DANISH FORESTRY EXTENSION

UTGA
Uganda Timber Growers Association

Forest Restoration for Carbon Sequestration in West Bugwe Central Forest Reserve, Uganda.
Extract from plan between:

Uganda Timber Growers Association ("UTGA"), Plot 116 Bukoto Street, Kamwokya, Kampala, Uganda

Danish Forestry Extension A/S ("DFE"), Slotsmarken 18, DK-2970 Hørsholm, Denmark, CVR no. 35926941

PROJECT DESCRIPTION

Uganda Timber Growers Association (UTGA) in collaboration with Danish Forestry Extension (DFE) will undertake a restoration project in West Bugwe Central Forest Reserve (CFR) in Uganda. The establishment of the numbers of hectares will be financially supported by Grow For It (GFI).

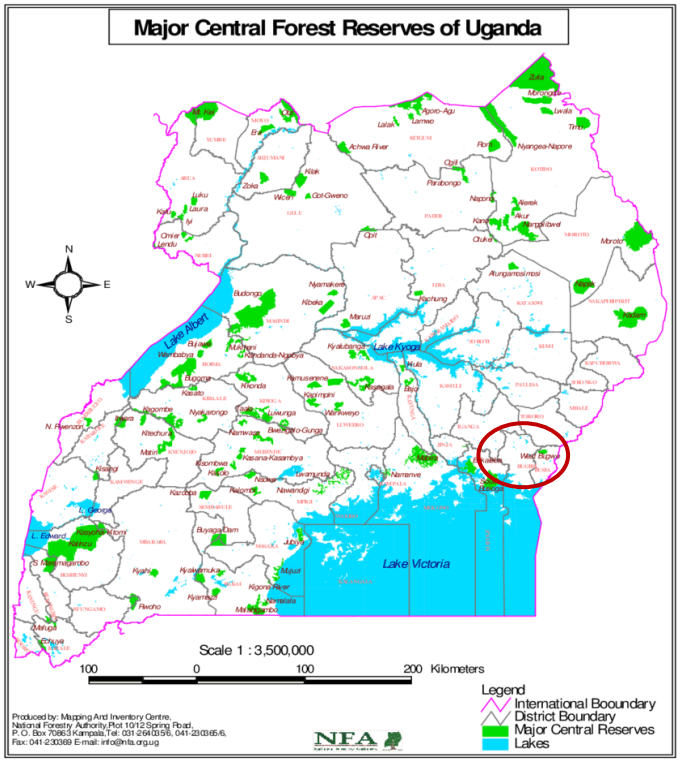
The project will involve the establishment and maintenance of mainly indigenous trees under a carbon sequestration program. Fast growing exotic species may also be used for boundary, community plantings etc. UTGA has entered an MoU with the National Forest Authority regarding the management rights to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

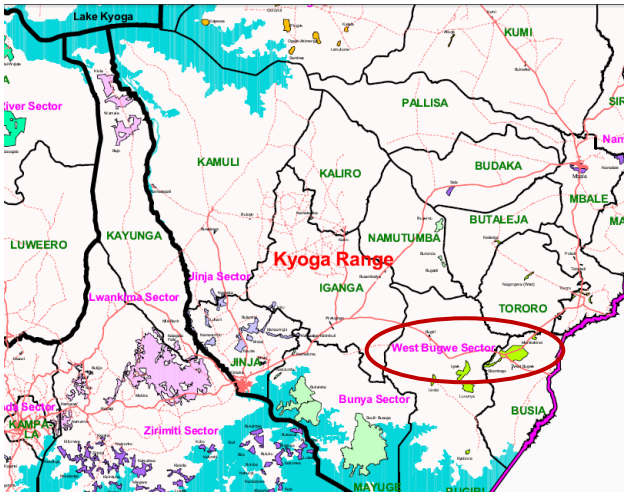
LOCATION

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.

Maximum temperature average 28,7 ^{0}C and the minimum average 16,2 ^{0}C. Rainfall averages 1514 mm annually. Rainfall is highest during March to May, and lowest during September to November.

The CFR located in Bulumbi and Busitema sub counties in Busia district. There are no more encroachers in the entire reserve and its fully protected. Scattered restoration has been done in some parts of the CFR.





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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.

Several strides have been made both by the private sector and the government through investment in various initiatives like indigenous forest restoration. 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.

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 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.

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Management Standards

The restoration will follow the *Guidelines for Natural Forest Restauration* (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 DFE´s close association with the Department of Geosciences & Natural Resource Management under the University of Copenhagen. 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 DFE

The DFE 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 DFE.
3. Obliged to secure that the activities are carried out in conformity with national laws and regulations.
4. Obliged 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 DFE, design/plan the planting program. The plans will be subject for approval by DFE
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 20%.
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 DFE, or its representatives in an agreed format.

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

1. To GFI for the utilization of the grant, and for reporting duly to GFI.
2. To 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 DFE.
7. To comment on and approve of management and working plans together with associated budgets.

REMUNERATION FOR SERVICES PROVIDED BY UTGA

Prior to each season, UTGA will present a detailed planting / restoration plan. The plan will be subject for prior approval by DFE. Different planting models will dictate species choice, seedling spacing, maintenance and other management interventions.

TREE PLANTING MODEL – Silvicultural Approach

The present Forest Management Plan 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.

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 etc. Being digitized the zones 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.

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 has already planned for the production of indigenous species for this project. In future UTGA may work with partner nurseries to source some other seedlings.

Planting models:

One or more of the following planting models may be used:

- *Gap / block* planting with native species in accordance to 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.

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. Pits of one foot deep and wide will be dug at every planting spot. 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.

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.

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 DFE develop a comprehensive monitoring plan for monitoring and follow up of the restoration and tree growing activities. 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 stablished 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;
   a. The GPS location.
   b. Pre- and post-planting photo documentation.
   c. Area.
   d. Species.
   e. Stocking.
   f. Silvicultural regimes.
   g. Any protection issues.

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

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 app 10-ton CO_2/hectares when in growth.
- 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.

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.