Project Design Document (CFS v2.1 + CCBA v1)

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History of the document

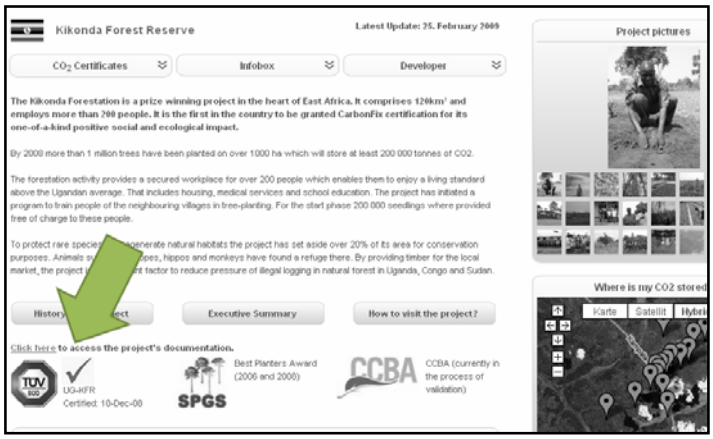
Version	Date	Nature of revision
01	19 Feb 2008	This CCBA PDD template has been developed by TÜV SÜD in support of CCBA. TÜV SÜD refrains from responsibilities related to the complete and accurate inclusion of CCBA indicators in this form. For AR projects: If the CCBA PDD is used in combination with an AR-CDM PDD, it is recommended to briefly indicate in the CCBA PDD, which chapter of the AR-CDM PDD already contains the relevant information – avoiding, in this manner, the duplication of information.
	Oct 2008	The PDD has been converted into a template by the CFS to assist project developers who already prepared their CFS documents to also become CCBS certified without rewriting all of their project information.

I. Basic Data:

This document contains cross-references to documents which have already been certified according to the criteria of the CarbonFix Standard. All these documents are attached to this PDD.

Documents can also be accessed over the projects website: www.CarbonFix.info/KFR

On this website you will find a link which allows you to access all present and past project documentation.



References to Documents

The following coding structure is given for reference documents (Ref-Doc.):

2-digit codes	starting with 00	Document of the CarbonFix Standard
2-digit codes	larger than 01	CFS certified project documents
3-digit codes	starting with 001	Documents of this CCBA-PDD

Abbreviations

KFR	Kikonda Forest Reserve
CFS	CarbonFix Standard
FSC	Forest Stewardship Council
IUE	Institut für Umwelt und Entwicklung (now called global-woods)
NFA	National Forest Authority (Uganda)
SUB	Sustainable Use of Biomass Ltd. (owned by global-woods)
MU	Management Unit (homogeneous parcel of planted trees)

1) The title and code of project:

Kikonda Forest Reserve (UG-KFR)

2) The version number of the document:

1.3

3) The date of the document:

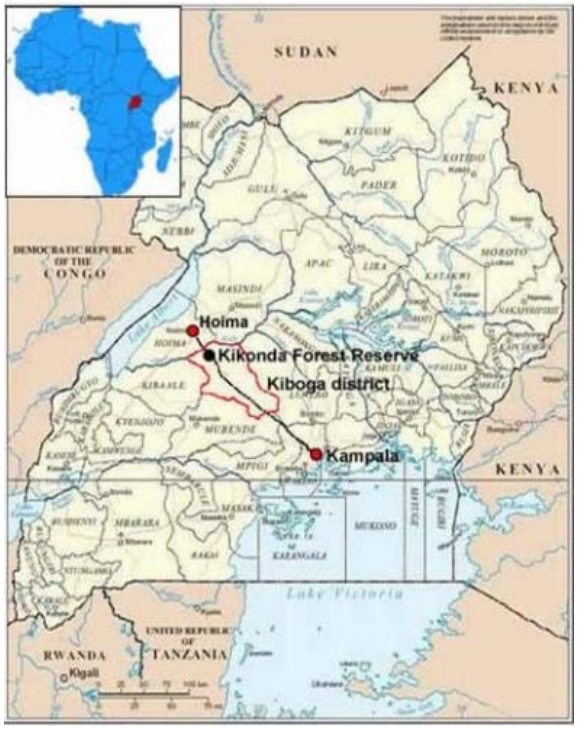
Version 1.1 10-Dec-2008
Version 1.2 27-Mar-2009
Version 1.2 23-Apr-2009

II. General Section:

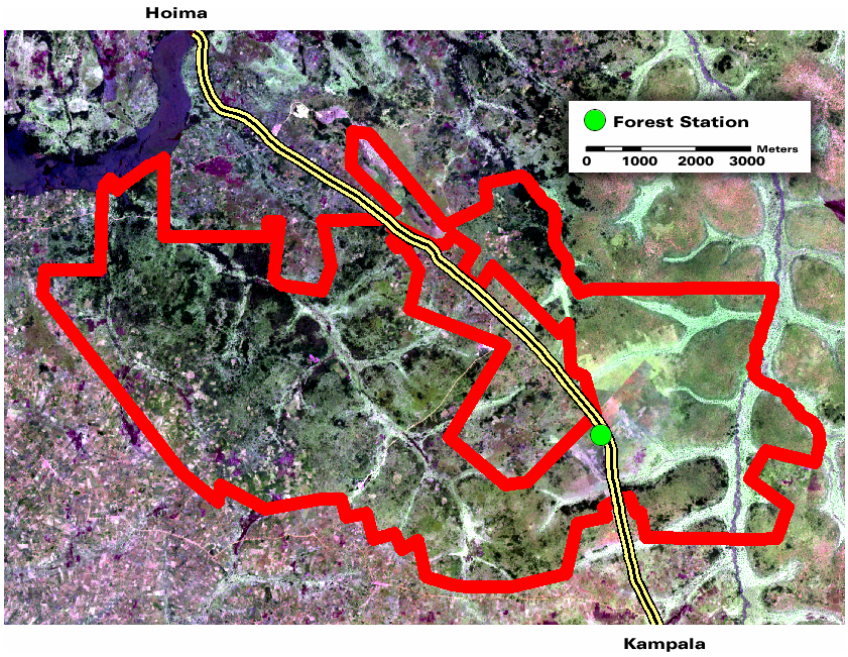
G1 Original Conditions at Project Site (Required)

G.1.1 Describe the location of the project and basic physical parameters (e.g., soil, geology, climate).

The project is located in the centre of Uganda, 30km South-East of the City of Hoima. For the location of the project see CFS-document “Visit of the Project” (Ref-Doc: 15) or the CFS project website.



The red cycled polygon represents the district of Kiboga, while the black dot shows the location of the project area.



The river in the left upper corner of the image shows the border between the Kiboga and Hoima discrict. The red line shows the boundry of the project area.

The rock formation underlying the project belongs to Singo series rock of the old basement complex. They are made up of grit and sandstone with basal conglomerate shale facies. As in many areas of Uganda, sheet laterite rock can be found as can be seen at the base of Kawuka Hill which is found in the north of the project area.

The whole project lies in the catchment of the Kafu river. The area is drained by two rivers Kinawoga and Nankende, and their numerous tributaries. The two rivers drain into Kafu to the west and north-west. However, on the upper reaches of Kinawoga the land is flat causing the stream to stagnate. Water only moves along these streams immediately after

heavy rainfall.

Although the project area lies within the tropical belt, both temperature and humidity, typical to the regions, are considerably modified by a relatively high general altitude ranging from 1,050 m.a.s.l. to just over 1,150 m.a.s.l.

According to Henderson's classification (1949), the climate of the project area remains under the influence of air masses of the Congo basin and is characterized by a bi-modal distribution of an average annual rainfall between 1,000 and 1,300 mm. It is associated with the inter-tropical convergence zone with two rainy peaks generally falling between mid-March and mid-May and from September till early October, the first peak generally being higher than the second.

Further background information is available in the document "Environmental Aspects" (Ref-Doc: 05). Here, the project owner described the following parameters of the project: soil, water, biodiversity, climate, nutrients, flora, temperatures, erosion, fauna and precipitation.

The exact location of the project can also be accessed on the Kikonda website on the CarbonFix platform: www.CarbonFix.info/KFR

Here, maps on the project area, conservation area, Management Units, etc. are made available.

The following table shows the different project areas according to their past vegetation types and their future use by the project:

Natural Forest (Conservation Area)	**Wetland** (Conservation Area)	**Bush- and Grassland** (Planting Area)	**Total area**
3 376 ha (28%)	1 485 ha (12%)	7 321 ha (60%)	12 182 ha (100%)

G.1.2 Describe the types and condition of vegetation at the project site:

Cattle keeping, logging and other anthropogenic activities have led to the creation of savanna grassland and bushland in the last decades. The shrub species that characterize the bushland vegetation are Albizia coriaria, Combretum collinum sub sp binderanum, C. ghasalense, Allophylus africanus and Bridelia micrantha together with other shrub and tree spp. Below this is a herb layer consisting of Acalypha villicaulis, Afromomum sanguineum and Asparagus pauli-guilelmi. There are few grass species under mature dense bushland, but some species namely Setaria chevaleri and Panicum maximum are frequently found. In the areas affected by seasonal flooding grass spp such as Leersia hexandra and Setaria sphacelata are found. The majority of the area today is covered with Pennisetum parpureum (elephant grass) which also indicates the loss of natural forest. The plants found in the Kikonda reserve today do not differ significantly from those found in the surrounding areas.

In 2006 a vegetation assessment led by biologist Olivia Wannyana of Makerer University, Kampala was conducted. The main findings for the project area were, that vegetation types are mainly woodlands and wooded grasslands.

Its natural *tree vegetation* mainly comprises of Combretaceous species, Acacia woodlands, forest remnants or savanna / forest mosaic, colonising forests, thickets mainly of Grewia and Rhus spp. and *wooded grasslands* mainly of Hyparrhenia and Loudetia spp. This vegetation is the result of grazing and burning of formerly supported forests and woodlands.

These *woodlands* are common in the region, but not extensive as described by Langdale-Brown et al (1964). They contain a variety of woody genera (Appendix 1) most of which are fire tolerant. The most common genera are Combretum, Terminalia and Acacia species. In these woodlands, especially the Combretaceous woodlands, there is very little shrubby undergrowth.

Further background information is available by documents “Classification of Kikonda Vegetation” (Ref-Doc: 001).

The table below summarizes the types and conditions of vegetation between 1990 and 2001 in and around the project. In addition, the information of the year 1995 is provided to point out the continuity of land use change affecting the vegetation. All calculated figures can be tracked by the information of the eligibility analysis documented for the CarbonFix Standard.

Land use type (area in ha)	1990	1995	2001	Land use change 1990-2001(ha)
Natural Forest	11,946	9,471	6,815	-5,130
Bush/Grassland	27,290	28,383	25,084	-2,206
Wetland	10,539	10,685	10,594	55
Cropland	4,365	5,590	11,698	7,333
Settlement		3	17	17
Other Land	1,959	1,967	1,891	-68
Total area (ha)	**56,099**	56,099	**56,099**	

Land use history in and around project area (1990 to 2001) (source: Landsat and Spot images groundtruthed by GEOfis GmbH and global-woods AG for details see documents “GAF_KFR_Eligibiliy.pdf” and “GeoFIS_KFR_Groundtruthing.pdf” under www.carbonfix.info/kfr.)

The following table shows the history of types and conditions of vegetation **inside** the project area. Additional information is given for the year 1995 and 2006 which is irrelevant for Eligibility but shows the continuous tendency of land use change.

The category ‘Settlement’ has risen in 2006 due to the construction of housing for management members and two stone quarries. These quarries are used to extract stones for the construction of the Kampala-Hoima road. The stone quarry activities are foreseen to last until 2010.

Land use type (area in ha)	1990	1995	2001	2006	Land use change 1990-2001 (ha)
Natural Forest	3,376	3,273	2,945	2,569	-431
Bush/Grassland	7,321	7,390	7,745	8,229	424
Wetland	1,402	1,434	1,409	1,006	7
Cropland	0.02	0.01	0.01	0.1	
Settlement				12	
Other Land	82	85	82	83	
Planted area				282	
Total area (ha)	**12.182**	12.182	**12.182**	12.182	

Land use history in the project area (1990 to 2006) (source: Landsat and Spot images groundtruthed by GEOfis GmbH and global-woods AG for details see documents "GAF_KFR_Eligibiliy.pdf" and "GeoFIS_KFR_Groundtruthing.pdf" under www.carbonfix.info/kfr.)

There have been continuous deforestation activities and an increase of Bush- and Grassland since 1990 as shown in the tables above. Only marginal forest increase occurred from 1990 up to 2001. Natural Forest decreased by 431 ha and Bush-/ Grassland increased by 424 ha.

The following table illustrated the eligibility or non-eligibility of the areas which are allowed to enter into carbon accounting planting area.

Land use	Eligible / Not Eligible
Natural Forest	Not Eligible
Bush/Grassland	Eligible
Wetland	Not Eligible
Cropland	Eligible
Settlement	Eligible
Other Land	Eligible

Categories of carbon accounting planting areas

G.1.3 Current carbon stocks at the project site(s), using methodologies from the Intergovernmental Panel on Climate Change's Good Practice Guidance (IPCC GPG) or other internationally approved methodologies (e.g. from the CDM Executive Board):

The baseline of Kikonda project was determined by the methodology of the CFS, which is based on the on the IPCC GPG and uses a stationary baseline approach whereby it has to be proven that the biomass on the carbon accounting area is not increasing in a "without project scenario".

9 out of 10 approved A/R CDM methodologies use the same approach (stationary). Only the methodology AR-AM0010 uses a dynamic approach.

To determine the baseline of a project, different carbon pools must be selected. According to the CFS methodology the following carbon pools have been assessed by the project:

Carbon pools	Relevance for long-term CO_2-sequestration	Costs of measurements
Aboveground living biomass	++	o
Belowground living biomass	+	Not necessary (calculated)
Dead wood	o	o
Litter	o	+
Soil	Depending on the soil (o to ++)	++
	++ very relevant + relevant o less relevant - not relevant	++ very high + high o moderate - low

From the already approved A/R CDM methodologies 5[1] out of 10 use the same approach – selecting the above- and belowground living biomass only.

In the baseline scenario no additional growth of trees, shrubs and herbs is expected since removal of biomass due to logging, grazing and charcoal-burning is expected to continue. Hence no increase of the carbon stock in the baseline scenario is expected and a static baseline regarded realistic for the project.

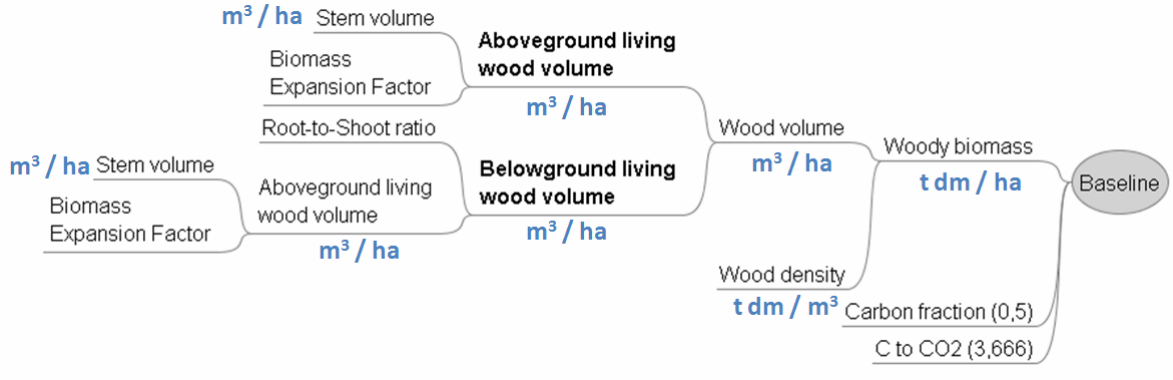
Comparing the long-term CO_2-sequestration of the different carbon pools, it becomes evident that these two pools can be considered as most cost effective.

To avoid that 'soil' becomes a *relevant* carbon pool, the following restrictions are given within the CarbonFix Standard:

- Trees are not allowed to be planted on wetland.
- No flooding or regular irrigation is allowed.
- For the planting of trees no area-wide ploughing is allowed. Overall, mechanized ploughing is limited to the purpose of planting.

To convert standing wood and living non-woody biomass into the unit of CO_2equivalent, other parameters must be considered. The graph below shows these variables:

[1] AR-AM0001, AR-AM0003, AR-AM0004, AR-AM0008, AR-AM00010



The synergy of the application from these variables determines if the methodology follows a conservative approach – which means that in determining the baseline, emissions are rather over-estimated than under-estimated.

Variables to determine the baseline can be influenced by one or several of the following attributes:

- As the stem volume is based on a specific cut diameter (x cm), the Biomass Expansion Factors (BEF) must relate accordingly.
- As the stem volume can be calculated over-bark or under-bark, the BEF must thus consider this.
- Some BEFs are written as a relative figure (0.4), others with the calculation figure (1.4).
- Some BEFs already include the Root-to-Shoot ratio.

All these factors have been considered in the determination of the Kikonda baseline.

The guideline 'Inventory' (Doc-Ref: 07) was followed to execute the field measurements. This guideline is based on the 'Winrock Sourcebook for LULUCF'.

The following table gives an overview of the results from the baseline assessment executive summary:

Woody biomass		**Non-woody biomass**	
Stem volume:	14.9 m_3	Fresh biomass:	12.8 tons / ha
Wood density:	0.58	Wet-to-Dry ratio:	0.36
BEF:	1.4		
Root-to-Shoot ratio:	0.48	Root-to-Shoot ratio:	0.48
Carbon fraction:	0.5	Carbon fraction:	0.5
C to CO_2-ration:	3.666	C to CO_2-ration:	3.666
Subtotal:	32.8 tCO_2/ha		12.5 tCO_2/ha
TOTAL:	**45 tCO_2/ha**		

Ref-Doc: 07

G.1.4 Description of communities located in and around the project area, including basic socioeconomic information (using appropriate methodologies such as the livelihood frameworks).

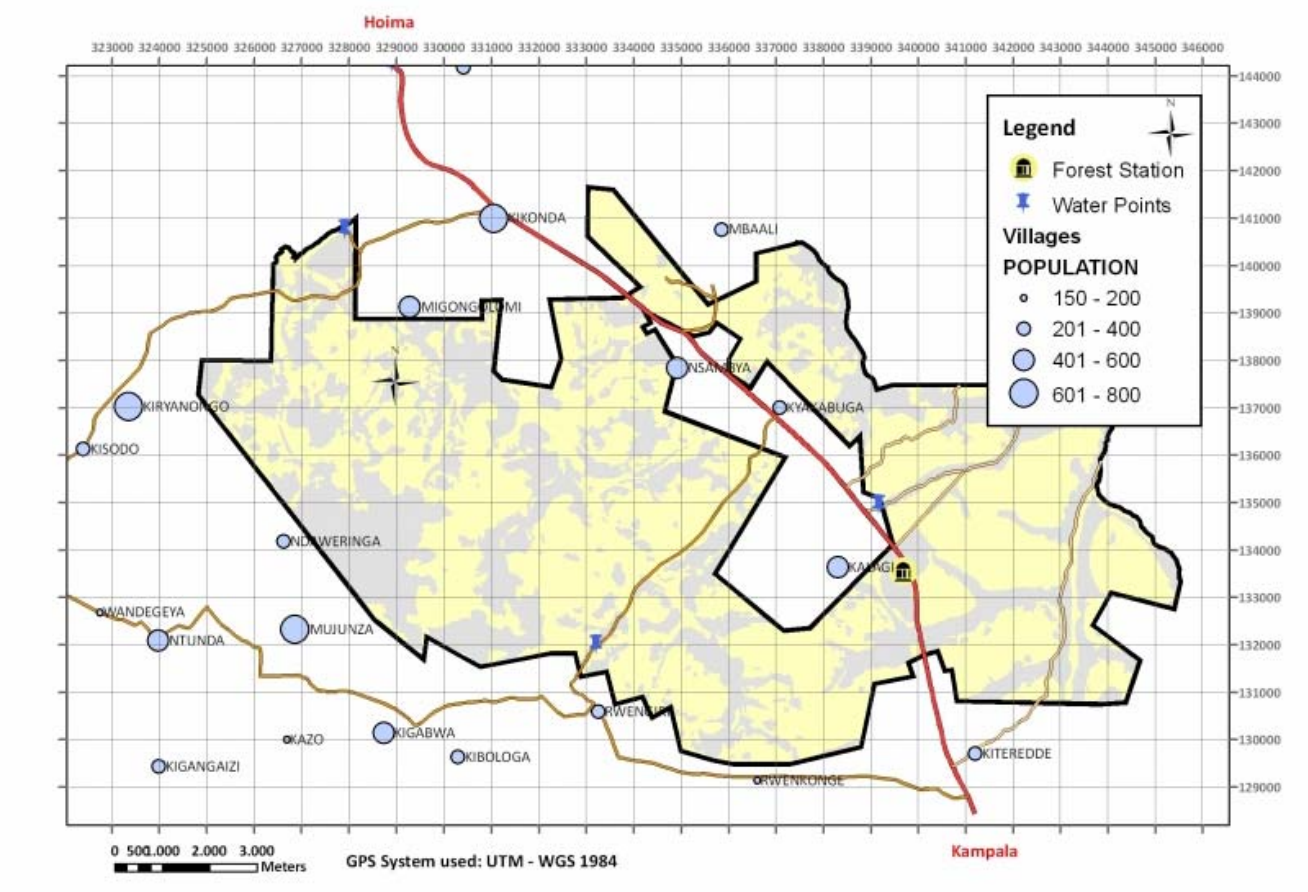
A survey executed by SUB in September 2006, revealed that about 12 540 people live in the 20 villages around the KFR. A socio-economic assessment in 2007 resulted in the estimation of a population of over 20 000 people.

All villages located at a maximum distance of 5 km around the reserve boarder are referred to as the 'neighboring area'. In each village a state employed "local council 5 (LC 5)" mayor is employed to administer the village concerns or to forward issues of concern to the next higher local council (LC 4) after they have been discussed in village meetings.

There are no settlements in the KFR.

As described below, some of the local people live nomadically and therefore the figures are subject to fluctuations.

The following map gives an overview on the location of the different villages and its sizes.



There are two main population groups who live in the area neighboring the project: Subsistence farmers/ cultivators and cattle keepers, who mainly live nomadic, as can be seen in figure 4 and 5.

Figure 4: Farmer/ cultivator in the field

Figure 5: Cattle keeper with his herd

Farmers/ Cultivators

Most farmers/ cultivators live nearby the villages and emigrated from other districts to settle around the KFR. Their main language spoken is Luganda and Rusonga. Farmers/ cultivators live together with their families on small farms around the villages. On average, every household operates on 5-6 acres (2- 2.5 ha). The farmed fields are most often situated around their houses within a few minutes walking distance. The main crop cultivated is cassava (*Manihot esculenta*), bean (*Phaseolus spec.*), maize (*Zea mays*), sweet potato (*Ipomea batatas*) and groundnut (*Arachis hypogaea*) and is mainly grown for own consumption. With banana (*Musa* spec.) being the staple food for the people in the area, a small surplus can be earned as an income by selling it on local markets. Around the house, most farmers established home gardens where they mainly grow different kinds of fruit trees like papaya (*Carica papaya*), jackfruit (*Artocarpus heterophyllus)* or mango (*Mangifera ssp.)*. Furthermore, almost 50% of these farmers keep livestock, on a small scale, with two to five head of cattle, while only about 10% of the farmers perform live stock keeping in larger scale with up to 30 head.

In addition to the farming practices mentioned, the production of charcoal is an important source of income in the area. Due to the fact, that 90% of the Ugandan energy consumption is covered by wood (US Energy Information Administration, EIA), forests are highly depleted.

Wood is processed in simple soil kilns into charcoal. The woodland around, and sometimes also in the KFR, provides the raw material for the charcoal production. The NFA counteracts this tendency by persecuting these illegal activities. The level of success of the NFA efforts is not known. The charcoal is sold along the road to traders, who are able to purchase large quantities, and is mainly brought to the city of Kampala.

Cattle keepers

Cattle keepers prevailingly live nomadically. They have their origin in the north of Rwanda and belong mainly to the tribes of Bahima and Banyakole. This is the reason why many of them only speak their local languages of Runyarwanda and Runyakole. While some of them only pass through the area with their herd every second year on the way to other regions of the country, some pass through annually (Kajura, pers. comment).

Most of the relations between the local farmers and the moving cattle keepers are restricted to business and trade. The difference in cultural heritage causes problems in this relation. Because of their nomadic lifestyle, the cattle keepers are forced to migrate with their grazing herds across the countryside. During this migration it frequently happens, that the cattle grazing activities in the KFR or on farmers' fields and home gardens, result in damages to food crops or young trees. Consequently, local farmers are of the opinion that cattle keepers are not respecting other people's property.

Problems through common land use techniques

Land utilization and land management executed by the local population around the area is posing another threat to the plantation. The agricultural practice of burning bushland to create and fertilize land for crops directly endangers the KFR pine plantation. Fire is used in an irresponsible way as an easy to apply and cheap land-management tool. Cattle keeper and hunters make use of this management tool as well. Cattle keepers create pastures for their cattle while hunters use fire to flush animals out of the bushland, and also contribute to the problem (Kreuzer, 2007).

Land loss for local people

As the reserve was not commercially used until 2002, cattle keepers and charcoal burners were used to letting their cattle graze in the KFR and to make charcoal without any large legal restrictions. With the enforcement of the demarcation of the KFR, illegal activities are steadily diminishing while charcoal burners and cattle keepers have to find new jobs or other land to continue their practices.

The impact of the project activities on local communities is monitored in a two fold approach. The first pillar is a social impact survey conducted in the village based on interviews done in the villages and scientifically analyses. Such assessment was first undertaken by a member of the University of Rottenburg, Germany and is bound to be repeated in regular intervals. The second pillar is the continuous stakeholder consultation process maintained by the project management. A forester employed exclusively employed to be an extension worker in the villages, travels permanently through the communities and verbally collects complaints and requests. In his work he contacts all relevant stakeholder groups which are local leaders (administration, church, traditional), women, cattle keeper, charcoal-burner and farmers. This information is brought into the weekly management meetings in which it is documented in writing (minutes) and brought to the attention of both the Ugandan management and the German management. Feedback of management is noted in the minutes likewise. It is planed to further standardize the documentation of stakeholder requests and answers, by introducing standardized forms.

Besides these official channels of stakeholder communication, the management is very much aware of the needs of the local communities, since all staff lives in the region and many have grown up in the project vicinity.

Further background information is available in the document "Evaluation of the cooperation with communities in KFR" (Ref-Doc: 04-01).

G.1.5 A description of current land use and land tenure at the project site.

As visualised in the latest satelitte picture of the eligibility assessment, there is very limted agricultural activity taking place within the forest reserve.

According to the classifications of cropland and settlement, these activities are between 0.1 ha and 12 ha of the forest reserve. This represents 0.1% of the area.

In most parts of the reserve where no planting activities have yet taken place, illegal cattle grazing and charcoal burning activities are taking place.

These activities, as well as the minor activities of illegal agriculture farming, will be diminished and eventually stopped with the expansion of afforestation. Currently, security guards (app. 10) employed by the project management, patrol the area of the forest reserve constantly to stop illegal activities. These patrols also constantly remind the people of the area, that the Forest Reserve may only be used for tree growing. As the government does not have the capacities to arrest culprits in the field, these security guards also fullfil this responsibility and bring the culprits to local police station if necessary.

Capacities which hinder local police to take action are mainly due to the lack of financial capacity – which also includes fuel for transportation. Instead of providing the local police with monetary means, the projecet management sees it as more effective to assist in law enforcement by the possibilities which are given from the usual private property rights. Hereby, no sanctions are given by the management team – this is up to the police and the juridical courts of the state of Uganda.

The assistance is appreciated by the police and by now, known as normal practice by the communities. Activities, such as the illegal agriculture will diminish with the expansion of the planted areas, as people will see that the land is eventually being used.

The standard procedure of supporting Ugandan authorities in identifying and arresting culprits and the documentation of illegal activities is described in the document “IMP – Security Cattle” (Ref-Doc: 03-02).

As the holder of the tree planting licence issued by the State of Uganda to the area, global-woods AG holds the land-tenure-rights of the Kikonda Forest Reserve.

Name of project participants ((host) indicates a host Party)	**Private or Public entity**
Germany	• global-woods (private)
Uganda (host)	• SUB – Sustainable Use of Biomass (private) 100% owned by global-woods
Uganda (host)	• National Forest Authority (public)

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G.1.6 Description of current biodiversity in the project area and threats to that biodiversity, using appropriate methodologies (e.g., key species habitat analysis, connectivity analysis), substantiated with reference (evidence) where possible.

Plants

Cattle keeping, logging and other anthropogenic activities have led to the creation of savanna grassland and bushland in the last decades. The shrub species which characterize the bushland vegetation are Albizia coriaria, Combretum collinum sub sp binderanum, C. ghasalense, Allophylus africanus and Bridelia micrantha together with other shrub and tree spp. Below this is a herb layer consisting of Acalypha villicaulis, Afromomum sanguineum and Asparagus pauli-guilelmi. There are few grass species under the mature dense bushland, but some species namely Setaria chevaleri and Panicum maximum are frequently found. In the areas affected by seasonal flooding grass spp such as Leersia hexandra and Setaria sphacelata are found. The majority of the area today is covered with Pennisetum parpureum (elephant grass) which also indicates the loss of natural forest. The plants found in the Kikonda reserve today do not differ significantly from those found in the surrounding areas.

Animals

The initial fauna of the Kikonda region was that of a Ugandan Tropical High Forest. Chimpanzees and other primates along with a large variety of mammals, reptiles and amphibians can today be found in the few remaining natural forests (Budongo, Mabira etc.). The current fauna has evolved to a group of animals adapted to savanna and farm land. An example of this is in the areas outside the reserve, these animals include bush-bucks (Tragelaphus scriptus) and Guineafowl spp. Houses have become settlements of bats and the swampy areas are inhabited by insects such as the damselfly Chrolocypha molindica.

In the vegetation study executed by biologist Olivia Wannyana of Makerere University (Ref-Doc: 001) floral biodiversity was summarised as follows:
“There are significant frequency differences in vegetation of Kikonda. Between forest remnants, Combretaceous woodlands, Acacia woodlands and wooded grasslands, especially where there were many termites. The most common genera in the

Combretaceous woodlands were Combretum and Terminalia spp. In these woodlands there is very little shrubby undergrowth around termite mounds. The woody genera along termite mounds are often different from those in the surrounding microhabitats and include species more characteristic of drier areas. These termite thickets have many shrubs with edible fruits of the major ones being Capparis tomentosa and Grewia similes. The grass layer consists of perennial tussocks of several genera including Brachiaria, Hyparrhenia, Sporobolus and Loudetia species. In many places Hyparrhenia dominates. Thickets can be looked upon as extreme types of bushlands or woodlands with dense stands of thorny or spiny shrubs. Milne (1947), states that thickets appears to be limited to deep soils of high acidity and light texture. According to Gillman (1947) it is consolidated swamp floor deposit of pre-rift age."

Satellite picture analysis by the consultant Dr. Dees (GeoFIS GmbH - Freiburg, Germany) was conducted to identify the vegetation strata within the project area. These are: high forest, degraded forest, grass- and bushland and wetlands.

To evaluate the main parameters of the biodiversity within the project area, the initial baseline analysis - which normally only determines the stock and in-situ growth of existing vegetation was extended by biodiversity parameters in order to provide a base for further monitoring.

Sample plots of 250 m² were visited by a professional biologist and a team of 2 assistants and plants were identified *in situ*. The location of the plots was documented through GPS, making a re-measurement possible.

Although this initial analysis has given a good overview of the current state of faunal biodiversity, it is envisage to further develop sampling techniques for the upcoming inventories, earmarked for every five years. The overall aim is to generate sufficient data to transparently track the development of floral biodiversity and to compute biodiversity indicators such as e.g. Shannon-Wiener.

Additional to the baseline analysis, which only took place on the project area, the fauna biodiversity was assessed through interviews with local people and staff that are frequently in the field. Based on these assessments, a list of species common to the area of the reserve was compiled. (Ref-Doc: 001)

Further studies on that matter are bound to be done. They will follow scientific guidelines as given in the Ref. Doc. 006 and 007. This will include repeated transect sampling and capture-recapture approaches repeated in intervals of approximately 5 years and stratified according the different land-use types of the baseline scenario and the project scenario.

For more details see CFS document "Environmental aspects" (Ref-Doc: 05).

G.1.7 List of all IUCN Red List threatened species (which encompasses endangered and vulnerable species) and species on nationally recognized list (where applicable) found within the Project boundary.

Scientific Name	Common Name	Red List Category	Existence
Hallea stipulosa		VU A1cd ver 2.3 (1994)	Permanent
Prunus africana	RED STINKWOOD (E)	VU A1cd ver 2.3 (1994)	Permanent

Table of IUCN red list – Plants. Ref-Doc: 05-01

Scientific Name	Common Name	Red List Category	Existence
Afrixalus orophilus		VU B1ab(iii) ver 3.1(2001)	Permanent
Chrolocypha jacksoni		VU B1ab(iii) +2ab(iii) ver 3.1(2001)	Permanent
Chrolocypha molindica		EN B1ab(iii) +2ab(iii) ver 3.1(2001)	Permanent
Crocidura tarella	UGANDAN SHREW (E)	VU D2 ver 3.1 (2001)	Temporary
Dasymys montanus	MONTANE SHAGGY RAT (E)	VU B1ab(iii); D1 ver 3.1 (2001)	Permanent
Delanymys brooksi	DELANY'S MOUSE (E)	EN B1ab(iii) ver 3.1 (2001)	Permanent
Francolinus nahani	NAHAN'S FRANCOLIN (E)	EN B1ab(ii,iii,v) ver 3.1 (2001)	Permanent
Glauconycteris gleni	GLEN'S WATTLED BAT (E)	VU D1 ver 3.1 (2001)	Permanent
Hippopotamus amphibius	COMMON HIPPOPOTAMUS (E)	VU A4cd ver 3.1 (2001)	Temporary
Mops trevori	TREVOR'S FREE-TAILED BAT (E)	VU A4c ver 3.1 (2001)	Temporary
Otomys barbouri	BARBOUR'S VLEI RAT (E)	EN B1ac(ii,iv) ver 3.1 (2001)	Permanent
Pan troglodytes	CHIMPANZEE (E)	EN A3cd ver 3.1 (2001)	Temporary

Table of IUCN red list – Animals. Ref-Doc: 05-01

G2 Baseline Projections (Required)

G.2.1 Description of the most likely land-use scenario in the absence of the Project activity. Identify whether the scenario assumes that existing laws or regulations would have required that project activities be undertaken anyway:

The historical activities of cattle-grazing and charcoal burning can be considered as alternatives to the proposed climate forest project – although they are illegal within the Kikonda Forest Reserve.

By law (National Forest Act) National Forest Reserves of Uganda are strictly reserved for sustainable timber production - still, reality shows that in most cases illegal logging and non-sustainable land-use regimes take place. This is also the case in parts of the Kikonda Forest Reserve.

The police as the primary law enforcement authority are not taking care of enforcing the forest laws since no political pressure is put on the police to do so and financial means are restricted. As the Commonwealth Human Rights Commission named it in their 2004 report on the Ugandan police system “Uganda does not have a democratic, accountable police service. Instead, it has a heavily militarized, colonial-style regime police force that is firmly under the control of the ruling government”.

The National Forestry Authority as the administration second in line to be concerned about the enforcement of the forest laws is understaffed and not able to ensure widespread law enforcement on the ground.

In fact, this is well known in Uganda. As a testimony we quote the National Forest Authority of Uganda (NFA) (16.09.2004, Kampala): “The NFA has inherited an extremely run-down business from the Forest Department as the former authority responsible for Ugandan forestry. This includes many Forest Reserves with encroachment problems and cattle grazers that are now accustomed to grazing in reserves. Since the NFA and an increasing number of private investors are now planting in such reserves, there is unsurprisingly a conflict situation that needs to be resolved and this will undoubtedly take time. NFA staff numbers are low (compared with Forest Department days) and the work-load high after years of neglect of the estate.”

After that quote was taken the NFA faced another setback since the international funding was stopped in 2006 as a reaction of groups close to the president taking key positions in NFA to back-up land-use conversion in Forest Reserves. Cases of Forest Reserves taken for sugar cane or oil palm production have gained specific attention in recent years.

A report of the Yale School of Forestry on “Forest Certification in Uganda” in 2004 supports that the poor law enforcement is reflected in the figures on land cover in Forest Reserves. Of the 1.1 Million ha covered by Forest Reserves, 0.7 Million ha are covered with Tropical High Forest and Woodlands (including forests that are encroached and damaged), 0.4 Million ha have other land-use and only 0.02 Million ha is plantation.

Despite the fact that Uganda has remained politically stable with great efforts from donors and international environmental agencies, the trend remains that deforestation of Forest

Reserves is only effectively stopped if tree planting projects are executed.

The additionality of the project was further proven by the application of the "UNFCCC additionality-tool". In the frame of that application, an investment analysis was conducted, that has proven, that without returns from CO2-sales the project would be financially less attractive that state bonds, which come with a significantly lower risk. This benchmark analysis was favored over an investment comparison analysis, since reliable date for potential land-use alternatives (charcoal burning, cattle keeping) was not available. Low returns in a project scenario without CO2-sales therefore is a significant barrier to the implementation of such projects but this barrier does not stop alternative, illegal activities. Although it is mandatory to plant trees on the project area, the activity is regarded additional, since it is evident and proven by statements of authorities, that this mandate is not implemented and illegal biomass removal is the reality if the project activity does not take place. Taken all these points into account, the project is regarded to be additional. (For the full application of the additionality tool please read attachment at the end of this document)

G.2.2 Provide a projection of future carbon stock changes in the absence of the project, based on the land-use scenario described above. The timeframe for this analysis can be either the project lifetime or the project accounting period, whichever is more appropriate.

As described in the without-project scenario, where illegal charcoaling and cattle grazing will continue, evidence is given that the future carbon stock change would be negative.

Following a conservative approach the baseline is set to zero.

G.2.2a If there is evidence that non-CO_2 greenhouse gas (GHG) emissions such as CH_4 or N_2O are more than 15% of the baseline GHG fluxes at the project site (in terms of CO_2 equivalents), they must be estimated.

There is no evidence that non-CO2 GHG could exceed 15% of the baseline GHG fluxes.

G.2.3 Description of how the "without-project" scenario would affect local communities in the project area.

Unsustainable development of local communities, as described in the CFS-document "Additionality" (for the full application of the additionality tool please read attachment at the end of this document) where the historical land use of the project area is described, would continue in a "without-project" scenario.

Without the project activities, actions such as illegal agriculture, cattle grazing and charcoaling would expand in the forest reserve and eventually lead to an uncontrolled and unsustainable land-use.

As seen in other forest reserves within Uganda, tension between local communities and the government would grow. The government would probably try to enforce the law (to clear the land of illegal activites) - when the financial means are available.

Overall, any without-project scenario will lead to the unsustainable use of natural resources, due to the fact that any law to protect the forest reserve cannot be enorced. The following examples of other forest reserves within Uganda display clearly what the results are if sufficient protection is not provided by the governement or the license holder:

Forest Reserves - Budongo and Bugoma
… Although there are currently thousands of hectares of protected area in this region, logging, both legal and illegal; poaching of protected species; and illegal use of forest resources threaten the integrity of the Budongo and Bugoma forest ecosystems. Deforests of the landscape to accomodate increased agricultural production has resulted in the creation of isolated forest islands; these areas are increasingly surrounded by a degraded and unsustainable mosaic of cultivated and abandoned fields. …

Source: http://www.whrc.org/africa/PAWAR/Budongo-Bugoma.htm, accessed 24.03.09

2003: Forest Reserve - West Mengo
… These short-term encroachments into the forest reserves of West Mengo are difficult to observe with Landsat image analyses sampling at 10+ yr intervals. This is why there are often conflicting projections of the fate of state-held forests in this area. As casual observers toured these forest reserves in recent decades, they likely noticed clearings for the illegal harvesting of charcoal or timber at various locations within the reserves. …

Source: http://www.ecologyandsociety.org/vol11/iss1/art38/, accessed 24.03.09

National News
… An additional toll on forest reserves resulted from wildfires, often the result of illegal charcoal-making activity in reserves. Neither natural regrowth nor tree-planting projects could keep pace with the demand for forest products. …

Source: http://www.myuganda.co.ug/economy/agricForestry.php, accessed 24.03.09

2003: Forest Reserve - Buto-buvuma
… Despite its status as a nature reserve, Buto-buvuma Forest Reserve has been illegally overharvested for timber, charcoal and commercial firewood.The forest has also suffered encroachment by people growing vegetables and sugar cane for cash income. Currently, about 50 percent of the forest is severely degraded by these illegal activities. …

Source: Community participation in forest management: the case of Buto-buvuma Forest Reserve, Department of Forestry, Uganda

G.2.4 Description of how the “without-project” land-use scenario would affect biodiversity in the project area.

Since the “without-project” land-use scenario would be unsustainable, it would have negative effects on fauna and flora, the biodiversity would decrease.

With the expansion of agricultural activities, cattle grazing and charcoal burning the remaining areas of natural forest would be destroyed step-by-step.

In contrast to the current mixture of ecosystems, in the “without-project” scenario agriculture activities in combination with savanna bushland that is used for pasture and charcoal activities would be the remaining types of land-uses.

Therefore, the current biodiversity would be negatively effected.

G.2.5 Description of how the “without-project” land-use scenario would affect water and soil resources.

It is most likely that the state of the water and soil resources as described in the CFS document “Environmental Aspects” (Doc-Ref: 05) would negatively change in the “without-project” landuse scenario. That is due to the fact that illegal logging and cattle grazing would further increase in intensity causing errosion and reduced water storage capacity of the soil.

Although the productivity of tropical forests situated on ferrasols is quite high, these type of tropical soils are actually very thin and poor in nutrients. The underlying “parent” rock weathers rapidly in the tropics’ high temperatures and heavy rains, and over time, most of the minerals have washed from the soil. Nearly all the nutrient content of a tropical forest is in the living plants and the decomposing litter on the forest floor.

When an area is completely deforested for farming or cattle grazing, the farmer typically burns the trees and vegetation to create a fertilizing layer of ash or grassland which serves as meadow. After this slash-and-burn deforestation, the nutrient reservoir is lost, flooding and erosion rates are high, and soils often become unable to support crops in just a few years. In case of cattle pasture, the ground is further being compacted, preventing forest recovery.

The missing root system of the trees will decrease the natural filtering of water which further leads to an enrichment of nutrients within the water. Such enrichment will increase the growth of algee and waterplants leading to disturbance of the ecosystem of lakes and rivers.

G3 Project Design & Goals (Required)

G.3.1 Provide a description of the scope of the project and a summary of the major climate, community and biodiversity goals.

The prize winning Kikonda Forestation project lies in the heart of East Africa comprising 120 km² and employing more than 200 people. It is the first in the country to be granted CarbonFix certification for its one-of-a-kind positive social and ecological impact. By 2008 more than 1 million trees had been planted on an area equivalent to approximately 2 000 soccer fields which will store more than 200 000 tonnes of CO_2. Through this project, more than 200 people have not only found jobs, but also benefited from additional services provided by the project developer, such as the provision of housing, medical care or the support of local schools. Furthermore, the project has initiated a program to train people of neighbouring villages in tree-planting. Thereby over 300 families have been reached,

planting an additional 200 000 trees in the surrounding area of the project. To protect rare species and regenerate natural habitats the project has set aside over 20% of its area for conservation purposes. A team of forestry and business experts from Germany, Uganda and South Africa ensures that the project is managed on the highest professional level.

Developing Nature and People
global-woods conducted a first feasibility study in the Kikonda area as early as 1999. Two years later a long-term contract with the Ugandan state was signed which led to the project start in 2002. Throughout this time, Uganda was not well developed in the skill of reforestation. The best foresters from the country were recruited to initially learn and then manage the project together with the assistance of international experts. Since then the combination of local knowledge and international expertise has formed the basis for successful and sustainable project management.

From fear to fair
Until the activities of global-woods started in 2002, the street passing though the Kikonda Forest Reserve was feared by travelers due to street-robbers which had used the widely unsettled areas of the reserve as hiding places. Since then, more than 200 people have found work through the reforestation activities and their families have settled in the surrounding neighbourhood, making the Kikonda Forest Reserve one of the most peaceful areas of the district. With the integrated concept of professionalism and close interaction with the neighbouring, the project has received in 2006 and 2008 the sought after Ugandan ‘Best Planter Award’.

Doc-Ref: 14 - CFS-document “Executive Summary” and the website of the project.

G.3.2 Describe each major project activity (if more than one) and its relevance to achieving the project’s goals.

The project activities will be implemted in the Kikonda Forest Reserve at Kiboga District in Uganda. To counteract the limitation of wood production within the country which lead to the exploitation of native forests, the project has the following objectives:

1. The production of wood for the national markets of timber and energy wood
2. Sustainable sequestration of CO2 with the trees
3. Improving the economical situation of the surrounding villages
4. The conservation of biodiversity

1. The production of wood for the national markets of timber and energy wood
Uganda is fast approaching a major shortage of sawn timber. To meet the increasing demand of the growing economy, the country already imports timber as well as it is facing the increasing pressure on its remaining natural forests.

Virtually no planting activities have been established in Uganda for over 30 years and less than 2 000ha of mature timber-forest now remains in Uganda, whilst it has been estimated that Uganda needs some 60-70 000ha of productive forests to meet the country's projected timber demand by 2025.

The main requirement in Uganda is general purpose timber for construction, furniture making, etc. Pine is very suitable for these markets and could eventually replace much of the hardwood timber currently being used from native forests.

Furthermore, the demand of energy-wood is also growing quickly together with the rapid polutation growth in Uganda. Timber which will not be used in high-quality market segment will find its value in this secondary market.

2. Sustainable sequestration of CO2 with the trees

According to the CarbonFix Standard, the carbon sequestration of the project is being monitored over the project's lifetime. Hereby, the monitoring of the trees is based on the inventory guideline for LULUCF projects – published by Winrock International. Growth-models which predict the amount of carbon being sequestrated will be adapted and verified with every certification process.

Initial inventories were executed during 2007 and 2008 verifying the expected growth rate of the already planted forests.

3. Improving the economic situation of the surrounding villages

The project provides continouse long-term employment to more and more people in different fields of forest operations and with its expansion these benefits will also continue to grow. Currently over 300 workers are employed to raise seedlings, prepare land, maintain already planted forests and administer the project. Staff is countiously being trained in their work to ensure best practices.

When trees are mature, additional work will be created through the transformation of wood into timber. Sawmilling as well as further wood processing, such as carpentry, will lead to further jobs which also require continuous capacity building.

In addition to the direct impact coming from the project activities, the project supports schools within the region to enhance one of the most needed instruments of society - education.

Overall, the project's activities lead to contiuous and long-term positive impacts on the communities surrounding the forest reserve.

4. The conservation of biodiversity

With the protection of parts of the forest reserve, natural fauna and flora will recover.

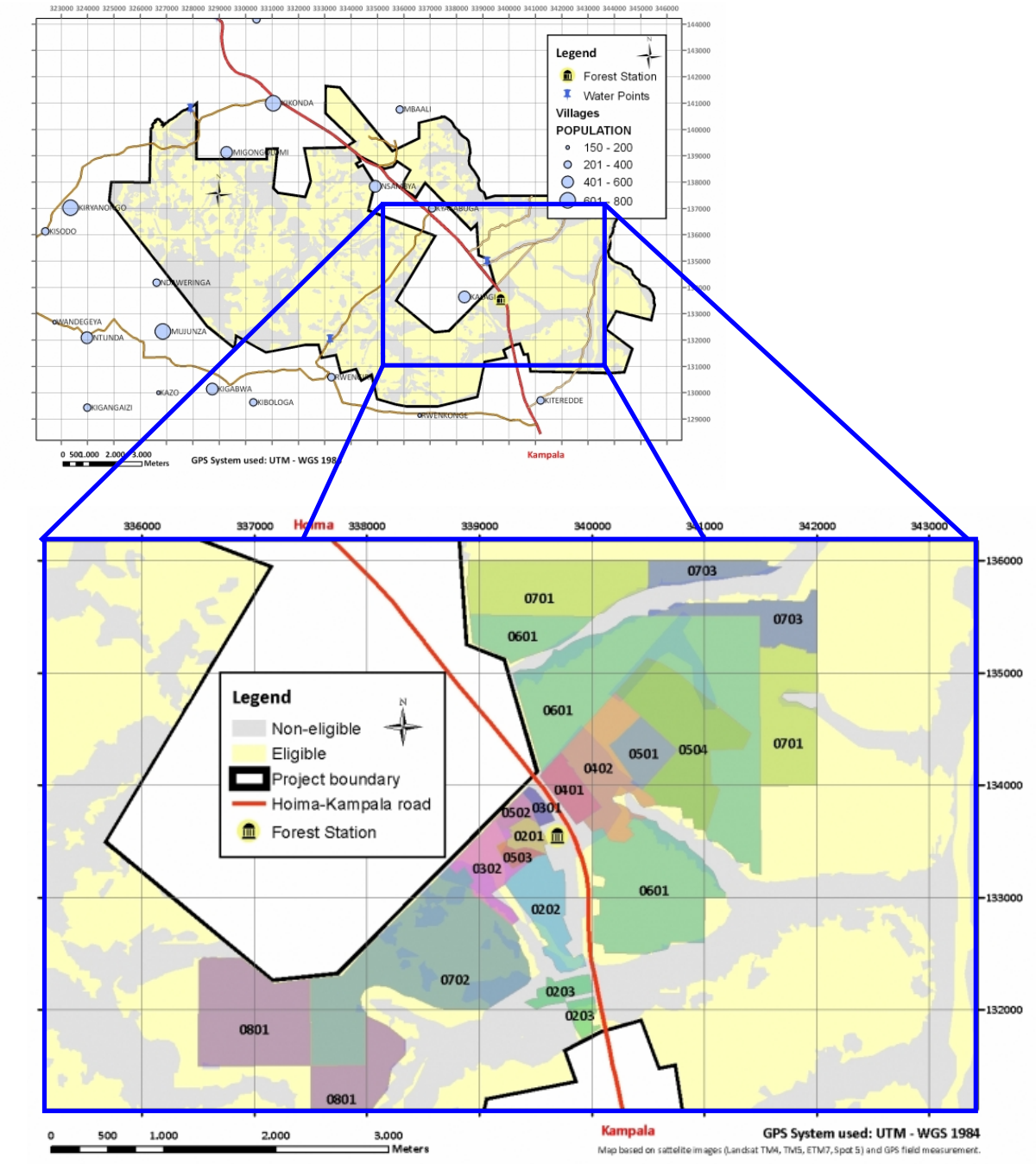
The conservation areas is step-by-step being protected so that animals such as hippos, birds, monkey and bushbucks can find refuge from illegal hunters. These hiding placed will allow them to breed and live in their natural habitats.

With the start of the project activities, the company started to fight illegal activities such as charcoaling and cattle grazing so that animals and plants are able to re-settle their natural habitats. As a significant portion of the project area will not be used for forestation purposes habitat fragmentation is avoided.

An additional positive effect on biodiversity will be reached through the sale of timber. This is due the fact that all timber will be sold on the national market and thereby lower the

pressure of the unsustainable exploitation of the natural forests in Uganda and surrounding countries.

G.3.3 Provide a map identifying the project location, where the major project activities will occur, geo-referenced boundaries of the project site(s).



The map above shows the different Management Units of the project. Each Management Unit is labeled with an ID. The first two digits of ID state the year of planting, the last two figures represent a company specific code. E.g.: 0801 is an area which was planted in 2008. This shows clearly that step-by-step planting activities expand further away from the forest station.

G.3.4 Provide a timeframe for the project's duration. Describe the rationale used for determining the Project lifetime. If the accounting period for carbon credits differs from the project lifetime, explain.

According to the CFS "Terms and Definitions" (Doc-Ref: 00-01) projects are designed to create a permanent CO_2-stock.

The current license for the project area limits the project lifetime to 50 years. This is the maximum length of license issued by the National Forestry Authority.
Start of the project: 06 September 2001
Project lifetime: 05 September 2051

Still, it can be expected that with appropriate management of the project, a renewal of the license will be achieved.

The project area is reserved by law for tree planting and a continuous forest cover must be established and maintained following the regulations of the tree planting license. These obligations also count for future holders of the tree planting license that might take over from the current project manager in future.

All management decisions related to the project are made under the assumption that the project is unlimited in time.

G.3.5 Identify likely risks to climate, community and biodiversity benefits during the project lifetime. Outline measures that the project plans to undertake to mitigate the risks.

Risks to climate benefits of the project
The major potential risk to the climate benefits of the project would be scenarios in which the trees planted under the project scheme do not exist permanently. This risk is mitigated in such a way, that the project developer has pledged under the CarbonFix scheme to not only replant after harvest, but also to compensate in case of losses (such as fire or drought) or adaptations to the growth-model (which determines also the amount of CO_2certificates).

If the project developer would not be able compensate these shortfalls, the buffer fund (30% of all CFS projects) of CarbonFix would step in to reduce the negative impact on the climate.

In addition to that, the economic viability and overall set-up of the project give a strong incentive to maintain the forest cover permanently and not to turn the area into other forms of land-use.

Risks to communities

The potential risk to communities is to loose income from illegal activities on the project area. As the shift only comes step-by-step in the next 5 to 10 years, the risk is seen as a chance to move to legal work within this time.

Risks evolving from the water consumption of trees or the spreading of seeds can not be seen.

Risks for Biodiversity

A potential risk to biodiversity would be, that the project developer does not

- have the means to pay for the services needed to protect the set-aside areas and
- undertake the necessary measures to sensitize neighboring communities to biodiversity protection.

The total project stands on solid financial ground and has payments for biodiversity protection in its cash-flows. Since FSC certification is also a goal for the years to come, payment for biodiversity protection will maintain a high ranking position on the list of expenditures.

For further reading on the measures to mitigate the risks addressed above please read the CFS-documents Forest Management (Ref-Doc: 03), Protective capacity (Ref-Doc: 12), Socioeconomic aspects (Ref-Doc: 04), and Environmental aspects (Ref-Doc: 05).

G.3.6 Document and defend how local stakeholders have been or will be defined.

Definition of the stakeholders was done in a process of subsequent group discussions. In each discussion, people from different parts of the project organization and environment (community members, consultants etc.) had a brainstorm session on the question of who the stakeholders of the project are. The results of such sessions were further refined through interviews of individuals involved in the project.

Based on that process, the following groups are considered as stakeholders of the project.

National Forest Authority - NFA
The NFA represents the government of Uganda which owns the land of the Kikonda Forest Reserve and leases it to the SUB (the project developer).

Sustainable Use of Biomass - SUB // global-woods
SUB is a subsidiary company of the German company global-woods. It is registered in Uganda and takes care of the management from the Kikonda Forest Reserve. SUB as well as the company global-woods can both be regarded as project developer.

Kikonda Community Forest Association (KiCoFA)

The KiCoFA is a non-profit organization run by the communities surrounding the Kikonda Forest Reserve. Its aim is to foster tree planting activities in the region. SUB supports this organization in their activities.

Neighboring community
The neighborhood of the KFR is defined by a 5km zone around the project area.

Cattle keepers
This stakeholder group consists of cattle keepers which live a nomadic style. Although, cattle keepers are often only a few weeks or months within project area, their interest of new pastures has led to a decrease of forest within the KFR. Cattle-grazing within forest reserves is forbidden by Ugandan law.

Illegal Charcoal Users
This group of stakeholders burn charcoal illegally within the KFR leading to the degradation of forests.

Contractors
Contractors are individuals who signed working contracts with SUB to execute work for the project. They employ their own workers.

Workers
Workers are individuals operating and paid by a contractor.

Employees
Individuals employed by SUB which execute work according to their work contract.

G.3.7 Demonstrate transparency by: making all project documentation publicly accessible at, or near, the project site; only withholding information when the need for confidentiality is clearly justified; informing local stakeholders how they can access the project documentation; and making key project documents available in local or regional languages, where applicable.

All documents are available in the local office at the Kikonda Forest Reserve. By notice published in both english and local languages on a road-side notice board, the public will be informed that CCBS- certification has been granted and that the affiliated documents are available in the office. Local stakeholders will additionaly be informed verbally at regular meetings.

All project documents can be accessed through the project website at www.CarbonFix.info/KFR

Documents which is not made publically available by the CarbonFix Standard are attached to this PDD. These documents refer to the project:
1. Additionality (Doc-Ref: 02)

G4 Management Capacity (Required)

G.4.1 Document the management team's experience implementing land management projects. If relevant experience is lacking, the proponents must demonstrate how other organizations will be partnered with to support the project.

For this point see CFS-document "Management Capacity" (Doc-Ref: 09), in which a list of the educational level, work experience, duties, type of employment and GPS/GIS know-how of each management staff is given.

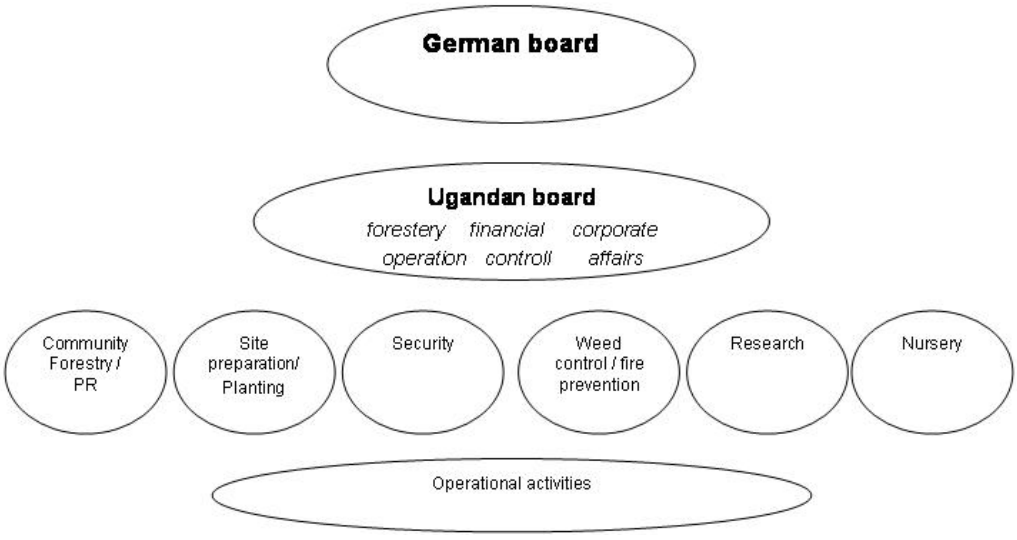
According to the CFS "Terms and Definitions" (Doc-Ref: 01), the management staff can consist of employees as well as contractors.

G.4.2 Demonstrate that management capacity is appropriate to the scale of the project.

There are 11 full time employees working for the Kikonda Forest Reserve, 3 of which are responsible for operations and the remaining are technicians. The local office provides technical guidance, including training courses, and conduct quality control for the preparation and implementation of the project activities. Project participants have a network of local, national, and international forestry experts they can approach to solve questions concerning the different aspects of the projects. The project implements the most up-to-date technologies and silvicultural models.

During the time of plantation, temporary labour is employed from the local community. As the planting area varies between 100 to 500ha per year, on average 300 local farmers find work by the projects activity.

To achieve the qualitative and quantitative targets of the project, the company structure as well as the amount of management staff is sufficient. The following organigramm shows in detail the structure of the working force.



G.4.3 Document key technical skills that will be required to successfully implement the project and identify members of the management team or project partners who possess the appropriate skills.

The management team has adequate experience for running the project. The following table provides detailed information on the current management staff, their highest educational levels and years of professional experience.

Management team experience

Name	Education level	Years of working experience
Matthias Baldus	M.Sc. in Forestry (Diplom-Forstwirt)	5 years working experience in forestry
Masiga Martin	Bachelor of Business and Administration (Accounting) Certified Public Accountant - level 3	5 years working experience in forestry accounting and 2 years as auditor
Shedrack Kajura	Forest Ranger's certificate	16 years working experience in forestry
Johannes Mokwena	Bachelor of Forestry - Tech(Hons)	2 years working experience in forestry
Peter Kakaire	Secondary school	
John Paul Asiimwe	Diploma in Agroforestry	2 years working experience in forestry
Alex Kyaboona	Diploma in Forestry (technical school)	3 years working experience in forestry
Charles Kija	Bachelor of Science Forestry	2 years working experience in forestry
Emmanuel Muganza	Bachelor of Science Forestry	1 year forestry working experience
Otim Moses	Bachelor of Science Forestry	1 year forestry working experience
Wathum Gilbert	Bachelor of Science Forestry	1 year forestry working experience

Duties of the management staff

Name	Title	Type of employment	Duties
Matthias Baldus	Project Manager	100%	• Cross-checking the performances within the company SUB (financial expenditures and field work) • Assistance in the structure of the company
Masiga Martin	Financial Manager	100%	• All financial activities within SUB • Compiling meeting reports • Management of office equipment • Supervisions of workers payroll, insurances, days of leave, etc.
Shedrack Kajura	Director of Cooperate Affaires	75%	• Cross-approving payments of the financial manager • Leading of the management meetings • Assistance in talks with surrounding communities
Johannes Mokwena	Supporting Manager	100%	• Supporting the existing personal structures in all technical aspects of plantation forestry • Improving of employees planning, organizing and coordinating skills • Analyzing and improving of project costs efficiency of the different activities

Peter Kakaire	Division leader (DL) - Security	100%	• Patrolling of the reserve boundaries • Supporting Ugandan authorities in counteracting illegal activities
John Paul Asiimwe	DL - Assistance Land Preparation and Planting	100%	• Managing the land preparation and planting activities
Alex Kyaboona	DL - Public Relations	100%	• Manage the implementation of the KiCOFA and other community forestry activities
Charles Kija	DL - Research	100%	• Manage research activities carried out in all divisions • Supervision of the SUB project database
Emmanuel Muganza	DL - Clearance	100%	• Managing the land preparation and planting activities
Otim Moses	DL - Nursery	100%	• Managing of all nursery operations
Wathum Gilbert	DL - Fire Security and Maintenance	100%	• Managing of all fire protection related tasks • Managing of all chemical and manual maintenance activities • Sheep management for natural weeding • Managing of Thinning and Pruning

G.4.5 Document the financial health of the implementing organization(s).

global-woods is a public company under German law. Its shareholders are private international investors as well as institutional investors. In recent years, the company has invested over US$3 Million in afforestation and biofuel projects.

The business model of timber investment in combination with the generation of high-quality CO2certificates, as implemented in Uganda, gives the organzation a stable financial ground to continue its expansive course in the set-up and management of climate forestation projects.

For more detailed information see CFS-document “Financial Capacity” (Doc-Ref: 10).

G5 Land Tenure (Required)

G.5.1 Guarantee that the project will not encroach uninvited on private property, community property, or government property.

The project boundaries are clearly defined by the National Forest Authority – via GPS and field-trenches at the corner points of the reserve. It is illegal in Uganda to encroach uninvited on private, community or leasehold land without the permission of the landholder or leaseholder. The project developer acts in accordance to all laws within the country.

G.5.2 Guarantee that the project does not require the relocation of people or any relocation is 100% voluntary and fundamentally helps resolve land tenure problems in the area.

As validated during the field visit of the TÜV in July 2008, the relocation of people was not necessary in order to implement the project activities.

G.5.3 Describe potential “in-migration” of people from surrounding areas, if relevant, and explain how the project will respond.

Encroachment is taking place on a temporary basis in a fluctuating intensity. Since these activities are illegal by Ugandan law, joint patrols by the project owner and the police are executed regularly to counteract encroachment.

To encourage people to support the project, instead of illegally encroaching the area, the project owner has voluntarily set aside a 100 meter wide strip at the borderline of the reserve to allow local people to plant trees for their own benefit. Planting food crops or oil plants remains prohibited. The area remains under the control of the project owner in terms of determining where and which plants are to be planted.

G6 Legal Status (Required)

G.6.1. Guarantee that no laws will be broken by the project.

The project is registered under CarbonFix Standard. By submitting the project documents to CarbonFix the project owner agrees to apply the CFS “Procedures” (Doc-Ref: 00-02) and must therefore respect all national laws.

G.6.2. Document that the project has, or expects to secure, approval from the appropriate authorities.

The project is legally based on a Tree Planting License (Doc-Ref. 003) issued by the state of Uganda. This license is further defined by a Management Plan imposed and permanently controlled by the National Forestry Authority.

The Tree Planting License includes the right to use the wood for its final harvest and any other silvicultural operations (pruning, thinning, etc.)

G7 Adaptive Management for Sustainability (1 Point)

G.7.1 Demonstrate how management actions and monitoring programs are designed to generate reliable feedback that is used to improve project outcomes.

The Kikonda project follows an approach for adaptive management which is based on three pillars:

1) Written documentation of all factual knowledge and procedures
Divided by the different "divisions" such as administration, clearance, nursery, planting, maintenance, public relations etc. all knowledge and routines that are applied in the project are documented. These documents, called "Internal Management Plans (IMP)" (Doc-Ref: 09-02) are equal to documents which, in most other projects, are called "Standard Operating procedures".

These IMPs were initially set up by a consultant who spent several weeks with the individual members of staff, documenting the current state of work organization. In the next step the IMPs were reviewed by staff and in a moderated group discussion with the consultant, improvements were integrated into the IMPs. Each IMP is available to the staff both digitally and in a print out version conveniently placed at the workplace. Although, the IMPs form the conceptual backbone of the organization, they are not necessarily permanent. To the contrary, they have to be adapted to the needs of the organization.

At least once every year, in January, an IMP review meeting is called in. The IMPs are worked through chapter by chapter. Notes that have been added throughout the year by hand on the paper copies or as comments to the digital versions are then reviewed by the management team and/or consultants and integrated into the IMPs if approved.
A new print out edition of the IMPs marks the beginning of a new management year and is a visible proof of continuous integration of feedback into the management processes for the benefit of the project outcome.

2) Weekly meetings of the entire management staff
Every Monday at 9 a.m. the management staff of the Kikonda project gathers in the conference hall. The wall of the hall is covered with a blackboard that bares a table with columns for each member of staff. The staff members bring to the meeting their weekly task list and reports – either on paper or on their laptops – and report one by one, first on their achievements of the past week, then on the new tasks of the current week. The manager chairing the meeting notes all new tasks on the big black board. Since the conference hall is also used for breakfast, lunch and dinner, the weekly tasks are clearly visible all day. On top of that each member of staff has a list of their own tasks and carries them with him throughout the week.

Minutes of the meeting an a task list in excel or outlook format is forwarded to Germany and reviewed by global-woods staff

3) Quarterly visits of global-woods staff, Germany
Approximately once per quarter, staff from global-woods Germany visit the Kikonda project. By the minutes of the weekly management meetings and frequent phone calls, German staff has a reliable overview of the developments of the project. The advantage of

the “external” German staff is, that it can focus on the major trends, opportunities and failures of the project without getting distracted by day-to-day business. This “outside-perspective” is a vital tool to judge important issues from minor ones and bring in new inspirations to improve the development of the project.

G.7.2 Describe the a management plan for documenting decisions, actions and outcomes and sharing this information with others within the project team, so experience is passed on rather than being lost when individuals leave the project.

As already described under point G.7.1, the Kikonda project puts emphasis on the set up and maintenance of the Standard Operating Procedures, called IMPs. These IMPs are not meant to be secret knowledge for restricted use of selected individuals, but on the contrary are openly distributed to all staff. It is expected from staff members to know all IMPs and to contribute to the best of their knowledge to the permanent improvement of these documents. Although, working with the IMPs in the beginning was time consuming and not fully embraced by all staff, they have been now fully accepted after being in place for more than 4 years. It is common sense of the staff, that the IMPs make work easier and avoid loss of knowledge and double work.

In case a staff member is leaving the company, he or she is obliged to hand in a written report on his or her current duties and be present for a sufficient hand over period. The people, who so far have left the project, have left it in good faith and a trustful exchange of knowledge and ideas is still ongoing.

Shuffling staff between different assignments has proven to be another tool to disseminate knowledge equally amongst staff and avoid “brain drain” in case of staff changes.
A sector not fully developed to the aims of the project developer is the field of electronic knowledge management. All data stored on the servers of the project is backed-up daily on a second lap-top placed at night outside the office and weekly on DVD. The folder tree of the server follows the systematic of the company set-up by divisions. But what is lacking so far is a feasible system that educates all staff members to carefully label and store digital documents in a way that they can easily be retrieved. Although the simple use of software such as “google-desktop” would be one option, the project developer plans to intensive training in this field plus a more widespread use of pre-arranged databases to store vital information.

G.7.3 Demonstrate how the project design is sufficiently flexible to accommodate potential changes and that the project has a defined process in place to adjust project activities as needed.

The management staff of the project constantly evaluate if the tasks are reached. If, due to changes in the project environment, tasks are not reached, they become subject of the weekly management meeting. Here, ad-hoc solutions can be taken. If changes are so severe that a general adjustment of the project is necessary (planting area, size of the project) consultation meetings are held with the financiers and the top management of global-woods.

Besides the mechanisms lined out under G.7.1 and G.7.2 it is worthwhile to note, that the management staff of the project constantly evaluates the set up and direction of the

project. If due to changes in the project environment tasks are not reached, they become subject to the weekly management meetings. In that meeting, ad-hoc decisions can be taken. If changes are so severe, that a general adjustment of the project is necessary (e.g. planting area, size of the project), consultation meetings are held on short notice with the financiers and the top-management of global-woods.

A case in point for the above described ability to adapt to change is the mere fact that the project still exists. When the first trees where planted in 2002 it was expected that the carbon market would come into full swing fast and funds would be enough to put the project to scale. But year after year project budgets were small and unreliable. Nevertheless the project staff has managed to adapt and to bring the project to prosper.

G.7.4. Demonstrate an early commitment to the long-term sustainability of project benefits once initial project funding expires, including e.g. a new project; securing payments for ecosystem services; promoting micro-enterprise; and establishing alliances to continue sustainable land management.

The core business model of global-woods is to establish long-term sustainably used forests. After an initial phase in which funding from CO2-sales is necessary, the projects will be financed by the revenues of timber sales.

Income from carbon sales allows global-woods to initiate projects in high-risk regions and to bridge the first years when no income from timber could be generated. Since these are the years when also cost intensive services for local communities have to be established, carbon sales are vital.

Once commercial thinning and harvest sets in, the income streams change. Standing timber and timber products will provide sufficient funds to re-plant and maintain the forest land long term. That is insured by choosing tree species with well researched silvicultural demand and established markets. The prosperous economic set up will be a security that no other land-use form will become attractive to replace the forest land established under that project scheme.

Apart from this long term commitment to the project area, global-woods has entered into partnerships with communities and local individuals which are as well designed in the long-term. Financial support, for small scale tree planting and for local schools, is just the first step. With more liquidity, global-woods is looking into supporting local small-scale enterprises with micro-credits. Currently a co-operation with a Charity from the UK is in the making, which will permanently pay farmers out of a trust fund for taking care of tree lots assigned to them. Also this initiative is moderated and financially supported by global-woods.

G8 Knowledge Dissemination (1 Point)

G.8.1. Describe how they will document the relevant or applicable lessons learned.

The Kikonda project has a written record of management meeting minutes over more than 4 years. This wealth of documents shows the successes and failures and will continue to

document these lessons learned with note keeping on all weekly and extraordinary meetings. The essence of “lessons learned” finds its way into the Standard Operating Procedures (called IMPs in Kikonda). These documents show the current status of knowledge and appliance in all aspects of the project. At least once a year they are updated in a joint effort of the permanent staff in Kikonda and the staff of global-woods Germany.

G.8.2. Describe how they will disseminate this information in order to encourage replication of successful practices. Examples include: undertaking and disseminating research that has wide reaching applications; holding training workshops for community members from other locales; promoting “farmer to farmer” knowledge-transfer activities; linking to regional databases; and working with interested academic, corporate, governmental or non-governmental organizations to replicate successful project activities.

The Kikonda project has extensive 'welfare activities' which aim to encourage surrounding farmers to learn more about the techniques of tree planting. These activities have led to better understanding, improved communication and the plating of almost 300 hectares of forest outside the project area.

The Kikonda project from the very beginning has had the aim, not only to be a good project, but also to play a significant role in the development of the region and of the national forestry sector. The following pullet-point gives an overview what has been achieved so far:

- The NGO “Kikonda Community Forestry Association” has been set up with the support of global-woods to form a center of farmer-to-farmer knowledge exchange on tree planting, Jatropha farming and sustainable land use. Today KiCoFA has almost 500 members and looks back on app. 200 ha of small scale wood lots planted.
- More than 100 village training courses on tree planting and Jatropha farming and processing have been conducted by global-woods.
- More than 20 graduates from national forestry schools have been trained in a 6 month program in plantation management. Knowledge from the Kikonda Project is now applied in all major forestry operations and administrations in the country.*
- A co-operation with the University of applied science, Rottenburg, Germany and the Makerere University Kampala is in place that has brought app. 10 students from Germany and a multitude of students from Makerere to the project. Project dissertations and reports have been made available to the greater public.

* Evidence can be given on demand by a list of organizations members of the program are now working for including the National Forestry Authority, greenresoures Ltd., New Forest Company Ltd. etc.

- Kikonda has frequently been the host of workshops of the “Sawlog Productions Grant Scheme” bringing together tree planter from all over the country to get hands-on training on forest management.
- Kikonda has hosted twice the “Uganda Forest Plantation Forum”, a workshop on the sustainable development of forest attended by forestry entrepreneurs as well as local farmers, ministers and ambassadors.
- Staff of Kikonda is member of the Uganda Tree Growers Association as well as of the working group of the Ugandan FSC standard.

These are examples of how global-woods puts its philosophy of “sharing knowledge for constant growth”. It is our firm belief that sharing is rewarding. And as a next step of replicating the positive results we have gotten in Kikonda so far, global-woods is currently looking into setting up a similar project in the North of Tanzania.

III. Climate Section

CL1 Net Positive Climate Impacts (Required)

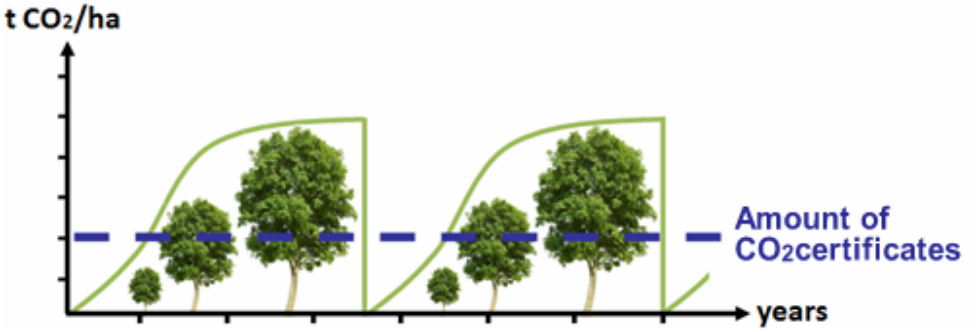
CL.1.1 Estimate the net change in carbon stocks due to the project activities. The net change is equal to carbon stock changes with the project minus carbon stock changes without the project (G2). Alternatively, any methodology approved by the CDM Executive Board may be used. Define and defend assumptions about how project activities will alter carbon stocks over the duration of the project or the project accounting period.

For the long-term net carbon stock generated by the project see point G2.2 or alternatively the CFS projects website. The CFS “Methodology background” (Doc-Ref: 00-06) paper describes in detail that the method of calculation is based on CDM-EB accepted formulas and a conservative approach.

The current license for the project area limits the projects lifetime to 50 years. This is the maximum time licenses are issued by the National Forest Authority.
Start of the project: 06 September 2001
Project lifetime: 05 September 2051

Still, it can be expected that with appropriate management of the project, a renewal of the license will be achieved.

The accounting period is regarded to be the projects lifetime. Still the amount of certificates being issued (ex-ante) will be realized on a per Management Unit base 9 years after planting – which represent half of the time of the first rotation period (18 years).



Adapted graphic from the CarbonFix Standard. Note that the scale does not match the growth-models of trees from the Kikonda Forest Reserves.

The net anthropogenic GHG removals by sinks for the entire project and each year are presented in the following:

Year	Annual estimation of net project GHG removals by sinks in tCO2e over project lifetime
2002	-1.062
2003	-1.945
2004	-2.175
2005	-5.218
2006	-17.258
2007	-25.504
2008	-15.041
2009	-26.069
2010	-38.391
2011	-23.444
2012	27.032
2013	118.537
2014	249.515
2015	451.396
2016	741.741
2017	1.079.892
2018	1.441.195
2019	1.832.039
2020	2.254.526
2021	2.678.171
2022	3.066.958
2023	3.376.371
2024	3.512.709
2025	3.615.457
2026	3.859.991
2027	3.594.172
2028	3.137.266
2029	2.675.123
2030	2.181.459
2031	1.662.040
2032	1.115.789
2033	854.035
2034	1.144.380
2035	1.482.531
2036	1.843.834
2037	2.234.678
2038	2.655.954
2039	3.078.390
2040	3.466.000
2041	3.770.127
2042	3.889.525
2043	3.974.442
2044	**4.211.936**
2045	3.904.592
2046	3.392.686
2047	2.875.543
2048	2.326.879
2049	1.752.460
2050	1.151.209
2051	854.035
Total (max of annual) of estimated project net GHG removals (tCO2e) over the project lifetime	4.211.936
Annual average of estimated project net GHG removals (tCO2e) over the project lifetime	1.827.570

See Ref-Doc: 008 for detailed calculation

CL.1.2 Factor in the non-CO_2 gases CH_4 and N_2O to the net change calculations (estimated in CL.1.1.) if they are likely to account for more than 15% (in terms of CO2 equivalents) of the project's overall GHG impact.

Chapters of the following text refer to the CFS document "Criteria and Methodology" (Ref-Doc: 00-03).

Non-CO_2 gases from fertilization are taken into account by the deduction of 0.4 tons of CO_2 per kg N (see chapter "Project emissions"). Non-CO_2 Green House Gases which derive from the burning of biomass during land-preparation are accounted for by deducting an additional 10% of the baseline (see chapter "Baseline"). For non-CO_2 project emissions, 0.5% of the projects CO_2-fixation are deducted (see chapter "Project emissions").

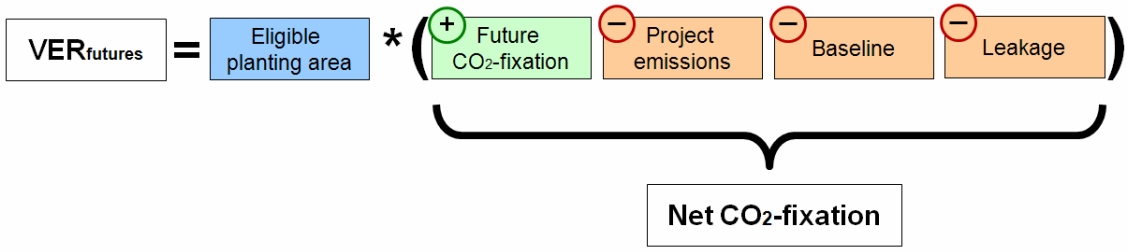
Non-CO_2 Green House Gases from the soil are not expected to occur as area-wide plowing is limited, drainage as well as irrigation are forbidden and it is not allowed to plant on wetlands (see chapters "Environmental Aspects" and "Eligibility")

With the above mentioned methods also non-CO_2 GHG are estimated and accounted for.

CL.1.3 Demonstrate that the net climate impact of the project (including changes in carbon stocks, and non-CO_2 gases where appropriate) will give a positive result in terms of overall GHG benefits delivered.

For the long-term net carbon stock generated by the project see point G2.2 and the CFS projects website. Figures are explained in the CFS documents "Future CO2 fixation" (Doc-Ref: 06), "Baseline" (Doc-Ref: 07), and "Leakage" (Doc-Ref: 08).

The net climate impact of the Management Units (MUs) is calculated the following:



The following table was extracted from the CarbonFix Web system. Here, the different parameters are being calculated according to the formula above.

Man. Unit	Area in ha	Seq. by planted trees	Project Emiss.	Baseline CO2	Leakage	Biomass burned	VER Futures /ha	Buffer	CO2e/MU	Main tree species
201	0	0	0	0	0	0	0	0	0	Maesopsis eminii
202	6	391	2	45	9	5	330	99	1 386	Pinus oocarpa
203	16	391	2	45	9	5	330	99	3 696	Pinus oocarpa
301	0	423	2	45	9	5	362	109	0	Pinus caribaea
302	22	427	2	45	9	5	366	110	5 632	Pinus caribaea
401	0	440	2	45	9	0	384	115	0	Pinus caribaea
402	21	396	2	45	9	5	335	101	4 914	Pinus oocarpa
501	20	370	2	45	9	5	309	93	4 320	Pinus caribaea
502	0	440	2	45	9	5	379	114	0	Pinus caribaea
503	1	440	2	45	9	5	379	114	265	Pinus caribaea
504	75	440	2	45	9	5	379	114	19 875	Pinus caribaea
601	308	387	2	45	9	5	326	98	70 224	Pinus caribaea
701	129	387	2	45	9	5	326	98	29 412	Pinus caribaea
702	142	387	2	45	9	5	326	98	32 376	Pinus caribaea
703	53	387	2	45	9	5	326	98	12 084	Pinus caribaea
801	128	387	2	45	9	5	326	98	29 184	Pinus caribaea
								TOTAL	**213 368**	**tCO2 sequestrated**

For further information of the CFS methodology, see the “Methodology background” (Ref-Doc: 00-06).

CL.2 Offsite Climate Impacts (“Leakage”) (Required)

CL.2.1 Estimate potential offsite decreases in carbon stocks (increases in emissions or decreases in sequestration) due to project activities.

In 2006 a survey was conducted in 22 villages surrounding the reserve. With knowledgeable representatives, in many cases the mayor, it was discussed, what leakage effects might occur, in case the project activity is implemented. The main activities mentioned that might be shifted were fuelwood use, charcoal burning and lifestock grazing.

For fuelwood, the study and further estimations found out, that of app. 15 m³ of fuelwood that are collected annually per ha, app. 2 m³ come from living trees. It is expected that this activities will shift 100% to outside areas and hence leading to a leakage of app. 4,4 t of CO2/ha.

For charcoal production 6.9% of the interviewees stated that they will shift charcoaling to places outside the reserve, the rest will shift to work in reforestation etc.. This will lead to a leakage effect of 1,52 t of CO2/ha.

For cattle keeping the result of the survey was, that 19% of the cattle keepers would clear forests outside the project area whereas the rest has sufficient other grazing lands leading to leakage of 66,5 t of CO2/ha.

Overall this resulted in a leakage effect of 67'477 tCO2.
32'212 tCO2 From the shift of fuelwood use activities
11'128 tCO2 From the shift of charcoal burning activities
24'137 tCO2 From the shift of livestock grazing

Divided by the eligible project area of 7'321ha, this result in a leakage effect of 9,2tCO2/ha

For more details see CFS-document "Leakage" (Ref-Doc: 08).

CL.2.2 Document how negative offsite impacts resulting from project activities will be mitigated and estimate the extent to which such impacts will be reduced. Estimate the extent to which the negative offsite impacts will be reduced adequately.

The following categories of potential leakage effects have been evaluated

a.	Fuelwood use	d.	Agricultural farming
b.	Charcoal burning	e.	Resettlement
c.	Timber harvesting	f.	Livestock farming

whereby only category a. b. and f. are applicaple to the project of the Kikonda Forest Reserve.

To mitigate any of these types of leakages, the project offers jobs especially to people living in surrounding areas. This enhances the effect that charcoalers (b.) and cattle keepers (f.) from the region do not shift their activities with the expansion of the project, but change their jobs to become part of the tree planting activities.

The use of fuelwood (a.) is not majorly effected by the project activity, as people mainly (80%) collect dead-wood. Dead-wood will continue to be accessible in areas which are not planted on by the project. The strict enforcement that no living wood is being cut in the remaining existing forests is provided by the project developer.

For more detailed information see also CFS-document "Leakage" (Ref-Doc: 08).

CL.2.3 Subtract any likely project-related unmitigated negative offsite climate impacts from the climate benefits being claimed by the project. The total net effect, equal to the net increase in onsite carbon stocks (calculated in the third indicator in CL1) minus negative offsite climate impacts, must be positive

For this point see chapter "Calculation of $VER_{futures}$" of the CarbonFix "Criteria & Methodology" document (Doc-Ref: 00-03).

CL.3 Climate Impact Monitoring (Required)

CL.3.1a Describe the initial plan for how they will select carbon pools and non-CO_2 GHGs to be monitored.

The following carbon pools are selected to determine the carbon sequestration of the project:

Carbon Pools		*Examples*	Future CO_2 fixation	Baseline	Leakage
Woody	Aboveground	*Stem, branches and bark*	Selected	Selected	Selected
	Belowground	*Tree roots*	Selected	Selected	
Non-woody	Aboveground	*Grass*		Selected	
	Belowground	*Grassroots*		Selected	
Dead biomass		*Dead branches, trees and litter*			
Soil		*Organic soil*			
Harvested wood (timber and energy wood)		*Furniture, construction material, etc.*			

The parameter of 'Baseline' as well as 'Leakage' are determined once in the beginning of the project and must therefor not be monitored.

The parameter 'CO2-Fixation', respectively the carbon pools 'Woody Aboveground Biomass' must be monitored through the forest inventories. Guidelines for these inventories are given by the CFS (Doc-Ref: 00-05-01). The parameter 'Woody Belowground Biomass' is determined by a contiuously used expansion factor.

The contiuous monitoring of non-GHGs is done by verifying the amount of fertilzer used per MU and if the biomass was burned on a MU. Both of these parameters must be considered in the CarbonFix Websystem for the calculation of the CO2-certificates.

CL.3.1b State if the corresponding measurements and the sampling strategy (including monitoring frequency) are set in the monitoring plan.

The CFS "Procedures" (Doc-Ref: 00-02) determine the monitoring frequency. These vary between 2 to 5 years, depending on the age of the project. The sampling strategy is described by the CFS "Inventory" guideline (Doc-Ref: 00-05-01).

The inventory guideline of the CFS is an extended version of the "Winrock Sourcebook for LULUCF (2005)" which is considered as best practice in sampling design for worldwide climate forestation projects.

Uncertainties from forest inventories which are the basis for the determination of the CO2fixation are treated with the concervative approach, which lead to a rather underestimation of carbon sequestration.

An overview on the parameters measured and evaluated by the inventories is given in the table of the following page:

ID	Data variable	Data unit Discription (d)	Measured (m) Calculated (c) Estimated (e) Default (d)	Evaluation frequency 1 = once in the beginning of a project a = anually c = before every certification	Comment	Source of data
MONITORING - CO2 FIXATION						
Calculation per sample plot				**a or c**		
M 1	Date of inventory	Date				06-01
M 2	ID of sample plot					06-01
M 3	Name of responsible person					06-01
M 4	Plot location	GPS coordinates	m		plot must be marked in the field	06-01 and 06-05
M 5	Plot area	ha or m2				06-01
M 6	Slope (see comment)	% or °	m		in case slope of the plot is >10% or >6°	n/a
M 7	Picture (optional)					-
M 8	ID of tree					06-01
M 9	Tree specy					06-01
M 10	Diameter breast height (DBH)	cm	m			06-01
M 11	Tree height (see comment)	m	m		only the height of the 3 average trees must be mesured	06-01
M 12	Biomass Expansion Factor (BEF)			1		06 and 06-04
M 13	Root-to-Shoot ratio (R-t-S)			1		06 and 06-04
M 14	Form factor			1		06 and 06-04
M 15	Wood density			1		06 and 06-04
M 16	Carbon fraction		d = 0.5	1		
M 17	C to CO2 ratio		d = 3.666	1		
Calculation per stratum				**a or c**		
M 18	Mean tree height	m	c			06-01
M 19	Dominant tree height (see comment)	m	c		depending on the growth-model applied	n/a
M 20	Mean DBH	cm	c			06-01
M 21	Corrected plot area (see comment)	ha or m2	c		in case slope of the plot is >10% or >6°	n/a
M 22	Mean Stem volume	m3/ha	c			06-01
M 23	Precision level (see comment)	%	c or e		prior the first monitoring, this value must be estimated. It must be <20% or conservative approach much be taken	06-01
M 24	t		c or d		prior the first monitoring, the default value of 2 can be taken	06-01
M 25	Area of stratum	ha	m			06-01
M 26	Standard deviation within the sample plot (s)	m3/ha	c or e		prior the first monitoring, this value must be estimated	06-01
M 27	Allowable error (E)	m3/ha	c		Mean Stem volume * Precision level	06-01
M 28	Possible amount of sample plots in the stratum (N)		c		Area of stratum / Plot area	06-01
M 29	Amount of sample plots (n)		c		Forumla see "Inventory guideline"	06-01
M 30	Mean BEF (see comment)		c	1	in case of mixed forest	n/a
M 31	Mean From factor (see comment)		c	1	in case of mixed forest	n/a
M 32	Mean Wood density (see comment)		c	1	in case of mixed forest	n/a
M 33	Carbon fraction		d = 0.5	1		
M 34	C to CO2 ratio		d = 3.666	1		
Optional calculations				**a or c**		
M 35	Survival rate	%	c			-
M 36	Increment of Stem volume	m3/ha/a	c			06-01

In the following, the essentials of the procedure from the “Inventory” guideline are given. Frequent inventories shall lead to an accurate adaptation of the predicted growth-model.

Shape and size of plots
The plot size should be large enough so that at least 10 trees (ideal is 12 to 15 trees) are measured within the plot boundaries. A common size of plots is 250 to 500m². With a circular sample plot, this corresponds to a radius of 8.92 to 12.61m. A general rule is that larger plots lead to smaller sampling errors.

Stratification
To facilitate the fieldwork and increase the precision of measuring the existing Stem volume, it is useful to divide the area to be measured in a inventory into so-called strata. The strata form homogenous units.

Amount of sample plots
The amount of sample plots determines the precision level of the analysis. Therefore, before field measurements are executed, the first step is to identify the required number of plots to obtain the desired precision level, using standard scientific procedures.

Location of Plots
To maintain precision, plots must be located without bias. If plots follow a road, trail or straight river they might be biased. In this case, the location of plots should be relocated. The area to be inventoried shall be evenly sampled.

The location of plots can be random or systematic. It is recommended to use a systematic setting as this approach is easier in its preparation and gives a better impression on the special distribution of the plots

Plots which are used for the verification of forest growth-models must be established on a permanent base.

Slope Correction
Because all measurements of a sample plot are reported on a horizontal-projection basis, the establishment of plots on sloping lands must use a correction factor. The slope angle must be measured with a clinometer.

If sample plots are located on a slope that is >10% the plot radius must be adapted.

CL.3.1c Show that all potential pools are included (aboveground biomass, litter, dead wood, belowground biomass and soil carbon). Pools to monitor must include any pools expected to decrease as a result of project activities.

The CFS “Methodology background” paper (Doc-Ref: 00-06) describes in detail that with the selected pools a conservative approach is being followed.

CL.3.1d Describe if relevant non-CO_2 gases are monitored if they account for more than 15% of the project’s net climate impact expressed in terms of CO_2 equivalents.

See G2.2a or CL 1.2.

CL.4 Adapting to Climate Change & Climate Variability (1 Point)

CL.4.1 Identify likely regional climate change and climate variability impacts, using available studies.

Although the project area lies within the tropical belt, both temperature and humidity typical of the regions are considerably modified by a relatively high general altitude ranging from 1,050 m.a.s.l. to just over 1,150 m.a.s.l. According to Henderson's classification (1949), the climate of the project area remains under the influence of air masses of the Congo basin and is characterized by a bi-modal distribution of an average annual rainfall between 1,000 to 1,300 mm associated with the inter-tropical convergence zone with two rainy peaks generally falling between mid-March and mid-May and from September until early October, the first peak generally being higher than the second. However, the peaks are not well defined and considerable variations occur from one year to next. During the intervening dry periods, light showers or even heavy rain storms are not infrequent and this accounts for a relatively favorable distribution of rain throughout the year. Of the two intervening dry seasons in December to February and June to July, the former is more severe than the latter. The temperature is typical of West Central Uganda and characterized by a mean annual temperature of around 26 °C. The maximum temperatures vary between 30 to 35°C and the minimum temperatures between 15 to 20°C. As there are weather recording instruments at the Forest Station only since a few years, the climatic data is taken from Kiboga town some 40 km to the east, where it has been recorded for several decades. It is known that the climate at the project area is the very same to that of Kiboga.

Rain
In recent years there have been changes in the weather with rains coming earlier (February) than expected and dry seasons also starting as early as May instead of June. Nevertheless, the rainfall of over 1,000mm per year is adequate to support the planted trees.

In summary, the project is well adapted to potential local climate change effects, since the trees planted can cope with changing conditions.
It is likely that the project will have a positive climatic impact of the region in terms of cooling the air close to the project through evaporation of the trees.
Further studies on climate impact and climate adaptation will be conducted.

CL.4.2 Demonstrate that the project has anticipated such potential impacts and that appropriate measures will be taken to minimize these negative impacts.

According to the assumptions of point CL 4.1 it must be justified that that all tree species used are long-term site-adapted, also under these foreseeable changing climate conditions.

CL5 Carbon Benefits Withheld from Regulatory Markets (1 Point)

CL.5.1	Demonstrate that at least 10% of the total carbon benefits generated by the project into regulated GHG markets will not be sold. Projects can sell these carbon benefits in a voluntary market or retire them.

According to the CFS chapter “Buffer”, 30% of the carbon credits being generated will not be sold. It is not planed to sell any credits in the regulated GHG compliance market.

IV. Community Section

CM1 Net Positive Community Impacts (Required)

CM.1.1a Describe the appropriate methodologies used (e.g. the livelihoods framework) to estimate the net benefits to communities resulting from planned project activities.

Communities are only found in the surrounding of the project area. In 2007, a survey in the surrounding villages was undertaken following the empiric social research approach.
The main technique used to gather information was in the form of a survey. This was implemented with the help of different methods. Generally, methods which can be applied within interviews are individual or group interviews, written or oral interviews and structured or unstructured interviews.

The methodology applied in the present research can be categorised as an individual interview, orally conducted and on the basis of a structured questionnaire.
The interviews were conducted one person at a time. Questions were asked orally and answers recorded on the questionnaire. The term “structured” relates to the interview situation. This means that the questions were prepared, pre-tested and put in specific order. Nothing was changed in the questionnaire between the individual interviews.

In summary the result was that especially the cooperation between the company and the NGO KiCoFA brought numerous positive social benefits to the people who live in the neighbouring areas of the Kikonda Forest Reserve.

People became sensitized about the problems and the benefits of tree planting actions and learned more about them. This led to a better understanding of tree planting activities. With the foundation of the NGO KiCoFA, the support of it through the company and the numerous offered training activities concerning tree planting the local population has the possibility to take part and to experience tree planting on their own. Continuous increasing membership figures of the NGO KiCoFA and more applications for future tree planting clearly showed the high interest and acceptation of the offered activities.

The participants are not only interested in the free provision of seedlings, they also are interested in the idea of growing trees as a farming activity and using the trees as an investment for the future as this is new to most of them. Additionally, more and more people see the positive effects of trees concerning environmental protection. As the area is highly deforested, people realize that growing trees can help to counteract this development. The NGO itself, as a group where people can meet and discuss problems, is a big social benefit. People are organized in a group and appreciate the fact that they receive more attention as a group as it would be as single persons. People from all backgrounds and professions are members of the NGO, teachers and district chairmen as well as farmers and even few cattle keepers.

Therefore the NGO contributes to good relation of all people around the Kikonda Forest Reserve.

CM.1.1b Include a credible estimate of net benefits changes in community wellbeing given project activities. This estimate must be based on clearly defined and defendable assumptions about how project activities will alter social and economic wellbeing over the duration of the project.

To evaluate the community benefits coming from the project, the performance of the KiCoFA association is contiously (before every certification process) being assessed. A first study was conducted in 2007 which now present the base of evaluation for further assessments.

Key figures and communities benefits can be followed by the following extracts of the study:

- The KiCoFA was founded in July 2005 by 30 farmers, who lived around the KFR and who were interested in taking part in tree planting trainings and sensitisation courses about the benefits of tree planting.

- As can be seen in table 2, in the last three planting seasons 200 007 trees, which were provided for free by the PPP program, were planted by a total of 352 farmers. Every participating farmer planted between 0.2 ha and 2.5 ha (in average 0.6 ha) on his/her private land. Thereby a total of 213 ha of degraded farm land was afforested in form of small, private owned woodlots.

	2006 1st planting season	2006 2nd planting season	2007 1st planting season	Total
No. of trees planted	26.706	69.147	104.154	200.007
Area planted (ha)	44	76	93	213
No. of new planters	86	148	118	352

2: Planting figures of KiCoFA; Source: SUB 2007

- The constitution of the NGO clearly states the objectives and regulations of the membership. The following is an extract of the NGO's aims as stated in the NGO constitution. A complete list of the NGO's objectives can be found in the NGO's constitution in document 009 – KiCoFA constitution.

    - Encouraging and facilitating the communities neighbouring Kikonda Forest Reserve to plant more trees from which they can derive income and thereby improving the quality of their lives and contributing to sustainable development.
    - Facilitating training of farmers, which enhances productivity and which is adding value to their lives and that of the community.
    - Facilitating access to appropriate, relevant and good quality information regarding forest conservation.
    - Facilitating the conservation of the environment through tree planting.

The following table gives an overview on the socio-economic net-benefit for the different stakeholders of the project:

Stakeholder	Scope	Short-term	Long-term	Comment
Charcoalers	~ 300	o	+	- enforcement of law accelerates through the project implementation + alternative work is offered
Nomadic cattle keepers	~ 100	-	o	
KiCoFA (Kikonda Community Forest Association)	Farmers from all neighboring communities (> 20.000 people) are invited to join the KiCoFA 2008: ~ 500	+	++	+ sponsored tree seedlings or assistance in nursery practices + theoretical training of tree planting and management + practical support in the implementation of tree planting activities + assistance in management of community forest + direct support of local schools + income from community forests will raise investment for social infrastructure (hospitals, schools, boreholes, etc.)
Workers (families)	~ 300 (~ 1500 family members)	++	++	+ continuous long-term income + employment in rural area

- negative impacts
o nighter positive nor negative impacts
+ positiv impacts
++ major positiv impacts

Charcoalers
In short to mid-term the Kikonda Forest Reserve will be planted and illegal activities such as choarcoal burning will stop. Charcoalers know this and are prepared to find other jobs in the upcoming 5-10 years. This fact is supported by the survey executed to determine the leakage. Here, only 7% stated that they, as charcoalers, see themselves continuing to work as charcoalers in future.

In contrast to any baseline scenario, the project provides charcoalers the opportunity of a job with stable and long-term income.

Nomadic cattle keepers
As with charcoaling activities, also cattle keepers will step-by-step be required to stop their illegal activities on the project area. As most of these cattle keepers live normadically, shifts to other ground surrounding the project area will be used instead. In contrast to any baseline scenario where illegal activities are not counteracted, such enforcement may lead to short-term negative impacts. Long-term, with the current development of Uganda, where the population is growing rapidly and setteling the land, it is not expected that nomadic cattle keepers will be able to contioue their normadic way of life. Still at a later stage of the project, when the trees are tall enough not to be harmed, it would be possible to re-open the traditional paths for the cattle keepers.

KiCoFA
Major socio-economical co-benefits are brought to people living in the surrounding of the project area. In contrast to the baseline scenario, communities are now being motivated also to plant trees and profit from the know-how and the well-fare activities of the project developer. The Kikonda Community Forest Association is strongly supported by the project developer and assisted in their work of educating, training, planting and maintaining new forests. While members of the KiCoFA have focused in the last years to plant trees in their own backyard, management plan are currently being prepared to foster also the planting of community forests.

Additional income from carbon sales will be evaluated together with SUB, as soon as the KiCoFA has sufficient land planted which would allow the costly documentation and certification process.

Long-term, income from timber harvest will allow farmers and communities to raise their quality of life. It can be expected that the timber sales from community forests will foster the development of social infrastructure such as schools, electricity, hospitals, roads, etc. Overall, this will lead to that not only KiCoFA members will profit from these benefits, but all community members.

Workers
Staff being employed or working for SUB gain several benefits from the project activity in contrast to the baseline scenario.

Fair and long-term working contracts secure the income of SUB staff, allowing them to settle and securely build their social networks. The first years of the project show that the steadily increasing quality of social infrastructure in the surrounding communities does not only enhance the workers quality of life, but also creates additional work by trading food, building material and offering leasure activities (cinema, pubs, etc.).

Workers have the free choice to work in different fields offered by the project activities, such as nursery, planting, maintenance, security, etc.. This allows workers not to execute contiouse monotonic work and enables contractors as well as supervisors to select workers with differen skills for promotion of other work.

Taking the lively story of Charles Okodi who had to flee from the north of Uganda due to rebel activities when he was 18 and found work at the Kikonda Forest Reserve. Supervisors soon saw his hard work and effort together with other technical skills and then gave him the job of repairing cars and motrocylces from the project. By now SUB has financed him in an apprenticeship and driver license allowing Okodi to work together with the mangement team.

This is just one example of many stories from different workers which have found a reliable employer in SUB, making them proud when telling their family whom they work for.

Within the management team of SUB (~ 10 people) continuous education and training is being offered by the company. Even travel to other countries such as South Africa have been included in such offers. Together with the yearly trainging programs, young foresters are educated while only the best of them stay at SUB. Other find jobs throughout the country, spreading best pratice work.

CM.1.1c Compare the “with project” scenario with the baseline scenario of social and economic wellbeing in the absence of the project. The difference (i.e., the net community benefit) must be positive.

A project of the size of KFR affects the lives of a large number of people living in the area. global-woods is fully aware that potentially conflicts during the projects lifetime with neighboring stakeholder groups and inidviduals must be treated and solved in consensus with all participants in order to ensure a long-term secured set-up of the project – and therefore bind the CO_2 fixed from the atmosphere on a permanent base.

To monitor and mitigate these potential negative effects, global-woods puts into the centre of its attention the ongoing dialogue with the neighbouring communities and all people potentially affected by the project. That is done in the shape of scientifically backed-up socio-economic surveys on the perception and impact of global-woods activities (Ref-Doc: 04-01) as well as through continuous communication via extension workers and regular meetings (see also later part of this document).

As a quantifiable positive output, 250 to 350 people have found a job in the project so far, which is significantly more than the work created through cattle keeping and charcoal burning on the area already planted. People who decide not to change their source of income and work for global-woods, still have the possibility to continue their way of living and working in other parts of the country. Grazing land and land for charcoal burning is abundant in areas around the reserve and other parts of the country. Besides creating jobs, global-woods supports the surrounding villages with tree seedlings free of charge, financial support of schools and seedlings and training for oil-crop (Jatropha) production.

In total, these effects already now exceed the negative effects (dislocation of cattle keeping and charcoal burning) by far.

Nevertheless global-woods remains attentive to ensure that a net postive socio economic impact will be assured in future, too.

For further details please see CFS-document “Socioeconomic Aspects” (Ref-Doc: 04).

CM.1.2a Document local stakeholder participation in the project’s planning. If the project occurs in an area with significant local stakeholders, the project must engage a diversity of stakeholders, including appropriate sub-groups, underrepresented groups and women living in the project vicinity.

Since the beginning of the project in 2002, the project owner has put emphasis on involving local knowledge into the project planning. Especially through the work of key staff of the project who was recruited from the regional Forest Department, and who set the bases of local stakeholder involvement.

Several staff members were born in the region and is a person highly sensitive to local customs and knowledge. In their decisions and recommendations they have and still do integrate knowledge from his widespread network in the neigbouring communities and local political levels.

Above that the local representatives of the National Forestry Authority were, at all times, involved in the set-up of the project. With regular visits and the adaptations of the

Management Plan continuous feedback is ensured.

Additional to this, the cooperation with the NGO KiCoFA ensures the permanent influence of local stakeholders on the projects planning.

CM.1.2b Describe how stakeholders in the project's area of influence will have an opportunity before the project design is finalized, to raise concerns about potential negative impacts, express desired outcomes and provide input on the project design. Project developers must document stakeholder dialogues and indicate if and how the project proposal was revised based on such input.

Before the project start a management plan was developed (Ref-Doc: 05-05). This management plan was written by the Ugandan Professor Peter Karani and included several site visits and consultations of local stakeholders. This management plan was then approved by the National Forest Authority.

The National Forestry Authority through its local representative constantly monitors the impacts of the projects on local communities by actively asking in the villages and by being well known as an ombudsman.

The cooperation with the NGO "Kikonda Community Forestry Association" which has more than 200 members in the surrounding villages, ensures further that new decisions are only being implemented with the support of the local stakeholders. Meeting with the representatives of the KiCoFA as well as the general assemblies, where several hundred local farmers come together to voice their concerns, lead to a permanent monitoring of the impacts.

Besides these formalized channels of communication, the local management is in constant contact with the local communities since they live on the site or in the surrounding villages with their families.

Meetings with local stakeholders such as farmers, local leaders, representatives of charcoalers and cattle keepers, administrations and religious groups are documented in protocols and minutes available on request.

Further, requests of local stakeholders brought to notice to the management staff verbally, which is by far the most common way to voice concerns in the region, are brought up in the weekly management meetings and documented in the management meeting minutes. In these minutes, the follow-up process of such concerns is documented. The minutes are kept in digital form at the project office and are available on request at all times.

Revision of the project proposal and set up based on stakeholders requests is done in a two-fold way. The formal way is, that every 5 years the management plan of the project is revised by the NFA. Stakeholders and the NFA itself are very aware of this process and are informed well in advance that they have a chance to voice their interes for an adaption of the plan. On case in point for the next review will be the question, if a temporary road leading through the reserve from North to South might be turned into a public road for easier access of a number of villages.

The “informal” but in practice higly important way is, that stakeholders concerns are directily fed into the daily management process of the project. Whenever a concern it brought up, it is instantly dealt with by the project team. One case in point was temporarly insufficient water supply at a village pump which let to a instant openingn of one of the project dwells for the public. To allow a more structured assessent of such adaption due to stakeholder request, all such actions will be documented in standardized forms in future.

CM.1.3a Formalize a clear process for handling unresolved conflicts and grievances that arise during project planning and implementation.

For this point see CFS-document “Socioeconomic Aspects” (Doc-Ref: 04). Here, it is described that neighbors must be able to address their concerns to the project owner and that decisions to resolve these concerns must be implemented in a cooperative way.

The main points are as such:

a) The division leader "Local Public Relations" is the liaison worker who constantly travels the villages talking to the villagers and listening to their concerns. He is also supporting the activities of the NGO KiCoFA (Kikonda Community Forest Assosiation) which includes all the villages surrounding the project area. Besides the daily contacts with the S.U.B. management staff he participates in the weekly management meeting and brings forward issues of concern for communities. Those concerns and their follow up are documented in the management meeting minutes. The liaison worker also informs the villagers about decisions of concern taken by the SUB management.

b. The main office is supplied with a suggestion box, hanging outside so that all people can access it.

c. The postal address is known to be: SUB Ltd., P.O. Box, 290 Hoima, Uganda

d. During monthly meetings of the KiCoFA, comments on the project can also be forwarded to the division leader responsible for ‘local public relations’

e. Most management staff of SUB lives on the project site and in the neighbouring villages. There are plenty of informal occasion where villagers can voice their concerns to the management staff. It is also common knowledge that the reserve was leased out by the National Forestry Authority (NFA) and that the NFA staff is ready to listen to concerns not followed up by SUB staff.

CM.1.3b Include a process for hearing, responding to and resolving community grievances within a reasonable time period. This grievance process must be publicized to local stakeholders.

No matter which channels the communities use to voice their grievances (liaison worker, KiCoFA, farmers meetings, suggestion box, personal contacts), their requests are dealt with at the next subsequent weekly management meeting. The responds is normally getting verbally, also for the reason that a significant number of local stakeholders is illiterate. But still, all management decisions concerning local stakeholders are

documented in the minutes of the management meeting which can be made available on request.

The process of grievance and the follow up is communicated to the stakeholders in verbally in meetings. It is planned to summarize the steps for the process in a written document in all local languages as well. This document will be made public in local gathering points (bars, churches etc.) in regular intervals.

CM.1.3c Describe how the project management will attempt to resolve all reasonable grievances raised, and provide a written response to grievances within 30 days. Document Grievances and project responses.

Grievance is responded to after the following weekly management meeting if not immediately. The result is documented in the management meeting minutes.

CM2 Offsite Community Impacts (Required)

CM.2.1 Identify potential negative offsite community impacts that the project is likely to cause.

The Kikonda project is not expected to have net negative offsite social impacts on the communities outside of the Reserve.

However, a negative impact expected is, that the local communities will have less income from the illegal activites conducted so far on the project area. That includes cattel keeping, charcoal burning and fuelwood collection.

As lined out under CM.2.2, it is expected that these negative aspects will be more than compensated by the project activities.

More detailed information can be found in the CFS-document “Socioeconomic Aspects” (Doc-Ref: 04).

CM.2.2 Describe how the project plans to mitigate these negative offsite social and economic impacts.

Mitigation of negative aspects may not follow one single straight line. It consits of a variety of measures, that will be adapted throughout the development of the project. The most important current measures are as such:

Support of the NGO “Kikonda Community Forestr Association KiCoFA”. With the continuous evaluation of the performance of the KiCoFA, the project seeks to enhance the relationships to the communities surrounding the project and to generate critical input to avoid and manage possible future negative impacts to offsite communities. In practical terms tree and oil-shrup seedlings and technical support is provided to open up new income streems for local farmers that are deprived of their illegal income from activities on the project area.

Also for charcoaler and cattle keepers which will have to stop their illegal activities within the reserve and must find other work outside, no long-term negative impacts can be expected. The time of transition to find other work (5-10 years) should be sufficient to come to terms with accepting the job offers of the project or to develop other income alternatives. These alternatives would include the infrastruture (shops, houses etc.) needed by the growing number of people working for the project.
Still for normadic cattle keepers the overall situation within Uganda - growth of population combined with the settlement of land - does not favor the normadic way of life and a solution on a higher, political level must be found..

CM.2.3 Evaluate likely unmitigated negative offsite social and economic impacts against the social and economic benefits of the project within the project boundaries. Justify and demonstrate that the net social and economic effect of the project is positive.

As lined out in CM.2.1 and CM.2.2 it is expected, that the project will lower the income of local communities form illegal activities undertaken so far on the project area. Since the project itself will create jobs and money spent by workers in the local villages will created additional jobs, it is expected that the project will have a net positive social and economic impact.

To assure that this projection is right, the social and economical development in the villages will be monitored. That includes regular sampling of mean income and overall satisfaction with the living conditions in the communities.

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CM3 Community Impact Monitoring (Required)

CM.3.1 Define the initial plan for how they will select community variables to be monitored, and the frequency of monitoring. Potential variables include income, health, roads, schools, food security, education and inequality. Include in the monitoring plan, community variables at risk of being negatively impacted by Project activities.

In order to monitor the different socioeconomic benefits the following parameters will be compared for every certification process.

ID	Data variable	Data unit Discription (d)	Measured (m) Calculated (c) Estimated (e) Default (d)	Evaluation frequency 1 = once in the beginning of a project a = anually c = before every certification	Comment	Source of data
MONITORING - SOCIOECONOMIC IMPACTS						
S 1	Members of the KiCoFA	members		a		04-01
S 2	Area planted by KiCoFA members	ha	m	a		04-01
S 3	Area planted as Community forest	ha	m	a		n/a yet
S 4	Amount of trainings provided to KiCoFA members	trainings		c		04-01
S 5	Quality of these tainings	d	e	c		04-01
S 6	Amount of assistance provided to KiCoFA members	d	e	c		04-01
S 7	Quality of this assistance	d	e	c		04-01
S 8	Amount of training provided to young foresters	trainings		c		004
S 9	Amount of certificates issues to young foresters	training-certificates		c		004
S 10	Amount of workers	workers	m	a		04
S 11	Amount of management staff	employees		a		04
S 12	Activities sponsored by the project developer (in schools, churches, hospitals, etc.)	d		c		005
S 13	Number of reports of illegal activities	reports		c		to be monitored

The methodology applied to execute the *Survey* is related to the method of the Rapid-Rural-Appraisal (RRA). It is described in detail on page 14 of the first report (Doc-Ref: 04-01) executed to evaluate the socioeconomic impacts of the project.

CM4 Capacity Building (1 Point)

CM.4.1 Explain how the capacity building is structured to accommodate the needs of communities, not only of the project.

The Kikonda Community Forestry Association (KiCoFA) was set up and is supported by the project owner to train community members to be able to do forestry on their own land (see also document "Evalutation of cooperation of the communities with the project management at Kikonda, Uganda" - Doc-Ref: 04-01). This training does not accommodate the needs of the project and is of great advantage for the communities.

Education
To enhance the education of the children living in the surrounding communities the company is supporting schools by sponsoring the salary of teachers. At present one teacher at a primary school is fully and continuously paid by the project owner. Based on the experience of that exercise more teachers will be funded. Schools are often overloaded and classes of 50 to 100 students are often found. In the school, children learn how to read and write, skills which are essential for their future.

A pictures of the supported teachers together with its students (in blue school uniforms) can be accessed through the projects website.

The source of other co-benefits is listed in the table the criterion CM3.

CM.4.2 Explain how the capacity building is targeted to a wide range of groups, not just elites.

The capacity building in terms of lectures held at the forest station or in the villages is open to everybody living in the surrounding communities. There are no restrictions regarding the participants religion, position in the local communities, race or gender.

Invitations to participate in such training are published at the noticeboard which is accessible from the roadside and verbally annonced to local multipliers and in the regular farmer’s meetings.

CM.4.3 Explain how the capacity building is targeted to women to increase their participation.

As mentioned in CM.4.3 the capacity building activities are open for all members of the communities. From the beginning a focus was put on women since they have prooven to be specifically skilled and motivated to in term of tree planting. The result is that 70% of the members of KiCoFA today are women.

CM.4.4 Explain how the capacity building is aimed to increase community participation in project implementation.

The capacity building raises awareness for the risks and challenges of tree planting activities. Although the tree planting in the Project Area is not executed by the communities, capacity building significantly reduces the risk of activities such as uncontrolled burning or cattel grasing done by the communities that could harm the planted trees and hence contributes to the implementation of the project. Besides that community members as field workers or management staff contribute the actual implementation work. The work of KiCoFA will continuously be supported and concerns and ideas of community members are listened to through the channels explained under CM 1.2a.

CM5 Best Practices in Community Involvement (1 Point)

CM.5.1 Demonstrate that the project was developed with a strong knowledge of local customs and that, where relevant, project activities are compatible with local customs.

At every stage of project development, local customs are not only respected but also integrated into the project activities. That includes respecting local holidays, supporting application of traditional medicine when desired, allowing rhitual or religious performances and respecting extraordinary days of leave for unexpected, but frequenly occuring faility issues (e.g. funerals).

CM.5.2 Show that local stakeholders will fill all employment positions (including management) if the job requirements are met. Explain how stakeholders will be selected for positions and where relevant, must indicate how traditionally underrepresented stakeholders and women, will be given a fair chance to fill positions for which they can be trained.

For this point see CFS-document “Socioeconomic Aspects” (Doc-Ref: 04). Here, it is described that the workers shall preferably be from the area around the project.

CM.5.3 Demonstrate that the project complies with international rules on worker rights.

Being certifies according to the CFS, it has been validated that the project owner acts according to all national laws.

Further, the CFS-document “Socioeconomic Aspects” (Doc-Ref: 04) requires the project owner to fulfill the following criteria, which lead to the compliance with the international rules on worker rights:

- Workers must be able to organize themselves and voluntarily negotiate with their employers.
- Proper protective equipment and training of the workers must be implemented – especially when chemicals are used.
- Children under the age of 16 are not allowed to work for the project.
- Contracts must clearly define the work, vocational, insurance and payment parameters.

CM.5.4 Comprehensively assess situations and occupations that pose a substantial risk to worker safety

For this point see CFS-document "Socioeconomic Aspects" (Doc-Ref: 04). Here, it is described that all equipment (tools, machines, substrates, etc.), including those of the contractors, shall be in safe working mode. Further, proper protective equipment and training of the workers must be implemented – especially when chemicals are used.

CM.5.5 Describe the plan in place to inform workers of risks and to explain how to minimize such risks. Where worker safety cannot be guaranteed, project proponents must show how the risks will be minimized using best work practices.

Through the above mentioned training (CM 5.4) the workers are informed about the risks. At the same time, this training leads to reduce the risk to the workers.

V. Biodiversity Section

B1. Net Positive Biodiversity Impacts (Required)

B.1.1 Describe the appropriate methodologies used to estimate changes in biodiversity as a result of the project. Base this estimate on clearly defined and defendable assumptions. Compare the "with project" scenario with the baseline "without project" biodiversity scenario completed in G2. The difference (i.e., the net biodiversity benefit) must be positive.

The methodology followed to measure the current state of biodiversity and its development with respect to the project activities is based on the report of

- Jacques Rondeux (Agricultural Sciences Faculty, University of Gembloux) on "Forest inventories and biodiversity" - for the monitoring of plants (Doc-Ref: 006), and
- Barry Shiver & Bruce Borders on "Sampling Techniques for Forest Resource Inventories" - for the monitoring of animals (Doc-Ref: 007)

Monitoring of flora will be streamlined with the regular forest monitoring.

Monitoring of fauna will be done by a combination of three approaches:

- interviews with field staff on animal sightings (focus on large mammals, reptiles and birds)
- transect sampling (focus on all animal types not well known to field staff)
- capture – re-capture (focus on small mammals, reptiles, insects)

Intervals of monitoring are app. once every five years. For the next years of the project, which will see a rather high figure of areas planted with new forests, shorter intervals are envisaged.
In co-operation with scientists it will be determined, what indicator species are common in the region. Using indicator species would allow to make reliable assumptions for a greater section of the fauna, without actually having to sight or capture all animals in question.

Biodiversity has been monitored, although not fully scientifically structured, since the very beginning of the project.

The assumptions count for the transformation of the land use types of the baseline scenario (degraded forest, wetlands, bush- and grasslands) to the land use types of the project scenario (protected forest and wetlands, planted forest).

Without the project and its protective actions on the conservation land, the current depredating and unsustainable land-uses will be maintained. This will have negative impacts to the habitat of wild animals and plants as well as negative effect to biodiversity. As the project implemented app. 30% of nature conservation area, the expansion of wildlife habitats will be enhanced. With the success of the project, the reintroduce of native species is supported.
Although major biodiversity benefits can be expected also through the production of wood which lowers the pressure on the native forests in Uganda, these impacts are not monitored.

Following the guidelines of the 2. Helsinki Conference on Biodiversity, biodiversity is assessed by comparing inventories in a regular time frame.
A biodiversity inventory in the planted area is executed every two years. In the non-planted area it is executed every 5 years. The results of the inventory are made public. If a decline in the number of species appearing or the amount of individuals sighted per species declines, the project management calls in a meeting with local stakeholders to discuss the consequences.
Above that, it is recommended to calculate biodiversity indices following the Shannon-Wiener equation or the Simpson-Index.
It is recommended to repeat the inventory at the same time of the year. The inventory counting animals is recommended to be done both at daytime and at night.

Monitoring of Flora
For the inventory on plants in the planting area and in the total project area sample plots are set up according to the CarbonFix inventory guidelines.
On top of the information collected following CarbonFix, data on the name and amount of non-woody species must be gathered. This approach follows the recommendations of Prof. Pelz on the integration of Biodiversity Inventories in regular forest inventories1.
The following data must be gathered:
- Name and number of all woody species found on the sample plot.
- Name and number of all non-woody species counted on a sample plot of one by one meter within the big sample plot.

Monitoring of Fauna
Per land-use-type 7 transects of 100 meter must be identified.
These transects are walked along and the species name of all animals seen during that walk are recorded and their number counted.
In the middle of the 100 meter transect an area of 5 by 2 meter must be demarcated and the names of all animals on that area must be determined and their number counted.
This Text was taken from CFS attachment-document “Guideline Biodiversity Inventory”, in which also further background information is available.

Animals: status and impact
Both on the grass and bushland areas and in the degraded forests, wild animals, in the baseline scenario, are permanently subject to poaching and their habitat is threatened by illegal logging and cattle keeping. Nesting trees of birds are felled and vegetation that provides shelter for insects up to mammals is destroyed by fires set by herdsmen to increase pasture land.

When the set-aside forest and swampland areas are fully protected under the frame of the project activities, animal population is expected to increase in size and variety. This increase will also cover the areas planted with new trees since also here poaching and wildfires are effectively stopped and a layer of grass and herbs under the planted trees provides shelter and food.

Plants: status and impact
The degraded forests and swamp areas in the baseline scenario bear a smaller variety of plants than in a natural state. This is due to active removal of plants (for logging, fuel wood collection, grazing) and intentional fires.

The bush- and grassland of the baseline scenario represent a human induced mix of plant species that is not related to the original high-forest/savannah composition of species. The project activity of setting aside all vegetation that falls under the definition of forest and permanent wetlands provides an effective measure to increase variety of species and number of plants in the protected areas. The areas planted with trees in the project scenario are expected to rather remain with the same level of plant biodiversity as found by now in the degraded grass and bushland, since under the planted trees a layer of grass, herbs and small shrubs will still be present. Still, a decline in the individual plants per species on these areas might occur.

	Habitat	Short-term	Long-term	Comment
Animals				
	Depleted forest turns into protected forest	o	++	It is expected that it will take some time until animal population and variety has recovered from century long poaching and forest destruction. Since the next large scale forest is more than 100 km away, transfer of animals extinct in Kikonda shall be taken into consideration.
	Disturbed wetlands turns into protected wetlands	+	++	It is expected, that wetland will rather fast be recovered by animals for that niche migrating in from the nearby river Kafu.
	Grass- and bushland turns into planted forests	-	+	The establishment of new planted forests will certainly scare of a significant number of animals from the planting area. As the stands grow it is expected that they give habitat to more animals than the baseline vegetation
Plants				
	Depleted forest turns into	++	++	The depleted forests still have a vivid seed stock in the soil and are not invaded by

	protected forest			elephant grass. It is hence expected that recovery of plant distribution will start rather fast and will be continuous
	Disturbed wetlands turns into protected wetlands	+	++	Since wetlands had suffered from grazing which has altered the species mix, it is expected that it will take some time until the natural biodiversity is archived again.
	Grass- and bushland turns into planted forests	-	o	Similar to the animal aspect, it is expected that plant biodiversity will decline due to establishment work of planted forests. As the stand mature, grass and bushland species will move into the planted area again. Chemical and intensive mechanical weed control is done for the first few years only, so that the natural plant mix can re-establish after some years. Due to competition from the planted trees it is nevertheless likely that not the full number of plants per species will be restored as in the baseline scenario

- \- negative impact
- o neither positive nor negative impact
- \+ positive impact
- ++ major positive impact

B.1.2 Describe possible adverse effects of non-native species on the area's environment, including impacts on native species and disease introduction or facilitation. If these impacts have a substantial bearing on biodiversity or other environmental outcomes, the project proponents must justify the necessity of using non-native species over native species.

At present, no reliable information on the cultivation of local species in Uganda is available. Nevertheless, the project owner undertook tests with the native species Maesopsis emminii. The results were that the growth rate and the timber quality are not sufficient for commercial tree planting. Having that in mind the project owner followed the advice of the National Forestry Authority to plant Pinus caribaea, a tree of good growth and no known negative ecological effects.

Risks of all types of tree species is described within the CFS-document "Protective Management" (Ref-Doc: 12).

B.1.3 Identify all IUCN Red List threatened species and species deemed threatened on nationally recognized lists that may be found within the project boundary. Project proponents must document how project activities will not be detrimental in any way to these species.

For both fauna and flora assessment, the red list was obtained from www.iucnredlist.org.

The study for IUCN red-list plant species was executed by Biologist Ms. Olivia Wannyana from Makerere University, Department of Botany. It was done together with the baseline

analysis (Ref-Doc: 07-05) executed on the project area. This meant visiting sample plots of a size of 250 m³ in the different vegetation types of Kikonda (Forest, Bushland, grassland, wetland) and assessing in-situ all plant species. Overall, 69 different plants were identified whereby 2 of them are on the IUCN red list as endangered species

It is apparent that there is rich biodiversity in the still existing forests and a lower biodiversity value in the proposed reforestation sites which are currently covered by bush- and grassland.

Scientific Name	Common Name	Red List Category	Existence
Hallea stipulosa		VU A1cd ver 2.3 (1994)	Permanent
Prunus africana	RED STINKWOOD (E)	VU A1cd ver 2.3 (1994)	Permanent

Table of IUCN red list – Plants. Ref-Doc: 05-01

Assessment of animal species was done by staff of SUB Ltd. lead by biologist Charles Kiija. The methodology applied were interviews with field workers, neighbors and management staff of SUB with regards to spotting of animals.

A scientific rigorous analysis including transect sampling and capture – re-capture is still pending.
The following table nevertheless gives a first indication of the red-list species spotted in Kikonda..

Scientific Name	Common Name	Red List Category	Existence
Afrixalus orophilus		VU B1ab(iii) ver 3.1(2001)	Permanent
Chrolocypha jacksoni		VU B1ab(iii) +2ab(iii) ver 3.1(2001)	Permanent
Chrolocypha molindica		EN B1ab(iii) +2ab(iii) ver 3.1(2001)	Permanent
Crocidura tarella	UGANDAN SHREW (E)	VU D2 ver 3.1 (2001)	Temporary
Dasymys montanus	MONTANE SHAGGY RAT (E)	VU B1ab(iii); D1 ver 3.1 (2001)	Permanent
Delanymys brooksi	DELANY'S MOUSE (E)	EN B1ab(iii) ver 3.1 (2001)	Permanent
Francolinus nahani	NAHAN'S FRANCOLIN (E)	EN B1ab(ii,iii,v) ver 3.1 (2001)	Permanent
Glauconycteris gleni	GLEN'S WATTLED BAT (E)	VU D1 ver 3.1 (2001)	Permanent
Hippopotamus amphibius	COMMON HIPPOPOTAMUS (E)	VU A4cd ver 3.1 (2001)	Temporary
Mops trevori	TREVOR'S FREE-TAILED BAT (E)	VU A4c ver 3.1 (2001)	Temporary
Otomys barbouri	BARBOUR'S VLEI RAT (E)	EN B1ac(ii,iv) ver 3.1 (2001)	Permanent
Pan troglodytes	CHIMPANZEE (E)	EN A3cd ver 3.1 (2001)	Temporary

Table of IUCN red list – Animals. Ref-Doc: 05-01

The project has assigned a significant portion of its area as conservation area. While areas where planting activities are taking place might decrease in few aspects of biodiversity the protection of these conservation area will be a refuge of natural habitat for the majority of species.

As most IUCN endangered species within the project area are animals, the protection of remaining forests from illegal activities (such as meat-bush hunting) will enhance the possibilites for wild animals to reproduce and recover in their natural habitats.

It is expected that also the the change of bush- and grassland will enhance animals to resettle in the area. As no fences will be used, habitat fragmentation for larger animals is not given.

B.1.4 Identify all species to be used by the project and show that no known invasive species will be used.

Species used to reforest the project area are:
• Pinus caribaea
• Pinus oocarpa
• Maesopsis emminii
Proven by the National Tree Seed Centre through which the seeds were procured, all tree species used in the project are not invasive.

B.1.5 Guarantee that no genetically modified organisms will be used to generate carbon credits.

For this point see CFS-document “Environmental Aspects” (Ref-Doc: 05). Here it is described that no genetically modified tree species are allowed to be used.

B2 Offsite Biodiversity Impacts (Required)

B.2.1 Identify potential negative offsite biodiversity impacts that the project is likely to cause.

The potential negative offsite biodiversity impacts could be caused by the potential leakage activities. These comprise illegal timber harvesting for fuelwood, timber and charcoal production as well as cattle keeping shifted from the project area to areas outside.

With the projects implementation illegal cattle grazing as well as charcoal burning activities are being partly shifted.

To avoid any negative biodiversity impacts from local charcoal burners it is offered to them to work for the project. The possible shift to other areas for charcoal production is limited, as these people normally have family and land which limites them in their movements.

Possible negative biodiversity impacts from the shift of cattle grazing activities are hard to predict. The majority of cattle grazing activites within the reserve is done by normadic people, which use every year slighly different pathes. Overall, there are ongoing conflics of normadic living and setteled people throughout the country. Therefore, not the project but other political desicions have influence on the shift of these activities and their consequences on biodiversity.

Spreading of seeds to non forest areas outside the project is not regarded as a negative impact. Such spread does not negatively interfere with the standard land-use types around the project area.

B.2.2 Describe how the project plans to mitigate these negative offsite biodiversity impacts.

It is the overall policy of the project to develop alternatives to the illegal activities that might be shifted due to the project activities to neigbouring areas. This policy includes offering jobs at the project to illegal loggers, charcoalers and cattle grazers and supplying surrounding villages with sustainable produced fuelwood – which they can also use to make legally charcoal. Combined with a continous capacity building to sensetize the neighborhood for a sustainable use of forest the potential negative impacts on the biodiversity outside the project are seen as very limited.

B.2.3 Evaluate likely unmitigated negative offsite biodiversity impacts against the biodiversity benefits of the project within the project boundaries. Justify and demonstrate that the net effect of the project on biodiversity is positive.

Shifts of illegal activities such as logging and cattle grazing to areas of relatively high biodiversity outside the project area can not at 100% be ruled out.

Nevertheless it is likely that the project gives strong incentives for illegal loggers not to move to places outside the reserve, since it offers jobs and supplies the regional market with sustainably produced timber.

Combined with a strict enforcement of biodiversity protection on more than one third of the project area it is expected that the speed of reduction of biodiversity outside the project will deacrease and the positive effects inside the reserve will increase by the projects implementation.

B3 Biodiversity Impact Monitoring (Required)

B.3.1 Describe the initial plan for how they will select biodiversity variables to be monitored. Potential variables include species abundance and diversity, landscape connectivity, forest fragmentation, habitat area and diversity, etc. Clarify the frequency of monitoring. Include in the monitoring plan, biodiversity variables at risk of being negatively impacted by project activities.

The methodology used to assess the biodiversity is a flora-fauna inventory repeated before every certification process. It is stratified by land cover: forest, bush/grassland, and wetland.The survey provides the basic data to generate indices such as the Shannon-Wiener or the Simpson-Index. With the contious monitoring these indices can also be compared to evaluate the biodiversity within the project area.

To monitor the biodiversity of plants, the sample sample design and sample plots which were used to determin the baseline will be taken. Hereby, the “Inventory” guideline (Ref-Doc: 00-05-01) of the CarbonFix Standard will be followed.

For the monitoring of animals transects of 100m will be determined throughout the project area. These transects are walked along and the species name of all animals seen during

that walk are recorded. Along these transects sample plots are established to determine smaller animals such as insects, small reptiles, small mammals etc.

For the comparative monitoring of animals it is of utmost importance that circumstances such as climatic conditions as well as the time of monitoring are executed under similar conditions.

The following tables give an overview on the variables which must be determined to evaluated the net-biodiversity benefits. Referencs to variables which have already been determined for an initial evaluation are also provided in these tables.

ID	Data variable	Data unit Discription (d)	Measured (m) Calculated (c) Estimated (e) Default (d)	Evaluation frequency 1 = once in the beginning of a project a = anually c = before every certification	Comment	Ref-Doc.
MONITORING - BIODIVERSITY ASPECTS (PLANTS)						
Monitoring per sample plot				c		
B-P 1	Date of inventory	Date				07-05
B-P 2	ID of sample plot					07-05
B-P 3	Name of responsible person					07-05
B-P 4	Plot location	GPS coordinates	m		plot must be marked in the field	07-05
B-P 5	Plot area	ha or m2				07-05
B-P 6	Slope (see comment)	% or °	m		in case slope of the plot is >10% or >6°	n/a
B-P 7	Picture (optional)					
B-P 8	Category of vegetation type (biodiversity stratum)				use the categories of land-types of your baseline analysis (wetland, forest, bushland, etc.)	07-05
B-P 9	Humus and soil properties		d			to be monitored
B-P 10	Percentag of dead wood	%	e			07-05
B-P 11	Tree species					
B-P 12	Main tree species (see comment)	%			if more than one vegetation layer exists, please describe seperatly	001
B-P 13	Tree species of IUCN red list					05-01 and 05-10
B-P 14	Health of trees		d			-
B-P 15	Mean age (see comment)		e		if more than one vegetation layer exists, please describe seperatly	to be monitored
B-P 16	Mean Stem volume (see comment)	m3/ha	e		if more than one vegetation layer exists, please describe seperatly	05-01
B-P 17	Mean Diameter Breast Height (DBH) (see comment)	cm	e		if more than one vegetation layer exists, please describe seperatly	05-01
B-P 18	Tree height (see comment)	m	e		if more than one vegetation layer exists, please describe seperatly	05-01
B-P 19	Non-woody species					001
B-P 20	Main non-woody species	%			if more than one vegetation layer exists, please describe seperatly	to be monitored
B-P 21	Non-woody species of IUCN red list					05-01
Evaluation per stratum & overall				c		
B-P 22	Change of Category of vegetation type		d			to be monitored
B-P 23	Change of Humus and soil properties		d			to be monitored
B-P 24	Change of Percentage of dead wood	%	d			to be monitored
B-P 27	Change of Main tree species (see comment)	%	d		if more than one vegetation layer exists, please describe seperatly	to be monitored
B-P 25	Change of Tree species of IUCN red list		d			to be monitored
B-P 26	Change of Health of trees		d			to be monitored
B-P 27	Change of Main non-woody species		d			to be monitored
B-P 28	Change of Non-woody species of IUCN red list		d			to be monitored
Optional evaluations				c		
B-P 29	Vegatation layers		d			

ID	Data variable	Data unit Discription (d)	Measured (m) Calculated (c) Estimated (e) Default (d)	Evaluation frequency 1 = once in the beginning of a project a = anually c = before every certification	Comment	Ref-Doc.
MONITORING - BIODIVERSITY ASPECTS (ANIMALS)						
Monitoring per transect / sample plot				c		
B-A 1	Date & Time of inventory	Date and Time				07-05
B-A 2	ID of transect / sample plot					07-05
B-A 3	Name of responsible person					07-05
B-A 4	Plot location	GPS coordinates	m		plot must be marked in the field	07-05
B-A 5	Transect area / Sample plot area	ha or m2				07-05
B-A 6	Picture (optional)					
B-P 7	Category of vegetation type (biodiversity stratum)				use the categories of land-types of your baseline analysis (wetland, forest, bushland, etc.)	07-05
B-A 8	Animal species seen (transect)					05-01 (no yet scientifically monitored)
B-A 9	Animal species (sample plot)					to be monitored
Evaluation per stratum & overall				c		
B-A 10	Change of Animal species seen (transect)					to be monitored
B-A 11	Change of Animal species (sample plot)					to be monitored
Optional evaluations				c		
B-A 12	Habitat fragmentation of certain species					

B4. Native Species Use (1 Point)

B.4.1 Show that the project will only use species that are native to the region, or justify that any non-native species used by the project are superior to native species for generating concrete biodiversity benefits.

At present majorly non-native tree species are planted, as there are no reliable information on the cultivation of local species in Uganda is available. Nevertheless the project owner undertook tests with the native species Maesopsis emminii. The results where as such that the growth rate and the timber quality are not sufficient for commercial tree planting. Having that in mind the project owner followed the advice of the National Forestry Authority to plant Pinus caribaea, a tree of good growth and no direct negative ecological effects.

Indirect positive effects on the biodiversity are reached by this species through the production of timber. This is due the fact, that all timber will be sold on the national market and will lower herewith the pressure on the unsustainable exploitation of the natural forests in Uganda and surrounding countries.

B5 Water & Soil Resource Enhancement (1 Point)

B.5.1 Identify project activities that are likely to enhance water and soil resources.

The project activity of "tree planting" in combination with the protection area area will contribute to enhance water and soil resources. That is due to the fact, that in contrast to the baseline activities, newly established forests will reduce fast surface drain of water and soil erosion. Soil is fixed and water oozes away to the ground water instead of beeing washed away to the rivers and streams.

B.5.2 Credibly demonstrates that these activities are likely to improve water and soil resource compared to the baseline, using justifiable assumptions about cause and effect, and relevant studies.

In contrast to the current land-use types the newly established forest will build up an organic soil layer which enhances soil fertility. In contrast to the baseline scenario in which the project area would be striped off forests and overgrazed, the newly grown forest counteracts the erosison as in the baseline scenario.

Water resources are improved since the planted trees support a penetration of water into the soil at the spot and decrease drainage into surface waters. Local groundwater levels are hence expected to rise. Prohibition of cattle grazing in swamp areas is expected to reduce the level of water contamination from dung of cows grazing in the swamps.

The following studies support the fact that with the project activities water and soil resources will be enhances, not only due to the fact that bare land is being planted, but also that the timber supply allows the protection of other native forests within the country.

The baseline would lead to a further loss of existing forest which would leads to soil erosion and therefore to the “degradation of watershed areas”. (*Dissappearing forest of Uganda - the way forward*. CURRENT SCIENCE, VOL. 81, NO. 8, 25 OCTOBER 2001. http://www.ias.ac.in/currsci/oct252001/936.pdf)

In contrast to the baseline scenario where the project area is continuously being depredated the “fast growth of the trees the turnover of biomass is increased. This leads to a greater production of litter, which ends up as dead biomass on the soil and converts fastly into organic soil”. (*Litter production, nutrient recycling and litter accumulation in Pinus caribaea Morelet var. hondurensis stands in the northern Guniea savanna of Nigeria*, 2005, O. Kadeba and A. Aduayi, Plant and Soil**,** Springer Netherlands)

Further than this, the report of *“Science for decision makers – Plantation and Water, Australian Government, 2006”* states the following points which favor the planting of trees in regard to water and soil improvement over the baseline scenario of grassland and pasture.

1. Trees have a longer growing season, more foliage and deeper roots than pasture. Runoff from forested catchments is therefore generally lower than from those other land uses.
2. Run-off reduction increases with increasing rainfall. For the Kikonda Forest Reserve with an annual rainfall of ~ 1000mm, this is estimated to be a reduction of 200 mm.
3. As no fertilizer and only environmentally accepted herbicides are being applied, no negative impacts are expected.

Overall, the Kikonda region does not have any contains of water which might be negatively impacted by the planting of trees. More importantly for people surrounding the Forest Reserves are electricity supply and boreholes which must have a depth of 30 to more than 100m in order to supply the community with clean drinkable water.

Additionality

Name of the Project: Kikonda Forest Reserve
Project code: UG-KFR

Only this part of the document has to be filled out if your project is CCBS[*] certified.

Please insert the page numbers of the PDD certified and published by the CCBA where the information about the environmental aspects is located:

Pages: e.g. 2-12; 15; 34-37

To prove the additionality of the project, the *project owner* can choose between the following options:

Option 1 - An official statement of a bank[*] which gives evidence that the *project* would not be feasible without the additional financial means from the sale of $VER_{futures}$. The statement must be based on a realistic cash-flow which must be attached to the document.
* This footnote is only available in the CarbonFix Standard itself.

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and ***Option 2*** - An analysis of 'Additionality' according to the UNFCCC guideline. GUIDELINE: Additionality

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Which option have you selected? **Option 2**

If you have selected
- 'Option 1', please state the name of reference documents.
- 'Option 2', please follow the 'Additionality' guideline.

[*] CCBS = Climate Community Biodiversity Standard: www.climate-standards.org/projects

Step 0: Preliminary screening based on project starting date and project eligibility

According to the guideline 'Addtitionality' of CFS Step 0 is not required.

Step 1: Identification of alternative scenarios consistent with legal and regulatory framework

Sub-step 1a. Define alternatives to the project activity - Identify realistic and credible land-use alternative(s) available to the project participants or similar project developers.

Cattle-grazing and charcoal burning can be considered as alternatives to the proposed climate forest project. This is due to the fact that it is the historical and current land-use, and no other landuse options are common or foreseeable in the area.

If the project was not accepted as climate forest project, revenues could only be generated from timber sales. Under these circumstances the project would not be economically viable, as presented in the 'Investment analysis'.

This project could not be implemented outside the national forest reserve for the following reason: Real estate in Uganda is very diversified and consecutive areas of a size to make forestry projects for high quality timber profitable are not available outside the forest reserves.

Step 2: Investment analysis was chosen to proof the projects' additionality.

Sub-step 2a. Determine appropriate analysis method - Determine whether to apply simple cost analysis, investment comparison analysis or benchmark analysis.

Simple cost analysis can only be applied if the project activity generates no financial or economic benefits other than CFM related income. Since the project also generates income from timber sales, simple cost analysis is not applicable.

To conduct an investment comparison analysis, financial indicators such as internal rate of return (IRR), cost benefit ratio or unit costs of service most suitable for the project type and decision-making context of the project and its alternatives are compared. In case of the Kikonda project, it would be necessary to determine such indicators from cattle-grazing and charcoal burning activities. For these operations no such data is available in a reliable manner, because cattle grazing and charcoal making are illegally practiced with products sold on an informal market, where prices and conditions are intransparent. Therefore investment comparison analysis cannot be applied.

For that reason the 'Option III' - a benchmark analysis - is conducted.

Sub-step 2b – Option III. Application of a benchmark analysis

Identify the financial indicator, such as IRR10, NPV, cost benefit ratio, or other (e.g. required rate of return (RRR) related to investments in agriculture or forestry, bank deposit interest rate corrected for risk inherent to the project or the opportunity costs of land, such as any expected income from land speculation) most suitable for the project type and decision context. Identify the relevant benchmark value, such as the required rate of return (RRR) on equity. The benchmark is to represent standard returns in the market, considering the specific risk of the project type, but not linked to the subjective profitability expectation or risk profile of a particular project developer.

In order to calculate the **Internal Rate of Return** the following data was collected and used:

Table 1: Costs for forest plantation in Uganda.

Rent of land (US$/hectare planted/year)	10
Planting costs (US$/hectare)	288
Overheads (Project Management, Fire Control, Security) (US$/hectare planted)	145
Maintenance costs (US$/ha)	200
FSC + carbon certification (US$/year)	10.000

Cost are based on figures from 2006/2007. It is assumed that they stay stable throughout the calculation period of 37 years, which is a rather optimistic assumption. It indicates that the expected IRR in this calculation for the project is in the upper range. This approach was chosen to support the conservativeness of the calculation.

Table 2: Income from forest plantation in Uganda.

Timber (all qualities) sales volume after a rotation of 18 years (m^3/ha)	473
Timber (all qualities) sales amount after a rotation of 18 years (US$/ha)	9,460
VERfuture sales volume total project over 36 years (tCO_2e)	1,464,200
Sale price of VERfutures (US$/$tCO_2$)	7,5
VERfutures sales amount total project over 36 years (US$)	10,981,500

Table 3: Assumptions made for the calculation of the income.

Mean annual increment of trees (m^3/ha)	26.2
Price standing timber sawn wood quality (US$/$m^3$)	20 [1]

The income calculation assumes that am mean volume of 200 t CO_2 is fixed per ha and sales price is assumend to be at 7.5 US$ per ton. Wood increment is forecasted by the growth model of Denis Alder (“Alder – growth model.pdf”). Prices for standing timber were calculated from the Uganda Timber Price Index, published in the maganzine “The forester” of the National Forestry Authority, Uganda.

Using this data we concluded an internal rate of return after 36 years of 5.42% without sales of VERfutures. A period of 36 years was chosen as it includes the harvest of areas planted continuously corresponding to a 18-year rotation period.

As a **benchmark** for the project activities we propose to use government bond rates of the bank of Uganda. The bond rates used where submitted to global-woods by Stanbic Bank Ltd on the 20th of June 2007 (see document “Uganda State Bonds 2007 and webpage www.bou.or.ug). Data for bond rates running for 24years was not available but it can be assumed, that the rate would not be below the rate for 5 year bonds (personal communication Mr. Andrew Batte, Stanbic Bank Ltd., City Branch, Kampala, Uganda).

Table 4: Government bond rates of the bank of Uganda in 2007 (tenor yield to maturity).

2 year	13,98%
3 year	14,01%
5 year	14.07 %

These benchmark values are calculated in Uganda Shilling (USH) and not in US$, as the IRR for the proposed forestation project. To make the values comparable, the development of the US$/USH exchange rate might fluctuate during the project lifetime.

Since the middle of 2003 the price of USH for one US$ has shown fluctuations between 1.700 and 1.850 USH per US$. It is not expected by Stanbic Bank Ltd, that this fluctuation will exceed the

[1] Uganda Timber Price Index, in The Forester, National Forestry Authority, Uganda, (2006)

limits of 1.700/1.800 USH in the foreseeable future. By the end of June 2007, the time when the bond rates used as benchmark figures where selected, the USH had a value of app. 1.700 USH per US$. That is a value within that amplitude.

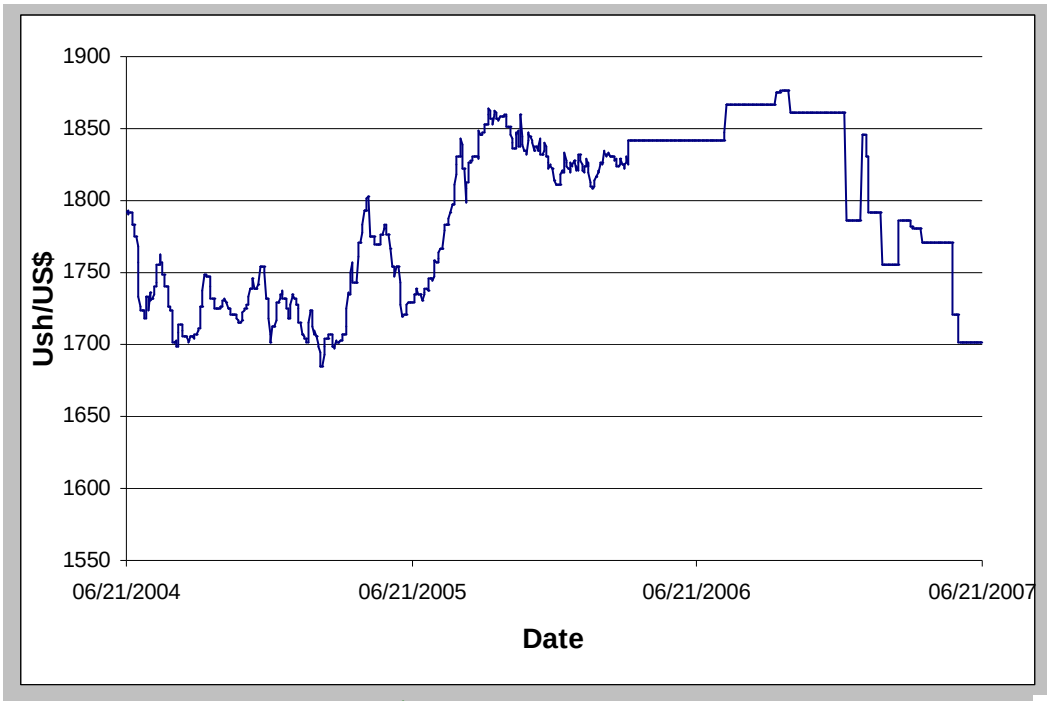

Figure 1: Exchange rate USH/US$ 21.06.2004 – 21.06.2007 (source www.oanda.com).

To calculate conservatively, a decrease of 2% of average interest rate of Uganda state bonds due to a decrease of the value of the USH compared to the US$ is anticipated.
Subtracted from the lowest bond rate available of 13.98% a return of 11.98% remains which is 6.56% more than the return available from the project without sales of $VER_{futures}$

A crucial factor that has to be taken into consideration is that a climate forest project bears significantly more risks than Uganda state bonds. Natural hazards such as fire or drought can significantly decrease the timber volume output. As the tree species used in the project have never been planted before in the area, the growth prediction is linked with uncertainties. The development of prices for $VER_{futures}$ is difficult to predict and investors' trust in $VER_{futures}$ generated by forestry projects is still limited.

Above that, from the companies own experience it is impossible to attract any foreign investment in a long-term project in Africa, if the return is below 10 %.

From these points it can be concluded, that the project at Kikonda is financially less attractive than Uganda State bonds

Sub-step 2d. Sensitivity analysis

The financial attractiveness of a forestation project increases both by changes in the profitability of the project itself and on the other side by a decrease of the profitability of the alternatives used as benchmarks.

The profitability of the forestation project can be improved by:

- a decrease in production costs
- an increase in timber sales prices

As an investment alternative for the area Uganda state bonds were chosen. The attractiveness of these state bonds in comparison to an investment in a forestation project depends on their actual interest rate and on the USH/US$ exchange rate.
The interest rate of the State Bonds itself depends on the overall performance of the Ugandan economy. Among the East African states, Uganda is regarded as the politically most stable. Its economy is steadily growing and its location as a state bordering to the Democratic Republic of Congo, Sudan, Kenya, Tanzania and Rwanda provides a solid basis for constant growth in trade. Nevertheless, national political developments as well as global economic trends that affect the Ugandan economy are hard to predict. In this respect, we regard it as the most realistic assumption to assume the state bonds will keep the same range of interest rates throughout the next thirty years. This assumption balances fluctuations that will definitely occur and is backed by experts of the Stanbic Bank, Uganda.
Fluctuations in the USH/US$ exchange rate are included in the sensitivity analysis by reducing the Uganda state bonds' rate of return by 2%.

To conduct a sensitivity analysis for each factor, assumptions are made that are realistic and would affect the profitability of the project.

Table 5: Different assumptions for sensitivity analysis.

Assumption No.	Annual increase of costs	Annual increase of wood prices	Internal rate of return	Rate of return (Uganda state bonds)
1	1%	1%	7.68%	11.98%
2	2%	0%	negative	11.98%
3	0%	2%	10.29%	11.98%

Assumption 1)
Production costs and wood prices are assumed as increasing annually by 1 percent. As wood sales in contrast to planting and maintenance costs mostly appear at a later stage of the project, an increase in wood prices increases the overall internal rate of return. (See document "Additionlity_sensitivity assumption 1.xls)

Assumption 2)
Production costs are assumed as increasing by 2 % per annum, woods prices are assumed as staying on the same level as 2007. This scenario reflects the possibility that the demand for wood in Uganda decreases due to substitution of wood by other materials, and the possibility that an increase of wood imports from neighbouring countries would lead to an oversupply of wood on the Ugandan market. (See document "Additionlity_sensitivity assumption 2.xls")

Assumption 3)
Production costs stay the same; the wood prices are increasing 2% per annum. An increase in wood prices might occur due to the reasons mentioned in point 3). A 2% increase is rather high according to judgement of companies such as Weyerhaeuser which take that default only for very prospering timber producing countries. Production costs are to an large extend salaries and costs for industrial goods such as fuel. It is not likely that these goods will be available at a lower price than today in future. The assumption that production costs will stay stable over the next 18 years is therefore rather optimistic (See document "Additionlity_sensitivity assumption 3.xls")

The sensitivity analysis supports the assumption, that the proposed project activity is unlikely to be the most financially attractive.

Step 3: Application of a barrier test - Financial barriers

A reforestation project in general bears substantial risks for the investor. Growth rates, natural hazards and wood prices are hard to predict. Due to long production circles return only is generated after several years. Eastern Africa as an investment region carries additional risks. Political and legal instability are significant hurdles to attract investment. To compensate for the risk, investors demand returns starting from 10%.

global-woods experienced that even investors with a high motivation in investing in projects in developing countries for social and ecological reasons expect returns of at least 10% to compensate for their above average risks.
Furthermore g-w experienced that the risk factors mentioned above make it impossible to receive credits for such projects.

An alternative to the proposed reforestation activities would be cattle keeping and charcoal burning. As explained earlier, this activity is illegal, but common. No significant investment is needed to run this kind of business. The barriers brought forward that prevent the realisation of the proposed reforestation activity do not hinder the alternative cattle keeping and charcoal burning.

Hereby it is prooven that the project faces a barier that would prevent the implementation of the project and at the same time an alternative activity would not be stoped by the activity mentioned.

The additionality of the project is proven according to the barrier test.

Step 4: Registration of the project as forestation activity under CarbonFix Standard.

The projected forestation activity faces the problem of generating a low IRR if the income is generated from wood sales only. In this case global-woods expects an IRR of 5.42 %. Taking into account existing alternative investments with a risk much lower than that occurring in reforestation projects, it would not be possible to generate financial means to implement the project.

global-woods expects the price per tonne CO_2 equivalent to be about 7.5 US$. The average amount of CO_2 equivalents stored per ha planted area is expected to be app. 200 tonnes. That represents a fully stocked area with *Pinus caribaea* Setting the revenues from wood sales at the same level as in the calculation mentioned above, g-w expects an IRR after 36 years of 12.11 %. (for details see document “additionality general assumption.xls”). These revenues will allow global-woods to generate the financial means to run the project.
If the proposed forestation activities are put into practice, the current land-use activities are not continued. The proposed forestation project activity is therefore not the baseline scenario.

With the compliance of step 4, the financial additionality of the proposed forestation project activity is proven.

If the information above has any further references, please state their title(s).
Reference documents must be uploaded in the respective attachment folder, reference pictures on the project specific website.
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A responsible state authority must approve that the forestation on the *planting area* is not mandatory by any law or regulation **or** if it is mandatory, it evidenced must be that these laws or regulations are systematically not enforced.

Name of the reference document:
The area where the project takes place is a “National Forest Reserve”. It is legally required by the Ugandan National Forest Authority that leaseholders use the reserves for forestry operations. Any other use is considered to be illegal. Nevertheless, cattle grazing and charcoal burning is taking place in project area. The reference document is calles "Kikonda - planting trees law not enforced.pdf"

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or Evidence must be given that a forest would not establish itself on the *planting area* under the foreseeable land-use, and without the *project* activities.

Describe here, why forest does not establish itself **or** state the name of reference:
Pinus caribaea as the major tree species planted in the project would not occur naturally in the project area without human induced activities.

A natural regeneration on the project area which could lead to a transition into forest is prevented by current land use practice of charcoal burning, fuelwood collection and cattle grazing.

Due to insuficient law enforcement (see also document "Kikonda - planting trees law not enforced.doc") the project area has been facing illegal land-use activities that inhibit forest establishment. These land-use activties include illegal logging and cattle grazing. It is proofen that the deforestation is still an overal trend in Uganda, especially in Forest Reserves. It can only be stopped by increasing the revenues from sustainable forest management and tree planting. The prime source of such additional income is the sales of CO2-certificates.

Fehler! Keine gültige Verknüpfung.-