



Plan No. 4 on

Forest Restoration for Carbon Sequestration in West Bugwe Central Forest Reserve, Uganda

Between:

Uganda Timber Growers Association (hereinafter referred to as "UTGA")
Plot 116 Bukoto Street, Kamwokya
Kampala, Uganda

&

Grow For IT (referred to as "GFI")
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&

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PROJECT DESCRIPTION

Uganda Timber Growers Association (UTGA) in collaboration with Silva Causa (SC) will undertake a restoration project initially amounting to 20 hectares in West Bugwe Central Forest Reserve (CFR) in Uganda. The establishment of the 20 hectares will be financially supported by Grow For It (GFI) through institutional donations.

The project will involve the establishment and maintenance of mainly indigenous trees under a carbon sequestration program. Fast growing exotic species may also be used for boundary, community plantings etc. UTGA has entered an MoU with the National Forest Authority regarding the management rights to a proportion of the West Bugwe Central Forest Reserve. Initially amounting to 1.000 ha. Upon expiry, UTGA may apply for an extension of the MoU. The continued validity of this agreement is conditional on the maintenance of an MoU between UTGA and the NFA.

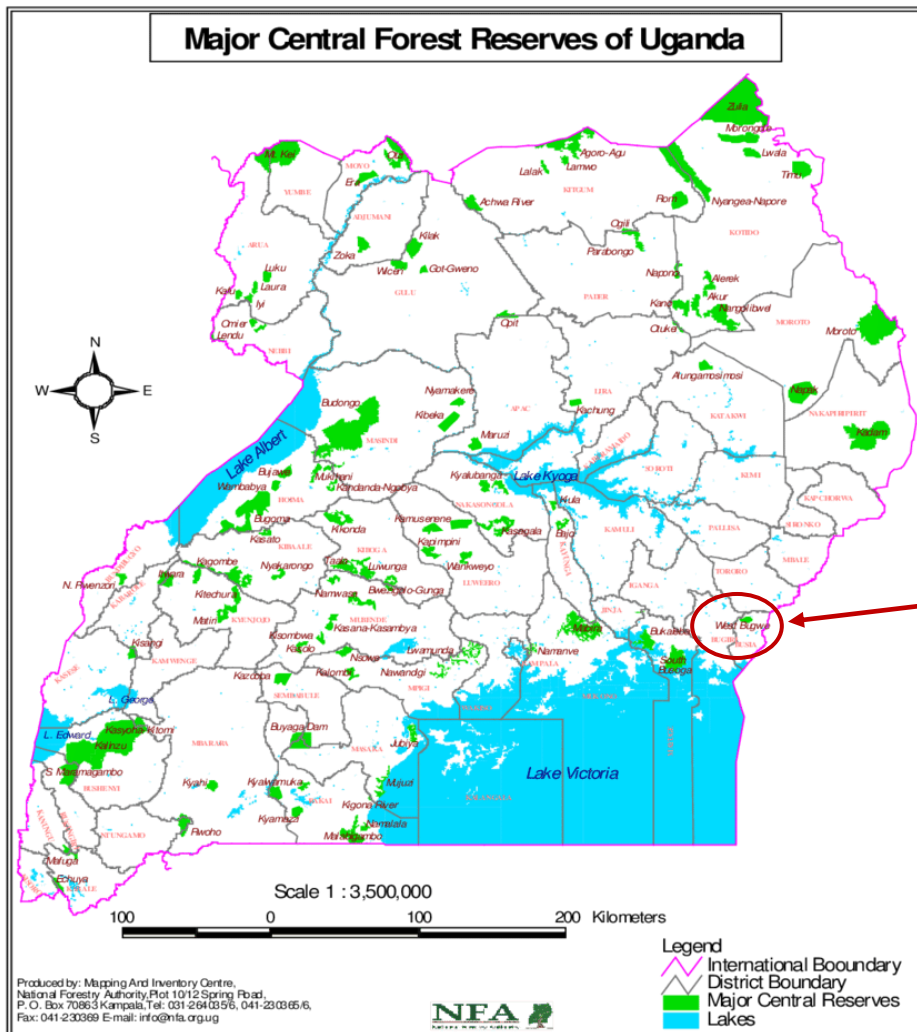
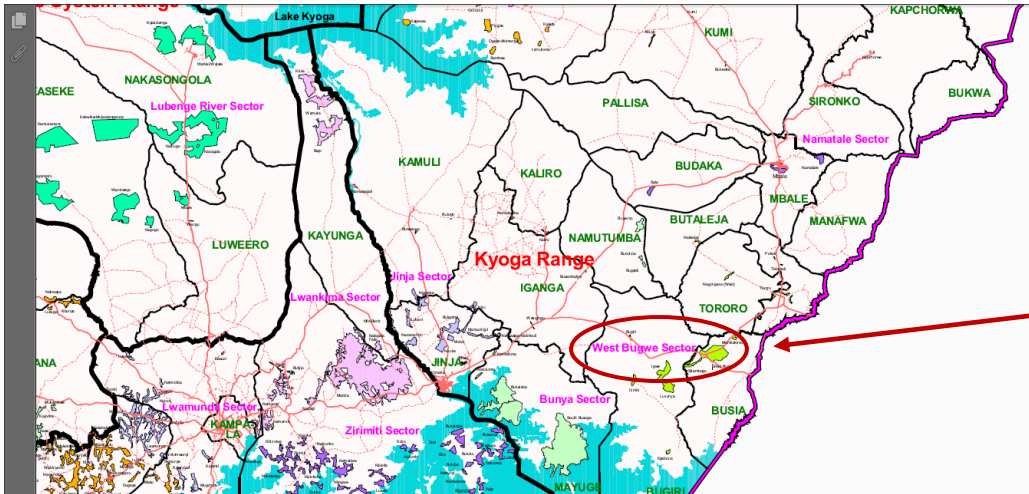
LOCATION

West Bugwe Central Forest Reserve which in total covers 3054 ha is the central part of the West Bugwe Group of Forest Reserves. West Bugwe CFR is located in Busia district, Samia Bugwe Country. The group of CFR's which West Bugwe is a part of occupies basins of a number of rivers. Main rivers include Malaba.

Maximum temperature average 28,7 °C and the minimum average is 16,2 °C. Rainfall averages 1514 mm annually. Rainfall is highest during the months of March to May, and lowest during the months of September to November.

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The CFR located in Bulumbi and Busitema sub counties in Busia district was gazetted in 1940. It has an existing Forest Management Plan 2012-2022. There are no more encroachers in the entire reserve and its fully protected. Scattered restoration has been done in some parts of the CFR.




WHY PLANT TREES IN UGANDA

Uganda's forests are an important and treasured natural asset contributing about 8.7% to the national economy based on conservative estimates (NEMA, 2011).

Forests provide multiple benefits and sustainably managed forests give environmental benefits, sustainable economic development and improve the quality of life of people across the country. Forests provide habitats for many native flora and fauna species, clean the atmosphere through carbon sequestration, provide renewable products and energy and contribute to the development of a green economy. Forests also provide a wide range of wood and non-wood products, clean water resources, and play a vital role in the mitigation of climate change.

One of the key objectives of Uganda's sustainable forest management is to protect and enhance the health and diversity of our forest resources, while ensuring they continue to provide a range of environmental, social and economic benefits for Uganda's present and future generations.

Several strides have been made both by the private sector and the government through investment in various initiatives like indigenous forest restoration. The government due to limited capacity to restore degraded forest is licensing private tree growers in government forest reserves to establish and restore privately owned forests.

Despite all these efforts, Uganda's forests are faced with continuously worsening trends through encroachment, deforestation and forest degradation.

Overall, the country has been losing on average 122,000 hectares/year of forest every year from 1990-2015 and a total of 3.05 million hectares were lost in a span of 25 years. Uganda's forest cover has overall reduced from 24% of the country's total land area in 1990 to 18% in 2005 and to 8% in 2015. A recent survey however showed that a slight increment of up to 12% has been realized by 2018. This is mostly attributed to private sector efforts through establishment of commercial forest plantations and restoration of indigenous forests both on degraded private and government land.

OBJECTIVES OF THIS PROJECT

It is important that multiple efforts be employed to contribute to restoring the country's forest cover. UTGA will contribute to the restoration of degraded forest so that the multitude of benefits (products and services can accrue since forests are to a large extent a public good). The objective of these plantings and restoration initiatives will be hinged on the direct products and services from forests but also be guided by the National Forestry Plan. Some of these include;

1. Carbon sequestration services.
2. Ecotourism (forests – water – landscape connection).
3. Bee products and other Non-Timber Forest Products
4. Social benefits like access to clean water, medicinal plants and restoration of the cultural values of the communities surrounding the areas of intervention, Aesthetic values.
5. Biodiversity conservation (soil, water, flora and fauna).
6. The national forest plan of Uganda (2011/12- 2021/22) highlights the Key strategies for restoration and conservation of natural forests and these provide the basis for planting trees in Uganda. The plan encourages tree planting to;
 - a. Restore/rehabilitate degraded and deforested natural forests in CFRs and wildlife conservation areas.



- b. Promote the restoration/rehabilitation of natural forests on private and communal lands.
- c. Restore/rehabilitate water catchment areas and fragile ecosystems (bare hills, riverbanks, lakeshores, wetlands).
- d. Build capacity for community based natural resource/forest management (CBNRM) and collaborative forest management (CFM).
- e. Promote the development of natural forest related enterprises.
- f. Promote conservation of biodiversity in priority forest reserves and wildlife conservation areas.
- g. Promote management of important biodiversity corridors on private and communal land.

It is widely recognized that active responsible forest management is one of the most efficient tools against climate change. Therefore, it is envisaged that this project will open an opportunity for in collaboration with NFA to demonstrate that responsible forest management is possible in natural forest without compromising needed considerations towards bio-diversity and social interests while serving climate mitigating and adaptation purposes.

COMPLIANCE WITH NATIONAL LEGISLATION AND RECOGNISED STANDARDS

Objective XIII of the 1995 Constitution of Uganda provides for protection of important natural resources on behalf of the people of Uganda while Objective XIV emphasizes that all development efforts should ensure maximum social and cultural well-being of the people.

The national Forestry and Tree Planting Act of 2003 encourages the conservation and management of trees and forests in a manner that meets the needs of the present generation without compromising the rights of the future generations by safeguarding the biological diversity and environmental benefits that accrue from forests and trees.

Section 54, sub section 1, part (a) of the National Forestry Tree Planting Act (NFTPA) of 2003 puts the management of all the Central Forest Reserves (CFRs) under the management of NFA; part (i) of the same section allows the NFA to enter into agreement or other arrangement with any person for the provision of forestry services accruing from central forest reserves. It is through this arrangement that UTGA lobbied NFA for allocation of land for restoration in Kagombe CFR.

Similarly, Statement 13 of the Land Use Policy (2006) provide for establishment of a participatory mechanism to determine resource needs from protected areas, to allow access to some resources, and to develop and implement participatory mechanisms to share responsibilities, costs and benefits of protected areas.

Management Standards The restoration will follow the *Guidelines for Natural Forest Restoration* (NFA, May, 2020). The guidelines focus on species choice, site- species matching, land preparation and all the other tending any other silvicultural treatments that may apply. Following SC's close association with the Department of Geosciences & Natural Resource Management under the University of Copenhagen, relevant recent research findings on natural tree species compositions in the region will be considered. As for the technical aspects, tree planting will follow the standards stipulated in guidelines developed by the Sawlog Production Grant Scheme (SPGS).

UTGA operates an FSC group certification scheme and will ensure that the area under restoration will be managed in compliance with the requirements for responsible forest management set out by Forest Stewardship Council. Against an agreed additional payment, UTGA will ensure the reforested area becomes formally certified.



DIVISION OF RESPONSIBILITIES BETWEEN UTGA AND SC

Both parties agree to make their best efforts and, in the spirit of partnership and co-operation, to implement the activities in accordance with what is stated/outlined in this and complementary plans. Significant changes regarding general time frame, objectives and components can only be made after a dialogue between UTGA and SC and required approval by the latter.

The SC Director will be the main contact person for the project and partnership coordination with UTGA in order to ensure realization of the interventions, outputs and activities.

The UTGA General Manager will be responsible for ensuring thorough implementation and realization of objectives, activities etc., as outlined in this and complementary plans. Not limited to and applicable for a minimum of 50 years, UTGA will/is:

1. Through an MoU with the NFA secure and maintain the management rights to **West Bugwe Central Forest Reserves. Initially amounting to an area of 1.000 ha.** And in general, ensure smooth collaboration and liaison with relevant authorities and other stakeholders.
2. Establish and maintain good and productive relations with concerned local communities. Hereunder, develop and support carbon conserving out-grower / tree planting schemes. The schemes will prior to implementation be subject for approval by SC.
3. Obligated to secure that the activities are carried out in conformity with national laws and regulations.
4. Obligated to secure that all activities are carried out in conformity with international conventions and treaties ratified by Uganda.
5. Ensure necessary project approvals by relevant authorities.
6. Be responsible for all aspects related operational management of the reforested area.
7. Work together with NFA to ensure that the boundaries are open and clear and that there are no incumbrances.
8. Ensure that the land is mapped and based on the existing forest restoration management plan for the entire reserve and develop one for this project.
9. In collaboration with SC, design/plan the planting program. The plans will be subject for approval by SC
10. Undertake the production of tree seedlings in accordance with the management plan.
11. Implement the planting program as designed.
12. Undertake silvicultural and maintenance activities based on the guidelines and management plan that will ensure successful establishment and growth of the plantings allowing for a maximum mortality of 25%.
13. Put in place protection measures that will ensure sustainability of the trees / forest.
14. Conduct monitoring visits to the forest and ensure the smooth running of the day-to-day operations of activities in the forests.
15. Maintain relevant records and ensure timely and relevant communication.
16. In a collaborative manner, and as long as requested, timely deliver relevant information on this project to SC, or its representatives in an agreed format.

As long as contractual relationships are maintained, SC will/is responsible:

1. To GFI for the utilization of the grant, and for reporting duly to GFI.
2. To immediately inform GFI of any suspected irregularities in connection with the management of the grant.
3. To conduct planning and monitoring visits to the restoration area as agreed.
4. For maintaining regular communication with UTGA in order to sustain a close dialogue with on the implementation process and other matters related to the intervention.
5. For the timely and active provision of technical and administrative input.



6. For the timely transfer of funds in accordance with the budget and instalment schedule as separately stipulated in the agreement between UTGA and SC.
7. To comment on and approve of management and working plans together with associated budgets.

REMUNERATION FOR SERVICES PROVIDED BY UTGA

The planting / restoration project will upon mutual agreement be divided into a number of stages.

Prior to each season, UTGA will present a detailed planting / restoration plan among others accounting for the number of hectares to be planted / restored. The plan will be subject for prior approval by SC. The total budget for the various stages will be based on a simple multiplication of price per hectare by the number of hectares. Different planting models will dictate species choice, seedling spacing, maintenance and other management interventions.

According to the agreed plans, and by following the main principles of NFA and SPGS procedures, the payment to UTGA will installment-wise take place in accordance to a set number of milestones. The exact payment schedule is stipulated the separate contract between GFI and UTGA.

TREE PLANTING MODEL – Silvicultural Approach

The present FMP for West Bugwe will be amended to this agreement and its prescriptions will serve as the lowest nominator for the establishment and subsequent management of the planting. The prescriptions outlined in this agreement will serve as complementary guidance.

Complementary to the above, detailed work plans and associated budgets will be developed for the different stages of establishment.

Zoning

Before starting actual restoration work, the forest area will be zoned. Zones will be subdivided into compartments of 15 to 20 hectares depending on the physical features, species, management regimes and other factors. Sub-compartments mapping of e.g. species trials will be established as per need.

Being digitized, the system of zones, compartments and sub-compartments will be used for a phased approach as for planning, prioritization and operation.

Model forest

The plantings will partly be established as a model forest with the intentions to gain and disseminate useful knowledge on technical, silvicultural and biological character for the benefit of the forest and academic sector.

Not limited to, the following trials will be established:

- Testing different species/provenance compositions to learn more about growth potential and dynamics.
- Spacing and thinning trials to optimize on stand development and quality.
- Technology/methodology test to optimize operational management.
- Different rotation ages.
- Biodiversity promoting initiatives.

Trial layout, data collection, compilation and dissemination of findings will be conducted in collaboration with Nyabyeya Forestry College and Makerere University.



Species choice

This being a restoration project, the forest management plan developed by NFA for **West Bugwe CFR** will be followed. Relevant recent research findings from Department of Geosciences & Natural Resource Management in Denmark on natural tree species compositions in the region will be considered and discussed with NFA. Indigenous species will be mostly used but consideration will also be given to species that sequester large amounts of carbon in a short time. Some of the species include; *Kaya species*, *Terminalia species*, *Mahogany species*, *Maesopsis eminii*, *Melia azedarach*, *Grevillea robusta species*, *Milicia excelsa* and *Makhamia Lutea*. Also, fast growing exotic species may be used when justified, e.g., for boundary and community purposes.

Source of planting material

UTGA owns a SPGS certified tree seedling nursery but also works closely with several other certified member nurseries. The UTGA nursery will endeavor to produce the seedlings required for the project but may work with partner nurseries to source some other seedlings. The UTGA nursery has already planned for the production of an assortment of indigenous species that will be used for this project and has spread them over the two planting seasons.

Planting models:

For this project plan one or more of the following planting models will be used:

- *Gap / block* planting with native species in accordance with NFA Forest Restoration Guidelines, 2020: Planting should preferably be in lines at 4 meters by 4 meters equaling a minimum of 625 saplings per hectare.
- *Encroachment / boundary* planting with fast growing (native and exotic) species in accordance with the SPGS plantation guidelines: Planting should preferably be in lines at 3 meters by 4 meters equaling a minimum of 833 saplings per hectare.

Establishment and Maintenance

UTGA will use the services of certified forest contractors with focus on the use of labour from neighboring communities who will undertake the land preparation, planting and tending operations. UTGA technical staff will oversee all the operation to ensure that they are done in a responsible and professional manner.

Stocking density (number of seedlings) per hectare will largely follow the prescriptions stipulated in Natural Forest Restoration Guidelines developed by NFA. *See planting models above.*

The plan is to establish 20 hectares over a time span of 1 calendar years, spread over 1-2 planting seasons.

The land preparation activities to carry out will depend on what is on ground in the various blocks but will be geared to ensure that the plants get a good start. In order to encourage completion among the trees and also to allow for better management, the plant will be planted in proper lines by first lining out and marking the planting spots. Pits of one foot deep and wide will be dug at every planting spot. The lining out and marking of planting spots will put into consideration the growth habits of the different species. At the point of lining out and marking compartmentation will be done for better management. The restoration interventions will also include invasive plant management, liberation of climbers, enhancement of natural regeneration, line planting, etc.



The planting will be done at the onset of the two planting seasons in the March to May and the September to December seasons. The timing for planting will also ensure that it is done as early as possible in the planting season so that the trees are able to receive high amounts of rainfall for most of the season. In order to ensure maximum stocking, blanking/beatup will be done on an ongoing basis. This being a restoration project, replacement of plants that may not make it will be done continuously to ensure that full stocking is achieved. This will be done through continuous monitoring and replacement of dead seedlings of trees. A mortality rate of maximum 20% is accepted.

Silvicultural regimes

As a restoration project, the plantings and other silvicultural interventions will seek ultimately to mimic the dynamics of natural forest. Over time, the forest area will develop into a continuous tree cover system, which in future – in principle for perpetuity – will be re-generated by natural seeding.

Although, a restoration project, regimes for future commercial operations will be tested in collaboration between UTGA, SC, NFA and relevant research institutions. This will be achieved through a responsible near-to-nature management approach, where the natural dynamics of, and the interrelations between the various tree species will be utilized.

Thus, in order to encourage rapid growth and fast volume increments pruning and selective thinning regimes will be incorporated in the tending operations. All these will be implemented in accordance with prescriptions of the management plan developed in collaboration between UTGA, SC and NFA.

Forest protection

This will include:

- a. Fire protection and management – Measures will be put in place to ensure that the forest is safe from forest fires and others to ensure that in case any fire broke out, it can be managed well so that it doesn't cause substantial damage to the forest. Such measures will include;
 - i. Training and sensitization of local communities.
 - ii. Ensuring that fire fighting tools and equipment are in place.
 - iii. Timely removal of invasive species
 - iv. Patrolling the forest especially during the hot/dry season.
 - v. Community sensitization on protection and management of forest fires.
 - vi. Provide any relate incentives to contribute to forest protection.
- b. Protection from animal and human damage, managing forest encroachment- in collaboration with NFA and the local authorities, the communities surrounding the restoration area will be engaged and strategies put in place to ensure that their activities do not have negative impact on the plantings.

Forest monitoring

UTGA will in collaboration with SC develop a comprehensive monitoring plan for monitoring and follow up of the restoration and tree growing activities. The trees planted will be monitored for survival so that blanking is done within the planting seasons. Other monitoring aspects will include;

- a. The presence of pests and/or diseases. An integrated pest management process will be used to solve pest problems so that there is minimal risk to people and the environment.
- b. Monitoring tree growth. Sample plots will be established from which data will periodically be collected and extrapolated to provide information on various aspects of the forest.



- c. A compartment registry or data base will be created in which information will be kept about each compartment and this will support the monitoring of activities for each compartment. For each compartment some of the information that will be captured and monitored will include;
- The GPS location.
 - Pre- and post-planting photo documentation.
 - Area.
 - Species.
 - Stocking.
 - Silvicultural regimes.
 - Any protection issues.

Area verifications will be done frequently, especially in the years of establishment to monitor the acreage.

Rotations

Applying a near-to-nature silvicultural regime while aiming a continuous tree-cover forest eco-system, different tree species will be managed individually. Thus, there will not be any fixed rotation age. Based the tree species preference and actual need of spacing, rotation ages for individual trees will range from app 10 to 100 years. And in any case the area will continuously be covered by trees and ultimately characterized by a high proportion of old trees as well as a high stocking density / carbon storage.

Expected output

The forest is expected to provide a wide range of produce/outputs. Not limited to, this will include:

- Timber and conventional forest produce.
- Biofuel for local communities through residues.
- Biodiversity enhancement.
- Erosion protection/climate adaptation.
- Carbon sequestration by absorbing an estimated / projected [10-ton CO₂/hectares](#) on net-areas planted when in growth. The actual growth is expected to be verified at the time when the plantings are well established
- Additional carbon sequestered on areas adjacent to the net-areas planted due to general protection / growth enhancement.
- Non-Timber Forest Products

RIGHTS TO PRODUCTS AND FOREST PRODUCE

On behalf of the government, NFA has the mandate to manage the CFR for restoration. By signing an agreement with NFA, UTGA will undertake these restoration activities as described above. The agreement provides for UTGA having the right to implement restoration activities, manage the forest and to trade carbon credits (see special arrangement on carbon trade below) and potentially NTFP's accruing from those restoration activities over an agreed period of time. At the end of the MoU period UTGA will either hand over the forest to NFA or apply for an extension of the management rights of the area. NFA or UTGA will then be obliged to practice responsible forest management on the project area thereafter.

By signing this project plan, UTGA accepts that the ownership on carbon sequestered by the tree planting and restoration work sponsored under this agreement will be transferred to GFI. Thus, GFI – on behalf of its institutional donors - holds exclusivity to claim ownership on carbon sequestered, irrespective of whether UTGA and/or the final beneficiaries receive complementary funding from third parties. GFI will maintain this right for a minimum of 50 years. Accordingly, GFI is added as signatory to this project plan as a rights holder





GOVERNING LAW AND JURISDICTION

Any disputes relating to this Agreement, or the transactions contemplated hereby shall be governed by and interpreted according to the laws of Denmark without giving any effect to the conflicts of laws principles thereof. The parties hereto agree to submit any dispute to the non-exclusive jurisdiction of the courts of Denmark.

By signature approved by:

As project parties:

Date: **01/April/2023**

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Solomon Oketcho, Board Chairperson
Uganda Tree Growers Association.

A handwritten signature in blue ink, appearing to read "Flemming Sehested".

Flemming Sehested, Director
Silva Causa.

A handwritten signature in blue ink, appearing to read "Henrik Stiesdal".

Henrik Stiesdal, Chairman of the Board
Grow For It.
As right holder to the carbon claims