have been lost if the trend continues.

The VVB confirmed the availability and provision of land to the project proponent with the Ministry of Water and the Environment and the Inter-Religious Council during stakeholder interviews.

Reason for Deviation

1) It is not possible to provide all instances of land for validation in advance.

Land is available in general, but the specific plots of land available for planting are constantly shifting. Traditional use of heritage land as well as sensitivities around community stakeholder management make it impossible secure specific instances for planting more than 3-months in advance of the activity without the risk of causing conflict with local communities. We cannot “take” land before providing impact.

2) The Project will collapse without ex-ante certificates based on all activities

To finance the project, the proponent needs an accounting model to be based on the sum of all committed activities, rather than activities at the point of validation. The proponent could provide indicative instances, but this would occur in the full knowledge that these plots are inaccurate or maybe wrong. Considering market sentiment regarding greenwashing, this will damage the integrity of the project.

Carbon Accounting (Deviation):

*The project proponent proposes to use **Activity Based Accounting** following IPCC Guidance for good practices. With this it builds a census-based carbon accounting model to issue ex-ante Carbon certificates based on the **Sum over Activities and Commitment Period**.*

Changes in Carbon Stock will be measured per activity, units of planted area and time on a rolling basis per activity, until the sum of all activities of the commitment period is achieved.

*This approach will allow for the issuance of ex-ante Certificates for the entirety of the project designed **Sum over Activities for the commitment period**, rather than an area-based approach that measures the **Sum over land units for the commitment period**.*

Source: <https://www.ipcc.ch/site/assets/uploads/2018/03/srl-en-1.pdf>

Land Use, Land-Use Change, and Forestry

9

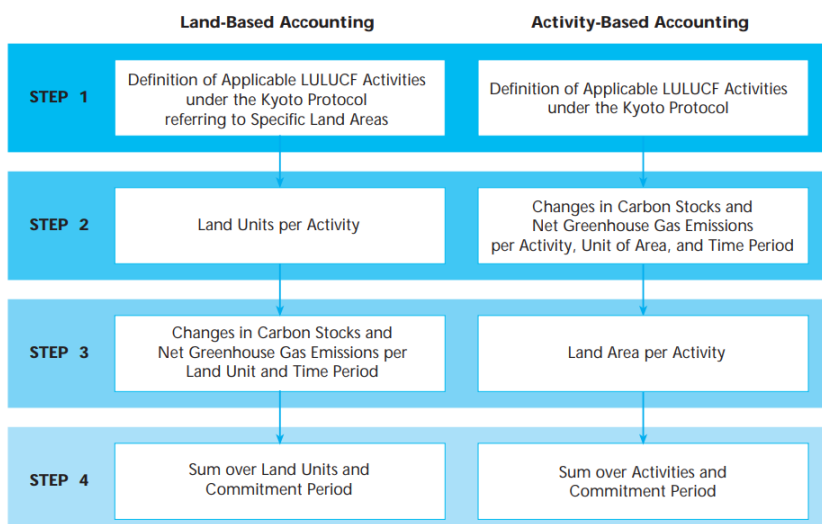


Figure 1: Accounting approaches.

Implementation of Deviation:**1. Compliance with IPCC Guidelines**

The GRO project – Bright Future Africa – Vol.2 (Uganda) remains within the compliance of the Intergovernmental Panel for Climate Change Guidance on Activity-Based Accounting and in fact improves on the IPCC call for strict additionality by focussing on census-based accounting **per activity**.

The Carbon Accounting Model for the issuance of ex-ante Certificates is to be based on the planned sum of all activities over the commitment period i.e. 255 million trees on an estimated area of 250.000 hectares. This is defined as the “sum over activities and commitment period”.

The project proponent defines each instance as a new “land area per activity” and will add these on a rolling basis until the Sum of activities is achieved.

This is in line with Step 1-4 of Activity Based Accounting. The project proponent is willing to submit documentation for a rolling annual validation report update by the VVB to document new instances.

2. Project implementation & Community engagement

Stakeholder engagement is an extremely sensitive topic. Subsistence farmers traditionally receive the permission to use land for agricultural use following crop cycles of 3-6 months.

This traditional land use of heritage land makes it impossible to allocate land in advance of an activity taking place without causing conflict with communities. Demarcating land months or even years in advance of an activity without benefits to the community would spark massive resentment. Even the rumour of allocation of land can cause conflict.

The project is therefore designed to identify specific instances for planting 3 to maximum 6 months in advance. To align with local communities, the ongoing crop cycle is identified, and the community is engaged to learn about the project impact model, alternative land use allocation and impact funding.

Specific Instance for planting is only fixed AFTER the local communities agree regardless of who legally owns the land.

Final Statement

We humbly ask for the endorsement of our proposed deviation.

The project proponent notes that:

- 1) The Project will collapse without the deviation to allow the issuance of ex-ante certificates to cover the sum over activities and commitment period.
- 2) All Project stakeholders agree to the methodology.

- a. All heritage landowners agree on the proposed project methodology
- b. All stakeholders confirm the availability of land and general areas for planting
- c. All stakeholders confirm to identify planting locations by KML-File a minimum of 3-months in advance of planting on a rolling basis

3) The IPCC prefers Additionality and allows for Activity Based Accounting

4) Market buyers prefer the more accurate activity-based accounting method as it meets the highest proof of additionality and transparency. This provides market proof for the demand for our project design.

Ex-ante certificates are the only viable means to meet the market and IPCC demand for additionality and integrity, but additionality requires an assessment of “what will happen” rather than a measurement of “what has happened.”

We easily meet all the criteria of good practice accounting of the IPCC and we are confident that this project will be a reference model for high integrity, high quality, high impact carbon projects in the future.

All on the ground stakeholders, every third-party analyst and all approached market buyers agree that the project is designed to reach the highest level of integrity for additionality, biodiversity, regenerative social impact, and conservative carbon accounting.

Our impact on the environment and social impact has already won several awards in Uganda and Kenya and has been noted by the Presidents of both countries as well as the Queen Consort of Great Britain, the Duke of Lichtenstein and the reigning Sultan of Malaysia.

The Kings Council and Inter-Religious council of East Africa as well as their millions of constituents are waiting to benefit from the impact we are about to create and companies such as Allianz and Puma are ready to review issuance and pay for ex-ante certificates.

4.4 Other Information relating to methodology application

There is no other information related to the methodology application.

5. Additionality

5.1 Level 1 - ISO 14064-2 GHG emissions additionality

The project scenario is considered additional to the baseline scenario in accordance with the ICRs additionality requirements and ISO 14064-2 guidelines. We define our baseline as zero emissions because we account solely for the newly planted trees and exclude the three additional carbon pools. By establishing this baseline, we can demonstrate that our project results in GHG emissions mitigations that are additional to what would occur without the project.

In the absence of the project, the 255 million trees planned for planting would not be planted, resulting in zero GHG emissions mitigations. Therefore, by implementing the project and planting these trees, we are achieving 138,571,686 CO₂ emissions reductions that would not have occurred otherwise, demonstrating additionality to the baseline scenario.

5.2 Level 2a – Statutory additionality

Our project demonstrates Level 2a – Statutory Additionality in compliance with the ICR Requirement Document v5.0, Section 4.4.1 Additionality. The implementation of our reforestation initiative, aimed at restoring deforested forests, goes beyond any legal obligations or regulatory frameworks. Additionally, the implementation of the project is not required by any law, statute, or other regulatory framework, agreements, settlements, or other legally binding mandates requiring implementation and operation or requiring implementation of similar measures that would result in the same levels of GHG emission mitigations in the host country. The profit generated from the sale of carbon certificates resulting from our reforestation efforts showcases our commitment to achieving GHG emission mitigations that surpass what is mandated by law or any binding regulatory measures in the host country. Thus, our project not only meets statutory requirements but exceeds them, ensuring a higher level of environmental impact and sustainability.

5.3 Level 2b – Non-enforcement additionality

Not applicable.

5.4 Level 3 – Technology, institutional, common practice additionality

The project aligns with Level 3 additionality – Technology, Institutional, Common Practice Additionality as outlined in Section 4.4.1 of the ICR Requirement Document v5.0. This alignment ensures that the project implements climate actions that are subject to significant barriers to implementation or accelerates the deployment of technology or activities that would otherwise face slow adoption.

The project faces numerous organizational, cultural, social, and technological barriers, making carbon market incentives essential for overcoming these challenges. These barriers include:

- Lack of trained personnel: There is a significant deficit in skilled labor necessary for implementing and maintaining forestation activities.

- Supporting infrastructure for implementation: The region lacks the infrastructure needed to support large-scale forestation projects.
- Logistics for maintenance: Effective logistics systems for ongoing maintenance and monitoring of reforested areas are insufficient.
- Lack of knowledge on practices: There is limited awareness and understanding of best practices for sustainable land management and forestation among local communities.

Without the funding provided by the carbon market, overcoming these barriers would be impossible.

By addressing these barriers through carbon finance, the project accelerates the deployment of sustainable forestation practices that would not have occurred otherwise. This ensures that the project is common practice additional, meeting the requirements for Level 3 additionality under the ICR requirement document v5.0.

5.5 Level 4a – Financial additionality I

Not applicable.

5.6 Level 4b – Financial additionality II

The project fulfills the criteria for Level 4b additionality – Financial Additionality II in accordance with ICR Requirement Document v5.0. Our initiatives face significant financial limitations that are systematically addressed by revenues generated from the sale of carbon credits. In our unique model, carbon credit revenues stand as the sole source of funding. Importantly, these revenues are not only a precondition for the implementation of the project but are also essential in sustaining ongoing project operations and ensuring financial viability post-implementation.

GRO's commitment to being entirely self-sustaining underscores the crucial role of carbon credits in funding our initiatives. This singular source of funding enables us to leverage opportunities within voluntary carbon markets (VCMs) to drive economic development in Africa and combat greenhouse gas emissions. Without the financial support derived from carbon credit revenues, the implementation of our projects would be impossible, emphasizing the indispensability of these revenues for the success and longevity of our initiatives.

5.7 Level 5 – Policy additionality

The project aligns with Level 5 additionality – Policy Additionality as outlined in the ICR Requirement Document v5.0 by surpassing the climate objectives of the host country and operating beyond the scope of the country's climate action strategy towards its Nationally Determined Contributions (NDCs). Our initiatives are designed and implemented with a strategic vision that transcends the established climate goals of the host country.

As an organization committed to environmental stewardship and sustainable development, GRO goes beyond the parameters set by the host country's climate objectives. Our projects operate independently,

addressing critical issues related to reforestation, carbon sequestration, and community development in a manner that extends beyond the current climate action strategy outlined in the host country's NDCs. The GRO Foundation's commitment to Level 5 additionality underscores our dedication to implementing projects that not only align with global climate objectives but also surpass the specific targets and strategies outlined by the host country, thereby contributing significantly to the global fight against climate change.

6. Baseline scenario

Adhering to the requirements outlined in Section 4.4 of the ICR Requirement document version 5.0, we have established and described the baseline scenario for Project Instance 1 in accordance with the applied methodology, AR-ACM0003: Afforestation and reforestation of lands except wetlands --- Version 2.0. The referenced methodological tool - "Combined Tool to Identify the Baseline Scenario and Demonstrate Additionality in A/R CDM Project Activities" v.01, guides our approach to accurately determine the baseline scenario. All sources used are documented to obtain relevant, reliable, and verifiable data.

Baseline scenario for all future project instances added post-validation will be provided along with KML, Geotiff files and Forest/Non-Forest Analysis Report.

Baseline Scenario: Instance 1 – Mayuge

We use “Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities” - step by step guide to identify baseline scenarios

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

Sub-step 1a. Identify credible alternative land use scenarios to the proposed CDM project activity

We identified realistic and credible land-use scenarios that would have occurred on the land within the proposed project boundary in the absence of the project re/afforestation activities. The scenarios are feasible for the project participants and consider relevant national, sectoral policies, and circumstances, such as historical land uses, practices, and economic trends.

- **Alternative land use scenario 1 - Continuation of the pre-project land use**

We conducted a survey for land use and forest/non-forest analysis for the past 10 years. Based on these assessments, we determined that the only pre-project activity on the plot was the planting of no-commercial illegal croplands (agricultural activities) in some parts of the plot. Over time, the number of trees decreased while the area of bare ground increased annually. Therefore, for Alternative Land Use Scenario 1, we identified the continuation of planting illegal croplands (agricultural activities).

This scenario is justified as realistic and credible, as agricultural activities had previously occurred on the land since December 31, 1989, but are no longer present.

- **Alternative land use scenario 2 - Forestation of the land within the project boundary performed without being registered as the A/R CDM project activity**

Our land use surveys, and forest/non-forest analysis revealed evidence of tree planting within the past 10 years on the plot. We justify Alternative Land Use Scenario 2 as credible and realistic given the historical context of tree planting that had occurred on the land since December 31, 1989.

Based on our surveys, it was observed that many of these trees were cut down within the following year or two. Through national surveys and stakeholder discussions, it became evident that the primary purpose of tree planting on the project plot was for firewood, rather than as part of a sustainable forestry

initiative. In the most recent years of the survey, the area has predominantly transitioned to deforested land (bare ground).

Both Alternative Land Use Scenarios 1 and 2 are deemed credible and likely occurrences within the project boundary of the A/R CDM project activity. The evidence of their previous occurrence, coupled with national and regional trends in land use, supports this assertion. Alternative Scenario 1, involving the continuation of planting croplands (agricultural activities), reflects a historically established practice on the land. Similarly, Alternative Scenario 2, which entails forestation of the land without being registered as the A/R CDM project activity, aligns with past instances of tree planting, albeit for non-sustainable purposes such as firewood.

Sub-step 1b. Consistency of credible alternative land use scenarios with enforced mandatory applicable laws and regulations

Enforced Mandatory Applicable Laws and Regulations
National Environment Act of 2019
https://faolex.fao.org/docs/pdf/uga192395.pdf
National Environment Policy (NEP) and National Environmental Management Strategy (2004; Revised 2014)
https://climate-laws.org/documents/national-environment-policy-nep-and-national-environmental-management-strategy-2004-revised-2014_4682?id=national-environment-policy-nep-and-national-environmental-management-strategy-2004-revised-2014_a72f
Nation Guidelines for Biodiversity and Social Offsets
https://www.nema.go.ug/sites/default/files/Final National Biodiversity and Social Offset Guidelines - Approved by NEMA Board March 2022.pdf
The National Forestry and Tree Planting Act (2003)
https://ugandatrades.go.ug/media/National Forestry and Tree Planting Act 2003.pdf
The Seeds and Plant Act (2007)
https://ugandatrades.go.ug/media/Seeds and Plant Act, 2006.pdf
The Land Act (1998)
https://mlhud.go.ug/wp-content/uploads/2019/03/Land-Act-1998-as-amended-CAP-227.pdf
THE PLANT PROTECTION AND HEALTH ACT, 2015.
https://ugandatrades.go.ug/media/Plant protection and Health Act.compressed.pdf
Agricultural Chemicals (Control) Act, 2006 (No. 1 of 2007).

<https://faolex.fao.org/docs/pdf/uga138015.pdf>

The applicable laws and regulations in place are referenced in the list above. The alternative land use scenarios do not adhere to most of the requirements established in the referenced applicable laws and regulations.

Our findings indicate a prevalent divergence between the common land use practices and the stipulated legal framework. It is a widespread occurrence for local communities to engage in the illegal encroachment of land that remains unutilized, irrespective of its legal status or rightful ownership. Attributable land fees are sometimes not paid in years. Despite the clear contravention of mandatory laws and regulations, there exists a tacit arrangement whereby landowners enter into informal collaborations with local communities. These arrangements are characterized by the granting of non-permanent rights to the communities to cultivate crops on their land. The scope of this permission is typically confined to the planting seasons of specific crops that are expected to yield produce within a three-month period.

As the alternative land use scenarios identified are not adhering to all enforced regulations and laws, we demonstrate widespread non-compliance in compliance with paragraph 12 of the Methodological tool “Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities.”

To demonstrate that applicable mandatory legal or regulatory requirements are systematically not enforced and that non-compliance with those requirements is widespread, we refer to paragraphs 205, 206, and 207 of the National Development Plan (NDP) of Uganda. These sections highlight the widespread nature of illegal practices and the challenges in managing them with the current penalties and enforcement mechanisms, even at a national level.

The NDP categorizes existing penalties and enforcement mechanisms as inadequate to address the increasing impunity on encroachment. Therefore, based on the examination of current practice in the region and supported by the National Development Plan of Uganda, it is clear that mandatory legal and regulatory requirements are systematically not enforced, and non-compliance is widespread. This non-compliance is prevalent in at least 30% of the area of the smallest administrative unit encompassing the project area, thereby meeting the requirements outlined in paragraph 12 of the Methodological tool “Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities.”

As we have demonstrated that the alternative land use scenarios do not adhere to the enforced applicable laws and regulations as part of a systematic non-enforcement, i.e., it is a widespread practice as per the applied tool's requirements, we retain these scenarios in the list of plausible alternatives.

National Development Plan of Uganda (NDPIII) 2020/21 – 2024/25

https://www.npa.go.ug/wp-content/uploads/2023/03/NDPIII-Finale_Compressed.pdf

STEP 2. Barrier analysis

Sub-step 2a. Identification of barriers that would prevent the implementation of at least one alternative land use scenarios

We identified the following barriers that would prevent the implementation of at least one of our alternative land use scenarios:

- *Lack of access to credit* - There is a lack of access to credit. Uganda encounters considerable difficulties in accessing credit facilities. The absence of viable credit options restricts the ability of individuals and organizations to secure financing for various projects, including those related to land use. Given this limitation, relying on credit for funding the implementation of the proposed scenarios is not an option.

Evidence for the lack of access to credit on page 6, paragraph (v) of the National Development Plan of Uganda (NDPIII) 2020/21 – 2024/25: https://www.npa.go.ug/wp-content/uploads/2023/03/NDPIII-Finale_Compressed.pdf

- *Widespread illegal practices (e.g. illegal grazing, non-timber product extraction and tree felling)* - Uganda has an issue of widespread illegal practices, including illegal grazing, non-timber product extraction, and tree felling. Uganda grapples with a prevalence of such unlawful activities, posing substantial challenges to sustainable land management initiatives. Such actions occur outside legal frameworks and conservation guidelines.

Evidence for the widespread illegal practices in paragraph 205,206 and 207 of the National Development Plan of Uganda (NDPIII) 2020/21 – 2024/25: https://www.npa.go.ug/wp-content/uploads/2023/03/NDPIII-Finale_Compressed.pdf

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

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

In this sub-step, we determine which land use scenarios identified in Sub-step 1b are prevented by at least one of the barriers listed in Sub-step 2a.

Upon review and analysis, we have determined that the alternative land use scenario 2 is prevented by both identified barriers:

Lack of access to credit - Uganda encounters considerable difficulties in accessing credit facilities. The absence of viable credit options restricts the ability of individuals and organizations to secure financing for various projects, including those related to land use. Given this limitation, relying on credit for funding the implementation of the proposed scenarios is not an option.

Widespread illegal practices - Uganda grapples with a prevalence of unlawful activities, including illegal grazing, non-timber product extraction, and tree felling. These illegal practices pose substantial challenges to sustainable land management initiatives, as they occur outside legal frameworks and conservation guidelines.

Furthermore, the land within the boundary of the proposed A/R CDM project activity was not forested since 31 December 1989. Therefore, there are no historical precedents of forestation on this land that need to be examined for barriers related to past forestation activities. As such, there is no need to identify reasons, actions, or incentives that allowed for past forestation, nor to demonstrate changes in legal, financial, or other applicable regulations or socio-economic or ecological conditions that would affect the possibility of forestation without being registered as an A/R CDM project activity.

As evidence that the alternative scenario 1 is not prevented by the identified barriers, we note that the land has not been used for any legal activities that are documented. This indicates that the alternative scenarios can emerge in the same manner as the pre-project activities on the ground, even with the identified barriers.

The following land use scenario identified in Sub-step 1b remains under consideration, as it is not prevented by the barriers identified in Sub-step 2a:

List of land use scenarios that are not prevented by any barrier:

Alternative land use scenario 1 - Continuation of the pre-project land use

Sub-step 2c. Determination of baseline scenario (if allowed by the barrier analysis)

To determine the baseline scenario we apply the following decision tree to the outcome of sub-step 2b:

Is forestation without being registered as an A/R CDM project activity included in the list of land use scenarios that are not prevented by any barrier?

→ If yes, then:

Has the proposed A/R CDM project activity a less favourable financial indicator (e.g. IRR), than at least one land use scenario that is not prevented by any barrier?

→ If yes, then select as the baseline scenario the land use scenario that allows for the highest value of the financial indicator (e.g. IRR). Proceed to Sub-step 3d. Sensitivity analysis.

→ If no, then the proposed A/R CDM project activity is not add

→ If no, then: (alternative land use scenario 2 (forestation without being registered as an A/R CDM project activity) is not included in the list of land use scenarios that are not prevented by any barrier)

Select as the baseline scenario the land use scenario that allows for the highest financial indicator (e.g. IRR). Proceed to Sub-step 3d. Sensitivity analysis

Sub-step 3d. Sensitivity analysis (for Option II and III)

We include a sensitivity analysis to assess whether the initial conclusion regarding the financial attractiveness of the baseline scenario is robust to reasonable variations in the critical assumptions.

We apply the following decision tree:

Is forestation without being registered as an A/R CDM project activity included in the list of land use scenarios that are not prevented by any barrier?

→ If yes, then:

Is the sensitivity analysis conclusive?

→ If yes, then the selection of baseline scenario is valid. Proceed to Step 4. Common practice test.

→ If no, then the proposed A/R CDM project activity is not additional.

→ If no, then: (alternative land use scenario 2 (forestation without being registered as an A/R CDM project activity) is not included in the list of land use scenarios that are not prevented by any barrier)

Is the sensitivity analysis conclusive?

→ If yes, then the selection of baseline scenario is valid. Proceed to Step 4.

Common practice test. (The sensitivity analysis is conclusive)

→ If no, then select as the baseline scenario the land use, which allows for the highest baseline GHG removals by sinks. Proceed to Step 4. Common practice test.

We identify land use scenario 1 as our baseline scenario.

STEP 4. Common practice analysis

To complement the previous steps, we conducted analysis of the extent to which forestation activity has diffused in the geographical area of the proposed A/R CDM project activity. This analysis serves as a credibility check to demonstrate additionality, complementing the barrier analysis (Step 2).

Based on Uganda's National Development Plan, paragraph 205, the forest cover has declined from 24% (or 4.9 million ha) of Uganda's total land area in 1990 to 9% (1.83 million ha) in 2018, a reduction of 57% over 25 years. In comparison, about 3,500 ha of degraded natural forests were restored between 2016 and 2019.

There are no similar forestation activities to the one proposed as the A/R CDM project. Our project is designed to plant 255 million indigenous trees over ten years, with a planting density averaging 913 trees per hectare. This results in the restoration of approximately 279,299 hectares of deforested land, averaging 27,929.9 hectares annually.

According to paragraph 205 of the Uganda National Development Plan: "private commercial plantations and tree planting campaigns restored about 3,500 ha of degraded natural forests and allocated 60,000 ha to private developers for commercial tree plantation development, with 5,400 ha of new plantations established." This means an average annual restoration of 1,166 hectares on a National level. As evidenced by a national entity's statement, no project can be considered similar in scale or goals.

Since no similar activities have been identified, the proposed A/R CDM project activity is not the baseline scenario and, hence, it is additional.

National Development Plan of Uganda (NDPIII) 2020/21 – 2024/25: https://www.npa.go.ug/wp-content/uploads/2023/03/NDPIII-Finale_Compressed.pdf

7. Project boundary

The project boundary is Uganda. The chosen project locations are exclusively public and institutional land provided to the GRO Foundation for the purpose of implementing the Bright Future Africa - Vol.2 (Uganda) project.



Sources included within the project boundary comprise above and below woody biomass, specifically trees and shrubs.

Dead wood, litter, and soil organic carbon are intentionally excluded from our quantification process, aligning with the directives outlined in Section 1. Introduction of the applied methodology. This decision is driven by our commitment to measure and account for the distinct impact attributed solely to the newly planted trees within the scope of our project.

We provide a link to KML files for detailed visualization and representation of our project locations. <https://grofoundation.io/mapEarth.php>

The project boundary is set by Estimation by modelling of tree growth and stand development.

Rather than an area-based approach, our approach is using a complete census of planted trees, thereby defining the principal project boundary by the tree itself.

This allows for a decentralized plantation. Specific locations and their respective census will be published in our monitoring reports.

KML for the first project instances are included in the Project Database. KML files for all post-validation project instances will be included in the Project Database.

Site selection criteria

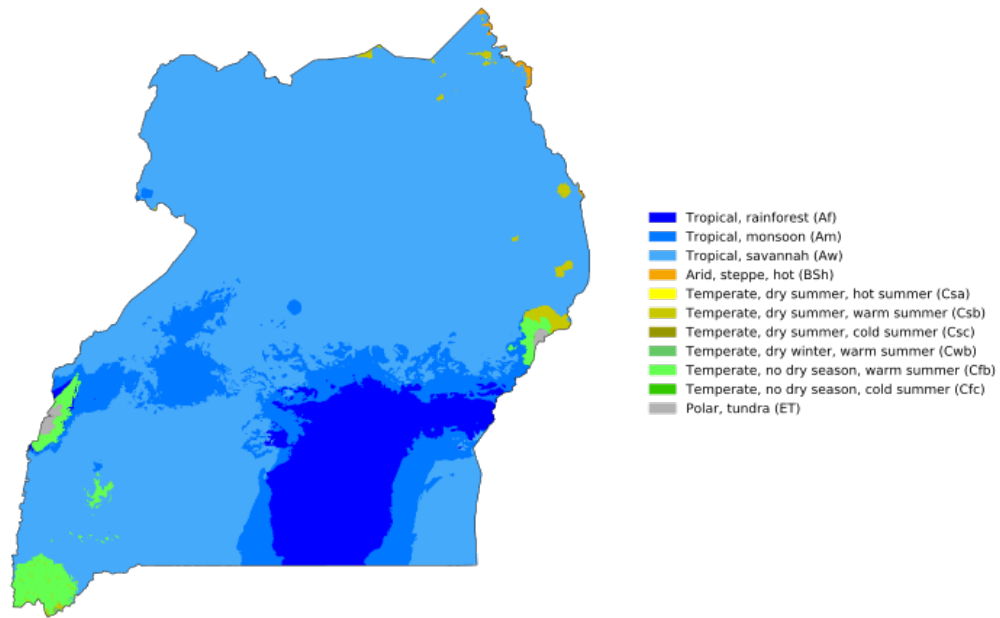
Uganda's climate classification - tropical savannah, tropical monsoon, and tropical rainforest regions, renders it highly conducive for large-scale reforestation efforts.

As part of our site selection process, we identify public and institutional lands suitable for afforestation and reforestation through our partnerships with the Ministry of Water and Environment, the Inter-Religious Council of Uganda, and the Kingdoms of Buganda, Bunyoro, Busoga, and Tooro.

We secure the selected planting sites with Confirmation Statement Letters from the respective local authorities affirming the suitability of the identified land for reforestation purposes. And/or, we obtain similar confirmation statement from landowners through the Landowner Declaration. These confirmation statements for each Project Instance will be documented and included in the Project Database, ensuring transparency and accountability in our project implementation.

Our project is purposefully designed to establish new forest cover on deforested or otherwise suitable land, ensuring strict adherence to guidelines prohibiting planting on wetlands, tidal wetlands, and organic soils. This strategic approach not only optimizes the effectiveness of our reforestation initiatives but also safeguards against potential environmental risks associated with unsuitable planting areas.

Köppen-Geiger climate classification map for Uganda (1980–2016)



Source: Beck et al.: Present and future Köppen-Geiger climate classification maps at 1-km resolution, Scientific Data 5:180214, doi:10.1038/sdata.2018.214 (2018)

As of 2019, Uganda had **1.79** Mha of forest (0.92 Mha of moistforest and 0.88 Mha of dry forest), extending over **7.41%** of land area (Figure below). The remaining area is classified as herbaceous (7.66%), cultivated (26.58%) and other land cover (58.35%) [1].

In 2022, tropical moist forests (TMFs) cover **0.82** Mha from which **26.83%** (0.22 Mha) are in a degraded state (vs 10% for all the pan-tropical region). Degraded refers to recovering from logging, fires and natural disturbances. **13.41%** (0.11 Mha) are secondary forests.

Almost **1.25** Mha or **71.73%** of undisturbed tropical moist forest have disappeared since 1990 from continuous deforestation and forest degradation.

61.2% (1.12 Mha) of the 1990 TMF domain was deforested over the last three decades. **96.04%** (0.97 Mha) of permanent conversion of forest are conversions to other land cover (e.g. infrastructure, agriculture, mining), **0.99%** (0.01 Mha) to plantation (mainly oil palm and rubber) and **2.97%** (0.03 Mha) to water bodies mainly due to new dams.

Table 1 Identification of GHG SSRs

SSR		Controlled/ related/ affected	GHGs	Included? Y/N	Justification/ explanation	Coordinates
Baseline	Source 1 - Burning of woody biomass	Related	CO2	No	CO2 emissions due to burning of biomass are accounted as a change in carbon stock	No burning of biomass due to the implementation of the project activities
	Source 1 - Burning of woody biomass	Related	CH4	NO	Burning of woody biomass for the purpose of site preparation, or as part of forest management, is allowed under this methodology	No burning of woody biomass for the purpose of site preparation, or as part of forest management
	Source 1 - Burning of woody biomass	Related	N2O	No	Burning of woody biomass for the purpose of site preparation, or as part of forest management, is allowed under this methodology	No burning of woody biomass for the purpose of site preparation, or as part of forest management
	Sink 2 - Above-ground biomass	Controlled	CO2	No	This is the major carbon pool subjected to project activity	The sequestration attributable to the above-ground biomass of the pre-project trees is not included in our estimations.
	Sink 3 - Below-ground biomass	Related	CO2	No	Carbon stock in this sink is expected to increase due to the implementation of the project activity	The sequestration attributable to the below-ground biomass of the pre-project trees is not included in our estimations.
	Reservoir 4 - Dead wood	Related	CO2	No	Carbon stock in these pools may increase due to	By adhering to the requirements of the applied methodology, we

	Litter and Soil organic carbon				implementation of the project activity	chose to exclude the three additional carbon pools.
Project	Source 1 - Burning of woody biomass	Related	CO2	No	CO2 emissions due to burning of biomass are accounted as a change in carbon stock	No burning of biomass due to the implementation of the project activities
	Source 1 - Burning of woody biomass	Related	CH4	No	Burning of woody biomass for the purpose of site preparation, or as part of forest management, is allowed under this methodology	No burning of woody biomass for the purpose of site preparation, or as part of forest management
	Source 1 - Burning of woody biomass	Related	N2O	No	Burning of woody biomass for the purpose of site preparation, or as part of forest management, is allowed under this methodology	No burning of woody biomass for the purpose of site preparation, or as part of forest management
	Sink 2 - Above-ground biomass	Controlled	CO2	Yes	This is the major carbon pool subjected to project activity	The sequestration attributable to the above-ground biomass of the project trees is included in our sequestration estimations.
	Sink 3 - Below-ground biomass	Related	CO2	Yes	Carbon stock in this sink is expected to increase due to the implementation of the project activity	The sequestration attributable to the below-ground biomass of the project trees is included in our sequestration estimations.
	Reservoir 4 - Dead wood Litter and Soil organic carbon	Related	CO2	No	Carbon stock in these pools may increase due to	By adhering to the requirements of the applied methodology, we

					implementation of the project activity	chose to exclude the three additional carbon pools.
--	--	--	--	--	--	---

To identify the GHG SSRs, we adhere to the requirements of paragraph 9. and 10. Of the applied methodology - AR-ACM0003: Afforestation and reforestation of lands except wetlands - Version 2.0.

8. Quantification of GHG emission mitigations

8.1 Criteria and procedures for quantification

We refer to the following CDM Methodology & Methodological Tools:

Reference Material & Sources

AR-ACM0003: Afforestation and reforestation of lands except wetlands --- Version 2.0

<https://cdm.unfccc.int/UserManagement/FileStorage/THNRJC15IW4K89UBE6DFZYX23OVP0Q>

AR-TOOL14: Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/RCDM project activities - Version 04.2

<https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-14-v4.2.pdf>

AR-TOOL15: Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity - Version 02.0

<https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-15-v2.0.pdf>

AR-TOOL08: Estimation of non-CO2 GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity - Version 04.0.0

<https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-08-v4.0.0.pdf>

AR-TOOL16: Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities - Version 01.1.0

<https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-16-v1.1.0.pdf>

AR-TOOL02: Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities - Version 01

<https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-02-v1.pdf>

AR-TOOL12: Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities - Version 03.0

<https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-12-v3.1.pdf>

Quantification of baseline project emissions, project emissions, leakage, and net GHG emissions and/or removals is conducted utilizing the CDM A/R methodological tools referenced in section 3 of the applied methodology AR-ACM0003: Afforestation and reforestation of lands except wetlands v2.0.

We exclude deadwood, litter, and soil organic carbon from the quantification process of our baseline emissions by adhering to the conditions stipulated in Section 1. Introduction of the applied methodology. Based on the above, our baseline project emissions are quantified through the application of AR-TOOL14 - "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities." In accordance with conditions a), b), and c) outlined in paragraph 11 of the tool, we determine our baseline project emissions as zero.

Project emissions attributable to the project activity are quantified as negative. This outcome is achieved by exclusively offsetting of carbon through tree planting and excluding the three additional carbon pools - deadwood, litter, and soil organic carbon, and accounting solely for the above and below biomass of the newly planted trees and shrubs. The emissions quantification is negative, signifying the carbon offsetting nature of the project.

Leakage emissions are result from the carbon organic soil disturbance attributable to the implementation of the project activity and are limited to preparation of the land for planting. This conclusion is substantiated by the application of "Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities".

8.1.1 Baseline emissions

To quantify the Baseline net GHG removals by sinks, we use the following formula provided in section 5.4 of the applied methodology:

$$\Delta C_{BSL,t} = \Delta C_{TREE_BSL,t} + \Delta C_{SHRUB_BSL,t} + \Delta C_{DW_BSL,t} + \Delta C_{LI_BSL,t}$$

Where:

$\Delta C_{BSL,t}$ = Baseline net GHG removals by sinks in year t; t CO₂-e

$\Delta C_{TREE_BSL,t}$ = Change in carbon stock in baseline tree biomass within the project boundary in year t, as estimated in the tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities"; t CO₂-e

$\Delta C_{SHRUB_BSL,t}$ = Change in carbon stock in baseline shrub biomass within the project boundary, in year t, as estimated in the tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities"; t CO₂-e

$\Delta C_{DW_BSL,t}$ = Change in carbon stock in baseline dead wood biomass within the project boundary in year t, as estimated in the tool "Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities"; t CO₂-e

$\Delta C_{LI_BSL,t}$ = Change in carbon stock in baseline litter biomass within the project boundary, in year t, as estimated in the tool "Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities"; t CO₂-e

Change in carbon stock in baseline tree biomass within the project boundary in year 45 ($\Delta C_{TREE_BSL,t}$)

To quantify the change in carbon stock in baseline tree biomass within the project boundary in year t of the crediting period, we adhere to the requirements of the "Estimation of carbon stocks and change in

carbon stocks of trees and shrubs in A/R CDM project activities." Based on paragraph 11, we are allowed to quantify the carbon stock in trees in the baseline as zero by fulfilling all three conditions listed. We ensure that:

- a) The pre-project trees remain untouched throughout the crediting period, with no harvesting, clearing, or removal activities taking place.
- b) The vitality of pre-project trees is preserved, as they neither succumb to mortality due to competition from trees planted in the project nor incur damage as a result of the project activity throughout the crediting period. We reaffirm our commitment to ecological integrity by exclusively planting indigenous trees, thereby ensuring the restoration of natural biodiversity and preservation of the pre-project trees.
- c) Pre-project trees, though not inventoried alongside project trees in carbon stock monitoring, are tracked to ensure their continuous existence aligns with the baseline scenario throughout the crediting period.

The fulfillment of all three criteria under paragraph 11 validates our baseline emissions being quantify as zero.

8.1.2 Project emissions

We exclude the three additional carbon pools (deadwood, litter, and soil organic carbon) from the accounting scheme of our project emissions by adhering to the requirements of section 5.1. Selection of carbon pools and greenhouse gases accounted of the applied methodology - AR-ACM0003: Afforestation and reforestation of lands except wetlands - Version 2.0.

According to this section, the accounting for these additional carbon pools is considered optional or supplementary. Justification for this exclusion is to ensure that the estimated carbon stocks remain realistic and manageable. Including deadwood, litter, and soil organic carbon could potentially lead to inflated expectations of carbon sequestration due to the expected increase in carbon stocks resulting from the project activity.

We focus on accounting for the above and below biomass of the newly planted trees and shrubs to achieve a higher level of accuracy and transparency in quantifying the carbon sequestration potential. This approach ensures that the reported carbon stocks are more closely tied to the direct impact of the afforestation and reforestation efforts.

Emissions associated with transportation for the project activity are considered negligible, following the provisions outlined in paragraph 14 of the applied methodology. As per this directive, transportation attributable to the project activity is considered insignificant and should be accounted as zero.

Actual net GHG removals are calculated in accordance with the outlined in section 5.5., paragraph 15 of the applied methodology and are estimated as follows:

$$\Delta C_{ACTUAL,t} = \Delta C_{P,t} - GHG_{E,t}$$

Where:

$\Delta C_{ACTUAL,t}$ = Actual net GHG removals by sinks, in year t; t CO₂-e

$\Delta C_{P,t}$ = Change in the carbon stocks in project, occurring in the selected carbon pools, in year t; t CO₂-e

$GHG_{E,t}$ = Increase in non-CO₂ GHG emissions within the project boundary as a result of the implementation of the A/R CDM project activity, in year t, as estimated in the tool "Estimation of non-CO₂ GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity"; t CO₂-e

To quantify the increase in non-CO₂ GHG emissions resulting from biomass burning attributable to our A/R CDM project activity, we adhere to the requirements of the "Estimation of non-CO₂ GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity" methodological tool. As there has been no occurrence of fire within the project boundary, as defined by the tool, we quantify the increase in non-CO₂ GHG emissions as zero.

$$\Delta C_{ACTUAL,t, Instance1} = \Delta C_{P,t} - GHG_{E,t}$$

$$\Delta C_{ACTUAL,t, Instance1} = 540\,221\,tCO_2e - 0\,tCO_2e$$

$$\Delta C_{ACTUAL, Instance1} = 540\,221\,tCO_2e$$

$$\Delta C_{ACTUAL,t} = \Delta C_{P,t} - GHG_{E,t}$$

$$\Delta C_{ACTUAL,t} = 225\,065\,895\,tCO_2e - 0\,tCO_2e$$

$$\Delta C_{ACTUAL,t} = 225\,065\,895\,tCO_2e$$

To quantify the change in the carbon stocks, occurring in the selected carbon pools in year t, we apply the formula from paragraph 16. of the applied methodology:

$$\Delta C_{P,t} = \Delta C_{TREE_PROJ,t} + C_{SHRUB_PROJ,t} + C_{DW_PROJ,t} + C_{LI_PROJ,t} + SOC_{AL,t}$$

Where:

$\Delta C_{P,t}$ = Change in the carbon stocks in project, occurring in the selected carbon pools, in year t; t CO₂-e

$\Delta C_{TREE_PROJ,t}$ = Change in carbon stock in tree biomass in project in year t, as estimated in the tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities"; t CO₂-e

$C_{SHRUB_PROJ,t}$ = Change in carbon stock in shrub biomass in project in year t, as estimated in the tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities"; t CO₂-e

$C_{DW_PROJ,t}$ = Change in carbon stock in dead wood in project in year t, as estimated in the tool “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities”; t CO₂-e

$C_{LI_PROJ,t}$ = Change in carbon stock in litter in project in year t, as estimated in the tool “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities”;
t CO₂-e

$SOC_{AL,t}$ = Change in carbon stock in SOC in project, in year t, in areas of land meeting the applicability conditions of the tool “Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities”, as estimated in the same tool; t CO₂-e

$$\Delta C_{P,t} = \Delta C_{TREE_PROJ,t} + C_{SHRUB_PROJ,t} + C_{DW_PROJ,t} + C_{LI_PROJ,t} + SOC_{AL,t}$$

$$\Delta C_{P,45,Instance1} = 540\,221\,tCO_2e + 0\,tCO_2e + 0\,tCO_2e + 0\,tCO_2e + 0\,tCO_2e$$

$$\Delta C_{P,45,Instance1} = 540\,221\,tCO_2e$$

$$\Delta C_{P,t} = \Delta C_{TREE_PROJ,t} + C_{SHRUB_PROJ,t} + C_{DW_PROJ,t} + C_{LI_PROJ,t} + SOC_{AL,t}$$

$$\Delta C_{P,45} = 225\,065\,895\,tCO_2e + 0\,tCO_2e + 0\,tCO_2e + 0\,tCO_2e + 0\,tCO_2e$$

$$\Delta C_{P,45} = 225\,065\,895\,tCO_2e$$

The project emissions are quantified in accordance with the ICR PDD template v4.0, utilizing the prescribed formula outlined therein.

Project emissions are calculated as follows:

$$PE_y = PE_{FCy} + PE_{ECy} + C_{ACTUAL,t} + \dots$$

Where:

PE_y = Project emissions in year y (t CO₂-e)

PE_{FCy} = Project emissions from fossil fuel combustion in year y (t CO₂-e)

PE_{ECy} = Project emissions from electricity consumption in year y (t CO₂-e)

...

$C_{ACTUAL,t}$ = Actual net GHG removals by sinks, in year t; t CO₂-e

$$PE_{y,Instance1} = PE_{FC45} + PE_{EC45} + C_{ACTUAL,45}$$

$$PE_{45,Instance1} = 0\,t\,CO_2-e + 0\,tCO_2-e + 540\,221\,tCO_2-e$$

$$PE_{45,Instance1} = 540\,221\,tCO_2-e$$

$$PE_y = PEFC45 + PEEC45 + CACTUAL_{,45}$$

$$PE_{45} = 0 \text{ t CO}_2\text{-e} + 0 \text{ tCO}_2\text{-e} + 225,065,895 \text{ tCO}_2\text{-e}$$

$$PE_{45} = 225,065,895 \text{ tCO}_2\text{-e}$$

The actual net GHG removals by sinks is quantified in accordance with section 5.5. Actual net GHG removals by sinks, paragraph 15 of the applied methodology - AR-ACM0003 v2.0.

The actual net GHG removals by sinks is calculated as follows:

$$C_{ACTUAL,t} = C_{P,t} - GHG_{E,t}$$

Where:

$C_{ACTUAL,t}$ = Actual net GHG removals by sinks, in year t; t CO₂-e

$C_{P,t}$ = Change in the carbon stocks in project, occurring in the selected carbon pools, in year t; t CO₂-e

$GHG_{E,t}$ = Increase in non-CO₂ GHG emissions within the project boundary as a result of the implementation of the A/R CDM project activity, in year t, as estimated in the tool "Estimation of non-CO₂ GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity"; t CO₂-e

$$C_{ACTUAL,t, Instance1} = C_{P,t} - GHG_{E,t}$$

$$C_{ACTUAL,45, Instance1} = 540\,221 \text{ tCO}_2\text{-e} - 0 \text{ tCO}_2\text{-e}$$

$$C_{ACTUAL,45, Instance1} = 540\,221 \text{ tCO}_2\text{-e}$$

$$C_{ACTUAL,t} = C_{P,t} - GHG_{E,t}$$

$$C_{ACTUAL,45} = 225,065,895 \text{ tCO}_2\text{-e} - 0 \text{ tCO}_2\text{-e}$$

$$C_{ACTUAL,45} = 225,065,895 \text{ tCO}_2\text{-e}$$

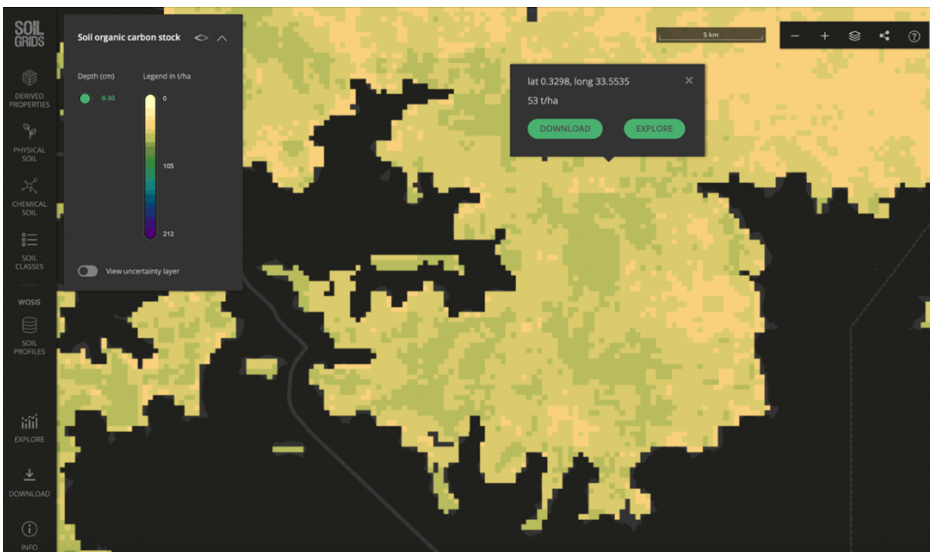
The Project emissions from SOC disturbance (for each stratum of the areas of land which is subjected to soil disturbance attributable to project activity and for which the total area disturbed, over and above the area disturbed in the baseline (if any), is greater than 10% of the area of the stratum) are accounted as follow:

We use the A/R Methodological Tool "Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities" to estimate the organic carbon soil disturbance due to implementation of A/R project activities.

We adhere to the applicability conditions of the tool. All project instances proposed for the is in accordance with the appropriate soil conservation practices, e.g. follows the land contours and the soil disturbance is limited for site preparation before planting and such disturbance is not repeated during the project duration.

For quantification of our initial SOC stock at the start of the project we use data available in ISRIC — World Soil information. The information presented through this platform is based on the best, and sometimes only, available soil data, information about the environment and digital soil mapping using quantile random forest.

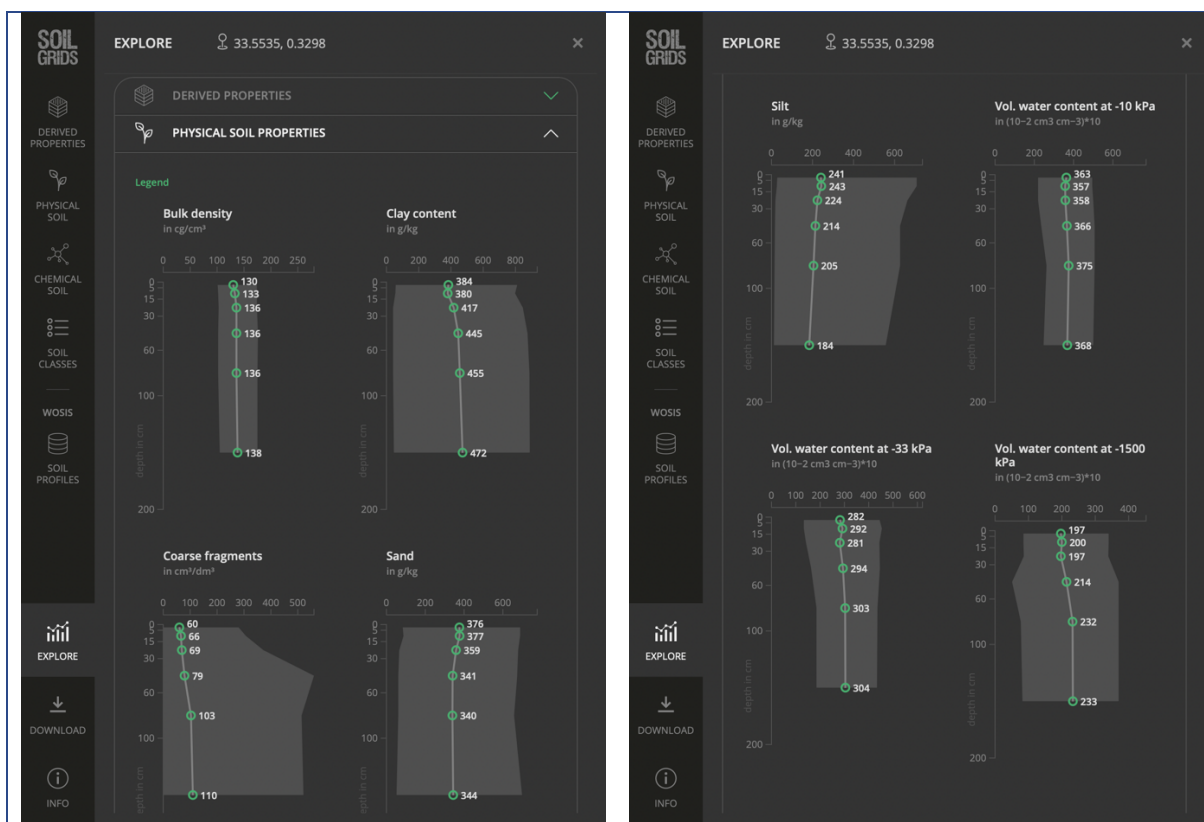
We chose 10 random coordinate points with different SOC stock distribution within our project Instance 1 – Mayuge.



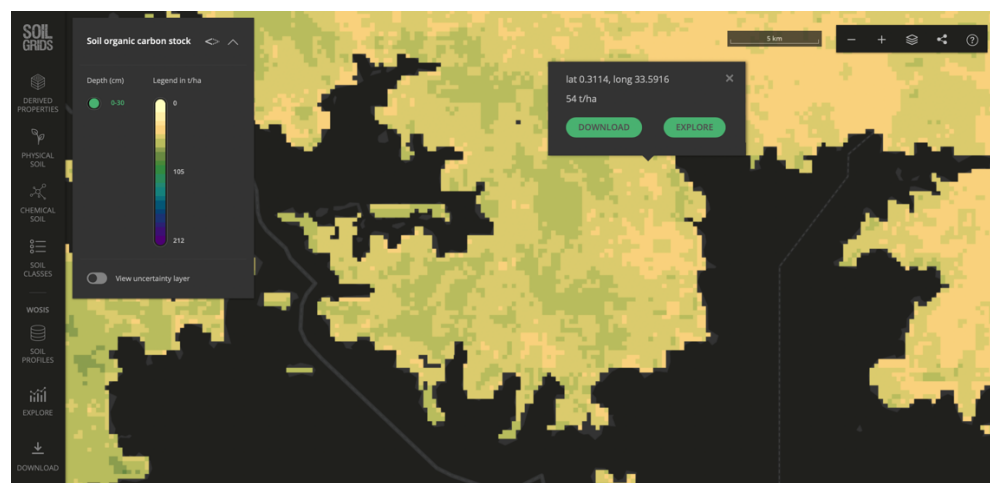
Picture 1: SOC stock in t/ha, Random Point1 within our project Instance 1 – Mayuge.

$$SOC_{Point1} = 53t/ha$$

All physical soil properties required by the methodological tool for a value to be considered as transparent and verifiable are included into account for the quantification of the SOC stock.



Picture 2 & 3: Physical properties included into account by ISRIC — World Soil information



Picture 4: SOC stock in t/ha, Random Point2 within our project Instance 1 – Mayuge.

$$SOC_{Point2} = 54 \text{ t/ha}$$



Picture 5: SOC stock in t/ha, Random Point3 within our project Instance 1 – Mayuge.

$$SOC_{Point3} = 61t/ha$$



Picture 6: SOC stock in t/ha, Random Point4 within our project Instance 1 – Mayuge.

$$SOC_{Point4} = 52t/ha$$



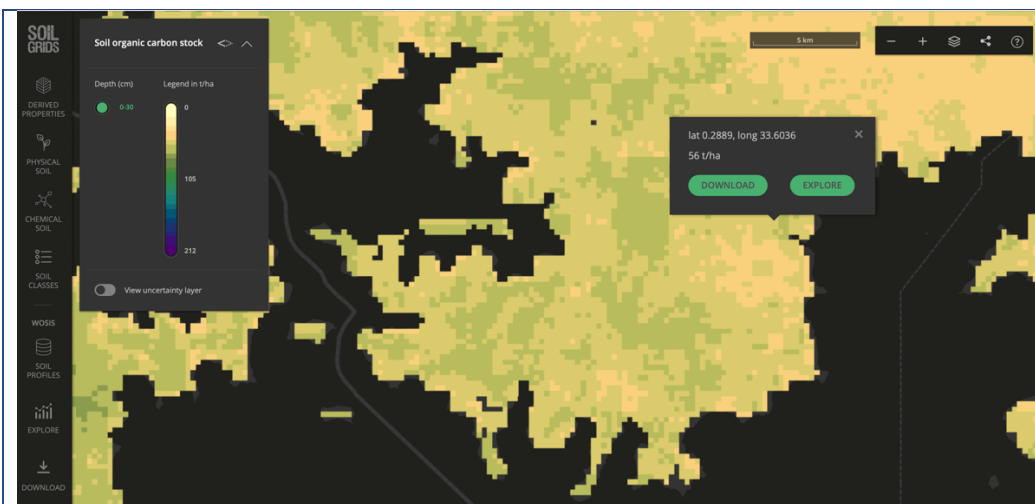
Picture 7: SOC stock in t/ha, Random Point5 within our project Instance 1 – Mayuge.

$SOC_{Point5} = 62 \text{ t/ha}$



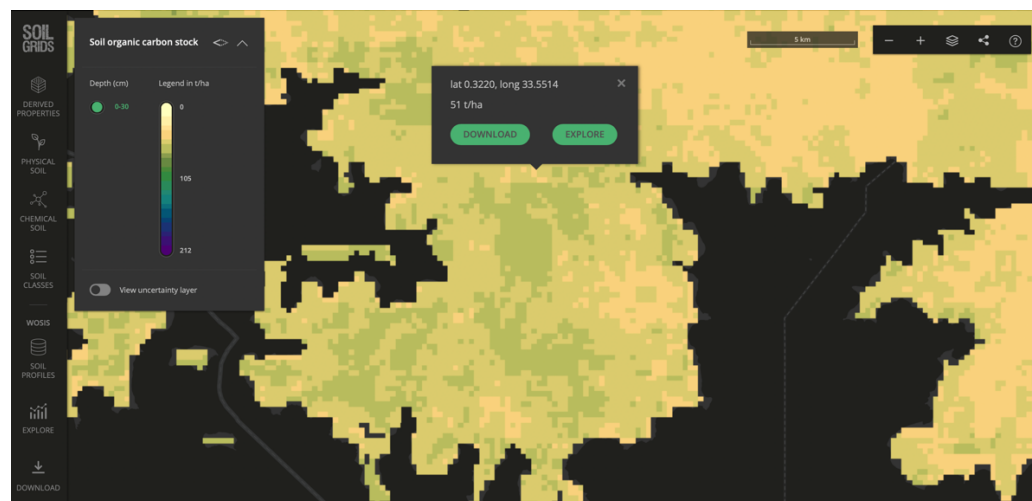
Picture 8: SOC stock in t/ha, Random Point6 within our project Instance 1 – Mayuge.

$SOC_{Point6} = 50 \text{ t/ha}$



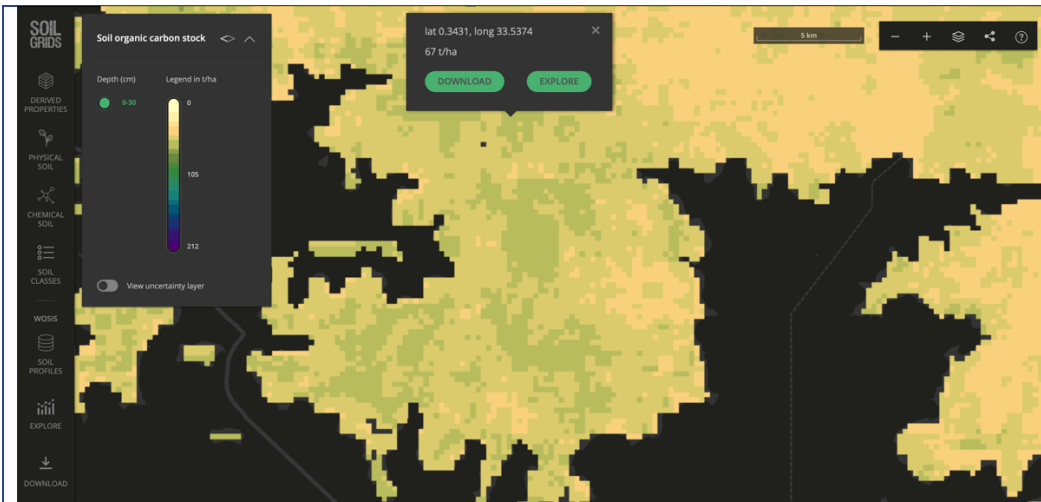
Picture 9: SOC stock in t/ha, Random Point7 within our project Instance 1 – Mayuge.

$SOC_{Point7} = 56t/ha$



Picture 10: SOC stock in t/ha, Random Point8 within our project Instance 1 – Mayuge.

$SOC_{Point8} = 51t/ha$



Picture 11: SOC stock in t/ha, Random Point9 within our project Instance 1 – Mayuge.

$SOC_{Point9} = 67t/ha$



Picture 12: SOC stock in t/ha, Random Point10 within our project Instance 1 – Mayuge.

$SOC_{Point10} = 47t/ha$

Reference: <https://www.soilgrids.org/>

For quantification of the initial SOC stock at the start of the project, we estimate the average SOC stock of the 10 Random Points we chose (Picture 1 & 4-12).

$$SOC_{INITIAL,i} = (SOC_{Point1} + SOC_{Point2} + SOC_{Point3} + SOC_{Point4} + SOC_{Point5} + SOC_{Point6} + SOC_{Point7} + SOC_{Point8} + SOC_{Point9} + SOC_{Point10}) / 10$$

$$SOC_{INITIAL,1} = (53 + 54 + 61 + 52 + 62 + 50 + 56 + 51 + 67 + 47) / 10$$

$$SOC_{INITIAL,i} = 553 / 10$$

$$SOC_{INITIAL,i} = 55.3 \text{ t/ha}$$

To quantify the carbon loss attributable to project activity we adhere to the requirements of the applied methodological tool, section 9. For each stratum of the areas of land which is subjected to soil disturbance attributable to project activity and for which the total area disturbed, over and above the area disturbed in the baseline (if any), is greater than 10% of the area of the stratum, the following carbon loss is accounted:

$$SOC_{LOSS,i} = SOC_{INITIAL,i} * 0.1$$

Where:

$SOC_{LOSS,i}$ = Loss of SOC caused by soil disturbance attributable the A/R CDM project activity, in stratum i of the areas of land; t C ha^{-1}

$0,1$ = The approximate proportion of SOC lost within the first five years from the year of site preparation

i = 1, 2, 3, Ö strata of areas of land; dimensionless

$$SOC_{LOSS,1} = 55.3 \text{ t/ha} * 0.1$$

$$SOC_{LOSS,1} = 5.53 \text{ t/ha}$$

As our project use census-based accounting, we divide the SOC Loss result to the number of trees we plant per hectare to find the SOC Loss attributable to 1 tree planted.

$$SOC_{LOSS,1} = 5.53 \text{ t/ha}$$

$$SOC_{LOSS,1 \text{ tree}} = 5.53 \text{ t} / 1500$$

$$SOC_{LOSS,1 \text{ tree}} = 0.003687 \text{ t/1 tree planted}$$

The Bright Future Africa – Vol.2 (Uganda) is designed to plant 255 million trees.

$$SOC_{LOSS, 255M} = 0.003687 t * 255\,000\,000$$

$$SOC_{LOSS, 255M} = 940\,185 t$$

Estimation of the % of area of land where soil disturbance due to implementation of the project appear is accounted as follows:

We use a census-based accounting, and we plant between 600 – 1500 trees per hectare depending on the species growing characteristics.

Preparation of land for planting follows appropriate soil conservation practices, e.g. follows the land contours and we use only hand work approach and tools (hand-digged holes for the seedlings). We established a standardized size of the holes - 40cm x 40cm (1,600 square centimeters – cm²).



Picture 13: The standardized size of the holes needed for the project a/reforestation activity.



Picture 14: Team of volunteers preparing the project Instance 1 for planting

To estimate the % of area where soil organic carbon disturbance appears, we use the maximum number of trees that we plant per hectare (1,500) multiplied by the size of the holes we dig to plant the seedlings. By using the maximum number of trees planted per hectare, we are able to estimate the highest possible % of area with soil organic carbon disturbance that we can expect.

$$SOC_{disturbance\ area} = Trees_{Number/ha} * HoleSize_{sq\ cm}$$

Where:

$SOC_{disturbance\ area}$ = Area with soil organic carbon attributable to the implementation of the project activity in square centimeters

$Trees_{Number/ha}$ = Trees planted hectare

$HoleSize_{sq\ cm}$ = Size of the the areas with soil organic carbon attributable to the implementation of the project activity in square centimeters

$$SOC_{disturbance\ area} = Trees_{Number/ha} * HoleSize_{cm^2}$$

$$SOC_{disturbance\ area} = 1\ 500 \times 1\ 600\ cm^2$$

$$SOC_{disturbance\ area} = 2\ 400\ 000\ cm^2$$

$$SOC_{disturbance\ area} = 240\ m^2$$

1 hectare = 10 000 m²

To find what % 240 m² is out of 1 hectare:

$$240/10\ 000 * 100 = (240 * 100) / 10\ 000 = 24\ 000 / 10\ 000 = 2,4\ \%$$

The area of land with soil organic carbon disturbance attributable to the implementation of project activity is a maximum of 2.4% per hectare. Based on that and the requirements of the tool, we won't exclude the estimated SOC_{Loss} from our Net GHG Emission Mitigation.

For clarification, please check section 8.2 Quantification of Net-GHG Emissions and/or Removals.

8.1.3 Leakage

Leakage emissions of the project are estimated by quantifying the project emissions attributable to the displacement of pre-project agricultural activities for the purpose of project implementation.

-Existing forest cover

The project differentiates between eligibility areas and the net planting (actual) areas when identifying planting locations. Existing significant forest cover within the eligibility area is excluded from the assessed area so as not to affect the project baseline.



Map 1: Eligibility Area Project Instance 1; Map 2: Net (Actual) Area Project Instance 1

-Displacement of agricultural activities

GRO only plants on land dedicated to permanent reforestation. This is ensured by agreements provided by the legal or heritage landowners such as the National Forest Authority, the respective Kingdom, or the respective religious council. On occasion plots of land are temporarily used for agriculture by local communities. Temporary crop cycles can last from 3 to 6 months before shifting. As a policy, the GRO project will wait for the natural crop cycle to end, before implementing reforestation activities. As per the applied methodology, shifting agriculture cannot be attributed as leakage to the project.

To prevent any increase or shift in greenhouse gas (GHG) emissions, the GRO project does not plant on areas where agricultural activities are currently taking place. Additionally, no agricultural activities are displaced or relocated to accommodate reforestation. This ensures that there are no disruptions to the pre-existing land use that could lead to leakage or indirect GHG emissions elsewhere.

Shifting agriculture reference literature: <https://www.fao.org/4/n8595e/n8595e05.htm>

-Other leakage

There is no other displacement of pre-project agricultural activities within the project boundary. By restricting reforestation to land already designated for permanent reforestation, the GRO project ensures that no increase or shift in GHG emissions results from the displacement of agricultural activities. This model minimizes potential leakage and aligns with sustainable land management practices.

-Leakage quantification

Leakage is quantified in accordance with section 5.7., paragraph 17 of the applied methodology, and it is calculated as follows:

$$LK_t = LK_{AGRIC,t}$$

Where:

LK_t = GHG emissions due to leakage, in year t; t CO₂-e

$LK_{AGRIC,t}$ = Leakage due to the displacement of agricultural activities in year t, as estimated in the tool "Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity"; t CO₂-e

$$LK_t = LK_{AGRIC,t}$$

$$LK_t = 0 \text{ tCO}_2\text{e}$$

To confirm the quantification of our project leakage emissions as zero, we also utilize the prescribed formula outlined in ICR PDD template v4.0.

Project leakage emissions are calculated as follows:

$$PL_y = PL_{FCy} + PL_{ECy} + \dots$$

Where:

PL_y = Project leakage in year y (t CO₂-e)

PL_{FCy} = Project leakage from fossil fuel combustion in year y (t CO₂-e)

PL_{ECy} = Project leakage from electricity consumption in year y (t CO₂-e)

...

$$PL_y = PL_{FCy} + PL_{ECy}$$

$$PL_{45} = 0 \text{ t CO}_2\text{-e} + 0 \text{ t CO}_2\text{-e}$$

$$PL_{45} = 0 \text{ t CO}_2\text{-e}$$

8.2 Quantification of Net-GHG emissions and/or removals

To quantify net GHG emissions and/or removals, we adhere to the criteria and procedures outlined in the CDM methodological tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities". We estimate our net GHG emissions and/or removals applying model b) Estimation by modelling of tree growth and stand development, paragraph 30/ b), section 8. Estimating carbon stock in trees at a point of time.

We employ this methodology for ex-ante estimation, projecting carbon stock in tree biomass. Our approach is characterized its conservatism, ensuring accuracy in our projections. Comprehensive research has been conducted, and pertinent data has been furnished by the Department of Forestry Biodiversity and Tourism at Makerere University, Kampala. 5-years monitoring and verification mechanisms are established during the crediting period.

Aligned with the guidance provided in section 8.2, "Estimation by modelling of tree growth and stand development", paragraph 45 – 48 within the same tool, we execute the following steps:

1. Stand parameters such as number of planted trees, age-class structure, and species composition at different points of time are simulated from assumed (planned) tree planting and management practices.
2. Tree growth parameters such as diameter or height increment is simulated by taking into account local tree-growth data from past experience while also considering relevant site factors (e.g. soil, terrain, slope, aspect, precipitation) and stand parameters.

We monitor the mortality rate and replace the trees on a needs basis.

The project design operates on the following planting schedule:

Year 1 (15/05/2024 – 31.12.2024)	499,960 trees
Year 2 (01/01/2025 – 31.12.2025)	2,499,760 trees
Year 3 (01/01/2026 – 31.12.2026)	9,999,000 trees
Year 4 (01/01/2027 – 31.12.2027)	14,000,248 trees
Year 5 (01/01/2028 – 31.12.2028)	18,000,994 trees
Year 6 (01/01/2029 – 31.12.2029)	25,000,277 trees
Year 7 (01/01/2030 – 31.12.2030)	30,000,336 trees
Year 8 (01/01/2031 – 31.12.2031)	35,000,960 trees
Year 9 (01/01/2032 – 31.12.2032)	39,999,762 trees
Year 10 (01/01/2033 – 31.12.2033)	40,000,212 trees
Year 11 (01/01/2034 – 14.05.2034)	39,999,340 trees
Total	255,000,849 trees

We estimate Carbon sequestration during the planting years by target. This number will be verified and monitored continuously during the crediting period based on the 5 years MRV cycle.

Extensive research has been conducted for each of the four kingdoms in Uganda—Busoga, Buganda, Bunyoro, and Tooro—in collaboration with the Department of Forestry Biodiversity and Tourism at Makerere University, Kampala. The project's initial phase is designated for implementation in the Busoga Kingdom.

The following list comprises indigenous tree species scheduled to be planted in the designated project area within Busoga Kingdom:

Syzygium guineense
Milicia excelsa
Vitex doniana
Markhamia lutea
Senna siamea
Ficus natalensis
Celtis africana
Albizia coriaria
Pouteria altissima
Millettia dura
Prunus africana
Warburgia ugandensis
Polyscias fulva
Trichilia emetica
Piptadeniastrum africanum
Maesopsis eminii
Terminalia superba
Uapaca kirkiana
Cordia millenii
Khaya anthotheca

For each tree species selected in the Busoga Kingdom, attention is devoted to individual stand parameters and tree growth simulation. Stand parameters, including number of planted trees, age-class structure, and species composition, are simulated based on assumed (planned) tree planting and management practices. These practices encompass considerations such as planting density and survival rate, ensuring a tailored approach to each species.

Similarly, the simulation of tree growth, involving diameter or height increment, is conducted with a species-specific focus. This process integrates local tree-growth data from past experiences. Relevant site factors, including soil characteristics, terrain, slope, aspect, and precipitation, are also carefully considered in the context of each species. This species-specific approach ensures accurate estimation of stand parameters and tree growth.

Net GHG Emission Mitigations are calculated as follows:

$$EM_y = BE_y - PE_y - PL_y$$

Where:

EM_y = Net GHG Emissions Mitigations in year y (t CO₂-e)

BE_y = Baseline emissions in year y (t CO₂-e)

PE_y = Project emissions in year y (t CO₂-e)

PL_y = Project leakage in year y (t CO₂-e)

$$EM_y = BE_y - PE_y - PL_y$$

$$EM_{45} = 0 \text{ t CO}_2\text{-e} - 138,571,687 \text{ tCO}_2\text{-e} - 0 \text{ t CO}_2\text{-e}$$

$$EM_{45} = 138,571,687 \text{ tCO}_2\text{-e}$$

To quantify the Net anthropogenic GHG removals by sinks we apply the referred formula in paragraph 18 of the applied methodology:

$$\Delta C_{AR - CDM,t} = \Delta C_{ACTUAL,t} - C_{BSL,t} - LK_t$$

Where:

$\Delta C_{AR - CDM,t}$ = Net anthropogenic GHG removals by sinks, in year t; t CO₂-e

$\Delta C_{ACTUAL,t}$ = Actual net GHG removals by sinks, in year t; t CO₂-e

$C_{BSL,t}$ = Baseline net GHG removals by sinks, in year t; t CO₂-e

LK_t = GHG emissions due to leakage, in year t; t CO₂-e

$$\Delta C_{AR - CDM,t} = \Delta C_{ACTUAL,t} - C_{BSL,t} - LK_t$$

$$\Delta C_{AR - CDM,t} = 138,571,687 \text{ tCO}_2\text{e} - 0 \text{ tCO}_2\text{e} - 0 \text{ tCO}_2\text{e}$$

$$\Delta C_{AR - CDM,t} = 138,571,687 \text{ tCO}_2\text{e}$$

For a more detailed insight into our estimations and data across various stages and components of the project, please refer to the Carbon Sequestration Sheet GRO Bright Future Africa - Vol.2 ID93 - v7.0. This spreadsheet is based on the carbon estimation platform developed by our partner, AirImpact, and provides an in-depth breakdown of calculations, estimations, and data to support a thorough understanding of the project's dynamics.

The spreadsheet is available in our database and has also been uploaded to the ICR platform for ease of access, serving as a valuable reference to complement the information provided in this document and ensuring a comprehensive view of our afforestation and carbon sequestration initiatives.

Table 2: Aggregated GHG Emission Mitigations for 255M trees

Year	Baseline emissions (tCO ₂ e)	Project emissions (tCO ₂ e)	Estimated leakage (tCO ₂ e)	Reductions (tCO ₂ e)	Removals (tCO ₂ e)	Total GHG emission mitigations (tCO ₂ e)
15/05/2024 to 31/12/2024	0	10,173	0	0	10,173	10,173
01/01/2025 to 31/12/2025	0	51,471	0	0	51,471	51,471
01/01/2026 to 31/12/2026	0	108,288	0	0	108,288	108,288
01/01/2027 to 31/12/2027	0	186,484	0	0	186,484	186,484
01/01/2028 to 31/12/2028	0	358,227	0	0	358,227	358,227
01/01/2029 to 31/12/2029	0	641,428	0	0	641,428	641,428
01/01/2030 to 31/12/2030	0	1,028,303	0	0	1,028,303	1,028,303
01/01/2031 to 31/12/2031	0	1,514,352	0	0	1,514,352	1,514,352
01/01/2032 to 31/12/2032	0	2,068,187	0	0	2,068,187	2,068,187
01/01/2033 to 31/12/2033	0	2,816,372	0	0	2,816,372	2,816,372
01/01/2034 to 31/12/2034	0	3,744,838	0	0	3,744,838	3,744,838
01/01/2035 to 31/12/2035	0	4,539,897	0	0	4,539,897	4,539,897
01/01/2036 to 31/12/2036	0	5,120,731	0	0	5,120,731	5,120,731
01/01/2037 to 31/12/2037	0	5,476,365	0	0	5,476,365	5,476,365
01/01/2038 to 31/12/2038	0	5,727,084	0	0	5,727,084	5,727,084
01/01/2039 to 31/12/2039	0	5,862,184	0	0	5,862,184	5,862,184
01/01/2040 to 31/12/2040	0	5,834,534	0	0	5,834,534	5,834,534
01/01/2041 to 31/12/2041	0	5,689,444	0	0	5,689,444	5,689,444

01/01/2042 to 31/12/2042	0	5,461,448	0	0	5,461,448	5,461,448
01/01/2043 to 31/12/2043	0	5,199,036	0	0	5,199,036	5,199,036
01/01/2044 to 31/12/2044	0	4,907,665	0	0	4,907,665	4,907,665
01/01/204 to 31/12/2045	0	4,605,820	0	0	4,605,820	4,605,820
01/01/2046 to 31/12/2046	0	4,298,475	0	0	4,298,475	4,298,475
01/01/2047 to 31/12/2047	0	4,011,309	0	0	4,011,309	4,011,309
01/01/2048 to 31/12/2048	0	3,739,164	0	0	3,739,164	3,739,164
01/01/2049 to 31/12/2049	0	3,523,956	0	0	3,523,956	3,523,956
01/01/2050 to 31/12/2050	0	3,319,912	0	0	3,319,912	3,319,912
01/01/2051 to 31/12/2051	0	3,158,359	0	0	3,158,359	3,158,359
01/01/2052 to 31/12/2052	0	3,029,734	0	0	3,029,734	3,029,734
01/01/2053 to 31/12/2053	0	2,929,587	0	0	2,929,587	2,929,587
01/01/2054 to 31/12/2054	0	2,849,576	0	0	2,849,576	2,849,576
01/01/2055 to 31/12/2055	0	2,779,264	0	0	2,779,264	2,779,264
01/01/2056 to 31/12/2056	0	2,710,736	0	0	2,710,736	2,710,736
01/01/2057 to 31/12/2057	0	2,654,008	0	0	2,654,008	2,654,008
01/01/2058 to 31/12/2058	0	2,589,149	0	0	2,589,149	2,589,149
01/01/2059 to 31/12/2059	0	2,533,867	0	0	2,533,867	2,533,867
01/01/2060 to 31/12/2060	0	2,481,474	0	0	2,481,474	2,481,474
01/01/2061 to 31/12/2061	0	2,437,767	0	0	2,437,767	2,437,767
01/01/2062 to 31/12/2062	0	2,400,280	0	0	2,400,280	2,400,280
01/01/2063 to 31/12/2063	0	2,371,946	0	0	2,371,946	2,371,946
01/01/2064 to 31/12/2064	0	2,350,024	0	0	2,350,024	2,350,024

01/01/2065 to 31/12/2065	0	2,333,174	0	0	2,333,174	2,333,174
01/01/2066 to 31/12/2066	0	2,312,549	0	0	2,312,549	2,312,549
01/01/2067 to 31/12/2067	0	2,293,939	0	0	2,293,939	2,293,939
1/1/2068 to 31/12/2068	0	2,266,170	0	0	2,266,170	2,266,170
01/01/2069 to 14/05/2067	0	2,244,936	0	0	2,244,936	2,244,936
Total	0	138,571,687	0	0	138,571,687	138,571,687
Annual average	0	3,079,370	0	0	3,079,370	3,079,370

8.3 Risk assessment for permanence

In alignment with the requirements set forth in the ICR requirement v5.0, Section 4.8.2 Non-Permanence our project relies on the international standard ISO 31000 to assess the non-permanence risks and ensure permanence of our project by integrating its approved risk management practices. The minimum term of permanence is 50 years after the end of the last crediting period.

The risk percentage estimates provided in the report reflect an evaluation of potential challenges and uncertainties within each category of the reforestation project. These percentages represent the likelihood of risk materializing, considering the mitigation strategies in place. The percentages are a subjective assessment based on expert advice, historical data from similar projects, and the proactive measures we have implemented.

1. Environmental Risks: 5-10%

Environmental risks include factors such as extreme weather, soil degradation, and climate change, which are difficult to control but can be managed with the right interventions.

We consider that these risks are relatively low due to the following factors:

The project focuses on planting only native species, which are naturally adapted to the local climate and soil conditions, reducing the likelihood of species failure due to environmental stress.

To enhance soil quality and promote healthy tree growth, we will plant 1,100 trees per hectare. Over the course of the project, we estimate a 60% mortality rate, with the decomposed trees serving as a natural fertilizer, enriching the soil and supporting the growth of the surviving trees. For erosion control, we will implement measures such as mulching, and planting cover crops to stabilize the soil, prevent runoff, and create an environment conducive to long-term forest health and sustainability.

Risk Mitigation: The strong environmental safeguards, including adaptive planting techniques, species diversification, and soil management, significantly reduce the probability of severe environmental challenges.

The 5-10% estimate suggests that while environmental risks exist, the likelihood of major disruptions to the project due to these factors is low. We expect minor environmental challenges (e.g., isolated droughts or rainfall irregularities), but they are manageable through our strategies.

2. Technical Risks: 0-5%

Technical risks pertain to challenges related to species survival, planting techniques, and the overall success of the reforestation effort.

We estimate this risk to be very low because:

We have accounted for a 60% mortality rate over 45 years, which is an industry standard for similar projects based on the density of the planted trees. Trees that die within the first three years will be replanted to ensure the biggest possible positive environmental impact.

Our planting techniques are supervised by the National Forest Authority, ensuring that the best practices are followed.

Continuous monitoring and early intervention in case of tree mortality further reduce the likelihood of significant technical issues.

Risk Mitigation: The replanting plan, combined with professional oversight and consistent monitoring, ensures that the technical risks are minimized to a negligible level.

The 0-5% estimate reflects the very low likelihood of encountering technical difficulties that could severely impact the project. The chances of failure due to poor planting techniques or species issues are minimal because of the strong mitigation measures in place.

3. Financial Risks: 5-10%

Financial risks encompass challenges such as securing consistent funding, managing costs effectively, and generating revenue from carbon certificates.

Funding Delays: Although rare, delays in funding disbursements could potentially impact project timelines or create temporary cash flow challenges.

Revenue Delays: Generating significant revenue from carbon credits is a process that typically takes several years, leading to potential delays in realizing returns.

Mitigation Strategies:

- **Active Investor Engagement:** The project is already in communication with multiple interested investors, ensuring the necessary funding for implementation until carbon credit sales become viable.

- Carbon Market Integration: We are actively engaged with several carbon market platforms to ensure timely certification and monetization of carbon credits, providing a clear pathway to revenue generation.

The estimated 5-10% financial risk reflects a low likelihood of significant funding or revenue challenges. Given the secured investor interest, and proactive carbon market engagement, financial risks are effectively mitigated. Any delays or constraints that do arise are expected to be minor and manageable, ensuring the project's financial stability and long-term success.

4. Regulatory and Political Risks: 0-5%

Regulatory and political risks include potential changes in government policy, delays in obtaining permits, or unforeseen shifts in national regulations.

Given the strong government endorsement, the likelihood of regulatory or political risks is extremely low:

The project is officially endorsed by the relevant ministries, the forest authority, and the largest landowner in Uganda, which ensures political stability and support.

We are actively involved in policy creation, which gives us an influential role in shaping forest management policies.

All land ownership and access issues have been cleared with the authorities, ensuring no legal disputes.

Risk Mitigation: With clear government support, policy alignment, and established land rights, the risk of political or regulatory obstacles is minimal.

The 0-5% estimate reflects that regulatory risks are almost non-existent. The project has strong backing from government and relevant authorities, ensuring that policy or political issues will not disrupt project activities.

5. Social Risks: 0-5%

Social risks involve community engagement and potential opposition, as well as conflicts over land ownership or land use.

The risk is considered extremely low because:

Local communities are engaged in every stage of the project, ensuring their participation and support.

Partnerships with heritage institutions help to respect local cultural values and traditions.

Land ownership and access have been clarified with both government authorities and traditional land users, preventing conflicts.

Risk Mitigation: By providing alternative livelihoods, involving communities in decision-making, and addressing cultural concerns, we significantly reduce social risks.

The 0-5% estimate indicates that social risks are minimal. Community opposition or land disputes are unlikely due to the extensive community engagement and clear land agreements already in place.

6. Operational Risks: 5-10%

Operational risks include challenges related to the implementation and management of the project, including logistical issues or inefficiencies in execution.

The operational risk is relatively low but still exists, particularly in terms of logistical challenges due to the location of planting sites and potential management inefficiencies.

The project's coordination with the forest authority and local communities helps to ensure effective management and oversight.

Local partnerships assist with logistics, ensuring the smooth transportation of materials and seedlings.

A strong project management team oversee all aspects of the project, from planning to execution.

Risk Mitigation: Operational risks are mitigated through the close collaboration with local stakeholders, professional management, and contingency planning for logistical disruptions.

The 5-10% estimate reflects the possibility of minor operational disruptions, such as delays or logistical challenges. However, these risks are manageable and will not significantly affect the overall success of the project.

Conclusion of Risk Assessment

The estimated risk percentages across all categories range from 0-5% to 5-10%, suggesting that the overall risk for the project is very low. This translates to a high likelihood of project success with only minor risks that are well within manageable limits. The comprehensive risk mitigation strategies in place—such as government backing, community engagement, financial security, and careful environmental planning—ensure that the project is positioned for success.

Based on these measures, the overall risk of the Bright Future Africa - Vol.2 (Uganda) reforestation project is estimated to fall in the low-risk range of 5-10%, meaning that there is a very small chance that unforeseen issues will arise that could jeopardize the project's successful implementation and long-term sustainability.

The risk percentage estimates in this report are based on insights drawn from multiple publications and industry standards related to reforestation, carbon credit generation, and sustainable forestry management. Key references include guidelines from the National Forest Authority (Uganda), methodologies from the United Nations Framework Convention on Climate Change (UNFCCC), and reforestation best practices outlined by the Intergovernmental Panel on Climate Change (IPCC). Additional insights were derived from resources provided by the World Resources Institute (WRI) and

UNESCO, ensuring a comprehensive and accurate assessment of potential risks and their mitigation strategies.

In accordance with the ICR requirement document v5.0, Section 4.8.2 Non-Permanence, a portion of our anticipated GHG emission mitigations will be allocated to an adjustment account. This measure is designed to safeguard the project from unexpected reductions in carbon stocks or unforeseen increases in emissions.

The quantification of buffer credits is determined, in adherence to Section 4.8.2 and we commit to depositing never less than 10% of the expected GHG emission mitigations into the buffer adjustment account.

Permanence risk (%)	5 - 10 %
---------------------	----------

9. Management of data quality

To ensure that the project is successful, the GRO Foundation puts in place a clear plan to manage the collection, recording, storage, and transfer of data and information.

The first step in the quality management procedures for data and information is our document schedule. The document schedule is a series of contracts, agreements and reports de-signed to create process transparency for all stakeholders.

With this we cover:

- Identification of stakeholders and relevant contacts
- Define roles and responsibilities
- Document statutory requirements such as land ownership
- Document service agreements
- Document monitoring reports
- Document planning, error management and escalation procedures

These documents include specific data that needs to be collected, how it will be collected, and who is responsible for recording it. Additionally, we outline the steps for verifying the accuracy of the collected data and how any errors will be addressed.

Once the data is collected and recorded, it is stored on a secure, multi-copy cloud server with various access levels.

A document management system to track and retrieve documents is being selected to further facilitate efficient and effective data storage, retrieval, and sharing.

Finally, an important component of quality management procedures for data and information is uncertainty assessment. This involves identifying potential sources of uncertainty that could impact the accuracy or reliability of the data and information collected.

It is important to address these sources of uncertainty through appropriate data analysis and modelling techniques to ensure that the project is based on accurate and reliable information. The GRO Foundation mitigates this by using multiple data sources to ensure plausibility, as well as frequent spot checks of data that has been provided.

10. Monitoring

10.1 Monitoring plan

Our monitoring plan is prepared in strict compliance with the guidelines set forth in section 4.10 of the ICR Requirements v5.0 and the applied methodology. All data and information related to the monitoring of the GHG project is meticulously recorded and documented, following the established procedures outlined in the aforementioned documents. We utilize the standardized ICR Monitoring report template for all reporting activities.

Purpose of Monitoring: As we employ the "Estimation by modelling of tree growth and stand development" method for the Ex-ante estimations of our project emissions, the primary purpose of monitoring is to ascertain the net GHG emission mitigations and activate the already issued ICCs. Monitoring extends to tracking the mortality of newly planted trees, ensuring timely replacements. Additionally, we vigilantly monitor the mortality of pre-project trees to ensure their continuous existence aligns with the baseline scenario throughout the crediting period.

List of Parameters:

Stand parameters: species composition, planting density, survival rate.

Tree growth: Diameter or height increment, considering relevant site factors such as soil, terrain, slope, aspect, and precipitation.

Types of Data and Information: We systematically monitor and record the numbers of trees planted along with all relevant parameters listed above. Social impact and livelihood projects, along with their impacts, are also monitored.

Origin of the Data: All data utilized in our monitoring activities are sourced through direct on-site inspection by GRO staff as well as active engagement with key stakeholders including IRCU, UN Women, National Forest Authority, Ministry of Water and Environment and local community-based organizations. This is documented with care, ensuring a transparent trail back to their origin, enhancing credibility.

Monitoring Methodologies: Our monitoring methodologies are anchored in the applied methodology "AR-ACM0003: Afforestation and reforestation of lands except wetlands - Version 2.0." We deliberately exclude accounting for deadwood, litter, and organic soil, focusing solely on the below and above biomass of newly planted trees and shrubs. The CDM tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities" is instrumental in our chosen methodology, particularly the "Estimation by modelling of tree growth and stand development" model.

Monitoring Frequency: In alignment with the ICR Requirements document v5.0, section 4.10, which stipulates a monitoring and verification frequency of up to five years for AFOLU projects. We opt for a five-year monitoring cycle.

Roles and Responsibilities: Our organizational structure features location managers operating under established procedures, subject to rigorous checks by the Project Country Manager and Quality Insurance Manager. This system ensures adherence to monitoring procedures, with documented submissions progressing to the Compliance Manager for further validation.

Our structure in relation with IRCU id based on three levels:

Steering Committee – responsible for strategic decision making and coordination between GRO, IRCU and key stakeholders

Executive Group – responsible for tree seedlings supply, planting coordination and ongoing quality assurance of the planting sites

Local Group – responsible for community mobilization, ongoing community engagement, planting activities and site maintenance

Internal Data Checks and Controls: We institute annual internal data checks and controls to uphold the accuracy and reliability of our monitoring activities.

To monitor and report our contributions to achieving the Sustainable Development Goals (SDGs) and the project's social impact, we implement a structured approach that includes various qualitative and quantitative data collection methods. We document project activities through 'before and after' photographs to visually capture the social impact. Receipts from purchases related to livelihood and social impact projects provide a verifiable trail of resource allocation towards local economic development. Additionally, written confirmation statements are collected from engaged stakeholders and impacted communities and beneficiaries, ensuring transparency and accountability in reported outcomes. These data sources enable us to consistently track, analyze, and report on key metrics that reflect progress towards the 11th SDGs that our project is addressing.

10.2 Data and parameters remaining constant

Table 3 Data and parameters to remain constant

Data / Parameter	C _{SHRUB_BSL}
Unit	t CO2e
Description	Carbon stock in shrub biomass within the project baseline
Origin of data	AR-TOOL14: Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities- v04.2
Value applied	Zero
Justification of choice of data or description of measurement methods and procedures applied	The source is a normative reference of the applied methodology AR-ACM0003: Afforestation and reforestation of lands except wetlands - v2.0. Aligned with the requirements of the same methodology, we exclude the deadwood, litter and soil organic carbon from the quantification of our project estimations and focus only on the biomass of trees and shrubs. We meet all conditions per paragraph 11 and 12 of the AR-TOOL14: Estimation of carbon stocks and change in carbon stocks of trees and

	shrubs in A/R CDM project activities- v04.2, to quantify our baseline as zero.
Purpose of Monitoring	☒ Calculation of baseline emissions ☐ Calculation of project emissions ☐ Calculation of leakage
Comments	No additional comments.

Data / Parameter	R _{TREE}
Unit	Root-shoot ratio
Description	Below-ground biomass of the project trees
Origin of data	AR-TOOL14: Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities - v04.2
Value applied	0.25
Justification of choice of data or description of measurement methods and procedures applied	The source is a normative reference of the applied methodology AR-ACM0003: Afforestation and reforestation of lands except wetlands - v2.0.
Purpose of Monitoring	☐ Calculation of baseline emissions ☒ Calculation of project emissions ☐ Calculation of leakage
Comments	No additional comments.

Data / Parameter	Instance 1 Area
Unit	hectares
Description	Size of Project Instance 1 (Net) Area in hectares
Origin of data	KML File
Value applied	1 427 ha
Justification of choice of data or description of measurement methods and procedures applied	The data parameter is required by the methodology

Purpose of Monitoring	☐ Calculation of baseline emissions ☒ Calculation of project emissions ☐ Calculation of leakage
Comments	No additional comments.

Data / Parameter	Grouped Project Area (Uganda)
Unit	hectares
Description	Size of Grouped Project (Eligibility) Area in hectares
Origin of data	https://www.gou.go.ug/topics/facts-figures - :~:text=Uganda's total land area is,shares with Kenya and Tanzania.
Value applied	250 000 ha
Justification of choice of data or description of measurement methods and procedures applied	The data parameter is required by the methodology
Purpose of Monitoring	☐ Calculation of baseline emissions ☒ Calculation of project emissions ☐ Calculation of leakage
Comments	No additional comments.

10.3 Data and parameters monitored

Table 4 Data and parameters to be monitored

Data / Parameter	$A_{PLOT,i}$, $A_{SHRUB,i}$, A_i
Unit	Ha
Description	Area of a sample plot; area of a stratum.
Origin of data	Field measurement
Value applied	n.A

Justification of choice of data or description of measurement methods and procedures applied	Standard operating procedures (SOPs) prescribed under national forest inventory are applied. In the absence of these, SOPs from published handbooks, or from the IPCC GPG LULUCF 2003, are applied
Monitoring frequency	At every verification
Purpose of data	☐ Calculation of baseline emissions ☒ Calculation of project emissions ☐ Calculation of leakage
Quality assurance and control	Quality control/quality assurance (QA/QC) procedures prescribed under national forest inventory are applied. In the absence of these, QA/QC procedures from published handbooks, or from the IPCC GPG LULUCF 2003, are applied
Comments	No additional comments.

Data / Parameter	$CC_{SHRUB,i}$
Unit	Dimensionless
Description	Crown cover of shrubs in shrub biomass stratum i
Origin of data	Field measurement
Value applied	n.A.
Justification of choice of data or description of measurement methods and procedures applied	Considering that the biomass in shrubs is smaller than the biomass in trees, a simplified method of measurement may be used for estimating shrub crown cover. Ocular estimation of crown cover may be carried out or any other method such as the line transect method or the relascope method may be applied
Monitoring frequency	5 years
Purpose of data	☒ Calculation of baseline emissions ☐ Calculation of project emissions ☐ Calculation of leakage
Quality assurance and control	Quality control/quality assurance (QA/QC) procedures prescribed under national forest inventory are applied. In the absence of these, QA/QC procedures from published handbooks, or from the IPCC GPG LULUCF 2003, are applied
Comments	When land is subjected to periodic cycles (e.g. slash-and-burn, or clearing-regrowing cycles) so that the shrub crown cover oscillates between a

	minimum and maximum values in the baseline, an average shrub crown cover equal to 0.5 is used unless transparent and verifiable information can be provided to justify a different value
--	--

Data / Parameter	CC _{TREE_BSL,i}
Unit	Dimensionless
Description	Crown cover of trees in the baseline stratum i
Origin of data	Field measurement
Value applied	n.A.
Justification of choice of data or description of measurement methods and procedures applied	Considering that the biomass in trees in the baseline is smaller compared to the biomass in trees in the project, a simplified method of measurement may be used for estimating tree crown cover. Ocular estimation of tree crown cover may be carried out or any other method such as the line transect method or the relascope method may be applied
Monitoring frequency	Measured only once (at the beginning of the project)
Purpose of data	☒ Calculation of baseline emissions ☐ Calculation of project emissions ☐ Calculation of leakage
Quality assurance and control	Quality control/quality assurance (QA/QC) procedures prescribed under national forest inventory are applied. In the absence of these, QA/QC procedures from published handbooks, or from the IPCC GPG LULUCF 2003, are applied
Comments	When land is subjected to periodic cycles (e.g. slash-and-burn, or clearing-regrowing cycles) so that the tree crown cover oscillates between a minimum and maximum values in the baseline, the value of this parameter should be set equal to half the maximum tree crown cover that would be achieved under the cycle

Data / Parameter	A _{DISP,t}
Unit	Ha
Description	Area of land from which agricultural activity is being displaced in year t
Origin of data	Field measurement
Value applied	n.A.

Justification of choice of data or description of measurement methods and procedures applied	Standard operating procedures (SOPs) prescribed under national forest inventory are applied. In the absence of these, SOPs from published handbooks, or from the IPCC GPG LULUCF 2003, are applied
Monitoring frequency	At every verification
Purpose of data	☐ Calculation of baseline emissions ☐ Calculation of project emissions ☒ Calculation of leakage
Quality assurance and control	Quality control/quality assurance (QA/QC) procedures prescribed under national forest inventory are applied. In the absence of these, QA/QC procedures from published handbooks, or from the IPCC GPG LULUCF 2003, are applied
Comments	No additional comments.

Data / Parameter	H _{TREE} ; D _{TREE}
Unit	cm
Description	We measure the height and diameter of sample trees of each tree species to determine their carbon sequestration. Then we estimate the number of trees in the specific area. Collected data is used for comparison between ex-ante and net GHG emission mitigations.
Origin of data	Planting report, monitoring report, tree mapper app (KML files)
Value applied	Multiple data sources provide high level of confidence
Justification of choice of data or description of measurement methods and procedures applied	The Project uses a census-based accounting model based on evidence including saplings purchased, number of people attending planting event, planting report, monitoring report, sampling, area-based assessments. Together we achieve a high level of confidence
Monitoring frequency	5 years
Purpose of data	☐ Calculation of baseline emissions ☒ Calculation of project emissions ☐ Calculation of leakage
Quality assurance and control	QA/QC
Comments	No additional comments.

Data / Parameter	Survival rate
Unit	Number of dead trees
Description	We monitor the mortality rate of sample trees of each tree species to determine their survival rate. Collected data is used to organize the replacing of the non-survived trees with new.
Origin of data	Planting report, monitoring report, tree mapper app
Value applied	Multiple data sources provide high level of confidence
Justification of choice of data or description of measurement methods and procedures applied	The Project uses a census-based accounting model based on evidence including saplings purchased, number of people attending planting event, planting report, monitoring report, sampling, area-based assessments. Together we achieve a high level of confidence
Monitoring frequency	5 years
Purpose of data	☐ Calculation of baseline emissions ☒ Calculation of project emissions ☐ Calculation of leakage
Quality assurance and control	QA/QC
Comments	No additional comments.

Data / Parameter	Shrubs
Unit	Multiple of planted tree sequestration (factor 1,2 * x)
Description	We monitor the number of planted trees and the corresponding carbon sequestration and multiply this with the factor of 1,2 for the accommodation of shrubs. This factor is based on the CDM Tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities"
Origin of data	Planting report, monitoring report, tree mapper app
Value applied	Multiple data sources provide high level of confidence
Justification of choice of data or description of measurement methods and procedures applied	The Project uses a census-based accounting model based on evidence including saplings purchased, number of people attending planting event, planting report, monitoring report, sampling, area-based assessments. Together we achieve a high level of confidence.
Monitoring frequency	5 years

Purpose of data	☐ Calculation of baseline emissions ☒ Calculation of project emissions ☐ Calculation of leakage
Quality assurance and control	QA/QC
Comments	No additional comments.

Data / Parameter	Jobs created
Unit	Number of jobs created
Description	We monitor the number of jobs created by sex as part of our social impact to address SDG 1. No poverty, 8. Decent work and economic growth and 10. Reduced inequalities.
Origin of data	Social impact report, transfer receipts for salary/hour rate payments
Value applied	n.A
Justification of choice of data or description of measurement methods and procedures applied	The data for job creation is collected through project records, including employment contracts, payroll systems, and attendance logs. Jobs are categorized into direct, indirect, and seasonal positions to reflect the scope of employment generated. Verification methods, such as field visits and interviews, are applied to validate the data. Gender-disaggregated data is also collected to measure inclusivity, particularly for women and youth. This approach ensures reliable reporting on the project's impact on local job creation.
Monitoring frequency	5 years
Purpose of data	☐ Calculation of baseline emissions ☐ Calculation of project emissions ☐ Calculation of leakage
Quality assurance and control	QA/QC
Comments	No additional comments.

Data / Parameter	Money deployed for livelihood projects (micro-finance)
Unit	\$
Description	We monitor the amount of \$ deployed for micro-finance to livelihood project as part of our social impact to address SDG 1. No poverty, 8. Decent work and economic growth and 10. Reduced inequalities.

Origin of data	Social impact report, transfer receipts to organizations and individuals for micro-finance initiatives.
Value applied	n.A
Justification of choice of data or description of measurement methods and procedures applied	The data for money deployed (micro-finance) for livelihood initiatives is collected through project records, including agreements, payroll systems, and micro businesses development reports. Verification methods, such as field visits and interviews, are applied to validate the data.
Monitoring frequency	5 years
Purpose of data	☐ Calculation of baseline emissions ☐ Calculation of project emissions ☐ Calculation of leakage
Quality assurance and control	QA/QC
Comments	No additional comments.

Data / Parameter	Money deployed for food security
Unit	\$
Description	We monitor the amount of \$ deployed for food security (food forests, food crops, greenhouses, farm development) as part of our social impact to address SDG 2. Zero hunger.
Origin of data	Social impact report, purchase receipts, transfer receipts to organizations and individuals for micro-finance initiatives.
Value applied	n.A
Justification of choice of data or description of measurement methods and procedures applied	The data for money deployed into food security initiatives such as food forests, food crops, greenhouses, farm development is collected through project records, including agreements, purchase receipts, payroll systems, and micro businesses development reports. Verification methods, such as field visits and interviews, are applied to validate the data.
Monitoring frequency	5 years
Purpose of data	☐ Calculation of baseline emissions ☐ Calculation of project emissions ☐ Calculation of leakage
Quality assurance and control	QA/QC
Comments	No additional comments.

Data / Parameter	Money deployed for education, skills and well-fare facilities (orphanages, school buildings, skill centers)
Unit	\$
Description	We monitor the amount of \$ deployed for education, skills and well-fare facilities (orphanages, school buildings, skill centers) as part of our social impact to address SDG 4. Quality education, 8. Decent work and economic growth and 10. Reduced inequalities.
Origin of data	Social impact report, purchase receipts and photographic evidence
Value applied	n.A
Justification of choice of data or description of measurement methods and procedures applied	The data for money deployed for orphanages, school buildings, skill centres is collected through financial records, project budgets, and transaction documentation. Expenditures are categorized based on project type (orphanages, school buildings, skill centres) to track the allocation of funds.
Monitoring frequency	5 years
Purpose of data	☐ Calculation of baseline emissions ☐ Calculation of project emissions ☐ Calculation of leakage
Quality assurance and control	QA/QC
Comments	No additional comments.

Data / Parameter	Commercial trees planted (agroforestry)
Unit	Number of trees
Description	We monitor the number of commercial planted trees for community use (fruit trees, firewood, building) as part of our social impact initiatives to address SDG 2. Zero hunger.
Origin of data	Social impact report, invoices, photographic evidence
Value applied	n.A
Justification of choice of data or description of measurement methods and procedures applied	The data on commercial trees planted for community use focuses on the total number of trees distributed and planted as part of our social impact initiative. These trees are intended for firewood, building materials, and fruit collection, supporting local livelihoods. Data is collected through project distribution records and community reports to ensure accurate tracking of the quantities provided. The commercial trees are not accounted for as part of our GHG mitigation estimations.

Monitoring frequency	5 years
Purpose of data	☐ Calculation of baseline emissions ☐ Calculation of project emissions ☐ Calculation of leakage
Quality assurance and control	QA/QC
Comments	No additional comments.

Data / Parameter	Salary rates
Unit	\$
Description	We monitor the salary rates of our part/full time employees as part of our social impact to address SDG 5. Gender equality and 10. Reduced inequalities.
Origin of data	Social impact report, salary transfer receipts
Value applied	n.A
Justification of choice of data or description of measurement methods and procedures applied	The data for the salary rates of our employees is collected through project records, including agreements, salary transfer receipts, payroll systems.
Monitoring frequency	5 years
Purpose of data	☐ Calculation of baseline emissions ☐ Calculation of project emissions ☐ Calculation of leakage
Quality assurance and control	QA/QC
Comments	No additional comments.

Data / Parameter	Water & sanitation wells
Unit	Number of water & sanitation wells built
Description	We monitor the number of water & sanitation wells builded as part of our social impact to address SDG 6. Clean water and sanitation water wells.
Origin of data	Social impact report, receipts from material purchases, photographic evidence

Value applied	n.A
Justification of choice of data or description of measurement methods and procedures applied	The data for the number of built water and sanitation wells is collected through project records and receipts from material purchases.
Monitoring frequency	5 years
Purpose of data	☐ Calculation of baseline emissions ☐ Calculation of project emissions ☐ Calculation of leakage
Quality assurance and control	QA/QC
Comments	No additional comments.

Data / Parameter	Money deployed into energy and energy efficiency
Unit	\$
Description	We monitor the amount of money deployed energy and energy efficiency for communities in need as part of our social impact to address SDG 7. Affordable and clean energy.
Origin of data	Social impact report, receipts from purchases, photographic evidence, community confirmation letter for the activity.
Value applied	n.A
Justification of choice of data or description of measurement methods and procedures applied	The data for the amount of money deployed into energy and energy efficiency is collected through project records, receipts from material purchases, photographic evidence and community confirmation letter for the activity.
Monitoring frequency	5 years
Purpose of data	☐ Calculation of baseline emissions ☐ Calculation of project emissions ☐ Calculation of leakage
Quality assurance and control	QA/QC
Comments	No additional comments.

Data / Parameter	Trees planted
------------------	---------------

Unit	Number of trees planted
Description	We monitor the number of trees planted as part of our reforestation project to address SDG 13. Climate action.
Origin of data	Project VV report, receipts for tree seedlings purchases, photographic evidence, satellite data.
Value applied	n.A
Justification of choice of data or description of measurement methods and procedures applied	The data for the number of trees planted is collected through project records, receipts from tree seedlings purchases, photographic evidence, photographic evidence and satellite data.
Monitoring frequency	5 years
Purpose of data	☐ Calculation of baseline emissions ☐ Calculation of project emissions ☐ Calculation of leakage
Quality assurance and control	QA/QC
Comments	No additional comments.

Data / Parameter	Restored (reforested) land
Unit	Hectares (ha)
Description	We monitor the ha of land reforested as part of our reforestation project to address SDG 15. Life on land.
Origin of data	Project VV report, receipts for tree seedlings purchases, photographic evidence, satellite data.
Value applied	n.A
Justification of choice of data or description of measurement methods and procedures applied	The data for the ha of land reforested as part of our reforestation project is collected through project records, receipts from tree seedlings purchases, photographic evidence and satellite data.
Monitoring frequency	5 years
Purpose of data	☐ Calculation of baseline emissions ☐ Calculation of project emissions ☐ Calculation of leakage
Quality assurance and control	QA/QC

Comments	No additional comments.
----------	-------------------------

Data / Parameter	Dollar value of all resources made available to strengthen statistical capacity in developing countries (Uganda)
Unit	\$
Description	We monitor the dollar value of all resources made available to strengthen statistical capacity in Uganda as part of our reforestation social-impact project to address SDG 17. Partnership for the goals.
Origin of data	Project VV report, receipts for purchases, photographic evidence, satellite data.
Value applied	n.A
Justification of choice of data or description of measurement methods and procedures applied	The data for the dollar value of all resources made available to strengthen statistical capacity in Uganda as part of our reforestation and social impact project is collected through project records, receipts from purchases, funding transfers, photographic evidence and satellite data.
Monitoring frequency	5 years
Purpose of data	☐ Calculation of baseline emissions ☐ Calculation of project emissions ☐ Calculation of leakage
Quality assurance and control	QA/QC
Comments	No additional comments.

Allometric equations for ex-post calculation:

To estimate the ex-post sequestration, we will adhere to the method provided in paragraph 19. of the methodological tool " Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities". In compliance with its requirements, this method is efficient when there is a significant correlation between the plot biomass values on the two occasions (e.g. when there has been no harvest or disturbance in a stratum and therefore no significant spatial re-distribution of biomass has occurred in the stratum after the first estimation).

Under this method, the change in carbon stock and the associated uncertainty are estimated as follows:

$$\Delta C_{\text{TREE}} = (44/12) \times C_{\text{TREE}} \times \Delta B_{\text{TREE}}$$

$$\Delta B_{\text{TREE}} = A \times \Delta b_{\text{TREE}}$$

$$\Delta b_{TREE} = \sum_{i=1}^M w_i \times \Delta b_{TREE,i}$$

$$u_{\Delta C} = \frac{t_{VAL} \times \sqrt{\sum_{i=1}^M w_i^2 \times \frac{s_{\Delta,i}^2}{n_i}}}{|\Delta b_{TREE}|}$$

Where:

- ΔC_{TREE} = Change in carbon stock in trees between two successive measurements; t CO₂e
- CF_{TREE} = Carbon fraction of tree biomass; t C (t d.m.)⁻¹
A default value of 0.47 is used unless transparent and verifiable information can be provided to justify a different value.
- Δb_{TREE} = Change in tree biomass within the biomass estimation strata; t d.m.
- A = Sum of areas of the biomass estimation strata; ha
- Δb_{TREE} = Mean change in tree biomass per hectare within the biomass estimation strata; t d.m. ha⁻¹
- w_i = Ratio of the area of stratum i to the sum of areas of biomass estimation strata (i.e. /); dimensionless
- $\Delta b_{TREE,i}$ = Mean change in carbon stock per hectare in tree biomass in stratum i; t d.m. ha⁻¹
- $u_{\Delta C}$ = Uncertainty in
- t_{VAL} = Two-sided Student's t-value for a confidence level of 90 per cent and degrees of freedom equal to n – M, where n is total number of sample plots within the tree biomass estimation strata, and M is the total number of tree biomass estimation strata
- $s_{\Delta,i}^2$ = Variance of mean change in tree biomass per hectare in stratum i; (t d.m. ha⁻¹)²
- n_i = Number of sample plots, in stratum i, in which tree biomass was re-measured

Mean change in tree biomass per hectare in a stratum and the associated variance are estimated as follows:

Equation (6)

$$\Delta b_{TREE,i} = \frac{\sum_{p=1}^{n_i} \Delta b_{TREE,p,i}}{n_i}$$

$$s_{\Delta,i}^2 = \frac{n_i \times \sum_{p=1}^{n_i} \Delta b_{TREE,p,i}^2 - \left(\sum_{p=1}^{n_i} \Delta b_{TREE,p,i}\right)^2}{n_i \times (n_i - 1)}$$

Where:

- $\Delta b_{\text{TREE},i}$ = Mean change in tree biomass per hectare in stratum i ; t d.m. ha-1
- $\Delta b_{\text{TREE},p,i}$ = Change in tree biomass per hectare in plot p in stratum i ; t d.m. ha-1
- $s_{\Delta,i}^2$ = Variance of mean change in tree biomass per hectare in stratum i ; (t d.m. ha-1)²
- n_i = Number of sample plots, in stratum i , in which tree biomass was re-measured

If $u_{\Delta C}$ estimated from Equation (6) is greater than 10 per cent, ΔC_{TREE} is made conservative by applying uncertainty discount according to the procedure provided in Appendix 2 of the applied methodological tool.

Tree biomass per hectare in a sample plot is estimated by applying one of the plot measurement methods provided in Appendix 1 2 of the applied methodological tool (provided below, measurement method will be chosen in a later stage).

Table 1. Plot measurements and their conversion to tree biomass

Step	Fixed area plots	Variable area plots
Step 1. Measurement (what is measured)	Individual tree dimension (e.g. diameter at breast height, diameter at root collar, tree height)	Basal area per hectare
Step 2. Conversion (how measurements are converted into tree biomass)	1. Using allometric equations based on tree dimensions; or 2. Using biomass expansion factors; or 3. Combination of 1 and 2	1. Using allometric equations based on basal area; or 2. Using biomass expansion factors; or 3. Combination of 1 and 2

Appendix I

Section	Information	Justification
Appendix II	Partnership Agreements with vary stakeholders	Includes sensitive information related to the project.
Appendix II	Invoices from vary stakeholders	Includes sensitive information related to the project.
Appendix II	MoUs with vary stakeholders	Includes sensitive information related to the project.
Appendix II	Minutes of meetings with vary stakeholders	Includes sensitive information related to the project.
Appendix II	NDA with vary stakeholders	Includes sensitive information related to the project.

